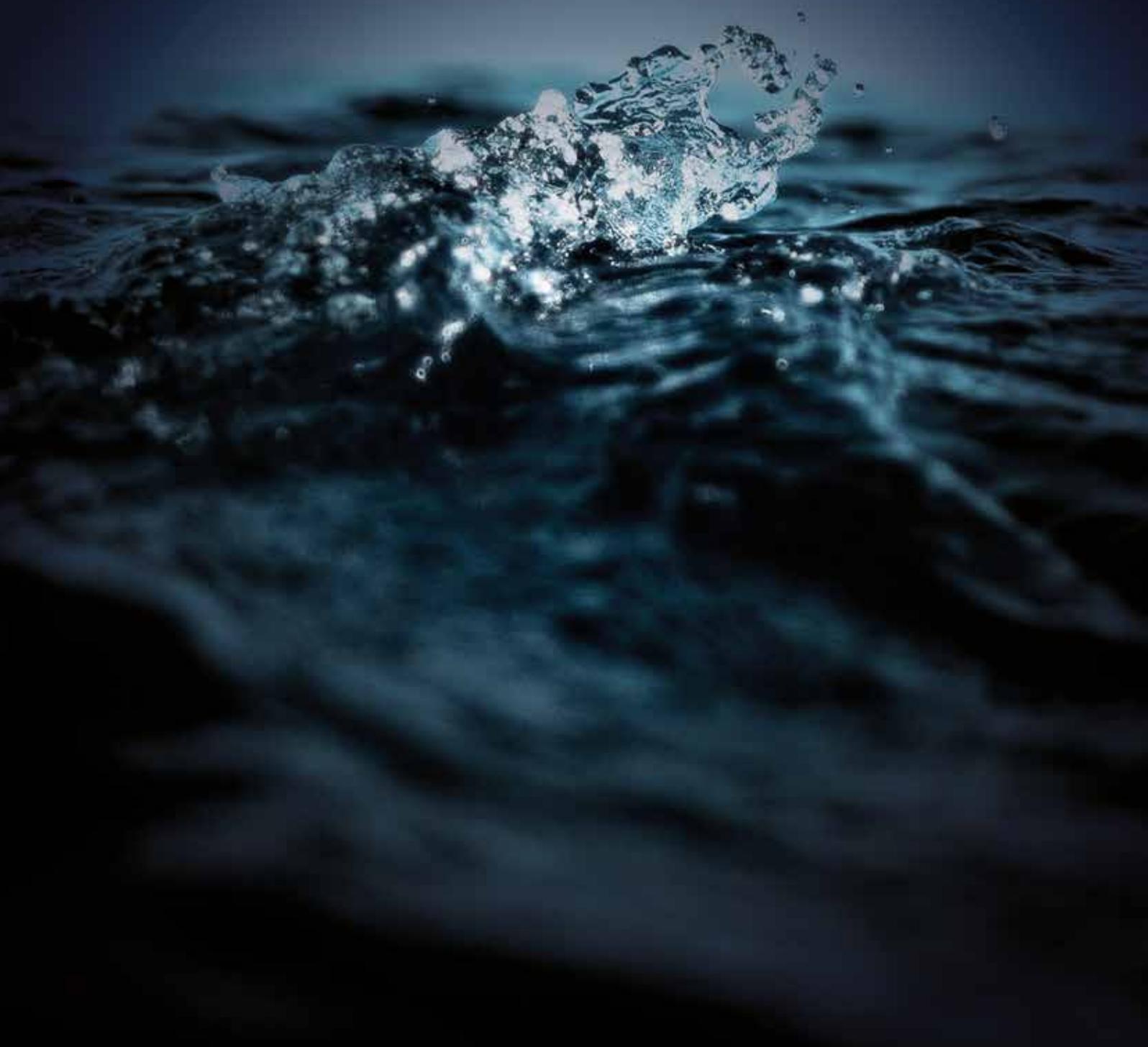




A World of Marine Equipment



2023

HIGHLIGHTS



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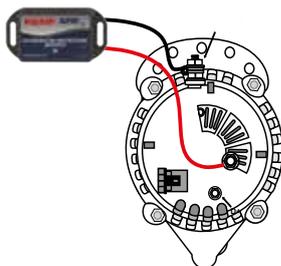
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Uflex S.r.l. declines any liability for possible mistakes in this catalogue due to printing errors.

The descriptions and guidelines shown in this catalog should be used as general reference only. For any further information please contact our Technical Service.





ULTRAFLEX GROUP
88 years
 1935-2023



1935 - 2023

Ultraflex Group has 88 years of experience in manufacturing and distributing the highest quality and most innovative products.

The Ultraflex Group affiliate Companies that design and produce widely known equipments in the marine, industrial, architectural and alternative energy fields.

Management System

The Ultraflex and Uflex Management Systems are certified in conformity with the UNI EN ISO 9001:2015 and UNI EN ISO 14001:2015 rules and involve all the company resources and processes starting from the design, in order to:

- Define and comply with the customer requirements
- Set up the actions to maintain and improve the quality standards constantly
- Pursue a continuous process improvement to meet the market needs, through research, innovation and developing products and processes.
- Maintain and verify conformity with ABYC requirements.
- Pursuing environmental protection, including pollution and continuous improvement aimed at environmental performance

Constantly test the products to verify their conformity with the 2013/53 EU and ABYC (American Boat and Yacht Council) requirements.



Steering and control systems for pleasure boats



Manufacturing of steering wheels and distribution of technical marine accessories



UFLEX - Renewable Energy
 Systems and accessories for alternative energy applications



ULTRAFLEX CONTROL SYSTEMS

Window and skylight remote controls. Building automation



INDUSTRIA di LEVI

Mechanical remote controls in the industrial field



UFLEX USA

Steering and control systems for pleasure boats



UES[®]

ULTRAFLEX CONTROL SYSTEMS Srl



AV SERIES ELECTRICAL HATCH LIFTERS



The AV hatch lifters are electromechanical products, especially designed for marine use on pleasure boats.

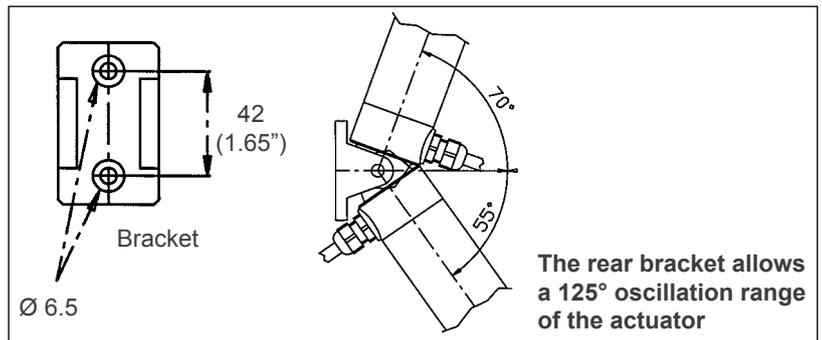
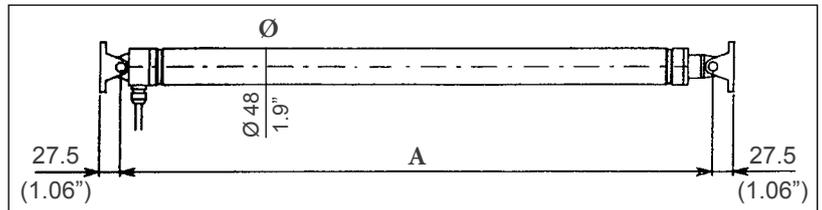
They allow full or partial opening and closing of heavy engine hatches, peak tanks, hatch beams etc.

By activating a switch, it is possible to lift the hatch to any desired position from closed to full open; an internal self-locking mechanism will maintain the position preventing any accidental hatch closing. In case of a power failure an emergency device allows for manual opening.

TECHNICAL FEATURES

- According to the load required, the AV hatch lifter can be mounted individually, or in twin cylinder installation for heavier loads.
- **Maximum load for single installations: 1200N (120 kg - 265 lbs)**
- **Maximum load for dual installations: 2400N (240 kg - 529 lbs)**
- Maximum load is recommended not to be exceeded.
- Supplied with all mounting hardware.
- Stainless steel telescopic ram for manual operation in case of emergency.
- Circuit breaker to stop accidental overloading of the system and electronic stop at closed or full open position.
- IP 65 protection rated
- Speed: 25mm/sec no load applied, 17 mm/sec maximum load
- Current absorption in single installations: 10A at 12V, 5A at 24V
- Current absorption in dual installations: 20A at 12V, 10A at 24V
- AV 12VDC models are Ignition Protected. UL1500 - ISO8846 approved.

NOTE: Available, on request, the push/pull actuator version. This option is not compatible with the manual emergency opening device.



MODEL	PART No.	VOLTS	STROKE	LENGTH A (FULL CLOSED ACTUATOR)	EXTERNAL DIA.
AV 3012	40671C	12V DC	300 mm (12")	677 mm (26.6")	48 mm (1.9")
AV 3024	40672E	24V DC	300 mm (12")	677 mm (26.6")	48 mm (1.9")
AV 4512	40582D	12V DC	450 mm (18")	827 mm (32.5")	48 mm (1.9")
AV 4524	40583F	24V DC	450 mm (18")	827 mm (32.5")	48 mm (1.9")
AV 6012	40584H	12V DC	600 mm (24")	977 mm (38.4")	48 mm (1.9")
AV 6024	40585K	24V DC	600 mm (24")	977 mm (38.4")	48 mm (1.9")

OPTIONAL COMPONENTS

RB12 - 40738Y Relay box 12V

RB24 - 40742C Relay box 24V

It contains the relays needed for cycle reversion. One box works with 1 or 2 lifters

SW20 - 69116J

1 x 3 way single pole momentary switch

BR/AV- 80382I Spare fixing bracket



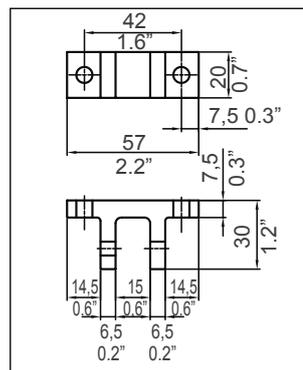
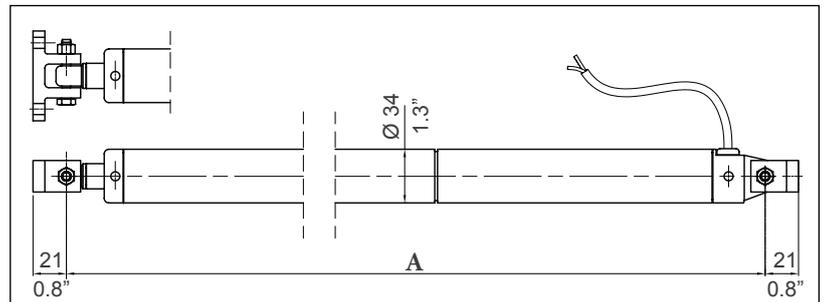
SW20



RB12

TECHNICAL FEATURES

- **Single installation only**
- **Pull and push maximum load: 650N (65 kg - 144 lbs)**
- Pull and push maximum load is recommended not to be exceeded.
- Supplied with all mounting hardware.
- Aluminium ram.
- Circuit breaker to stop accidental overloading of the system and electronic stop at closed or full open position.
- IP 65 protection rated
- Speed:
 - 12V model:
 - 5 mm/sec no load applied
 - 4 mm/sec maximum load
 - 24V model:
 - 8 mm/sec no load applied
 - 6 mm/sec maximum load
- Current absorption: 2A at 12V, 1A at 24V



Highest installation flexibility: 180° oscillation range

MODEL	PART No.	VOLTS	STROKE	LENGTH A (FULL CLOSED ACTUATOR)	EXTERNAL DIA.
ULYSSES 1812	40924Q	12V DC	180 mm (7")	515 mm (20.3")	34 mm (1.3")
ULYSSES 1824	40926S	24V DC	180 mm (7")	515 mm (20.3")	34 mm (1.3")
ULYSSES 3012	40925R	12V DC	300 mm (12")	635 mm (25.0")	34 mm (1.3")
ULYSSES 3024	40927T	24V DC	300 mm (12")	635 mm (25.0")	34 mm (1.3")

OPTIONAL COMPONENTS

SW20 - 69116J

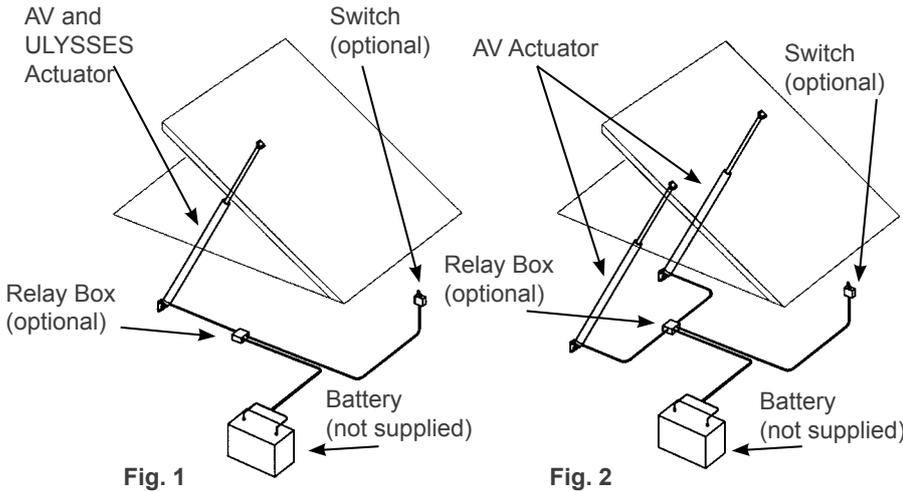
1 x 3 way single pole momentary switch

BR/UL - 35697P

Spare fixing bracket



SW20



COMPONENTS DESCRIPTION

AV Series Hatch Lifter

- n° 1 AV actuator for single installation (Fig.1)
- n° 2 AV actuators for dual installation (Fig.2)
- External diameter: 48 mm (1.9")
- Maximum oscillation range: 125°

ULYSSES Series actuators

- n° 1 Ulysses actuator (Fig.1)
- **no dual installatio**
- External diameter: 34 mm (1.3")
- Maximum oscillation range: 180°

Power supply cable:

- **AV** and **ULYSSES** actuators are supplied with 5 ft (1,5 m) of electrical cable
- Warning: in case of longer cable length required, do not substitute the existing harness, but make a junction following the instructions supplied with the product.

Relay Box: 12-24V (on demand)

Two way push-button with central off position (optional)

Fuse (not supplied)

Battery (not supplied)

INSTALLATION

- The following equation will help you to calculate the maximum strength (Fmax) required from the hatch lifter to open your hatch, knowing the dimensions and weight of the hatch and the position of the mounting brackets.

$$F_{max} = \frac{P}{2} \times \frac{L}{b} \times \frac{X}{a} \times K^*$$

P= hatch weight in N
L/b/X/a= mm

Maximum load (Fmax):

• AV Series actuators:

1200 N (120 kg - 265 lbs) single installation, pushing only 2400 N (240 kg - 530 lbs) dual installation pushing only

Note: when the load exceeds 2400 N (240 kg - 530 lbs), it is possible to install more then two AV actuators. Please, contact our Technical Service for the proper electrical configuratio

• ULYSSES actuators:

650 N (65 kg - 144 lbs) single installation only, both pull and push

*Values of K with ratio included between approx. 0 and 0.5 (if ratio > 0.5 use K=1)

		b/d															
		0.1	0.15	0.2	0.3	0.4	0.5	1.0	2.0	3.0	4.0	5.0	6.0	7.0	8.0	9.0	10.0
c/a	0.0	1.09	1.14	1.17	1.24	1.30	1.34	1.41	1.34	1.26	1.21	1.17	1.15	1.13	1.11	1.10	1.09
	0.1	1.00	1.01	1.04	1.09	1.13	1.16	1.23	1.16	1.10	1.06	1.04	1.02	1.01	1.00	1.00	1.00
	0.2	1.00	1.00	1.00	1.03	1.06	1.10	1.16	1.10	1.04	1.01	1.00	1.00	1.00	1.00	1.00	1.00
	0.3	1.00	1.00	1.00	1.00	1.03	1.06	1.12	1.06	1.26	1.01	1.00	1.00	1.00	1.00	1.00	1.00
	0.4	1.00	1.00	1.00	1.00	1.00	1.03	1.10	1.03	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	0.5	1.00	1.00	1.00	1.00	1.00	1.01	1.08	1.01	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00

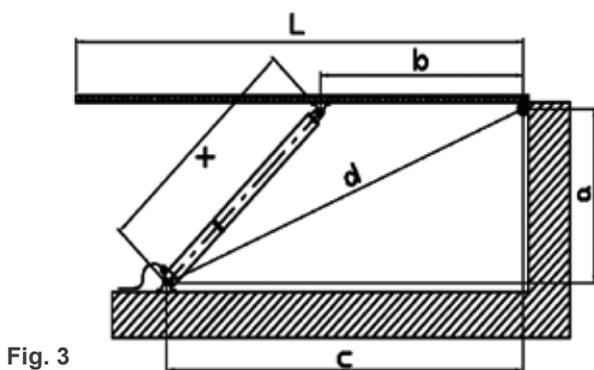


Fig. 3

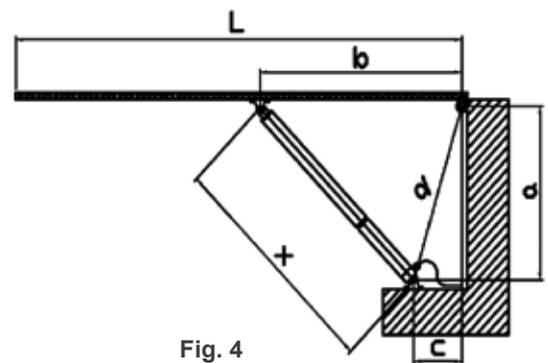
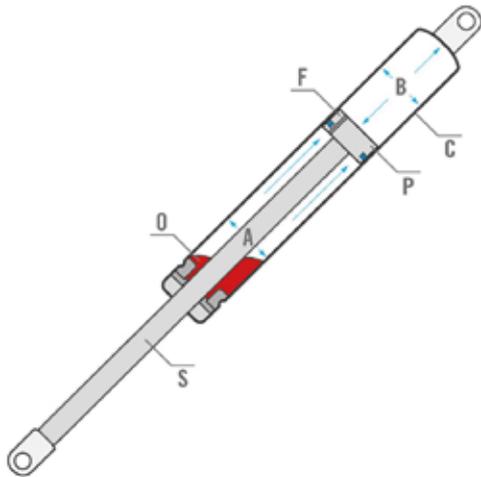


Fig. 4

UFLEX





A=upper part
B=below the piston
C=cylinder

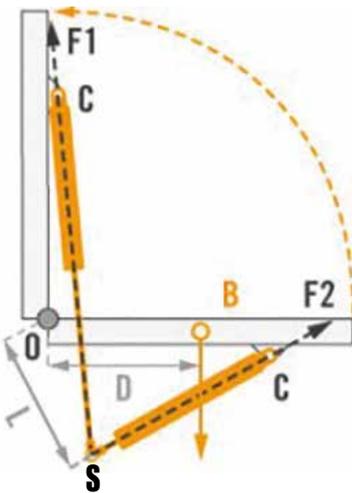
P=piston
S=piston rod
O=oil
F=channels

Gas springs are pneumatic force accumulators mainly used to lift, hold open and smoothly lower hatches, covers, lids and doors. A gas spring, not equipped with a lock device, functions as follows: the pressure of the compressed nitrogen gas contained in a tube provides the extension force of the spring as the result of the difference between the internal tube pressure and the atmospheric pressure. The gas flows from the highest to the lowest pressure compartment of the tube through a self-cleaning orifice in the piston rod causing the spring rod to telescope out of the pressure tube.

Each tube incorporates a small quantity of oil that provides lubrication of the seals and of the piston rod and, at the same time, a damping medium to control the opening speed of the cover or hatch.

INSTALLATION

Formula to calculate the force of a gas spring



$$F1 = [(M \times D) : L] : NM$$

F1=Force of the spring which opposes the weight of the object to be moved; in this case, F1 expressed in kg and have to be transformed in Newton multiplying the value obtained by 9.81.

M=Weight in kg of the object to be lifted.

D=Distance in mm measured horizontally between the center of gravity B and the point of rotation O.

L=Length in mm of the gas spring working arm; most of the time it is equal to the stroke of the gas spring and in case cannot be greater.

NM=Number of gas springs to be used in the application (1, 2 or more).

WARNINGS

- The rod surface should be protected against physical or chemical damages.
- Lateral loads should be carefully avoided.
- Attachment pivots should be well aligned.
- Springs should be mounted according to previous installation instructions ensuring correct orientation.
- Tensile forces exceeding the output force as indicated for each single spring should be avoided.
- Working temperature – 30° C and + 80°C.



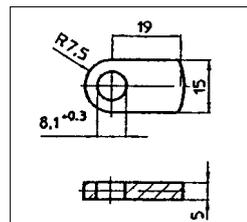
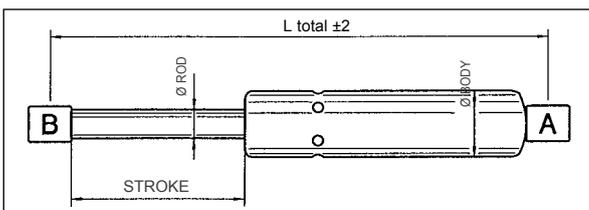


Nitro-protected steel rod and marine corrosion resistant black painted cylinder

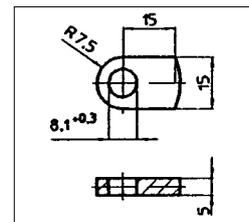
MODEL	TOTAL LENGTH mm (")	STROKE mm (")	OUTPUT FORCE kg (lbs)	ROD DIA. mm (")	END FITTING		OEM PACKA- GING PART No.	AFTER- MARKET PACKAGING PART No.
					SIDE A TYPE	SIDE B TYPE		
U95-5	257 (10.1)	95 (3.7)	5 (11.0)	8 (0.3)	1	2	64312G	64412L
U95-10	257 (10.1)	95 (3.7)	10 (22.0)	8 (0.3)	1	2	64313J	64413N
U95-20	257 (10.1)	95 (3.7)	20 (44.0)	8 (0.3)	1	2	64314L	64414R
U140-10	365 (14.4)	142 (5.6)	10 (22.0)	8 (0.3)	1	1	64315N	64415T
U140-20	365 (14.4)	142 (5.6)	20 (44.0)	8 (0.3)	1	1	64316R	64416V
U140-30	365 (14.4)	142 (5.6)	30 (66.1)	8 (0.3)	1	1	64317T	64417X
U235-10	550 (21.6)	234 (9.2)	10 (22.0)	8 (0.3)	1	1	64318V	64418Z
U235-20	550 (21.6)	234 (9.2)	20 (44.0)	8 (0.3)	1	1	64319X	64419B
U235-30	550 (21.6)	234 (9.2)	30 (66.1)	8 (0.3)	1	1	64320F	64420K
U235-40	550 (21.6)	234 (9.2)	40 (88.1)	8 (0.3)	1	1	64321H	64421M
U260-20	600 (23.6)	262 (10.3)	20 (44.0)	8 (0.3)	2	3	64322K	64422P
U260-30	600 (23.6)	262 (10.3)	30 (66.1)	8 (0.3)	2	3	64323M	64423S
U260-40	600 (23.6)	262 (10.3)	40 (88.1)	8 (0.3)	2	3	64324P	64424U
U300-30	683 (26.8)	300 (11.8)	30 (66.1)	10 (0.4)	2	2	65297V	65300E
U300-40	683 (26.8)	300 (11.8)	40 (88.1)	10 (0.4)	2	2	65298X	65301G
U300-50	683 (26.8)	300 (11.8)	50 (110.2)	10 (0.4)	2	2	65299Z	65302J

NOTE: The total length is measured from center pivot line to end fitting at fully extended spring.

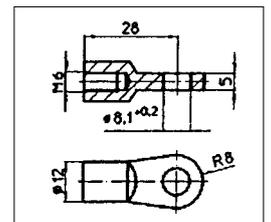
DIMENSIONS AND END FITTINGS



TYPE 1
Welded Eyelet



TYPE 2
Welded Eyelet



TYPE 3
Threaded Eyelet

APPLICATIONS

Uflex provides gas springs in a variety of pressures to suit various installation needs, nevertheless it is the customer who decides which is the most convenient selection for a specific application. For more detailed information, please contact our Technical Service.

PACKAGING

UFLEX gas springs are supplied in **OEM** or in **Aftermarket packaging**. Please specify when ordering.



BLACK PAINTED GAS SPRINGS UB SERIES

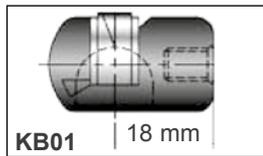
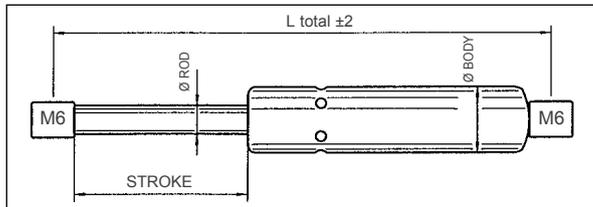


Nitro-protected steel rod and marine corrosion resistant black painted cylinder. Thermoplastic ball bearing end fittings to be threaded on.

MODEL	TOTAL LENGTH	STROKE	OUTPUT FORCE	ROD DIA.	OEM PACKAGING	AFTERMARKET PACKAGING
	mm (")				mm (")	kg (lbs)
UB120-30	315 (12.4)	120 (4.7)	30 (66.1)	6 (0.2)	66425GA	66448VA
UB150-20 UB150-30	375 (14.7) 375 (14.7)	150 (5.9) 150 (5.9)	20 (44.0) 30 (66.1)	6 (0.2) 6 (0.2)	66427LA 66428NA	66450FA 66451HA
UB180-30	445 (17.5)	180 (7.0)	30 (66.1)	8 (0.3)	66431BA	66454PA

NOTE: The total length is measured from center pivot line to end fitting at fully extended spring.

DIMENSIONS AND END FITTINGS



Kit **KB01** - 66510X: 2 ball bearing end fittings to be threaded on the gas spring

NOTE: End fittings to be ordered separately

APPLICATIONS

Uflex provides gas springs in a variety of pressures to suit various installation needs, nevertheless it is the customer who decides which is the most convenient selection for a specific application. For more detailed information, please contact our Technical Service.

PACKAGING

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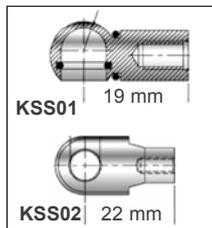
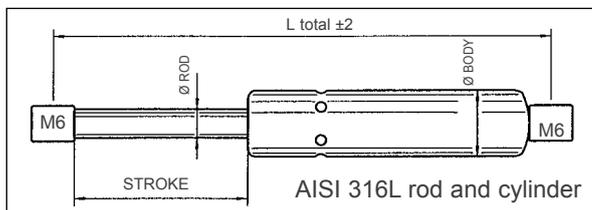




MODEL	TOTAL LENGTH	STROKE	OUTPUT FORCE	ROD DIA.	OEM PACKAGING	AFTERMARKET PACKAGING
	mm (")	mm (")	kg (lbs)	mm (")	Part No.	Part No
USS100-5	275 (10.8)	100 (3.9)	5 (11.0)	6 (0.2)	66465VA	66487FA
USS100-10	275 (10.8)	100 (3.9)	10 (22.0)	6 (0.2)	66466XA	66488HA
USS100-20	275 (10.8)	100 (3.9)	20 (44.0)	6 (0.2)	66467ZA	66489KA
USS120-10	315 (12.4)	120 (4.7)	10 (22.0)	6 (0.2)	66468BA	66490UA
USS120-20	315 (12.4)	120 (4.7)	20 (44.0)	6 (0.2)	66469DA	66491WA
USS120-30	315 (12.4)	120 (4.7)	30 (66.1)	6 (0.2)	66470MA	66492YA
USS150-10	375 (14.7)	150 (5.9)	10 (22.0)	6 (0.2)	66471PA	66493AA
USS150-20	375 (14.7)	150 (5.9)	20 (44.0)	6 (0.2)	66472SA	66494CA
USS150-30	375 (14.7)	150 (5.9)	30 (66.1)	6 (0.2)	66473UA	66495EA
USS180-10	445 (17.5)	180 (7.0)	10 (22.0)	8 (0.3)	66474WA	66496GA
USS180-20	445 (17.5)	180 (7.0)	20 (44.0)	8 (0.3)	66475YA	66497JA
USS180-30	445 (17.5)	180 (7.0)	30 (66.1)	8 (0.3)	66476AA	66498LA
USS220-5	525 (20.6)	220 (8.6)	5 (11.0)	8 (0.3)	22122PA	22589SA
USS220-10	525 (20.6)	220 (8.6)	10 (22.0)	8 (0.3)	66477CA	66499NA
USS220-20	525 (20.6)	220 (8.6)	20 (44.0)	8 (0.3)	66478EA	66500UA
USS220-30	525 (20.6)	220 (8.6)	30 (66.1)	8 (0.3)	66479GA	66501WA
USS220-40	525 (20.6)	220 (8.6)	40 (88.1)	8 (0.3)	66480RA	66502YA
USS250-20	585 (23.0)	250 (9.8)	20 (44.0)	8 (0.3)	66481TA	66503AA
USS250-30	585 (23.0)	250 (9.8)	30 (66.1)	8 (0.3)	66482VA	66504CA
USS250-40	585 (23.0)	250 (9.8)	40 (88.1)	8 (0.3)	66483XA	66505EA
USS300-20	700 (27.5)	300 (11.8)	20 (44.0)	10 (0.4)	68061EA	22529XA
USS300-30	700 (27.5)	300 (11.8)	30 (66.1)	10 (0.4)	66484ZA	66506GA
USS300-40	700 (27.5)	300 (11.8)	40 (88.1)	10 (0.4)	66485BA	66507JA
USS300-50	700 (27.5)	300 (11.8)	50 (110.2)	10 (0.4)	66486DA	66508LA
USS300-60	700 (27.5)	300 (11.8)	60 (132.3)	10 (0.4)	22517PA	22530TA

NOTE: The total length is measured from center pivot line to end fitting at fully extended spring. Further lengths, strokes and output forces available on request (50 pieces each size minimum order).

DIMENSIONS AND END FITTINGS



Kit **KSS01** - 66514F: 2 stainless steel ball bearing end fittings to be threaded on the gas spring

Kit **KSS02** - 69530V: 2 stainless steel eyelet end fittings to be threaded on the gas spring

NOTE: end fittings to be ordered separately

APPLICATIONS

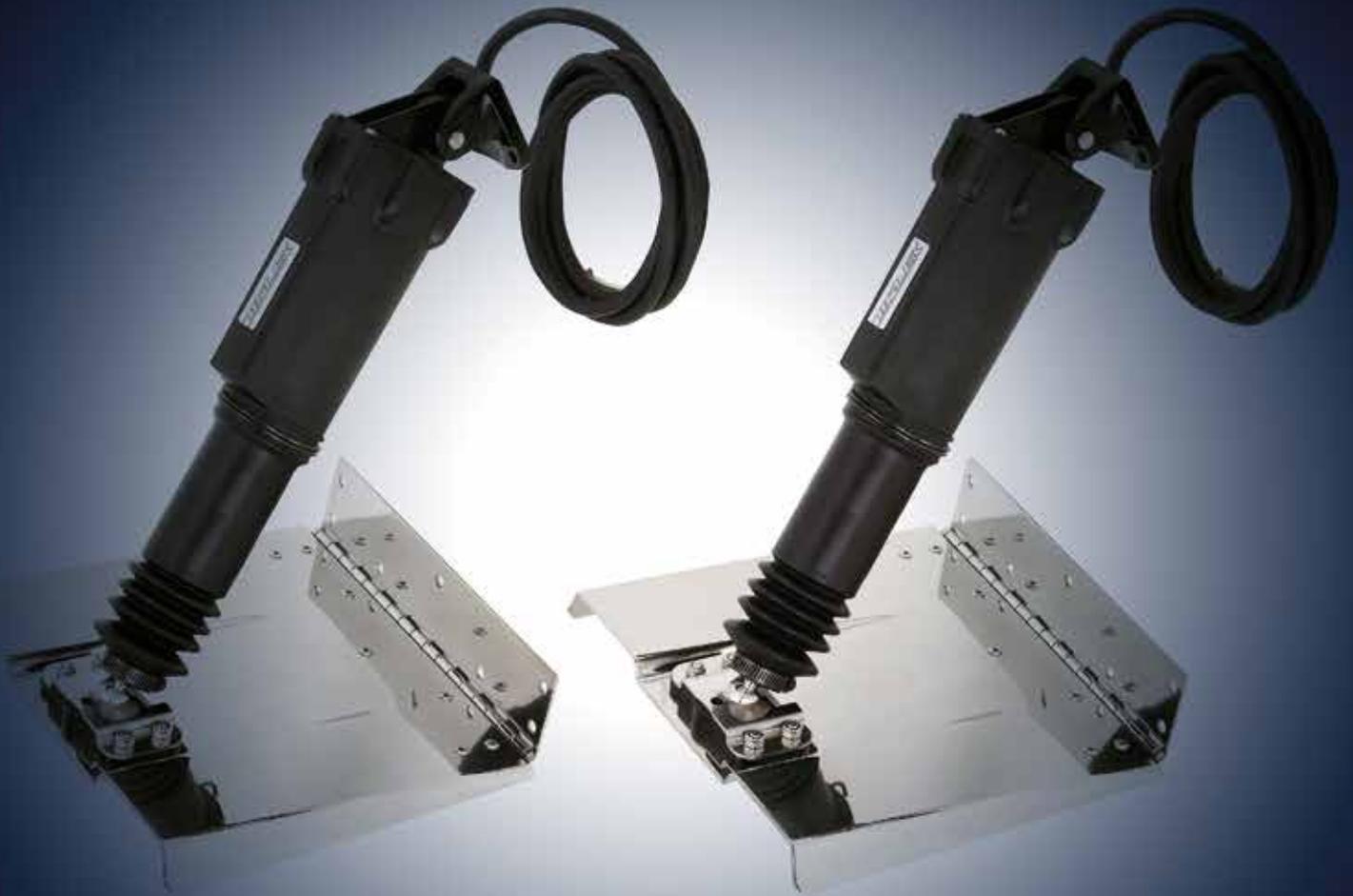
Uflex provides gas springs in a variety of pressures to suit various installation needs, nevertheless it is the customer who decides which is the most convenient selection for a specific application. For more detailed information, please contact our Technical Service.

PACKAGING

UFLEX gas springs are supplied in **OEM** or in **Aftermarket packaging**. Please specify when ordering.



UFLEX



TRIM TABS - INNOVATIVE FINGERTIP JOYSTICK CONTROL

Boats often become unbalanced to port or starboard due to wind, sea conditions, and weight transfer within the boat.

The innovative joystick by Uflex takes all the guesswork out of realigning the boat. A simple push of the joystick lever in the opposite direction of the "lean" of the boat is all you need to do.

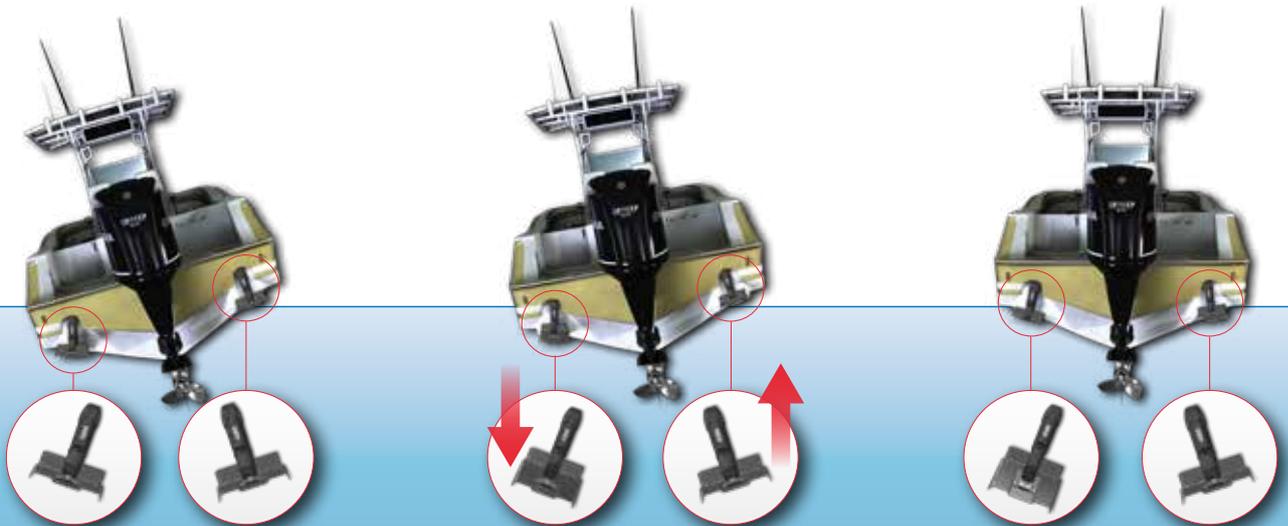
Gone are the days of having to think about the current positions of the tabs and then push two rocker switches, hoping that you have the correct sequence, i.e. port up and starboard down or vice versa.

The Uflex joystick lets you drive like a pro!

- Makes adjusting the position of the boat more intuitive than traditional rocker switches
- Both trim actuators move simultaneously in opposite directions when pushing the joystick to port or to starboard

REALIGNING LEAN TO PORT OR STARBOARD

Because the joystick simultaneously activates both tabs in opposite directions when adjusting for a lean to port or starboard, the realignment of the boat occurs very quickly, and with optimal tab positioning in terms of efficiency.



The unique profile of the Uflex planes offers greater efficiency and stern lift than traditional flat planes, often providing the opportunity to use a smaller size tab with the same performance of a larger flat plane

- Keep the boat on plane with lower engine RPM

IP68-rated, triple sealed 12VDC electrical mechanical actuators provide:

- One-piece actuator housing reduces the possibility of water intrusion
- Exclusive rubber boot protects internal primary seals from sea growth and high-pressure water

- Planetary gear actuator gearbox provides high efficiency and low amp consumption
- Tempered stainless-steel trapezoidal screw gives peak resistance to impact and high-torque loads
- The actuator upper bracket is prepared to route electrical cable through the transom

REALIGNING BOW LIFT

Pushing the joystick up or down moves the tabs in the same direction. This changes the attitude of the boat bow up or down.

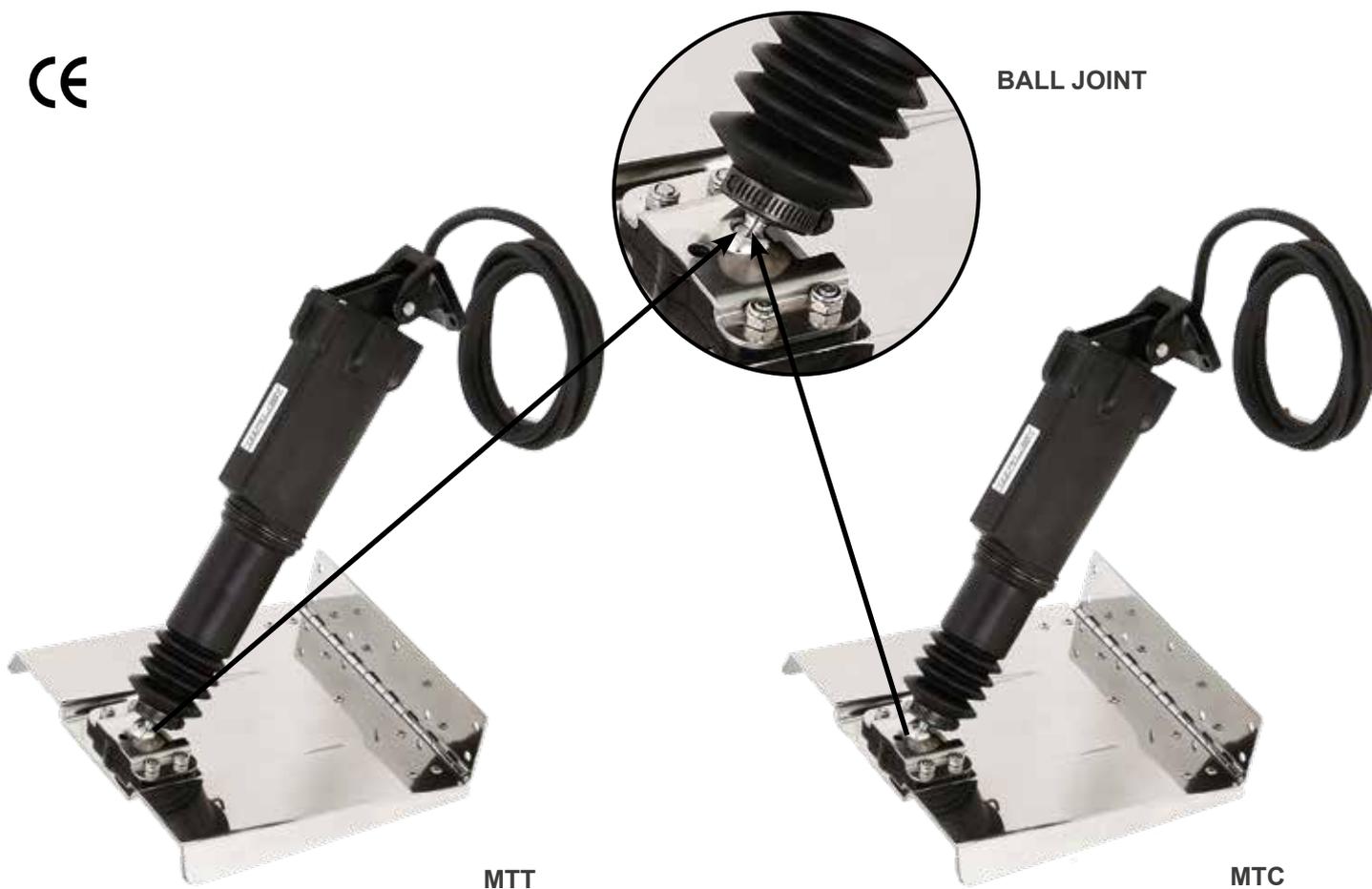


Improve fuel economy and passenger comfort with Uflex electromechanical trim tabs. Featuring electropolished stainless steel planes and low consumption, high speed, composite actuators, these tabs are built to last in the most demanding sea conditions. Uflex trim tabs have been specifically designed for easy installation using a quick connect bracket-actuator, requiring only one small hole per tab through the transom. The patented transom mounting bracket encapsulates the wiring to ensure protection against any wiring damage.

Uflex trim tab systems are available in 2 versions

MTT systems for standard installations

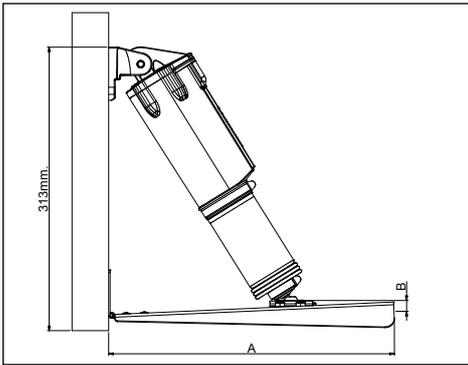
MTC systems for compact installations



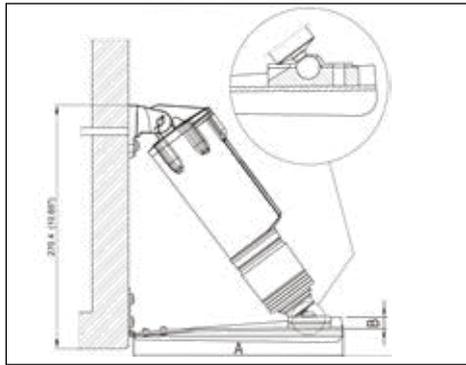
MTT AND MTC SYSTEMS - FEATURES

- Tab bracket with **BALL JOINT**
- Operating system with hardened steel ballscrew, suitable to withstand high push loads.
- Prompt and easy control with the innovative use of a Joystick (patented)
- **AUTO-LINE UP**: automatic flap re-alignment function
- Completely sealed thermoplastic resin tab actuators: maximum protection guaranteed by dual seals and a rubber bellow (patented)
- Stainless steel rod and tabs
- The innovative profile of the tabs increases the efficiency of the system
- Non polished stainless steel tabs also available (standard tabs only).
- The stainless steel top surface of the tabs is mirror polished to give higher resistance to marine environment.
- Hole hinge design (patented) allows for precise retrofit replacement with Lenco® and Bennett® same size tabs
- Fully maintenance free
- Voltage: 12V DC
- Waterproof: IP68 protection
- CE Certificatio
- Meets with the EN 60945 standards

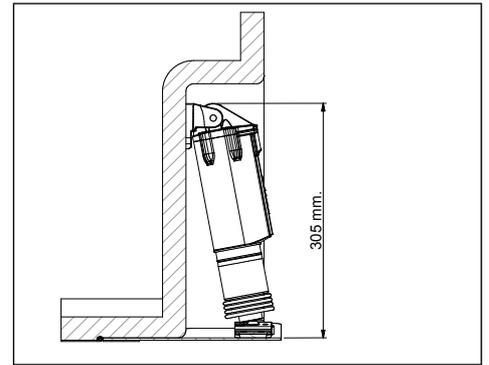
APPLICATIONS:



MTT INSTALLATION



MTC TILTED INSTALLATION



MTC VERTICAL INSTALLATION

NOTE: dimensions could change in case of raked transom

A: 228.6 mm - 9"

B: 19.5 mm - 0.77"

MTT SYSTEMS - APPLICATION

BOAT LENGTH	BOAT LENGTH (m)	TAB SIZE L x I	TAB SIZE L x I (cm)	TRANSOM MINIMUM HEIGHT
14' - 18'	4,5 - 5,5	9" x 9"	22,8 x 22,8	31.03 cm (12.22")
16' - 25'	5,0 - 8,0	12" x 9"	30,5 x 22,8	31.03 cm (12.22")
18' - 30'	5,5 - 9,0	12" x 12"	30,5 x 30,5	31.03 cm (12.22")
26' - 36'	8,0 - 11,0	12" x 18"	30,5 x 45,7	31.03 cm (12.22")

MTC SYSTEMS - APPLICATION

BOAT LENGTH	BOAT LENGTH (m)	TAB SIZE L x I	TAB SIZE L x I (cm)	TRANSOM MINIMUM HEIGHT	
				TILTED INSTALLATION	VERTICAL INSTALLATION
14' - 18'	4,5 - 5,5	9" x 9"	22,8 x 22,8	27.04 cm (10.65")	30.5 cm (12")
16' - 25'	5,0 - 8,0	12" x 9"	30,5 x 22,8	27.04 cm (10.65")	30.5 cm (12")
18' - 30'	5,5 - 9,0	12" x 12"	30,5 x 30,5	27.04 cm (10.65")	30.5 cm (12")
26' - 36'	8,0 - 11,0	12" x 18"	30,5 x 45,7	27.04 cm (10.65")	30.5 cm (12")

NOTE: L= Tab length, I= Transom side.

These recommendations should be used as a general reference only. Final selection should be made with the assistance of a qualified installation technician. For any further information please contact our Technical Service

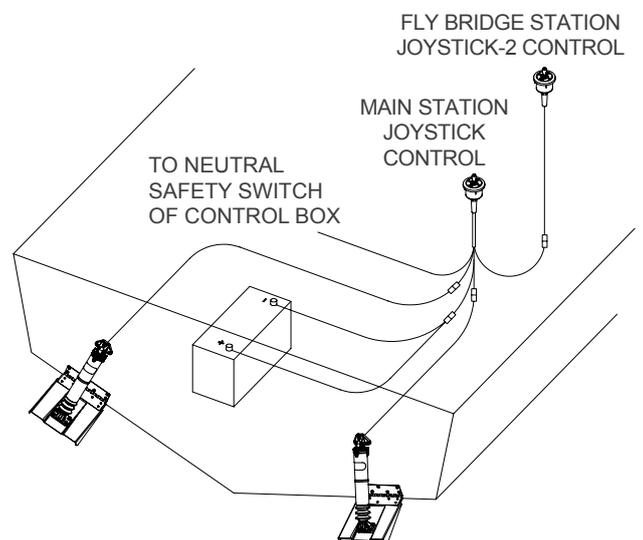
WARNING: The systems are not intended for use in racing applications

STANDARD COMPONENTS (SINGLE ACTUATOR PER TAB)

- 1 pair of electromechanical actuator complete with connection brackets and 2 m (6.56') wiring harness.
- 1 joystick control unit with 0.50 m (1.64') wiring harness
- 1 pair of stainless steel tabs. Tabs are sold separately: specify selected size when ordering

OPTIONAL COMPONENTS

- 1 extension wiring harness kit for the power cable and the actuator cables. Deutsch plugs included
- 1 second station joystick-2 control unit with 0.50 m (1.64') wiring harness
- 1 extension wiring harness (6 m and 9 m for second station). Deutsch plugs included.
- 1 extension wiring harness (2 m for auto-line up). Deutsch plugs included.
- 1 zinc alloy sacrificial anode kit to neutralize the galvanic currents on tabs (2 anode kits for every 1 pair tab installation)



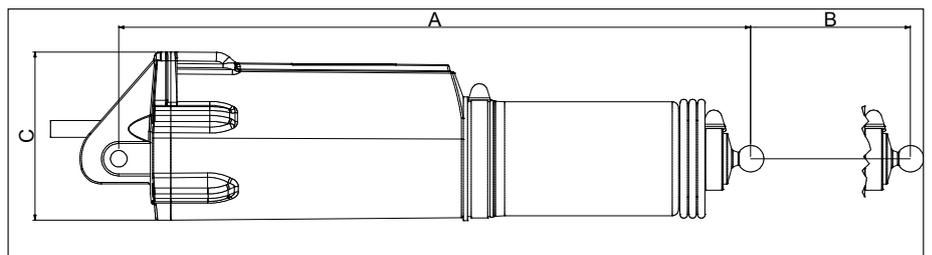


FEATURES

- 12 VDC Black actuator and brackets
- 1 m (3.28') wiring harness with Deutsch crimped pins included
- Stroke: 57 mm (2.25")

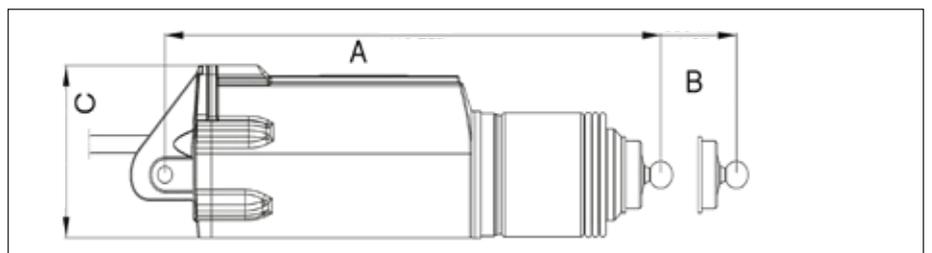
AT ACTUATOR FULL CLOSED/OPEN

- A** = 309 mm (12.17")
- B** = 366 mm (14.41")
- C** = 83 mm (3.27")



AC ACTUATOR FULL CLOSED/OPEN

- A** = 273 mm (10.75")
- B** = 330 mm (13")
- C** = 83 mm (3.27")





J/CH



JLP/CH



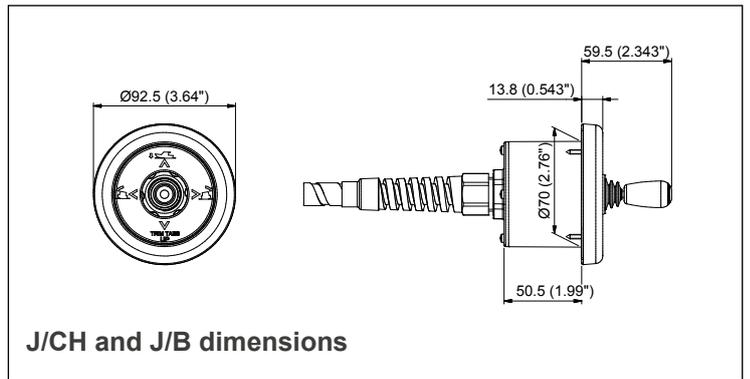
J/B-LED



JLP/B

J/B

Black finish (optional)



J/CH and J/B dimensions

JOYSTICK CONTROL UNITS FOR SINGLE STATION:

J/CH - 41849Z chrome

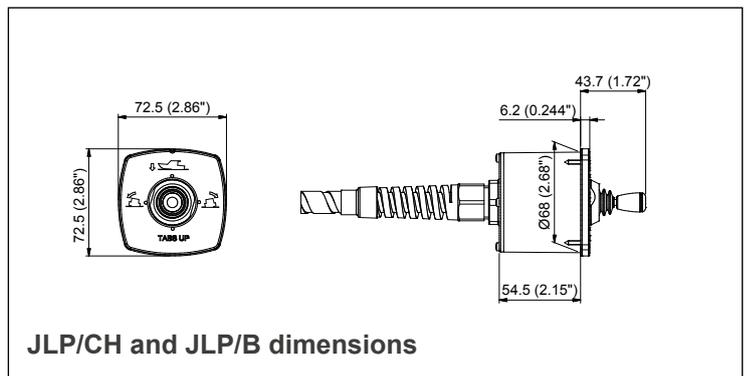
J/B - 42855Z black (optional)

JLP/CH - 43004B chrome, low profil

JLP/B - 43005D black, low profile (optional)

J/B-LED - 43416B joystick control with led indicators

- Main station compact control unit with joystick (PATENTED), **auto-line-up** function included (automatic fla re-alignment)
- 0.50 m (1.64") wiring harness included
- 70 mm (2.76") hole size
- Retrofit installation is also available on systems with standard joystick controls



JLP/CH and JLP/B dimensions

JOYSTICK CONTROL UNITS FOR DUAL STATION:

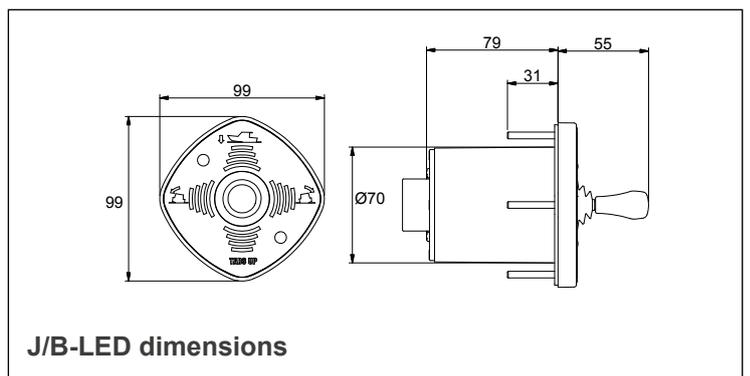
J/CH-2 - 42306 N chrome

J/B-2 - 42856 B black (optional)

JLP/CH-2 - 43080 U chrome, low profil

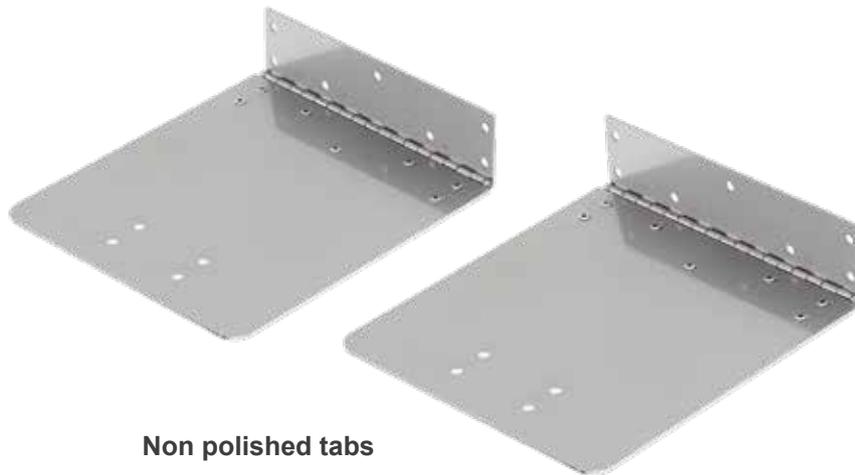
JLP/B-2 - 43081 W black, low profile (optional)

- 70 mm (2.76") hole size
- 6 m and 9 m (19.7' and 29.6') extension wiring harness available with deutsch plugs included (optional)



J/B-LED dimensions

STANDARD NON POLISHED TABS



Non polished tabs

No need for new holes in case of Lenco® or Bennett® same size replacements.
They are not designed for use in racing applications.

MODEL	PART No.	DESCRIPTION	WEIGHT PER PAIR
NP99	42650E	Stainless steel tab pair 228,6 x 228,6 mm (9"x9")	3,3 kg (7.3 lbs)
NP129	42653L	Stainless steel tab pair 304,8 x 228,6 mm (12"x9")	4,0 kg (8.8 lbs)
NP1212	42651G	Stainless steel tab pair 304,8 x 304,8 mm (12"x12")	5,0 kg (11.0 lbs)
NP1218	42652J	Stainless steel tab pair 304,8 x 457,2 mm (12"x18")	7,4 kg (16.3 lbs)

STAINLESS STEEL EDGE MOUNT TABS



Stainless steel edge mount tabs

Stainless steel non polished trim tabs blades.
No need for new holes in case of Lenco® or Bennett® same size replacements.
The installation requires less transom height than standard and high performance blades.
They are not designed for use in racing applications.

MODEL	PART No.	DESCRIPTION	WEIGHT PER PAIR
NPE912	43630D	Stainless steel tab pair 228,6 x 304,8 mm (9"x12")	5,8 kg (12.8 lbs)
NPE129	43631F	Stainless steel tab pair 304,8 x 228,6 mm (12"x9")	5,6 kg (12.3 lbs)
NPE1212	43632H	Stainless steel tab pair 304,8 x 304,8 mm (12"x12")	7,2 kg (15.9 lbs)
NPE1218	43633K	Stainless steel tab pair 304,8 x 457,2 mm (12"x18")	10,8 kg (23.8 lbs)



Mirror polished stainless steel tabs

Stainless steel, mirror electro-polished trim tab blades.
 No need for new holes in case of Lenco® or Bennett® same size replacements.
 They are not designed for use in racing applications.

MODEL	PART No.	DESCRIPTION	WEIGHT PER PAIR
P99	41844N	Stainless steel tab pair 228,6 x 228,6 mm (9"x9")	2,8 kg (6.2 lbs)
P129	41845R	Stainless steel tab pair 304,8 x 228,6 mm (12"x9")	3,6 kg (7.9 lbs)
P1212	41846T	Stainless steel tab pair 304,8 x 304,8 mm (12"x12")	4,6 kg (10.1 lbs)
P1218	41847V	Stainless steel tab pair 304,8 x 457,2 mm (12"x18")	6,7 kg (14.8 lbs)

OPTIONAL COMPONENTS

KE20 - 42378R - Extension Wiring Harness. Kit includes one 16.4' (5,0 m) length wiring harness extension for the power cable and two 19.7' (6,0 m) length wiring harness extensions for the actuator cables. Deutsch plugs included.

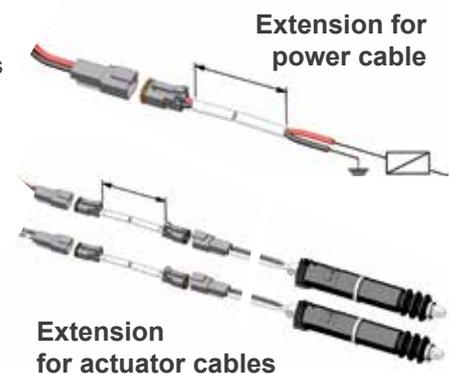
KE30 - 42379T - Extension Wiring Harness. Kit includes one 16.4' (5,0 m) length wiring harness extension for the power cable and two 29.5' (9,0 m) length wiring harness extensions for the actuator cables. Deutsch plugs included.

KEJ2-20 - 41853P - 19.7' (6,0 m) extension wiring harness for a second station. Deutsch connectors included.

KEJ2-30 - 42375J - 29.5' (9,0 m) extension wiring harness for a second station. Deutsch connectors included.

KEK-7 - 42376L - 6.6' (2,0 m) auto-line up extension wiring harness key frame. Deutsch connectors included.

KENS-7 - 42377N - 6.6' (2,0 m) auto-line up extension wiring harness neutral safety. Deutsch connectors included. Not suitable for systems with joystick control with led indicators (J/B-LED).



RETROFIT BRACKET

BRS-T bracket will adapt AT12-AS12 actuator to pre-existing mounting holes on transom, in case of AS12 or of Lenco® replacement (until 2007).

BRS-T - 43220H - black bracket



ANODE KIT

Zinc alloy anode kit neutralizes the galvanic currents endangering the trim tabs. 2 anode kits are necessary for every 1 pair tab installation.

KA70 - 42441V - Ø 2.8" (70 mm) sacrificial anode kit for tab up to 12" x 12" size

KA90 - 42442X - Ø 3.5" (90 mm) sacrificial anode kit for tab 12" x 18" size



KA90

KA70

TRIM TABS

CROSS MATCH SPARE PARTS VS ACTUATORS

ACTUATOR PART No.	BELLOWS KIT PART No.	BRACKET KIT PART No. (TAB SIDE)	BRACKET KIT PART No. (TRANSOM SIDE)
41839W	43094F	42296N	42298T
42937B	43094F	42296N	42298T
43001V	43724N	43040F	43039X / 43220H (Retrofit)
43160S	43725R	43040F	43039X / 43220H (Retrofit)
43276M	43724N	43040F	43220H
43280C	43094F	42296N	42298T
43302K	43725R	43040F	43220H
43432Z	43724N	43040F	43039X
43507E	43725R	43040F	43220H
42608F	43094F	42296N	42298T
43272D	43724N	43040F	43220H

* Part No. 43220H - see retrofit bracket explanation

PACKAGED UFLEX TRIM TAB SET

The prepackaged UFLEX set includes 1 pair of actuators complete with brackets and 1 joystick. The tabs are not included and sold separately: selected model has to be specified when ordering

Not intended for use in racing applications.

CE Certificatio
Waterproof: IP68
EN60945 Certificatio



MODEL	PART No.	VOLT	DESCRIPTION
MTT 12-CH	43250T	12V DC	2 AT12 actuators, 12V DC + 1 chrome joystick
MTT 12-CH-LP	43251V	12V DC	2 AT12 actuators, 12V DC + 1 chrome low profile joystic
MTC 12-CH	43043M	12V DC	2 AC12 actuators, 12V DC + 1 chrome joystick
MTC 12-CH-LP	43044P	12V DC	2 AC12 actuators, 12V DC + 1 chrome low profile joystic

SPARE PARTS

MODEL	PART No.	DESCRIPTION
BRS-C	43039X	Bracket kit - Connection between AT or AC actuators and boat
BRT-C	43040F	Bracket kit - Connection between AT or AC actuators and tab
EP 5	42440T	Wiring harness extension for power cable 5,0 m (16.4')
EP 6	42302E	Wiring harness extension for actuator cable 6,0 m (19.7')
EP 9	42439J	Wiring harness extension for actuator cable 9,0 m (29.5')

AQUATIC AV[®]



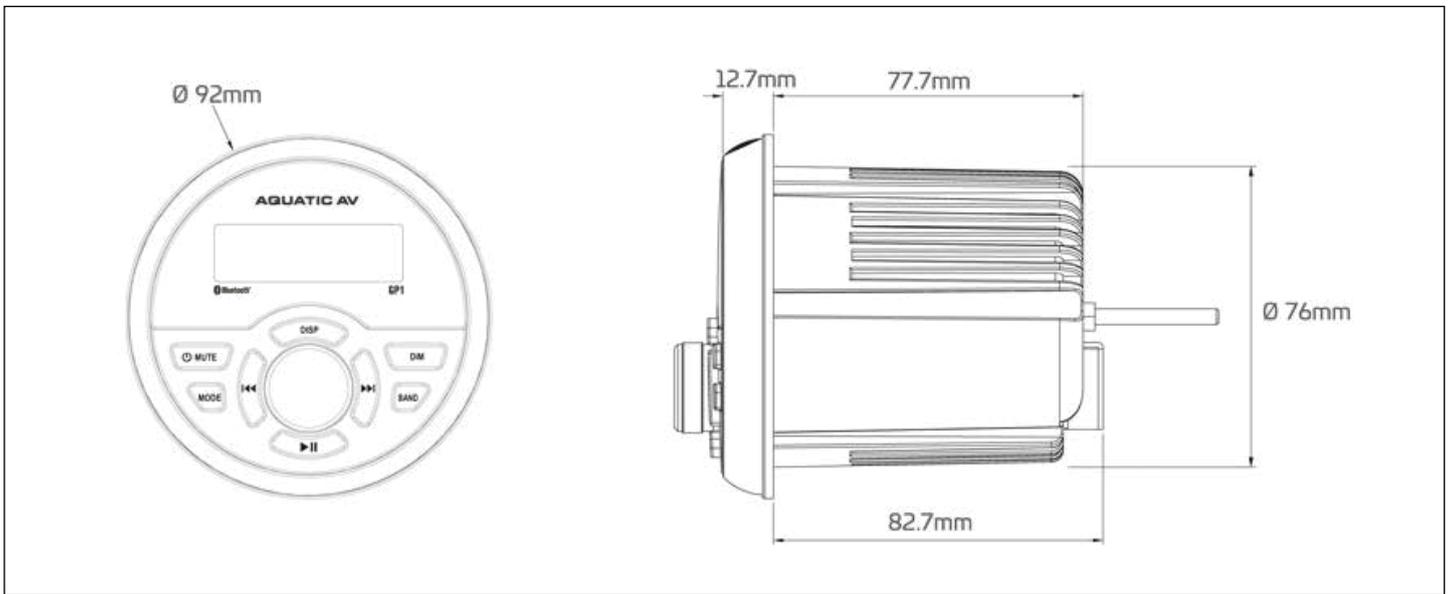
GP1 - WATERPROOF GAUGE SIZE STEREO

- **Bluetooth Audio:** Easily stream your favorite tunes from your smartphone with Bluetooth Audio support. View track info including a song's name, artist, and album information right on the display.
- **288W Amplifier:** Keep your system going with a 288W amplifier that powers up to 8 speakers or a combination of speakers and subwoofers.
- **Multi-Environment Protection:** Install anywhere with waterproof (rated IP65), UV, and salt/fog resistant protection enabling reliable performance in the toughest environmental conditions.
- **DSP EQ:** Allows common EQ settings to be applied to enhance music content, such as Pop, Classical and Rock or manually adjust bass and treble for a tailored sonic experience.
- **Variable Brightness:** Adjust the display brightness from 100% for normal operation to 30% brightness to reduce screen glare during night time operation.
- **Standard Gauge Size:** Our smallest stereo yet, designed to sit alongside standard dash gauges, but still packing a serious Aquatic AV feature set.
- **USB:** Play USB thumb drives with supported audio media and charge USB devices such as smartphones with USB charging.
- **AM/FM Radio:** Listen to your favorite AM and FM radio stations. Save your favorite stations with 18 FM and 12 AM presets available. Compatible with both US and European frequencies.
- **AUX:** Connect devices via stereo RCA cable with input gain of 2V for high performance with all devices.



GP1 - 23889K

MODEL	GP1
Supported media	Bluetooth audio, USB, MP3, AM/FM, AUX
Device control	via rear USB cable (2.1A)
Display	Monochrome TFT with blue backlight
Inputs	Bluetooth, 1x USB, 1x stereo pair RCA
Outputs	1x stereo pair RCA Pre-out (2V)
AM/FM tuner	18x FM pre-set & 12x AM pre-set memory. US/Euro frequencies
Power (max)	4x 45W (4 Ohms), 4x 72W (2 Ohms)
Amplifier typ	Class A/B (2 Ohm stable)
Output voltage	10.5V - 14.4V DC
Current draw	7A (max) / <3mA (standby)
Waterproof	Yes - IP65
UV protection	500hrs stable, ASTM D4329 compliant
Salt/fog protection	500hrs stable, ASTM B117 compliant
Certification	CE, RoHS, WEE, FCC
Additional features	Clock display, Stainless Steel mounting hardware



KIT GP1

GP1 stereo is also available in kit with a pair of AQ-SPK6.5-4EW speakers (see section):

KIT STEREO GP1 - 22985A

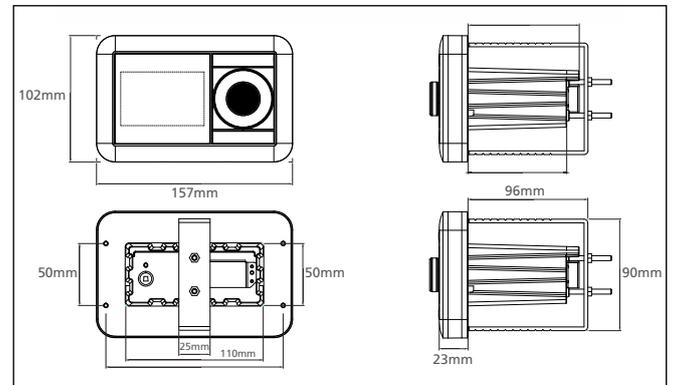


CP6 STEREO

- Supported media: Bluetooth, USB, DAB+, MP3, AM, FM, Aux
- Display: Monochrome TFT with blue backlight
- Inputs: Bluetooth, 1x USB, 1x stereo pair RCA
- Outputs: 1x stereo pair RCA Pre-out (2V)
- Power (max): 4x 45W (4 ohms), 4x 72W (2 ohms)
- Amplifier type: Class A/B (2 ohms stable)
- Output voltage: 10.5V - 14-4V
- Current draw: 10A (max) / <3A (standby)
- Waterproof: Yes - IP65
- UV protection: 500 hrs stable
- Salt/fog protection: 500 hrs stable
- Dimensions HxWxD mm ("): 102x157x119 (4x6.2x4.7)
- Additional features: Clock display, 2x external triggers (12V DC, 3A), DSP EQ, bass/treble, balance/fader, loudness, stainless steel mounting hardware

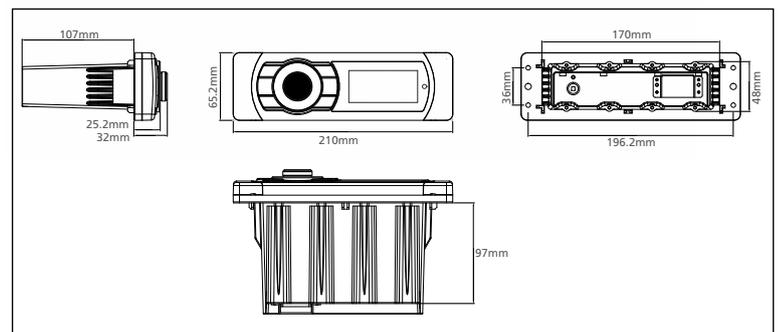


CP6 - 22572Y



MP6 STEREO

- Supported media: Bluetooth, USB, DAB+, MP3, AM, FM, Aux
- Display: Monochrome TFT with blue backlight
- Inputs: Bluetooth, 1x USB, 1x stereo pair RCA
- Outputs: 1x stereo pair RCA Pre-out (2V)
- Power (max): 4x 45W (4 ohms), 4x 72W (2 ohms)
- Amplifier type: Class A/B (2 ohms stable)
- Output voltage: 10.5V - 14-4V
- Current draw: 10A (max) / <3A (standby)
- Waterproof: Yes - IP65
- UV protection: 500 hrs stable
- Salt/fog protection: 500 hrs stable
- Dimensions HxWxD mm ("): 65.2x210x139 (2.6x8.3x5.1)
- Additional features: Clock display, 2x external triggers (12V DC, 3A), DSP EQ, bass/treble, balance/fader, loudness, stainless steel mounting hardware



MP6 - 22573A

The **BC6 MINI** is a high quality waterproof marine stereo designed to be installed hidden away out-of-sight.

- Support Bluetooth audio, MP3, AUX
- IP65 Rated, for use in any environment (dry, wet, muddy, damp etc)
- Built-in 288W amplifier allows for quick and easy installation

BC6 MINI - 23422H



BC6 MINI

MODEL	BC6 MINI
Supported media	Bluetooth Audio, MP3, Aux
Device control	via device or remote control
Halo Aerial Technology	Yes
Inputs	Bluetooth, 1 x stereo pair RCA
Outputs	1 x stereo pair RCA (2 V)
Power (max)	4 x 45 W (4 Ohms) / 4 x 72 W (2 Ohms)
Amplifier typ	IC (2 Ohm stable)
Operation voltage	9.6 V - 14,4 V DC
Current draw	6 mA (standby), 7 A (max)
Waterproof	Yes - IP65
UV protection	500 hrs stable
Salt/Fog protection	500 hrs stable
Dimensions HxWxD mm (“)	32x168x119,5 (2.34x7.97x5.41)
Additional features	Pre-balanced electronic crossover / Stainless steel mounting hardware

SWA6 COMBINED BLUETOOTH STEREO SUBWOOFER

The SWA6 Combined Bluetooth Stereo Subwoofer is a high quality, robust and durable marine stereo and subwoofer with built-in Bluetooth connectivity and a 288W amplifier with electronic crossover for connection of up to four full-range speakers.

- Combined Stereo Subwoofer
- Connect up to four marine speakers
- 8” Cone
- Tuned Subwoofer Port
- 288W max
- 4 Ohm & 2 Ohm stable

SWA6 - 22551P



SWA6

AQ-MP-5UBT-S STEREO

AQUATIC AV®
products with a watertight reputation

Play music wirelessly via a Bluetooth enabled smartphone or MP3 device or via USB connection. Wired connections can also be made with stereo 3.5 mm Jack or RCA inputs.

- SiriusXM satellite radio ready
- Supports Bluetooth, USB, iPod, iPhone, MP3 and AM/FM radio
- Clock display mode
- Dummy faceplate / Dust cover included
- Surface mount USB socket included
- Internal device compartment
- Fits most smartphones and media devices
- USB device charging
- FM/AM radio with 30 presets (US & Euro)
- Waterproof IP55
- Rotary knob control
- Removable faceplate
- Built-in 288W amplifie
- Connect up to 8 x speakers



AQ-MP-5UBT-S

AQ-MP-5UBT-S - 21564U

MODEL	AQ-MP-5UBT-S
Supported media	SiriusXM, Bluetooth (IAP), USB, iPhone, iPod, MP3, FM/AM radio, AUX
Datachable faceplate	Yes
Color	Black
Inputs	1 x USB, 1 x 3.5 mm jack, 1 x stereo pair RCA aux, Bluetooth
Outputs	2 x stereo pair RCA (4V), 1 x RCA Sub-out 1 x rear USB (charging only)
FM/AM tuner	18 x FM & 12 x AM pre-set memory switchable US/Euro frequencies
Amplifier typ	Class A/B (2 Ohm stable)
Power (max)	4 x 45W (4 Ohm) / 4 x 72W (2 Ohm)
Frequency response	20Hz - 20kHz
Operation voltage	9.6V - 14.4V DC
Current draw	6mA (standby), 7A (max)
Waterproof	IP55
Conformal PCB coating	Yes
Fascia material	ABS
Chassis material	ZAM coated
Certification	CE, RoHS, WEE, FCC
UV protection	500hrs stable
Salt/Fog protection	500hrs stable
Additional features	Clock display mode, removable faceplate, 2 x external triggers (12V DC, 350mA), DSP EQ, bass/fader oundness stainless steel mountin hardware

WR6 WIRED WATERPROOF MARINE REMOTE CONTROL

The **WR6** waterproof marine remote control is a high quality, robust and durable waterproof remote control, designed and built to withstand the harsh conditions associated with use in marine and boat applications.

- Fixed, Wired Remote Control
- Waterproof/Dustproof (IP65)
- 2-Way communication
- Requires extension cable (sold separately and in different lengths) for use with Aquatic AV 6-series marine stereos

WR6 - 23100J



WR6

RF610 HANDHELD MARINE REMOTE CONTROL KIT

The **RF610** handheld marine remote control kit is for use with all Aquatic AV '6-series' marine stereos.

- Includes: Handheld Remote Control, receiver and cable
- Charges via USB
- Waterproof/Dustproof (IP66)
- 2-Way RF (Radio Frequency) communication
- 40ft range

RF610 - 24891B



RF610

ACCESSORIES



Wiring harness for waterproof marine stereos and marine stereo systems.

AQ-UNH-2 - 69335X



High quality, robust and durable AM/FM Antenna for waterproof marine stereos, boat stereos and marine stereo systems. For use with Aquatic AV marine stereos

AQ-ANT-1 - 69610T

ELITE SERIES MARINE SPEAKERS AND SUBWOOFERS

AQUATIC AV®
products with a watertight reputation

The **ELITE series** featuring a traditional grill-style, customizable lighting via our RGB Controller (RG100 – sold separately) and the free Aquatic AV app. Built for durability, this multi-environment speakers and subwoofers are fully waterproof as well as UV/salt/fog resistant to ensure they last as long as possible.

- ELITE 6.5" SPEAKER, BLACK - 23423K
- ELITE 6.5" SPEAKER, WHITE - 23424M
- ELITE 10" SUBWOOFER, BLACK - 24893F
- ELITE 10" SUBWOOFER, WHITE - 24895K
- RGB CONTROLLER - 23754K - LED Controller RG 100 (supplied separately)



RG100 CONTROLLER



ELITE 6.5" BLACK



ELITE 6.5" WHITE



ELITE 10" BLACK

new



ELITE 10" WHITE

new

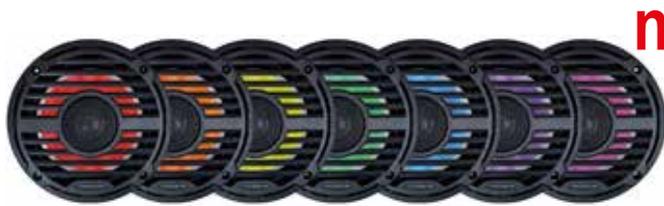
MODEL	ELITE 6.5" SPEAKERS	ELITE 10" SUBWOOFERS
Type	Full range, co-axial speaker	Subwoofer
Cone size mm (")	165 (6.5)	254 (10)
Outside diameter mm (")	175 (6.9)	282.1 (11.1)
Mounting hole diameter mm (")	130 (5.1)	250 (9.8)
Mounting depth mm (")	66 (2.6)	112.5 (4.4)
Impedance	4 ohm	4 ohm
Frequency response	55 Hz - 20 kHz	51Hz – 500Hz
Power (total)	240W (2x 120W)	600W (2x 300W)
Power (RMS)	120W (2x 60W)	300W (2x 150W)
Waterproof	Yes	Yes – IP65
Grill and basket material	UV plastic, 550 hrs stable	UV plastic, 550 hrs stable
Cone material	Polypropylene	Polypropylene
Tweeter material	Neodymium	Neodymium
Rubber surround material	Non-corrosive rubber	Non-corrosive rubber
Magnet material	Ferrite	Ferrite
Magnet protection	Plastic water guard	Plastic Water Guard
Certification	RoHS, ASTM B 117, ASTM D4329	RoHS, ASTM B117, ASTM D4329
Additional features	Stainless steel mounting hardware	RGB LED cone illumination, stainless steel mounting hardware

The **PRO Classic series** featuring a traditional grill-style, customizable lighting via our RGB Controller (RG100 – sold separately) and the free Aquatic AV app. Built for durability, this multi-environment speakers and subwoofers are fully waterproof as well as UV/salt/fog resistant to ensure they last as long as possible.

- PRO CLASSIC 6.5" SPEAKER, BLACK** - 21996A
- PRO CLASSIC 6.5" SPEAKER, WHITE** - 21995Y
- PRO CLASSIC 10" SUBWOOFER, BLACK** - 21998E
- PRO CLASSIC 10" SUBWOOFER, WHITE** - 21997C
- RGB CONTROLLER** - 23754K - LED Controller RG 100 (supplied separately)



RG100 CONTROLLER



new

PRO CLASSIC 6.5" BLACK



new

PRO CLASSIC 6.5" WHITE



new

PRO CLASSIC 10" BLACK



new

PRO CLASSIC 10" WHITE

MODEL	PRO CLASSIC 6.5" SPEAKER	PRO CLASSIC 10" SUBWOOFERS
Type	6.5" RGB Speaker	Infinite Baffle Subwoof
Color	Black or white	Black or white
Waterproof	IP65	IP65
Cone size mm (")	165 (6.5)	254 (10)
Outside diameter mm (")	175 (6.9)	281.4 (11)
Mounting hole diameter mm (")	130 (5.1)	230.5 (90.7)
Mounting depth mm (")	66 (2.6)	131.9 (5.2)
Impedance	4 Ohm	4 Ohm
Frequency response	60Hz - 20kHz	35 Hz - 1,000 Hz
Power (total)	120W (2 x 60W)	400W
Power (RMS)	60W (2 x 30W)	300W
Grill and basket material	Plastic ABS	Plastic ABS
Cone material	Polypropylene	Polypropylene
Rubber surround	Yes	Yes
Magnet material	Ferrite	Ferrite
Magnet protection	Enclosed in basket	Enclosed in basket
Certification	RoHS, ASTM B 117, ASTM D4329	RoHS, ASTM B 117, ASTM D4329
Additional features	Compatible with RGB controller and Aquatic AV App	Compatible with RGB controller and Aquatic AV App

PRO SPORT SERIES MARINE SPEAKERS AND SUBWOOFERS

AQUATIC AV[®]
products with a watertight reputation

The **PRO Sport series** featuring sport and modern grills, customizable lighting via our RGB Controller (RG100 – sold separately) and the free Aquatic AV app. Built for durability, this multi-environment speakers and subwoofers are fully waterproof as well as UV/salt/ fog resistant to ensure they last as long as possible.

PRO SPORT 6.5" SPEAKER, BLACK - 21992S
PRO SPORT 10" SUBWOOFER, BLACK - 24898S
RGB CONTROLLER - 23754K - LED Controller RG 100 (supplied separately)



PRO SPORT 6.5" BLACK



PRO SPORT 10" BLACK



RG100 CONTROLLER

MODEL	PRO SPORT 6.5" SPEAKER	PRO SPORT 10" SUBWOOFER
Type	Full-range, coaxial speaker	RGB Subwoofer
Color	Black	Black
Waterproof	IP65	IP65
Cone size mm (")	165 (6.5)	254 (10)
Outside diameter mm (")	174 (6.8)	281.4 (11)
Mounting hole diameter mm (")	130 (5.1)	230.5 (9.0.7)
Mounting depth mm (")	58 (2.3)	131.9 (5.2)
Impedance	4 Ohm	4 Ohm
Frequency response	60Hz - 20kHz	35 Hz - 1,000 Hz
Power (max)	120W (2 x 60W)	400W
Power (RMS)	60W (2 x 30W)	300W
Grill and basket material	Plastic ABS	Plastic ABS
Cone material	Polypropylene	Polypropylene
Rubber surround	Yes	Yes
Magnet material	Ferrite	Ferrite
Magnet protection	Enclosed in basket	Enclosed in basket
Certification	RoHS, ASTM B 117, ASTM D4329	RoHS, ASTM B 117, ASTM D4329
Additional features	Compatible with RGB controller and Aquatic AV App	Compatible with RGB controller and Aquatic AV App

The **Economy 6.5** waterproof marine speakers are high quality, robust and durable marine speakers.

These 6.5" cone marine speakers are capable delivering great audio quality at all levels and with all music types, even in high background noise installations.

They feature a fully waterproof design, UV and salt/fog protection and are supplied with Stainless Steel mounting hardware.

AQ-SPK6.5-4EW - 21537R

AQ-SPK6.5-4EB - 22182J



AQ-SPK6.5-4EW



AQ-SPK6.5-4EB

MODEL	AQ-SPK6.5-4E
Type	Full range, co-axial speaker
Total power	160W (2x80W)
Color	Matt white or black
Waterproof	Yes
Cone size mm (")	165 (6.5)
Outside diameter mm (")	163 (6.4)
Mounting hole diameter mm (")	129 (5.08)
Mounting depth mm (")	52 (2.05)
Impedance	4 ohm
Frequency response	83 Hz - 20 kHz
Grill and basket material	UV plastic, 500 hrs stable
Cone material	Polypropylene
Rubber surround	Yes
Certification	RoHS, ASTM B 117, ASTM D4329
Additional features	Removable grill, stainless steel mounting hardware

RG100 CONTROLLER

FEATURES

- 5A Total Power Output: All outputs have 5 Amps and a voltage of 12V.
- Works with the Aquatic AV Mobile App: Choose from over a thousand different colors and display modes.
- Waterproof: Our controller is built to last through the toughest conditions.
- Connect Up To 32 Speakers: Start with four speakers and connect up to 32 speakers using the Aquatic AV Y Splitters with one controller. Brightness may vary as you add more speakers.
- Easy to Install: Two tabs on the top and bottom of the device for easy installing and mounting in a variety of environments.
- **UNIVERSAL**: can not only be used with Aquatic AV's speakers with LED's, can also control any other third party RGB LED lights onboard.



RG100 CONTROLLER

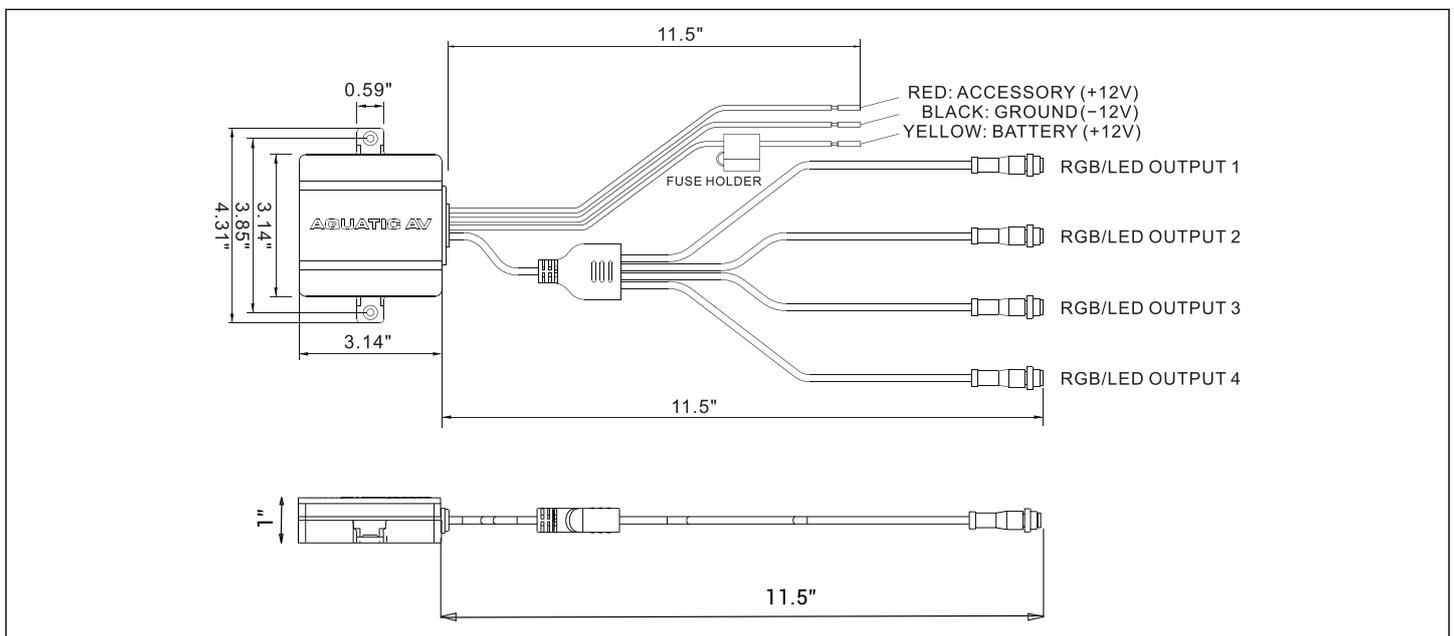
RGB CONTROLLER - 23754K - LED Controller RG100

Aquatic AV APP Features include:

- Thousands of Colors: select the exact color you want with multiple ways to change colors across the rainbow spectrum.
- Save Your Favorite Colors: save up to five of your favorite colors for quicker access when you want them.
- Multi-color Modes: featuring 15+ integrated modes for a variety of moods.



MODEL	RGB100
Type	Waterproof RGB Controller
Dimensions LxWxH mm (")	79,8x109,5x25,4 (3.14x4.31x1)
Voltage	12V
Total output (current)	5A
Total output (power)	60W
Certification	Waterproof
Additional features	Works with the Aquatic AV App; for compatibility with other 12VDC RGB devices, get the CB104 universal adaptor



CONNECTING EXTENSION CABLES & ADAPTORS TO THE RGB100



**RGB100
LED output**



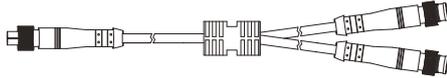
CB105 - 3,6 m RGB extension cable
CB106 - 7,2 m RGB extension cable



CB104 - DIN to 4-wire adaptor



**RGB100
LED output**



CB111 - RGB Y-splitter

CB105 - 3,6 m RGB extension cable
CB106 - 7,2 m RGB extension cable



CB105 - 3,6 m RGB extension cable
CB106 - 7,2 m RGB extension cable



**RGB100
LED output**



CB103 - DIN to JST adaptor



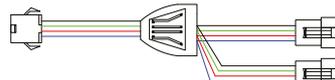
LC109 - 2,7 m JST extension cable



**RGB100
LED output**



CB103 - DIN to JST adaptor



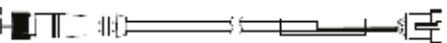
LC102 - JST Y-splitter



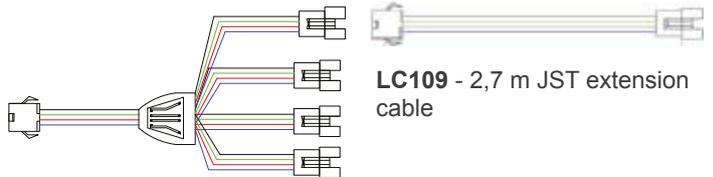
LC109 - 2,7 m JST extension cable



**RGB100
LED output**



CB103 - DIN to JST adaptor



LC104 - JST 4-way splitter



LC109 - 2,7 m JST extension cable

AD500.4 AMPLIFIER

The AD500.4 Amplifier, with its compact design, is capable of transitioning between 500mV to 10V, the AD500.4 and it is compatible with all systems. With 600 watts of pure power, this amplifier can operate in 3 different modes, four-channel, three-channel, and two-channel. Fully waterproof (IP67) and designed with UV/salt/fog resistance to ensure reliable performance anywhere you go. The AD500.4 is 2 ohm stable, but can be used with 4 ohm speakers as well, and is a perfect choice for marine application. For the best sound in sound quality and style, pair with any of Aquatic AV's waterproof speakers.

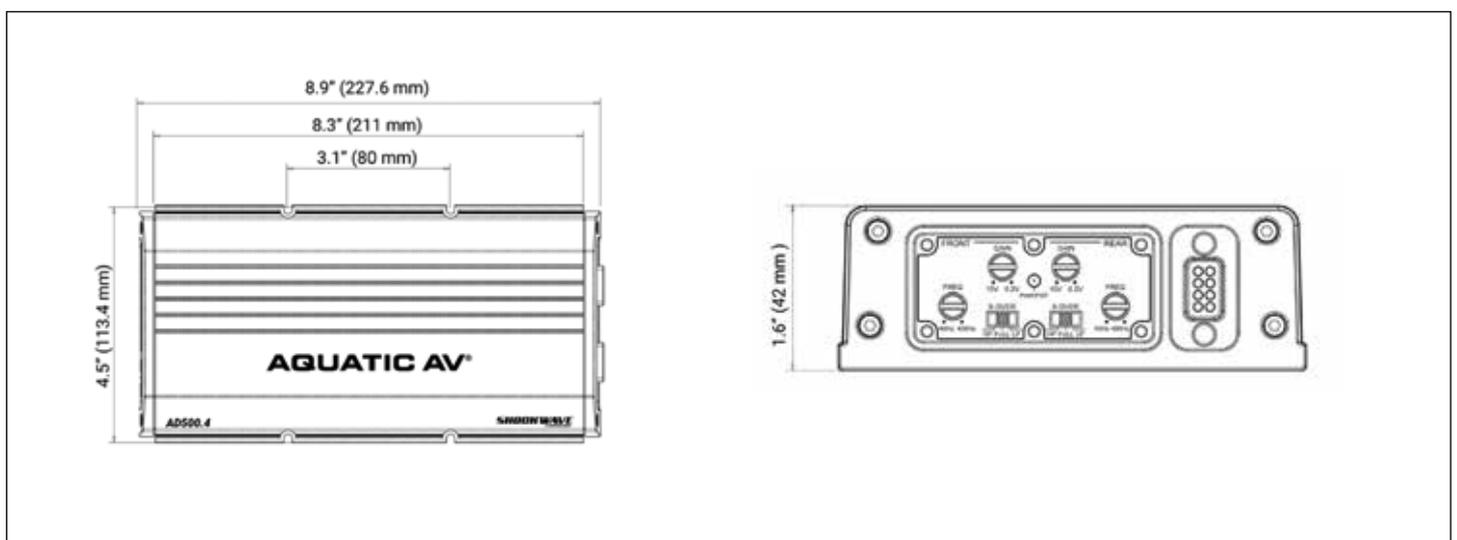
new



AD500.4

AD500.4 - 24899U

MODEL	AD500.4
Type	4/3/2 channel amplifier
Color	Blue
Waterproof	Yes – IP67
Input channels	4xRCA, 4 speaker level input
Output channels	4/3/2
Power output (max)	600W (4 x 150W) @ 2 ohms / 400W (4 x 100W) @ 4 ohms
Frequency response	20 Hz – 20,000 Hz
Input sensitivity	0.2 – 10V
High and low pass electronic crossover	40 Hz – 400 Hz
Dimensions WxDxH mm (")	226,1x114,3x40,6 (8.9x4.5x1.6)
Certification	RoHS, ASTM B117, ASTM D4329
Additional features	Shockwave technology



RITCHIE® NAVIGATION



Since 1861, Ritchie® has been making only one thing – compasses. When properly sized, installed and compensated a marine compass is the most important instrument on any boat.

It will provide accurate, trouble-free heading references under the most adverse conditions without relying on electricity, radio signals or satellite communications.

Quality components aid accuracy, smooth response, stability and trouble-free operation.



SELECTING AND INSTALLING YOUR COMPASS

When you choose your compass, you should always consider four things: mounting style, size, readability of the card and the design of your boat.

MOUNTING STYLE

<p style="text-align: center;">DASH MOUNT</p>  <p>Ideal for powerboats with limited dash space</p>	<p style="text-align: center;">BULKHEAD MOUNT</p>  <p>Often used on sailboats to reduce interference with lines and to save space</p>	<p style="text-align: center;">BRACKET MOUNT</p>  <p>Can be mounted on the deck or dash; allows compass to remain at proper viewing angle</p>
<p style="text-align: center;">FLUSH/SURFACE MOUNT</p>  <p>Ideal for today's compact helm designs</p>	<p style="text-align: center;">BINNACLE MOUNT</p>  <p>Features an outer case, often with a light-shielding hood</p>	

DIAL DESIGN

Dial dimensions refer to apparent dial diameter.

<p style="text-align: center;">FLAT-CARD DIAL</p>  <p>Allows you to look down on the compass to see the course heading</p>	<p style="text-align: center;">DIRECT-READ DIAL</p>  <p>Allows you to see the compass heading and lubber line from directly in front; good for when boat design requires your compass to be positioned at eye level</p>	<p style="text-align: center;">COMBI-DIAL</p>  <p>A combination of the direct-read and flat-card designs; incorporates dials that can be read from both above and directly in front of the compass and maximizes readability from any angle</p>
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POSITIONING

In an ideal situation, a compass should be mounted directly in front of the helm, as well as directly above the centerline of the hull. If this is not possible, the compass should be mounted parallel to the centerline. And on powerboats with upper steering stations, you should have a compass installed at both locations.



WHEELMARK

The Wheelmark approval is for Lifeboat and Rescue boat compasses. These compasses are also suitable for sailboats, power boats and motor sailing vessels.

The -WM suffix signifies type approval and compliance with the Navigation requirements of Marine Equipment Directive (MED) 95/98/EC and the last modification by Directive 2011/75/EU

VOYAGER SERIES S-87-WM AND S-87W-WM

- **Dial size/design:** 76 mm (3") / CombiDial
- **Night lighting:** 12V green
- **Compensators:** built-in
- **Warranty:** 5 years
- **Weight:** 539g (1 lb. 3 oz.)



S-87-WM - 67322B



S-87W-WM - 69147W

VOYAGER SERIES F-83-WM AND F-83W-WM

- **Dial size/design:** 76 mm (3") / CombiDial
- **Night lighting:** 12V green
- **Compensators:** built-in
- **Mounting hole:** 107 mm (4 3/16")
- **Warranty:** 5 years
- **Weight:** 567g (1 lb. 4 oz.)



F-83-WM - 69728T



F-83W-WM - 69730D

VOYAGER SERIES B-81-WM

- **Dial size/design:** 76 mm (3") / CombiDial
- **Night lighting:** 12V green
- **Compensators:** built-in
- **Warranty:** 5 years
- **Weight:** 680g (1 lb. 8 oz.)



B-81-WM - 67364U

NAVIGATOR SERIES FN-201-WM AND FN-201W-WM

- **Dial size/design:** 114 mm (4 1/2") / Flat-Card
- **Night lighting:** 12V green
- **Compensators:** built-in
- **Mounting hole:** 130 mm (5 1/8")
- **Warranty:** 5 years
- **Weight:** 1.19kg (2 lb. 10 oz.)
- **Protective cover:** Model No. N-203-C



FN-201-WM - 69731F



FN-201W-WM - 69732H

NAVIGATOR SERIES DNW-200-WM, DNP-200-WM AND DNB-200-WM

- **Dial size/design:** 114 mm (4 1/2") / Flat-Card
- **Night lighting:** 12V green
- **Compensators:** built-in
- **Warranty:** 5 years
- **Weight:** 1.65kg (3 lb. 10 oz.)
- **Protective cover:** Model No. N-203-C



DNW-200-WM - 69585X



DNB-200-WM - 69586Z



DNP-200-WM - 69587B



X-10-M



X-21BU



X-11Y SportAbout™



X-10-M



X-10W-M



X-10B-M



X-11-HW - 23379K
SportAbout™ Holder white



X-21BB



X-21BU

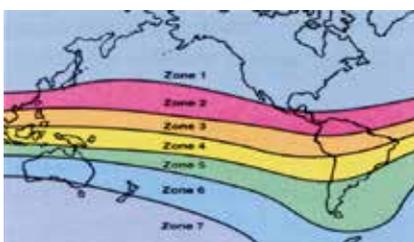
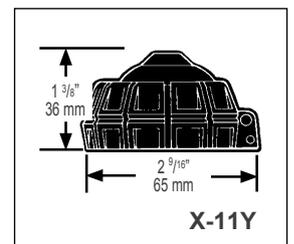
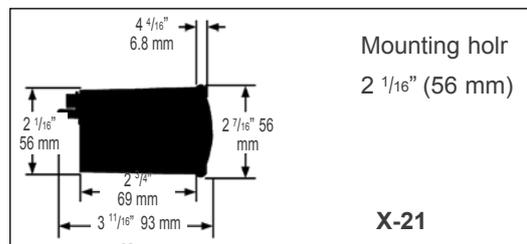
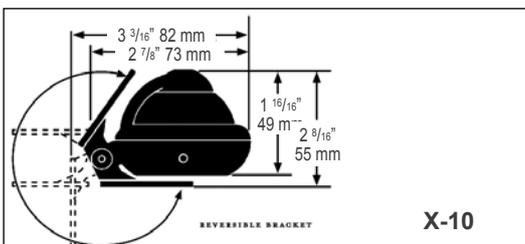


X-21WW

X10 REVERSIBLE BRACKET MOUNT

The fully adjustable and reversible Bracket allows a mounting range of over 300° from overhead, through angled and vertical mounts to horizontal surfaces.

RITCHEIE® MODEL	UFLEX® PART No.	DIAL APP. Ø	MOUNT	BOAT TYPE	DIAL READING	NIGHT LIGHTING	COMPENSATORS	WEIGHT
X-10-M	67099B	2"	bracket	powerboats	front	12V green	built-in	142 g - 5 oz
X-10W-M	67331C	2"	bracket	powerboats	front	12V green	built-in	142 g - 5 oz
X-10B-M	67332E	2"	bracket	powerboats	front	12V green	built-in	142 g - 5 oz
X-11Y	23378H	2"	-	power/sail	front	3 cyalume included	-	142 g - 5 oz
X-21BB	67333G	2"	bulkhead	powerboats	front	12V green	-	142 g - 5 oz
X-21BU	67334J	2"	bulkhead	powerboats	front	12V green	-	142 g - 5 oz
X-21WW	67335L	2"	bulkhead	powerboats	front	12V green	-	142 g - 5 oz



CARD BALANCING

The dials in magnetic compasses should be balanced to compensate for dip caused by Earth's magnetic field. All Ritchie® Compasses come standard for Zone 1 (essentially all of the Northern Hemisphere). When requesting a compass for Zone 2-7, please indicate the zone most central to your boating area. Once balanced for a specific Zone, the compass will maintain accuracy for one Zone north or south.



RA-91



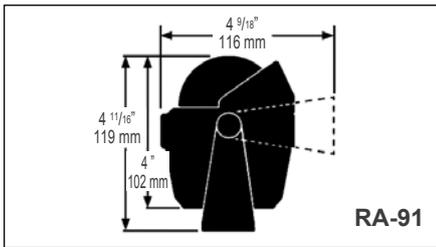
RA-93



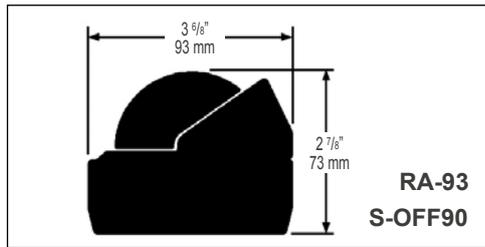
S-OFF90

RITCHEE® MODEL	UFLEX® PART No.	DIAL APP. Ø	MOUNT	BOAT TYPE	DIAL READING	NIGHT LIGHTING	COMPENSATORS	WEIGHT
RA-91	67352L	2 3/4"	bracket	powerboats	front	12V green	built-in	454 g - 1 lbs
RA-93	67353N	2 3/4"	surface	powerboats	front	12V green	built-in	454 g - 1 lbs
S-OFF90	67354R	2 3/4"	surface	powerboats	front	12V green	built-in	454 g - 1 lbs

S-OFF90: 90° off for viewing from starboard



RA-91



RA-93
S-OFF90

KAYAK COMPASSES AND ACCESSORIES

DIAL APP. DIAMETER: 3" (76 MM)

RITCHEE® MODEL	UFLEX® PART No.	DIAL APP. Ø	DIAL READING	WEIGHT
XP-99	68295G	2 3/4"	combi dial	454 g - 1 lbs
XP-99W	68296J	2 3/4"	combi dial	454 g - 1 lbs



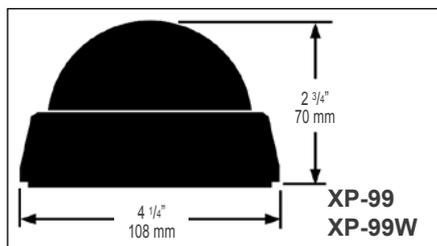
XP-99



XP-99W

K-TD.2 - 68297L (Compass not included). Designed for mounting the Ritchie Kayaker. No drill, no holes in the deck, flexible pad and foam ring.

X-TD- 23380U - Tie Down (SportAbout™ compass not included).



XP-99
XP-99W



K-TD.2



X-TD

EXPLORER® SERIES
DIAL APP. DIAMETER: 2 3/4" (70 MM)

RITCHIE®
NAVIGATION



F-50



F-50W



B-51



B-51W



B-51G



S-53



S-53W



S-53G



V-57.2



V-57W.2



V-537



V-537B

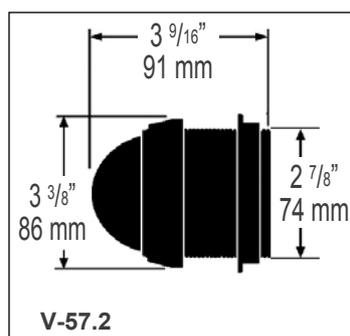
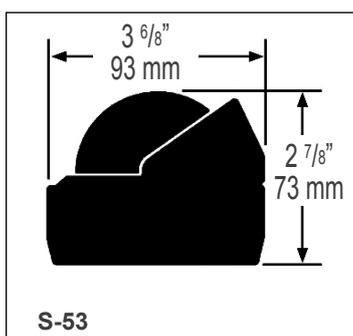
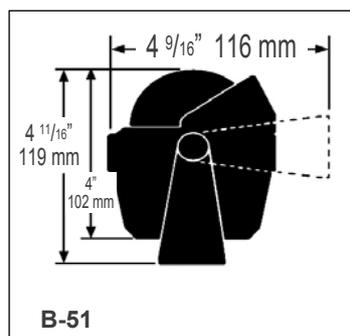
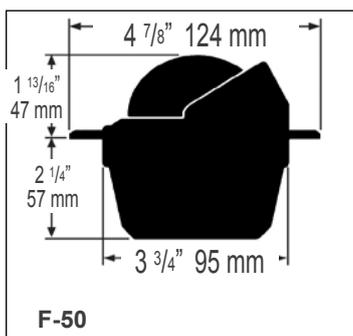


V-537W

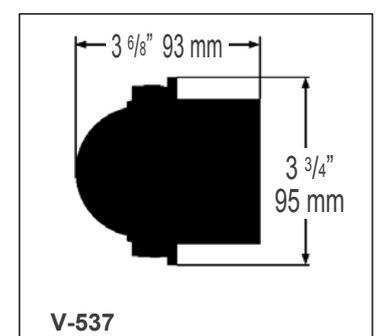
RITCHIE® MODEL	UFLEX® PART No.	DIAL APP. Ø	MOUNT	BOAT TYPE	DIAL READING	NIGHT LIGHTING	COMPENSATORS	WEIGHT
F-50	67102L	2 3/4"	flus	powerboats	front	12V green	built-in	454 g - 1 lbs
F-50W	67317J	2 3/4"	flus	powerboats	front	12V green	built-in	454 g - 1 lbs
B-51	67103N	2 3/4"	bracket	powerboats	front	12V green	built-in	454 g - 1 lbs
B-51W	67356V	2 3/4"	bracket	powerboats	front	12V green	built-in	454 g - 1 lbs
B-51G	67318L	2 3/4"	bracket	powerboats	front	12V green	built-in	454 g - 1 lbs
S-53	67104R	2 3/4"	surface	powerboats	front	12V green	built-in	454 g - 1 lbs
S-53W	67320X	2 3/4"	surface	powerboats	front	12V green	built-in	454 g - 1 lbs
S-53G	67319N	2 3/4"	surface	powerboats	front	12V green	built-in	454 g - 1 lbs
V-57.2	67358Z	2 3/4"	dash	powerboats	front	12V	built-in	454 g - 1 lbs
V-57W.2	67359B	2 3/4"	dash	powerboats	front	12V	built-in	454 g - 1 lbs
V-537	67360K	2 3/4"	bulkhead	sail	front	12V	built-in	454 g - 1 lbs
V-537B	67361M	2 3/4"	bulkhead	sail	front	12V	built-in	454 g - 1 lbs
V-537W	67362P	2 3/4"	bulkhead	sail	front	12V	built-in	454 g - 1 lbs

Optional protective cover E-50-C 67355T: for F-50 and S-53 magnetic compasses

Note: V-57.2 and V-537 compasses are adjustable to 30°, heel angle to 25°.



Mounting hole 3" (76 mm)



Mounting hole 3" (76 mm)

VOYAGER® SERIES

DIAL APP. DIAMETER: 3" (76 MM)



F-82W



F-83



B-81



S-87W



F-82



F-83 WM



B-80



S-87 WM



F-83W WM

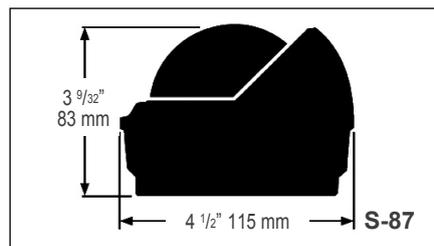
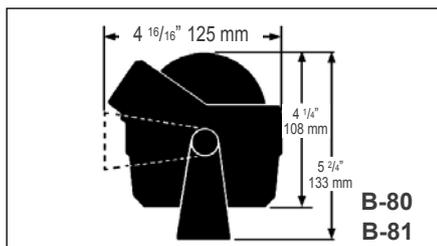
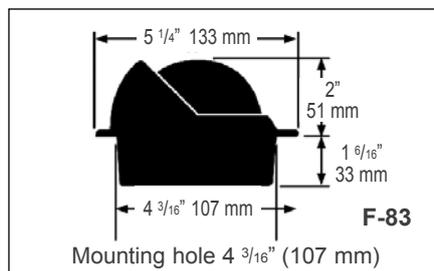
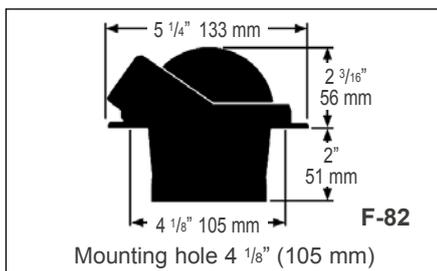


B-81 WM



S-87W WM

RITCHIE® MODEL	UFLEX® PART No.	DIAL APP. Ø	MOUNT	BOAT TYPE	DIAL READING	NIGHT LIGHTING	COMPENSATORS	WEIGHT
F-82	67105T	3"	flus	powerboats	flat-car	12V green	built-in	680 g - 1.8 lbs
F-82W	67367A	3"	flus	powerboats	flat-car	12V green	built-in	680 g - 1.8 lbs
F-83 WM	69728T	3"	flus	powerboats	combi-dial	12V green	built-in	567 g - 1.4 lbs
F-83W WM	69730D	3"	flus	powerboats	combi-dial	12V green	built-in	567 g - 1.4 lbs
B-80	67363S	3"	bracket	powerboats	flat-car	12V green	built-in	680 g - 1.8 lbs
B-81 WM	67364U	3"	bracket	powerboats	combi-dial	12V green	built-in	680 g - 1.8 lbs
S-87 WM	67322B	3"	surface	powerboats	combi-dial	12V green	built-in	539 g - 1.3 lbs
S-87W WM	69147W	3"	surface	powerboats	combi-dial	12V green	built-in	539 g - 1.3 lbs



Voyager compasses with wheel mark symbol (Wheelmark certified)



HF-742



HB-741



HF-743



HB-740



H-741-C



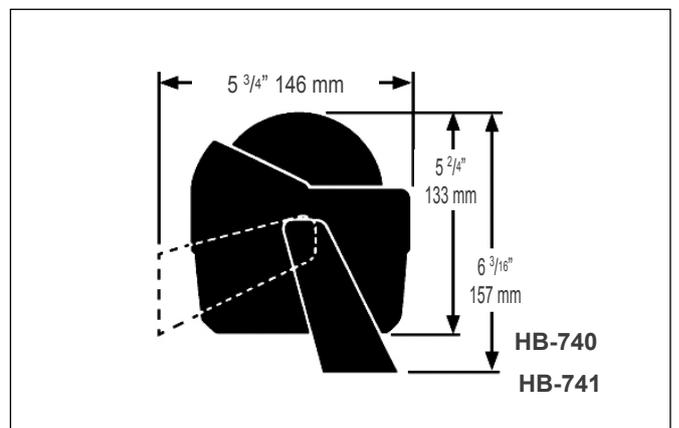
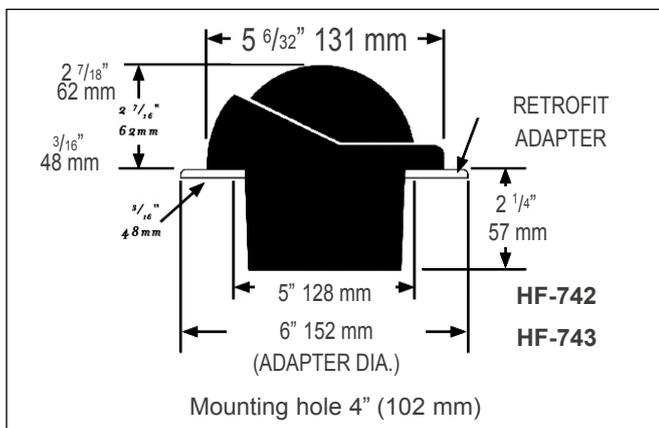
HF-742W



HF-743W

RITCHIE® MODEL	UFLEX® PART No.	DIAL APP. Ø	MOUNT	BOAT TYPE	DIAL READING	NIGHT LIGHTING	COMPENSATORS	WEIGHT
HF-742	67373V	3 3/4"	flus	power/sail	flat-car	12V green	built-in	907 g - 2 lbs
HF-742W	67323D	3 3/4"	flus	power/sail	flat-car	12V green	built-in	907 g - 2 lbs
HF-743	67107X	3 3/4"	flus	power/sail	combi-dial	12V green	built-in	907 g - 2 lbs
HF-743W	67375Z	3 3/4"	flus	power/sail	combi-dial	12V green	built-in	907 g - 2 lbs
HB-740	67370N	3 3/4"	bracket	power/sail	flat-car	12V green	built-in	907 g - 2 lbs
HB-741	67371R	3 3/4"	bracket	power/sail	combi-dial	12V green	built-in	907 g - 2 lbs

Optional protective cover H-741-C 67376B: for HF-742, HF-743, HB-740 and HB-741 compasses



VENTURE® AND SUPERSPORT™ SERIES

DIAL APP. DIAMETER: 3 3/4" (94 mm)



VENTURE SR-2



SUPERSPORT SS-1002



SUPERSPORT SS-PR2



INC-45



SR-CM2
Compensator for
SR-2 compass
(optional)



SS-1002W

Mount at any angle up
to 45°

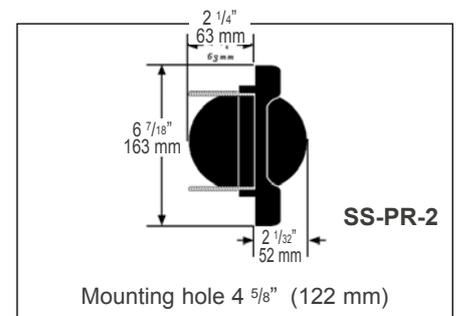
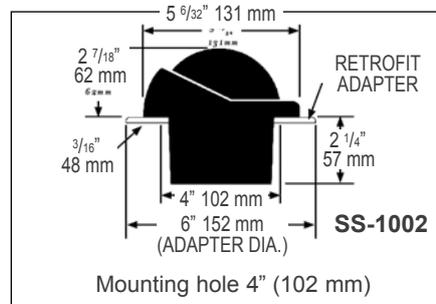
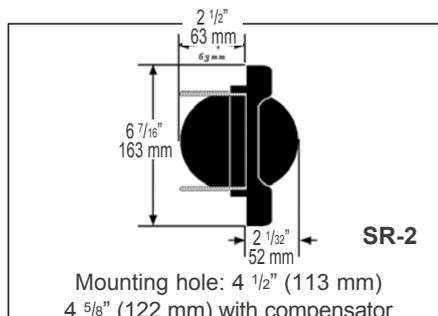


SS-PR-2

RITCHIE® MODEL	UFLEX® PART No.	DIAL APP. Ø	MOUNT	BOAT TYPE	DIAL READING	NIGHT LIGHTING	COMPENSATORS	WEIGHT
SR-2	67109B	3 3/4"	bulkhead	sail	combi-dial	12-24V blue	optional	910 g - 2 lbs
SS-1002	67377D	3 3/4"	flus	high perform. power	powerdamp + flat-card dia	12V green	built-in	907 g - 2 lbs
SS-1002W	67378F	3 3/4"	flus	high perform. power	powerdamp + flat-card dia	12V green	built-in	907 g - 2 lbs
SS-PR2	67380S	3 3/4"	bulkhead	powerboats	combi-dial	12V green	built-in	910 g - 2 lbs

Venture® compass is provided with protective cover (front and back cover) and with inclinometer **INC-45** 67381U.
SR-CM2 67382W compensator is optional.
 Supersport™ SS-PR2 compass is provided with protective cover.

Optional protective **front cover BK-19-C** - 68878H: for Venture SR-2 compasses
 Optional protective **back cover BK-0020** - 68879K: for Venture and SS-PR2 compasses
 Optional protective cover **H-741-C** 67376B: for SS-1002 compasses



BK-19-C



H-741-C



BK-0020



BN-202



FNW-201



FN-201 WM



DNP-200



DNB-200 WM



BN-C



FNW-201 WM



FN-203



DNP-200 WM



DNW-200 WM



SS-2000



SS-2000W



FNW-203



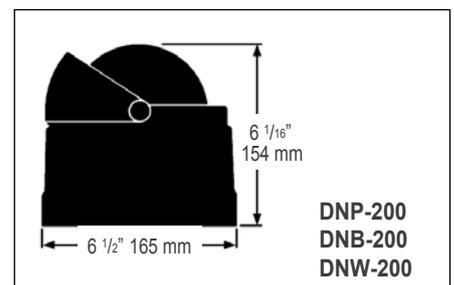
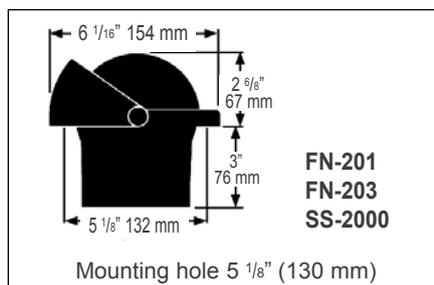
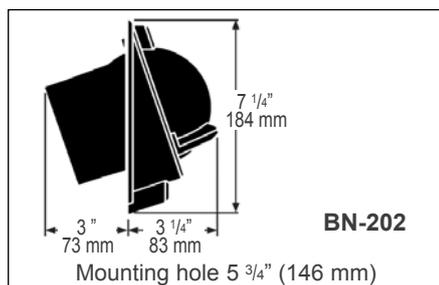
WS-P

Weather shield
WS-P (optional) – 67403B
for DN-200 compasses

RITCHEIE® MODEL	UFLEX® PART No.	DIAL APP. Ø	MOUNT	BOAT TYPE	DIAL READING	NIGHT LIGHTING	COMPENSATORS	WEIGHT
BN-202	67324F	4 1/2"	bulkhead mount	power/sail	combi-dial	12V	built-in	1050 g - 2.05 lbs
FN-201 WM	69731F	4 1/2"	flus	power/sail	flat-car	12V green	built-in	1190 g - 2.1 lbs
FNW-201 WM	69732H	4 1/2"	flus	power/sail	flat-card	12V green	built-in	1190 g - 2.1 lbs
FN-203	67326K	4 1/2"	flus	power/sail	combi-dial	12V green	built-in	1190 g - 2.1 lbs
FNW-203	67387G	4 1/2"	flus	power/sail	combi-dial	12V green	built-in	1190 g - 2.1 lbs
SS-2000 SUPERSPORT	67379H	4 1/2"	flus	high perform power	powerdamp + flat-card dia	12V green	built-in	1190 g - 2.1 lbs
SS-2000W SUPERSPORT	67327M	4 1/2"	flus	high perform power	powerdamp + flat-card dia	12V green	built-in	1190 g - 2.1 lbs
DNB-200 WM	69586Z	4 1/2"	binnacle	power/sail	flat-car	12V green	built-in	1650 g - 3.1 lbs
DNW-200 WM	69585X	4 1/2"	binnacle	power/sail	flat-car	12V green	built-in	1650 g - 3.1 lbs
DNP-200 WM	69587B	4 1/2"	binnacle	power/sail	flat-car	12V green	built-in	1650 g - 3.1 lbs

Optional protective cover **BN-C** 67394D: for BN-202 compass

Optional protective cover **N-203-C** 67395F: for FN-201, FN-203, SS-2000 and DN-200 compasses



Navigator compasses with wheel mark symbol (Wheelmark certified)

GLOBEMASTER® AND SUPERSPORT™ SERIES

DIAL APP. DIAMETER: 5" (127 MM)

RITCHEE
NAVIGATION



SP-5C



D-515-EP



FB-500



SP-5B



D-515-X



SS-5000



SS-5000W

RITCHEE® MODEL	UFLEX® PART No.	DIAL APP. Ø	MOUNT	BOAT TYPE	DIAL READING	NIGHT LIGHTING	COMPENSATORS	WEIGHT
SP-5B	67329S	5"	binnacle	power/sail	flat-car	12V/24V green	built-in	2720 g - 6 lbs
SP-5C	67328P	5"	binnacle	power/sail	flat-car	12V/24V green	built-in	2720 g - 6 lbs
D-515-EP	67396H	5"	binnacle	power/sail	flat-card	12V/24V green	built-in	4540 g - 10 lbs
D-515-X	67397K	5"	binnacle	power/sail	flat-car	12V/24V green	built-in	4540 g - 10 lbs
FB-500	67398M	5"	flus	power/sail	flat-car	12V/24V green	built-in	2610 g - 5 lbs
SS-5000 SUPERSPORT	67399P	5"	flus	high perform. power	powerdamp + flat-card dia	12V/24V green	built-in	2610 g - 5 lbs
SS-5000W SUPERSPORT	67400V	5"	flus	high perform. power	powerdamp + flat-card dia	12V/24V green	built-in	2610 g - 5 lbs

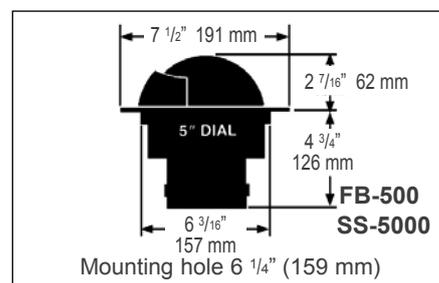
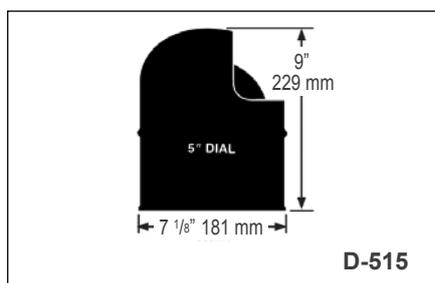
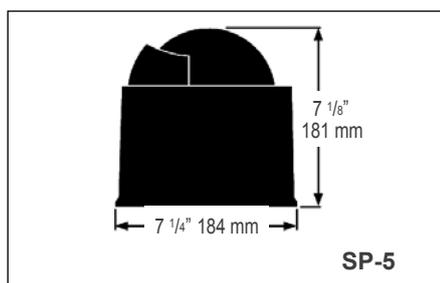
Voltage available on request: 32V

Optional protective cover **GM-5-C** 67401X:
for SP-5 and D-515-EP compasses

Optional protective cover **LL-C** 67402Z:
for FB-500 and SS-5000

Weather shield **WS-P (optional)** 67403B:
for SP-5 and D-515-EP

All Globemaster® compasses are individually custom assembled to order.
When ordering a Globemaster® compass it is important to specify your choice of power or sailboat model; 2°, 2° w/points, or 5° dial; 12, 24, or 32-volt night lighting and your choice of Polished Stainless (P), Black (B) or Polished Brass (X) finish on all models.



The Super Yacht Series is a unique blend of heritage polished bronze bezel, dial bushing and modern Ritchie compass technology.

Your compass can be personalized with engraving on the bezel.

Each compass is marked with a sequential coined serial number recorded at the factory.

Voltages available:
12, 24 and 32 VDC.



SY-600LL



Ritchie® steel boat compasses are completely equipped with the necessary compensating equipment (BIC and quadrant spheres) to provide proper operation on steel hulled boats.

HB-845

- **Dial size/design:** 82,5 mm (3 1/4") / Flat-Card Dial
- **Night lighting:** 12V green
- **Overall dimensions:** 305 x 157 mm (12" x 6 1/6")
- **Base:** 111 mm (4 3/8")
- **Warranty:** 5 years
- **Weight:** 2.72kg (6 lb.)
- **Protective cover:** Model No. H-741-C



HB-845 - 69588D

B-200P

- **Dial size/design:** 114 mm (4 1/2") / Flat-Card Dial
- **Night lighting:** 12V green
- **Overall dimensions:** 438 x 157 mm (17 1/4" x 6 1/6")
- **Base:** 184 mm (7 1/4")
- **Warranty:** 5 years
- **Weight:** 4.5kg (10 lb.)
- **Protective cover:** Model No. N-203-C



B-200P - 69589F

RITCHIE® POINT OF PURCHASE DISPLAY

For our distributors and dealers a **FREE** of charge Display is available ordering 12 compasses, two for each type, selected among the following models:

B-51, B-51W, B-81, S-53, S-53W, F-83, F-83W, SS-1002, SS-1002W

Ritchie® Display: 67577M



veratron

MARINE



2 IN 1 - VOLTMETER AND HOUR COUNTER

The ViewLine 2 in 1 - 52 mm provides you with battery status and engine hours.

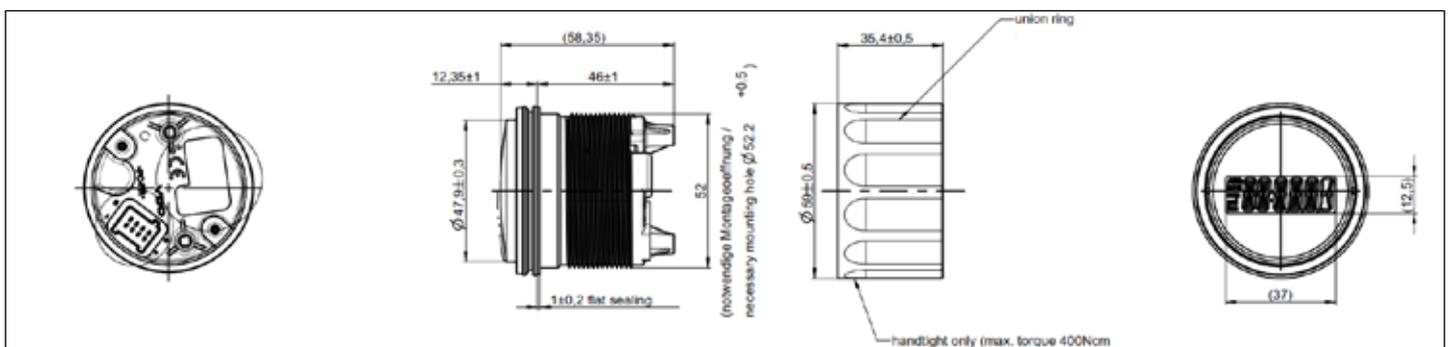


Veratron Article No.	Part No.	Colour	Descriptions
Ø 52 mm			
B00005302	23073J	Black	Black round bezel

TECHNICAL FEATURES

- Operating voltage: 9-48 VDC
- Power consumption: <50 mA
- Reverse polarity protection: Yes
- Load dump protection: Yes
- Operating temperature: -40°C +80°C
- Storage temperature: -40°C +80°C
- Protection class: IP67 front and IP52 back

DIMENSIONS



Gauge to indicate engine revolution, engine hours, voltage and clock.

The Viewline rev counter with or without operating hours counter (OHC) can be connected to conventional marine engines (no data bus).

- Indication error < 2.5 % over the entire display range
- Current consumption < 175 mA, with warning light (LED)
- Volatage: 8 - 32 V
- Output for acoustic alert (option)
- Various sensor inputs
- LC display size 37 mm x 11 mm
- Individually programmable display e. g., for clock, trip, odometer, etc. via externally switchable button or PC software (ViewLine programming tool)
- Reverse polarity protection
- Anti-fog double lens
- Front side protection rating IP67
- 85 mm installation diameter
- 50 mm installation depth
- Input: W, Ind, Hall, Generator

PACKAGE CONTENTS

Tachometer gauge, adapter cable 8 pole, adapter cable 14 pole, round bezel, pushbuttons for mode and configuration, spinlock nut, rubber seal, QR code, safety instructions



Veratron Article No. (black)	Part No.	Range rpm
Ø 85 mm		
A2C59512390	60212CA	3000
A2C59512391	60214EA	4000
A2C59512392	60216GA	5000
A2C59512393	60218KA	6000
A2C59512394	60220CA	7000
A2C59512395	60222EA	8000

Veratron Article No. (white)	Part No.	Range rpm
Ø 85 mm		
A2C59512396	60213DA	3000
A2C59512397	60215FA	4000
A2C59512398	60217HA	5000
A2C59512399	60219LA	6000
A2C59512400	60221DA	7000
A2C59512401	60223FA	8000

On pleasure boats with twin engine installations, the ViewLine synchronizer is an indispensable aid to ensuring correct synchronized running of both units.

- 8 and 14 pole Tyco / Hirschmann bush housing
- Accuracy +/- 2.5 %
- Current consumption 150 mA
- 2nd frequency input
- Connection for external alerts (option)
- Number of pulses programmable via dip switch or PC software (ViewLine programming tool)
- Anti-fog double lens
- Front side protection rating IP67
- 85 mm installation diameter
- 50 mm installation depth



PACKAGE CONTENTS

Synchronizer gauge, adapter cable 8 pole, adapter cable 14 pole, round bezel, pushbuttons for mode and configuration, spinlock nut, rubber seal, QR code, safety instructions

Veratron Article No.	Part No.	Colour	Range rpm	Voltage	Input
Ø 85 mm					
A2C59512402	60224GA	Black	-500 / +500	8 - 32 V	W, 1, Ind
A2C59512403	60225HA	White	-500 / +500	8 - 32 V	W, 1, Ind

GPS SPEED

This multifunctional gauge with segment display is intended for use in the marine market in open boats.

Based on the ViewLine housing concept, the cluster provides an ideal IP protection class, a modern appearance and high quality standards. It provides many parameters in NMEA 2000® and there are several customization opportunities to meet specific customer demands.

- Embedded GPS antenna
- Robust and flexible design for versatile applications
- CAN capability (NMEA 2000®)
- Pointer for analog indication of Speed over Ground (SOG)
- Programmable speed alarm
- Fixed segment LC display
- Flush mount possibility
- Front side protection rating IP67
- Compass for Course over Ground (COG)
- Clock
- 110 mm installation diameter
- 126 mm outer diameter
- 50 mm installation depth



PACKAGE CONTENTS

GPS speed gauge, GPS speed cable, round bezel, pushbuttons for mode and configuration, spinlock nut, rubber seal, QR code, safety instructions

Veratron Article No.	Part No.	Range (knots/kmh/mph)	Voltage	Operating temperature
Ø 110 mm				
A2C59501987	60226IA	0 - 12	8.5 - 16 V	-20° / +85°C
A2C59501782	60227JA	0 - 35	8.5 - 16 V	-20° / +85°C
A2C59501781	60228MA	0 - 70	8.5 - 16 V	-20° / +85°C

The ViewLine temperature gauge displays any sudden rise in oil temperature, thus helping to prevent serious damage to the engine and the associated expense.

- 8 pole Tyco / Hirschmann MQS plug
- +/- 3.6° angle degree accuracy over the entire display range
- Current consumption < 150 mA, with integrated warning light (LED)
- Input signal: standard Ω values
- 90° display angle
- Optional makepoint switch can be connected
- Reverse polarity protection
- Anti-fog double lens
- Front side protection rating IP67
- 52 mm installation diameter
- 50 mm installation depth

The outer scale is available also in °F



PACKAGE CONTENTS

Oil temperature gauge, adapter cable 8 pole, round bezel, pushbuttons for mode and configuration, spinlock nut, rubber seal, QR code, safety instructions

Veratron Article No.	Part No.	Colour	Range	Voltage	Input
Ø 52 mm					
A2C59514160	60231FA	Black	50° - 150°C	8 - 32 V	322.8 - 18.6 Ω
A2C59514231	60232GA	White	50° - 150°C	8 - 32 V	322.8 - 18.6 Ω

COOLANT TEMPERATURE

The ViewLine temperature gauge displays any sudden rise in coolant temperature, thus helping to prevent serious damage to the engine and the associated expense.

- 8 pole Tyco / Hirschmann MQS plug
- +/- 3.6° angle degree accuracy over the entire display range
- Current consumption < 150 mA, with integrated warning light (LED)
- Input signal: standard Ω values
- 90° display angle
- Optional makepoint switch can be connected
- Reverse polarity protection
- Anti-fog double lens
- Front side protection rating IP67
- 52 mm installation diameter
- 50 mm installation depth

The outer scale is available also in °F



PACKAGE CONTENTS

Coolant temperature gauge, adapter cable 8 pole, round bezel, pushbuttons for mode and configuration, spinlock nut, rubber seal, QR code, safety instructions

Veratron Article No.	Part No.	Colour	Range	Voltage	Input
Ø 52 mm					
A2C59514170	60235JA	Black	40° - 120°C	8 - 32 V	287.4 - 22.7 Ω
A2C59514237	60236KA	White	40° - 120°C	8 - 32 V	287.4 - 22.7 Ω

PYROMETER

The Viewline pyrometer indicates the exhaust temperature at the end of the exhaust pipe (up to 900 °C/1650 °F). The relationship of this value to the maximum permitted exhaust temperature shows how efficient combustion is at that particular load. A rise in temperature is therefore an important early warning signal.

- 8 pole Tyco / Hirschmann MQS plug
- < 2.5 % accuracy over the entire display range
- Current consumption < 100 mA, with integrated warning light (LED)
- 240° display angle
- Programmable warning point (via optional PC software)
- Reverse polarity protection
- Anti-fog double lens
- Front side protection rating IP67
- 52 mm installation diameter
- 50 mm installation depth



The outer scale is available also in °F

PACKAGE CONTENTS

Pyrometer gauge, adapter cable 8 pole, round bezel, pushbuttons for mode and configuration, spinlock nut, rubber seal, QR code, safety instructions

Veratron Article No.	Part No.	Colour	Range	Voltage	Input
Ø 52 mm					
A2C59512332	60239PA	Black	100° - 900°C	8 - 32 V	37 mV
A2C59512333	60240GA	White	100° - 900°C	8 - 32 V	37 mV

OUTSIDE AIR TEMPERATURE

The Viewline outside temperature gauge can display both the engine compartment temperature and the current air temperature.

- 8 pole Tyco / Hirschmann MQS plug
- < 2.5 % accuracy over the entire display range
- Current consumption < 100 mA, with integrated warning light (LED)
- 240° display angle
- Programmable warning point (via optional PC software)
- Reverse polarity protection
- Anti-fog double lens
- Front side protection rating IP67
- 52 mm installation diameter
- 50 mm installation depth



The outer scale is available also in °F

PACKAGE CONTENTS

Outside temperature gauge, adapter cable 8 pole, round bezel, pushbuttons for mode and configuration, spinlock nut, rubber seal, QR DB code, safety instructions

Veratron Article No.	Part No.	Colour	Range	Voltage	Input
Ø 52 mm					
A2C59512336	60243JA	Black	-25° / +50°	8 - 32 V	2k Ω
A2C59512338	60244KA	White	-25° / +50°	8 - 32 V	2k Ω
A2C59512337	60245LA	Black	-10 / +120 °F	8 - 32 V	2k Ω
A2C59512339	60246MA	White	-10 / +120 °F	8 - 32 V	2k Ω

The Viewline ammeter provides an overview of the entire electrical system. The level of current being drawn and the supply current are clearly displayed and the shunt – a measurement resistor – can be inserted into the measurement point in a matter of seconds. The fine connecting cable that runs from the shunt to the gauge is easy to lay without taking up much space.

- 8 pole Tyco / Hirschmann MQS plug
- < 2.5 % accuracy over the entire display range
- Current consumption < 100 mA, with integrated warning light (LED)
- 240° display angle
- Programmable warning point (PC software)
- Reverse polarity protection
- Anti-fog double lens
- Front side protection rating IP67
- 52 mm installation diameter
- 50 mm installation depth



PACKAGE CONTENTS

Ammeter gauge, adapter cable 8 pole, round bezel, pushbuttons for mode and configuration, spinlock nut, rubber seal, QR code, safety instructions

Veratron Article No.	Part No.	Colour	Range	Voltage	Input
Ø 52 mm					
A2C59512328	60289GA	Black	-60 / +60 A	8 - 32 V	60 mV
A2C59512330	60290XA	White	-60 / +60 A	8 - 32 V	60 mV
A2C59512329	60291YA	Black	-150 / +150 A	8 - 32 V	60 mV
A2C59512331	60292ZA	White	-150 / +150 A	8 - 32 V	60 mV

ENGINE OIL PRESSURE 5 BAR

The Viewline pressure gauge detects fluctuations in engine oil pressure.

- 8 pole Tyco / Hirschmann MQS plug
- + / - 3.6° angle degree accuracy over the entire display range
- Current consumption < 150 mA, with integrated warning light (LED)
- Input signal: standard Ω values
- 90° display angle
- Optional makepoint switch can be connected
- Reverse polarity protection
- Anti-fog double lens
- Front side protection rating IP67
- 52 mm installation diameter
- 50 mm installation depth



The outer scale is available also in PSI

PACKAGE CONTENTS

Oil pressure gauge, adapter cable 8 pole, round bezel, pushbuttons for mode and configuration, spinlock nut, rubber seal, QR code, safety instructions

Veratron Article No.	Part No.	Colour	Range	Voltage	Input
Ø 52 mm					
A2C59514123	60249RA	Black	0 - 5 bar	8 - 32 V	10 - 184 Ω
A2C59514211	60250IA	White	0 - 5 bar	8 - 32 V	10 - 184 Ω

ENGINE OIL PRESSURE 10 BAR

The Viewline pressure gauge detects fluctuations in engine oil pressure.

- Connettori a 8 poli Tyco/Hirschmann tipo MQS plug
- 8 pole Tyco / Hirschmann MQS plug
- + / - 3.6° angle degree accuracy over the entire display range
- Current consumption < 150 mA, with integrated warning light (LED)
- Input signal: standard Ω values
- 90° display angle
- Optional makepoint switch can be connected
- Reverse polarity protection
- Anti-fog double lens
- Front side protection rating IP67
- 52 mm installation diameter
- 50 mm installation depth



The outer scale is available also in PSI

PACKAGE CONTENTS

Oil pressure gauge, adapter cable 8 pole, round bezel, pushbuttons for mode and configuration, spinlock nut, rubber seal, QR code, safety instructions

Veratron Article No.	Part No.	Colour	Range	Voltage	Input
Ø 52 mm					
A2C59514111	60253LA	Black	0 - 10 bar	8 - 32 V	10 - 184 Ω
A2C59514199	60254MA	White	0 - 10 bar	8 - 32 V	10 - 184 Ω

25 BAR TRANSMISSION OIL PRESSURE

The Viewline pressure gauge detects fluctuations in gearbox oil pressure.

- 8 pole Tyco / Hirschmann MQS plug
- + / - 3.6° angle degree accuracy over the entire display range
- Current consumption < 150 mA, with integrated warning light (LED)
- Input signal: standard Ω values
- 90° display angle
- Optional makepoint switch can be connected
- Reverse polarity protection
- Anti-fog double lens
- Front side protection rating IP67
- 52 mm installation diameter
- 50 mm installation depth



The outer scale is available also in PSI

PACKAGE CONTENTS

Oil pressure gauge, adapter cable 8 pole, round bezel, pushbuttons for mode and configuration, spinlock nut, rubber seal, QR code, safety instructions

Veratron Article No.	Part No.	Colour	Range	Voltage	Input
Ø 52 mm					
A2C59514136	60255NA	Black	0 - 25 bar	8 - 32 V	10 - 184 Ω
A2C59514206	60256OA	White	0 - 25 bar	8 - 32 V	10 - 184 Ω

The Viewline pressure gauge detects fluctuations in gearbox oil pressure.

- 8 pole Tyco / Hirschmann MQS plug
- + / - 3.6° angle degree accuracy over the entire display range
- Current consumption < 150 mA, with integrated warning light (LED)
- Input signal: standard Ω values
- 90° display angle
- Optional makepoint switch can be connected
- Reverse polarity protection
- Anti-fog double lens
- Front side protection rating IP67
- 52 mm installation diameter
- 50 mm installation depth



The outer scale is available also in PSI

PACKAGE CONTENTS

Oil pressure gauge, adapter cable 8 pole, round bezel, pushbuttons for mode and configuration, spinlock nut, rubber seal, QR code, safety instructions

Veratron Article No.	Part No.	Colour	Range	Voltage	Input
Ø 52 mm					
A2C59514141	60257PA	Black	0 - 30 bar	8 - 32 V	10 - 184 Ω
A2C59514208	60258SA	White	0 - 30 bar	8 - 32 V	10 - 184 Ω

TURBO PRESSURE 2 BAR

The Viewline pressure gauge detects changes in the turbocharger boost.

- 8 pole Tyco / Hirschmann MQS plug
- + / - 3.6° angle degree accuracy over the entire display range
- Current consumption < 150 mA, with integrated warning light (LED)
- Input signal: standard Ω values
- 90° display angle
- Optional makepoint switch can be connected
- Reverse polarity protection
- Anti-fog double lens
- Front side protection rating IP67
- 52 mm installation diameter
- 50 mm installation depth



The outer scale is available also in PSI

PACKAGE CONTENTS

Turbo pressure gauge, adapter cable 8 pole, round bezel, pushbuttons for mode and configuration, spinlock nut, rubber seal, QR DB code, safety instructions

Veratron Article No.	Part No.	Colour	Range	Voltage	Input
Ø 52 mm					
A2C59514149	60261LA	Black	0 - 2 bar	8 - 32 V	10 - 184 Ω
A2C59514225	60262MA	White	0 - 2 bar	8 - 32 V	10 - 184 Ω

RUDDER POSITION

The Viewline rudder angle instrument for wheel-controlled yachts displays the current rudder position at all times. An important cockpit instrument for accident-free maneuvers in narrow waterways.

- 8 pole Tyco / Hirschmann bush housing
- Current consumption < 150 mA
- Anti-fog double lens
- Front side protection rating IP67
- 52 or 85 mm installation diameter
- 50 mm installation depth

Note:

52 mm range: 40° Port to 40° Starboard

85 mm range: 45° Port to 45° Starboard



PACKAGE CONTENTS

Rudder angle instrument, adapter cable 8 pole, round bezel, pushbuttons for mode and configuration, spinlock nut, rubber seal, QR code, safety instructions

Veratron Article No.	Part No.	Colour	Range	Voltage	Input
Ø 52 mm					
A2C59514154	60263NA	Black	-40° / +40°	8 - 32 V	3 - 180 Ω
A2C59514230	60264OA	White	-40° / +40°	8 - 32 V	3 - 180 Ω
Ø 85 mm					
A2C59512410	60265PA	Black	-45° / +45°	8 - 32 V	3 - 180 Ω
A2C59512411	60266QA	White	-45° / +45°	8 - 32 V	3 - 180 Ω

FUEL TANK LEVEL 0-90 Ω

The Viewline fuel gauge provides information about the fuel level in the tank and can be used with all types of tank sensors.

- 8 pole Tyco / Hirschmann MQS plug
- + / - 3.6° angle degree accuracy over the entire display range
- Current consumption < 150 mA, with integrated warning light (LED)
- Input signal: standard Ω values for lever type sensors
- 90° display angle
- Optional makepoint switch can be connected
- Reverse polarity protection
- Anti-fog double lens
- Front side protection rating IP67
- 52 mm installation diameter
- 50 mm installation depth



PACKAGE CONTENTS

Fuel level gauge, adapter cable 8 pole, round bezel, pushbuttons for mode and configuration, spinlock nut, rubber seal, QR code, safety instructions

Veratron Article No.	Part No.	Colour	Range	Voltage	Input
Ø 52 mm					
A2C59514085	60271NA	Black	Vuoto - Pieno	8 - 32 V	0 - 90 Ω
A2C59514186	60272OA	White	Empty - Full	8 - 32 V	0 - 90 Ω

The Viewline fuel gauge provides information about the fuel level in the tank and can be used with all types of tank sensors.

- 8 pole Tyco / Hirschmann MQS plug
- + / - 3.6° angle degree accuracy over the entire display range
- Current consumption < 150 mA, with integrated warning light (LED)
- Input signal: standard Ω values for lever type sensors
- 90° display angle
- Optional makepoint switch can be connected
- Reverse polarity protection
- Anti-fog double lens
- Front side protection rating IP67
- 52 mm installation diameter
- 50 mm installation depth



PACKAGE CONTENTS

Fuel level gauge, adapter cable 8 pole, round bezel, pushbuttons for mode and configuration, spinlock nut, rubber seal, QR code, safety instructions

Veratron Article No.	Part No.	Colour	Range	Voltage	Input
Ø 52 mm					
A2C59514082	60273PA	Black	0 - 1/1	8 - 32 V	3 - 180 Ω
A2C59514184	60274QA	White	0 - 1/1	8 - 32 V	3 - 180 Ω

FUEL TANK LEVEL 240-33.5 Ω

The Viewline fuel gauge provides information about the fuel level in the tank and can be used with all types of tank sensors.

- 8 pole Tyco / Hirschmann MQS plug
- + / - 3.6° angle degree accuracy over the entire display range
- Current consumption < 150 mA, with integrated warning light (LED)
- Input signal: standard Ω values for lever type sensors
- 90° display angle
- Optional makepoint switch can be connected
- Reverse polarity protection
- Anti-fog double lens
- Front side protection rating IP67
- 52 mm installation diameter
- 50 mm installation depth



PACKAGE CONTENTS

Fuel level gauge, adapter cable 8 pole, round bezel, pushbuttons for mode and configuration, spinlock nut, rubber seal, QR code, safety instructions

Veratron Article No.	Part No.	Colour	Range	Voltage	Input
Ø 52 mm					
A2C59514094	60277TA	Black	Empty - Full	8 - 32 V	240 - 33.5 Ω
A2C59514190	60278WA	White	Empty - Full	8 - 32 V	240 - 33.5 Ω

FUEL TANK LEVEL 90-4 Ω

The Viewline fuel gauge provides information about the fuel level in the tank and can be used with all types of tank sensors.

- 8 pole Tyco / Hirschmann MQS plug
- + / - 3.6° angle degree accuracy over the entire display range
- Current consumption < 150 mA, with integrated warning light (LED)
- Input signal: standard Ω values for dip type sensors
- 90° display angle
- Optional makepoint switch can be connected
- Reverse polarity protection
- Anti-fog double lens
- Front side protection rating IP67
- 52 mm installation diameter
- 50 mm installation depth



PACKAGE CONTENTS

Fuel level gauge, adapter cable 8 pole, round bezel, pushbuttons for mode and configuration, spinlock nut, rubber seal, QR code, safety instructions

Veratron Article No.	Part No.	Colour	Range	Voltage	Input
Ø 52 mm					
A2C59514079	60279XA	Black	0 - 1/1	8 - 32 V	90 - 4 Ω
A2C59514182	60280VA	White	0 - 1/1	8 - 32 V	90 - 4 Ω
A2C59514088	60281WA	Black	Empty - Full	8 - 32 V	90 - 4 Ω
A2C59514188	60282XA	White	Empty - Full	8 - 32 V	90 - 4 Ω

TRIM ANGLE INDICATOR (OUTBOARD POSITION)

The Viewline trim gauge provides information about the position of the engine in relation to the boat's stern.

In this way the skipper always knows whether the drive is in the raised or lowered position. He can also optimise the boat's trim.

- 8 pole Tyco / Hirschmann MQS plug
- + / - 3.6° angle degree accuracy over the entire display range
- Current consumption < 150 mA, with integrated warning light (LED)
- Input signal: standard Ω values
- 90° display angle
- Reverse polarity protection
- Anti-fog double lens
- Front side protection rating IP67
- 52 mm installation diameter
- 50 mm installation depth



PACKAGE CONTENTS

Trim gauge, adapter cable 8 pole, round bezel, pushbuttons for mode and configuration, spinlock nut, rubber seal, QR code, safety instructions

Veratron Article No.	Part No.	Colour	Range	Voltage	Input
Ø 52 mm					
A2C59514180	60283YA	Black	UP - Down	8 - 32 V	167 - 10 Ω
A2C59514244	60284ZA	White	UP - Down	8 - 32 V	167 - 10 Ω

The Viewline voltmeter displays the status of generator and battery and their loads on a voltage scale. Values exceeding the normal charging voltages can therefore be monitored exactly. Even potential deep discharges can be detected.

- 8 pole Tyco / Hirschmann MQS plug
- + / - 3.6° angle degree accuracy over the entire display range
- Current consumption < 150 mA, with integrated warning light (LED)
- 90° display angle
- Reverse polarity protection
- Anti-fog double lens
- Front side protection rating IP67
- 52 mm installation diameter
- 50 mm installation depth



Available with 12 or 24 V

PACKAGE CONTENTS

Voltmeter gauge, adapter cable 8 pole, round bezel, pushbuttons for mode and configuration, spinlock nut, rubber seal, QR code, safety instructions

Veratron Article No.	Part No.	Colour	Voltage
Ø 52 mm			
A2C59512545	60285AA	Black	8 - 16 V
A2C59512546	60286BA	White	8 - 16 V
A2C59512458	60287CA	Black	18 - 32 V
A2C59512459	60288FA	White	18 - 32 V

FRESH WATER LEVEL (CAPACITIVE)

The Viewline freshwater tank gauge indicates the level of freshwater. Capacity sensors can be fitted for a maximum depth of up to 1,5 m.

- 8 pole Tyco / Hirschmann MQS plug
- + / - 3.6° angle degree accuracy over the entire display range
- Current consumption < 150 mA, with integrated LED warning light (red)
- Input signal: 4 – 20 mA current consumption (Veratron fresh water sensor)
- 90° display angle
- Reverse polarity protection
- Anti-fog double lens
- Front side protection rating IP67
- 52 mm installation diameter
- 50 mm installation depth



PACKAGE CONTENTS

Fresh water gauge, adapter cable 8 pole, round bezel, pushbuttons for mode and configuration, spinlock nut, rubber seal, QR code, safety instructions

Veratron Article No.	Part No.	Colour	Range	Voltage	Input
Ø 52 mm					
A2C59514676	60297EA	Black	0 - 1/1	8 - 32 V	4 - 20 mA
A2C59514677	60298HA	White	0 - 1/1	8 - 32 V	4 - 20 mA

FRESH WATER LEVEL (RESISTIVE)

The Viewline freshwater gauge provides information about the water level in the tank and can be used with all types of tank sensors.

- 8 pole Tyco / Hirschmann MQS plug
- + / - 3.6° angle degree accuracy over the entire display range
- Current consumption < 140 mA
- Input signal: standard Ω values
- 90° display angle
- Reverse polarity protection
- Anti-fog double lens
- Front side protection rating IP67
- 52 mm installation diameter
- 50 mm installation depth
- Voltage: 12/24 V



PACKAGE CONTENTS

Fresh water gauge, adapter cable 8 pole, round bezel, pushbuttons for mode and configuration, spinlock nut, rubber seal, QR code, safety instructions

Veratron Article No.	Part No.	Colour	Range	Voltage	Input
Ø 52 mm					
A2C59514097	60301CA	Black	0 - 1/1	8 - 32 V	3 - 180 Ω
A2C59514192	60302DA	White	0 - 1/1	8 - 32 V	3 - 180 Ω
A2C59514099	60303EA	Black	Empty - Full	8 - 32 V	3 - 180 Ω
A2C59514193	60304FA	White	Empty - Full	8 - 32 V	3 - 180 Ω

WASTE WATER TANK LEVEL

The Viewline blackwater tank gauge indicates the level of wastewater. Capacity sensors can be fitted for a maximum depth of up to 1,5 m.

- 8 pole Tyco / Hirschmann MQS plug
- < 2.5 % accuracy over the entire display range
- Current consumption < 100 mA, with integrated warning light (LED)
- Input signal: 4 - 20 mA current consumption (Veratron waste water sensor)
- 240° display angle
- Reverse polarity protection
- Anti-fog double lens
- Front side protection rating IP67
- 52 mm installation diameter
- 50 mm installation depth



PACKAGE CONTENTS

Waste water gauge, adapter cable 8 pole, round bezel, pushbuttons for mode and configuration, spinlock nut, rubber seal, QR code, safety instructions

Veratron Article No.	Part No.	Colour	Range	Voltage	Input
Ø 52 mm					
A2C59512342	60305GA	Black	0 - 1/1	8 - 32 V	4 - 20 mA
A2C59512343	60306HA	White	0 - 1/1	8 - 32 V	4 - 20 mA

The Viewline operating hours counter makes it easy to stick to a proper maintenance schedule. It is only activated when the engine is running so only genuine engine operating hours are counted.

- 8 pole Tyco / Hirschmann MQS plug
- Current consumption < 30 mA, with integrated LED function control light (red)
- Reverse polarity protection
- Anti-fog double lens
- Front side protection rating IP67
- 52 mm installation diameter
- 50 mm installation depth



PACKAGE CONTENTS

Hour counter gauge, adapter cable 8 pole, round bezel, pushbuttons for mode and configuration, spinlock nut, Rubber seal, QR code, safety instructions

Veratron Article No.	Part No.	Colour	Voltage
Ø 52 mm			
A2C59512453	60309MA	Black	9 - 30 V
A2C59512454	60310DA	White	9 - 30 V

CLOCK

The clearly readable dial on the Viewline quartz clock adds a stylish touch to every pleasure boat and yacht cockpit.

- 8 pole Tyco / Hirschmann MQS plug
- Current consumption < 10 mA
- Reverse polarity protection
- Anti-fog double lens
- Front side protection rating IP67
- 52 mm installation diameter
- 50 mm installation depth

Available as 12 or 24 volt



PACKAGE CONTENTS

Clock gauge, adapter cable 8 pole, round bezel, pushbutton for time setting configuration, spinlock nut, Rubber seal, QR code, safety instructions

Veratron Article No.	Part No.	Colour	Voltage
Ø 52 mm			
A2C59513445	60311EA	Black	8 - 16 V
A2C59513443	60312FA	White	8 - 16 V
A2C59513446	60313GA	Black	18 - 32 V
A2C59513444	60314HA	White	18 - 32 V

RUDDER ANGLE SENSORS

RUDDER ANGLE SENSOR FOR SINGLE STATION:

Veratron Article No.	Part No.	Voltage	Resistance
A2C1102950001	20741J	12/24 V	10 - 180 Ω

RUDDER ANGLE SENSOR FOR DUAL STATION (FLY BRIDGE):

Veratron Article No.	Part No.	Voltage	Resistance
A2C1102960001	20742L	12/24 V	5 - 90 Ω



FRESH WATER CAPACITIVE SENSORS

- Fresh water level sensor
- Sensor type: adjustable dip
- Voltage: 12/24 V
- Gasket kit: N05-001-370 - 22184N

Veratron Article No.	Part No.	Signal range mA	Length
N02-240-402	60317KA	4-20 mA	80-600 mm
N02-240-404	60318NA	4-20 mA	600-1200 mm
N02-240-406	60319OA	4-20 mA	1200-1500 mm



FRESH WATER RESISTIVE SENSOR

- Fresh water level sensor
- Sensor type: adjustable lever
- Voltage: 12/24 V
- Gasket kit: N05-008-750 - 21922U

Veratron Article No.	Part No.	Signal range mA	Length
226-828-001-001K	60320FA	3 - 180 Ω	200-600 mm



WASTE WATER CAPACITIVE SENSORS

- Waste water level sensor (capacitive)
- Sensor type: adjustable dip
- Voltage: 12/24 V
- Gasket kit: N05-016-930 - 21522B

Veratron Article No.	Part No.	Signal range mA	Length
N02-240-902	60321GA	4-20 mA	200-600 mm
N02-240-904	60322HA	4-20 mA	600-1200 mm
N02-240-906	60323IA	4-20 mA	1200-1500 mm



- Individual packaging
- Voltage 12/24 V

Veratron Article No.	Part No.	Range amp	Input
A2C59514043	60324JA	-60 / +60 A	60 mV
A2C59514047	60325KA	-150 / +150 A	60 mV



PYROMETER SENSORS

THERMOCOUPLE ELEMENT - COMPATIBLE ONLY WITH VERATRON:

Veratron Article No.	Part No.	Range	Terminals
N03-320-264	60473YA	100° - 900°C 250° - 1650°F	Red = Negative Yellow = Positive

CONNECTING CABLE:

Veratron Article No.	Part No.	Range	Terminals
N03-320-268	60474ZA	6 m	White = Negative Blue = Positive



THREADED BUSHING FOR WELDING TO MANIFOLD:

Veratron Article No.	Part No.
N03-320-266	60475AA

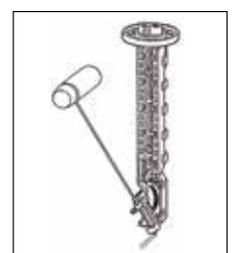
FUEL LEVEL SENSORS

Veratron Article No.	Part No.	Item specific	Length
226-801-015-001G	60478FA	Fuel level sensor Sensor type: Adjustable lever 3-180 Ω	150 - 600 mm
226-801-015-001C	20084Y	Bulk adjustable lever arm sensor (10 pcs)	150 - 600 mm
N02-240-106	60479GA	Dual station fuel level sensor Sensor type: Adjustable lever 2-90 Ω	150 - 600 mm

- Gasket kit: N05-801-432 - 61013UA

Veratron Article No.	Part No.	Signal range empty/full	Length	Item specific
A2C1364580001	21124N	240 - 33.5 Ω	150 - 600 mm	Fuel lever sensor Sensor type: adjustable lever

- Gasket kit: N05-801-432 - 61013UA



DEEP-PIPE LEVEL SENSOR 90-4 Ω / 0-180 Ω / 240-33 Ω

The Veratron Deep-Pipe Level Sensor is ideal for usage in fuel tanks. Its 38 mm diameter vertical tube contains a float inside, which measures a level of the liquid. Small holes at the top and bottom of the tube act as a baffle to fuel sloshing around in the fuel tank, so the float position remains stable at any sea state.

Sensors are made in various lengths starting at 150 mm increasing to 1400 mm. Please ensure that the length chosen is at least 4 mm from the base of the fuel tank once fitted.

- TE Superseal Connector IP67
- Compensation chamber
- Flange: PA66 GF30
- Wiring harness with length of 200 mm
- 3 signal ranges: 90–4 Ω, 0–180 Ω, 240–33 Ω
- Length: 150 mm–1400 mm (every 10mm step)
- Mounting diameter: 54 mm
- IP67 protection rating

AFT. PACKAGE CONTENTS

Deep-Pipe Level Sensor, Safety Instructions, Installation Instructions, Installation Kit A2C17593300 - 23071E

ACCESSORIES

6 m Wiring Harness A2C1756300001 - 23072G

FLANGE ADAPTER KIT

To be installed with the new sensors to replace the old 80 mm sensors: B00001201 - 22984Y



Deep-pipe liquid level sensor

For the identification of the codes, once the length and the desired signal are known, please refer to your Uflex dealer.

veratron V

MARINE



The best-in-class VMH 70 display is designed to manage large amounts of complex data, and thanks to its real-time operating system it ensures full control on vital engine information immediately after power up.

Easily configure to display information from up to four engines when connected to NMEA2000 or two engines via J1939 or analog inputs simultaneously, it has large possible setting.

This allows users to group similar items such as single or dual engines, battery performance, fuel, water, waste, tank level, rudder and trim, onboard systems, navigation and weather, if desired.

The device has an integrated light sensor that adjusts for easy reading without eye strain, no matter how bright or dark the conditions, and two camera inputs allow to control the engine compartment during navigation and keep an eye on the main deck while maneuvering.

The embedded NMEA 2000 gateway brings all the sensor readings and alarms to your external multifunctional display, saving the cost of an additional converter.

FEATURES

- Veratron VMH premium instruments series
- 7" sun-readable IPS TFT touchscreen display
- Slim panel installation profil
- Mineral glass front lens
- Reliably operating in high-temperature environments
- IPX7 protection rating (exposed device)
- NMEA 2000 certifie
- Fully configurable analog inputs for direct sensor connections with NMEA 2000 gateway
- Customizable startup screen
- Dual SAE J1939 CAN ports
- Easily customizable GUI screens

new



Lateral touch buttons are RGB illuminated and allow for a quick brightness adjustment

CUSTOMIZE YOUR SCREENS WITH MORE THAN 40 AVAILABLE DATA



The VMH series look and feel gives an elegant and stylish touch to your dashboard



VMH70

Intelligent Battery Sensor (IBS) screen to keep your energy supplies under control

ACCESSORIES AND SPARE PARTS

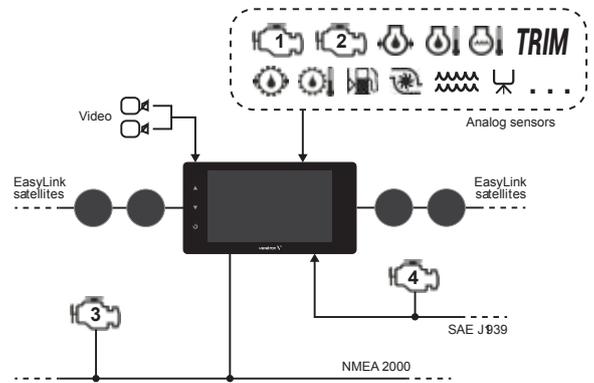
Model	Veratron Article No.	Part No.
Sun cover*	B00134401	24900Z
Panel mounting kit*	B00067201	24906M
Engine 1 power and data cable*	A2C1507870001	24907P
Engine 2 data cable*	A2C1992110001	24908S
EasyLink extension cable*	A2C59500139	21538T
Video cable 0,3 m	A2C1845710001	21944E
NMEA 2000 drop cables	A2C9624370001 - 0.5 m	21148D
	A2C9624380001 - 2m	21149F
	A2C9624400001 - 6m	21150P
VMH 14 satellite instrument	B00109901	21965N

* included in the box



INPUTS

- 6x resistive sensor inputs
- 2x frequency inputs for RPM readings
- 3x 0-5V sensor inputs
- 2x 4-20mA sensor inputs
- 2x SAE J1939 CAN ports
- 2x EasyLink channels
- 2x Composite video inputs



TECHNICAL DATA

Nominal voltage	12/24 V
Operating voltage	9 - 32 V
Current consumption	Max. 1.2 A @ 12 V with full backlight intensity ≤ 200 mA in standby mode
Display	7" IPS TFT display with multitouch screen Full 24 bit / 16 mio. colors 800x480 px resolution 800 cd/m2 intensity
Dimensions	WxH: 220 x 128 mm Profile height: 6 mm (with sealing)
Mounting	Front panel mount via mounting kit
Nominal position	NL 0° to NL 90° acc. to DIN 16257
Protection class	IPX7 acc. to IEC 60945 (exposed equipment) with plugged-in connectors or blind plugs
Housing	Aluminum case, mineral glass front lens
Connectors	2x Molex MX-150, 12 pins 1x DeviceNet M12, 5 pins (NMEA 2000) 2x TE SuperSeal 1.5, 3 pins (EasyLink) 1x M12, 4 pins (Video)
Flammability	V0 acc. to UL-94
Compliance	CE, UKCA, Reach, RoHS

VESSEL DATA

Engine data	Transmission
GPS information	Wind data
Battery status	Tank levels
Vessel roll & pitch	Weather
Media box radio	Trip and distance



Every place of the boat is under your control thanks to the dual video input

Model	Veratron Article No.	Part No.
VMH 70	B00129201	24897P

VMH 14 KIT

- VMH look-and-feel
- Digital display with visual bargraph
- Easylink interface
- Up to 16 satellites
- Configurable with your smartphone via Airlink
- Trim, voltmeter, fuel level, water temperature, transmission oil temperature and pressure, engine oil temperature and pressure



Model	Veratron Article No.	Part No.
VMH 14	B00109901	21965N



VMH 14

FEATURES

- Stylish black-glass design with brushed stainless-steel ring
- New generation sun-readable color hybrid display
- Intelligent Battery Sensor (IBS) port
- Analog to NMEA 2000® gateway
- Integrated high-performance GNSS receiver
- NMEA 2000® certifie

Designed with stylish mineral glass front lens framed by a brushed stainless-steel ring, it can display a wealth of critical boat system data in a compact package that's perfect for cockpits on smaller vessels with limited space.

The VMH 35 has an embedded GNSS receiver to support and show navigation information, while it is able to monitor analogue input directly, such as fuel, trim, and tachometer. A special input is dedicated to the Veratron IBS (Intelligent Battery Sensor). It can provide critical 12 V battery monitoring information. All these data are distributed to NMEA 2000® thanks to its embedded certified gateway.



Setup local alarms and send them to other devices via NMEA 2000®



The finest quality in every detail



Water-sealed connector and NMEA 2000® DeviceNet plug

GPS DATA

Navigation system	GPS, GLONASS, Galileo
Update rate	10 Hz
Channels	72
Tracking sensitivity	-165 dBm
Time to first fix (hot star)	1 s
Time to first fix (cold star)	30 s
Position accuracy	2,5 m
Velocity accuracy	0,05 m/s
Heading accuracy	0,3°

TECHNICAL DATA

Operating voltage	12 V
Voltage range	9 - 16 V
Protection class	IP X7
Flammability	UL94 compliant
Power consumption	≤ 15 mA (normal mode) ≤ 120 µA (sleep mode)
Dimensions	Ø 100 (Ø 85 mm mounting)
Active area	Ø 83 mm (optically bonded display)
Central display	1.44", 128 x 128 Pixel
Lens	Mineral glass
Buttons	2 silicon buttons
Ring	Brushed stainless steel
Operating temperature	-20 °C to 60 °C
Storage temperature	-30 °C to 80 °C
Plugs	Molex MX-150, 12 pins DeviceNet M12, 5 pins



TFT DISPLAY DATA

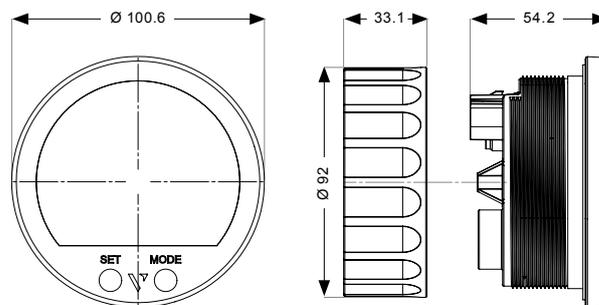
Freshwater level	Fuel consumption
Wastewater level	Fuel level
Rudder angle	Coolant temperature
Trim	Coolant pressure
GPS position	Engine oil temperature
COG Course Over Ground	Engine oil pressure
Engine speed (RPM)	Boost pressure
Seawater temperature	Ammeter
Depth	Battery voltage
Clock	Battery state of charge
Hour counter (total+trip)	Battery state of health
Trip distance	Battery autonomy
Total fuel used	Battery temperature



VMH35

ADDITIONAL DISPLAY DATA

- Engine speed
- Boat speed (SOG or STW)
- Gear position
- 6 x alarm teltales



Model	Veratron Article No.	Part No.
VMH 35	B00085501	23606U

VMH 14 KIT

- VMH look-and-feel
- Digital display with visual bargraph
- Easylink interface
- Up to 16 satellites
- Configurable with your smartphone via Airlink
- Trim, voltmeter, fuel level, water temperature, transmission oil temperature and pressure, engine oil temperature and pressure



Model	Veratron Article No.	Part No.
VMH 14	B00109901	21965N



VMH 14

GENERAL FEATURES

- 52 mm instrument with 1.44" TFT display
- 2 instruments in 1 with dual screen
- Wireless configurable with your smartphone
- Powerless configuratio
- Custom alarms setup
- Color bar graphs for visual data display
- 9 different styling rings available

The VL Flex device can easily be configured to be the instrument you need - thanks to its sun-readable 1.44" TFT display embedded into a standard 52 mm instrument housing. The supported analog inputs allow you to directly read from your engine sensors, and the NMEA 2000® or J1939 interface expands this possibility by allowing the device to read from the digital network. The simple but effective graphic design can be set up in a single or dual layout, presenting the data in a clear and intuitive form, while the colored bar graph and the alarm display allow you to visually understand your data.



INTUITIVE SETUP
IN JUST 3 STEPS



CONFIGURATOR SMARTPHONE APP

- To configure the VL Flex, some parameters must be calibrated, like the gauge type, the sensor and its calibration or the warning threshold. This is possible through the VL Flex Configurator smartphone App.
- A simple and detailed explanation of the configuration process is also available as in-app instructions.
- Thanks to the passive embedded NFC receiver, the VL Flex 52 can be configured without power supply.



TECHNICAL DATA

Display	1.44" sun-readable color TFT display
Resolution	125x125 pixels
Nominal voltage	12V / 24V
Operating voltage	8 - 32 V with overvoltage and reverse polarity protection
Current consumption	Typ. 50 mA with max. backlight intensity
Analogue ports	Resistive (0 – 400 Ω), Frequency (W, Ind, Hall, Generator)
Digital ports	NMEA 2000® or J1939, LIN bus
Wireless interface	Airwave (NFC-based)
Protection class	IP67 front side acc. IEC60529
Lens	PMMA with anti-glare and anti-fog
Housing	Ø 52 mm – Polycarbonate (PC), flame retardant acc. UL94-V
Operating temperature	-20 °C to +70 °C
Storage temperature	-30 °C to +80 °C
Connector	Tyco / Hirschmann MQS connector 8 pin

DISPLAY LAYOUT



Single layout



Dual layout



NMEA 2000®

The supported analog inputs allow you to directly read from your engine sensors. In addition NMEA 2000® and LIN 2.0 interface expands this possibility by allowing the device to read from the digital network.

- NMEA 2000 interface
- Resistive and frequency inputs
- IBS port for Battery monitoring

J1939

The supported analog inputs allow you to directly read from the sensors. In addition, the J1939 and the LIN 2.0 interfaces make it possible for the VL Flex to read from the digital networks as well.

- SAE J1939 CAN interface
- Resistive and frequency inputs
- BS port for Battery monitoring

IBM

The Intelligent Battery Monitoring System informs you about the current energy status, allowing you to plan your energy supply making it the key element of the vehicle's energy management.

- Flex display kit for Battery monitoring
- 1x Resistive input for Fuel or
- Fresh Water level
- Dedicated harness with pushbutton for screen scrolling

SUPPORTED DATA

Fuel level	Speedometer
Fresh water level	Ammeter
Waste water level	Voltmeter
Trim level	Battery SOC
Rudder angle	Battery SOH
Coolant temperature	Battery temperature
Boost pressure	Battery autonomy
Engine oil temperature	Engine hours
Engine oil pressure	Speed Over Ground (SOG)
Transmission oil pressure	Course Over Ground (COG)
Depth	Clock
Tachometer	



DOWNLOAD THE CONFIGURATION APP

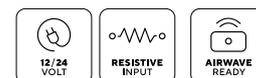


new

Model	Veratron Article No.	Part No.	Voltage	Colour
NMEA 2000®	B00043501	23605S	12V/24V	Black
NMEA 2000®	B00111301	21395X	12V/24V	White
J1939	B00086001	21616L	12V/24V	Black
J1939	B00110901	21613E	12V/24V	White
IBM	B00084701	21924Y	12V	Black
IBM	B00084801	21925A	24V	Black

VL FLEX IBM KIT

- **Includes:** VL Flex 52 instrument, Intelligent Battery Sensor (IBS) (incl. battery pole adapter), 6-meter long wiring harness
- **Delivered Data:** Voltage, current, battery temperature, state of charge, battery health, autonomy
- **Benefit :** Ready for connecting to Veratron dip-pipe liquid level sensors, continuous monitoring of battery status, support of battery maintenance, easy configuration with the mobile app



Veratron Article No.	Part No.	Voltage
B00084701	21924Y	12V
B00084801	21925A	24V

GENERAL FEATURES

- Save the money of an oversized NMEA 2000® converter
- Reduces the wiring, the gateway is installed where needed
- Contactless configuration with your smartphone, no expensive HW required!
- Powered by NMEA 2000® - no additional power supply
- Approved for engine compartment installation according to ISO 8846:1990

The LinkUp gateways provide an easy method to convert vessel and engine information to NMEA 2000®. Available in 8 different variants: resistive, voltage, LIN and J1939, those can be easily configured through either the embedded NFC-based Airlink interface or NMEA 2000® by means of our Configuration Tool.

The ISO 8846:1990 compliance completes the devices by allowing their installation into engine compartments.



WIRELESS CONFIGURATION IN JUST 4 STEPS

- 1 Near your smartphone to the LinkUp area
- 2 Select the sensor and type in its configuration
- 3 Configure an alarm
- 4 Tap again your smartphone into the Linkup to program it instantly

SIMPLE AND EFFECTIVE

- Fast: no prior pairing is required
- Powerless: thanks to the passive RF tag you can configure the device without power!
- Secure: the configuration requires proximity to the device
- Safe: the passive receiver does not continuously emit RF frequencies in the engine room
- Cost-effective: no need for additional expensive HW



DESIGN



NMEA 2000® SIDE WIRING

DeviceNet M12 connector 5 pins

12V power supply from the network!

LINKUP HOUSING

Contains the device electronic

Notification LED

Wireless interface

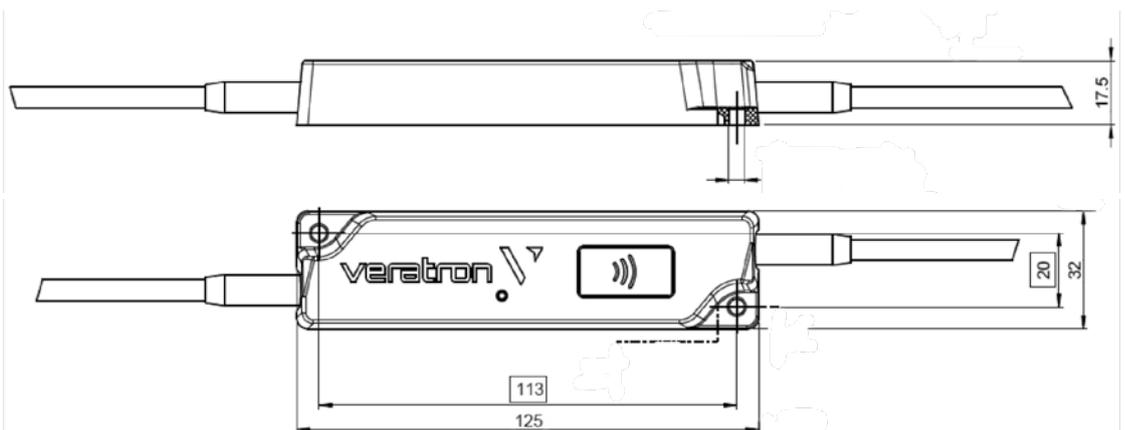
SENSOR-SIDE WIRING

Different depending on the sensor to interface



TECHNICAL DATA

Operating voltage	6 - 16,5V
Protection class	IP X9/K
Power consumption	≤ 15 mA (normal mode) ≤ 120 µA (sleep mode)
Output signal	NMEA 2000®
Operating temperature	-40°C to 115°C
Flammability	UL94 compliant
Compliance	CE, Reach, RoHS
Housing Material	PC-FR



The Intelligent Battery Monitoring System informs you about the current energy status, allowing you to plan your energy supply making it the key element of the vessel's energy management. In order to carefully preserve the energy of the boat battery, it is necessary to know its State of Charge, the ageing status (State of Health) and any changes to the battery, as weak batteries are the main cause of trouble in the boat.

BENEFITS

- 12 V and 24 V Intelligent Battery Sensors (IBS)
- Determines the current status of your battery to support energy management planning
- Helps to preserve battery life by reporting its State of Health
- Delivers real-time measurements preventing over charging and over heating which can shorten battery life

Model	12V	12V II ^{new}	24V
Veratron Article No.	B00042501	B00042502	B00070401
Part No.	23411C	24843P	23854P
Operating voltage	6-16,5 V	6-18 V	7,5-32 V
Permanent load current	±155 A	±200 A	±200 A
Max. current	±1500 A	±1500 A	±2000 A
Threaded GND bolt (Battery pole adapted included)	M8	M6	M8
Max. battery capacity	249 Ah	500 Ah	255 Ah



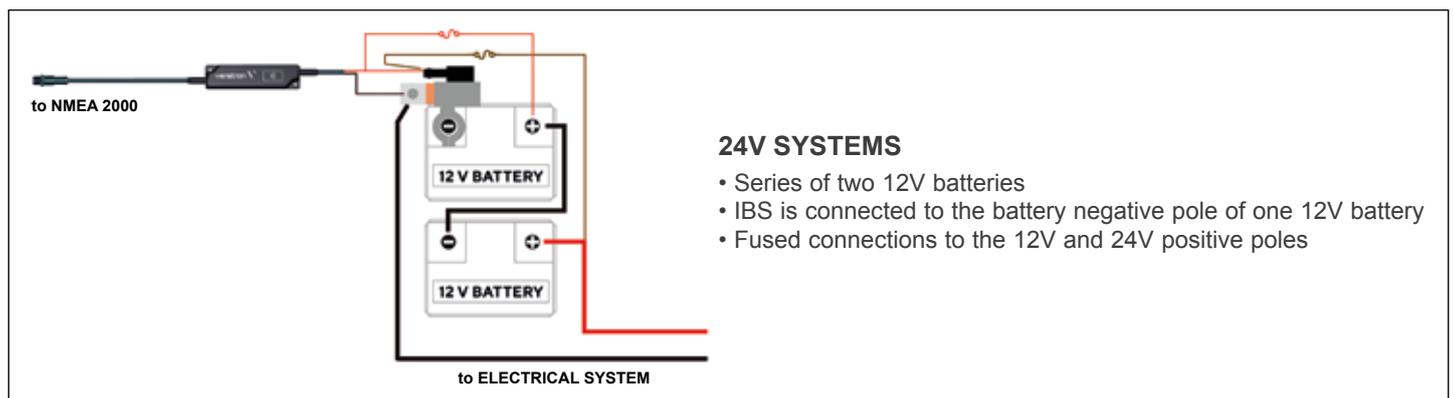
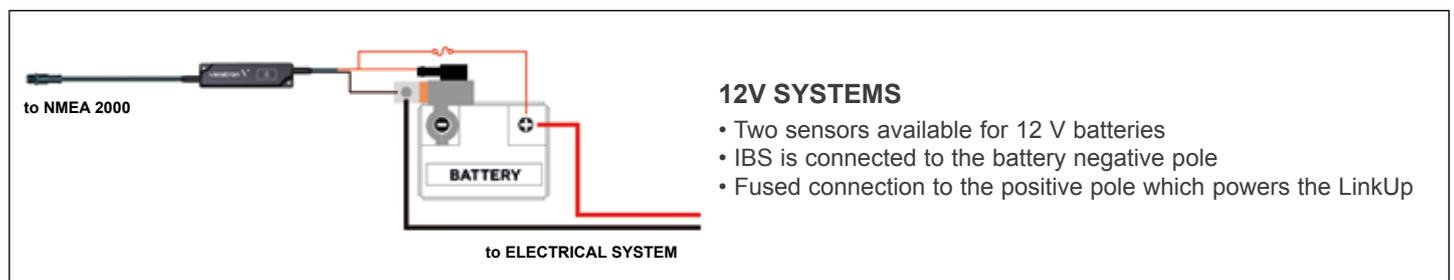
DESIGN AND FUNCTION

The IBS is attached directly to the negative pole of the battery via its pole terminal.

Alongside the terminal, the mechanical portion of the battery sensor consists of the shunt and grounding bolt.

DELIVERED DATA

- Battery voltage - Battery current - Battery temperature**
- State of Charge (SOC):** current charge status of the battery, defined in percentage
- State of Health (SOH):** ageing status of the battery, loss of capacity over time
- Autonomy:** estimated battery duration based on the instantaneous current consumption of the system



This Sensor measures simultaneously the engine oils temperature and pressure while providing the data to the LinkUp, which translates it to the NMEA 2000® standard.



Oil temperature and pressure

Veratron Article No.	Part No.
B00070501	21917B

BENEFITS

- Interface to the new electronic 2-in-1 sensor
- Oil Temperature and Pressure in a single sensor
- Rugged and reliable design derived from the automotive field
- ASIC-controlled sensor
- PWM output to transmit both pressure and temperature



TECHNICAL DATA

M12 mounting thread
IP 69/K protection class
5V power feed provided by the LinkUp
Temperature accuracy $\pm 1^{\circ}\text{K}$ in the $135^{\circ}\text{C} - 160^{\circ}\text{C}$ range
Pressure accuracy ± 0.2 bar (range $0.5 - 3$ bar), ± 0.1 bar below and ± 0.3 bar above
Temperature range: $-40^{\circ}\text{C} + 160^{\circ}\text{C}$
Pressure range: 0.5 to 10.5 bar
1 m cable length

J1939 GATEWAY

The LinkUp J1939 will bridge all your CAN engine data, transmitted on the CAN-J1939-Bus, to the NMEA2000® standard, making all the engine and diagnostic information available for any NMEA 2000-capable display.



J1939 Gateway

BENEFITS

- J1939 TO NMEA 2000® gateway to bring engine data to your boat network
- Delivers engine diagnostic to your MFD or to your smartphone in conjunction with a Veratron GO device
- Galvanic isolation between J1939 and NMEA 2000® networks
- Optional Y-shaped adapter cables to interface specific engines

Veratron Article No.	Part No.
B00042401	23560W

SUPPORTED DATA

Engine speed	Transmission oil pressure
Engine hours	Transmission oil temperature
Engine load	Exhaust temperature
Engine oil temperature	Fuel level
Engine oil pressure	Fuel pressure
Coolant temperature	Fuel rate
Coolant pressure	Inst fuel economy
Boost pressure	Alternator current
Engine rated speed	Alternator potential
VIN / SW ID	Battery potential
Percent torque	Transmission gear

SUPPORTED ALARMS

Low fuel pressure	Low battery voltage
Water in fuel	Engine overspeed
Low engine oil level	High gear oil temperature
Low engine pressure	Low gear oil pressure
High boost pressure	Low oil level
High coolant temperature	High oil temperature
Low coolant level	Lamps' status

ADAPTER CABLES

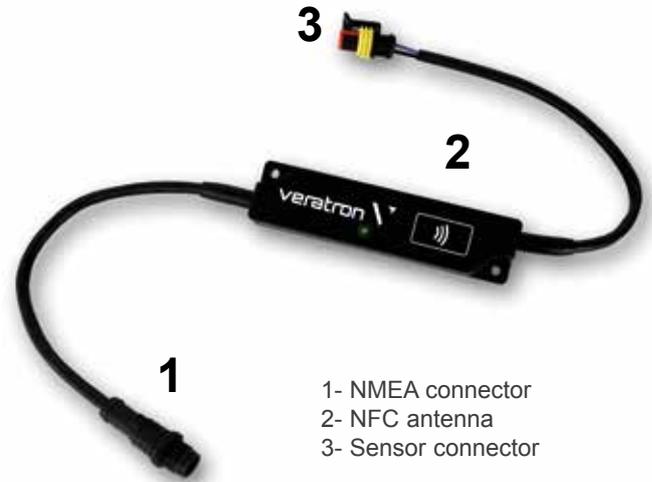
Volvo Penta EVC compatible	B00102701 - 24913J
Yanmar 4JH series	B00102801 - 24914L

The Resistive LinkUp gateway is designed to interface and convert resistive sensors measurements – such as Level, Temperature, or Pressure sensors – to the NMEA 2000® digital era. Optimized for a 0 – 400 ohm range, it can be configured with predefined sensor curves as well as with a customized characteristic to ensure compatibility with most of the sensors in the field

BENEFITS

- Customizable sensor curves
- Approved for engine compartments
- Alarms setup and transmission on NMEA 2000®
- Plug-and-play installation with veratron Dip-pipe level sensors

Veratron Article No.	Part No.
B00042201	23410A



- 1- NMEA connector
- 2- NFC antenna
- 3- Sensor connector

Resistive

SUPPORTED CONFIGURATION

Fuel level	Coolant temperature
Fresh water level	Boost pressure
Waste water level	Oil pressure
Trim position	Oil temperature
Trim tabs	Gear oil pressure
Rudder angle	Gear oil temperature

SETUP

SENSOR SIDE CABLE	PLUG-AND-PLAY CONNECTION TO VERATRON DIP-PIPE LEVEL SENSORS	CONFIGURABLE PARAMETERS
25 cm cable pigtail		
Water sealed AMP SuperSeal connector 2 pins		Sensor type Sensor characteristic Sensor instance Alarm threshold

PYROMETER

Specific LinkUp variant designed to interface the Veratron Pyrometer thermocouple (N03-320-264) PART No. 60473YA

- High precision probe for exhaust gas temperature (EGT) measurement
- Electrically compensated wires
- Extremely high temperature resistance
- Early warning of situations that are potentially dangerous for the engine!
- Helps preventing severe damages to the engine
- Can also be used as a guide for optimizing fuel economy

Veratron Article No.	Part No.
B00042301	23559M

KIT INCLUDES

- 1- Link-UP pyrometer B000423 part no. 23559N
- 2- 6m extension cable with high temperature resistance included B000632 part no. 23324K
- 3- Pyrometer thermocouple N03-320-264 part no. 60473YA



Pyrometer

VERATRON GO - GPS & BLUETOOTH NMEA 2000® CERTIFIED SENSOR



Veratron GO is a series of products featuring three versions: Veratron GO (GPS), Veratron GO Data (Bluetooth Low Energy) and Veratron GO Plus (GPS and Bluetooth).

GNSS receiver is the smallest available on the market. Thanks to its reduced installation footprint – the Veratron GO device can be mounted almost everywhere in your boat without being noticed.

FEATURES

- High-performance GNSS receiver
- 10 Hz update rate 72 channels
- Very high tracking sensitivity
- Bluetooth Low Energy gateway
- All your vessel data on your smart device
- Powered by NMEA 2000® network
- NMEA 2000® certifie
- Global BLE certifie

TECHNICAL DATA

Nominal voltage	12V (from NMEA)
Color and material	White, ASA plastic
Minimal cut-out size	Ø 16 mm
Protection class	IPX9/K according to IEC60529 “Exposed Device”
Flammability	Flame retardant according to UL94 VO
Mounting	High-resistive bi-adhesive tape or optional bracket
Connector	DeviceNet M12 5 pin

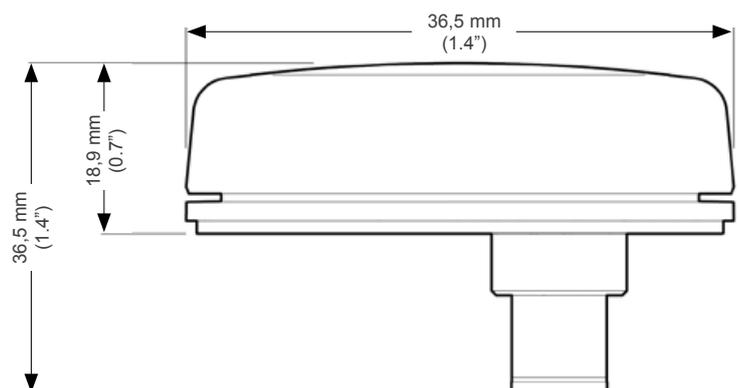


BLUETOOTH SUPPORTED DATA

Engine RPM	GPS position
Trim	Depth
Boost pressure	Yaw
Coolant temperature	Pitch
Fuel rate	Roll
Fuel press	AWA
Engine oil temperature	AWS
Engine oil pressure	TWA
Engine hours	TWS
Engine load	TWD
Coolant pressure	True heading
Engine alarms	Mag heading
Gear oil temperature	Sea water temperature
Gear oil pressure	Air temperature
Gear position	Barometer
Gear alarms	Water speed
Fuel level	Battery voltage
Fresh water	Battery current
Waste water	Battery temperature
Exhaust temperature	Battery SOC
Rudder angle	Battery SOH
COG	Autonomy
SOG	Battery Ah

DESIGN AND DIMENSIONS

- Smallest NMEA 2000® GNSS antenna on the market
- Small installation footprint
- Minimal cut out size: only 16 mm hole required
- White ASA plastic housing
- Maximum UV resistance
- Higher resistance to environmental stress
- Bottom filled with two-components resin
- Air-sealed device for weather resistance
- DeviceNet M12 connector
- Powered by NMEA 2000® network
- No dedicated power supply required



GO GPS

Veratron GO is the smallest NMEA 2000® certified GNSS receiver on the market which supports GPS / GLONASS / GALILEO constellations. Compact and easy to install, it does not require any additional protection against harsh weather conditions.

GO Data

Veratron GO Data is an NMEA 2000® to Bluetooth Low Energy (BLE) gateway. Together with the Veratron smartphone and tablet apps you can monitor your engine, read your sailing performance data, keep an eye on your batteries status and receive alarm notifications

Go Plus

Veratron GO Plus+ is a combined GPS receiver and NMEA 2000® to Bluetooth Low Energy (BLE) gateway and combines all the features of the Veratron GO and the Veratron GO Data devices in a single unit.

Accessories

Mounting kit with bracket + screws - 21617N



Veratron Article No.	Part No.	Voltage	Description
B00034901	23112S	12 V	Veratron GO
B00041601	23566J	12 V	Veratron GO DATA
B00041701	23565G	12 V	Veratron GO PLUS+

NavDash App

The easiest way to display your vessel data on your mobile device. The most complete app for vessel monitoring, it allows to easily setup your system and instantly have a direct view on your engine, read your sailing performance data, keep an eye on your batteries status and receive alarm notifications



TFT DISPLAY

AcquaLink® multifunction TFT displays are available in 4.3" and 7" sizes. The full 24 bit / 16 mio colors optically bonded displays feature transmissive layer technology for unprecedented and unsurpassed readability even in direct sunlight. The TFT display a wide array of data received from the AcquaLink® NavBox or NMEA 2000®. Users can customize up to 40 different data pages with single, double, treble or quad grid layouts.

TFT displays can be daisy chained with other AcquaLink® gauges, displays or NavControls using the unique VDO Bus or directly connected to the NMEA 2000® backbone (optional adapter cable required) for simple installation on any yacht.

7" TFTs are equipped with capacitive multi touch screens to slide between pages whereas 4.3" displays require the use of a NavControl unit for data input and operation.

- 1x plug with 2 Video input
- 2x VDO Bus connectors
- Operating temperature range -20°C / +70°C
- Protection level front and rear IPX9 with connectors



4.3" TFT display



7" TFT display

PACKAGE CONTENTS

TFT Display, bezel, silicone cover, mounting screws, drilling template, installation instructions, safety instructions

Veratron Article No.	Part No.	Voltage	Colour	Resolution
4.3"				
A2C59501996	20205H	12-24 V	Black	480 x 272 (WQVGA)
7"				
A2C59501997	20206K	12-24 V	Black	800 x 480 (WQVGA)

NAVCONTROL

The AcquaLink® NavControl can assume control of any AcquaLink® TFT display connected to the Veratron Bus or NMEA 2000® network. Even multiple units can be connected to the same Bus without conflicts.

- Compatible with AcquaLink and OceanLink
- 2x Veratron Bus connectors
- Operating temperature range -20°C / +70°C
- Protection level front and rear IPX6
- Reverse polarity protection
- Telltales light indication

PACKAGE CONTENTS

NavControl, bezel, silicone cover, mounting screws, drilling template, installation instructions, safety instructions



NavControl

Veratron Article No.	Part No.	Voltage	Colour
A2C59501982	20202 B	12-24 V	Black

The Veratron Wind Gauges display wind speed and angle information received from the Veratron AcquaLink® NavBox or the NMEA 2000® data bus.

- 2x Veratron Bus connectors
- <150 mA
- Reverse polarity protection
- Anti-fog coated mineral glass lens
- Front & rear side protection IPX6
- Operating temperature range -20°C / +70°C



110 mm apparent wind angle 360°



110 mm apparent wind speed 50 knots

PACKAGE CONTENTS

Gauge, bezel, rubber seal, spinlock,, drilling template, installation instructions, safety instructions

Veratron Article No.	Part No.	Voltage	Colour	Range
Apparent wind angle				
A2C59501900	20129U	12-24 V	Black	360°
Apparent wind angle magnified				
A2C59501901	20130C	12-24 V	Black	360°
Apparent wind speed				
A2C59501902	20131E	12-24 V	Black	0-50 knots

110 mm TACHOMETER

The Veratron Tachometer displays RPM information received from the Veratron AcquaLink® NavBox or the NMEA 2000® data bus and distributes additional engine information to optional 52 mm AcquaLink® EasyLink Gauges.

- 2x Veratron Bus connectors
- <150 mA
- Anti-fog coated mineral glass lens
- Front and rear protection rating IPX6
- Operating temperature range -20°C / +70°C
- Reverse polarity protection



110 mm tachometer 3000 rpm



110 mm tachometer 7000 rpm

PACKAGE CONTENTS

Gauge, bezel, rubber seal, spinlock, drilling template, installation instructions, safety instructions

Veratron Article No.	Part No.	Voltage	Colour	Range
A2C59501913	20142K	12-24 V	Black	3000 rpm
A2C59501914	20143M	12-24 V	Black	5000 rpm
A2C59501915	20144P	12-24 V	Black	7000 rpm

110 mm NAVIGATION GAUGES

The Veratron Navigation Gauges display depth, Speed over Ground, Speed through Water, Compass information received from the Veratron AcquaLink® NavBox or the NMEA 2000® data bus.

- 2x Veratron Bus connectors
- <150 mA
- Reverse polarity protection
- Anti-fog coated mineral glass lens
- Front and rear protection rating IPX6,
- Operating temperature range -20°C / +70°C

PACKAGE CONTENTS

Gauge, bezel, rubber seal, spinlock, drilling template, installation instructions, safety instructions



110 mm SOG 35 mph / 55 kmh

Veratron Article No.	Part No.	Voltage	Colour	Range
Depth				
A2C59501903	20132G	12-24 V	Black	200 m / 660 ft
Speed Over Ground (SOG)				
A2C59501908	20137T	12-24 V	Black	12 knots
A2C59501910	20139X	12-24 V	Black	35 mph / 55 kmh
A2C59501909	20138V	12-24 V	Black	70 mph / 115 kmh
Speed through water (LOG®)				
A2C59501905	20134L	12-24 V	Black	12 knots

52 mm TEMPERATURE GAUGES

- AMP Superseal EasyLink connector
- <100 mA
- 270° pointer deflection angle
- Reverse polarity protection
- Anti-fog mineral glass lens
- Front and rear protection rating IPX6
- Operating temperature range -20°C / +70°C

The outer scale is available also in °F

PACKAGE CONTENTS

Gauge, rubber seal, spinlock, drilling template, installation instructions, safety instructions



52 mm coolant temperature
120 °C / 250 °F



52 mm pyrometer
900 °C / 1650 °F

Veratron Article No.	Part No.	Voltage	Colour	Range
Coolant temperature				
A2C59501931	20151L	12-24 V	Black	120°C / 250°F
Engine oil temperature				
A2C59501926	20146U	12-24 V	Black	150°C / 300°F
Pyrometer				
A2C59501933	20153R	12-24 V	Black	900°C / 1650°F

- AMP Superseal EasyLink connector
- <100 mA
- 270° pointer deflection angle
- Reverse polarity protection
- Anti-fog mineral glass lens
- Front and rear protection rating IPX6
- Operating temperature range -20°C / +70°C

The outer scale is available also in PSI

PACKAGE CONTENTS

Gauge, rubber seal, spinlock, drilling template, installation instructions, safety instructions



52 mm boost pressure
30 psi / 2 bar



52 mm transmission
oil pressure 30 bar /
440 psi

Veratron Article No.	Part No.	Voltage	Colour	Range
Boost pressure				
A2C59501944	20164W	12-24 V	Black	2 bar / 30 psi
Engine oil pressure				
A2C59501935	20155V	12-24 V	Black	10 bar / 150 psi
Transmission oil pressure				
A2C59501937	20157Z	12-24 V	Black	30 bar / 440 psi

52 mm LIQUID LEVEL

- AMP Superseal EasyLink connector
- <100 mA
- 270° pointer deflection angle
- Reverse polarity protection
- Anti-fog mineral glass lens
- Front and rear protection rating IPX6
- Operating temperature range -20°C / +70°C

PACKAGE CONTENTS

Gauge, rubber seal, spinlock, drilling template, installation instructions, safety instructions



52 mm fuel level
Empty – Full



52 mm waste water level
Empty – Full

Veratron Article No.	Part No.	Voltage	Colour	Range
Fuel level				
A2C59501930	20150J	12-24 V	Black	Empty - Full
Fresh water				
A2C59501929	20149A	12-24 V	Black	Empty - Full
Waste water				
A2C59501928	20148Y	12-24 V	Black	Empty - Full

52 mm BATTERY STATUS

- AMP Superseal EasyLink connector
- <100 mA
- 270° pointer deflection angle
- Reverse polarity protection
- Anti-fog mineral glass lens
- Front and rear protection rating IPX6
- Operating temperature range -20°C / +70°C

PACKAGE CONTENTS

Gauge, rubber seal, spinlock, drilling template, installation instructions, safety instructions



52 mm ammeter 60 A

Veratron Article No.	Part No.	Voltage	Colour	Range
Current				
A2C59501942	20162S	12-24 V	Black	-60 / +60 A
A2C59501943	20163U	12-24 V	Black	-150 / +150 A
Voltage				
A2C59501940	20160M	12-24 V	Black	8 - 16 V
A2C59501941	20161P	12-24 V	Black	16 - 32 V

52 mm VESSEL STATUS

- AMP Superseal EasyLink connector
- <100 mA
- Reverse polarity protection
- Anti-fog mineral glass lens
- Front and rear protection rating IPX6
- Operating temperature range -20°C / +70°C

PACKAGE CONTENTS

Gauge, rubber seal, spinlock, drilling template, installation instructions, safety instructions



52 mm rudder angle

Veratron Article No.	Part No.	Voltage	Colour	Range
Rudder angle				
A2C59501939	20159D	12-24 V	Black	90°
Engine trim				
A2C59501925	20145S	12-24 V	Black	Up / Down

The AcquaLink® NavBox is the core of the AcquaLink® Veratron Bus system. It acts as a CPU and signal interface. The NavBox provides a wide range of digital and analog input possibilities. It supports J1939, NMEA 2000® and analogue signals. It also features two Veratron Sumlog® paddle wheel sensor and one analogue Veratron Windsensor connections, so legacy Veratron products can be used and brought to the digital age.

With a dedicated analogue input port it can support the following analogue signal from Veratron sensor or from 3rd parties company

- Engine oil pressure
- Engine oil temperature
- Engine coolant temperature
- Transmission oil pressure
- Fresh water/waste water and fuel level
- Ammeter status
- Rudder angle
- Engine frequency
- Battery current
- Pyrometer



NavBox

It also features a NMEA 0183 input and output port as well as a buzzer output. All received data are converted and sent to the NMEA 2000® network and to the Veratron Bus. This gateway function allows displaying engine, liquid level, pressure, temperature other vital information on any compatible display on the NMEA 2000® network or on designed Veratron AcquaLink® gauges or TFT displays.

SPECIFICATIONS

The configuration of the NavBox can be done by using an AcquaLink® TFT and NavControl or by using the intuitive Veratron App.

- NMEA 2000® certifie
- LED signal status indication
- Aluminum base plate
- Front & rear side protection rating IPX4
- 3x Veratron bus lines
- 1x J1939 CAN bus
- 1x NMEA 2000® bus
- 1 x Veratron analogue wind sensor input
- 2x Veratron Sumlog® inputs
- AMP Super Seal power input
- 26 pin AUX input (analog signal, NMEA 0183)
- Operating temperature range -20°C / +70°C

The EngineBox expands the possibilities of the NavBox for multi-engine applications or can be used as stand-alone when navigation information is not required. The EngineBox has a NMEA2000® and a J1939 CAN port. The EngineBox can also be used on older, completely analog engines, thanks to the analog input ports provided and designed for: RPM data, 0-400 Ω sensors and 4-20 mA sensors. EngineBox is available in 2 versions: Single Engine and Dual Engine. The dual engine version is designed with double frequency and resistive inputs.

The EngineBox has to be set up using an intuitive PC configuration tool making it easy for programming the inputs (delivered free of charge).

SPECIFICATIONS

- Analog to NMEA 2000® gateway
- J1939 to NMEA 2000® gateway
- 1x J1939 (2x J1939 Dual Engine)
- 1x M12 5 pins NMEA 2000®
- 1x Input 0–4 kHz for RPM (2x with Dual Engine)
- 4x Inputs 0–400 Ω (8x Inputs with Dual Engine)
- 2x Inputs 4–20 mA
- 1x Input 0–5 V (2x Inputs with Dual Engine)
- Status LED
- Compact design



EngineBox

Veratron Article No.	Part No.	DESCRIPTION
A2C59501979	20199S	NavBox 12-24 V
A2C1824820001	23557H	EngineBox Single Engine 12-24 V
A2C1767000001	22221S	EngineBox Double Engine 12-24 V

The OceanLink™ 4.3" and 7" multifunction TFT Displays feature a full 24 bit / 16 m colors optically bonded display with IPS technology for perfect readability even in direct sunlight. The TFT Displays show and distribute a wide array of data received from NMEA 2000® and J1939 CAN Bus systems and analog sensors directly connected to the display. Users can customize different data pages with single, double, triple or quadruple grid layouts.

The display can be linked via NMEA 2000® with other OceanLink gauges, displays or NavControls using the unique Veratron Bus or directly connected to the NMEA 2000® backbone (optional adapter cable required).



4.3" TFT DISPLAY

- Optical bonded mineral glass lens
- Front & rear side protection rating IPX7
- 1x NMEA 2000® connector
- 1x J1939
- 2x 4 – 20 mA inputs
- 4x Analog inputs
- 1x Frequency input
- 1x EasyLink data output
- 1x Programmable alarm output 500 mA
- Operating temperature range -20°C/+70°C



4.3" TFT Display

7" TFT DISPLAY

- Touch screen function
- Optical bonded mineral glass lens
- Front & rear side protection rating IPX7
- 1x NMEA 2000® connector
- 2x J1939
- 6x Analog inputs
- 2x Frequency inputs
- 2x 4 – 20 mA inputs
- 3x Digital inputs or 0 – 5 V
- 2x Alarm outputs
- 2x Video inputs
- 2x EasyLink data outputs
- 2x Programmable alarm outputs 500 mA
- Operating temperature range -20°C/+70°C



7" TFT Display

PACKAGE CONTENTS

TFT Display, bezel, silicone cover, mounting screws, connection cable, installation instructions, safety instructions

Veratron Article No.	Part No.	Voltage	Colour	Resolution
4.3"				
A2C1352150001	21123L	12-24 V	Black	480 x 272 (WQVGA)
7"				
A2C1865330001	22545V	12-24 V	Black	800 x 480 (WQVGA)

85 mm TACHOMETER

The OceanLink Tachometer automatically presents all the key data ranging from oil pressure and fuel consumption to operating hours – on a generously proportioned inverted dot matrix digital display. Besides a CAN interface with NMEA 2000® certified and SAE J1939 data protocol it features two inputs for analogue sensors. The innovative EasyLink data connection make the installation easy and cost effective. Satellite instruments for further dynamic measurement values receive updates from the central instrument every 20 ms. OceanLink is available in various designs and a number of bezel colour options. The instruments can also be conveniently integrated into customer-specific panel solutions. The Veratron Tachometer displays all important engine related data and distribute to up to sixteen 52 mm satellite gauge

- 1x NMEA 2000® input
- 1x J1939 and analogue input
- Reverse polarity protection
- Anti-fog double layer plastic lens
- Protection rating IPX7
- Operating temperature range -20°C / +70°C



85 mm tachometer 5000 rpm 85 mm tachometer 5000 rpm

PACKAGE CONTENTS

Gauge, bezel, rubber seal, spinlock, connection cable, installation instructions, safety instructions

Veratron Article No.	Part No.	Voltage	Colour	Range
Ø 85 mm				
A2C1065660001	21022E	12-24 V	Black	3000 rpm
A2C1065670001	21023G	12-24 V	White	3000 rpm
A2C1065720001	21024J	12-24 V	Black	5000 rpm
A2C1065800001	21025L	12-24 V	White	5000 rpm
A2C1065810001	21026N	12-24 V	Black	7000 rpm
A2C1065820001	21027R	12-24 V	White	7000 rpm

85 mm GPS SPEEDOMETER

The OceanLink GPS speedometer features an embedded GPS antenna, an inverted dot matrix LCD and NMEA 2000® connectivity. The LCD displays information like, heading, depth, SW temperature, STW, SOG, date & time, battery status, air temperature, engine oil pressure, fuel level, RPM, coolant temperature, transmission gear temperature, fresh water level, waste water level, trim, engine hours, rudder, booster pressure, COG. Up to 20 satellite gauges of 52 mm each, can be connected thanks to the integrated EasyLink connectivity.

- 1xJ1939 analog input
- 1x NMEA 2000® input
- Reverse polarity protection
- Front & rear side protection rating IPX7
- Operating temperature range -20°C / +70°C
- Anti-fog double layer plastic lens



85 mm GPS speedometer 0 - 35 knots / kmh / mph 85 mm GPS speedometer 0 - 14 knots / kmh / mph

PACKAGE CONTENTS

Gauge, bezel, rubber seal, spinlock, connection cable, installation instructions, safety instructions

Veratron Article No.	Part No.	Voltage	Colour	Range
Ø 85 mm				
A2C1351970001	21114K	12-24 V	Black	0 - 14 knots / kmh / mph
A2C1352010001	21117S	12-24 V	White	0 - 14 knots / kmh / mph
A2C1351980001	21115M	12-24 V	Black	0 - 35 knots / kmh / mph
A2C1352080001	21118U	12-24 V	White	0 - 35 knots / kmh / mph
A2C1351990001	21116P	12-24 V	Black	0 - 70 knots / kmh / mph
A2C1352090001	21120E	12-24 V	White	0 - 70 knots / kmh / mph

OceanLink 52 mm temperature gauges are connected directly to any OceanLink Master Unit using the patented Easy Link serial bus connection.

- AMP Superseal EasyLink
- <100 mA
- 270° pointer deflection angle
- Reverse polarity protection
- Anti-fog double layer plastic lens
- Front & rear protection rating IPX7
- Operating temperature range -20°C / +70°C

The outer scale is available also in °F



52 mm Coolant Temperature
120°C / 250°F

PACKAGE CONTENTS

Gauge, bezel, rubber seal, spinlock, installation instructions, safety instructions

Veratron Article No.	Part No.	Voltage	Colour	Range outer/inner
Coolant temperature				
A2C1065950001	21040G	12-24 V	Black	120°C / 250°F
A2C1065970001	21041J	12-24 V	White	120°C / 250°F
Engine oil temperature				
A2C1065850001	21030D	12-24 V	Black	150°C / 300°F
A2C1065860001	21031F	12-24 V	White	150°C / 300°F
Pyrometer				
A2C1349690001	21110B	12-24 V	Black	900°C / 1650°F
A2C1349710001	21112F	12-24 V	White	900°C / 1650°F

52 mm PRESSURE GAUGES

OceanLink 52 mm pressure gauges are connected directly to any OceanLink Master Unit using the patented Easy Link serial bus connection.

- AMP Superseal EasyLink
- <100 mA
- 270° pointer deflection angle
- Reverse polarity protection
- Anti-fog double layer plastic lens
- Front & rear protection rating IPX7
- Operating temperature range -20°C / +70°C

The outer scale is available also in psi

PACKAGE CONTENTS

Gauge, bezel, rubber seal, spinlock, installation instructions, safety instructions



52 mm transmission oil pressure
30 bar / 440 psi



52 mm engine oil pressure
Low / High

Veratron Article No.	Part No.	Voltage	Colour	Range outer/inner
Boost pressure				
A2C1066140001	21058C	12-24 V	Black	2 bar / 30 psi
A2C1066150001	21059E	12-24 V	White	2 bar / 30 psi
Engine oil pressure				
A2C1066000001	21044R	12-24 V	Black	10 bar / 150 psi
A2C1066010001	21045T	12-24 V	White	10 bar / 150 psi
Transmission oil pressure				
A2C1066040001	21048Z	12-24 V	Black	30 bar / 440 psi
A2C1066050001	21049B	12-24 V	White	30 bar / 440 psi

52 mm LIQUID LEVEL

OceanLink 52 mm liquid level gauges are connected directly to any OceanLink Master Unit using the patented Easy Link serial bus connection.

- AMP Superseal EasyLink
- <100 mA
- 270° pointer deflection angle
- Reverse polarity protection
- Anti-fog double layer plastic lens
- Front & rear protection rating IPX7
- Operating temperature range -20°C / +70°C



52 mm fuel level
Empty – Full



52 mm fresh water level
Empty – Full

PACKAGE CONTENTS

Gauge, bezel, rubber seal, spinlock, installation instructions, safety instructions

Veratron Article No.	Part No.	Voltage	Colour	Range
Fuel level				
A2C1065930001	21038W	12-24 V	Black	Empty - Full
A2C1065940001	21039Y	12-24 V	White	Empty - Full
Fresh water				
A2C1065910001	21036S	12-24 V	Black	Empty - Full
A2C1065920001	21037U	12-24 V	White	Empty - Full
Waste water				
A2C1065890001	21034M	12-24 V	Black	Empty - Full
A2C1065900001	21035P	12-24 V	White	Empty - Full

52 mm BATTERY STATUS

OceanLink 52 mm battery status gauges are connected directly to any OceanLink Master Unit using the patented Easy Link serial bus connection.

- AMP Superseal EasyLink connector
- <100 mA
- 270° pointer deflection angle
- Reverse polarity protection
- Anti-fog double layer plastic lens
- Front and rear protection rating IPX7
- Operating temperature range -20°C / +70°C



52 mm voltmeter
16 - 32 V

PACKAGE CONTENTS

Gauge, bezel, rubber seal, spinlock, installation instructions, safety instructions

Veratron Article No.	Part No.	Voltage	Colour	Range
Current				
A2C1349640001	21106L	12-24 V	Black	-60 / +60 A
A2C1349660001	21108R	12-24 V	White	-60 / +60 A
A2C1349650001	21107N	12-24 V	Black	-150 / +150 A
A2C1349680001	21109T	12-24 V	White	-150 / +150 A
Voltage				
A2C1066100001	21054U	12-24 V	Black	8 - 16 V
A2C1066110001	21055W	12-24 V	White	8 - 16 V
A2C1066120001	21056Y	12-24 V	Black	16 - 32 V
A2C1066130001	21057A	12-24 V	White	16 - 32 V

OceanLink 52 mm vessel status gauges are connected directly to any OceanLink Master Unit using the patented Easy Link serial bus connection.

- AMP Superseal EasyLink connector
- <100 mA
- Reverse polarity protection
- Anti-fog double layer plastic lens
- Front and rear protection rating IPX7
- Operating temperature range -20°C / +70°C



52 mm rudder angle



52 mm trim

PACKAGE CONTENTS

Gauge, bezel, rubber seal, spinlock, installation instructions, safety instructions

Veratron Article No.	Part No.	Voltage	Colour	Range
Rudder angle				
A2C1066080001	21052P	12-24 V	Black	-45° / +45°
A2C1066090001	21053S	12-24 V	White	-45° / +45°
Engine trim				
A2C1065830001	21028T	12-24 V	Black	Up / Down
A2C1065840001	21029V	12-24 V	White	Up / Down

85 MM GPS SPEED, WIND ANGLE, MAG WIND ANGLE, WIND SPEED, COMPASS, DEPTH



- Analogue indicator readable in extreme weather conditions
- Infrared electronic switch
- NMEA2000 compatible, AcquaLink compatible
- Spinlock installation method or flush mount
- Anti fog dual lens
- White and chrome bezel available as optional
- Protection grade IPX7 exposed front and IPX5 extended back
- Movement: stepper motor
- Dial scale through it illumination cold white
- Pointer with red illumination
- Nominal voltage: 12/24 V
- Operation Temperature -20°C to +70°C



- CE certifie
- NMEA2000 compatible
- EN60945-2002
- IEC 60945 Classification Exposed
- RoHS2 2002/95/CE
- Electrical Disturbance ISO7637-1/2

Veratron Article No.	Part No.	DESCRIPTION
A2C1351980001	21115M	OL 85 mm GPS Speedo 0-35 Black
A2C1957360001	22546X	OL 85 mm Depth 200 m / 600 ft Black
A2C1957380001	22547Z	OL 85 mm Compass Black
A2C1957390001	22548B	OL 85 mm Magnified Apparent Wind Angle Blac
A2C1957420001	22549D	OL 85 mm Wind speed Black
A2C1957400001	22550M	OL 85 mm Wind angle Black

FEATURES

- Input signal Veratron BUS / NMEA 2000®
- New Mast Display functionality has been implemented in all 7" AcquaLink® TFTs
- Landscape and Portrait orientation
- New Mast Pages to enhance readability
- New software update required
- Automatic detection of AcquaLink® NavBox to self configure as Mast Display
- Nominal voltage: 12 V

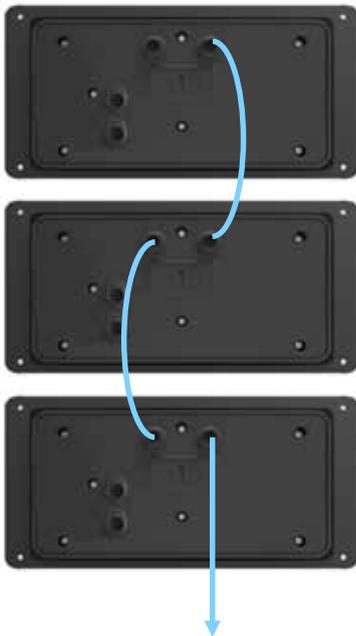
Same technical specifications as AcquaLink® 7" displays:

- High readability
- NMEA 2000® compatible
- IP67 exposed
- Touch screen with swipe function
- Operation Temperature range design for -30°C to +80°C



Triple Mast Display 7" - 23004N - 3x display, carbon bracket

Single Mast Display 7" - 23558K - 1x display, aluminum bracket



To NMEA 2000® network

INSTALLATION CONCEPT

- Minimum-sized and clean installation thanks to daisy-chain wiring concept between displays
- No "tees" are required to be hidden or taped behind the displays
- Access to NMEA 2000® network via Veratronbus to NMEA 2000® adapter cable



USER OPERATION-1

16 data available to be displayed:

- AWA
- AWS
- TWA
- TWS
- Boat speed (BSpd)
- COG
- SOG
- Heading
- Depth
- Rudder position
- Heel angle
- Battery voltage
- Velocity Made Good (VMG)
- Distance To Waypoint (DTW)
- Bearing To Waypoint (BTW)
- Easy touch-based interaction to setup the pages



USER OPERATION-2

- NavControl integration to operate the displays from remote without touch interaction
- OceanLink® 4.3 TFT can be used remotely (e.g. at helm station) to set offsets and dampings for the data
- Basic settings available on Mast display as well to quickly change backlight intensity or unity references

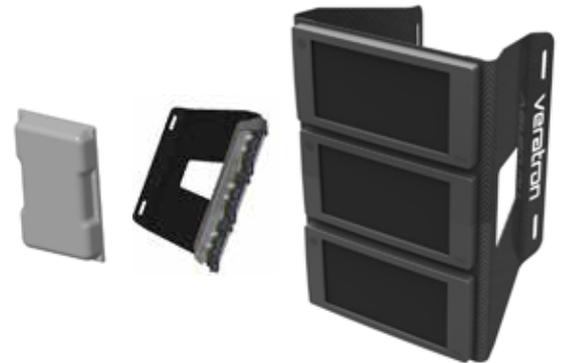


PORTRAIT ORIENTATION

- Portrait orientation also available for smaller and cost-effective installations
- Same amount of data available as per Landscape mode
- Swipe function also available for each data as well as NavControl integration

CARBON BRACKET - B00033101 - 23004N

- Elegant and efficient solution for mast installation
- Holds three 7" displays
- Rear cover available with minimum installation space thanks to the AcquaLink daisy-chain between displays



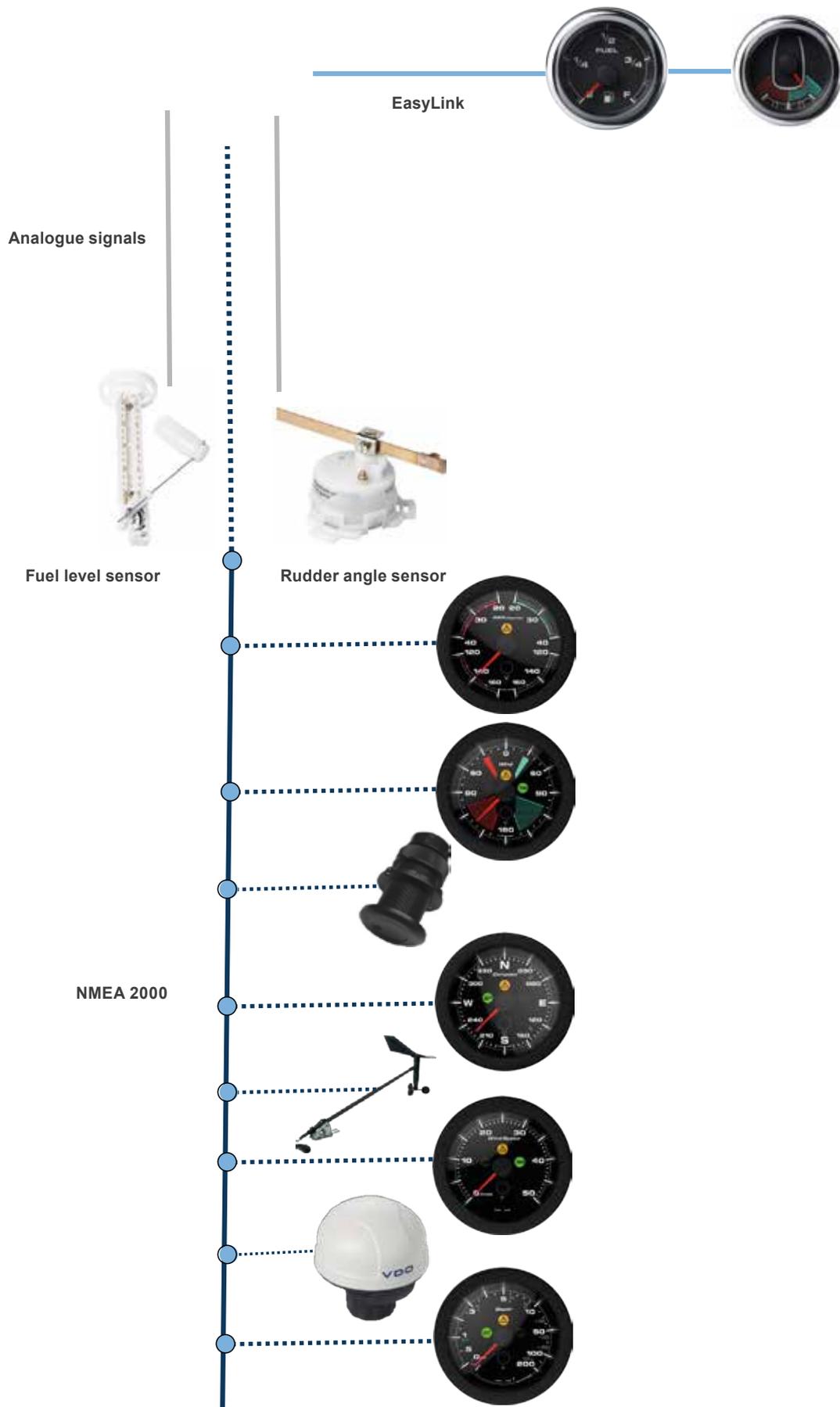
ALUMINUM BRACKET - B00044701 - 23558K

Single aluminum Bracket, 1x 7" AcquaLink™ Display with Black Bezel and Silicone Cover, NMEA 2000® Adapter Cable, Terminator, Cables

WIND PAGE

- Available for both standard AcquaLink® and Mast display mode
- 6 data fields at the corner fully configurable via integrated menu
- Rudder and Compass indication fixed on the top and the bottom side of indicator
- Amber and Blue colours available as well as Day and Night modes





The kit includes everything you need for the installation and provides all the information for a safe sailing.



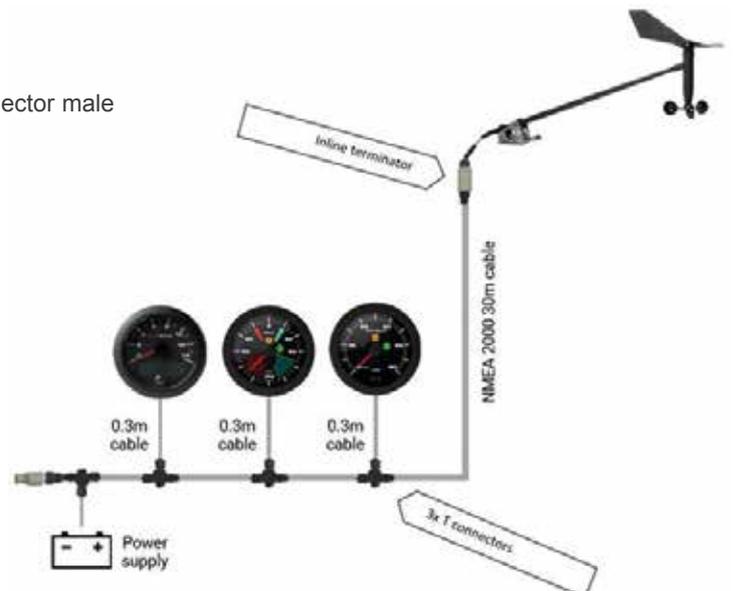
Thanks to the NMEA 2000® protocol common to all the components of the kit is possible to switch in real time the reading of direction and wind speed between real and apparent thanks to the pressure of an infrared button positioned on the instrument itself.

Thanks to the NMEA2000® and Veratron Easylink protocols it is possible to integrate the system with other instruments of the Oceanlink® series in order to have the complete monitoring of the engine, the level of the tanks and share them on the navigation instruments.

Veratron Marine Sailing KIT by Veratron AG works on low consumption, it complies with REACH, RoHS and it is produced with environmentally friendly materials

KIT COMPONENTS:

- NMEA2000® short arm wind sensor
- OceanLink® 85mm GPS Speedo 14Knots
- OceanLink® 85mm Classic wind angle
- OceanLink® 85mm Classic wind speed
- 30m NMEA2000® cable, 0.3m NMEA2000® cable
- NMEA2000® inline terminator + terminator female + infield connector male
- NMEA2000® Power cable
- User manual & safety instructions



Veratron Article No.

A2C3935310001

Part No.

22919L

UPGRADE YOUR BOAT TO THE DIGITAL WORLD

The Smart Kit is composed with an OceanLink™ 4.3" or 7" TFT Display, the new GPS module Veratron GO and all the necessary cables for installation and connection. All your data are displayed on the TFT Display.



Veratron Article No.	Part No.	VARIANTS
A2C1352150004	23608Y	Smart Kit 4.3"
A2C1865330002	23609A	Smart Kit 7"



The Veratron MediaBox features a waterproof, compact and black box design that can be mounted literally everywhere on the boat. Listen to Radio and weather forecasts with it's built in AM/FM Tuner or connect a MP3 player or smartphone via USB or Bluetooth to enjoy your favorite music. The MediaBox is NMEA 2000® certified and can be used with any compatible NMEA 2000® head unit or with the Veratron AcquaLink® or OceanLink TFT Displays. Additionally Veratron offers a free Remote App so the MediaBox can be used as a stand alone radio.

- AM/FM radio tuner with RDS - Backup memory
- Bluetooth audio player with 50 m range
- USB memory device MP3 player on smartphone
- Three band equalizer with volume control
- Power amplifie 4x 28W (D class)
- NMEA 2000® certified
- IPX5 protection rating
- Operating temperature range -20°C / +70°C
- Free Veratron Media Box App

PACKAGE CONTENTS

MediaBox, cable harness, mounting screws, installation instructions, safety instructions

MARINE SPEAKERS

- Diameter: 130 mm
- Installation depth: 50 mm
- IP55 protection rating
- Output power: 150 W



MediaBox



Speaker pair - 22566D
(to be ordered separately)

Veratron Article No.	Part No.	Voltage
A2C59501980	20200X	9-16 V

NMEA 2000® NAV SENSOR

The multifunctional AcquaLink® Nav Sensor is the gem of all sensors. The inertial sensor complements the inbuilt satellite receiver module to provide accurate readings of the speed of travel as well as the pitch & roll (up and down) and YAW (sideways) motion of the boat. Compass readings can be displayed electronically thanks to the embedded compass, which also facilitate course corrections in electronic autopilots.

The barometer and air temperature sensors are early indicators of forthcoming weather conditions.

SPECIFICATIONS

- Standard MicroC connector for NMEA 2000®
- NMEA 2000® certified
- IP65 protection rating
- GPS module: position, time, boats vector, signal quality, satellites
- Compass: +/-40° tilt angle, <2° accuracy, alarm (rapid field strength change, tilt angle averrun, undervoltage conduction)
- Barometer: air pressure, air temperature inside the sensor
- Air temperature: -20°C / +65°C
- Inertial sensor: resolution 1°/s
- YAW-range 100°/s, linearity +/-3°/s
- Acceleration range 50 m/s², linearity +/-1 m/s²
- Calculated heeling, pitch & roll-range +/-50°
- Operating temperature range -20°C / +70°C



Nav Sensor



PACKAGE CONTENTS

Nav Sensor, 2x brackets, installation instructions, safety instructions

Veratron Article No.	Part No.	Voltage
A2C59501981	20201Z	12-24 V

NMEA 2000® WIND SENSOR

The wind vane turns in the direction of the wind and steers the wind direction gauge. The wind cups records the relative wind speed which in turn is transmitted on the NMEA 2000® network.



NMEA 2000® Wind Sensor



Veratron Article No.	Part No.	Voltage
A2C59501984	20203D	12 V

The new Veratron Marine Vertical Mast Unit Wind Sensor “VMWS” is the last entry in Marine sensors portfolio. It is the result of a long experience of Veratron Marine engineering department. Technically improved for better accuracy, the wind vane turns in the direction of the wind and steers the wind direction gauge. The wind cups record the relative wind speed which in turn is transmitted on the NMEA 2000® network.



Veratron Article No.	Part No.	Voltage
A2C1029570002	23562A	12 V

NMEA 2000® FRESH AND WASTE WATER CAPACITIVE SENSORS

The new NMEA 2000® liquid level sensor, with adjustable dip, provides fresh or waste water level data which can be displayed on every NMEA 2000® enabled display.



Veratron Article No.	Part No.	Voltage	Length
B00041201	23408P	12 V	200-600 mm

NMEA 2000® TRIDUCER SENSOR



Through-hull 100 W plastic Airmar triducer provides depth, speed and sea-water temperature data. The sensor is NMEA 2000® certified and operates up to a depth of 330 feet (100 m) and frequency of 235 kHz.



Veratron Article No.	Part No.	Voltage
44-196-2-01	23564E	12 V

SUMLOG® TRANSDUCER KIT

The Sumlog® Transducer is required to measure boat speed through water. The Sumlog® includes two paddle wheels which can be exchanged to match the speed range of the boat, thereby supporting speeds from 0 to 18 or up to 50 knots respective of the installed paddle wheels. The NavBox supports up to two Sumlogs® which can be directly connected to the dedicated Sumlog® ports using a 4 pin M12 connector extension cable.



Sumlog® transducer kit

PACKAGE CONTENTS

18 knots Sumlog® transducer, additional 50 knots paddle wheels, valve, plug, 2x rubber seal, installation instructions, safety instructions

Veratron Article No.	Part No.	Voltage
A2C59501986	20204F	12-24 V

ANALOG WIND SENSOR

The legacy wind vane turns in the direction of the wind and steers the wind direction gauge. The wind cups records the relative wind speed which in turn is displayed on the wind speed gauge. Also compatible with Veratron “Standard”, “Logic” series.



Analogue wind sensor

Veratron Article No.	Part No.	Voltage
A2C59501983	600119Y	12-24 V

Image	Veratron Article No.	Part No.	Item specifics
	A2C59501965	20185E	Bezel 52 mm single, black
	A2C3979480001	21138A	Bezel 52 mm single, white
	A2C59501966	20186G	Bezel 52 mm double, black
	A2C3979510001	21139C	Bezel 52 mm double, white
	A2C59501963	20184C	Bezel 110 mm, black
	A2C3979530001	21140L	Bezel 110 mm, white
	A2C59501967	20187J	Bezel TFT 4.3", black
	A2C3983920001	21141N	Bezel TFT 4.3", white
	A2C59501968	20188L	Bezel TFT 7", black
	A2C3995200001	21643P	Bezel TFT 7", white
	A2C1156050001	21068F	Bezel NavControl, black
	A2C3997600001	21144V	Bezel NavControl, white
	A2C5205947101	20112A	Spinlock nut, 52 mm
	A2C1376090001	21928G	Spinlock nut, 85 mm
	A2C5323888101	20122D	Spinlock nut, 110 mm
	A2A59501971	20191Z	Silicone instrument cover 52 mm double
	A2C59501972	20192B	Silicone cover for 4.3" TFT Display and 110 mm gauge
	A2C59501973	20193D	Silicone cover for 7" TFT Display
	A2C59501974	20194F	Silicone cover for NavControl

OCEANLINK GAUGES ACCESSORIES

Image	Veratron Article No.	Part No.	Item specifics
	A2C5205947101	20112A	Spinlock nut, 52 mm
	A2C13760900	21125R	Spinlock nut, 85 mm
	A2C1141440001	21065Z	Round Bezel 52 mm, black
	A2C5336487001	21543K	Round Bezel 52 mm, chrome
	A2C1352110001	21121G	Round Bezel 52 mm, white
	A2C1111380001	21064X	Round Bezel 85 mm, black
	A2C1141580001	21066B	Round Bezel 85 mm, chrome
	A2C1352140001	21122J	Round Bezel 85 mm, white
	A2C1152980001	21067D	Bezel TFT 4.3", white
	A2C1083230001	21063V	Bezel TFT 4.3", black

CAN BUS ACCESSORIES - ACQUALINK® & OCEANLINK

Image	Veratron Article No.	Part No.	Item specifics
	A2C96244900	21153W	Veratron Bus to NMEA 2000® Adapter 0.3 m
	A2C96244600	21152U	Veratron Bus Cable 0.3 m
	A2C38805700	21128X	Veratron Bus Cable 2 m
	A2C96245000	21154Y	Veratron Bus Cable 5 m
	A2C96245100	21155A	Veratron Bus Cable 10 m
	A2C38805500	21127V	Veratron Bus Gender Changer
	A2C99793900	21159J	Veratron Bus Termination Resistor
	A2C39312900	21135U	NMEA 2000® Power Cable
	A2C39312700	21134S	NMEA 2000® T Splitter
	A2C96243700	21148D	NMEA 2000® Cable 0.5 m
	A2C96243800	21149F	NMEA 2000® Cable 2 m
	A2C96244000	21150P	NMEA 2000® Cable 6 m
	A2C96244200	21151S	NMEA 2000® Cable 10 m
	A2C59501950	20170R	NMEA 2000® Cable 30 m
	A2C39310600	21131K	NMEA 2000® Terminator Female
	A2C39311000	21132M	NMEA 2000® Terminator Male
	A2C39312500	21133P	NMEA 2000® Inline Terminator
	A2C39308500	21129Z	NMEA 2000® Infield Installation Connector Female
	A2C39310500	21130H	NMEA 2000® Infield Installation Connector Male
	A2C38804900	21126T	Infield Installation Connector Veratron Bus / Wind Sensor Cable
	A2C99794200	21160T	J1939 Termination Resistor, Inline J1939

U F L E X





ULTRA BLACK



ULTRA WHITE

FEATURES:

- Red or yellow perimeter-lighted black (ULTRA BLACK) or white dial (ULTRA WHITE) with bold graphics.
- Default working voltage 12/24V (except voltmeters)
- Black plastic bezel
- Double layer reinforced anti-fogging glass
- Metric and american scales.
- Plug and play installation with multi-plug socket connection design
- IP67 protection rating for the entire gauge

Ufle[®] instruments are single tested and CE marked according to the European Standards.

INSTRUMENT	HOLE SIZE mm (")	DIAL RANGE	DESCRIPTION	ULTRA BLACK PART No.	ULTRA WHITE PART No.
Tachometer/hourmeter	85 (3.35)	4000 RPM	Tachometer 4000 1/10 speed ratio*	60510JK	60534UK
	85 (3.35)	4000 RPM	Tachometer 4000 0,5/250 speed ratio**	22464VK	22449ZK
	85 (3.35)	6000 RPM	Tachometer 6000 1/10 speed ratio*	60738GK	60691KK
	85 (3.35)	6000 RPM	Tachometer 6000 0,5/250 speed ratio**	22465XK	22442JK
	85 (3.35)	8000 RPM	Tachometer 8000 1/10 speed ratio*	22466ZK	22437SK
	85 (3.35)	8000 RPM	Tachometer 8000 0,5/250 speed ratio**	22467BK	22438TK
Speedometer	85 (3.35) 85 (3.35) 85 (3.35)	35 Knots 55 Knots 65 Knots	Pitot tube provides pressure signals (not included)	22468DK 22470PK 22469FK	22439WK 22441GK 22443LK
	85 (3.35)	60 Knots GPS	GPS signal (antenna included)	22471SK	22445RK
	52 (2.05)	E - 1/2 - F	0-190 ohm	60518TK	60542UK
	52 (2.05)	E - 1/2 - F	0-190 ohm	60520LK	60544WK
Holding tank level gauge	52 (2.05)	E - 1/2 - F	240-33 ohm	22463TK	22430BK
Oil pressure gauge	52 (2.05) 52 (2.05)	0 - 5 bar 0 - 10 bar	Pressure sensors provide signals (not included)	60521MK 60522NK	60545XK 60546YK
	52 (2.05)	0 - 800°C	Exhaust temperature sensor provides signal (not included)	22475AK	22447VK
Clock	52 (2.05)	-	Analog	60531RK	60539BK
Ammeter	52 (2.05)	± 80 A	Matched with 100 A current shunt unit (included)	22472WK	22431DK
Water temperature gauge	52 (2.05)	40 - 120 °C	Temperature sensor provides signals (not included)	60526RK	60550UK
Hourmeter	52 (2.05)	0 - 99999 hours	-	60530QK	60554YK
Trim gauge	52 (2.05) 52 (2.05)	160-10 ohm 0-190 ohm	Requires sending unit on outboard or sterndrive (check resistance values)	22474YK 22475MK	22432FK 22433HK
	85 (3.35)	Port-Starboard	Indicates relative position of rudder	60699UK	60700QK
Voltmeter	52 (2.05) 52 (2.05)	8-16 Volt 18-32 Volt	For all 12 Volt electrical system For all 24 Volt electrical system	60529WK 60741ZK	60553XK 60742AK

*** SPEED RATIO SETTING 1/10**

Common setup on boat engines

OUTBOARD				INBOARD & GAS ENGINE				
POLES	SPEED RATIO			CYLINDER	CYCLE	SPEED RATIO		
	4000 RPM	6000 RPM	8000 RPM			4000 RPM	6000 RPM	8000 RPM
4	1.3	2.0	2.6	4	4	1.3	2.0	2.6
6	2.0	3.0	4.0	6	4	2.0	3.0	4.0
8	2.7	4.0	5.3	8	4	2.7	4.0	5.3
10	3.3	5.0	6.6	10	4	3.3	5.0	6.6
12	4.0	6.0	8.0					



**** SPEED RATIO SETTING 0,5/250 TO 25.0 EXAMPLE**





ULTRA BLACK SS



ULTRA WHITE SS

FEATURES:

- Red or yellow perimeter-lighted black (ULTRABLACK SS) or white dial (ULTRAWHITE SS) with bold graphics.
- Default working voltage 12/24V (except voltmeters)
- 316 stainless steel bezel with convex glass
- Double layer reinforced anti-fogging glass
- Metric and american scales.
- Plug and play installation with multi-plug socket connection design
- IP67 protection rating for the entire gauge

Ufle[®] instruments are single tested and CE marked according to the European Standards.

INSTRUMENT	HOLE SIZE mm (")	DIAL RANGE	DESCRIPTION	U-BLACK SS PART No.	U-WHITE SS PART No.	
Tachometer/hourmeter	85 (3.35)	4000 RPM	Tachometer 4000 1/10 speed ratio*	22481VK	62005LK	
	85 (3.35)	4000 RPM	Tachometer 4000 0,5/250 speed ratio**	22482XK	22450HK	
	85 (3.35)	6000 RPM	Tachometer 6000 1/10 speed ratio*	22483ZK	62004JK	
	85 (3.35)	6000 RPM	Tachometer 6000 0,5/250 speed ratio**	22484BK	22451KK	
	85 (3.35)	8000 RPM	Tachometer 8000 1/10 speed ratio*	22485DK	22452MK	
	85 (3.35)	8000 RPM	Tachometer 8000 0,5/250 speed ratio**	22486FK	22453PK	
Speedometer	85 (3.35) 85 (3.35) 85 (3.35)	35 Knots 55 Knots 65 Knots	Pitot tube provides pressure signals (not included)	22487HK 22489MK 22488KK	22454SK 22456WK 22455UK	
	85 (3.35)	60 Knots GPS	GPS signal (antenna included)	22490WK	22457YK	
	Fuel level gauge	52 (2.05)	E - 1/2 - F	0-190 ohm	22476BK	62014MK
	Water level gauge	52 (2.05)	E - 1/2 - F	0-190 ohm	22477EK	62018WK
Holding tank level gauge	52 (2.05)	E - 1/2 - F	240-33 ohm	22478GK	22462RK	
Oil pressure gauge	52 (2.05) 52 (2.05)	0 - 5 bar 0 - 10 bar	Pressure sensors provide signals (not included)	22479JK 22480TK	62016SK 62017UK	
Exhaust temperature gauge	52 (2.05)	0 - 800°C	Exhaust temperature sensor provides signal (not included)	22491YK	22458AK	
Clock	52 (2.05)	-	Analog	22492AK	62013KK	
Ammeter	52 (2.05)	± 80 A	Matched with 100 A current shunt unit (included)	22493CK	22459CK	
Water temperature gauge	52 (2.05)	40 - 120 °C	Temperature sensor provides signals (not included)	22494EK	62024RK	
Hourmeter	52 (2.05)	0 - 99999 hours	-	22495GK	62015PK	
Trim gauge	52 (2.05) 52 (2.05)	160-10 ohm 0-190 ohm	Requires sending unit on outboard or sterndrive (check resistance values)	22496JK 22497LK	22460LK 22461NK	
Rudder angle indicator	85 (3.35)	Port-Starboard	Indicates relative position of rudder	22498NK	62027XK	
Voltmeter	52 (2.05) 52 (2.05)	8-16 Volt 18-32 Volt	For all 12 Volt electrical system For all 24 Volt electrical system	22499RK 22500WK	62022LK 62023NK	

*** SPEED RATIO SETTING 1/10**

Common setup on boat engines

OUTBOARD				INBOARD & GAS ENGINE				
POLES	SPEED RATIO			CYLINDER	CYCLE	SPEED RATIO		
	4000 RPM	6000 RPM	8000 RPM			4000 RPM	6000 RPM	8000 RPM
4	1.3	2.0	2.6	4	4	1.3	2.0	2.6
6	2.0	3.0	4.0	6	4	2.0	3.0	4.0
8	2.7	4.0	5.3	8	4	2.7	4.0	5.3
10	3.3	5.0	6.6	10	4	3.3	5.0	6.6
12	4.0	6.0	8.0					



**** SPEED RATIO SETTING 0,5/250 TO 25.0 EXAMPLE**





DRESS WHITE

FEATURES:

- Red or yellow perimeter-lighted white dial with bold black graphics.
- Default working voltage 12/24V (except voltmeters)
- White plastic bezel
- Double layer reinforced anti-fogging glass
- Metric and american scales
- Plug and play installation with multi-plug socket connection design
- IP67 protection rating for the entire gauge

Ufle[®] instruments are single tested and CE marked according to the European Standards.

REPLACEMENT PLASTIC BEZEL Ø 52 MM - 85 MM

Black bezel 52 mm - 22535SK
 White bezel 52 mm - 22514HK
 Silver bezel 52 mm - 22536UK

Black bezel 85 mm - 68028GK
 White bezel 85 mm - 68029JK
 Silver bezel 85 mm - 68030OK



Replacement bezels Ø 52 mm



Replacement bezels Ø 85 mm

RESISTANCE RESISTOR

This product can perfectly connect two equipments whose signals didn't match.

If E-F end short circuit:

Input 240-33 ohm - Output 0-190 ohm

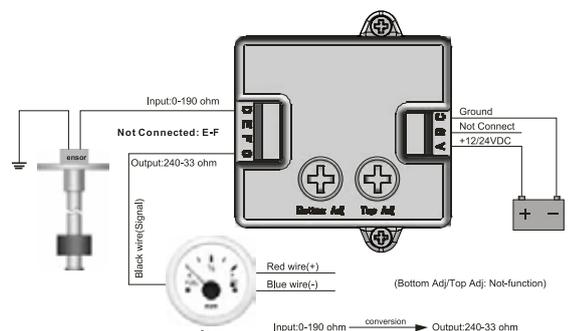
If E-F end off:

Input 0-190 ohm - Output 240-33 ohm



RESISTANCE RESISTOR - 22537WK

Please note the connection of E-F



INSTRUMENT	HOLE SIZE mm (")	DIAL RANGE	DESCRIPTION	DRESS WHITE PART No.
Tachometer/hourmeter	85 (3.35)	4000 RPM	Tachometer 4000 1/10 speed ratio*	62658KK
	85 (3.35)	4000 RPM	Tachometer 4000 0,5/250 speed ratio**	22502AK
	85 (3.35)	6000 RPM	Tachometer 6000 1/10 speed ratio*	62656FK
	85 (3.35)	6000 RPM	Tachometer 6000 0,5/250 speed ratio**	22503CK
	85 (3.35)	8000 RPM	Tachometer 8000 1/10 speed ratio*	22504EK
	85 (3.35)	8000 RPM	Tachometer 8000 0,5/250 speed ratio**	22505GK
Speedometer	85 (3.35)	35 Knots	Pitot tube provides pressure signals (not included)	22506JK
	85 (3.35)	55 Knots		22508NK
	85 (3.35)	65 Knots		22507LK
	85 (3.35)	60 Knots GPS	GPS signal (antenna included)	22509RK
Fuel level gauge	52 (2.05)	E - 1/2 - F	0-190 ohm	62664EK
Water level gauge	52 (2.05)	E - 1/2 - F	0-190 ohm	62665GK
Holding tank level gauge	52 (2.05)	E - 1/2 - F	240-33 ohm	22501YK
Oil pressure gauge	52 (2.05)	0 - 5 bar	Pressure sensors provide signals (not included)	62666JK
	52 (2.05)	0 - 10 bar		62667LK
Exhaust temperature gauge	52 (2.05)	0 - 800°C	Exhaust temperature sensor provides signal (not included)	22510ZK
Clock	52 (2.05)	-	Analog	62676MK
Ammeter	52 (2.05)	± 80 A	Matched with 100 A current shunt unit (included)	22511BK
Water temperature gauge	52 (2.05)	40 - 120 °C	Temperature sensor provides signals (not included)	62669RK
Hourmeter	52 (2.05)	0 - 99999 hours	-	62672DK
Trim gauge	52 (2.05)	160-10 ohm	Requires sending unit on outboard or sterndrive (check resistance values)	22512DK
	52 (2.05)	0-190 ohm		22513FK
Rudder angle indicator	85 (3.35)	Port-Starboard	Indicates relative position of rudder	62678SK
Voltmeter	52 (2.05)	8-16 Volt	For all 12 Volt electrical system For all 24 Volt electrical system	62670ZK
	52 (2.05)	18-32 Volt		62671BK

*** SPEED RATIO SETTING 1/10**

Common setup on boat engines

OUTBOARD				INBOARD & GAS ENGINE				
POLES	SPEED RATIO			CYLINDER	CYCLE	SPEED RATIO		
	4000 RPM	6000 RPM	8000 RPM			4000 RPM	6000 RPM	8000 RPM
4	1.3	2.0	2.6	4	4	1.3	2.0	2.6
6	2.0	3.0	4.0	6	4	2.0	3.0	4.0
8	2.7	4.0	5.3	8	4	2.7	4.0	5.3
10	3.3	5.0	6.6	10	4	3.3	5.0	6.6
12	4.0	6.0	8.0					

H-0040 H

**** SPEED RATIO SETTING 0,5/250 TO 25.0 EXAMPLE**

H-0250 H

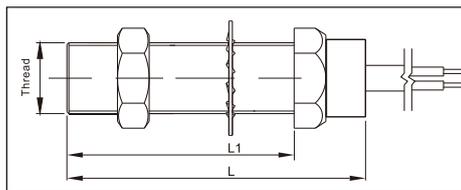
SENDERS AND ACCESSORIES



TYPE	SCALE	DESCRIPTION	PART No.
Diesel tachometer sender	-	Attaches to diesel sender mechanical take-off. Includes coupling and 4 drive keys	60613S
Oil pressure sender	5 bar 10 bar	Single station, 1/8" NPTF Single station, 1/8" NPTF	60525QK 60360NK
Water temperature sender	40 - 120 °C	Single station, 1/8" NPTF	60528VK
Bushing kit	Temperature and pressure senders	1/8" NPTF - M10x1 1/8" NPTF - M12x1 1/8" NPTF - M16x1.5 1/8" NPTF to 1/4" - 3/8" 1/8" NPTF to 1/2" - 5/8" 1/8" NPTF to 1/8" BSP/F	60618Z 60619A 60620R 60615U 60616V 60617W
Exhaust temperature sender	0 - 800 °C	Stainless steel 316 sender, thread: PT 3/8", supplied with 5 m sleeving cable	22533MK
Fuel level sender	20 - 60 cm (7.9" - 23.6")	Single station 10 -180 Ω	66180C
Pitot kits	-	Pitot tube complete with transom mount mounting hardware As above complete with 20' of tubing	60515OK 60516 PK
Rudder angle sender	-	Sender for single rudder angle indicator	68451UK



NOTE: SINGLE SENDER: to connect to 1 gauge DOUBLE SENDER: to connect to 2 gauges



MOD.	DESCRIPTION	L mm	L1 mm	THREAD	OUTPUT SIGNAL	FREQUENCY RANGE	CONNECTION	PART No.
KE10010	Magnetolectric tacho sender	100	80	M16x1.5	Sine wave	100-15000 Hz	Two wires	22531HK
KE10004	Holzer tacho sender	80	70	M16x1.5	Square wave	0-20000 Hz	Three wires	22532KK

FUEL LEVEL KIT

66234Z

Fuel level Ultra Black Series gauge complete with sender 20 - 60 cm (7.9" - 23.6")

66235B

Fuel level Ultra White Series gauge complete with sender 20 - 60 cm (7.9" - 23.6")



US3H - HOLDING TANK SENDERS

- Stainless steel
- Resistance rating: 240 Ohm (empty) – 33 Ohm (full)
- Threaded mounting flange

LENGTH	MODEL	PART No.
100 mm (3.9")	US3H-1	20602U
205 mm (8.0")	US3H-2	20603W
305 mm (12.0)	US3H-3	20604Y
410 mm (16.1")	US3H-4	20605A
510 mm (20.1)	US3H-5	21717T

HFL - 64719P - 1 1/4" Spare or adapting flange - NPT threads



HFL

US3H

US5 and US3 - FUEL/WATER SENDERS



- Stainless steel senders
- SAE 5-hole mounting flange or threaded mounting flange
- Resistance rating: 0 Ohm (empty) - 180 Ohm (full)
- S5 and S3 senders interface all Uflex fuel and water level indicators



US5

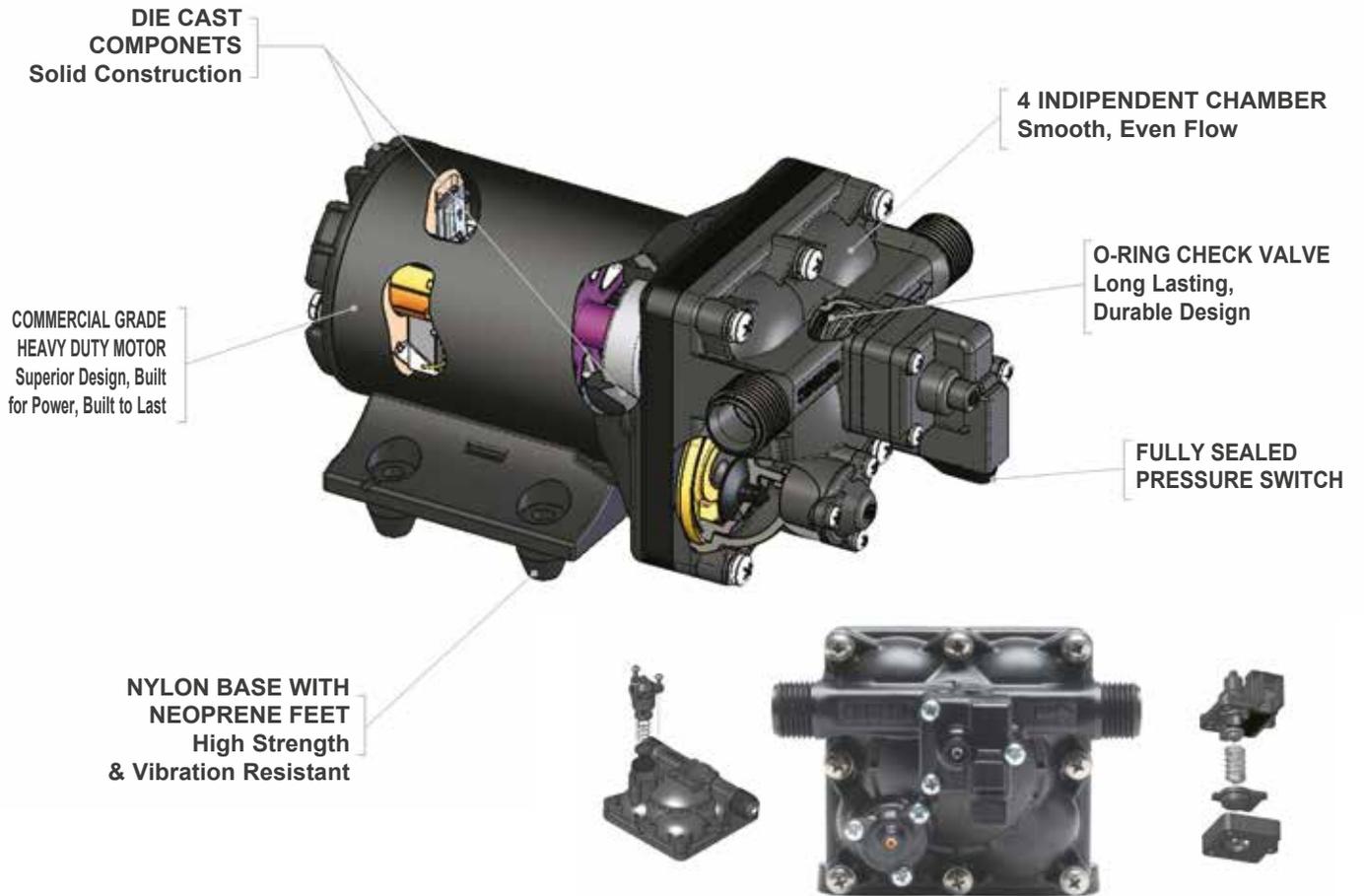
LENGTH	US5 EUROPEAN RESISTANCE 5 HOLE FLANGE		US5 AMERICAN RESISTANCE 5 HOLE FLANGE		US3 EUROPEAN RESISTANCE THREAD FLANGE	
	MODEL	PART No.	MODEL	PART No.	MODEL	PART No.
100 mm (5.9")	US5-E100	23522M	-	-	-	-
150 mm (5.9")	US5-E150	20606C	-	-	-	-
175 mm (6.9")	US5-E175	20607E	US5-A175	20625G	-	-
200 mm (7.9")	US5-E200	20608G	US5-A200	20626J	-	-
225 mm (8.9")	US5-E225	20609J	-	-	-	-
250 mm (9.8")	US5-E250	20610T	US5-A250	20627L	US3-E250	21745Y
275 mm (10.8")	US5-E275	20611V	US5-A275	20628N	-	-
300 mm (11.8")	US5-E300	20612X	US5-A300	20629R	US3-E300	20634H
350 mm (13.8")	US5-E350	20613Z	US5-A350	20630Z	US3-E350	20635K
400 mm (15.7")	US5-E400	20614B	US5-A400	20632D	US3-E400	20636M
450 mm (17.7")	US5-E450	20615D	US5-A450	21634N	US3-E450	20637P
500 mm (19.7")	US5-E500	20616F	US5-A500	20633F	US3-E500	20638S
550 mm (21.7")	US5-E550	20617H	-	-	US3-E550	20639U
600 mm (23.6")	US5-E600	20618K	-	-	US3-E600	20640C
650 mm (25.6")	US5-E650	20619M	-	-	-	-
700 mm (27.6")	US5-E700	20620W	-	-	-	-
750 mm (29.5")	US5-E750	20621Y	US5-A750	65181Z	-	-
800 mm (31.5")	US5-E800	20622A	-	-	US3-E800	65631E
850 mm (33.5")	US5-E850	20623C	-	-	-	-
900 mm (35.4")	US5-E900	20624E	-	-	-	-
1400 mm (55.1")	-	-	-	-	US3-E1400	20370Z
1500 mm (59.1")	US5-E1500	62501Z	-	-	-	-
2000 mm (78.7")	-	-	-	-	US3-E2000	20371B

FL-2 - 68417U - Adapter flange for SAE3 threaded head senders to 5 holes SAE5 flang

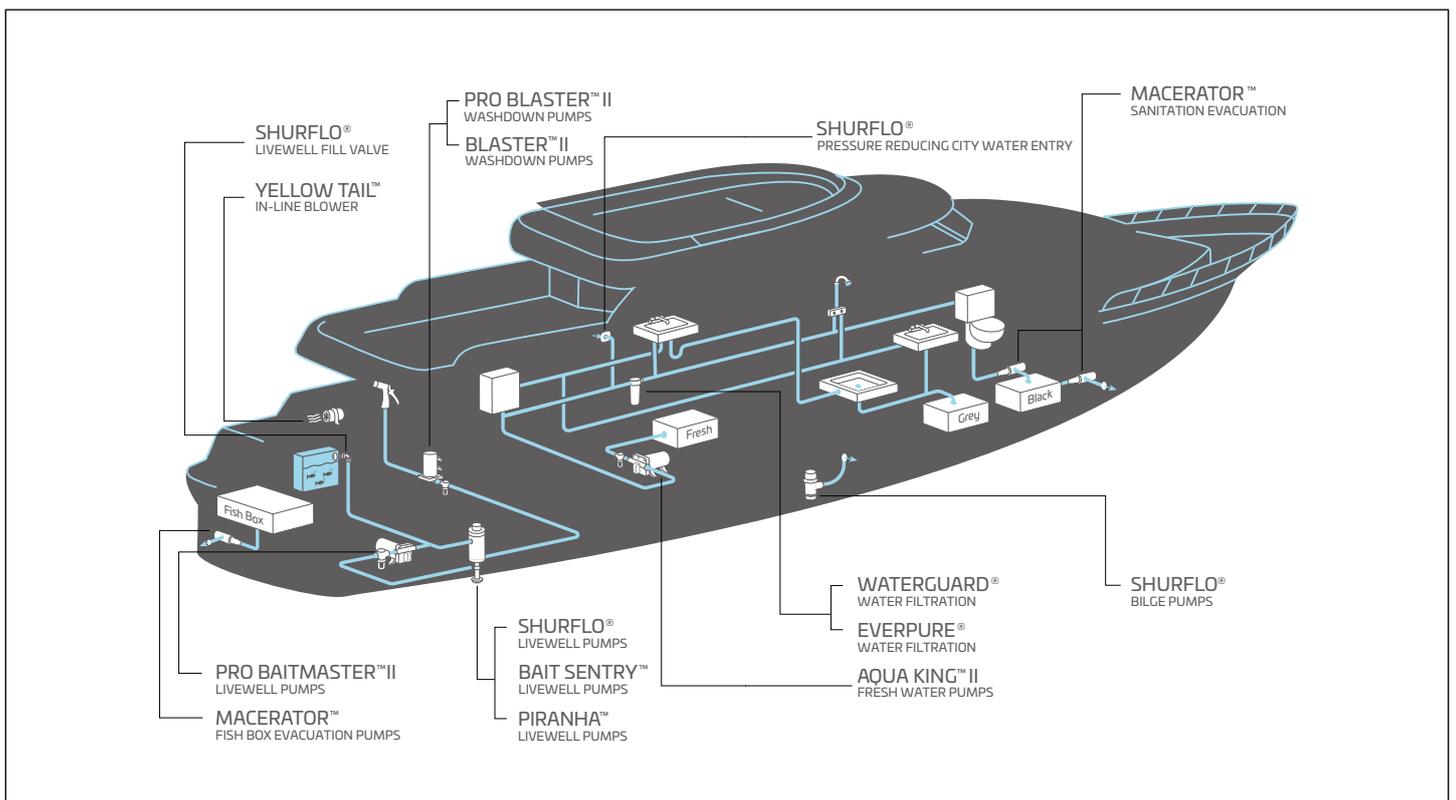


PENTAIR SHURFLO®





SHURFLO MARINE PLUMBING SYSTEM





SLV



Aqua King™ II Junior 2.0

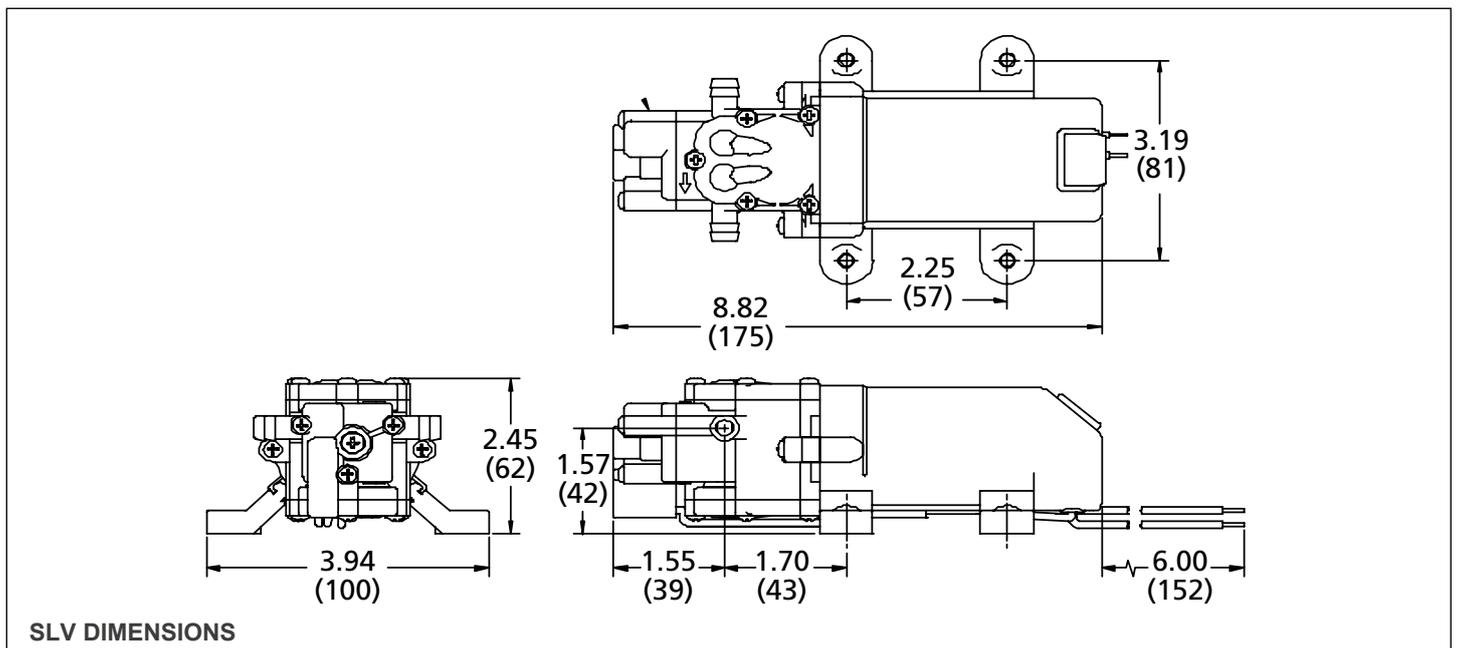


Aqua King™ II Standard 3.0

The Next Generation SHURflo® pumps guarantee quiet operation and smooth performance while providing the ultimate in durability and reliability. These automatic water pumps are self priming with a three-chamber design to lift water up to 8ft (2,4 m).

- Run dry capability
- Built-in check valve prevents backflow into the tank
- Sealed switch
- Corrosion resistant seamless e-coated motor
- Thermally Protected. Ignition Protected
- CE marked

MODEL	PART No.	VOLT	FLOW RATE	DIMENSIONS mm (")	SHUT-OFF PRESSURE	AMP MAX
SLV	68851L	12V DC	1.0 GPM - 3,8 l/min	170x100x60 (6.7x3.9x2.5)	30 PSI - 2,0 Bar	2,5
Aqua King™ II Junior	69590P	12V DC	2.0 GPM - 7,6 l/min	208x124x105 (8.2x4.9x4.1)	30 PSI - 2,0 Bar	3,5
Aqua King™ II Standard 12V	69591S	12V DC	3.0 GPM - 11,35 l/min	208x124x105 (8.2x4.9x4.1)	45 PSI - 3,1 Bar	6,5
Aqua King™ II Standard 24V	69592U	24V DC	3.0 GPM - 11,35 l/min	208x124x105 (8.2x4.9x4.1)	45 PSI - 3,1 Bar	3,8



AQUA KING™ II SERIES PREMIUM 4.0

The Aqua King™ II Premium Series 4.0 fresh water pump design was created with unique over-molded single-piece diaphragm and internal by-pass, assuring long life and top performance in all plumbing systems. These pumps are constructed for high flow demand, smooth flow and no rapid cycling.

The Series 4.0 fresh water automatic demand pumps are quiet, thermally protected and can run dry without damage.

- Sealed switch
- Sealed motor
- Corrosion resistant electro coated motor
- 4 independent chambers
- Built-in check valve
- Co-molded diaphragm
- Adjustable switch and by-bass
- Self-priming up to 6 ft (1,8 m)
- Dry run capability
- Thermally protected
- CE marked – Ignition protected



Aqua King™ II Premium 4.0

MODEL	PART No.	VOLT	DIMENSIONS mm (")	FLOW RATE	AMP MAX	SHUT-OFF PRESSURE
Aqua King™ II Premium 4.0 12V	68806F	12V	254x127x120 (10x5x4.75)	4.0 GPM – 15,1 l/min	10	55 PSI – 3,8 Bar
Aqua King™ II Premium 4.0 24V	68850J	24V	254x127x120 (10x5x4.75)	4.0 GPM – 15,1 l/min	5	55 PSI – 3,8 Bar

AQUA KING™ II SERIES SUPREME 5.0

The Aqua King™ II Supreme Series 5.0 fresh water pump design was created with unique over-molded single-piece diaphragm and internal by-pass, assuring long life and top performance in all plumbing systems. These pumps are constructed for high flow demand, smooth flow and no rapid cycling.

The Series 5.0 fresh water automatic demand pumps are quiet, thermally protected and can run dry without damage.

- Sealed switch
- Sealed motor
- Corrosion resistant electro coated motor
- 4 independent chambers
- Built-in check valve
- Co-molded diaphragm
- Adjustable switch and by-bass
- Self-priming up to 6 ft (1,8 m)
- Dry run capability
- Thermally protected
- CE marked – Ignition protected



Aqua King™ II Supreme 5.0

MODEL	PART No.	VOLT	DIMENSIONS mm (")	FLOW RATE	AMP MAX	SHUT-OFF PRESSURE
Aqua King™ II Supreme 5.0 12V	68804B	12V	254x127x120 (10x5x4.75)	5.0 GPM - 18,9 l/min	13	55 PSI - 3,8 Bar
Aqua King™ II Supreme 5.0 24V	68805D	24V	254x127x120 (10x5x4.75)	5.0 GPM - 18,9 l/min	7	55 PSI - 3,8 Bar

THE washdown kit includes everything you need for tough washdown applications all in one box. The kit includes the Next Generation ProBlaster™ Pump, Fittings, Blaster™ Nozzle, Raw Water Strainer and a 7,6 m (25') coiled hose.

- CE marked



Washdown kit™ II Deluxe 4.0

MODEL	PART No.	VOLT	DIMENSIONS mm (")	FLOW RATE	AMP MAX	HUT-OFF PRESSURE
Washdown Kit™	69194F	12V DC	210x136x127 (8.3x5.3x5.0)	4.0 GPM - 15,1 l/min	10	45 PSI - 3,1 Bar

MACERATOR PUMPS

Designed specifically for sanitation waste and fish box evacuations, SHURflo's Macerator pump features a premium impeller design.

- Run dry capability
- Self Priming
- SHURflo's unique dual blade and housing construction ensures problem free pumping
- Thermally Protected. Ignition Protected
- CE marked
- Impeller for Macerator pump: 63432M



Macerator

MODEL	PART No.	VOLT	DIMENSIONS mm (")	FLOW RATE	AMP MAX	PORT SIZE
Macerator 12V	62767R	12V DC	274x97x114 (10.8x3.8x4.5)	13 GPM - 50 l/min	14	inlet: 1.5" barb / 1,5 NPT outlet: 1" barb
Macerator 24V	62768T	24V DC	274x97x114 (10.8x3.8x4.5)	13 GPM - 50 l/min	8	inlet: 1.5" barb / 1,5 NPT outlet: 1" barb

HORIZONTAL MACERATOR PUMP WITH BLACK WATER TANK KIT

Kit is sold with pump already mounted and ready for installation. Compatible with all manual and electric wc.

- Electric soaker 12 V or 24 V
- 3 kind of tank available: 40 l, 60 l and 70 l
- 1" 1/2 + 3/4" loading female threads
- 3/4" vent female threads
- 1" 1/2 manual emergency drain female threads
- Housing for fastening hooks
- Shut off valve for soaker drainage in case of maintenance
- 5-hole flange for level sensor (sensor to order separately)
- Protection for sensor level
- Complying with ISO 8099



MODEL	PART No. 12V	PART No. 24V	CAPACITY	DIMENSIONS mm (") WxHxd	DRY WEIGHT kg (lbs)
KITMCT-40	20915S	20918Y	40 l	500 x 300 x 390 (19.7 x 11.8 x 15.3)	4,5 (9.9)
KITMCT-60	20916U	20919A	60 l	645 x 300 x 390 (25.4 x 11.8 x 15.3)	5,5 (12.1)
KITMCT-70	20914P	20917W	70 l	800 x 300 x 390 (31.5 x 11.8 x 15.3)	6,5 (14.3)

Perfect for tough washdown applications, such as fish box, scaling and anchor chain cleaning, these rugged self-priming pumps deliver high lift, can run dry without damage, and won't overheat with extended use.

- Run dry capability
- Sealed switch
- Corrosion resistant seamless e-coated motor
- Thermally Protected. Ignition Protected
- CE marked



Blaster II 12 V™
Blaster II 24 V™

MODEL	PART No.	VOLT	DIMENSIONS mm (")	FLOW RATE	AMP MAX	SHUT-OFF PRESSURE
Blaster II™ 12V	69437F	12V DC	229x124x104 (9.0x4.9x4.1)	3.5 GPM - 13,2 l/min	7,5	45 PSI - 3,1 Bar
Blaster II™ 24V	69436D	24V DC	229x124x104 (9.0x4.9x4.1)	3.5 GPM - 13,2 l/min	3,5	45 PSI - 3,1 Bar

DELUXE AND ULTIMATE PROBLASTER™ II WASHDOWN PUMPS

Deluxe and Ultimate ProBlaster™ II deliver over 5 GPM (20 l/min) and pressure up to 45 PSI (3,1 Bar), giving you the ultimate in washdown capabilities. This high volume pump will clean your deck quickly and easily. The corrosion resistant coated seamless motor shell with sealed switch provides excellent protection against the harsh marine environment. The Extreme™ Pro Blaster™ is designed for the toughest washdown applications.

- Compact 4 chamber design
- Superior five-chamber design that incorporates large inlet and outlet passages to maximize water flow and efficiency
- Current limiting and over/under voltage protection
- Run dry capability
- Self Priming
- Sealed switch
- Corrosion resistant seamless e-coated motor with o-ring sealed end bells
- Quick-Connect fittings included
- Thermally Protected. Ignition Protected
- CE marked



Problaster™ II Deluxe 4.0
Problaster™ II Ultimate 5.0

MODEL	PART No.	VOLT	DIMENSIONS mm (")	FLOW RATE	AMP MAX	SHUT-OFF PRESSURE
Problaster™ II – Deluxe 4.0	68803Z	12V DC	254.48x124.97x121.16 (10.02x4.92x4.77)	4.0 GPM – 15.1 l/min	8.8	45 PSI – 3.1 Bar
Problaster™ II – Deluxe 4.0	69202B	24V DC	254.48x124.97x121.16 (10.02x4.92x4.77)	4.0 GPM – 15.1 l/min	5	45 PSI – 3.1 Bar
Problaster™ II – Ultimate 5.0	68802X	12V DC	254.48x124.97x121.16 (10.02x4.92x4.77)	5.0 GPM – 18.9 l/min	11.5	45 PSI – 3.1 Bar
Problaster™ II – Ultimate 5.0	68801V	24V DC	254.48x124.97x121.16 (10.02x4.92x4.77)	5.0 GPM – 18.9 l/min	6	45 PSI – 3.1 Bar

PRE-PRESSURIZED ACCUMULATOR TANK

Reduces cycling pulsation and pressure spikes, increases the life of your pump and even saves battery power. SHURfl[®] accumulator tank is NSF certified.

- Easy handles pressure requirements from 1,4 Bar (20 PSI) to 8,8 Bar (125 PSI)
- 1/2" male threaded Ports - Uses standard SHURfl[®] fitting
- Can be mounted in-line
- Nylon housing/Butyl Bladder
- CE marked



Nylon Tank

MODEL	PART No.	DIMENSIONS mm (")	TOTAL VOLUME	MAXIMUM PSI - BAR	PRECHARGED
Nylon Tank	65861Y	232x121x97 (9.1x4.8x3.8)	24 oz - 0,7 litres	125 PSI - 8,8 Bar	20 PSI - 1,4 Bar

OIL CHANGE, WINTERIZING AND LIQUID TRANSFER SYSTEM

- 13 litres (3,5 gal) storage container – 2,4 m (8') cable with battery clips and hose kit included
- Reversible switch
- Motor : 12V DC permanent magnet, continuous duty
- Self Priming up to 1,82 m (6')
- Thermal overload protection
- CE marked



20975 L

MODEL	PART No.	DIMENSIONS mm (")	FLOW RATE	AMP MAX	PORT SIZE
Oil Change System	20975L	406x318 (16.0x12.5)	1.5 GPM - 5,6 l/min	4,5	3/8" F NPT

PRESSURE REGULATED CITY WATER ENTRIES

An exclusive diaphragm design prevents high-pressure damage often caused by city water systems. Leak-tight, stress and crack-resistant, these high-performance water entries limit water pressure safely to 50 or 65 PSI (3.5 or 4.5 Bar) while meeting or surpassing all check valve code requirements

- 63378J** - Wall mount Pressure regulator - Chrome
- 64717K** - Wall mount Pressure regulator - White
- 65306T** - Hose Adapter fitting 1/2" NPT (F) x 3/4" GSH (M)
- 20731F** - In-Line Pressure regulator



63378J



65306T



20731F



64717K

STRAINERS AND ACCESSORIES

MODEL	PART No.	DESCRIPTION	FITTINGS
In-Line Strainer	63185X	Protects pumps from harmful debris. High capacity, rugged nylon housing, slide out easy to clean screen.	1/2" (13 mm) female
Swivel nut strainer	66526N	Protects pumps from harmful debris. High capacity, rugged nylon housing, slide out easy to clean screen.	1/2" (13 mm) barb inlet
In-line check valve	61125F	Allows flow in one direction only to safeguard against backsurge up to 6,8 Bar (1000 PSI)	1/2" (13 mm) barb inlet
High Pressure Blaster Nozzle	61120A	High impact plastic for long life. Use with SHURflo® pumps or garden hose. Adjust to fine mist or full stream. Lock clip for continuous spray.	3/4" (19 mm) female



63185X



66526N



61125F



61120A

NOTE: The images are purely for information. They may not represent the real product features such as dimensions, colours or accessories.

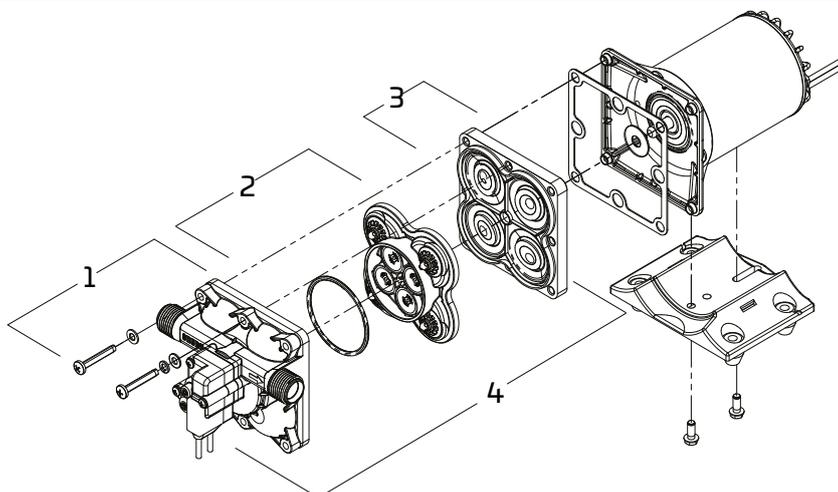
FITTINGS

MODEL	PART No.
Straight fitting 1/2" NPT (f) x 3/8" barb swive	61129L
Elbow fitting 1/2" NPT (f) x 3/8" barb swive	61130C
Straight fitting 1/2" NPT (f) x 1/2" barb swive	61127H
Elbow fitting 1/2" NPT (f) x 1/2" barb swive	61128K
Straight fitting 1/2" NPT (f) x 3/4" barb swive	64220B
Elbow fitting 1/2" NPT (f) x 3/4" barb swive	64340M
Straight adaptor 1/2" NPT (m) x 1/2"	61132E



61128K

SPARE PARTS



- 1 Headpump and switch kit
- 2 Valve kit
- 3 Diaphragm kit
- 4 Complete headpump

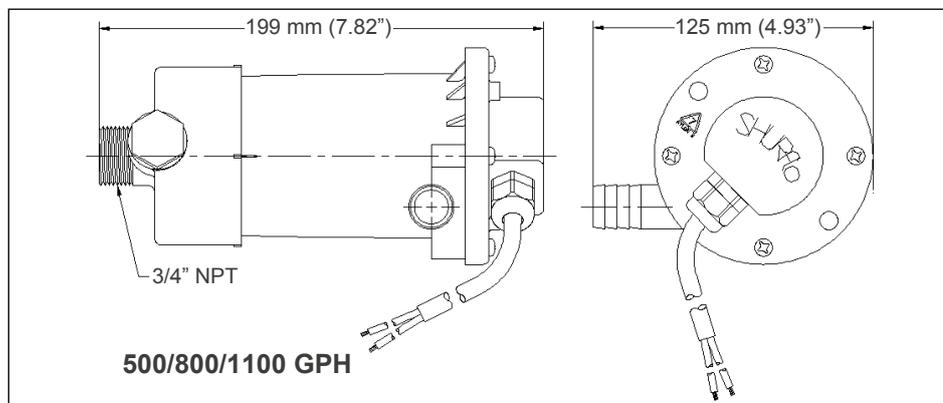
For any further information please contact our Assistance Service.

The sportsfishing livewell application requires an extremely rugged pump to withstand the harsh marine environment. Shurflo®'s Bait Sentry™ is designed for easy installation and trouble-free operation. Magnetic drive technology eliminates unnecessary failures. Anti-airlock feature allows pump to clear trapped air in rough water or when boat is anchored. Dual ports allow for easy washdown pump connections.

- Voltage: 12 VDC
- Magnetic drive
- Continuous duty
- No seals to leak, can run dry continuously
- Anti-airlock feature will clear trapped air even in rough water
- Second inlet port for washdown pump, requires one thru-hull fitting for two pumps
- UL & CE listed



500/800 GPH



500/800/1100 GPH



1100 GPH

MODEL	PART No.	PORT SIZE	FLOW RATE	AMP MAX	TANK SIZE
Bait Sentry™ 500	23377F	3/4" inlet NPT 3/4" outlet barb	1893 LPH (500 GPH)	1.75	113 l (30 gal)
Bait Sentry™ 800	68828S	3/4" inlet NPT 3/4" outlet barb	3028 LPH (800 GPH)	3.5	151 l (40 gal)
Bait Sentry™ 1100	67731V	3/4" inlet NPT 1-1/8" outlet barb	4164 LPH (1100 GPH)	3.75	227 l (60 gal)

LIVWELL FILL VALVE

The Shurflo® Livewell Fill Valve creates an energized environment that “keeps your bait alive.” The full port fittings (3/4” or 1-1/8”) assure the amount of flow required is achieved and maintained. The adjustable flow valve allows you to adjust the water flow to your desired amount.

- Adjustable Flow Valve
- Low Profile Design
- Nylon Construction
- CE Listed



MODEL	PART No.	DESCRIPTION
330-021	23540P	3/4" and 1-1/8" Full Port Fittings Included

BILGE PUMPS 380/500/700/1000 GPH



Quality bilge pumps you can trust. SHURfl[®] bilge pumps are built for the harsh marine environment to withstand the toughest conditions. Water cooled motors for extended life.

- Continuous duty
- Submersible with 3' tinned wire assembly
- Tough nylon housing
- Quick-snap swivel baseplate
- Ignition protected. ISO 8849
- All the pumps can be integrated with a drive switch



Shurfl[®] 380 GPH with switch

Shurfl[®] 380/500/700/1000 GPH

MODEL	PART No.	VOLT	DIMENSIONS mm (")	Ø BASE mm (")	FLOW RATE	AMP MAX	OUTLET
Bilge 380	66527R	12V DC	114x95 (4.5x3.75)	60 (2 3/8)	380 GPH - 24 l/min	1,7	3/4" - 19 mm
Bilge 500	66528T	12V DC	114x95 (4.5x3.75)	60 (2 3/8)	500 GPH - 32 l/min	1,8	3/4" - 19 mm
Bilge 700	66529V	12V DC	114x95 (4.5x3.75)	60 (2 3/8)	700 GPH - 42 l/min	3,2	3/4" - 19 mm
Bilge 1000	66530D	12V DC	114x95 (4.5x3.75)	60 (2 3/8)	1000 GPH - 63 l/min	3,2	3/4" - 19 mm

BILGE PUMPS 1500/2000 GPH

Heavy duty and built to last. SHURfl[®]'s 1500 and 2000 GPH nylon bilge pumps offer a unique motor cooling system (patent pending) to ensure efficient performance and long life. Installation is a snap with our patented swivel base.

- Continuous duty
- Submersible with 6' (1,8 m) tinned wire assembly
- Anti-air lock
- Run dry without damage
- Quick-snap swivel baseplate
- Commercial duty
- Ignition protected. ISO 8849



Shurfl[®] 1500/2000 GPH

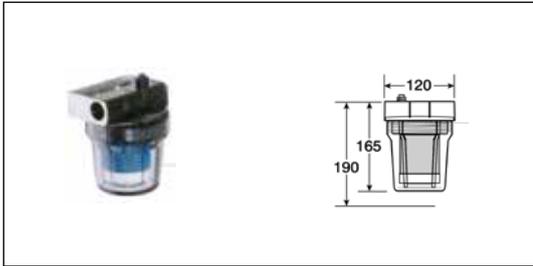


MODEL	PART No.	VOLT	DIMENSIONS mm (")	FLOW RATE	AMP MAX	OUTLET
Bilge 1500/12	66531F	12V DC	183x152 (7.2x6)	1500 GPH - 94,6 l/min	8	1 1/8" - 28,5 mm
Bilge 1500/24	66532H	24V DC	183x152 (7.2x6)	1500 GPH - 94,6 l/min	4	1 1/8" - 28,5 mm
Bilge 2000/12	66533K	12V DC	183x152 (7.2x6)	2000 GPH - 126 l/min	10	1 1/8" - 28,5 mm
Bilge 2000/24	66534M	24V DC	183x152 (7.2x6)	2000 GPH - 126 l/min	5	1 1/8" - 28,5 mm

WAVESTREAM™ - LLOYDS APPROVED BILGE WATER FILTRATION SYSTEM

WAVESTREAM MICRO - 65973K

Designed for the bilges of day boats, RIBs and small sports boats or where minimal space is available, the Micro unit is easy to connect into the bilge water system, using 3/4" BSP connections. Filter cartridges can be replaced in seconds.



- Flow rate: 1 – 40 liters/minute
- Max. pressure: 10 bar
- Max. temperature: 40°C
- Min. temperature: 1° C
- Connections: 3/4" BSP
- Cartridge: WS-CM – 65977U

WAVESTREAM 1000 - 65974M

The 1000 system has a larger filter element to cope with the demands of larger pleasure boats up to 20m. 3/4" BSP connections are used, and the flow rate, at 40 liters, is the same as the Micro system but filter cartridge replacement intervals double.



- Flow rate: 1-40 liters/minute
- Max. pressure: 8 bar
- Max. temperature: 40°C
- Min. temperature: 1°C
- Connections: 3/4" BSP
- Cartridge: WS-C1 - 65978W

WAVESTREAM 2000 - 65975P

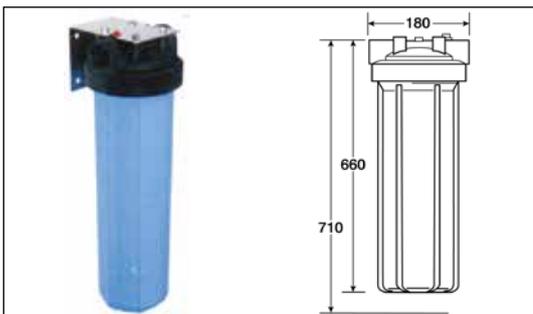
Recommended for large pleasure craft and commercial boats, the 2000 system will handle bilge pump flow rates up to 265 liters per minute with a 117mm diameter filter cartridge and 1 1/2" BSP connections.



- Flow rate: 1-265 liters/minute
- Min. pressure: 0,5 bar
- Max. pressure: 6,8 bar
- Max. temperature: 37°C
- Min. temperature: 1°C
- Connections: 1 1/2" BSP
- Cartridge: WS-C2 - 65979Y

WAVESTREAM 3000 - 65976S

The 3000 is designed for large commercial craft and ships. It incorporates a massive filter cartridge almost 500mm long, with significantly increased capacity. The flow rate and BSP connectors are common with the 2000 series.



- Flow rate: 1-265 liters/minute
- Min. pressure: 0,5 bar
- Max. pressure: 6,2 bar
- Max. temperature: 37°C
- Min. temperature: 1°C
- Connections: 1 1/2" BSP
- Cartridge: WS-C3 - 65980G

AUTOMATIC FLOAT SWITCHES

The SHURfl[®] float switches provide the ultimate in reliability for your boat.

Complete line includes a solid state control, standard float switch and protected cage switch.

Manufactured in corrosion resistant and explosion proof material. They can be used for any kind of pump and also for water bilge and other alarm systems.



MODEL	PART No.	DESCRIPTIONS	VOLT	DIMENSIONS mm (")
SWS	66535P	Standard float switch	12/24V DC	116x53x40 (4.6x2.1x1.6)
SWSC	66536S	Protected cage switch	12/24V DC	116x53x40 (4.6x2.1x1.6)

IN-LINE BILGE BLOWERS

Shurfl[®] in-line blowers provide ventilation for engine compartments, galleys, bilge and heads. Mounting feet allow vertical or horizontal installation in confined spaces.

- Wider base-plate and oval screw hole for ease of installation
- Splash-proof motor with rubber boot
- Heavy duty shaft seal
- High volume air flow - low current draw
- Longer barb for ease of duct connection
- CE, ISO 9097 and Ignition Protected



IN-LINE BILGE BLOWERS

PART No.	VOLT	HOSE INT. Ø	DIMENSIONS mm (")	DRAW AMP	AIR FLOW
64703Y	12V DC	76 mm - 3"	130x140x96 (5.1x5.5x3.8)	3,8	3,3 m ³ /min
64704A	12V DC	100 mm - 4"	130x162x122 (5.1x6.4x4.8)	5,5	6,0 m ³ /min

U F L E X



BRONZE SELF-PRIMING - ELECTRIC PUMPS



Self-priming side liquid ring electric pumps used to empty bilges and transfer unflammable liquids such as: fresh water, sea water, fuel diesel and generally all low viscosity and free of solid impurities liquids.



U070



U050



U030/U040



U025



U020

MODEL	PART No.	VOLT	MAX AMP	MAX INLET	MAX HEAD	MAX DELIVERY
U020-12	64809R	12V DC	26 A	4 m (13.1')	10 m (32.8')	28 l/min
U020-24	64812D	24V DC	14 A	4 m (13.1')	10 m (32.8')	28 l/min
U025-12	64810Z	12V DC	38 A	6 m (19.7')	12 m (39.4')	52 l/min
U025-24	64813F	24V DC	22 A	6 m (19.7')	12 m (39.4')	52 l/min
U030-12	64811B	12V DC	40A	6 m (19.7')	18 m (59.0')	75 l/min
U030-24	64814H	24V DC	24 A	6 m (19.7')	18 m (59.0')	75 l/min
U040	64815K	24 V DC	45 A	6 m (19.7')	22 m (72.2')	120 l/min
U050-M	66329L	230V AC	12 A	6 m (19.7')	30 m (98.4')	230 l/min
U050-T	66330V	380V AC	7,6 ÷ 4,4 A	6 m (19.7')	30 m (98.4')	230 l/min
U050	23610J	24 V DC	96 A	6 m (19.7')	30 m (98.4')	230 l/min
U070-T	66331X	380V AC	11,8 A	6 m (19.7')	40 m (131.2')	500 l/min

STANDARD FEATURES

Bronze pump body, bronze impeller, AISI 316 stainless steel shaft, corrosion-proof clamping rings, continuous duty electric motor with F insulation class, IP55 protection.

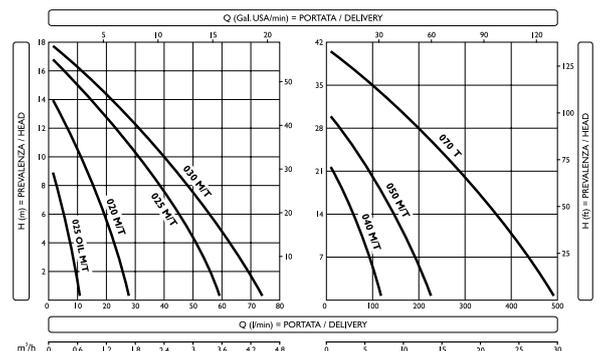
BSP threads on pumps.

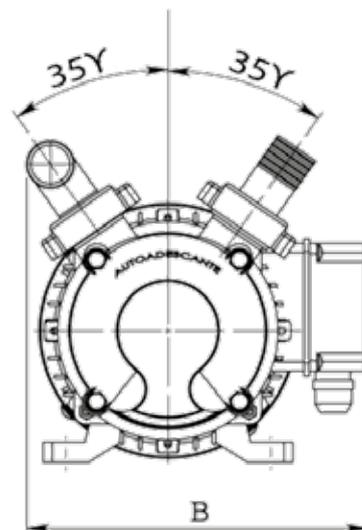
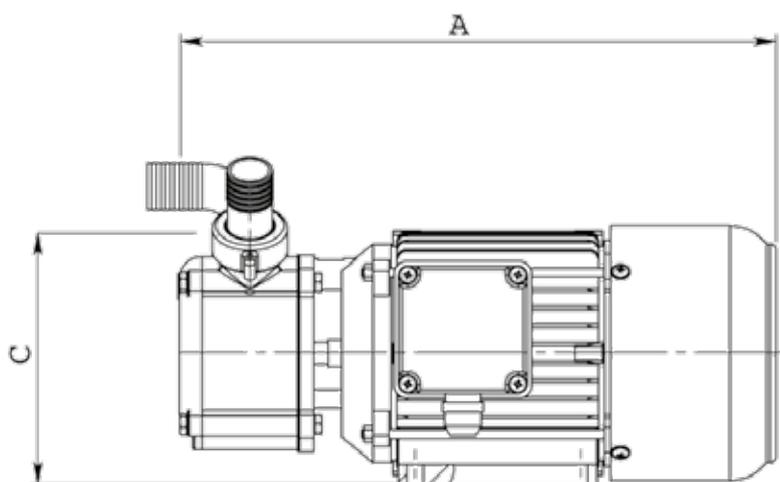
APPLICATION LIMITS

Unflammable liquids free of solid impurities.

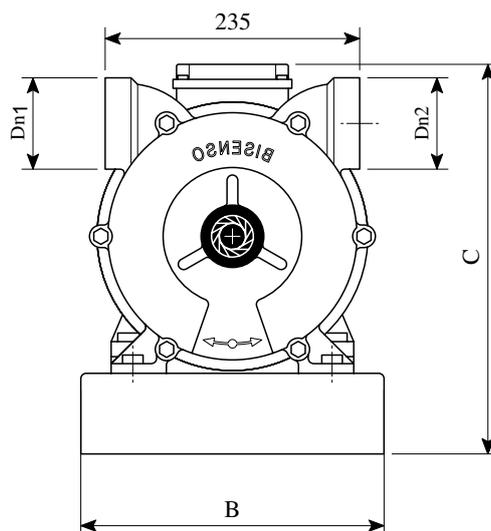
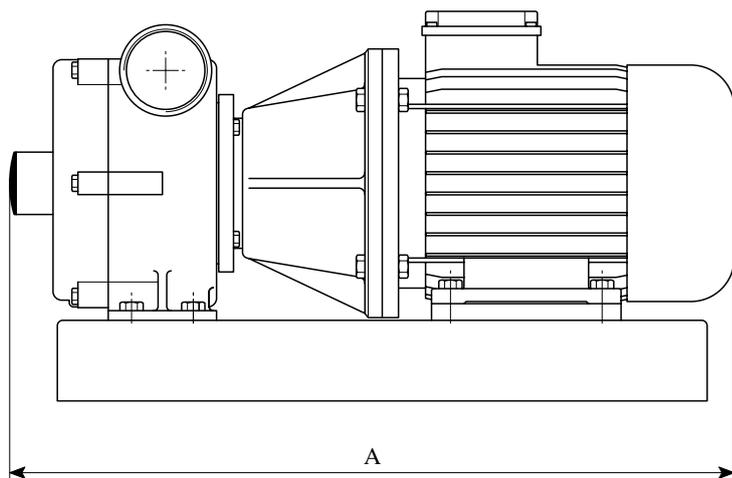
Liquid temperature range: from 0° C to 70° C. Static pressure internal to the pump body: 6 bar max.

CORRENTE CONTINUA (C.C.) / DIRECT CURRENT (D.C.)





U020 - U025 - U030 - U040 - U050 Dimensions



U070 Dimensions

DIMENSIONS AND WEIGHTS

MODEL	Ø IN mm (")	Ø OUT mm (")	A mm (")	B mm (")	C mm (")	WEIGHT kg (lbs)
U020	20 (0.8)	20 (0.8)	295 (11.6)	165 (6.5)	123 (4.8)	5.7 (12.6)
U025	25 (1)	25 (1)	320 (12.6)	180 (7.1)	139 (5.5)	9.6 (21.2)
U030	30 (1.2)	30 (1.2)	375 (14.8)	205 (8.1)	156 (6.1)	13.5 (29.8)
U040	40 (1.6)	40 (1.6)	490 (19.3)	218 (8.6)	178 (7)	21 (46.3)
U050	50 (1.9)	50 (1.9)	435 (17.1)	247 (9.7)	200 (7.9)	26.5 (58.4)
U070	70 (2.7)	70 (2.7)	705 (27.8)	280 (11)	370 (14.6)	75 (165.3)

USBM-midex SELF-PRIMING ELECTRIC PUMP



Rotary self-priming bi-directional volumetric electric pump used on boats to empty waste tanks, toilet sewage and particularly viscous oily fluids or liquids with small debris in suspension.



STANDARD FEATURES

AISI 316 stainless steel body pump, neoprene or nitrile impeller, AISI 316 stainless steel shaft, mechanical seal: steel-graphite-NBR (special corrosion-proof).

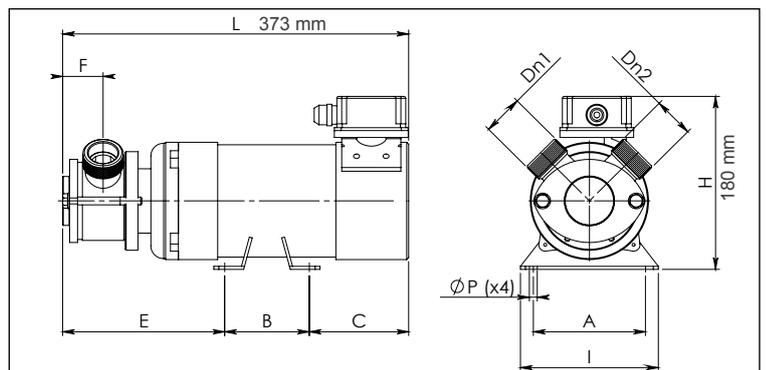
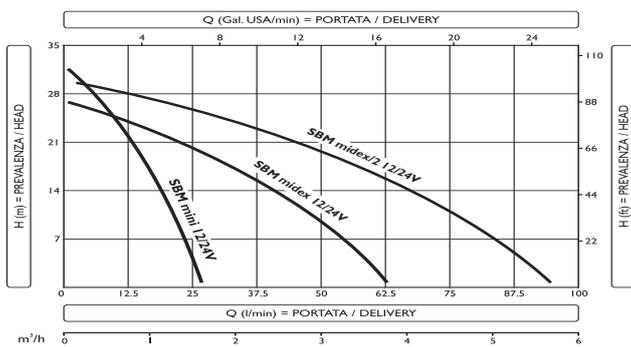
APPLICATION LIMITS

Never let the USBM-Midex pump run when empty. Liquid temperature range: from 0° C to 70° C. Max. suction depth: 6 meter. Static pressure internal to the pump body: 6 bar max. For use as oil and/or fuel transfer pump it is necessary nitrile impeller (available on request).

SPARE IMPELLERS

- Neoprene impeller - 66538W
- Nitrile impeller (for only transfer) - 66539Y

MODEL	PART No.	VOLT	MAX AMP	MAX INLET	MAX HEAD	MAX DELIVERY
USBM - midex-12	24850L	12V DC	55 A	6 m (19.7')	27 m (88.6')	64 l/min
USBM - midex-24	64821E	24V DC	28 A	6 m (19.7')	27 m (88.6')	64 l/min



DIMENSIONS AND WEIGHTS

MODEL	Ø IN mm (")	Ø OUT mm (")	A mm (")	B mm (")	C mm (")	WEIGHT kg (lbs)
USBM-midex-12	1" 1/4 BSP-F	1" 1/4 BSP-F	125 (4.9)	100 (3.9)	110 (4.3)	16 (32.3)
USBM-midex-24	1" 1/4 BSP-F	1" 1/4 BSP-F	125 (4.9)	100 (3.9)	110 (4.3)	16 (32.3)

Centrifugal electric pumps made in **BRONZE** widely used in the nautical sector to transfer and/or deliver fresh water and sea water to all the plants where a large flow rate is needed such as: air conditioning, cooling and circulation etc.



UB-CE

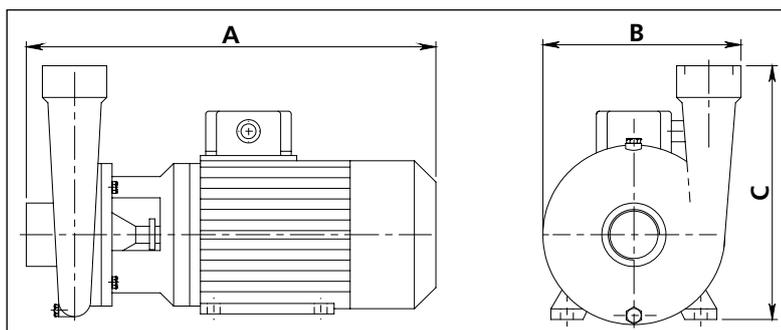
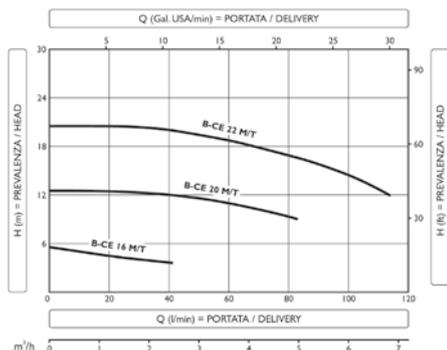
STANDARD FEATURES

BRONZE pump body, BRONZE motor support, BRONZE impeller, AISI 316 stainless steel shaft. Mechanical seal: CERAMICS – GRAPHITE - NBR (special corrosion-proof)

APPLICATION LIMITS

Solid impurities free liquid, liquid temperature range 0 to + 90 C°, max suction depth: 7 m, max static pressure of the body pump: 6 bar.

MODEL	PART No.	VOLT	MAX AMP	MAX INLET	MAX HEAD	MAX DELIVERY
UB-CE 16-12	67958A	12V DC	16 A	7 m (22.9')	7 m (22.9')	40 l/min
UB-CE 16-24	67959C	24V DC	8 A	7 m (22.9')	7 m (22.9')	40 l/min
UB-CE 16-M	67960L	230V AC	1,7 A	7 m (22.9')	7 m (22.9')	40 l/min
UB-CE 16-T	67961N	380V AC	1,5 ÷ 1 A	7 m (22.9')	7 m (22.9')	40 l/min
UB-CE 20-12	67962R	12V DC	38 A	7 m (22.9')	14 m (45.9')	80 l/min
UB-CE 20-24	67963T	24 V DC	20 A	7 m (22.9')	14 m (45.9')	80 l/min
UB-CE 20-M	67964V	230V AC	2,8 A	7 m (22.9')	14 m (45.9')	80 l/min
UB-CE 20-T	67965X	380V AC	2,3 ÷ 1,3 A	7 m (22.9')	14 m (45.9')	80 l/min
UB-CE 22-24	67966Z	24V DC	30 A	7 m (22.9')	21 m (68.9')	120 l/min
UB-CE 22-M	67967B	230V AC	4,5 A	7 m (22.9')	21 m (68.9')	120 l/min
UB-CE 22-T	67968D	380V AC	3 ÷ 1,7 A	7 m (22.9')	21 m (68.9')	120 l/min
UB-CE 25-12-M	20848D	230V AC	5,8 A	7 m (22.9')	24 m (78.7')	200 l/min
UB-CE 25-12-T	20849F	380V AC	4 ÷ 2,3 A	7 m (22.9')	24 m (78.7')	200 l/min
UB-CE 41-1 A-M	20850P	230V AC	5,8 A	7 m (22.9')	19 m (62.3')	250 l/min
UB-CE 41-1 A-T	20851S	380V AC	4 ÷ 2,3 A	7 m (22.9')	19 m (62.3')	250 l/min



DC - DIMENSIONS AND WEIGHTS

MODEL	Ø IN mm (")	Ø OUT mm (")	A mm (")	B mm (")	C mm (")	WEIGHT kg (lbs)
UB-CE 16	1/2"	1/2"	285 (11.2)	122 (4.8)	138 (5.4)	5,6 (12.3)
UB-CE 20	1"	1"	325 (12.8)	154 (6.0)	161 (6.3)	9,1 (20.0)
UB-CE 22	1"	1"	325 (12.8)	174 (6.9)	181 (7.1)	10,3 (22.7)

AC - DIMENSIONS AND WEIGHTS

MODEL	Ø IN mm (")	Ø OUT mm (")	A mm (")	B mm (")	C mm (")	WEIGHT kg (lbs)
UB-CE 16	1/2"	1/2"	266 (10.5)	122 (4.8)	138 (5.4)	5,6 (12.3)
UB-CE 20	1"	1"	303 (11.9)	154 (6.0)	161 (6.3)	9,1 (20.0)
UB-CE 22	1"	1"	303 (11.9)	174 (6.9)	181 (7.1)	10,3 (22.7)
UB-CE 25-12	1"1/2	1"	313 (12.3)	173 (4.8)	230 (9.0)	14,5 (31.9)
UB-CE 41-1 A	1"1/2	1"1/2	380 (14.9)	193 (7.6)	240 (9.5)	17,5 (38.6)

BRONZE SELF-PRIMING ELECTRIC PUMPS - UABR SERIES

Multi-stage bronze self-priming electric pump fitted with radial impellers. These pumps are widely used to empty bilges, to attend fire equipments, to wash chains, to transfer fuel diesel etc.



STANDARD FEATURES

Bronze pump body, bronze impellers, AISI 316 stainless steel shaft, continuous duty electric motor with F insulation class, IP20 protection.

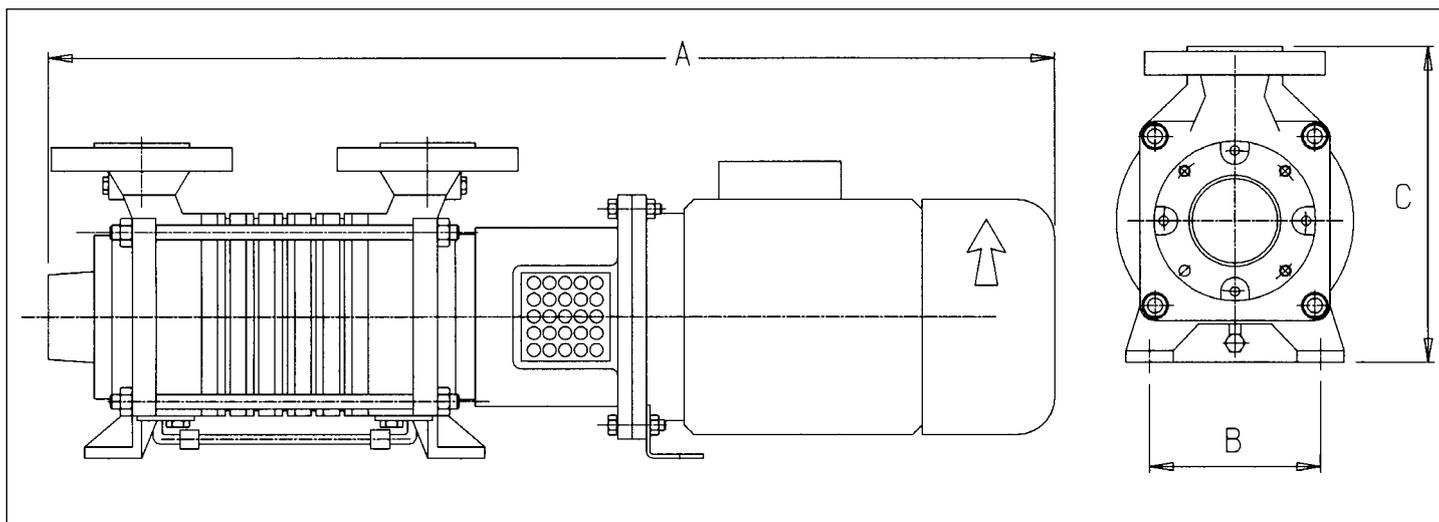
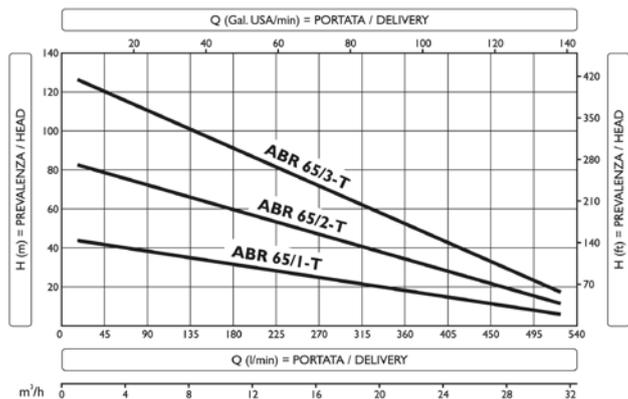
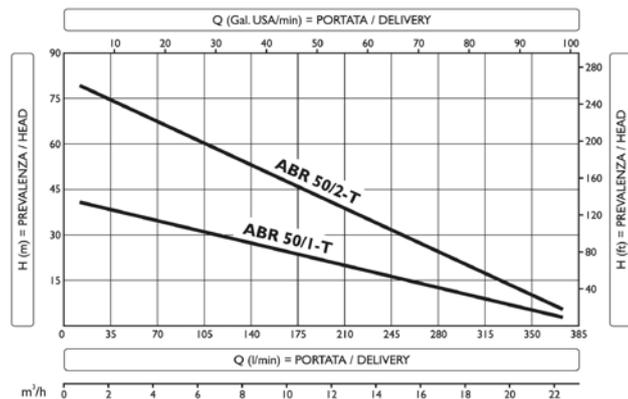
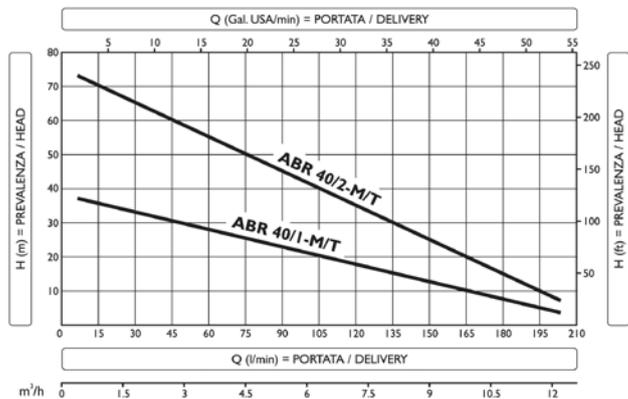
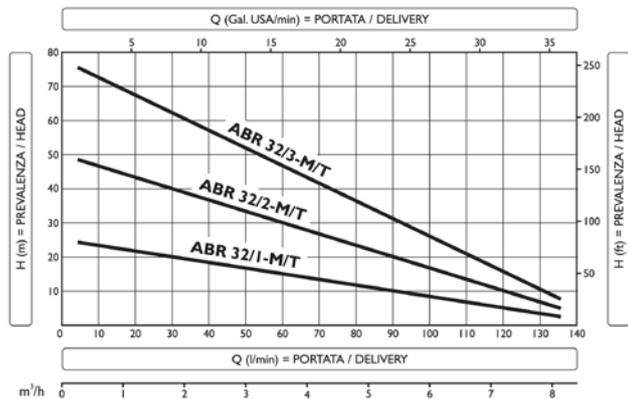


UABR

APPLICATION LIMITS

Solid impurities free liquid, liquid temperature range from 0 to + 90 C°, max static internal pressure of the pump body: 20 bar.

MODEL	PART No.	VOLT	MAX AMP	MAX INLET	MAX HEAD	MAX DELIVERY
UABR 32/1	66068J	24V DC	52 A	9 m (29.5')	28 m (82')	160 l/min
UABR 32/2	66069L	24V DC	90 A	9 m (29.5')	52 m (164')	160 l/min
UABR 40/1	66070V	24V DC	90 A	9 m (29.5')	40 m (114.8')	250 l/min
UABR 32/1-M	67948X	230V AC	9,6 A	9 m (29.5')	25 m (82')	150 l/min
UABR 32/1-T	67949Z	380V AC	4,8 ÷ 2,7 A	9 m (29.5')	25 m (82')	150 l/min
UABR 32/2-M	66071X	230V AC	12 A	9 m (29.5')	50 m (164')	150 l/min
UABR 32/2-T	66092F	380V AC	7,7 ÷ 4,4 A	9 m (29.5')	50 m (164')	150 l/min
UABR 40/1-M	67950H	230V AC	14 A	9 m (29.5')	38 m (124.7')	220 l/min
UABR 40/1-T	67951K	380V AC	9 ÷ 5,2 A	9 m (29.5')	38 m (124.7')	220 l/min
UABR 40/2-T	66093H	380V AC	15 ÷ 8,7 A	9 m (29.5')	75 m (236.2')	220 l/min
UABR 50/2-T	66073B	380V AC	18,2 ÷ 10,2 A	9 m (29.5')	82 m (269')	400 l/min
UABR 65/2-T	66074D	380V AC	29 ÷ 16 A	9 m (29.5')	85 m (278.8')	600 l/min



DIMENSIONS AND WEIGHTS

MODEL	Ø IN mm (")	Ø OUT mm (")	A mm (")	B mm (")	C mm (")	WEIGHT kg (lbs)
UABR 32/1	100 (3.9)	140 (5.5)	690 (27.2)	135 (5.3)	247 (9.7)	56 (123.4)
UABR 32/2	100 (3.9)	140 (5.5)	730 (28.7)	135 (5.3)	247 (9.7)	60 (132.3)
UABR 40/1	110 (4.3)	150 (5.9)	785 (30.9)	155 (6.1)	272 (10.7)	70 (154.3)
UABR 32/1-M or T	100 (3.9)	140 (5.5)	680 (26.7)	135 (5.3)	247 (9.7)	40 (88.2)
UABR 32/2-M or T	100 (3.9)	140 (5.5)	720 (28.3)	135 (5.3)	247 (9.7)	44 (97.0)
UABR 40/1-M or T	110 (4.3)	150 (5.9)	780 (30.7)	155 (6.1)	272 (10.7)	58 (127.8)
UABR 40/2-T	110 (4.3)	150 (5.9)	840 (33.1)	155 (6.1)	272 (10.7)	75 (165.3)
UABR 50/2-T	125 (4.9)	165 (6.5)	1100 (43.3)	170 (6.7)	325 (12.8)	132 (291.0)
UABR 65/2-T	145 (5.7)	185 (7.3)	1225 (48.2)	195 (7.6)	360 (14.2)	202 (445.3)

BRONZE/STAINLESS STEEL SELF-PRIMING ELECTRIC PUMPS – USBR SERIES



Bronze self-priming electric pumps fitted with a worm screw rotor. These pumps are widely used to empty waste tanks, toilet sewage and particularly viscous fluids or liquids with small debris in suspension.



STANDARD FEATURES

Standard features

BRONZE pump body, AISI 316 stainless steel rotor, AISI 316 stainless steel shaft, permanent magnet electric motor with F insulation class. IP 55 protection (DC), IP 44 protection (DC).

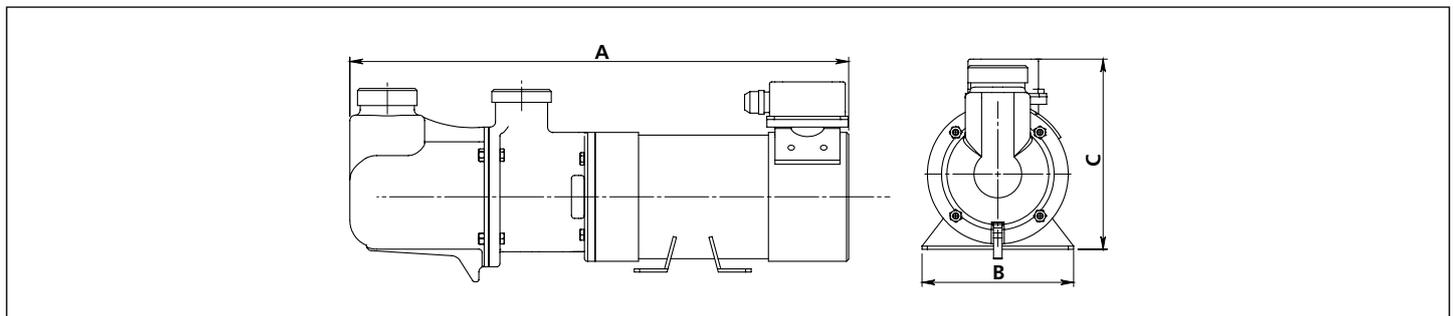
APPLICATION LIMITS

Liquid temperature range from 0 to +70°C, max static internal pressure of the pump body: 6 bar.



USBR

MODEL	PART No.	VOLT	MAX AMP	MAX INLET	MAX HEAD	MAX DELIVERY
USBR-12	67954S	12V DC	36 A	6 m (19.7')	50 m (164)	50 l/min
USBR-24	67955U	24V DC	20 A	6 m (19.7')	50 m (164)	50 l/min
USBR-M	67956W	230V AC	4 A	6 m (19.7')	50 m (164)	50 l/min
USBR-T	67957Y	380V AC	3,6 ÷ 2 A	6 m (19.7')	50 m (164)	50 l/min



DIMENSIONS AND WEIGHTS

MODEL	Ø IN mm (")	Ø OUT mm (")	A mm (")	B mm (")	C mm (")	WEIGHT kg (lbs)
USBR-12/24	1"	1"	500 (19.7)	160 (6.3)	190 (7.5)	15 (33)
USBR-M	1"	1"	465 (18.3)	160 (6.3)	210 (8.3)	16,5 (36.4)
USBR-T	1"	1"	465 (18.3)	160 (6.3)	210 (8.3)	16,5 (36.4)

UJ-INOX

Self-priming centrifugal electric pumps, Jet type, with high suction capacity. These electric pumps are used to deliver pressurized water to on-board appliances (showers, toilets, washbasins etc.).

Standard features

AISI 304 stainless steel pump body, noryl diffuser and venture tube, AISI 316 stainless steel shaft, corrosion-proof clamping rings, continuous duty electric motor with F insulation class.

Application limits

Liquid free of solid impurities, liquid temperature range: from 0° C to 50° C, static pressure inside the pump body: 6 bar max.



UJ-INOX



UMG-INOX

Self-priming electric pumps featuring 4 impellers that allow for a higher pressure and flow rate than the UJ-Inox pumps.

Standard features

AISI 304 stainless steel pump body, noryl diffuser and Venturi tube, AISI 316 stainless steel shaft, corrosion-proof clamping rings, continuous duty electric motor with F insulation class.

Application limits

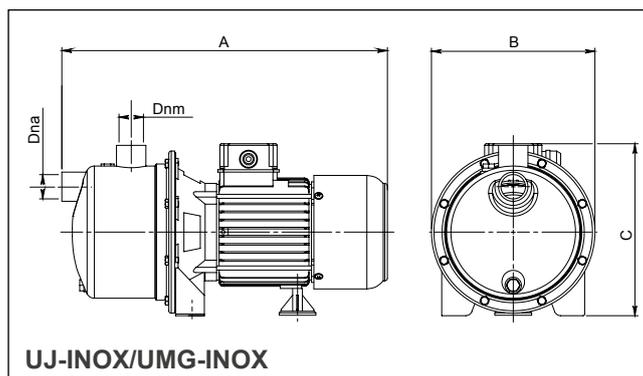
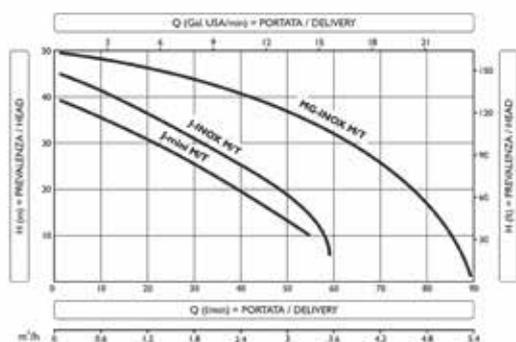
Liquid free of solid impurities. Liquid temperature range: from 0°C to 50°C. Static pressure inside the pump body: 6 bar max.



UMG-INOX



MODEL	PART No.	VOLT	MAX AMP	MAX INLET	MAX HEAD	MAX DELIVERY
UJ-INOX 12	64824L	12V DC	40 A	9 m (29.5')	30 m (118.8')	50 l/min
UJ-INOX 24	64825N	24V DC	28 A	9 m (29.5')	38 m (124.7')	50 l/min
UJ-INOX M	64827T	230V AC	3,8 A	9 m (29.5')	48 m (177.2')	50 l/min
UMG-INOX 24	64826R	24V DC	40 A	9 m (29.5')	50 m (164.0')	90 l/min
UMG-INOX M	64828V	230V AC	5 A	9 m (29.5')	50 m (164.0')	90 l/min



UJ-INOX/UMG-INOX

DIMENSIONS AND WEIGHTS

MODEL	Ø IN mm (")	Ø OUT mm (")	A mm (")	B mm (")	C mm (")	WEIGHT kg (lbs)
UJ-INOX 12	1" BSP-F	1" BSP-F	400 (15.7)	185 (7.3)	215 (8.5)	10 (22.0)
UJ-INOX 24	1" BSP-F	1" BSP-F	400 (15.7)	185 (7.3)	215 (8.5)	10 (22.0)
UJ-INOX M	1" BSP-F	1" BSP-F	345 (13.6)	185 (7.3)	200 (7.9)	8,5 (18.7)
UMG-INOX 24	1" BSP-F	1" BSP-F	507 (19.9)	200 (7.9)	230 (9.0)	15 (33.0)
UMG-INOX M	1" BSP-F	1" BSP-F	420 (16.5)	200 (7.9)	215 (8.5)	11,5 (25.3)

WATER PRESSURE SYSTEMS UJ AND UMG-INOX SERIES



UJ-INOX

UJ-INOX water pressure systems are equipped with **UJ** electric pumps and with a stainless steel cylindrical tank with inside butyl rubber diaphragm suitable for food stuff, widely used for constant water pressure for all on-board appliances such as kitchens, showers, washbasins etc.

UMG-INOX

UMG-INOX water pressure systems are equipped with a **UMG** series electric pump and with a stainless steel cylindrical tank with inside butyl rubber diaphragm suitable for food stuff, widely used for constant water pressure for all on-board appliances such as kitchens, showers, washbasins etc.

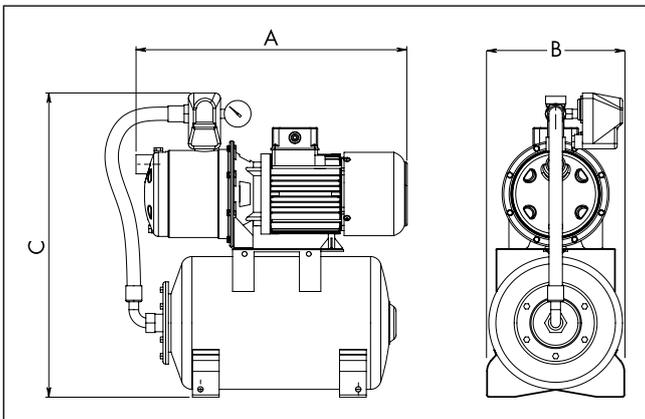
Standard features

Manual safety pressure switch, pressure gauge, non return valve, 5 ways brass pipe fitting

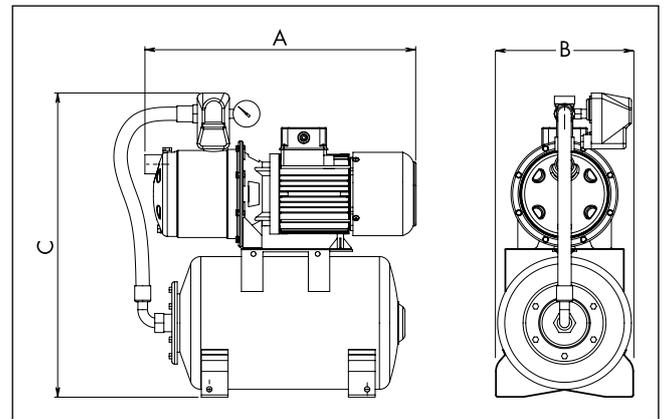


UJ-INOX 20X - UMG-INOX 20X

MODEL	PART No.	SWITCH PRE-SET	TANK PRESSURE	MAX DELIVERY	MAX PRESSURE	TANK CAPACITY
UJ-INOX 12/20X	64833M	1.2-2.0 bar	1.2 bar	50 l/min	3.0 bar	20 litres
UJ-INOX 24/20X	64834P	1.4-2.8 bar	1.2 bar	50 l/min	3.8 bar	20 litres
UJ-INOX M/20X	64836U	1.4-3.0 bar	1.2 bar	50 l/min	4.8 bar	20 litres
UMG-INOX 24/20X	64835S	1.4 – 4.0 bar	1.4 bar	90 l/min	5 bar	20 litres
UMG-INOX M/20X	64837W	1.4 – 4.0 bar	1.4 bar	90 l/min	5 bar	20 litres



UJ-INOX 20X



UMG-INOX 20X

DIMENSIONS AND WEIGHTS

MODEL	Ø IN mm (")	Ø OUT mm (")	A mm (")	B mm (")	C mm (")	WEIGHT kg (lbs)
UJ-INOX 12/24-20X	1" BSP-F	1" BSP-F	440 (17.3)	260 (10.2)	575 (22.6)	15 (33.0)
UJ-INOX M-20X	1" BSP-F	1" BSP-F	440 (17.3)	260 (10.2)	575 (22.6)	13.5 (29.7)
UMG-INOX 24-20X	1" BSP-F	1" BSP-F	507 (19.9)	260 (10.2)	575 (22.6)	20 (44.0)
UMG-INOX M-20X	1" BSP-F	1" BSP-F	507 (19.9)	260 (10.2)	575 (22.6)	16.5 (36.4)

Self-priming electric pumps, Jet type, with closed impeller, featuring a high suction capacity. These electric pumps are used **for rising both fresh and sea water and to deliver pressurized water to on-board appliances** (showers, toilets, washbasins etc), to air-conditioning units, anti-fire equipment. Used for washing of decks and chains.

STANDARD FEATURES

Bronze pump body, polycarbonate diffuser and Venturi tube, AISI 316 stainless steel shaft, special brass alloy impeller, corrosion-proof clamping rings, continuous duty electric motor with F insulation class.

APPLICATION LIMITS

Liquid free of solid impurities. Liquid temperature range: from 0° C to 70° C. Static pressure inside the pump body: 6 bar max.



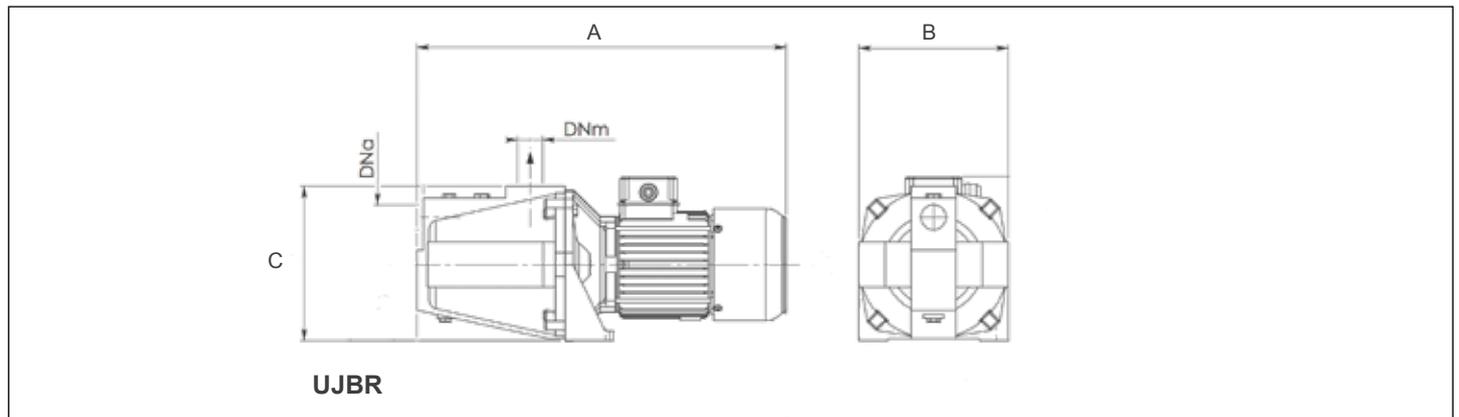
UJBR-3



UJBR



MODEL	PART No.	VOLT	MAX AMP	MAX INLET	MAX HEAD	MAX DELIVERY
UJBR 12	64816M	12V DC	40 A	9 m (29.5')	30 m (98.4')	44 l/min
UJBR 24	64817P	24V DC	28 A	9 m (29.5')	36 m (118.1')	55 l/min
UJBR M	64818S	230V AC	4,5 A	9 m (29.5')	52 m (170.6')	55 l/min
UJBR-3 M	69659A	230V AC	7,4 A	9 m (29.5')	50 m (164')	100 l/min



DIMENSIONS AND WEIGHTS

MODEL	Ø IN mm (")	Ø OUT mm (")	A mm (")	B mm (")	C mm (")	WEIGHT kg (lbs)
UJBR 12	1" BSP-F	1" BSP-F	455 (17.9)	185 (7.3)	195 (7.7)	25 (55.1)
UJBR 24	1" BSP-F	1" BSP-F	455 (17.9)	185 (7.3)	195 (7.7)	25 (55.1)
UJBR M	1" BSP-F	1" BSP-F	430 (16.9)	185 (7.3)	195 (7.7)	21 (46.3)
UJBR-3 M	1 1/2" BSP-F	1" BSP-F	560 (19.9)	215 (8.5)	222 (8.7)	31.5 (69.5)

UJBR water pressure systems are equipped with a **UJBR** electric pump and with a stainless steel cylindrical tank with inside butyl rubber diaphragm suitable for food stuff, widely used for constant water pressure for all on-board appliances such as kitchens, showers, washbasins etc.

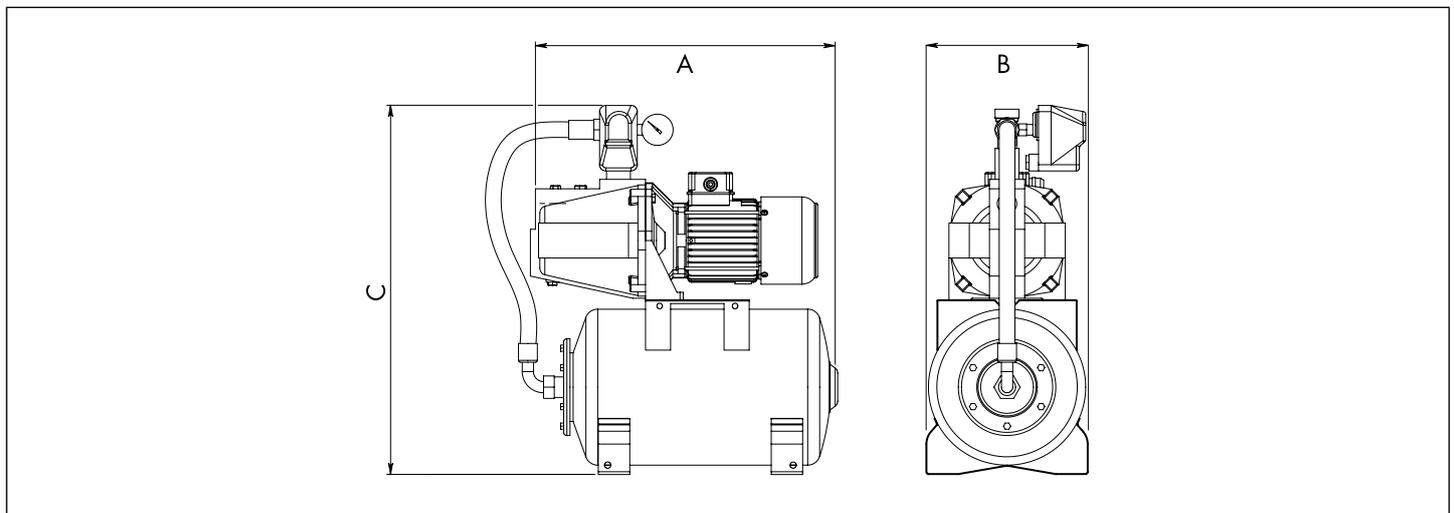
STANDARD FEATURES

Manual safety pressure switch, pressure gauge, non return valve, 5 ways brass pipe fitting



UJBR 20X

MODEL	PART No.	SWITCH PRE-SET	TANK PRESSURE	MAX DELIVERY	MAX PRESSURE	TANK CABACITY
UJBR 12/8X	64838Y	1.2-2.0 bar	1.2 bar	44 l/min	3.0 bar	8 litres
UJBR 12/20X	64840J	1.2-2.0 bar	1.2 bar	44 l/min	3.0 bar	20 litres
UJBR 24/8X	64839A	1.4-2.8 bar	1.2 bar	55 l/min	3.8 bar	8 litres
UJBR 24/20X	64841L	1.4-2.8 bar	1.2 bar	55 l/min	3.8 bar	20 litres
UJBR M/20X	64842N	1.4-3.5 bar	1.2 bar	55 l/min	5.2 bar	20 litres



DIMENSIONS AND WEIGHTS

MODEL	Ø IN mm (")	Ø OUT mm (")	A mm (")	B mm (")	C mm (")	WEIGHT kg (lbs)
UJBR 12/8X	1" BSP-F	1" BSP-F	455 (17.9)	220 (8.7)	420 (16.5)	26 (57.3)
UJBR 12/20X	1" BSP-F	1" BSP-F	460 (18.1)	260 (10.2)	590 (23.2)	28 (61.7)
UJBR 24/8X	1" BSP-F	1" BSP-F	455 (17.9)	220 (8.7)	420 (16.5)	26 (57.3)
UJBR 24/20X	1" BSP-F	1" BSP-F	460 (18.1)	260 (10.2)	590 (23.2)	28 (61.7)
UJBR M/20X	1 1/2" BSP-F	1" BSP-F	460 (18.1)	260 (10.2)	590 (23.2)	26 (57.3)

UPB SERIES - ELECTRIC PUMPS

Compact single-impeller peripheral electric pumps apt to develop high pressures compared to limited flow rate. These electric pumps are used for rising both and sea water and to deliver pressurized water to on-board appliances (showers, toilets, washbasins etc.), to air-conditioning units, anti-fire equipment. Used for washing of decks and chains.

Standard features

Bronze body pump, AISI 316 stainless steel shaft, special BRASS alloy impeller, corrosion-proof clamping rings, continuous duty electric motor with F insulation class.

Application limits

Liquid free of solid impurities. Liquid temperature range: from 0° C to 70° C. Static pressure inside the pump body: 6 bar max.



UPB

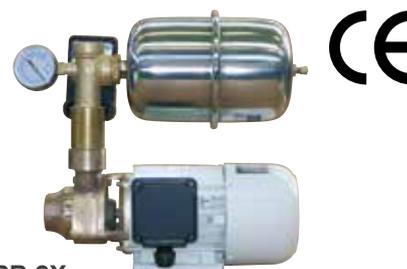
MODEL	PART No.	VOLT	MAX AMP	MAX INLET	MAX HEAD	MAX DELIVERY
UPB 12	64819U	12V DC	36 A	6 m (19.7')	40 m (131.2')	36 l/min
UPB 24	64820C	24V DC	22 A	6 m (19.7')	42 m (137.8')	36 l/min

UPB SERIES - WATER PRESSURE SYSTEMS

UPB are equipped with a UPB electric pump, a stainless steel or white painted steel cylindrical tank with a stainless steel flange and with an internal butyl rubber diaphragm suitable for food stuff, widely used for constant water pressure for all on-board appliances such as kitchens, showers, washbasins etc.

Standard features

Manual safety pressure switch, pressure gauge, non return valve, 5 ways brass pipe fitting

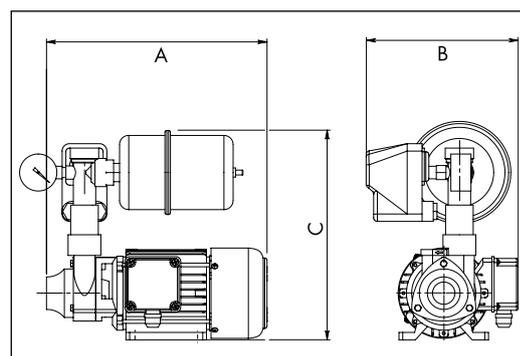


UPB 2X

MODEL	PART No.	SWITCH PRE-SET	TANK PRESSURE	MAX DELIVERY	MAX PRESSURE	TANK CAPACITY
UPB-12/2-X	64843R	1.4-2.8 bar	1.2 bar	35 l/min	4 bar	2 litres
UPB-12/8-L	64829X	1.4-2.8 bar	1.2 bar	35 l/min	4 bar	8 litres
UPB-12/8-X	64845V	1.4-2.8 bar	1.2 bar	35 l/min	4 bar	8 litres
UPB-24/2-X	64844T	1.4-2.8 bar	1.2 bar	36 l/min	4.2 bar	2 litres
UPB-24/8-L	64830F	1.4-2.8 bar	1.2 bar	36 l/min	4.2 bar	8 litres
UPB-24/8-X	64846X	1.4-2.8 bar	1.2 bar	36 l/min	4.2 bar	8 litres

DIMENSIONS AND WEIGHTS

MODEL	Ø IN	Ø OUT	A mm (")	B mm (")	C mm (")	WEIGHT kg (lbs)
UPB-12/24	1" BSP-F	1" BSP-F	295 (11.6)	160 (6.3)	142 (5.6)	7 (15.4)
UPB-12/24-2X	1" BSP-F	1" BSP-F	455 (17.9)	220 (8.6)	350 (13.8)	25 (55.1)
UPB-12/24-8X	1" BSP-F	1" BSP-F	455 (17.9)	220 (8.6)	420 (16.5)	26 (57.3)
UPB-12/24-8L	1" BSP-F	1" BSP-F	430 (16.9)	220 (8.6)	420 (16.5)	24 (52.9)



TWIN WATER PRESSURE SYSTEMS



Twin water pressure systems including 2 self-priming electric pumps (UJ-INOX or UMG-INOX stainless steel made), or 2 self priming electric pumps (UJBR bronze made), widely used in the marine field to grant a proper and constant water pressure for all on board utilities such as: showers, kitchen, washbasins, toilets, etc.

With this peculiar application a double flow rate can be obtained and the system can face an emergency stop of one of the pumps during navigation.

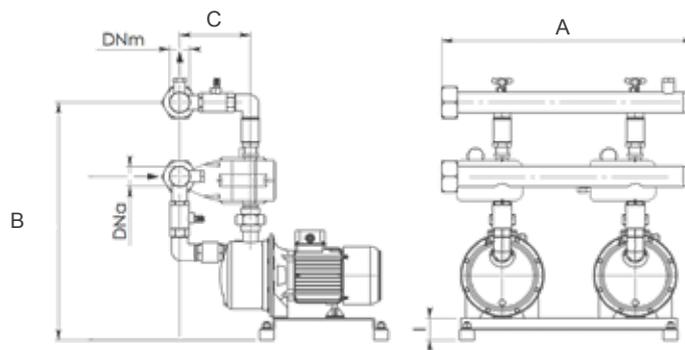
The use of twin water pressure systems **UGDE-J**, **UGDE-MG** and **UGDE-JBR** Series allows a water capacity higher than the traditional pressure sets, as the two pumps, whatever DC, AC, or mixed DC and AC, can work either simultaneously or singularly. For a proper operation of the group, a water tank is recommended.

Vertical twin water pressure systems are available on request.



UGDE J/1 - UGDE MG/1

MODEL	PART No.	PUMP 1	PUMP 2	MOTOR	POWER Kw	CURRENT A	MAX DELIVERY	MAX PRESSURE
UGDE J/1	66332Z	UJ-INOX 24	UJ-INOX 24	DC+DC	0,6+0,6	28+28	50+50 l/min.	4 bar
UGDE J/2	66333B	UJ-INOX M	UJ-INOX M	AC+AC	0,6+0,6	/	50+50 l/min.	4 bar
UGDE J/3	20852U	UJ-INOX 24	UJ-INOX M	DC+AC	0,6+0,6	28+/ /	50+50 l/min.	4 bar
UGDE MG/1	66335F	UMG-INOX 24	UMG-INOX 24	DC+DC	0,75+0,75	40+40	90+90 l/min.	5 bar
UGDE MG/2	66336H	UMG-INOX M	UMG-INOX M	AC+AC	0,75+0,75	/	90+90 l/min.	5 bar
UGDE MG/3	66337K	UMG-INOX 24	UMG-INOX M	DC+AC	0,75+0,75	40+/ /	90+90 l/min.	5 bar
UGDE JBR/1	66338M	UJBR 24	UJBR 24	DC+DC	0,6+0,6	28+28	55+55 l/min.	3,6 bar
UGDE JBR/2	66339P	UJBR M	UJBR M	AC+AC	0,6+0,6	/	55+55 l/min.	5 bar
UGDE JBR/3	66340Y	UJBR 24	UJBR M	DC+AC	0,6+0,6	28+/ /	55+55 l/min.	5 bar



DIMENSIONS AND WEIGHTS

MODEL	Ø IN mm (")	Ø OUT mm (")	A mm (")	B mm (")	C mm (")	WEIGHT kg (lbs)
UGDE J/ 1-2-3	1" 1/2 BSP-F	1" 1/2 BSP-F	610 (24)	540 (21.3)	160 (6.3)	30-26-28 (66.1-57.3-61.7)
UGDE UMG/ 1-2-3	1" 1/2 BSP-F	1" 1/2 BSP-F	610 (24)	540 (21.3)	160 (6.3)	40-35-37 (88.2-77.2-81.6)
UGDE JBR/ 1-2-3	1" 1/2 BSP-F	1" 1/2 BSP-F	610 (24)	540 (21.3)	150 (5.9)	60-52-56 (132.3-114.6-123.5)

Water Pressure Systems featuring an **Electronic Control System EPC (Electronic Pressure Control)** that automatically controls the pump start and stop stages when the pressure drops or when the water supply to the system is interrupted.

The electronic control system EPC will guarantee the automatic stop of the pump when the water supply has run out (preventing damage to the pump if dry running) and will offer constant monitoring of the operation by means of warning lights.

If in lack of water the pump stops, in which case the EPC device will allow the pump to make brief starts at regular breaks to check the availability of water. If the pump is able to take in water during one of these attempts (maximum 4), the pressure booster set will restart its normal operation. After four attempts, the EPC device will stop the pump definitively. The pump can then be restarted only by pressing the "Reset" button.



UJ-mini/EPC



UMG-INOX/EPC



UJBR/EPC



UPB/EPC

MODEL	PART No.	VOLT	MAX AMP	MAX DELIVERY	MAX PRESSURE
UJ-mini/EPC-12	69660J	12V DC	33 A	55 l/min	2,8 bar
UJ-mini/EPC-24	69661L	24V DC	16 A	55 l/min	3 bar
UJ-mini/EPC-M	69662N	230V AC	3,6 A	55 l/min	3,9 bar
UMG-INOX/EPC-24	66079P	24V DC	40 A	90 l/min	5 bar
UMG-INOX/EPC-M	66080Y	230V AC	5 A	90 l/min	5 bar
UJBR/EPC-12	66081A	12V DC	42 A	44 l/min	3 bar
UJBR/EPC-24	66082C	24V DC	28 A	55 l/min	3,6 bar
UJBR/EPC-M	66083E	230V AC	4,5 A	55 l/min	5,2 bar
UPB/EPC-12	66084G	12V DC	36 A	36 l/min	4 bar
UPB/EPC-24	66085J	24V DC	22 A	36 l/min	4,2 bar

Inlet: 1" BSP - F (Gas)

Outlet: 1" BSP - M (Gas)

BIDIRECTIONAL SELF-PRIMING PUMPS NAUTIC AND SPECIAL SERIES



UN



UN F



US



US FM

Bidirectional side liquid ring self-priming pumps. Thanks to their high delivery capability, these pumps are widely used in marine applications sector to empty bilges or for sea water suction. Upon request these pumps are also available with BSP thread.

STANDARD FEATURES

Bronze body pump, bronze impeller, bronze pipe fittings, AISI 316 stainless steel shaft, corrosion-proof clamping rings.

APPLICATION LIMITS

Liquid free of solid impurities, liquid temperature range: from 0° C to 70° C, static pressure inside the pump body: 6 bar max.

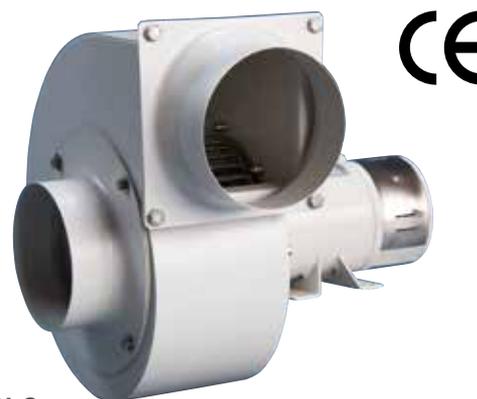
NAUTIC SERIES

MODEL	PART No.	OPERATION	MAX INLET	MAX HEAD	MAX DELIVERY l/min@ rpm
UN 025	64847Z	Bare shaft	6 m (19.7')	18 m (70.8')	60 @ 2800
UN 030 F	64857C	Manual clutch	6 m (19.7')	18 m (70.8')	75 @ 1400
UN 040 F	64858E	Manual clutch	6 m (19.7')	22 m (88.6')	120 @ 1400
UN 050 F	64859G	Manual clutch	6 m (19.7')	30 m (118.1')	230 @ 1400
UN 070 F	64860R	Manual clutch	6 m (19.7')	40 m (157.4')	500 @ 1400

SPECIAL SERIES

MODEL	PART No.	OPERATION	MAX INLET	MAX HEAD	MAX DELIVERY l/min@ rpm
US 020	64852S	Bare shaft	6 m (19.7')	15 m (59.0')	30 @ 2800
US 025	64853U	Bare shaft	6 m (19.7')	18 m (70.8')	60 @ 2800
US 030 FM 12V	64861T	Electromagnetic clutch	6 m (19.7')	18 m (70.8')	75 @ 1400
US 030 FM 24V	64864Z	Electromagnetic clutch	6 m (19.7')	18 m (70.8')	75 @ 1400
US 040 FM 12V	64862V	Electromagnetic clutch	6 m (19.7')	22 m (88.6')	120 @ 1400
US 040 FM 24V	64865B	Electromagnetic clutch	6 m (19.7')	22 m (88.6')	120 @ 1400
US 050 FM 12V	64863X	Electromagnetic clutch	6 m (19.7')	30 m (118.1')	230 @ 1400
US 050 FM 24V	64866D	Electromagnetic clutch	6 m (19.7')	30 m (118.1')	230 @ 1400

UBLC spiral centrifugal electric blowers are used for suction and ventilation of air in closed compartments such as toilets, kitchen, engine room etc.

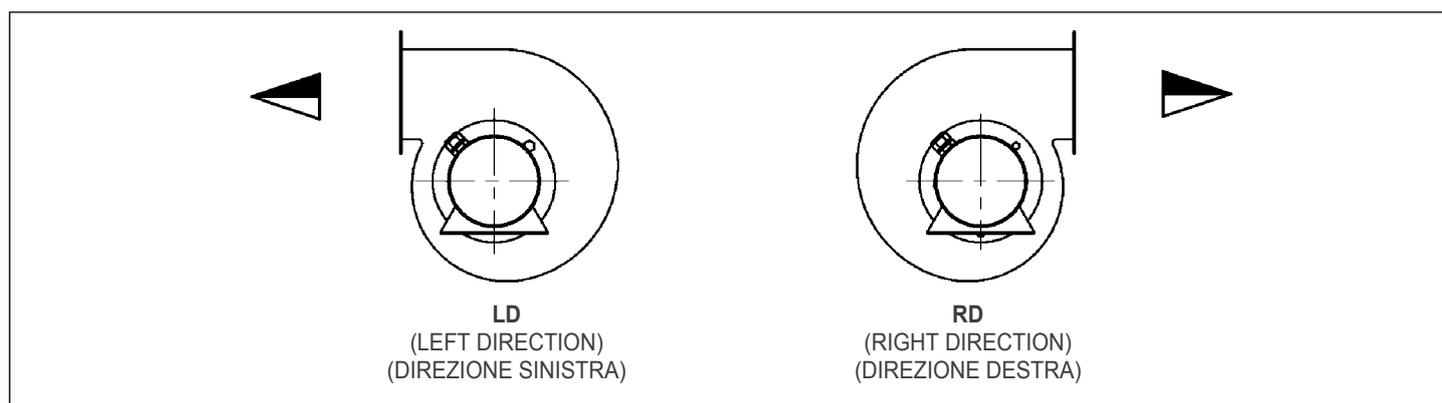


STANDARD FEATURES

Painted steel casing, fan with forward and balanced steel blades, continuous duty electric motor with F insulation class, IP 44 protection (alternating current), IP 23 (direct current)

The orientation of the blower must be stated when ordering (see drawing).

UBLC



MODEL	PART No.	VOLT	MAX AMP	RPM	MAX HEAD m ³ /min	MAX DELIVERY mm H ₂ O
UBLC 002-12	65433A	12V DC	3,2 A	2800	4,5	22
UBLC 002-24	65434C	24V DC	1,6 A	2800	4,5	22
UBLC 002-M or T	65435E 65436G	230V AC/380V AC	0,8/0,5 A	2800	4,5	22
UBLC 004-12	65437J	12V DC	6 A	2500	12	35
UBLC 004-24	64867F	24V DC	3 A	2500	12	35
UBLC 004-M or T	65438L 65439N	230V AC/380V AC	2,2/0,8 A	2800	15	45
UBLC 015-12	67971S	12V DC	24 A	1400	24	34
UBLC 015-24	64868H	24V DC	12 A	1400	24	34
UBLC 015-M or T	65440X 65441Z	230V AC/380V AC	2,2/0,8 A	1400	24	34
UBLC 028-12	67973W	12V DC	26 A	2800	24	64
UBLC 028-24	64869K	24V DC	14 A	2800	24	64
UBLC 028-M or T	65442B 65443D	230V AC/380V AC	2,8/0,9 A	2800	24	64
UBLC 023-12	67972U	12V DC	30 A	2000	37	64
UBLC 023-24	65444F	24V DC	22 A	2000	37	64
UBLC 023-M or T	65445H 65446K	230V AC/380V AC	7/2,9 A	2800	58	130
UBLC 025-24	65447M	24V DC	30 A	1400	50	55
UBLC 025-M or T	65448P 65449S	230V AC/380V AC	5,2/2,2 A	1400	50	55
UBLC 030-M or T	65450A 65451C	230V AC/380V AC	7,2/2,9 A	1400	95	75

HELICOIDAL ELECTRIC BLOWERS - UVE SERIES

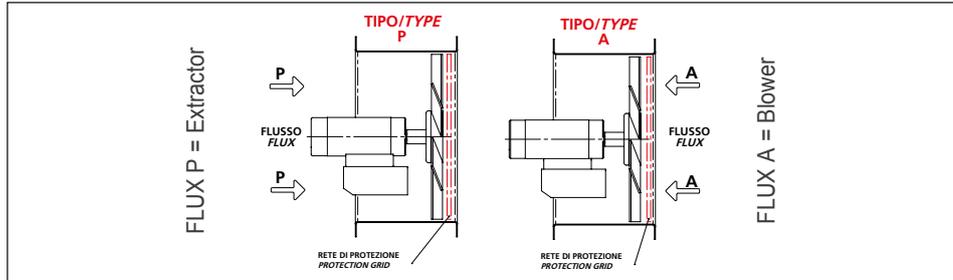


UVE helicoidal electric blowers are used for suction and ventilation of air in closed compartments such as toilets, kitchen and engine rooms.

STANDARD FEATURES

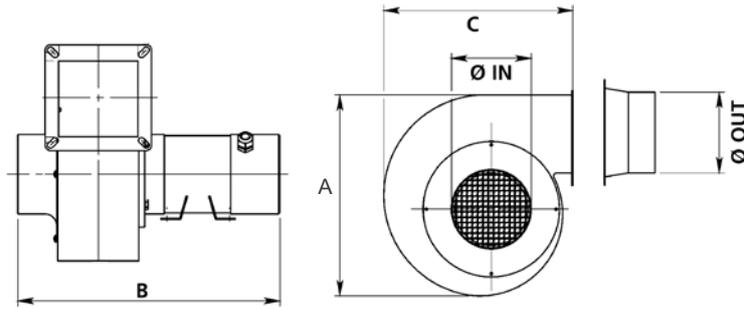
Painted sheet steel drum, polypropylene balanced fan (temperature range: from -5° C to 70° C), continuous duty electric motor with F insulation class, IP 44 protection.

The orientation of the blower must be specified when ordering (see drawing below).



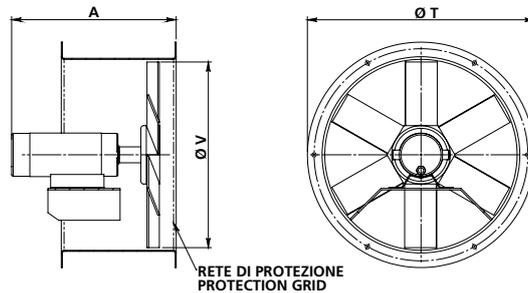
MODEL	PART No.	VOLT	MAX AMP	RPM	MAX DELIVERY m ³ /min	MAX HEAD mm H ₂ O
UVE 21-12	67969F	12V DC	12 A	2800	22	14
UVE 21-24	67970P	24V DC	6 A	2800	22	14
UVE 25-12	65452E	12V DC	17 A	2500	37	19
UVE 25-24	64873A	24V DC	9 A	2500	37	19
UVE 25-M or T	65453G 65454J	230V AC/380V AC	2,7/0,8 A	2800	42	20
UVE 30-12	65455L	12V DC	10 A	1400	42	10
UVE 30-24	65456N	24V DC	5 A	1400	42	10
UVE 30-M or T	65457R 65458T	230V AC/380V AC	1,8/0,6 A	1400	42	10
UVE 30/2-24	65459V	24V DC	14 A	2000	75	22
UVE 30/2-M or T	65460D 65491R	230V AC/380V AC	4/1,7 A	2800	80	35
UVE 35-12	65461F	12V DC	12 A	1400	62	16
UVE 35-24	64874C	24V DC	6 A	1400	62	16
UVE 35-M or T	65462H 65463K	230V AC/380V AC	1,8/0,6 A	1400	62	16
UVE 35/2-24	65464M	24V DC	16 A	2000	96	22
UVE 35/2-M or T	65465P 65466S	230V AC/380V AC	7,2/2,9 A	2800	100	60
UVE 40-12	65467U	12V DC	14 A	1400	70	20
UVE 40-24	65468W	24V DC	7 A	1400	70	20
UVE 40-M or T	65469Y 65470G	230V AC/380V AC	1,8/0,6 A	1400	70	20
UVE 40/2-24	65471J	24V DC	20 A	2000	130	24
UVE 40/2-M or T	65472L 65473N	230V AC/380V AC	7,2/2,9 A	2800	135	70
UVE 45-24	65474R	24V DC	9 A	1400	108	20
UVE 45-M or T	65475T 65476V	230V AC/380V AC	2,6/0,9 A	1400	108	20
UVE 45/2-24	65477X	24V DC	28 A	2000	145	28
UVE 45/2-M or T	65478Z 65479B	230V AC/380V AC	9,6/4,3 A	2800	175	74
UVE 50-24	65480K	24V DC	22 A	1400	160	28
UVE 50-M or T	65481M 65482P	230V AC/380V AC	5,1/2,2 A	1400	160	28
UVE 56-24	65483S	24V DC	22 A	1400	225	28
UVE 56-M or T	65484U 65485W	230V AC/380V AC	5,1/2,2 A	1400	225	28
UVE 63-M or T	65486Y 65487A	230V AC/380V AC	7,2/2,9 A	1400	312	36
UVE 71-T	65489E	380V AC	4,3 A	1400	330	36
UVE 71/B - T	65490N	380V AC	8,2 A	1400	400	42

UBLC - DIMENSIONS AND WEIGHTS



MODEL	Ø IN mm (")	Ø OUT mm (")	A mm (")	B mm (")	C mm (")	WEIGHT kg (lbs)
UBLC 002	58 (2.3)	58 (2.3)	190 (7.5)	295 (11.6)	168 (6.6)	3,5 (7.7)
UBLC 004	98 (3.8)	98 (3.8)	270 (10.6)	370 (14.6)	225 (8.8)	6 (13.2)
UBLC 015	148 (5.8)	148 (5.8)	405 (16.0)	415 (16.3)	338 (13.3)	14 (30.9)
UBLC 028	118 (4.6)	118 (4.6)	322 (12.7)	390 (15.3)	273 (12.6)	10 (22.1)
UBLC 023	200 (7.8)	160 (6.3)	420 (16.5)	530 (20.9)	340 (13.4)	18 (39.7)
UBLC 025	250 (9.8)	200 (7.8)	510 (20)	570 (22.7)	420 (16.5)	23 (50.7)
UBLC 030	300 (11.8)	250 (9.8)	610 (24)	580 (22.8)	500 (19.7)	38 (83.8)

UVE - DIMENSIONS AND WEIGHTS



MODEL	A mm (")	Ø V mm (")	Ø T mm (")	WEIGHT Kg (lbs)
UVE 21	255 (10)	205 (8.1)	275 (10.8)	6 (13.2)
UVE 25	325 (12.8)	240 (9.5)	315 (12.2)	7 (15.4)
UVE 30	300 (11.8)	305 (12.0)	378 (14.9)	8 (17.6)
UVE 30/2	330 (13.0)	305 (12.0)	378 (14.9)	10 (22)
UVE 35	300 (11.8)	350 (13.8)	425 (16.7)	9 (19.8)
UVE 35/2	330 (13.0)	350 (13.8)	425 (16.7)	11 (14.3)
UVE 40	330 (13.0)	400 (15.7)	473 (18.6)	12 (26.4)
UVE 40/2	370 (14.5)	400 (15.7)	473 (18.6)	14 (30.8)
UVE 45	330 (13.0)	450 (17.7)	523 (20.6)	13 (28.6)
UVE 45/2	380 (14.9)	450 (17.7)	523 (20.6)	18 (39.7)
UVE 50	400 (15.7)	500 (19.7)	573 (22.5)	21 (46.3)
UVE 56	400 (15.7)	560 (22.0)	633 (24.9)	24 (52.9)
UVE 63	420 (16.5)	630 (24.8)	704 (27.7)	27 (59.5)
UVE 71	450 (17.7)	700 (27.5)	774 (30.5)	48 (105.8)
UVE 71/B	510 (20.1)	700 (27.5)	774 (30.5)	58 (127.9)

STAINLESS STEEL FIRE DAMPERS



Serrande tagliafuoco a pale multiple in acciaio inox omologate "MED" E USCG DA LLOYDS REGISTER-MCA, per classi di fuoco A0-A60 e dotate di certificati MIL 901-D (Shock test). Le nostre serrande tagliafuoco sono fornite di serie con attuatore elettrico (24V, 120V o 230V) e termofusibile di sicurezza tarato a 72°C.

STANDARD FEATURES

Square/rectangular flange selection or circular flange

- UFD-A60: AISI 316 stainless steel case and blades
- UFD-A60Z: galvanized steel case, AISI 316 stainless steel blades.

OPTIONAL ACCESSORIES

- Dampers supplied with pneumatic actuator
- Dampers with ignition protected actuator (ATEX rule)

HOLES

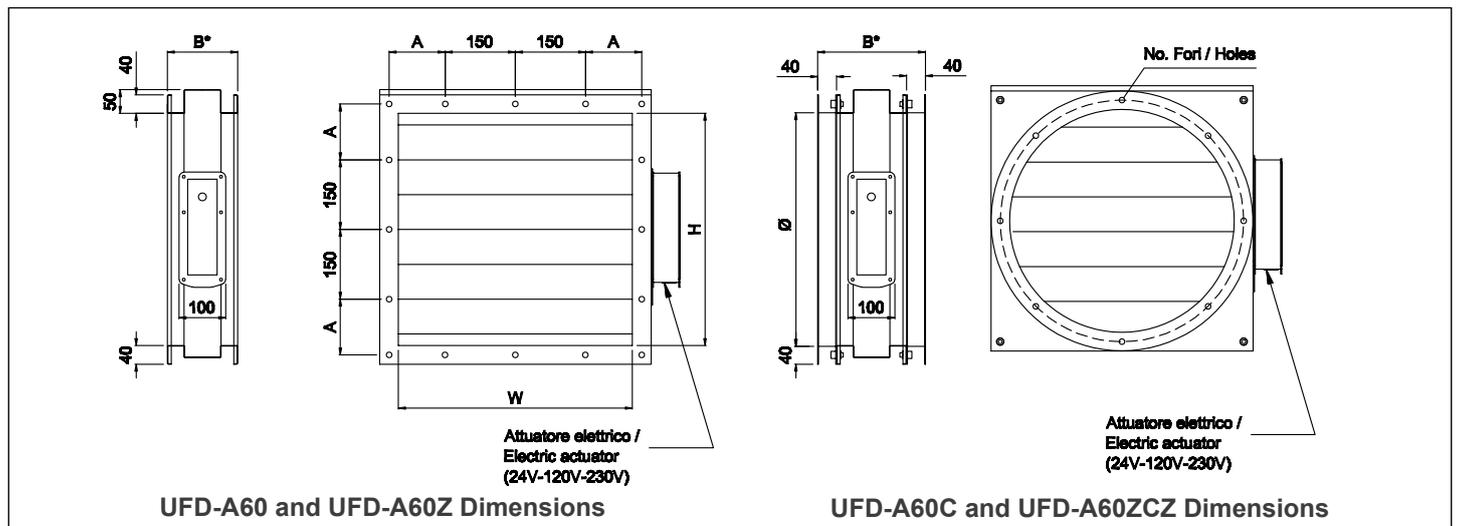
DAMPER Ø	No.	Ø
100 – 250	4	7
251 – 500	8	10
501 – 750	12	12
751 – 1000	16	12



UFD-A60 and UFD-A60Z



UFD-A60C and UFD-A60ZCZ



UFD-A60 and UFD-A60Z Dimensions

UFD-A60C and UFD-A60ZCZ Dimensions

DIMENSIONS

MODEL	A mm (")	B* mm (")	W Duct Width mm (")	H Duct Height mm (")	Case Thickness mm (")
UFD-A60/UFD-A60Z	Min. 75 (2.9) Max. 150 (5.9)	150 (5.9)	100 / 1000 (3.9/39.4)	100 / 1000 (3.9/39.4)	1,5 (0.06)

MODEL	B* mm (")	Ø Duct mm (")	Case Thickness mm (")
UFD-A60C/UFD-A60CZ	230 (9.0)	100 / 1000 (3.9/39.4)	1,5 (0.06)

*B: 210 mm (8.3") on request

Electric actuator width: 42 mm (1.6")

Electric actuator height: 155 mm (6.1") (for 100/400 mm - 3.9"/15.7" dampers) – 248 mm (9.7") (for 400/1000 mm - 15.7"/39.4" dampers)

MARLUNCO®



EASY LOCK™ SYSTEM

Marinco's exclusive Easy Lock System has been designed to make hook-up quick and easy. Just connect the cordset (with an Easy Lock locking ring installed) to the inlet and turn the locking ring less than a quarter turn.

The tabs on the locking ring lock into the inlet for a positive watertight hook-up while eliminating any chance of cross threading. The locking ring features lock locators positioned at 180° to improve finger grip during attachment.

Easy Lock inlets have a threaded boss that will accept threaded cordsets as well.

SOFT TOUCH™ CAP DESIGN

MARINCO inlets feature the Soft Touch cap design. The Soft Touch hinge is designed with a special cam feature that allows it to stay "locked" open in the upright position during hook-up. A "soft touch" unlocks it for closing.

POWERCORD PLUS® CORDSET

The PowerCord PLUS® has features you will not find on other cordsets.

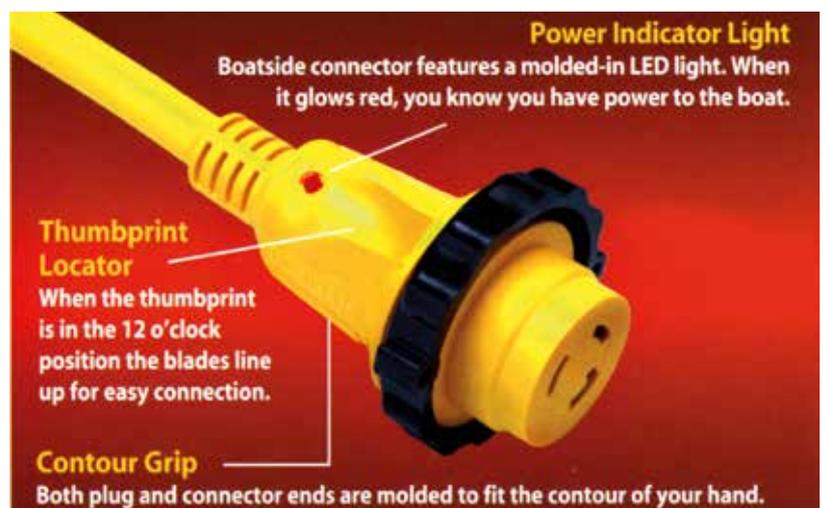
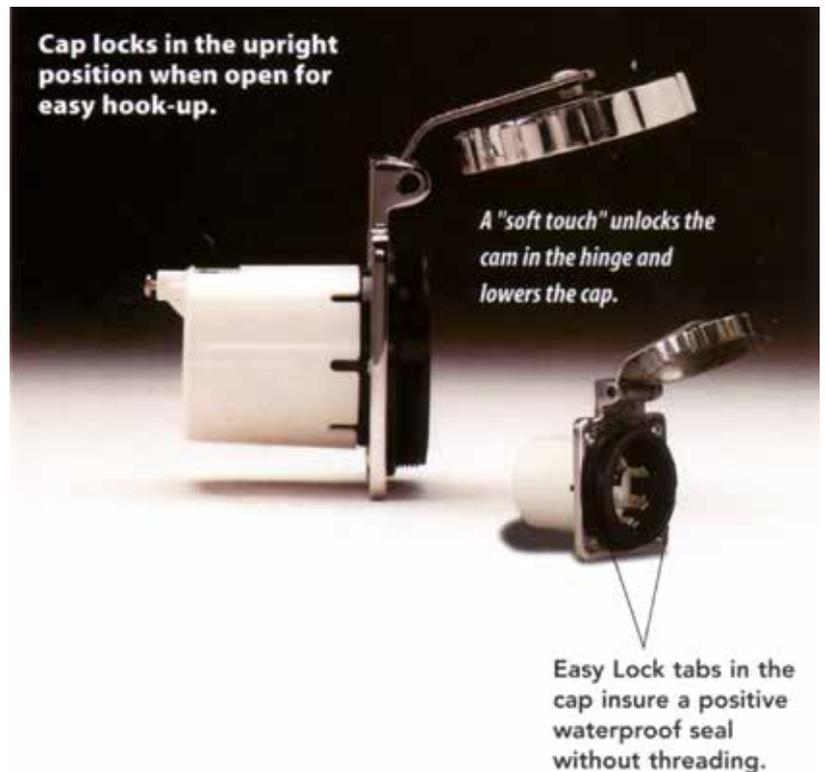
Power Indicator light

LED Power indicator light – lets you know if you have power

Comfort Grip with Thumbprint Locator

Moulded to fit the contour of your hand. Thumbprint Locator lines up the locking blades for quick and easy connections.

- LED Power Indicator Light
- Contour Grip Ends
- Thumbprint Locator
- Super Flexible 10/3 Cable
- Easy Lock™ System
- High Quality Marine Grade Construction
- Watertight Molded Plug & Connectors
- Includes threaded ring and Easy Lock ring
- All PowerCord PLUS cords assembled complete with Watertight Connector Cap to ensure CE compliance
- CE marked



16 AMP/220V & 32 AMP/220V 50 HZ - POWER INLETS



- 316 Stainless Steel
- Easy Lock System
- Soft Touch cap design
- Rear safety enclosure with strain relief
- IP56

303SSEL-BX - 66753A - 16A
6371EL-BX - 66766K - 32A



- Glass-filled polyester
- Easy Lock System
- Watertight
- Rear safety enclosure with strain relief
- IP56

301EL-BX - 66754C - 16A
6351EL-BX - 66767M - 32A



- Glass-filled polyester
- Easy Lock System
- Watertight
- Rear safety enclosure with strain relief
- IP56

304EL-BX - 66755E - 16A
6343EL-BX - 66768P - 32A

16 AMP/220V & 32AMP/220V - FEMALE CONNECTORS



- Female Connector
- Corrosion resistant contacts and terminals

305CRCXN - 66757J - 16A
6360CRNX - 66770A - 32A



- Weatherproof Cover with threaded ring
- Use with female connectors

103RNX - 66758L - for 16A
7715CRNX - 66771C - for 32A



- Watertight Connector Sealing Cap
 - For use on 16 or 32 A products for CE compliance
 - For use on 30 or 50 A products to protect the connector when not in use
- 199109PK** - 66759N - for 16A/30A
199110PK - 66772E - for 32A/50A



- Includes female connector, weatherproof cover with treaded ring and watertight cap
- 199114** - 22555Y - for 16A
199115 - 22556A - for 32A

16 AMP/220V 50 HZ - SHORE POWER CORDSETS



- PowerCord™ Cordset
- 3,3 mm² (12/3)
- With Female connector
- Blunt cut male end

50PCMX - 66760X - 15,24 m (50 ft)



- PowerCord™ PLUS Cordset
- 3,3 mm² (12/3)
- With moulded connector with LED power indicator light
- Blunt cut male end

50SPPX - 66762B - 15,24 m (50 ft)



- PowerCord™ PLUS Cordset
- 2,5 mm² (10/3)
- With moulded connector with LED power indicator light and IEC 60309 male plug (IP44)
- Watertight connector sealing cap for CE compliance

20MSPPXP - 66763D - 20 m (65.6 ft)
15MSPPXP - 66764F - 15 m (49.2 ft)
10MSPPXP - 66765H - 10 m (32.8 ft)

32 AMP/220V 50 HZ - SHORE POWER CORDSETS



- PowerCord™ PLUS Cordset
- 3,3 mm (12/3)
- With moulded connector with LED power indicator light and IEC 60309 male plug (IP44)
- Watertight connector sealing cap for CE compliance

15M32AXP - 66773G - 15 m (49.2 ft)



- Blunt cut
- Watertight connector sealing cap for CE compliance
- With moulded connector with LED power indicator light

15M32AX - 22557C - 15 m (49.2 ft)

CABLE CLIP – 66825Z

- Includes 6 Cable Clips with stainless steel mounting screws, easy to install

50 Amp 125V/250V; 3 POLE, 4-WIRE SHORE POWER PRODUCTS

MARINCO

50 AMP 125V/250V; 3 POLE, 4-WIRE - POWER INLETS



- Solid cast 316 stainless steel
 - Easy Lock System
 - Soft Touch cap stays open in the upright position
 - Rear safety enclosure with strain relief
 - Locking waterproof cap
 - IP56
- 6373EL-B – 66774J - 50A**

- Same as 6373EL-B power inlet, without rear safety enclosure
 - IP56
- 6373EL - 66776N - 50A**

- Glass-filled polyester
 - Easy Lock System
 - Watertight cap
 - Rear safety enclosure w/strain relief
 - Marine stainless steel trim
 - IP56
- 6353EL-B – 66775L - 50A**

50 AMP 125V/250V; 3 POLE, 4-WIRE - MALE PLUG AND FEMALE CONNECTOR



- Male Plug ribbed, thick wall nylon housing for secure gripping
 - Use with weatherproof 7717N cover for superior seal
- 6365CRN – 66778T -50A**



- Weatherproof cover for male plug 6365CRN
- 7717N – 66822T**



- Female connector ribbed, nylon housing for secure gripping
 - Use with weatherproof 7715CRN cover for superior seal
- 6364CRN – 66779V - 50A**



- Weatherproof cover for female connector 6364CRN
- 7715CRN – 66771C**

SEALING COLLAR WITH THREADED RING

- 510R – 66782H - 50A**
110R – 67056G - 30A

63 Amp/230V 50 Hz SHORE POWER PRODUCTS Single Phase 3-wire, Three Phase 4-wire



6401EL-BX - 66785M - 63A Single Phase, 3-wire
6402EL-BX - 66788W - 63 A Three Phase, 4-wire

- Power Inlet
- 316 stainless steel
- Easy Lock System
- Soft Touch cap design
- Rear safety enclosure with strain relief
- IP56



6401CRCX - 66786S - 63A Single Phase, 3-wire
6402CRCX - 66789Y - 63A Three Phase, 4-wire

- Female Connector
- Corrosion resistant contacts and terminals
- Best when used with weatherproof cover 7715CRNX



6401CRPX - 66787U - 63A Single Phase, 3-wire
6402CRPX - 66790G - 63A Three Phase, 4-wire

- Male Plug
- Corrosion resistant materials
- Best when used with weatherproof cover 7715CRNX



7715CRNX - 66771C

- Weatherproof cover for 63 Amp male plugs and female connectors both single and three phase



199111PK - 60102TA

- Watertight Connector Cap
- For use on 16, 32 or 63 A products for CE compliance
- For use on 30 or 50 A products to protect the connector when not in use

100 Amp 125/250V SHORE POWER PRODUCTS



M4100P12 - 67038E - 3 pole, 4 wire
M5100P9 - 20856C - 4 pole, 5 wire

- Plugs with gasketed locking ring
- For use with 100A 125/250V shore power cordsets



M4100C12 - 20857E - 3 pole, 4 wire
M5100C9 - 20858G - 4 pole, 5 wire

- Body connectors
- Mate with plug on extension cords or adapters. Note: It does not mate with shore power inlet



M4100C12R - 66792L - 3 pole, 4 wire (Mate with M4100B12R)
M5100C9R - 66794R - 4 pole, 5 wire (Mate with M5100B9R)

- Body connectors with gasketed locking ring
- For use with 100A 125/250V shore power cordsets



M4100B12R - 66793N - 3 pole, 4 wire
M5100B9R - 66795T - 4 pole, 5 wire

- Shore power inlets on boat side
- Gray inlets have a gasketed, spring-loaded cover providing an IP-67 watertight rating (withstands temporary immersion) when tightened

30 Amp/125V SHORE POWER PRODUCTS

MARINCO



305CRPN - 66817A - 30A

- Male Plug ribbed for secure gripping
- Compact design



102N - 66818C

- Weatherproof cover for male plug 305CRPN



305CRCN - 66819E - 30A

- Female Connector ribbed for secure gripping
- Compact design



103RNX - 66758L

- Weatherproof cover with threaded ring for female connector 305CRCN

50 Amp/125V; 2 POLE, 3-WIRE SHORE POWER PRODUCTS



6361CRN - 66821R - 50A

- Male Plug ribbed, thick wall nylon housing for secure gripping
- Use with weatherproof 7717N cover for superior seal



7717N - 66822T

- Weatherproof cover for male plug 6361CRN
- White version also available on request (Art. 102182)



6360CRN - 66823V - 50A

- Female connector ribbed, nylon housing for secure gripping
- Use with weatherproof 7715CRN cover for superior seal



7715CRNX - 66771C

- Weatherproof cover for female connector 6360CRN



- 316 stainless steel inlet
- Locking waterproof cap
- Soft Touch cap design
- Watertight rear boot (PH/TV inlet only)

PH6592TV-SS - 66796V - Phone and Cable TV Inlet

TV6592 - 66797X - Cable TV / internet inlet



TV6444 - 66801J

Cable TV / internet inlet



- Standard glass-filled polyester inlet
- Watertight cap
- Stainless steel trim on cap

PH6574TV – 66798Z

Phone and Cable TV Inlet

TV6574 - 66799B

Cable TV / internet inlet



- Female Phone Connector With cover

PH6629 – 66848M

PHONE AND CABLE TV CORDSETS



Telephone Cordset

- 3 conductor vinyl cord provides portable connection for RVs and pleasure boats

PH6599 – 66802L - 15,24 m (50 ft)



TV Cable Cordset

- Standard 75 Ohm, with quick, slip-on connections and heavy duty boots included on both ends

TV99-25 - 66805T - 7,62 m (25 ft)



new

12VCPS3 - 70A Trolling motor plug & receptacle

- 70A continuous rating
- Universal design for 2 or 3-wire configuration 12V, 24V, 12/24V, 24/36V, 36V or 48V systems
- Corrosion resistant, plated brass electrical components
- Receptacle contains watertight sealing cap
- Plug contains Integrated strain relief and keyed design with thumbprint locator

12VCPS3 – 22129E



12V DC Receptacle

- Watertight sealing cap
- Easy to install with mounting plate for front panel installation, or locking ring for rear access installation

Mounting plate – 20767D (optional)

- Compatible with standard 12V plugs

12VRC – 66156F



12V DC Receptacle white

- Weather resistant plug cover
- Easy to install, with supplied mounting plate for front panel installation, or locking ring for rear access installation
- Compatible with standard 12V plugs

12VRCW – 66862F



12V DC Plug

- Moisture proof sealing ring
- LED power indicator light
- Interchangeable 10A fuse
- Internal strain relief and cord seal
- Compatible with standard 12V receptacles

12VPG – 66415D



12VBP Plug

- O-ring seal for waterproof connections
- Weather resistant plug cover
- Corrosion resistant, plated brass electrical components
- Ergonomic contoured grip for easy hook-up and ground blade alignment

12VBP – 67219J



12VBR Receptacle

- Watertight sealing cap
- Corrosion resistant, plated brass electrical components
- Drain holes in receptacle keep water away from electrical components
- Perma-Lock screw terminals will not loosen under extreme hull vibration
- Easy to install with supplied mounting plate for front panel installation or locking ring for rear access installation

12VBR – 67220T



12VCP Plug + Receptacle

- 12VBP and 12VBR packaged together

12VCP – 67225D



12V USB

- 12 to 24VDC input
- 5V, 2.1 amp total output
- Blue LED power indicator light for USB
- Water resistant cover protects against dust and water
- Dual USB ports
- Terminals not included

12VDUSB-B – 21630E Black

12VDUSB-W – 21631G White

ACCESSORIES



12V DC Extension Cord

- Heavy duty 18 gauge wire, extends to over 1,8 m (6 ft)
- Watertight cap
- Plug features a LED indicator light, moisture proof sealing ring, strain relief and built-in 10A fuse
- Works with any standard 12V plug and receptacle

12VXT – 66810K



12V DC Dual Outlet Cord

- Heavy duty 18 gauge wire, extends to over 0,3 m (1 ft)
- Watertight cap
- Plug features a LED indicator light, moisture proof sealing ring, strain relief and built-in 10A fuse
- Works with any standard 12V plug and receptacle

12VAD – 66811M

The EEL (Easily Engaged Lock) ShorePower Cordsets has a patented industry first, jaw-clamp design providing one-handed operation and a secure waterproof seal which completely eliminates the need for a locking ring. The EEL connection is built for the harshest environments and is UL approved. This easy-to-use cordset features a built-in cord light which serves as an alert to boaters when the cord is left plugged in. And, best of all, it works with your current inlet. In addition to cordsets with EEL System, Marinco® also has a full set of Pigtail and “Y” adapters all using the new EEL technology



PATENTED EEL TECHNOLOGY

- Designed for use with standard inlets (NEMA)
- Single-handed operation
- No sealing ring required
- Patented jaw-clamp technology provides a watertight seal every time

FEATURES & BENEFITS

- Built-in cord light for added safety - alert light indicates if you are plugged into the dock and cord is powered
- Power indicator light on both ends informs you full power is flowing through the cord
- Meets and exceeds rigorous UL testing standards
- 50 Amp 125/250V cordset models, 50' lengths in white and yellow available
- EEL product line includes connectors, pigtail, straight and “Y” adapters



MODEL	PART No.	LENGTH	COLOUR
<i>CS504-50</i>	21507F	50'	yellow
<i>CS504-50W</i>	21644S	50'	white

SPL SERIES – PRECISION WIRELESS CONTROLLED SPOTLIGHTS



FEATURES

- Bright 100W halogen bulb
- Uniform 132sq. ft (25 m) coverage with 370° rotation and 120° tilt
- Durable, weatherproof housing
- Universal 12V or 24V operation
- Wireless, hand held control SPRL-2 supplied with spotlight. Range 65 m (200 ft)
- Current draw: 7 Amp in use. 0,03 Amp standby
- Peak beam intensity: 210.000 CP. Peak beam distance: 280 m
- Operation temperature: -15°C a 45°C
- Dimensions: 7,5"x7,5"x9,25" (cm 19x19x23,5)
- Weight: 3,3 lbs (1.5 kg)
- IP rating: IP56
- Housing material: UV resistant PC/ASA
- Lens material: UV resistant Lexan®

SPL-12W – 68115B 12/24 V, white

SPL-12B – 68116D 12/24 V, black

SPL-12C – 68117F 12/24 V, chrome



SPL-12W



SPL-12B



SPL-12C

SPLR-2 - 68120U

Wireless control supplied with spotlight
Dim. 88x57x19mm (3.5"x2.5"x0.75")
12V or 24V power supply



SPLR-1 - 68121W

Hand held bridge remote (optional)
Dim. 51x96x25 mm (2.0"x3.78"x1")



SPLR-3 - (optional)

Wired remote control
Dim. 88x57x19mm (3.5"x2.5"x0.75")
12V or 24V power supply



REPLACEMENT BULBS

MODEL	PART No.	DESCRIPTION
202319	68118H	12 Volt, halogen H3
202320	68119K	24 Volt, halogen H3

- 316 stainless steel base, 304 stainless steel head
- Includes joystick control and 15' wiring cable with easy to install plug ends
- Secondary station may be added (see parts and accessories)
- Light can be directed manually without damaging motors
- Spot Power: 72.000 CP
- Flood Power: 30.000 CP
- Amp Draw: 7 Amp
- Operation: 12V Incandescent
- Bulb: Replaceable Incandescent
- Lamp Dimensions: H 241mm (9.5") x W 114mm (4.5") x L 190mm (7.5")
- Base Dimensions: L 140mm (5.5") x W 89mm (3.5")
- Weight: 2,7 kg (6 lbs)
- Joystick requires 70mm (2.75") installation hole



22040 A

22040A - 66860B - Stainless Steel Halogen Spot/Flood with Joystick Control

PARTS & ACCESSORIES

SPOTLIGHT MODEL	CONTROL PANEL	REPLACEMENT 12V BULB KIT
22040A - 66860B	22240-R - 66989G	22014-P - 67001E

IP67 HALOGEN STAINLESS STEEL SPOT/FLOODLIGHT

- Wireless remote communication
- 316 stainless steel base, 304 stainless steel head
- 350 degree horizontal, 60 degree vertical two speed movement
- Peak beam intensity: 165.000 CP
- Amp draw: Spot 8.3A, flood 7.5A @12V- Spot 4.15A, flood 3.75A @24V
- Power (input voltage): 12V or 24V
- Bulb: H4 halogen
- Dimensions: H 250,1 mm (9.875") x W 120,6 mm (4.75") x L 212,1 mm (8.35")
- Weight: 2,7 kg (6 lbs)
- IP Rating: IP67

22050A - 21505B - 12V remote control included
22051A - 21645U- 12V remote control not included
22150A - 22590A - 24V remote control included
22151A - 23513L - 24V remote control not included



22050A (12V)
22150A (24V)

22051A (12V)
22151A (24V)

IP67 LED STAINLESS STEEL SPOTLIGHTS

- Wireless remote communication
- 316 stainless steel base, 304 stainless steel head
- 350 degree horizontal, 60 degree vertical two speed movement
- Amp draw: 3A @12V DC - 1.5A @24V DC
- Power (input voltage): 12V or 24V
- Dimensions: H 250,1 mm (9.875") x W 120,6 mm (4.75") x L 212,1 mm (8.35")
- Weight: 5,2 kg (11.46)
- IP Rating: IP67
- 92000 CD bright intensity (12 and 24 V) no. of LEDs 12

23050A - 22361J - 12V remote control included
23051A - 22362L - 12V remote control not included
23150A - 23403D - 24V remote control included
23151A - 22591C - 24V remote control not included



23050A (12V)
23150A (24V)

23051A (12V)
23151A (24V)

23250-R - 22542N
12V wireless IP67 LED spotlights bridge remote

23350-R - 22543R
24V wireless IP67 LED spotlights bridge remote



23250-HH - 22544T
Wireless IP67 LED spotlights hand held remote

Marinco® is the leading supplier of horns to the marine industry, with over a fifty years of experience in designing and manufacturing sound devices specifically for use in harsh marine environments. Stainless steel is used for all critical components such as trumpets, motor cover, diaphragms and mounting hardware.

Marinco® offers a complete line of marine horn products designed to meet almost any need, including electric and air trumpet horns, compact horns, below deck and deck horns.

DROP-IN HIDDEN HORN

- Easy installation: 69,8mm (2.75") diameter hole x 25,4mm (1") deep
- 12 Volt, maximum Amp draw: 4 Amp
- dB(A) rating: 111 at one meter
- Fundamental frequency: 370±20Hz
- Grills have water resistant fabric liners. Ordered separately.
- Easy retrofit

11080 - 66904V - Drop-in Hidden Horn without Grill

11187 - 66905X - Screw-in White ASA Grill for 11080

11188 - 66906Z - Screw-in Black ABS Grill for 11080

11096 - 66907B - Screw-in Stainless Steel Grill Kit for 11080: includes stainless steel grill cover and plastic white (11187) screw-in grill



11080



Only 1" deep



HORN WITH GRILLS

- Comes with both black ABS and white ASA snap-in grills
- dB(A) rating: 107 at one meter
- Fundamental frequency: 370±20Hz
- Internal space requirements: H 50,8mm (2") x W 85,6mm (3.37") x D 82,5mm (3.25")
- Distinctive marine horn sound
- Easy installation or retrofit, mounts from the outside
- 12 Volt, maximum Amp draw: 4 Amp

10079 - 66908D - Drop-in "H" Horn with Grills



10079

DROP-IN HIDDEN HORN WITHOUT GRILL

- Internal space requirements: H 57,2mm (2.25") x W 92,2mm (3.63") x D 88,9mm (3.5")
- Maximum Amp draw: 3 Amp
- dB(A) rating: 105 at one meter
- Fundamental frequency: 440±20Hz
- Mounts from the outside, horn grill snap on for easy installation
- Easy retrofit
- Grill must be ordered separately

11095 - 66909F - Drop-in Hidden Horn without Grill

11090 - 66910P - Snap-in White ASA Grill for 11095

11091 - 66911S - Snap-in Black ABS Grill for 11095

11225 - 66912U - Snap-in Chrome Plated ABS Grill for 11095 horn



11095



- Long lasting, non-corrosive ASA plastic cover
- Sealed sound unit with stainless steel diaphragm
- Dimensions: L 109,2mm (4.37") x W 85,6mm (3.37") x H 50,8mm (2.0")
- Maximum Amp draw: 3 Amp, 12Volt
- dB(A) rating: 106 at one meter (3ft)
- Fundamental frequency: 440±20Hz

10099 – 66920T – White MiniBlast Compact Electric Horn
10098 – 66921V – Black MiniBlast Compact Electric Horn



10099



10098

DECK HORNS - FULLBLAST™ AIR HORNS

Marinco® FullBlast compressor driven air horns are the loudest and most complete line of 12V air horns available. They produce sound levels ranging between 120 and 127 dB, which means they meet the ABYC and NMMA regulations for boats up to 20 meters (66 ft). Both 12V and 24V compressors are CE listed.

SINGLE TRUMPET MINI AIR HORNS

- Solid brass construction
- Non-corrosive Lexan® diaphragm
- Include compressor, air tubing, fittings and hardware
- Dimensions: L 241,3mm (9.5") x W 88,9mm (3.5") x H 88,9mm (3.5")
- Maximum Amp draw: 12 Volt: 20 Amp
- dB rating: 126 at one meter, 1/3 octave band
- Fundamental frequency: 630±15Hz

10107 – 66913W – 12 Volt Chrome Single Trumpet Mini Air Horn - chrome plated solid brass
10104 – 66914Y– 12 Volt White Single Trumpet Mini Air Horn - white epoxy powder-coated finish over solid brass



10107



10104

DUAL TRUMPET MINI AIR HORNS

- Solid brass construction
- Non-corrosive Lexan® diaphragm
- Include compressor, air tubing, fittings and hardware
- Dimensions: L 241,3mm (9.5") x W 127,0mm (5.0") x H 95,3mm (3.75")
- Maximum Amp draw: 12 Volt: 20 Amp
- dB rating: 127 at one meter, 1/3 octave band
- Fundamental frequency: 630±15Hz/525±15Hz

10108 – 66915A – 12 Volt Chrome Dual Trumpet Mini Air Horn - chrome plated solid brass



10108

AIR COMPRESSORS

- Replacement compressors fit all Marinco® 12 Volt Air Horns
- Dimensions: L 127,0mm (5.0") x D 66,8mm (2.63")
- Include mounting bracket
- Maximum Amp draw: 12 Volt: 20 Amp, 24 Volt: 10 Amp. Produce 9-11 PSI
- CE marked

10102 – 66917E – 12 Volt Air Compressor
10224 – 66918G – 24 Volt Air Compressor



10102

UNDER DECK HORN

MARINCO

- dB(A) rating: 110 at one meter
- Fundamental frequency: 420±20Hz
- 12V DC
- Dimensions:
L 146,05mm (5.75") x W 101,6mm (4") x H 92,33mm (3.635")
- Permanently mounted grill to protect against water intrusion

11045 – 21511W – Under deck horn



11045

SINGLE TRUMPET ELECTRIC HORN

- dB(A) rating: 118 at one meter
- Fundamental frequency: 370±20Hz
- Dimensions:
L 419,1mm (16.5") x W 101,6mm (4") x H 120,65mm (4.75")
- Maximum Amp draw: 5 amps (12V), 2,5 amps (24V)
- 100% stainless steel exterior
- Type 304 stainless steel diaphragm

10028XLP – 21646W – 12 Volt Single Trumpet Electric Horn

10017XL – 21647Y – 24 Volt Single Trumpet Electric Horn



10028XLP-10017XL

DUAL TRUMPET ELECTRIC HORN

- dB(A) rating: 123 at one meter
- Fundamental frequency: 370±20Hz / 310±20Hz
- Dimensions:
L 470mm (18.5") x W 203,2mm (8") x H 127mm (5")
- Maximum Amp draw: 10 amps (12V), 5 amps (24V)
- 100% stainless steel exterior
- Type 304 stainless steel diaphragm

10029XLP – 21648A – 12 Volt Dual Trumpet Electric Horn

10018XL – 21649C – 24 Dual Single Trumpet Electric Horn



10029XLP-10018XL

500 WIPER KIT - 80 DEGREE

This kit includes a 12V 500 Waterproof Wiper Motor with 11.5" Deluxe stainless steel curved blade (33004) and Deluxe adjustable (6.75" to 10.5") stainless steel arm (33006AS).

- Windshield Mount: 0.5" shaft diameter
- Shaft length: 2.5"
- Sweep 80°



MODEL	PART No	DESCRIPTION
30004	23615V	Wiper kit

INTELLIGENT SWITCH FOR HEAVY DUTY PLUS WIPER SYSTEMS

AFI's microcontroller based "intelligent" switch provides all necessary wiper motor functions in one small component

- Settings for two continuous speed functions and three intermittent speed functions (2 sec delay, 4 sec delay, 8 sec delay)
- Washer system operation function
- Blinking LED lights in switch indicate operating function
- Works with 12V or 24V DC motors
- Fits standard switch size openings, requires 67,5mm (2.65") depth
- Includes one ten pole connector with female pins and two female quick-connects



MODEL	PART No	DESCRIPTION
76030	66935G	Single Motor Intelligent Switch

INTERMITTENT WIPER MOTOR CONTROLLER

- Single speed and dual speed options
- Allows for the control of single motor systems and synchronized control of dual motor systems
- Intuitive automotive-style functionality-features adjustable intermittent settings, adjustable continuous settings and washer system operation
- IP67-Potted case for harsh environment durability
- Includes Contura Switch, SPDT (On)-Off-(On)
- Easy to install with 1/4" spade connectors
- Reverse polarity protection
- Compatible with 12V and 24V DC motors



MODEL	PART No	DESCRIPTION
76090	23957A	Single speed
76080	23958C	Dual speed

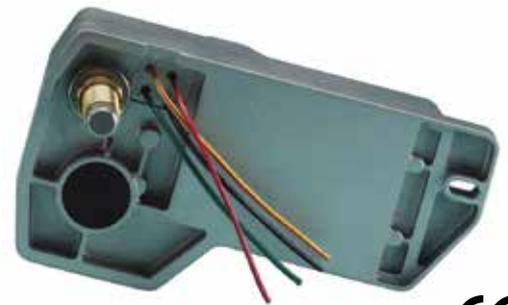


2.5 - HEAVY DUTY WATERPROOF WIPER MOTOR

- The most powerful waterproof wiper motor available
- Fully sealed powder coated aluminum waterproof base and housing
- Powers a 26" Deluxe arm and blade combination or a 24" Premier arm and blade combination
- Available in two shaft lengths: 1.5" and 2.5" (knurled arm fitting adds ½" to overall length)
- Factory pre-set sweep angle of 80° or 110°, can be easily adjusted to 45° or 60°
- Chrome plated solid brass knurled drive nut with 16 mm (5/8") dia. brass and stainless steel drive shaft
- Measures approx.: L 201,0mm (7.91"), W 108,0mm (4.25"), D 76,8mm (3.02")
- Available in 12V and 24V models
- Coast to park with adjustable right or left self parking
- Two speed motor
- CE marked



CE



CE

MODEL	PART No.	SWEEP	SHAFT	VOLT
82082	66938N	80°	2"	12V
82012	66940Z	110°	2"	12V
82312	66941B	110°	2"	24V

1.5 - HEAVY DUTY WATERPROOF WIPER MOTOR

- Fully sealed powder coated aluminum waterproof base and housing
- Powers a 22" Deluxe arm and blade combination or a 20" Premier arm and blade combination
- Available in two shaft lengths: 1" and 2" (knurled arm fitting adds ½" to overall length)
- Factory pre-set sweep angle of 80° or 110°, can be easily adjusted to 45° or 60°
- Chrome plated solid brass knurled drive nut with 16 mm (5/8") dia. brass and stainless steel drive shaft
- Measures approx.: L 197,0mm (7.76"), W 101,0mm (3.98"), D 70,3mm (2.77")
- Available in 12V
- Coast to park with adjustable right or left self parking
- Two speed motor
- CE marked
- It replaces AFI 2000 engine model



CE



CE

MODEL	PART No.	SWEEP	SHAFT	VOLT
71081	66952G	80°	1"	12V
71082	66953J	80°	2"	12V
71011	66954L	110°	1"	12V
71012	66955N	110°	2"	12V

DELUXE™ - STAINLESS STEEL WIPER BLADES

- Works well on curved or flat windshields
- All stainless steel construction
- Marine grade silicone squeegee

MODEL	PART No.	DESCRIPTION
34016S	23075N	16" stainless steel
34018S	23076R	18" stainless steel
34020S	22883S	20" stainless steel
34022S	23077T	22" stainless steel
34024S	22884U	24" stainless steel



PREMIER™ - STAINLESS STEEL ADJUSTABLE SINGLE AND PANTOGRAPHIC WIPER ARMS

- Available in standard and pantographic styles with both versions offered in normal and wet arm configuration

MODEL	PART No.	DESCRIPTION
33086	66957T	Single Arm, Adjusts 20" to 25"
33092	66958V	Pantographic Arm, Adjusts 17" to 22"
33094	66959X	Pantographic Arm, Adjusts 22" to 26"
33086W	66960F	Single Wet Arm, Adjusts 20" to 25"
33092W	66961H	Pantographic Wet Arm, Adjusts 17" to 22"



Note: pantographic wiper arms will ONLY function properly with wiper motor sweep angles 80° or less

PREMIER™ - STAINLESS STEEL WIPER BLADES

- Available in stainless steel or black finis

MODEL	PART No.	DESCRIPTION
34020B	22918J	20" Black Blade
34024B	23426S	24" Black Blade



DELUXE™ - STAINLESS STEEL ADJUSTABLE SINGLE AND PANTOGRAPHIC WIPER ARMS

- Available in stainless steel or black finis

MODEL	PART No.	DESCRIPTION
33010A	66967W	Single Arm, Adjusts 14" to 20"
33070A	66968Y	Single Black Arm, Adjusts 18" to 24"
33037A	66969A	Pantographic Black Arm, Adjusts 17" to 22"



Note: pantographic wiper arms will ONLY function properly with wiper motor sweep angles 80° or less

UFLEX® - PERMANENT IMMERSION SHORE POWER CORDS

- Conductor: Red Copper Class 5 in conformity with HD 383 / IEC 228 rules
- Insulation: special compound
- Protective covering: yellow special compound, for marine applications.
Flame retardant: NFC.32-070 C2 – IEC 60332-1
- Rated voltage: 0,6/1kW – 50/60 Hz
- Operating temperature in air: -40°C to +70°C. In motion: -25°C to +70°C
- Operating temperature in immersion: 50°C
- Immersion depth: 250 m (820') – 25 bar
- Permanent immersion in conformity with BS 6920 – AD8 NF C 15-100 rule
- Flame retardant in conformity with NF C 32-070 C2 – IEC 60332-1 rules
- Excellent resistance to weathering and low water absorption: 1% / 2%
- Excellent resistance to UV according to SEPAP test 1000 hours at 60°C
- Resistance to radiations: 80 Mrad (8.100 cJ/kg)
- Excellent resistance to ozone in conformity with VDE 0472 § 805 rule
- Resistance to salt fogs: in conformity with ASTM B - 117 test 500 hours



DIMENSION mm ²	COIL 20 m	COIL 30 m	COIL 60 m	Amp
3 x 2,5	69845X	67310U	69846Z	16
3 x 4	69847B	67311W	69848D	32
3 x 6	69849F	67837M	69850P	32
3 x 10	67755K	68946Y	69815M	50
3 x 16	68911C	-	69600P	63
4 x 10	69817S	-	69816P	50
4 x 16	69599J	-	69598G	63
4 x 25	20920J	-	20921L	100

UFLEX® - MONOFILAMENT POLYESTER BRAIDED SLEEVINGS FOR CABLES

- Temperature class: F
- Continuous working temperature rating: -50°C +155°C with peaks at +180°C
- Halogen free
- Flammability: self extinguishing
- Good mechanical resistance
- Excellent resistance to abrasion
- Good resistance to solvent
- Non watertight
- Very flexibl
- Expansion ratio: from 1 to 2
- Use: hot cutting to avoid fraying
- Colour: black



APPLICATIONS

STANDARDS



- Compliant with RoHS 2002/95/CE specification
- NF EN 60684-1 (10-2003)
- NF EN 60684-2 (01-1998) modified by NF EN 60684-2/A1 (12-2003), NF EN 60684-2/A2 (05/2006)
- NF EN 60684-3 sheets 340 to 342 (4-2003)



NOMINAL INTERNAL DIAMETER	PART No. 1 m length	PART No. 10 m length	PART No. 20 m length	BULK PART No. 100 m length	ROLL WEIGHT Kg
10 mm (0.39")	23622S	24853T	24858D	68180N	8,0
15 mm (0.59")	23623U	24854V	24859F	20540Y	12,16
20 mm (0.78")	23624W	24855X	24863W	20542C	17,8
25 mm (0.98")	23625Y	24856Z	24861S	20543E	20,2
30 mm (1.18")	23626A	24857B	24862U	20544G	27,0

BEP



CIRCUIT BREAKER PANELS



BEP Marine manufactures a wide range of control panels for any type and dimension of boats utilizing high quality products and components as, for instance, the certified AIRPAX® circuit breakers fitted in modern and elegant designed panels.

Panels are supplied standard with preassembled cables for an easy installation and equipped with back lit label sets and indication LED's.

Configurations available: 12V DC, 24V DC (please specify voltage requested on ordering to receive the correct back lit labels), 220V AC or voltage combination.
All panels are available with Analog or Digital meters.

BEP AC Panels back covers are designed to insulate the exposed terminals at the rear of the AC panels. The back covers are made from flame retardant PVC.



CUSTOM PANELS

BEP Marine manufactures a wide range of Custom panel sizes for OEM's. The Contour panel design allows for flexibility in layout. Although the panels shown in this catalogue are BEP Marine standard range, there are a number of changes that can be made to fit the needs of custom and production boatbuilders.

For example, a panel can be made up with eight circuit breakers, four systems in operation lights plus a meter; or a panel can consist of a mixture of analog and digital meters if required.

If the panel involves a total custom layout, as described above, a specific part number will be applied to that panel and quoted accordingly.

If the design is unable to be achieved we will notify the customer.



R158 - Back

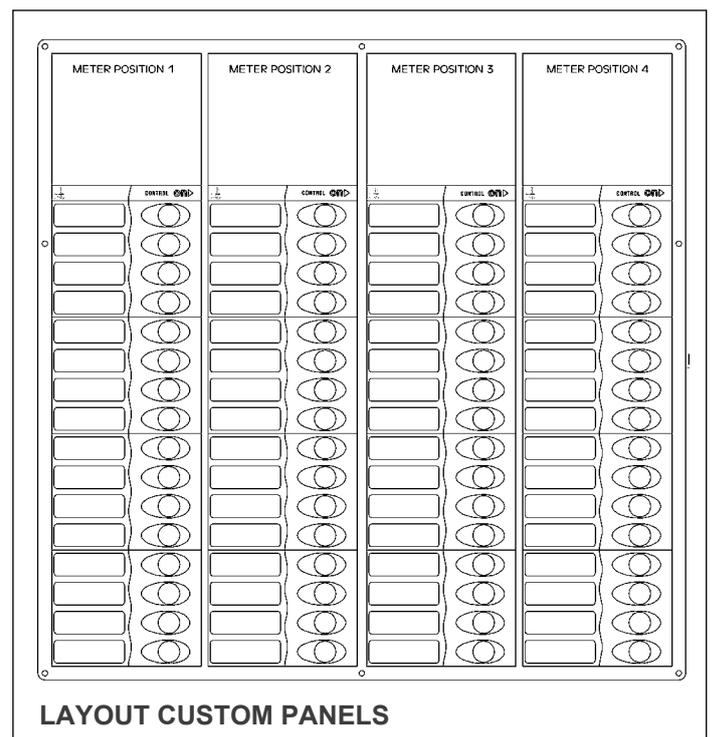
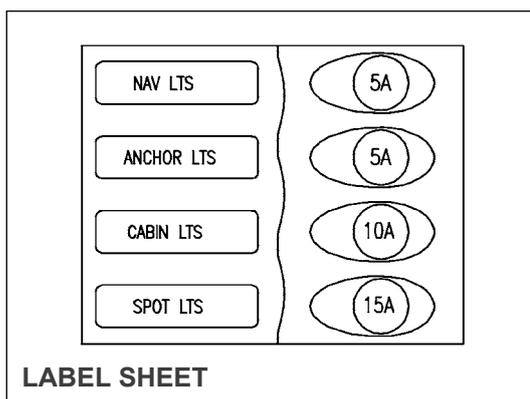
R158 - Front

Alternatively a customer may request a standard panel with circuit breakers laid out to their requirements with labels factory fitted: this involves a personalised layout charge.

When ordering personalised panels, please specify the desired label sets.

When ordering BEP Marine standard range panels or smaller size models, it may be useful to refer to the following layout panel template where you can fill in model and number of meters requested, circuit breaker rating (double pole for 220V AC) and label set.

Layout template available directly from Uflex or from BEP Marine website.



New Zealand has a world wide recognized success both in pleasure and sport boats field as developer of innovative quality boats and electrical products for the marine market. The success of BEP Marine has been brought about through world class campaigns by New Zealand boats and crews in events such as the One Ton Cup, Admirals Cup Sydney to Hobart race, Volvo round the World Race and more recently the America's Cup.

BEP Marine Ltd is actively involved in the research and development of new products as circuit panels, circuit breakers panels and accessories that will be installed in the most important boats all around the world.

BEP Marine is today the most innovative manufacturer of electrical products for the sport and commercial boats. Its product are today available in Italy through UFLEX.

FEATURES

- Stylish Contour Design
- Red LED's for systems "ON"
- Green LED backlit labels
- 12V (24V Backlighting kit available)
- Cutout size: 10 mm (3/8") inside all external edges
- Depth for mounting 64 mm (2.5") all panels



900-DC



900-AM



901V



901V-DCSM



901H



902-AM & 902-DCSM



904NM



NC32Y-DCSM & NC32Y-AM



NC36L-DCSM



902NMH



903-DCSM

MODEL	PART No.	DIMENSIONS mm ("") H x W x D	CIRCUIT BREAKERS - SINGLE POLE						NEG BUS	VOLT	METER	LABEL SHEET
			5	10	15	20	25	30				
900-DC	63125C	115x127x65 (4.5x5.0x2.5)	1	2	1				6 way	12V DC	N/D	Set 1
900-AM	64363A	200x127x65 (7.8x5.0x2.5)	1	2	1				6 way	12V DC	ANALOGIC	Set 1
901V	63126E	200x127x65 (7.9x5.0x2.5)	2	2	3	1			6 way	12V DC	N/D	Set 1
901V-DCSM	64364C	295x127x65 (11.6x5.0x2.5)	2	2	3	1			6 way	12V DC	DIGITAL	Set 1
901H	63127G	115x239x65 (4.5x9.4x2.5)	2	2	3	1			6 way	12V DC	N/D	Set 1
902-AM	63128J	200x239x65 (7.8x9.4x2.5)	3	4	4		1		6 way	12V DC	ANALOGIC	Set 1
902-DCSM	64365E	200x239x65 (7.8x9.4x2.5)	3	4	4		1		6 way	12V DC	DIGITAL	Set 1
902NMH	65538R	115x351x65 (4.5x13.9x2.5)	3	4	4		1		6 way	12V DC	N/D	Set 1
904NM	63129L	200x239x65 (7.8x9.4x2.5)	4	5	5	1	1		12 way	12V DC	N/D	Set 1
903-DCSM	22236F	200x351x65 (7.8x13.9x2.5)	5	6	7	1		1	12 way	12V DC	DIGITAL	Set 1
NC32Y-DCSM	63145J	380x351x65 (15x13.9x2.5)	7	11	11	1	1	1	24 way	12V DC	DIGITAL	Set 1-4, 6
NC32Y-AM	66413Z	380x351x65 (15x13.9x2.5)	7	11	11	1	1	1	24 way	12V DC	ANALOGIC	Set 1-4, 6
NC36L-DCSM	63144G	380x351x65 (15x13.9x2.5)	8	12	12	2	1	1	24 way	12V DC	DIGITAL	Set 1-4, 6

AC CIRCUIT BREAKER PANELS



900-ACM2W



900-ACCH



900-ACM6W



900-ACM2-AM



900-ACM6V-AM



900-AC2H-ACSM

FEATURES

- All AC panels available in 110 V or 230 V options
- Double pole circuit breakers
- The panels are available with analog and digital meter.
Models with digital meters show Volt, Amp and Frequency
- **NOTE:** All panels are supplied with label set 5.

MODEL	PART No.	DIMENSIONS mm ("") H x W x D	SINGLE POLE						DOUBLE POLE				METER	LABEL SHEET		
			5	10	15	20	25	30	20	25	30	50				
900-ACM2W	64517B	115X127X65 (4.5X5.0X2.5)		2						1			IS-6 mm-2	230 V	N/D	Set 5
900-ACCH	68859D	115X127X65 (4.5X5.0X2.5)											IS-6 mm-2	230 V	N/D	Set 5
900-ACM6W	63131X	115X127X65 (4.5X5.0X2.5)		2	3	1				1			IS-6 mm-2	230 V	N/D	Set 5
900-ACM2-AM	20861V	200X127X65 (7.9X5.0X2.5)		2						1			IS-6 mm-2	230 V	ANALOGIC	Set 5
900-ACM6V-AM	20862X	295X127X65 (11.6X5.0X2.5)		2	3	1				1			IS-6 mm-2	230 V	ANALOGIC	Set 5
900-AC2H-ACSM	20863Z	200X239X65 (7.9X9.75X2.5)	1	3	3	1				1	1		2x6 way	230 V	DIGITAL	Set 5

CIRCUIT BREAKERS PANELS LABEL SETS

ACCESSORIES	BAIT TANK PUMP	AFT DECK LIGHT	BILGE ALARM	AC MAINS	ACCESSORIES
Set 1N 63254P	Set 2N 63255S	Set 3N 63256U	Set 4N 63257W	Set 5N 63258Y	Set 6N 63259A
Accessories Auto Pilot Bilge Pumps Cabin Lights Cabin Lights Cockpit Lights Compass Lights DC Outlets Depth Sounder Freezer Freshwater Pump GPS Instruments LPG Control Mast Light Navigation Light Riding Light Saltwater Pump Shower Drain Pump Spare Spreader Light Spotlight Stereo Trim Tabs VHF Winch Wiper	Bait Tank Pump Bilge Pump Aft Bilge Pump Forward Bilge Pump Mid Bilge Pump Port Bilge Pump STBD Blower Boarding Light Cabin Lights Aft Cabin Lights Mid Cabin Lights Port Cabin Lights STBD Deck Wash Pump Electric Toilet Engine room Lights Fridge Horn Nav Lts Port Nav Lts STBD Panel Lights Radar Saloon Lights SSB Start Stern Lights Stop Sum Log Tri Light	AFT Deck Light Bilge Auto Man Bow Lights Docking Lights Emergency Parallel Engine Alarm Engine Blowers Extraction Fan Floodlights Fore Deck Light Holding Tank Pump House Batteries Lazerette Light Port Radio Battery Toilet LT Search Light Spare Galley LT Starboard Start Batteries Step Light Strobe Light Weather Fax Window Washers Windex Light 12v Outlets 24v Outlets	1,2,3,4,5 6,7,8,9,10, Bilge Alarm Davit Winch Engine ALT Fire System Fish Finder Fishing Light House ALT Intercom Load Locker Light Tank Room Lights Mid Wiper Mlzzen Spar Light Plotter Port Wiper Preheat Sole Light Heater Fan Spare Spare Starboard Wiper Start Stop Sub Main Sump Pump Towing Light	AC Mains AC Outlets AC Outlets AC Outlets Air Conditioning Battery Changer Cook Top Dive Comp Dryer Frequency Genset Hotwater Cylinder Ice Maker Inverter Refrigeration Microwave Oven Reverse Polarity Ships Power Shore Power Trash Compactor TV Video Washing Machine Wastemaster Water Maker 230v AC 110v AC	Accessories AC Mains Anchor Wash Automatic Autopilot Auxiliary Bilge Auto-Manual Bilge Lights Book Furl Bridge Lights Burglar Alarm CB Radio Cell Phone Computer DC Mains Fuel Transfer Cabin Fan Hatch Controls Hydraulics Loud Hailer Macerator Manual Night Lights Pelmet Lights Solar Panel Galley Fan Spare TV Antenna

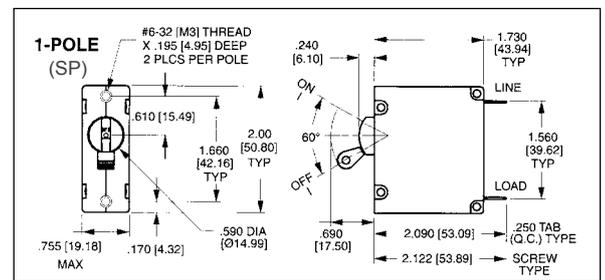
AIRPAX® IEG

B Series circuit breakers Carlingswitch magnetic circuit breakers are current sensing devices employing a time proven hydraulic magnetic design. These precision mechanisms are temperature stable and are not adversely affected by temperature changes in their operating environment. As such, derating consideration due to temperature variations are not normally required and heat induced nuisance tripping is avoided

FEATURES

- Trip free mechanism, a safety feature which makes it possible to manually hold the contacts closed during overcurrent or fault condition
- Certifications: UL1077/CSA C22.2 – No 235 / EN60947 – 2 & EN60934
- Common trip linkage between all poles. Another safety feature ensures that an overload in one pole will trip all adjacent poles.

SINGLE POLE PART No.	DOUBLE POLE PART No.	TRIPLE POLE PART No.
CBS 2.5A - SP 63260J	-	-
CBS 5A - SP 63261L	-	-
-	CBS 10A - DP 63265V	-
CBS 15A - SP 63146L	CBS 15A - DP 63151D	-
CBS 20A - SP 63147N	CBS 20A - DP 63152F	-
CBS 25A - SP 63148R	-	-
CBS 30A - SP 63149T	-	CBS 30A - TP 63266X
CBS 40A - SP 63150B	-	-
CBS 50A - SP-IGP 63263R	-	-



BUSSMANN

Single pole thermal type breakers

FEATURES

- Ratings: 50Amp to 150Amp; 30V DC; 3000Amp Interrupt Capacity
- Operating temperature: -32°C to 82°C
- Storage temperature: -32°C to 150°C
- Applications: Typically used in auxiliary and accessory circuits - trucks, buses, RV's and marine applications. Others might include battery charges and DC audio systems. Series 184 and 185 are sealed for engine compartment and bilge area applications.
- Mounting: Panel or surface
- Indicator: series 184 and 185 have a unique reset mechanism which provides visible indication of tripped condition.
- Approvals: complies with SAE J 1625, J1171 and UL1500 (Ignition Protected)



MANUAL RESET

MODEL	PART No.	RATING	SURFACE	PANNEL
184 050P-01-1	65382K	50	-	X
184 060P-01-1	65383M	60	-	X
184 080P-01-1	23601H	80	-	X
184 100F-01-1	63160E	100	X	-
184 100P-01-1	63162J	100	-	X
184 150F-01-1	63161G	150	X	-
184 150P-01-1	63163L	150	-	X

SWITCHABLE RESET

MODEL	PART No.	RATING	SURFACE	PANNEL
185 050P-01-1	63927S	50	-	X
185 070P-01-1	65385S	70	-	X
185 080P-01-1	63928U	80	-	X
185 100P-01-1	63166T	100	-	X
185 120P-01-1	23602K	120	-	X
185 135P-01-1	23603M	135	-	X
185 150P-01-1	23604P	150	-	X

Also available in FM version

SPRAY PROOF SWITCH PANELS – 900 SERIES



The 900 series panels have the same dimensions as the previous series and are therefore easily replaceable.

Switches clip easily into rear of panel and can be removed to replace with different function switches eg. on/on, on/off/on, off/on and (on)off(on)



Custom designed toggle cover with unique sealing feature

900-5WPS



900-2WPOFO



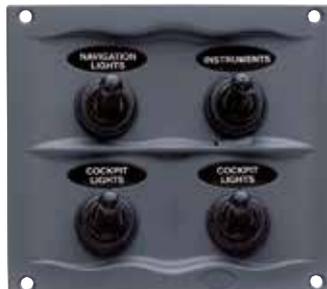
900-2WP



900-2WPMOM



900-3WPSW



900-4WP



900-6WP

SPECIFICATIONS

MODEL	PART No.	COLOUR	DIMENSIONS mm (") H x W x D	LABEL SHEET	SWITCHES
900-2WPOFO	63135F	BLACK	86x58x28 (3.4x2.3x1.2)	LBL-WP	2
900-2WP	63133B	BLACK	86x58x28 (3.4x2.3x1.2)	LBL-MIC1 LBL-MIC2	2
900-2WPMOM	63134D	BLACK	86x58x28 (3.4x2.3x1.2)	LBL-MICSYM	2
900-3WPS	64401F	BLACK	95x107x75 (3.75x4.25x2.9)	LBL-WP	3 + DC socket
900-3WPSW	64405P	WHITE	95x107x75 (3.75x4.25x2.9)	LBL-WP	3 + DC socket
900-4WP	63139P	BLACK	95x107x75 (3.75x4.25x2.9)	LBL-WP	4
900-5WPS	64402H	BLACK	95x107x75 (3.75x4.25x2.9)	LBL-WP	5 + DC socket
900-6WP	63140Y	BLACK	95x107x75 (3.75x4.25x2.9)	LBL-WP	6

LABEL SHEET

LBL - WP - 63252K	
LBL - MIC1 - 63136H	
LBL - MIC2 - 63137K	
LBL - MICSYM - 63138M	
ATM FUSES ARE SUPPLIED IN PACKS OF 2	
PART No	RATING
66520A	5 A
66521C	10 A
66522E	15 A
66523G	20 A
66524J	30 A

The CSP6 panel range comes in 3 models. All models are back lit.

CSP6 Includes six switches unfused for installation where separate fused supply is available.

CSP6-F Includes six switches and 3 **WAFH14** fuse holders with fuses behind panel.

CSP6-PTC This panel utilises the latest technology in overload protection – Positive Temperature Coefficient (PTC). PTC fuses are solid state resettable fuses which will change to a high resistance device on over-current. To reset: Switch circuit off for 10 seconds.

If fault remains the PTC will trip back to a resistive state. The panel is supplied with 6 x 9A PTC fuses mounted internally.

No more changing fuses!

All CSP6 models are supplied with label back lit sheet set



CSP6

FEATURES

- Switches protected by high quality neoprene rubber boots
- Green LED backlit labels
- Red LED's for system "ON"
- Waterproof to IP56 rating
- Removable cover plate over switches conceals screws and water drain
- Switch current ratings 20 Amp DC, 10 Amp AC
- Charcoal colour

Set - 1SP

63253M

<Anc.Light Nav.Lts>
 Accessories
 Aerator
 Anchor Lights
 Autopilot
 Bait Tank Pump
 Bilge Pump
 Bilge Pump Auto/Man
 Blower
 Cabin Lights
 Cockpit Lights
 DC Outlets
 Deck Wash
 Depth Sounder
 Flood Lights
 Freshwater Pump
 Fridge
 Horn
 Inst. Lights
 Instruments
 Navigation Lights
 Trim Tabs
 Radio
 Saltwater Pump
 Spot Lights
 Winch
 Wiper

MODEL	PART No.	DIMENSIONS mm (") H x W x D	SET LABEL SHEET	FUSES	PTC
CSP6	64375H	158x112x65 (6.2x4.4x2.5)	SET-1SP	NO	NO
CSP6-F	64376K	158x112x65 (6.2x4.4x2.5)	SET-1SP	3	NO
CSP6-PTC	63141A	158x112x65 (6.2x4.4x2.5)	SET-1SP	NO	6

SPARE PARTS FOR SPRAY PROOF PANELS

- **WAFH-14** - 63537C Waterproof fuse holder
- **SW-M331** - 64404M Splash proof cover



CONTOUR G2 SERIES SPRAY PROOF PANELS



The Generation 2 spray proof range offers unique styling utilising the latest techniques in injection moulding. The switch tray is moulded plastic with a rubber gasket and seal moulded into the plastic. The cover is moulded in a clear plastic with a rubber over-mould allowing the flexibility to operate the switches through the front of the panel while providing a clear window for label backlighting. Panels available in black or white colour with charcoal or blue strips. When ordering white add "W" on the end of black colour model. G2 can be mounted vertically or horizontally and is available in 2, 4 and 6 way configurations. A joiner is available for multiple panel installations. Supplied complete with on/off switches.



CG2-2W



CG2-4W



CG2-4W-W



CG2-2W-W



CG2-6W



CG2-6W-W

Joiner available for linking multiple panels



CG2-JB
64403K

MODEL	PART No.	SWITCHES	FUSE	LABEL SHEET
CG2-2W	64366G	2	No	Set - G2 - 1
CG2-2W-W	64591P	2	No	Set - G2 - 1
CG2-2W-F	64367J	2	1	Set - G2 - 1
CG2-4W	64368L	4	No	Set - G2 - 1
CG2-4W-W	64542A	4	No	Set - G2 - 1
CG2-4W-F	64369N	4	2	Set - G2 - 1
CG2-6W	64370X	6	No	Set - G2 - 1
CG2-6W-W	64543C	6	No	Set - G2 - 1
CG2-6W-F	64371Z	6	3	Set - G2 - 1

LABEL SET FOR G2 SPRAY PROOF PANELS

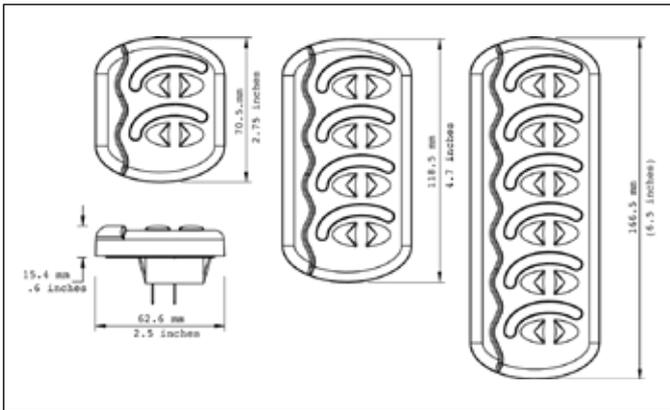
LABEL SET SET - G2 - 2 64374F

B/Pump Port
B/Pump Stbd
B/Pump Fwd
B/Pump Mid
B/Pump Aft
B/Pump Eng Rm
Compass Lt
Deck Lts
Steaming Lt
Nav Lts Pt
Nav Lts Stbd
Step Lts
Stern Lt
Wiper Pt
Wiper Mid
Wiper Stbd
Washers
Freezer
H/Tank Pump
Sump Pump
Locker Lts
Panel Lts
Tri Lt
Bow Lts
Shower Lt
Shower Pump
Spare
Spare

NOTE: Label set G2-2 optional, to be ordered separately.



CG2-4W



Switch rated for 16 Amp



SW-CG1

MODEL	PART No.	SPARE SWITCH FOR G2 PANELS
SW-CG1	64372B	ON/OFF
SW-CG2	64750H	MOMENTARY ON/OFF
SW-CG3	64751K	ON/OFF/ON
SW-CG4	64752M	MOMENTARY ON/OFF/MOMENTARY ON

CONTOUR 1100 SERIES SWITCHES

The Contour Interior switch can be either surface or recess mounted. The interior series is supplied standard with a three terminal on/on switch which can be used for ON/OFF circuits or two way light installations. For applications, eg: shower drain pumps or electric toilets, momentary switches can be interchanged into the switch plate. Switches can be turned 90° for horizontal mounting, and all are current rated at 10A DC. All switches include a label set.

MODEL	PART No.	AMP	SINGLE/DUAL	DIMENSIONS LxWxH mm ("")
1100-BK	63666P	10 A	Single	60 x 30 x 18 (2.4 x 1.2 x 0.75)
1101-BK	63668U	10 A	Dual	91 x 30 x 18 (3.6 x 1.2 x 0.75)



REPLACEMENT

SW-6064B3P - 20866F - ON/ON - ON/OFF switch (supplied as standard)

1000 SERIES CONTROL PANEL

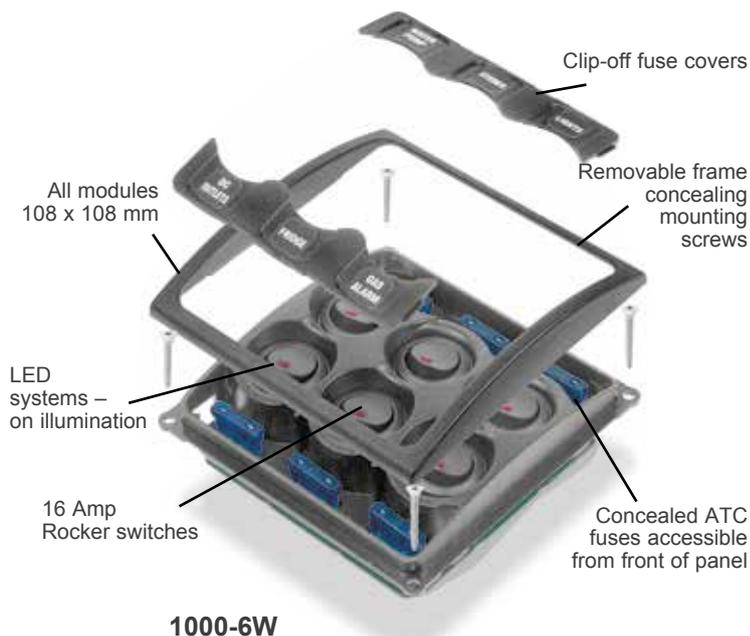


The 1000 Series control panels are offered for interior use on smaller sail boats or cruises.

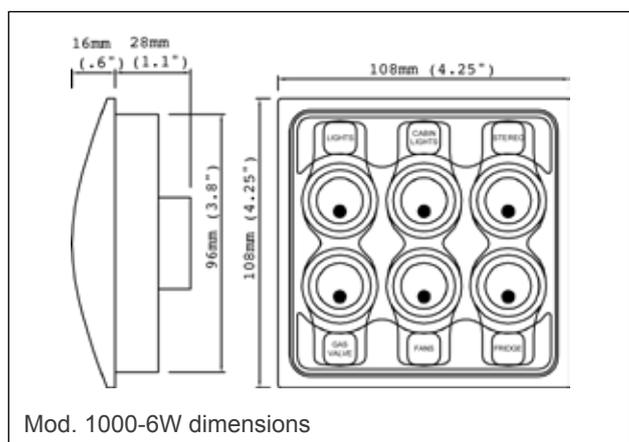
- The ATC fuses are easily accessible from the front of the unit.
- The range is fully modular allowing it to be mounted in a vertical or horizontal configuration.

FEATURES

- Supplied with ATC fuses accessible from front cover
- Square dimensions allow for modular mounting
- Supplied with label sheet part no. SET-1000
- Systems – on LED on each switch
- Matching trim conceals mounting screws
- An On/Off/Momentary switch is available for horn operation. Ordered separately Part No. SW-RVS2 - 65380F
- Max load: 50A



MODEL	PART No.	SWITCHES	FUSES	VOLT
1000-6W-12V	64379S	6	6	12V DC
1000-6W-24V	24926U	6	6	24V DC



LABEL SHEETS FOR 1000 SERIES CONTROL PANEL

Included



SET-1000 - 64383G

Ordered separately

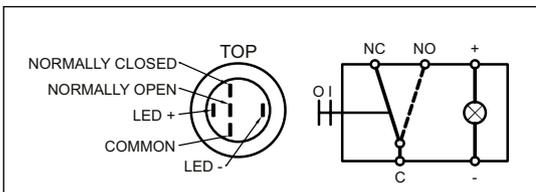
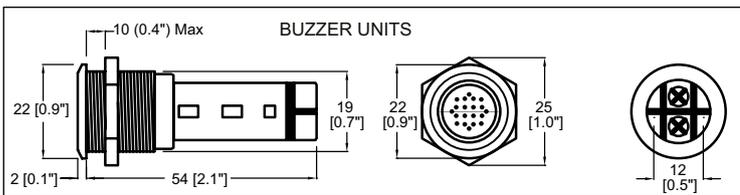
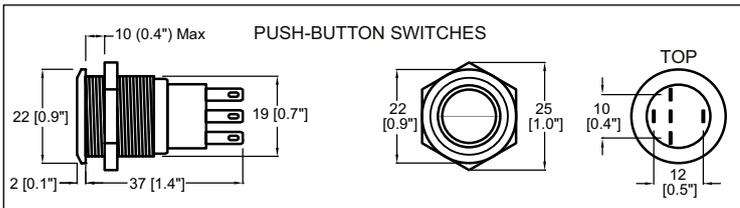


SET-1002 - 64384J

New push-button Switches & Buzzers are built to last with their stainless steel components and silver alloy contacts. The through panel mount switches are ideal for lighting, switch, or dash panels, with colored rings that can be wired to either display power to the system or switch back lighting. The product line includes both switches and warning buzzers with LED light rings.

FEATURES & BENEFITS

- Maximum switch current rating 5 amps
- IP67 environmental protection switches
- IP50 environmental protection buzzers
- 80 decibel buzzer sound intensity
- Warning buzzers flash red on alarm



MODEL 12V	PART No.	DESCRIPTION	COLOUR
80-511-0001-00	20872A	ON/OFF	Red
80-511-0003-00	20873C	ON/OFF	Blue
80-511-0002-00	20874E	Momentary (ON)/OFF	Red
80-511-0004-00	20875G	Momentary (ON)/OFF	Blue
80-511-0009-00	20876J	Buzzer	Red
80-511-0012-01	24927W	Momentary (ON)/OFF	Green

MODEL 24V	PART No.	DESCRIPTION	COLOUR
80-511-0005-00	20877L	ON/OFF	Red
80-511-0007-00	20878N	ON/OFF	Blue
80-511-0006-00	20922N	Momentary (ON)/OFF	Red
80-511-0008-00	20923R	Momentary (ON)/OFF	Blue
80-511-0010-00	20924T	Buzzer	Red

CONNECTION CABLE

This 300 mm (12") cable simply pushes onto the back of the push button switches and features 0.8 mm² / 18 g cables for switch and backlight connections that comply with ISO/ABYC. Other end is stripped wire for easy connection.

80-511-0031-00 - 21652R



BEP MARINE BATTERY SWITCH TEST PROCEDURES (UL 1107)

Continuous (1 hour) intermittent (5 minutes) and cranking (engine starting – 10 seconds). The test is to determine the maximum current the switch can handle for the stated time, without the rear terminals exceeding 100°C above the ambient temperature. The continuous and intermittent ratings are tested at 110% of specified ratings. All BEP switches are tested independently to this specification by a 3rd party laboratory.

701 BATTERY SWITCH - 63142C

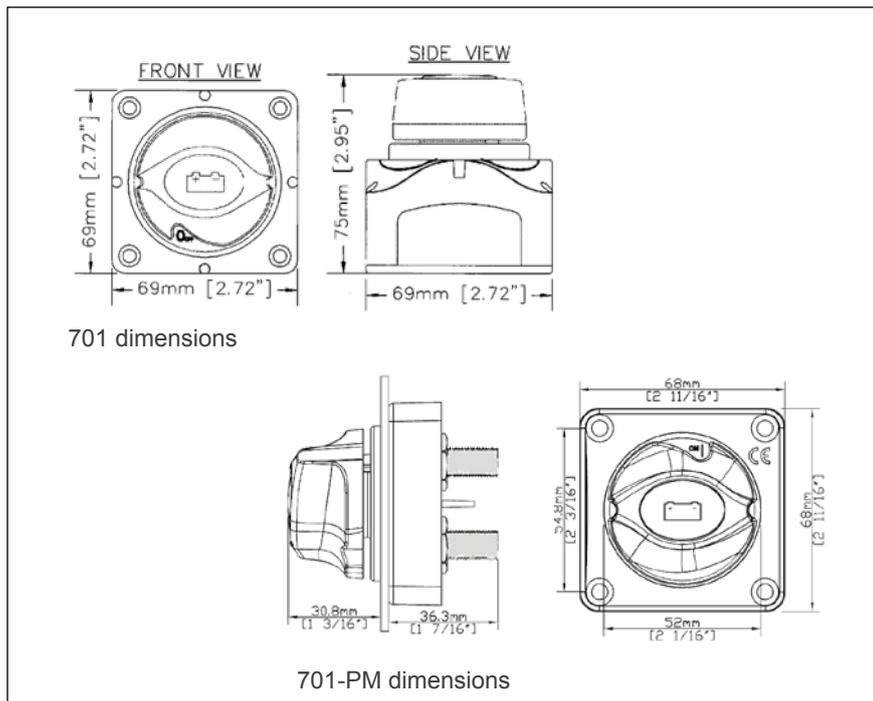
The 701 Contour Battery Master Switch offers a number of unique features. The highlights being the patented contour lock system, allowing it to be a stand alone unit, or locked together with other switches. The 701 also features a control knob which cannot be removed whilst in the On or OFF position, however can be removed by switching to an anti-clockwise 45° position. The control knob also features an interchangeable labelling system allowing a full range of applications (Set 715-713). The 701 also features removable side plates on 4 sides for access of up to 1/0 cables. Plus a rear cover insulating the rear terminals against any short circuits ensuring the switch meets ABYC requirements. The 701 can be either surface or recess mounted by cutting a 52 mm (2 1/16") hole.

FEATURES

- Continuous rating: 275 Amp DC
- Intermittent rating: 455 Amp DC
- Cranking rating: 1250 Amp DC
- Voltage rating: 48V DC
- Operation: ON/OFF
- Mounting: recessed or surface
- Termination stud size: 2 x 10 mm (3/8")
- Dimensions: 69 x 69 x 75h mm (2.75 x 2.75 x 3h inches)
- Tin plated copper studs and nuts
- Ignition protected

701-PM PANEL MOUNT BATTERY SWITCHES - 65494X

Same specifications as 701 switch



701-KEY
- 63930E
Spare Part
Removable knob

701

Standard BEP interchangeable label system

Countersunk recess for surface mount application



701 - PM

Removable key

Standard 52,4 mm (2 1/16") hole cut out

720 HEAVY DUTY BATTERY SWITCH - 63174S

The 720 Heavy Duty Battery Switch fits into the same contour lock system as used on the battery distribution system. Rated at 600 Amp continuous and 2500 Amp cranking. It is well suited to larger vessels. As with the 701 and 720 can be recessed or surface mounted. The 720 uses the same style of self cleaning sliding contact as used in the 701. Also utilises the same label sheet as 701 (Set-715).

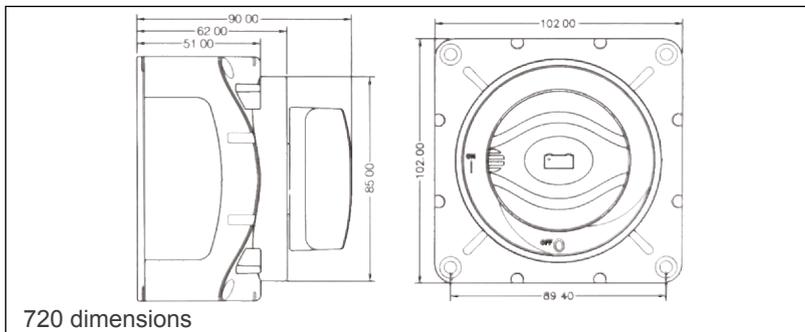
FEATURES

- Continuous rating: 600 Amp DC
- Intermittent rating: 800 Amp DC
- Cranking rating: 2500 Amp DC
- Voltage rating: 48V DC
- Operation: ON/OFF
- Mounting: recessed or surface
- Termination stud size: 2 x 12 mm (1/2")
- Dimensions: 102 x 102 x 90h mm (4 x 4 x 3.5h inches)
- Tin plated copper studs and nuts
- Ignition protected
- Available in bulk only



Recessed
hole cut
out 85 mm (3.3")

720



720 dimensions

700 EASYFIT BATTERY SWITCH - 63672 J

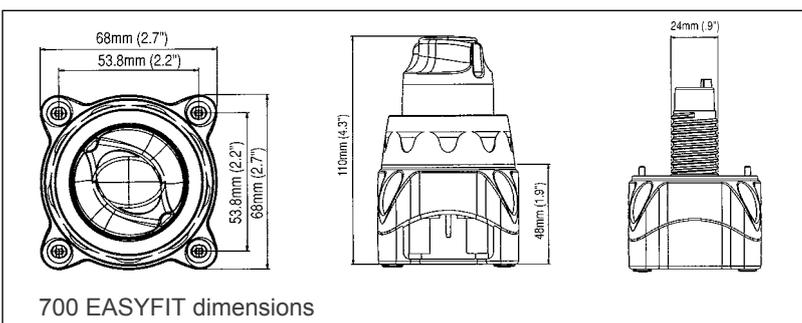
The 700 Easyfit is ideal on those installations where switches need to be recessed through varying thickness of panels. 700 Easyfit features an easily removable threaded ring allowing for panel thickness up to 19 mm (3/4"). It uses the same features as the 701 with the removable key 45° past the off position.

FEATURES

- Continuous rating: 275 Amp DC
- Intermittent rating: 455 Amp DC
- Cranking rating: 1250 Amp DC
- Voltage rating: 48V DC
- Operation: ON/OFF
- Mounting: recessed or surface
- Termination stud size: 2 x 10 mm (3/8")
- Tin plated copper studs and nuts
- Ignition protected



700 EASYFIT



700 EASYFIT dimensions

BATTERY DISTRIBUTION SWITCHES



701-S MINI BATTERY SELECTOR SWITCH - 64387R

The 701-S is the most compact selector switch available on the market. Housed in the same dimensions as the 701 and includes the same removable side plates and back cover.

Please note this system will not separate electronics from harmful engine starting spikes.

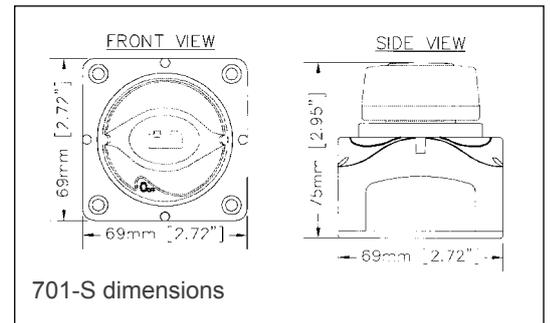
FEATURES

- Continuous rating: 200 Amp DC
- Intermittent rating: 300 Amp DC
- Cranking rating: 1000 Amp DC
- Voltage rating: 48V DC
- Operation: Selector 1-2-both-off
- Mounting: recessed or surface
- Termination stud size: 3 x 8 mm (5/16")
- Dimensions: 69 x 69 x 75h mm (2.75 x 2.75 x 3h inches)
- Tin plated copper studs and nuts



701-S

Recessed hole cut out 52 mm (2.1")



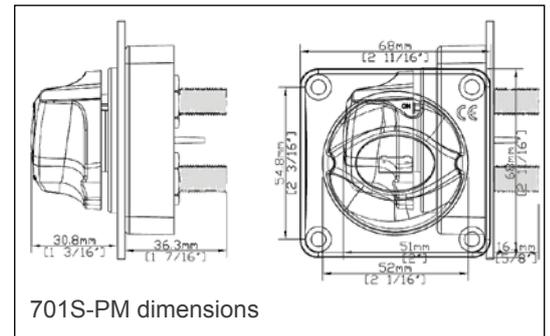
701S-PM Panel mount battery switches - 66163C

Same specifications as 701S switch



Countersunk recess for surface mount application

Standard 52,4 mm (2 1/16") hole cut out



SELETTORE PER BATTERIE 721 - 63143E

The 721 is our heavy duty selector switch, housed in the same module as the 720 and includes the same removable plates and back cover. **Please note this system will not separate electronics from harmful engine starting spikes.**

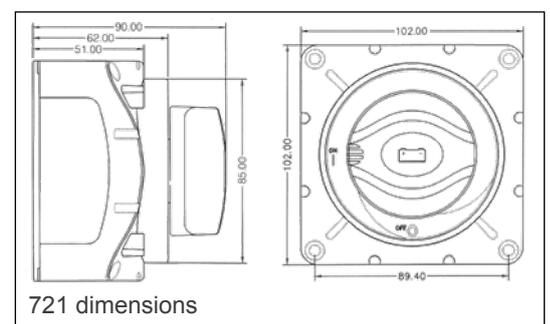
FEATURES

- Continuous rating: 600 Amp Dc
- Intermittent rating: 800 Amp DC
- Cranking rating: 2500 Amp DC
- Voltage rating: 48V DC
- Operation: Selector – Battery 1-2-both off
- Mounting: recessed or surface
- Termination stud size: 3 x 12 mm (1/2")
- Dimensions: 102 x 102 x 90h mm (4 x 4 x 3.5h inches)
- Tin plated copper studs and nuts
- Ignition protected



721

Recessed hole cut out 85 mm (3.3")



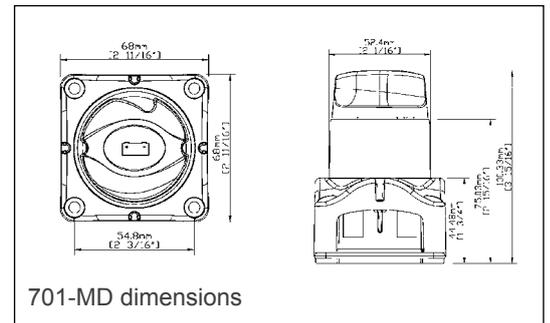
Due to the increased loading requirements on modern boats and large increases in the cost of copper battery cable, the MD range of battery switches allows you to mount the battery switch very close to the battery, reducing cable lengths to starter motor. They are also ideal for remote isolation of bow thrusters.

MD SERIES FEATURES

- Remote operation (easier access for battery control).
- Battery switch can be mounted alongside battery, reducing cable lengths and battery cable (large cost saving in copper cable).
- Reduced labour for fitting, due to shorter battery cabling.
- Manual override option to meet CE requirements.
- LED status identification for remote control switch.
- Same capacity/specification and mounting options as standard BEP battery switches.
- Utilize same interchangeable labelling system as BEP battery switches.



701-MD



701-MD SPECIFICATIONS - 66026S

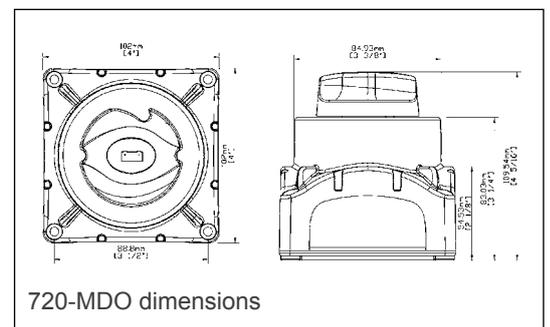
- Continuous rating: 275 Amp DC
- Intermittent rating: 455 Amp DC
- Cranking rating: 1250 Amp DC
- Voltage rating: 9,5 – 32 Volt
- Operation: On / Off
- Mounting: recessed or surface
- Ignition protected
- Stud size: 2 x 10 mm (3/8")
- Tin plated copper studs and nuts

720-MDO SPECIFICATIONS - 66027U

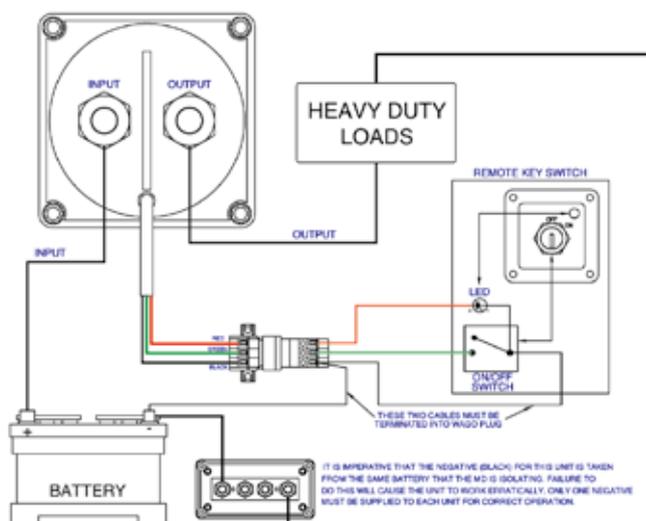
- Continuous rating: 500 Amp DC
- Intermittent rating: 700 Amp DC
- Cranking rating: 2500 Amp DC
- Voltage rating: 9,5 – 32 Volt
- Operation: On / Off
- Mounting: recessed or surface
- Ignition protected
- Stud size: 2 x 12 mm (1/2")
- Tin plated copper studs and nuts



720-MDO



WIRING DIAGRAM



Optical sensor benefits (720-MDO only)

- Can be used to switch in positive or negative lines
- Low stand by current draw (5mA).
- Main contacts isolated from control circuit allowing operation via another battery source

WIRELESS REMOTE CONTROL AND RECEIVER TO OPERATE BATTERY SWITCHES



You can now wire your Battery to the BEP receiver and operate the On/Off switch by remote control, from a distance of up to 50 metres away

- You can control up to 4 separate 5 Amp circuits, eg. 701/720-MD battery switches, anchor light, navigation lights and courtesy lights
- No more lifting hatches to turn on battery switches – it is now all controlled from your remote keyfob
- Control battery switches easily (On/Off) from the dock or carpark
- The remote has a rolling code, for your security



80-911-0045-00 - 66951E - Wireless remote control

REPLACING KNOBS FOR 701 SWITCHES

701-KEY-EP – 67866V replacing knob
701-KEY – 63930E replacing knob

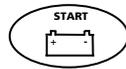
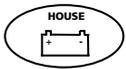


701-KEY-EP
67866V

701-KEY
63930E

LABEL SET FOR BATTERY DISTRIBUTION SWITCHES

Set - 715 - 64389V - Set 715 contains the three most commonly requested labels



TERMINAL LINK KITS (TLK'S)

Available for the 701 and 720 size battery switches, the TLK's allow for cable connections to be made outside of the body of the switches.

80-708-0017-00 - 67996J - for 701-MD
80-708-0013-00 - 66843B - for 720-MDO



BATTERY SWITCH CONTROL CENTER (BCC)

Sophisticated electrical systems need reliable automation. It is possible to centralize power handling with BEP Battery Control Center (BCC) that can control all battery switches from one convenient position.



80-700-0051-00

FEATURES

- The BCC is equipped with locks that ensures group operation at the turn of the key. Any switch can be isolated by disengaging its lock and toggling the switch off
- Isolate each battery via key switch or designated battery banks via breaker.
- LED Status indicators for battery switch status.

MODEL	PART No.	DESCRIPTION
80-700-0050-00	68857Z	Single engine remote
80-700-0051-00	67405F	Dual engine remote
80-700-0052-00	68858B	Triple engine remote

REMOTE ON/OFF KEY SWITCH

The remote On/Off key switch is used for the remote operation of the 701-MD and 720-MDO battery switches. It can be mounted standalone or within the Contour Connect panel range.

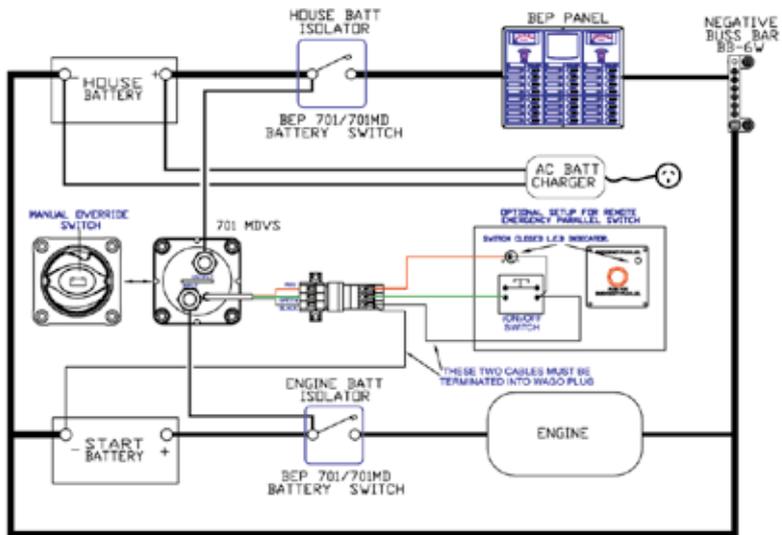
80-724-0006-00 – 21651N



80-724-0006-00

REMOTE OPERATED WITH EMERGENCY PARALLEL

The VSS switch utilizes the same operation as the MD battery switches and is packed with features which compliment the MD range.



IT IS IMPERATIVE THAT THE NEGATIVE (BLACK) FOR THE MD/MDVS IS TAKEN FROM THE SAME BATTERY THAT IT IS ISOLATING. FAILURE TO DO THIS WILL CAUSE THE UNIT TO WORK ERRATICALLY. ONLY ONE NEGATIVE MUST BE SUPPLIED TO EACH UNIT FOR CORRECT OPERATION.



701-MDVS
and 80-701-0018-00
Same specifications
as 701-MD

FEATURES

- Dual battery sensing
- Remote emergency parallel function 701-MDVS and 720-MDVSO can be operated through a momentary button on the dash which will parallel the batteries for a present time of 10 minutes. Once this 10 minutes has passed, if the voltage is up high enough for the voltage sensitive switch to operate, it will stay engaged. If not, it will discharge.
- Engine run sensing VSS will engage when the voltage on either start or house battery reaches 13,7 Volt. If the combined battery voltage drops below 13,0 Volt and the engine is not running, after 5 seconds the contacts will open and stay open until the start or house battery voltage exceeds 13,7 Volt. If the combined battery voltage drops below 12,2 Volt and the engine is running, after 5 minutes the contacts will open and stay open until the start or house battery voltage exceeds 13,7 Volt. If voltage drops below 13,0 Volt and stays above 12,2 Volt on either start or house battery while engine is running, the VSS will stay engaged.
- Manual override option
- The VSS will cover your dual battery charging requirements and emergency parallel operation in one unit



720-MDVSO
and 720-MDO-EP
Same specifications
as 720-MD

MODEL	PART No.	VOLT	RATING	ENGAGES	DISENGAGES
701-MDVS	66416F	12V DC	275A	13.7V DC	12.2-13.00V DC
701-MDVS-24V	66418K	24V DC	275A	27.4V DC	24.4-26.00V DC
720-MDVSO	21374N	12/24V DC	500A	13.3-26.6V DC	12.7-25.4V DC
80-701-0018-00	68152H	12/24V DC	275A	Emergency parallel only	
720-MDO-EP	68346X	12/24V DC	500A	Emergency parallel only	

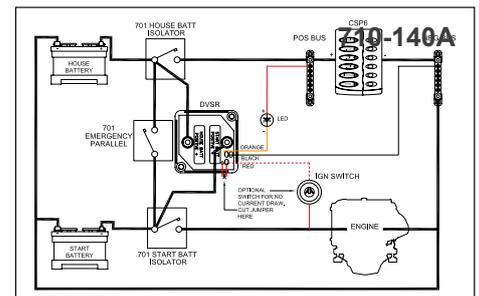
DUAL BATTERY CHARGING VOLTAGE SENSING RELAY



710 -140A - DIGITAL VOLTAGE SENSING RELAY (DVSR)

The Voltage Sensing Relay (VSR) allows the charging of a second battery from a single charging source. When the voltage on the start battery rises to a level indicating a 60% charge, the VSR engages allowing the 2nd battery to charge. When charging stops and voltage falls, the VSR will disengage isolating the two battery banks from each other. Dual sensing functionality enables the sensing of two battery banks allowing two way charging.

- Safely charge two or more independent battery banks from one charge source (alternator, battery charger....)
- Protects start batteries from becoming flattened by domestic loads
- Simple to install 3-wire connection, leaves alternator wiring intact
- No Volt drop vs. diode isolators
- Zero stand by current draw
- Multi voltage, auto selects between 12 and 24V DC operation
- Ignition protected
- Surface or panel mountable



It replaces previous models 710-125A and 710-125A-DS

MODEL	PART No.	VOLT	APPLICATIONS	SIZE mm (") H x W x D
710-140A	68101P	12V DC/24V DC	For use on charging systems up to: 140 Amp	69 x 69 x 50 (2.75 x 2.75 x 2)

GALVANIC ISOLATORS PROSAFE SERIES

- ABYC A-28 compliant
- Prevent galvanic corrosion due to dissimilar metals between boats
- Gold plated terminals provide superior corrosion resistance to marine environment
- Block DC current from flowing through shore power cable
- Ignition protected
- Use the 22034 model for 30 Amp Shore Cord Applications
- Use the 22074 model for (1) 50 Amp or (2) 30 Amp Shore Cord Applications



MODEL	PART No.	AMP	VOLTAGE	FREQUENCY	OPERATING TEMPERATURE	DIMENSIONS mm (")	WEIGHT kg (lbs)
22034	20588D	15/30A single cable	120/240V	50/60 Hz	max 50° C	171,5 x 177,8 x 63,5 (6.75 x 7 x 2.5)	1,4 (3)
22074	20589F	50A single cable 30A dual cable	120/240V	50/60 Hz	max 50° C	184,2 x 165,1 x 95,3 (7.25 x 6.5 x 3.75)	1,7 (3.7)

715-H DUAL BATTERY CHARGING CLUSTERS

To be used on following systems:

- Single outboard dual battery bank
- Single alternator dual battery bank
- Twin alternator dual battery bank



715-H

716-SQ-140A-DVSR DUAL BATTERY CHARGING CLUSTERS

For use on charging systems up to 150A. To be used on following systems:

- Single outboard dual battery bank
- Single alternator inboard engine dual battery bank



716-SQ-140A-DVSR

715-S DUAL BATTERY CHARGING CLUSTERS

The 715-S is designed for systems with twin engines and 2 batteries. The house loads can be switched between port and starboard battery.

The selector switch can also be used to parallel the batteries when in both position.



715-S

717-140A-DVSR THREE BATTERY CHARGING CLUSTERS

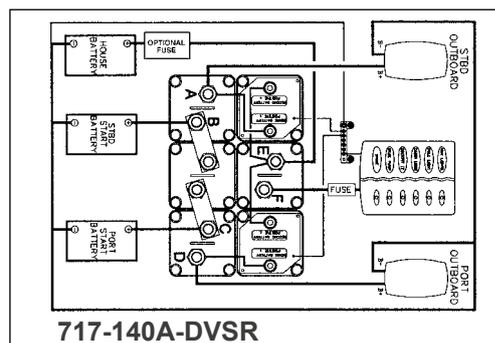
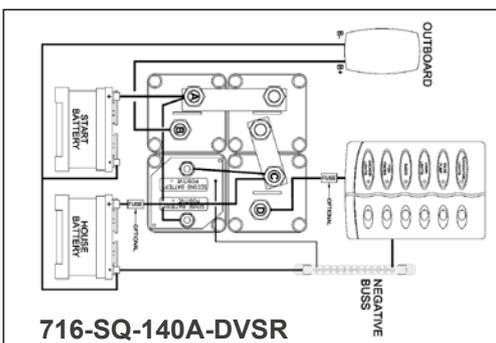
This system is designed for twin outboard installations using outboards without AUX outputs. It will allow the port engine to charge the port start battery and the house battery when the VSR is engaged. It will also allow the starboard engine to charge the starboard start battery and the house battery when the starboard VSR is engaged, giving a combined charge from two outboards into the house battery until the voltage regulators on both engines control the charge. It will also allow the house battery to be charged if steaming on one engine.



717-140A-DVSR

719-140A-DVSR TWO ENGINE AND FOUR BATTERY SYSTEMS

For triple motor installations. Using multiple VSRs combines service battery charging using the 3 engines on board



MODEL	PART No.	ENGINE/BATTERIES	ORIENTATION	SIZE mm (") W x D
715-H	68856X	Single inboard or outboard engine/2 banks	RECTANGULAR	207 x 69 (8.1 x 2.75)
716-SQ-140A-DVSR	68102S	Single inboard or outboard engine/2 banks	SQUARE	138 x 138 (5.4 x 5.4)
715-S	65352A	Twin inboard or outboard engine/2 banks	RECTANGULAR	138 x 69 (5.4 x 2.75)
717-140A-DVSR	68103U	Twin outboard engine/3 banks	RECTANGULAR	207 x 138 (8.1 x 5.4)
719-140A-DVSR	21368U	Triple outboard engine	SQUARE	207 x 207 (8.1 x 8.1)

The BEP Smart Battery Hub is a complete all in one battery management system. Simplify battery management with remotely activated switches, automatic Voltage Sensitive Switching combined with emergency parallel functionality. Enclosed in a robust easy to install, Ignition Protected IPX7 enclosure. Monitoring and transmission of battery voltages and full house bank state of charge over NMEA2000 for integration with multi-function displays. Options for two to six engine configurations available.

FEATURES AND BENEFITS

- Monitors and transmits all battery voltages, including house bank state of charge via NMEA2000®
- IPX7 and Ignition Protected
- Remotely operated switches via analog inputs or CZone®
- Ultra low power consumption
- Full mechanical override of all switches for safety and servicing
- Works with NMEA 2000® MFD

ADDITIONAL FEATURES

- Remotely operated emergency parallel switches
- Bi-directional Voltage Sensitive Switching with configurable cut in and out voltage thresholds
- Monitor up to 2 tank levels, additional battery voltage, temperature or pressure using industry standard sensors
- Status LED's for all switch outputs and fault indication
- Equipped with advanced core CZone® feature set like load shedding, NMEA2000® switch bank support and many more
- Support for CZone® logic blocks and data switching
- USB port allows firmware upgrades and full CZone® system updates including configuration changes over the NMEA2000® network (no PC or adapters required)
- 2 x 10A fused 24 hr house outputs with State of Charge monitoring
- Stand-alone functionality for systems without CZone®

MODEL	PART No.	DESCRIPTION
80-716-0030-00	24716G	Smart Battery Hub twin engine
80-716-0031-00	24717J	Smart Battery Hub triple engine
80-716-0032-00	24718L	Smart Battery Hub temperature sensor (15 m)

PRODUCT IMAGES



CLOSED

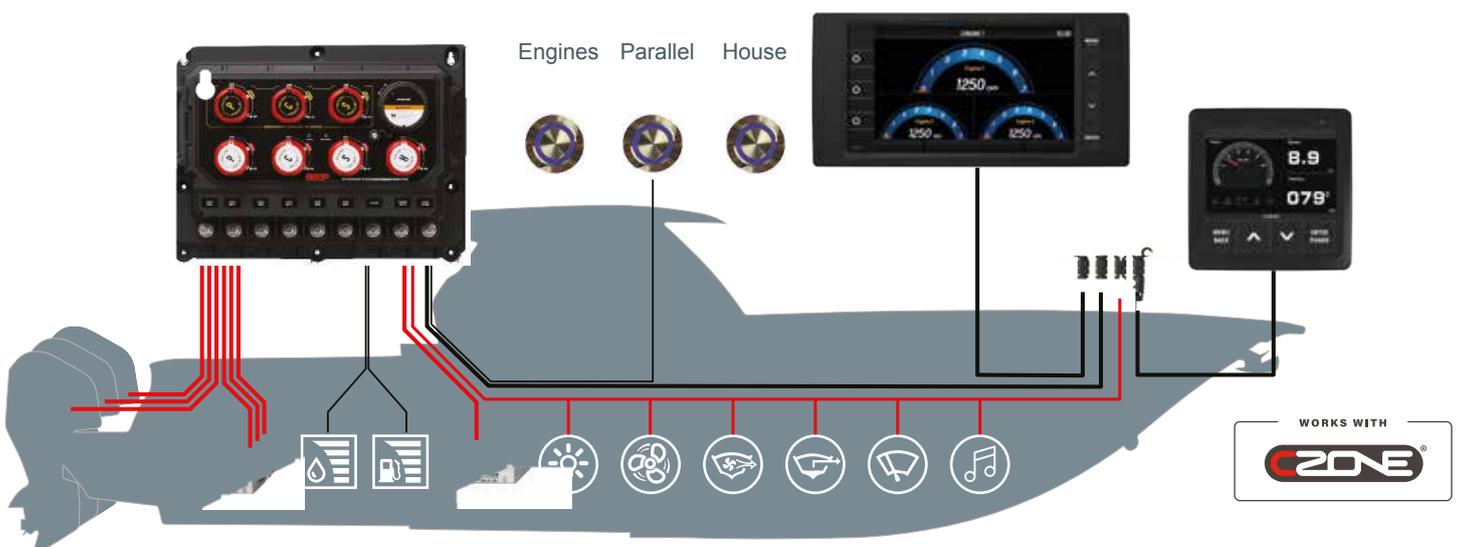


OPENED
(Triple engine version)

SPECIFICATIONS

Weight kg (lbs)	8,4 (18.5)
Power consumption max	92 mA
Power consumption sleep	< 3.5 mA
NMEA 2000® connectivity	1x NMEA 2000® Micro-C port, 1 LEN
Operating temperature range	-15°C to +55°C
Storage temperature range	-40°C to +85°C
Dimensions mm (") WxHxD	363.5x275.4x159.5 (14.3x10.8x6.3)
NMEA 2000® PGN output	Fluid level, pressure, temperature, battery volts, state of charge
Monitoring	Battery voltage, house current draw, house state of charge
Ingress protection	IPX7
Compliance	CE, NMEA, ISO8846/SAEJ1171 Ignition Protected
Nominal voltage	12 or 24 V, power harvested from all batteries
Continuous rating	300 A
Intermittent rating	700 A
Cranking rating	1450 A
Additional input	3 x Master switch 2x Analogue inputs: positive or negative switching, 0-30 Volt, 0-1000 Ohm resistance and 4-20 mA current 1 x Battery temperature sensor

SYSTEM EXAMPLE (TRIPLE ENGINE)



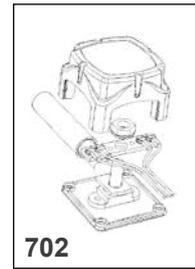
And NMEA 2000®
MFD displays

702 - 703 DISTRIBUTION STUD

BEP

The 702 Contour Distribution Stud allows terminating of heavy duty cables for 1 or more connections. Contour lock housing has removable side plates which allow for connections from all sides, utilising link bars 702SB.

MODEL	PART No.	STUD SIZE	AMP	DIMENSIONS mm (")
702	63687Y	10 mm (3/8")	200A	69x69x50 (2.71x2.71x2)
703-300A	68058S	10 mm (3/8")	300A	138x69x50 (5.4x2.71x2)
703-500A	63688A	10 mm (3/8")	500A	69x69x50 (2.71x2.71x2)



702SB SECONDARY BUS

Fitted to distribution stud 702 allows for small wire connections without cluttering main stud. Terminal screws 4 mm (1/8").



BUS BARS

- 4 mm (5/32") stainless steel screws with shakeproof washers
- 2x6 mm (1/4") input stud
- Tin plated brass
- Insulated mounting base
- Optional cover for compliance with ABYC standards with polarity inversion (model IS-10MM-1R)

MODEL	PART No.	OUTPUT SCREWS 4 mm (5/32")	INPUT STUDS 6 mm (1/4")	CURRENT RATING
BB-6W-2S	63690L	6	1	100A
BB-12W-2S	63691N	12	1	100A
BB-24W-2S	63692R	24	2	150A



INSULATED STUDS

- 6 mm (1/4"), 8 mm (5/16") e 10 mm (3/8") tinned copper and brass studs with spring washers
- High temperature plastic insulated mounting base
- 6 mm and 10 mm black and red covers available on request



MODEL	IS-6MM-1	IS-6MM-1R	IS-8MM-1	IS-8MM-1 R	IS-10MM-1	IS-10MM-1R	IS-6MM-2	IS-10MM-2	IS-10MM-8MM
Part No.	23517V	23518X	23124Z	23519Z	64392H	23904C	63689C	65766E	23520H
Terminals	1x6mm (1/4")	1x6mm (1/4")	1x8mm (5/16")	1x8mm (5/16")	1x10mm (3/8")	1x10mm (3/8")	2x6mm (1/4")	2x10mm (3/8")	1x10mm/1x8mm
Polarity	Neg.	Pos.	Neg.	Pos.	Neg.	Pos.	Neg.	Neg.	Neg.

BEP Marine's new heavy duty fuse holders are an economical way of fusing heavy loads 30-80 amp. Ideal for battery charger outputs or mains feeds. 6 mm (1/4") studs receive ring terminals and cables up to 25 mm² (4 gauge). Fuse is clamped between tinned brass clamp for positive connection. Covers enclose exposed terminals to meet ABYC standards.



702-MFH

MODEL	PART No.	STUD SIZE	DIMENSIONS mm (")
702-MFH	67406H	6 mm (1/4")	71 x 53 x 36 (2,8 x 2 x 1.42)

HIGH AMPERAGE FUSES MOD. MAXI

- Fuses available 30-80 Amp
- Interrupt capacity: 1000 Amp DC
- Maximum voltage: 32 Volt DC



BFHD-30A

HEAVY DUTY FUSES

MODEL	PART No.	RATING	MODEL	PART No.	RATING
BFHD-30A	66132R	30 Amp	BFHD-60A	66135X	60 Amp
BFHD-40A	66133T	40 Amp	BFHD-70A	66136Z	70 Amp
BFHD-50A	66134V	50 Amp	BFHD-80A	66137B	80 Amp

704-ANL FUSE HOLDER HEAVY DUTY - 63235K

The 704-ANL allows fusing of heavy duty accessories between 80 Amp - 500 Amp. Mounted in contour lock mouldings with removable sides. Meets ABYC standards for exposed terminals.



ANL-FUSE



704-ANL



Fuse viewing window

704-ANL

HIGH AMPERAGE FUSES

MODEL	PART No.	ANL FUSE LINKS	DIMENSIONS mm (")
IP100P/DSP	64395P	100 Amp	138 x 69 x 50 (5.4 x 2.75 x 2)
IP150P/DSP	63806D	150 Amp	138 x 69 x 50 (5.4 x 2.75 x 2)
IP200P/DSP	63807F	200 Amp	138 x 69 x 50 (5.4 x 2.75 x 2)
IP250P/DSP	63808H	250 Amp	138 x 69 x 50 (5.4 x 2.75 x 2)
IP300P/DSP	20764X	300 Amp	138 x 69 x 50 (5.4 x 2.75 x 2)
IP425P/DSP	63810U	425 Amp	138 x 69 x 50 (5.4 x 2.75 x 2)
IP500P/DSP	64407U	500 Amp	138 x 69 x 50 (5.4 x 2.75 x 2)

IGNITION PROTECTED

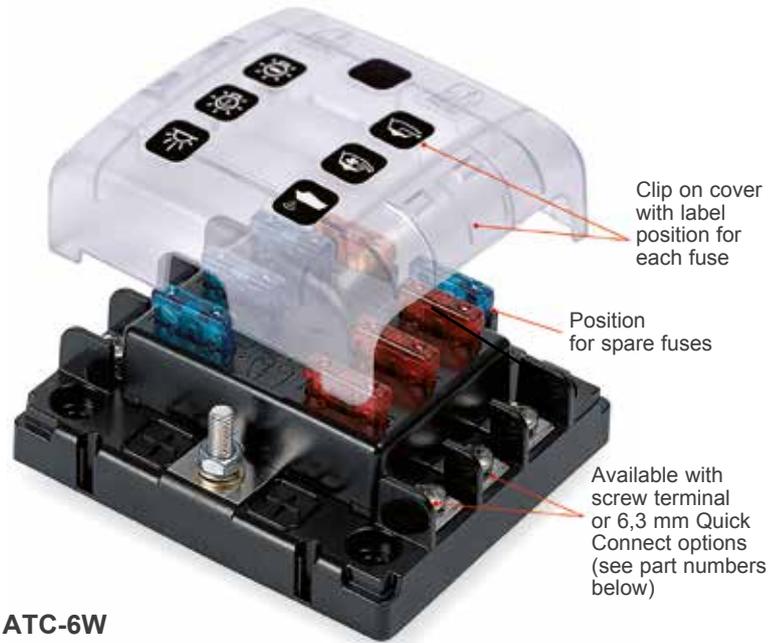
ATC FUSE HOLDERS



The BEP ATC fuse holder includes the patented contour lock system (as used in all BEP battery management products). This allows you to module as many fuse holders as you like together.

The advantage of this is that it allows you to link the inputs together, or split them apart to allow multiple power groups within one fuse holder: eg. switched supply or 24 hour supply.

For the aftermarket the modular system allows you to carry one part number instead of 3 or 4. The 6W-ATC also includes a clip on cover and label positions. The label (included) positions receive the same label as the 1000 series panels.



ATC-6W

SPECIFICATIONS

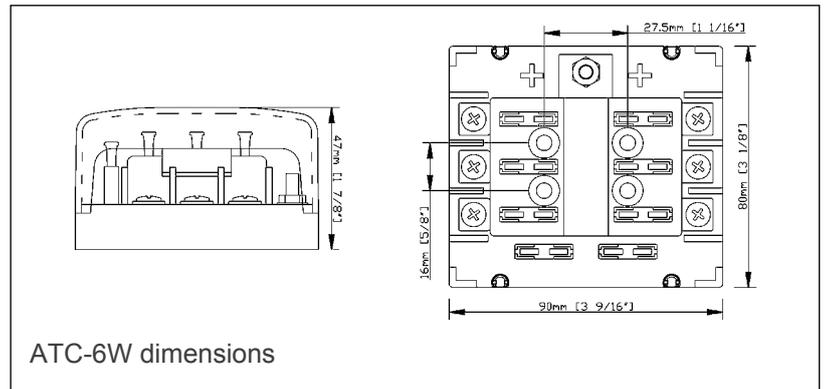
- Maximum amperage per circuit: 30 Amp
- Maximum amperage per block: 100 Amp
- Maximum voltage: 32V DC
- Base material: polycarbonate
- Cover material: clear polycarbonate

ATC FUSES

MODEL	PART No.	RATING
J03A	66018T	3 Amp
J05A	66019V	5 Amp
J7.5A	66020D	7.5 Amp
J10A	66021F	10 Amp
J15A	66022H	15 Amp
J20A	66023K	20 Amp
J25A	66024M	25 Amp
J30A	66025P	30 Amp



J05A



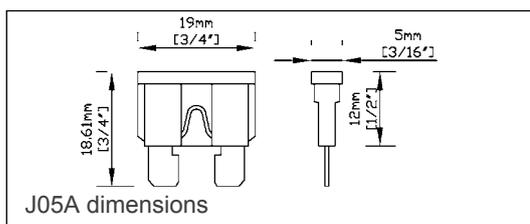
ATC-6W dimensions

ATC FUSE HOLDERS

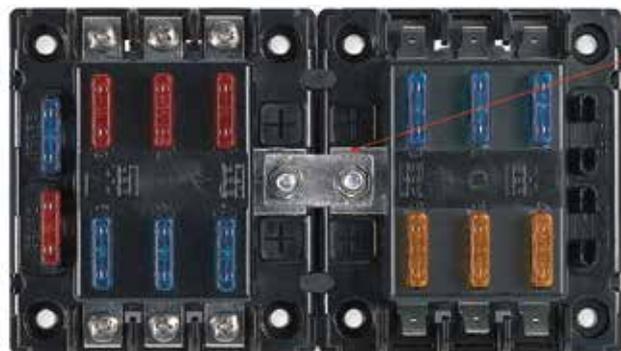
MODEL	PART No.	DESCRIPTION
ATC-6W	65569C	6 way fuseholder, screw terminals, with cover
ATC-6WQC	66017R	6 way fuseholder, quick connect, with cover
80-712-0039-00	24928Y	ATC 6 way, negative bus bar

SPECIFICATIONS

- Fuses available: 1-40 Amp
- Interrupt capacity: 1000 amp DC
- Maximum voltage: 32 Volt DC



J05A dimensions



BB-LINK - 23006T - 17 mm
Fuse holder to be ordered separately

STANDARD MOUNT SWITCHES

The new series of powerful 400 Amp rated battery switches have very high quality features and performance that satisfy both the installer and the end user at the same time. Three mounting options, surface, rear panel, front panel, and optimized cable access make installation safe and fast. They have been designed using the best materials to withstand the most hostile marine environment

EZ MOUNT SWITCHES

These switches offer a revolutionary three-step installation procedure, with front cable connection. Just remove the bottom of the switch, wire up, and replace the cover with the knob. EZ-Mount switches have a standard footprint that allows them to be installed alongside other Pro Installer products, have a continuous rating of 400 Amp and intermittent rating of 600 Amp

ALL PRO INSTALLER SWITCHES FEATURES

- Continuous rating: 400 Amp DC
- Intermittent rating: 600 Amp (5 mins)
- Cranking rating: 1500 Amp (10 secs)
- Waterproof to IP66
- Tinned copper 10 mm (3/8") studs
- Stainless steel washers/nuts
- Fiber reinforced plastics
- Removable knob allows isolation during servicing
- 3 removable sideplates for protection
- Industry standard 3.85" x 3.85" footprint
- Dimensions mm ("): 97.8 x 97.8 (3.85 x 3.85)
- Tested to UL1107 ignition protection, CE

- 770-EZ** - 69149A - On/off master switch EZ-MOUNT
- 770-DP** - 69952Y - Double pole, on/off master switch
- 770-DP-EZ** - 69953A - Double pole on/off master switch EZ-MOUNT
- 771-S-EZ** - 69150J - Selector battery switch EZ-MOUNT
- 771-S** - 69954C - Selector battery switch
- 772-DBC-EZ** - 69889U - Dual bank control battery switch EZ-MOUNT
- 771-SFD** - 69955E - Selector battery switch with alternator switch disconnect
- 770-KEY-EP** - 21978Y - Yellow knob, for application where emergency parallel switch needs to be highlighted. To order separately, replaces existing knob



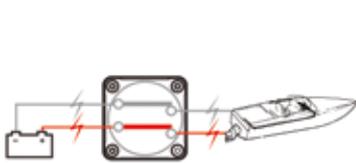
770-DP-EZ



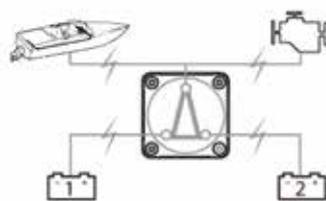
771-S-EZ



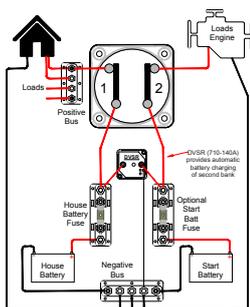
772-DBC-EZ



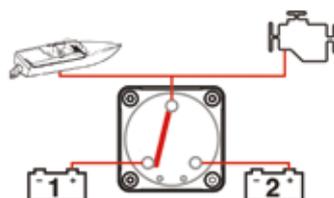
770-DP-400A - 770-DP-EZ



771-S-400A - 771-S-EZ



772-DBC-EZ



771-SFD

BEP Marine have created a completely new concept for small cable termination with the Z-Bar range. These bus bars maximize power density by utilizing high and low level bars to optimize cable runs, saving even more installation space

FEATURES

- Modular sizing and common interconnection height: Easily linked with other Pro Installer Busbars and Fuseholders to save installation time and space
- Clean installation—all cables can be run from one side of the Z-bar
- Innovative clear covers insulate/protect on three sides, with “snap outs” for extra cable access as required
- Label recess on cover allows fitting up to ½” width (12.7mm) printed labels
- Insert molded studs offer superior mechanical strength
- Designed for the harsh marine environment



777-Z18W-200



777-Z10W-200

SPECIFICATIONS

- 10 way and 18 way versions
- 4 x 6 mm (¼”) studs with anti-seize lubricant
- 4 mm (5/32”) terminals with captive lock washers
- 200 A max per Bar (2 x 200 A)
- 50 V DC
- Tinned CDA102 copper conductors
- Stainless steel studs, washers, nuts for longevity in marine environment
- Metric threads

MODEL	PART No.	TERMINAL		CONNECTING STUD		AMPS	DIMENSIONS mm (“)
		Q.TY	DIMENSIONS mm (“)	Q.TY	DIMENSIONS mm (“)		
777-Z18W-200	68864W	18	4 (5/32)	4	6x19 (1/4x3/4)	200A	147x49x51 (5.8x1.9x2.0)
777-Z10W-200	68865Y	10	4 (5/32)	4	6x19 (1/4x3/4)	200A	98x49x51 (3.9x1.9x2.0)



Pro Installer Heavy-duty Bus Bars provide a robust means to connect together the multitude of large cables found in modern electrical installations. They offer unrivaled flexibility to meet the requirements of any installation, saving significant cost and space



BUSBARS

SPECIFICATIONS

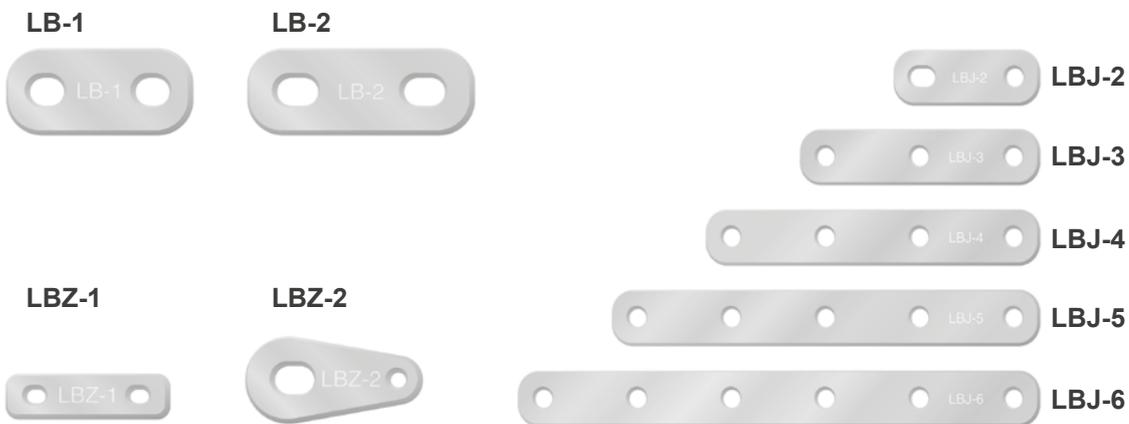
- 3,5 and 8 stud – 650 A bus bar 10 mm (3/8") stainless steel studs
- 4 stud – 500 A bus bar 8 mm (5/16") stainless steel studs
- Studs treated with anti-seize lubricant
- 50 V DC
- Tinned CDA102 copper conductors
- Stainless steel studs, washers, nuts for longevity in marine environment
- Generous stud lengths, metric threads

MODEL	PART No.	CONNECTING STUD		AMPS	DIMENSIONS mm (")
		Q.TY	DIMENSIONS mm (")		
777-BB8S-650	68860M	8	10x25 (3/8x1)	650A	249x48x66 (9.8x1.9x2.6)
777-BB5S-650	68861P	5	10x25 (3/8x1)	650A	147x48x66 (5.8x1.9x2.6)
777-BB3S-650	68862S	3	10x22 (3/8x7/8)	650A	99x48x63,5 (3.9x1.9x2.5)
777-BB4S-500	68863U	4	8x22 (5/16x7/8)	500A	99x48x63,5 (3.9x1.9x2.5)

- A range of linking bars complement the Pro Installer range of products
- High purity copper, tin plated for optimum marine electrical performance
- Fastest, most economic way of connecting for the most compact installations
- Saves space, allows clustering for the most compact installations
- Links can be doubled for higher loads



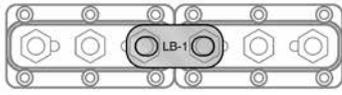
Application example



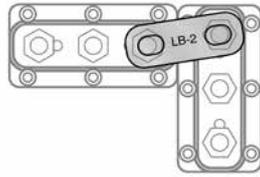
Application example

MODEL	PART No.	DESCRIPTION	LINK	MAX AMPS	DIMENSIONS mm (")
LB-1	69318X	Link bar 31-3,7 mm	Short Link Bar 8 & 10 mm studs	650	56x25 (2.2x1.0)
LB-2	69319Z	Link bar 35.5-42,5 mm	Medium Link Bar 8 & 10 mm studs	650	69x25 (2.8x1.0)
LBJ-2	69320H	Joiner 2-way 46-50 mm	Long Link Bar 8 & 10 mm studs	650	74x25 (3.0x1.0)
LBZ-1	69321K	Link Z Bar to Z Bar	Joins Z Bar E:E and S:S	250	49x12 (2.0x0.5)
LBZ-2	69322M	Link Z Bar to Busbar or Fuseholder	Joins Z Bar to Busbar or FuseHolder	400	53x25 (2.1x1.0)
LBJ-3	69324S	Joiner 3-way	Side to Side 3 products	525	123x25 (4.9x1.0)
LBJ-4	69325U	Joiner 4-way	Side to Side 4 products	450	172x25 (6.9x1.0)
LBJ-5	69326W	Joiner 5-way	Side to Side 5 products	400	221x25 (8.8x1.0)
LBJ-6	69327W	Joiner 6-way	Side to Side 6 products	350	270x25 (10.8x1.0)

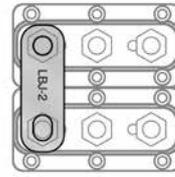
LINK BAR DIAGRAMS:



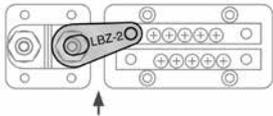
E:E End to End linking



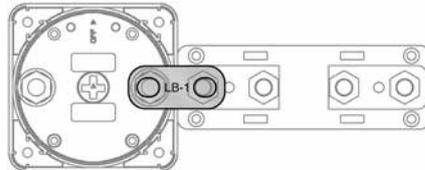
S:E Side to End linking



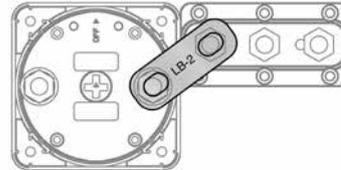
S:S Side to Side joining



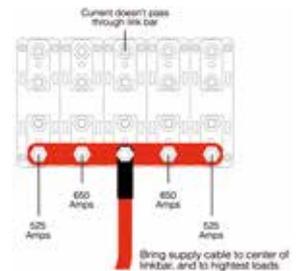
Gap For small gaps between products



C Centerline linking



O Offset linking



FOR HIGH LOAD LINK JOINER APPLICATIONS

Links can be doubled for higher loads. Example: If 2 x 779-LBJ-5-B joiners are used in the diagram at right, quoted Amps can be doubled: maximum of 1300 Amps to the adjacent stud, or 1050 Amps to the stud 2 positions away from the feed cable.

	Heavy Duty Busbars	Z Busbars	Fuseholder 778ANL	Fuseholder ANL	Fuseholder ANL & Class T	Single insulated studs	Double insulated studs	EZ Mount battery switch On/Off
BUSBARS								
Heavy Duty Busbars	LB-1	LBZ-2	LB-1	-	LB-1 (4 Gap)	LB-2	S:E LB-1 Gap LB-1	O: LB-2 C: LB-1
Z Bars	LBZ-2	LBZ-1	LBZ-2	-	LBZ-2	-	Gap LBZ-2	LBZ-2
FUSEHOLDER								
778ANL	LB-1	LBZ-2	LB-2	-	LB-1	LB-2	S:E LB-1 Gap LB-1	O: LB-2 C: LB-1
778ANLTP	-	-	-	LB-2	-	-	-	-
778ANL2S	LB-1	LBZ-2	LB-1	-	LB-1	LB-2	S:E LB-1 Gap LB-1	O: LB-2 C: LB-1
INSULATED STUDS								
Single insulated stud	LB-2	-	LB-2	-	LB-2	LBJ-2	LB-1	LBJ-2 C: LB-2
Double insulated studs	S:E LB-1 Gap LB-1	Gap LBZ-2	S:E LB-1 Gap LB-1	-	S:E LB-1 Gap LB-1	LB-1	S:S LBJ-2 Gap LB-1	O: LB-1 C: Gap LB-1
EZ MOUNT BATTERY SWITCHES								
EZ - ON/OFF	O: LB-2 C: LB-1	LBZ-2	LBZ-2 C: LB-1	-	O: LB-2 C: LB-1	O: LBJ-2 C: LB-2	O: LB-1 C: Gap LB-1	LB-1
EZ - Battery studs	LB-2 (4 studs LB-1)	LBZ-2	LB-2	-	O: LB-1 C: LB-2	LBJ-2	LB-1	-
EZ - Common studs	O: LB-2 C: LB-1	LBZ-2	O: LB-2 C: LB-1	-	O: LB-2 C: LB-1	O: LBJ-2 C: LB-2	O: LB-1 C: Gap LB-1	-

The Pro Installer insulated studs are a smart choice for marine installers. Increased stainless steel stud length allows up to three large cable lugs to be connected. The clear polycarbonate cover provides insulation/protection, while the snap-out side skirts allow for additional cable entry. The power tapping plate variant provides additional termination points for small cables.

FEATURES

- Modular sizing and common interconnection height: Easily linked with other Pro Installer Busbars and Fuseholders saving installation time and space
- Power tapping plate converts from a single stud, adding four connection points for smaller cables, while preserving access for larger cables
- Generous stud lengths allow securing of three 95mm² (3/0) cable lugs
- Innovative clear covers provide insulation/protection, with “snap outs” for extra cable access as required
- Label recess on cover allows fitting up to ½” width (12.7mm) printed labels
- Snap out partition on double stud base provides insulation to separate studs for isolated (positive/negative) application. Snapping this partition allows easy linking of the studs
- Insert moulded studs offer superior mechanical strength
- Four mounting holes in base allow installer choice of using two, or four fastenings depending on level of securing required
- Designed for the harsh marine environment



IST-8MM-2S



IST-8MM-1SPT



IST-8MM-1S

SPECIFICATIONS

- Note: no power passes through the stud so no amp rating is given
- 50 VDC
- High temperature, fiber reinforced plastic base provides strength and chemical resistance
- Clear poly carbonate cover
- Stainless steel studs/screws, and nickel plated brass nuts for longevity in the marine environment
- All threads are metric
- Double studs feature “snap out” insulating partition, to allow linking of studs

MODEL	PART No.	Q.TY	TERMINAL		DIMENSIONS mm (")
				DIMENSIONS mm (")	
IST-8MM-1S	68866A	1		8 (5/16)	49x49x62 (1.9x1.9x2.5)
IST-8MM-1SPT	68867C	1		8 (5/16)	49x49x62 (1.9x1.9x2.5)
IST-8MM-2S	68868E	2		8 (5/16)	49x49x62 (1.9x1.9x2.5)
IST-10MM-1S	24929A	1		10 (3/4)	49x49x62 (1.9x1.9x2.5)
IST-10MM-2S	24930J	2		10 (3/4)	49x49x62 (1.9x1.9x2.5)

These ANL fuse holders offer unparalleled circuit protection choice for both the installer and end-users. The innovative Through-Panel fuse holder (778-ANLTP) provides superior access for fuse inspection and replacement. Small electrical loads are catered to with the compact 778-ANL unit while additional cable security and highest capacity is provided by the 778-ANL-2S featuring additional studs for separate clamping



SPECIFICATIONS

- Cable connection studs: 8 mm (5/16") on 778-ANL, 10 mm (3/8") on 778-ANL-TP and 778-ANL-2S
- Fuse mounting studs 8 mm (5/16")
- Double washers allow any ANL fuse brand to be fitted
- Fuse type ANL or ANN (fast blow)
- Swinging fuse style allows changing fuse w/out removal of fastening nuts
- Amperage: determined by fuse sizing, 778-ANL (35 – 300 A), 778-ANL-2S (35 – 750 A), 778-ANLTP (35 – 500 A)
- 50 V DC
- Tinned CDA102 copper conductors (778-ANL-2S) / CDA260 high conductivity brass conductors (778-ANLTP)

MODEL	PART No.	FUSE	CONNECTING STUD		AMPS	DIMENSIONS mm (")
			Q.TY	DIMENSIONS mm (")		
778ANL	68869A	8 mm (5/16")	2 studs shared with fuse	8x22 (5/16x7/8)	300A	98x49x54 (3.9x1.9x2.1)
778ANLTP	68870R	8 mm (5/16")	+2 per cable	10x25 (3/8x1)	500A	98x49x36 (3.9x1.9x1.4)
778ANL2S	68871T	8 mm (5/16")	+2 per cable	10x29 (3/8x1/8)	750A	147x49x61 (5.8x1.9x2.4)

CLASS T FUSEHOLDERS



Class-T fusing provide high-capacity fusing, with very fast response and very high interrupt ratings (Class-T 20.000 A). These fuse holders are ideal for protecting today's demanding on board power electronics technology including inverters and battery chargers. They also protect wiring from short circuits, for example as a main fuse to protect house circuits, where modern battery technologies such as Lithium Ion and AGM, are capable of producing very high short circuit currents

SPECIFICATIONS

- Cable connection studs: 10mm (3/8") studs
- Fuse mounting studs: 10mm (3/8") 225-400 A holder, 12 mm (1/2") 450 – 600 A holder
- Fuse type: Class T (JLLN / TJN / A3T)
- Maximum amperage: Determined by fuse sizing, either 400 A or 600 A
- 50 VDC
- High temperature, fiber reinforced plastic base provides strength and chemical resistance
- Clear poly carbonate cover
- Tinned CDA102 copper conductors, stainless steel studs, and nickel plated brass nuts for longevity in the marine environment
- Metric threads



CLASS T

MODEL	PART No.	FUSE	FUSE STUD	CONNECTING STUD		AMPS	DIMENSIONS mm (")
				Q.TY	DIMENSIONS mm (")		
778T2S-400	68872V	Class T	10 mm	+ 2	10x29	225A -	147x49x61 (5.8x1.9x2.4)
		225A-400A	(3/8")	per cable	(3/8x1/8)	400A	
778T2S-600	68873X	Class T	12 mm	+ 2	10x29	400A -	147x49x61 (5.8x1.9x2.4)
		450A-600A	(0.47")	per cable	(3/8x1/8)	600A	

CLASS T FUSES

- Interrupt capacity: 20,000A DC
- Maximum voltage: 160V DC
- Diameter: 34 mm (1.34") - 41 mm (1.62") heavy-duty models
- Length: 70 mm (2.77") - 77 mm (3.03") heavy-duty models
- Use with: Pro Installer Class T Fuse Holders



MODEL	FT-225-B	FT-250-B	FT-300-B	FT-350-B	FT-400-B	FT-450-B	FT-500-B	FT-600-B
Part No.	23230Y	23231A	23232C	23233E	23234G	23235J	23236L	22186T
Rating	225 A	250 A	300 A	350 A	400 A	450 A	500 A	600 A
Heavy-duty	No	No	No	No	No	Yes	Yes	Yes
Q.ty	1	1	1	1	1	1	1	1

ACSM SYSTEM INCLUDES 1 X AC-VSEN-4 AND 2 X CT-10-3 80-600-0023-00 - 67408M

MONITORS:

- AC volts, amps and frequency

FEATURES:

- 3 generic user configurable inputs
- Displays data in analogue, digital and graphic forms
- Programmable high/low audio/visual alarms for each input

SPECIFICATIONS:

- 2.8" colour QVGA LCD
- Input voltage: 8-32VDC
- Dimensions: W 90mm (3.5") x H 100mm (3.9")
- Backlit keypad



80-600-0023-00



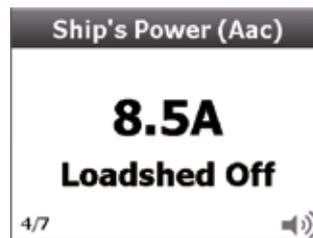
AC POWER METER:

- Displays AC volts, amps frequency and power for two supplies with a third position for monitoring AC volts and frequency of a third supply
- Displays AC power in kW



AC VOLTS/FREQUENCY:

- Displays AC voltage and frequency, 80-264 Vac 50 & 60 Hz



AC AMP:

- Visualizza la corrente per due sorgenti AC (0-75A)



AC AMPS:

- Displays current for 2 x AC supplies (0-75A)

DCSM SYSTEM INCLUDES 1 X SHUNT AND CABLE-10-3 80-600-0021-00 - 67407K

MONITORS:

- Charge/discharge amps for two banks
- Capacity remaining in A/h and %
- Battery condition
- Tank fluid level
- Circuit status

FEATURES:

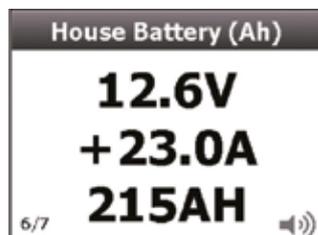
- 8 Generic, user configurable inputs
- Programmable high/low audio/visual alarms for volts, amps and tank levels
- Backlit keypad and dimmable screen
- Can be panel or surface mounted

SPECIFICATIONS:

- 2.8" Color QVGA LCD
- Input voltage 8-32V DC
- Dimensions (WxH): 90 x 100 mm
- Backlit keypad

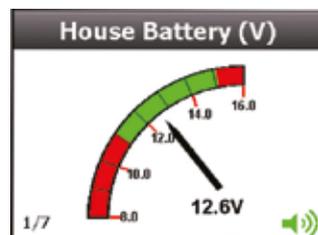


80-600-0021-00



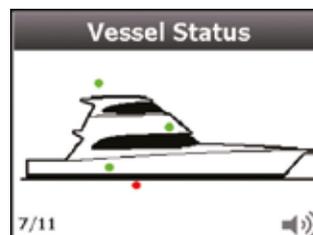
DC POWER METER:

- Displays voltages of multiple battery banks (0-32V DC)
- Displays charge and discharge (amps) of 2 battery banks
- Displays battery capacity in amp hours
- High/Low level alarms



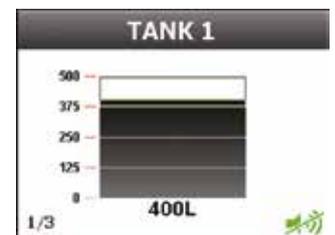
DISPLAY TYPE:

- Configure the DCSM to show the data in analog, digital and graphic form



CIRCUIT STATUS:

- View the status of important circuits (on/off)
- In graphic and numeric form



TANK LEVEL:

- View tank level information for multiple tanks in numeric and graphic forms
- Resetable when leaving boat

AC TRASDUCER

- The AC-VSEN-4 includes 3 voltage transformers for up to 3 voltage inputs.
- Dimensions: 69x140x50 mm (2.75"x5.5"x2")

AC-VSEN-4 – 67314C



AC TRASDUCER

HEAVY-DUTY CURRENT TRANSFORMER

- Maximum current 150A AC
- CT-HD is available for systems with large mains cables, too large for CT-10-3 (ordered separately)
- CT-HD dimensions: Ø 47x10.5 mm (1.85"x0.4")
- Hole size: 32 mm (1.25")

CT-HD - 68904F

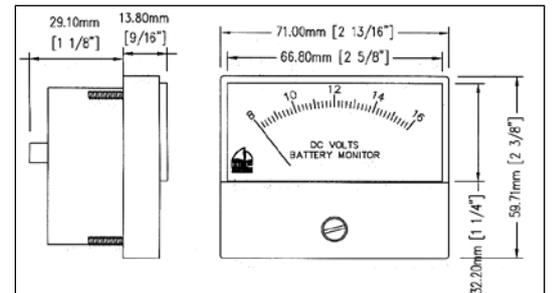


CT-HD

ANALOG STAND-ALONE METERS

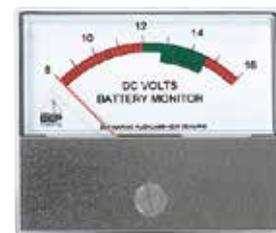
ANALOG VOLTMETERS

MODEL	PART No.	VOLT	SCALE
N816DCV	63682M	12V DC	8-16 Volt DC
N1632DCV	63683P	24V DC	16-32 Volt DC



ANALOG VOLTMETERS

MODEL	PART No.	SCALE	CURRENT TRASFORMER	SHUNT MODEL
N050A	64399A	0-50 Amp DC	N/D	50A-50MV
N0100A	64400D	0-100 Amp DC	N/D	100A-50MV
N0150A	64183Y	0-150 Amp DC	N/D	150A-50MV



N816DCV

AMMETER SHUNT

MODEL	PART No.	SCALE
50A - 50MV	64515X	0-50 A
100A - 50MV	64178F	0-100 A
150A - 50MV	64516Z	0-150
711L	24931L	Shunt Enclosure (50/100/150A)



AMMETER SHUNT



711L

TS1 - 66322W

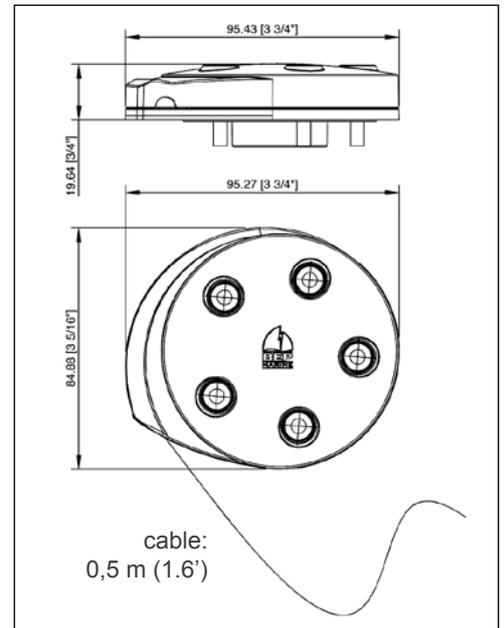
The TS1 Ultrasonic Tank Sender can be used on fuel (petrol or diesel), fresh water, grey or black water tanks. One part number suits all tanks! Not suitable for tank depths less than 200 mm (8")



TS1

FEATURES

- The TS1 is programmable for the following outputs: 240-33 Ohm, 10-180 Ohm and 0-5 Volt
- The TS1 offers low profile and standard SAE 5 hole mounting pattern, allowing it to be retrofitted to practically all other sender brands
- The TS1 can be programmed for tank dimensions via a computer utilizing BEP Marine's proprietary TS1 software and TS1-PK kit software avoiding experimental tank filling on site
- The TS1 configured to a 0-5V output will connect straight into the BEP DCSM digital tank monitor
- When configured to a 240-33 Ohm or 10-180 Ohm output the TS1 can be connected to Ufle[®], Wema[®], Faria[®], VDO[®], Telefle[®] and many other popular instrument brands. When connecting to non-adjustable gauges the TS1 must be pre-calibrated
- Standard off the shelf TSI sender is set for 0-2000 mm (6.5')
- The TS1 sender is not compatible with digital systems like Volvo[®] EVC, Mercury[®] SmartCraft, etc. For any information, please contact our Technical Service.



cable:
0,5 m (1.6')

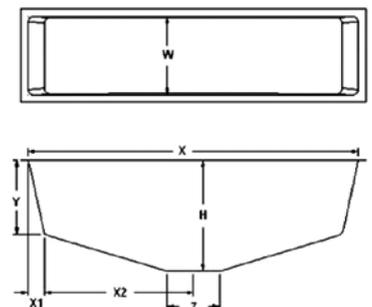


TS1-PK - 66323Y

SPECIFICATIONS

Current draw	10-32VDC
Power draw	25mA with 5 volt gauge output
Measurement method	acoustic sonic measurement
Tank depth	0 to 2000mm (6.5 ft)
Accuracy	distance 0-2000mm (6.5') at 2 mm accuracy
Mounting	SAE 5 stud mounting pattern with gasket, seal and screws. Top mount only
Environmental	temperature 4 to 65 degrees C
Chemical resistance	Petrol, diesel, water, toilet chemicals
Tank type	Metal and plastic with non linear capacity, grey and black water, petrol and diesel

Non linear Tank Parameter Calculation



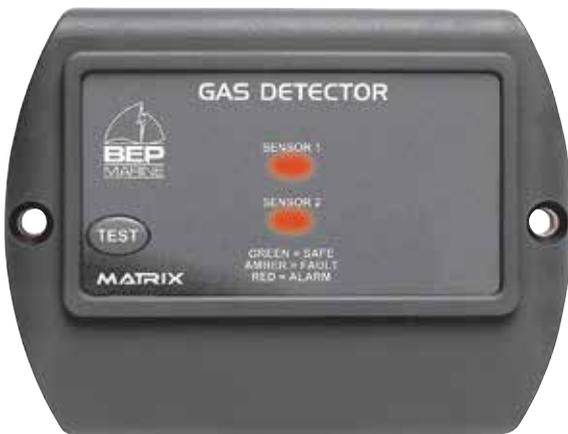
BEP Marine's proprietary software allows distributors or volume users to pre-programme tank dimensions giving accurate measurement avoiding experimental tank filling

600-GD, 600-GDL / 600-GDRV

The BEP Detectors use microprocessor control to ensure correct sensor sensitivity. The Detectors have the capability to control two sensors which detect both LPG and Petrol, with visual and audible alarms.

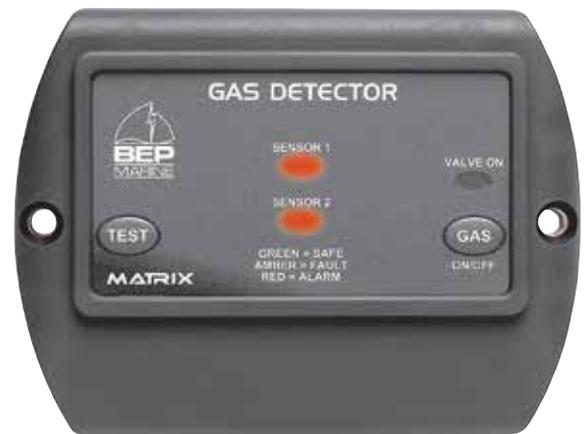
- Dual sensor for LPG and petrol
- Visual and audible alarms; provision for external alarm
- Automatic shut-off solenoid control with pulse and hold circuit for low power draw (600-GDL only)
- Self-testing
- Provision of bilge blower

Voltage (V DC)	10-32
Current (mA)	350 max.
Alarm sensitivity	20% lower explosive limit
Current@Out (mA)	800 max.
Solenoid (mA)	700 pulse, 250 hold
Dimensions mm (")	67x88x17 (2.4x3.5x0.7)



600-GD - 68008A

600-GD will detect LPG, Petrol and CNG fumes. Supplied with one sensor, with an option for a second sensor (BL-SL-L) output for remote alarm and blower unit. 600-GD can be used on 12 or 24V systems.



600-GDL - 63597X

Same features as the 600-GD, with the ability to switch a valve on. It contains a unique "Pulse & Hold" circuit within the detector. This reduces power consumption and heat while gas is turned on.



600-GDRV - 20871Y

600-GDRV has the sensor mounted in the front fascia creating a stand alone unit. The unit is designed to be surface mounted at the vessel's lowest point.



BL-SL-L - 64487V

Gas sensor lead with a 5 meter lead. Fits 600-GD, 600-GDL and 600-GDRV.

SAFE ALERT™



CARBON MONOXIDE ALARMS



- Microprocessor technology programmed to detect carbon monoxide levels using time weighted average (TWA) at 10% COHb curves.
- No false alarms from new boat smell or outgassing.
- Full 5 year service life. End of Life clock starts when power is applied, not in inventory or on retail shelves.
- No nuisance alarms caused by temporary background levels of CO.
- Alarm Mute button silences alarm while boat is ventilated.
- Low Current Draw. Innovative micro current circuit saves precious battery power. 37 milliamp (.037 amp.) current draw.
- 62-541-R-Marine and 62-542-R-Marine include normally closed or normally open relay. Use to turn on exhaust fans, remote horns/ lights/signals or connect to alarm systems.
- Listed NMMA Component. Meets ABYC A-24, Marine CO Alarm.
- Listed to UL 2034 Carbon Monoxide Alarms – Marine Use.
- Meets ISO: 12133 Small craft — Carbon Monoxide (CO) detection systems.



62-542-MARINE



62-541-MARINE

SURFACE MOUNT	PART No. (WHITE)	PART No. (BLACK)	DESCRIPTION	DIMENSIONS WxHxD mm (“)
62-541-MARINE	20930M	21265H	CO alarm - 12 V	89x63x32 (3.5x2.5x1.25)
62-541-MARINE-R-NC	20931P	21635R	CO alarm with relay that breaks when in alarm- 12 V	89x63x32 (3.5x2.5x1.25)
62-541-MARINE-R-NO	20932S	21636T	CO alarm with relay that makes when in alarm - 12 V	89x63x32 (3.5x2.5x1.25)

FLUSH MOUNT	PART No. (WHITE)	PART No. (BLACK)	DESCRIPTION	DIMENSIONS WxHxD mm (“)
62-542-MARINE	20933U	21619T	CO alarm - 12 V	114x83x32 (4.5x3.25x1.25)
62-542-MARINE-R-NC	20934W	21418G	CO alarm with relay that breaks when in alarm- 12 V	114x83x32 (4.5x3.25x1.25)
62-542-MARINE-R-NO	20935Y	21266K	CO alarm with relay that makes when in alarm - 12 V	114x83x32 (4.5x3.25x1.25)

- Sealed-In Lithium Battery, No Replacement Needed
- Long 5 Year Battery Life
- Easy Installation.
- Low Battery Indication.
- Built-In Test / Hush Functions.
- Approved. Meets RVIA/NFPA requirements.
- End of Life Signal. Provides audible confrmation when alarm needs to be replaced, with 30 day override. Replacement date is 60 months (5 years) after pulling battery tab.
- Conforms to ANSI / UL STD 2034.



SA-340-WT

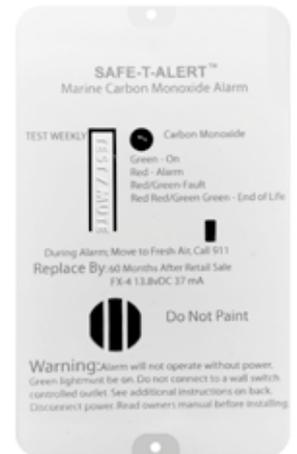


SA-340-BL

SURFACE MOUNT	PART No.	DESCRIPTION	DIMENSIONS WxH mm (")
SA-340--WT	23515R	Battery CO alarm	120x69 (4.75x2.75)
SA-340-BL	23516T	Battery CO alarm	120x69 (4.75x2.75)

FX-4 - CARBON MONOXIDE ALARMS

- Conforms to ANSI / UL STD 2034 - Marine. Meets ABYC A-24. NMMA Listed Component.
- Most Reliable. Boats DC electrical system or marine grade batteries supply power to the alarm. No missing or dead batteries to replace.
- Proven Sensing Technology. Prevents nuisance alarms which could lead to confusion and disconnected detectors.
- Advanced Technology. Alarm Mute button with advanced technology that silences alarm while boat is ventilated. Rapid recovery sensor resets when silenced or reactivates alarm if dangerous levels of CO remain.
- Loud. 85 dB alarm alerts you to CO
- Replaces Fireboy - Xintex CMD-4M and CMD-3M



FX-4

SURFACE MOUNT	PART No.	DESCRIPTION	DIMENSIONS WxH mm (")
FX-4	22567F	CO alarm - 12 V	63 x 89 x 32 (2.5 x 3.5 x 1.25)



victron energy

B L U E P O W E R



AUTOMOTIVE IP65

Depending on the application, clamps, eyelets or a cigarette plug (all included) can be connected to the charger.

The state of charge of the battery is indicated by 4 LED's:

- Red LED marked 25% flashing: state of charge less than 25%.
- Red LED marked 25% on, and red LED marked 50% flashing: state of charge less than 50%.
- Red LED's on, and yellow LED marked 75% flashing: state of charge less than 75%.
- Red and yellow LED's on and green LED marked 100% flashing: battery nearly charged.
- All charge level LED's solid on: battery fully charged. Flooded, AGM or GEL batteries.

In case of reverse polarity connection, the red LED ! will turn on after pressing the MODE button.

If the red LED STANDBY remains on, even after pressing the MODE button, the connection to the battery is interrupted.

The charger always starts in STANDBY mode when connected to the AC supply.



AUTOMOTIVE IP65



MODEL	PART No.	INPUT VOLTAGE RANGE	CHARGE VOLTAGE	CHARGE CURRENT	DIMENSIONS HxWxD mm (")	WEIGHT kg (lbs)
6V/12V-1,1A	69868K	200-265V / 50-60 Hz	7,2 or 14,4	1,1 A	42x61x185 (1.6x2.4x7.3)	0,6 (1.3)
12V/4A-12V/0,8A	69869M	200-265V / 50-60 Hz	14,4 or 14,7	4 A or 0,8 A	42x61x185 (1.6x2.4x7.3)	0,6 (1.3)

BLUE SMART IP65 SERIES WITH DC CONNECTOR

- Water, dust and chemical resistant
- Seven step smart charge algorithm
- Recovery of fully discharged "dead" batteries
- Automatic power supply function
- Automatic compensation for high or low temperature
- Several other battery life enhancing features
- Li-ion battery mode
- Bluetooth built-in function for smartphone monitoring



BLUE SMART IP 65



MODEL	PART No.	INPUT VOLTAGE RANGE	CHARGE VOLTAGE ABSORPTION	CHARGE CURRENT	DIMENSIONS HxWxD mm (")	WEIGHT kg (lbs)
6/12V-1.1 IP65 ^{new}	24989V	180-265V AC / 45-65 Hz	7,2 - 14,4V DC	1,1A	38x64x153 (1.5x2.5x6)	0,4 (0.9)
12/4 IP65S ^{new}	21654V	180-265V AC / 45-65 Hz	14,4V DC	4A	47x95x190 (1.8x3.7x7.5)	0,8 (1.8)
12/5 IP65S ^{new}	21655X	180-265V AC / 45-65 Hz	14,4V DC	5A	45x81x182 (1.7x3.2x7.2)	0,6 (1.3)
12/7 IP65	21656Z	180-265V AC / 45-65 Hz	14,4V DC	7A	47x95x190 (1.8x3.7x7.5)	0,8 (1.8)
12/10 IP65	21657B	180-265V AC / 45-65 Hz	14,4V DC	10A	60x105x190 (2.4x4.1x7.5)	0,9 (2.0)
12/15 IP65	21658D	180-265V AC / 45-65 Hz	14,4V DC	15A	60x105x190 (2.4x4.1x7.5)	0,9 (2.0)
12/25 IP65	23053C	180-265V AC / 45-65 Hz	14,4V DC	25A	75x140x240 (2.9x5.5x9.5)	1,9 (4.2)
24/5 IP65	21659F	180-265V AC / 45-65 Hz	28,8V DC	5A	47x95x190 (1.8x3.7x7.5)	0,8 (1.8)
24/8 IP65	21660P	180-265V AC / 45-65 Hz	28,8V DC	8A	60x105x190 (2.4x4.1x7.5)	0,9 (2.0)
24/13 IP65	23054E	180-265V AC / 45-65 Hz	28,8V DC	13A	47x95x190 (1.8x3.7x7.5)	1,9 (4.2)

ACCESSORIES

M6 eyelet connector with fuse - 69856C
2 m extension cable - 69857E

12V cigarette lighter plug with fuse - 69858G
Connect clamps with fuse - 69859J
Battery indicator panel - 23976E

With up to 94% efficiency, these chargers generate up to four times less heat when compared to the industry standard. And once the battery is fully charged, power consumption reduces to 0,5 Watt, some five to ten times better than the industry standard.

Bluetooth built-in function for smartphone monitoring

STANDARD FEATURES

Adaptive 6-stage charge algorithm: test-bulk-absorption-recondition-float-storage. Storage Mode: less maintenance and aging when the battery is not in use. Also charges Li-ion batteries. NIGHT and LOW setting: the output current is reduced to max. 50% of the nominal output and the charger will be totally noiseless. Protected against overheating. Eleven LEDs for Status indication.



BLUE SMART IP 22



MODEL	PART No.	INPUT VOLTAGE RANGE	CHARGE VOLTAGE ABSORPTION	CHARGE CURRENT	DIMENSIONS HxWxD mm (")	WEIGHT kg (lbs)
12/15 IP22 ⁽¹⁾	21661S	180-265V AC / 45-65 Hz	Variable*	15A	235x108x65 (9.2x4.2x2.6)	1,4 (3.1)
12/15 IP22 ⁽³⁾	21662U	180-265V AC / 45-65 Hz	Variable*	15A	235x108x65 (9.2x4.2x2.6)	1,4 (3.1)
12/20 IP22 ⁽¹⁾	21663W	180-265V AC / 45-65 Hz	Variable*	20A	235x108x65 (9.2x4.2x2.6)	1,4 (3.1)
12/20 IP22 ⁽³⁾	21664Y	180-265V AC / 45-65 Hz	Variable*	20A	235x108x65 (9.2x4.2x2.6)	1,4 (3.1)
12/30 IP22 ⁽¹⁾	21665A	180-265V AC / 45-65 Hz	Variable*	30A	235x108x65 (9.2x4.2x2.6)	1,4 (3.1)
12/30 IP22 ⁽³⁾	21553N	180-265V AC / 45-65 Hz	Variable*	30A	235x108x65 (9.2x4.2x2.6)	1,4 (3.1)
24/8 IP22 ⁽¹⁾	22135Z	180-265V AC / 45-65 Hz	Variable*	8A	235x108x65 (9.2x4.2x2.6)	1,4 (3.1)
24/12 IP22 ⁽¹⁾	23129K	180-265V AC / 45-65 Hz	Variable*	12A	235x108x65 (9.2x4.2x2.6)	1,4 (3.1)
24/16 IP22 ⁽¹⁾	22219F	180-265V AC / 45-65 Hz	Variable*	16A	235x108x65 (9.2x4.2x2.6)	1,4 (3.1)
24/16 IP22 ⁽³⁾	22258S	180-265V AC / 45-65 Hz	Variable*	16A	235x108x65 (9.2x4.2x2.6)	1,4 (3.1)

* **Absorption:** 12V Normal 14,4V, High 14,6V, Li-ion 14,2V – 24V Normal 28,8V, High 29,2V, Li-ion 28,4V

Float: 12V Normal 13,8V, High 13,8V, Li-ion 13,35V – 24V Normal 27,6V, High 27,6V, Li-ion 26,7V

Storage: 12V Normal 13,2V, High 13,8V, Li-ion n.d. – 24V Normal 26,4V, High 26,4V, Li-ion: n.d

BLUE SMART IP67

- Power supply range: 180-265 VAC
- Completely encapsulated body. Water, oil or dirt will not damage the Blue Power IP67 charger. The casing is made of cast aluminium and the electronics are moulded in resin.
- Top level efficiency: with 92% efficiency or better, these chargers waste three to four times less heat
- Adaptive 4-stage charge algorithm: bulk – absorption – float – storage. The Blue Power charger features a microprocessor controlled 'adaptive' battery management. This feature will automatically optimise the charging process relative to the way the battery is being used.
- Bluetooth built-in function for smartphone monitoring



BLUE SMART IP 67

MODEL	PART No.	INPUT VOLTAGE RANGE	CHARGE VOLTAGE	CHARGE CURRENT	DIMENSIONS HxWxD mm (")	WEIGHT kg (lbs)
12/7 IP67 ⁽¹⁾	21544M	180-265V AC / 45-65 Hz	14,4V DC	7A	85x211x60 (3.4x8.3x2.4)	1.8 (4)
12/13 IP67 ⁽¹⁾	21378X	180-265V AC / 45-65 Hz	14,4V DC	13A	85x211x60 (3.4x8.3x2.4)	1.8 (4)
12/17 IP67 ⁽¹⁾	21667E	180-265V AC / 45-65 Hz	14,4V DC	17A	99x219x65 (3.9x8.6x2.6)	2.4 (5.3)
12/25 IP67 ⁽¹⁾	21668G	180-265V AC / 45-65 Hz	14,4V DC	25A	99x219x65 (3.9x8.6x2.6)	2.4 (5.3)
12/25 IP67 (1+SI)	21669J	180-265V AC / 45-65 Hz	14,4V DC	25A	99x219x65 (3.9x8.6x2.6)	2.4 (5.3)
24/5 IP67 ⁽¹⁾	21670T	180-265V AC / 45-65 Hz	28,8V DC	5A	85x211x60 (3.4x8.3x2.4)	1.8 (4)
24/8 IP67 ⁽¹⁾	21671V	180-265V AC / 45-65 Hz	28,8V DC	8A	99x219x65 (3.9x8.6x2.6)	2.4 (5.3)
24/12 IP67 ⁽¹⁾	21672X	180-265V AC / 45-65 Hz	28,8V DC	12A	99x219x65 (3.9x8.6x2.6)	2.4 (5.3)
24/12 IP67 (1+SI)	21673Z	180-265V AC / 45-65 Hz	28,8V DC	12A	99x219x65 (3.9x8.6x2.6)	2.4 (5.3)

The models with suffix (1+Si) feature a second current limited output which is always powered as long as 180 - 265 VAC is present on the input. This output can for example be used to prevent starting of a vehicle before unplugging the battery charger (start interrupt function).

PHOENIX SERIES: MICROPROCESSOR CONTROL

Phoenix automatic battery chargers with microprocessor can suit perfectly and automatically the charge for the batteries. During the 4 charge stages (bulk-absorption-float-storage) the battery charger will maintain the optimal charge depending on battery status and use.

STANDARD FEATURES

Aluminium epoxy powder coated case with drip shield, circuit board protection with an acrylic coating, built-in temperature sensors, forced cooling, protection against output short circuit and over temperature, battery temperature sensor, compensation on cable voltage fall, two full charge output and one ooutput limited to 4 A, RS-485 data port for computer connection, feeder function.



PHOENIX

MODEL	PART No.	INPUT VOLTAGE	CHARGE VOLTAGE (Absorption)	CHARGE CURRENT ⁽¹⁾	Ah BATTERIES	DIMENSIONS HxWxD mm (")	WEIGHT kg (lbs)
12/30	64900A	90-265V AC / 45-65 Hz	14,4V DC	30 A (x2) + 4 A	100/400	350x200x108 (13.8x7.9x4.3)	3.8 (8.4)
12/50	64901C	90-265V AC / 45-65 Hz	14,4V DC	50 A (x2) + 4 A	200/800	350x200x108 (13.8x7.9x4.3)	3.8 (8.4)
24/16	64902E	90-265V AC / 45-65 Hz	28,8V DC	16 A (x2) + 4 A	100/200	350x200x108 (13.8x7.9x4.3)	3.8 (8.4)
24/25	64903G	90-265V AC / 45-65 Hz	28,8V DC	25 A (x2) + 4 A	100/400	350x200x108 (13.8x7.9x4.3)	3.8 (8.4)

(1) 100 % output up to 40°C, 80% nominal output at 50°C and 60% of nominal at 60°C

Bluetooth Smart enabled

Any Bluetooth enabled smart phone, tablet or other device can be used to monitor, to change settings and to update the charger when new software features become available.

Phoenix Smart (1+1): two outputs to charge 2 battery banks

The second output, limited to approximately 3A and with a slightly lower output voltage, is intended to top up a starter battery.

Phoenix Smart (3): three full current outputs to charge 3 battery banks

Each output can supply the full rated output current. But the total of the 3 outputs combined can never exceed the current rating of the charger

Automatic voltage compensation

The charger compensates for voltage drop over the DC cabling by slightly increasing output voltage when the DC current increases.

Adaptive 5-stage charge algorithm:

bulk – absorption – recondition – float – storage

The Phoenix Smart Charger features Victron well-known 'adaptive' battery management system that can be preset to suit different types of batteries. The 'adaptive' feature will automatically optimise the charge process relative to the way the battery is being used.

The right amount of charge: variable absorption time

When only shallow discharges occur (a yacht connected to shore power for example) the absorption time is kept short in order to prevent overcharging of the battery. After a deep discharge the absorption time is automatically increased to make sure that the battery will be fully charged.

Also charges Li-ion (LiFePO₄) batteries

Charger on-off control can be implemented by connecting a relay or open collector optocoupler output from a Li-ion BMS to the remote on-off port.

Alternatively full control of voltage and current can be achieved with Bluetooth.

Fully programmable charge algorithm

The charge algorithm can be programmed with help of Bluetooth or the VE.Direct interface. Three preprogrammed algorithms can be selected with the mode button.

Remote on-off

The remote on/off consists of two terminals: Remote H and Remote L.

A remote on/off switch or relay contact can be connected between H and L. Alternatively, terminal H can be pulled high, or terminal L can be pulled low.

VE.Direct interface

For a wired data connection to a Color Control panel, PC or other devices.

Programmable relay

Can be programmed using the VE.Direct interface or a Bluetooth enabled device to trip on an alarm or other events.



PHOENIX SMART IP43 (1+1)



PHOENIX SMART IP43 (3)



**2m AC cord CEE 7/7
to be ordered separately - 23069U**

MODEL	PART No.	INPUT VOLTAGE	FREQUENCY	CHARGE VOLTAGE	CHARGE CURRENT	DIMENSIONS HxWxD mm (")	WEIGHT kg (lbs)
12/30 ⁽¹⁺¹⁾	23886D	230 VCA	45-65 Hz	14,4 V	30/50 A	180x249x100 (7.1x9.8x4)	3,5 (7.7)
12/30 ⁽³⁾	23063F	230 VCA	45-65 Hz	14,4 V	30/50 A	180x249x100 (7.1x9.8x4)	3,5 (7.7)
12/50 ⁽¹⁺¹⁾	23064H	230 VCA	45-65 Hz	14,4 V	30/50 A	180x249x100 (7.1x9.8x4)	3,5 (7.7)
12/50 ⁽³⁾	23880R	230 VCA	45-65 Hz	14,4 V	30/50 A	180x249x100 (7.1x9.8x4)	3,5 (7.7)
24/16 ⁽¹⁺¹⁾	23065K	230 VCA	45-65 Hz	28,8 V	16/25 A	180x249x100 (7.1x9.8x4)	3,5 (7.7)
24/16 ⁽³⁾	23066M	230 VCA	45-65 Hz	28,8 V	16/25 A	180x249x100 (7.1x9.8x4)	3,5 (7.7)
24/25 ⁽¹⁺¹⁾	23067P	230 VCA	45-65 Hz	28,8 V	16/25 A	180x249x100 (7.1x9.8x4)	3,5 (7.7)
24/25 ⁽³⁾	23068S	230 VCA	45-65 Hz	28,8 V	16/25 A	180x249x100 (7.1x9.8x4)	3,5 (7.7)
12/30 ⁽¹⁺¹⁾ new	24990D	120 - 240 VCA	45-65 Hz	14,4 V	30/50 A	180x249x100 (7.1x9.8x4)	3,5 (7.7)
12/30 ⁽³⁾ new	24991F	120 - 240 VCA	45-65 Hz	14,4 V	30/50 A	180x249x100 (7.1x9.8x4)	3,5 (7.7)
12/50 ⁽¹⁺¹⁾ new	22946P	120 - 240 VCA	45-65 Hz	14,4 V	30/50 A	180x249x100 (7.1x9.8x4)	3,5 (7.7)
12/50 ⁽³⁾ new	24992H	120 - 240 VCA	45-65 Hz	14,4 V	30/50 A	180x249x100 (7.1x9.8x4)	3,5 (7.7)
24/16 ⁽¹⁺¹⁾ new	24943U	120 - 240 VCA	45-65 Hz	28,8 V	16/25 A	180x249x100 (7.1x9.8x4)	3,5 (7.7)
24/25 ⁽¹⁺¹⁾ new	24944W	120 - 240 VCA	45-65 Hz	28,8 V	16/25 A	180x249x100 (7.1x9.8x4)	3,5 (7.7)
24/25 ⁽³⁾ new	24945Y	120 - 240 VCA	45-65 Hz	28,8 V	16/25 A	180x249x100 (7.1x9.8x4)	3,5 (7.7)

CENTAUR BATTERY CHARGERS: ANALOGIC CONTROL



Centaur battery chargers have automatic three stage IUoUo charging. All models are designed to operate all over the world without any adjustment needed on input voltage range or frequency.

They have three isolated outputs to simultaneously charge 3 battery banks. Each output is capable to supply the full rated current.

STANDARD FEATURES

Aluminium epoxy powder coated case with drip shield, circuit board protection with an acrylic coating, built-in temperature sensors, forced cooling, protection against output short circuit and over temperature, analog ammeter, DIP switch for selection of charge/float voltage for flooded lead-acid, gel or AGM batteries, Europe CE certification and U.S.A. UL certification

Temperature range: -20 + 60° C



CENTAUR



MODEL	PART No.	INPUT VOLTAGE RANGE	CHARGE VOLTAGE ABSORPTION	CHARGE CURRENT ⁽¹⁾	Ah BATTERIES	DIMENSIONS HxWxD mm (")	WEIGHT kg (lbs)
12/20	64886K	90-265V AC / 45-65 Hz	14.3V DC	20 A	80/200	355x215x110 (14.0x8.5x4.3)	3.8 (8.4)
12/30	64887M	90-265V AC / 45-65 Hz	14.3V DC	30 A	120/300	355x215x110 (14.0x8.5x4.3)	3.8 (8.4)
12/40	64888P	90-265V AC / 45-65 Hz	14.3V DC	40 A	160/400	426x239x135 (16.8x9.4x5.3)	5 (11)
12/50	64889S	90-265V AC / 45-65 Hz	14.3V DC	50 A	200/500	426x239x135 (16.8x9.4x5.3)	5 (11)
12/60	64890A	90-265V AC / 45-65 Hz	14.3V DC	60 A	240/600	426x239x135 (16.8x9.4x5.3)	5 (11)
12/80	64891C	90-265V AC / 45-65 Hz	14.3V DC	80 A	320/800	505x255x130 (19.9x10.0x5.2)	12 (26.4)
12/100	64892E	90-265V AC / 45-65 Hz	14.3V DC	100 A	400/1000	505x255x130 (19.9x10.0x5.2)	12 (26.4)
24/16	64894J	90-265V AC / 45-65 Hz	28.5V DC	16 A	45/150	355x215x110 (14.0x8.5x4.3)	3.8 (8.4)
24/30	64895L	90-265V AC / 45-65 Hz	28.5V DC	30 A	120/300	426x239x135 (16.8x9.4x5.3)	5 (11)
24/40	64896N	90-265V AC / 45-65 Hz	28.5V DC	40 A	160/400	505x255x130 (19.9x10.0x5.2)	12 (26.4)
24/60	64897R	90-265V AC / 45-65 Hz	28.5V DC	60 A	240/600	505x255x130 (19.9x10.0x5.2)	12 (26.4)

(1) 100 % output up to 40°C, 80% nominal output at 50°C and 60% of nominal at 60°C.

Skylla-IP65 (1+1): two outputs to charge 2 battery banks

The Skylla-IP65 (1+1) features 2 isolated outputs. The second output, limited to approximately 3A and with a slightly lower output voltage, is intended to top up a starter battery.

Skylla-IP65 (3): three full current outputs to charge 3 battery banks

The Skylla-IP65 (3) features 3 isolated outputs. All outputs can supply the full rated output current.



SKYLLA IP65

IP65 protection

Steel epoxy powder coated case and splash proof. Withstands the rigors of an adverse environment: heat, humidity and salt air.

Circuit boards are protected with an acrylic coating for maximum corrosion resistance.

Temperature sensors ensure that power components will always operate within specified limits, if needed by automatic reduction of output current under extreme environmental conditions.

LCD display

For status monitoring and to easily adapt the charge algorithm to a particular battery and its conditions of use.

CAN bus interface (NMEA2000)

To connect to a CAN bus network, to a Skylla-i Control panel or to the Color Control digital display.

Synchronised parallel operation

Several chargers can be connected in parallel and synchronised with help of the CAN bus interface. This is achieved by simply interconnecting the chargers with RJ45 UTP-cables.

The right amount of charge for a lead-acid battery: variable absorption time

When only shallow discharges occur the absorption time is kept short in order to prevent overcharging of the battery. After a deep discharge the absorption time is automatically increased to make sure that the battery is completely recharged.

Preventing damage due to excessive gassing: the BatterySafe mode

If, in order to quickly charge a battery, a high charge current in combination with a high absorption voltage has been chosen, the Skylla-IP65 will prevent damage due to excessive gassing by automatically limiting the rate of voltage increase once the gassing voltage has been reached.

Less maintenance and aging when the battery is not in use: the Storage mode

The Storage mode kicks in whenever the battery has not been subjected to discharge during 24 hours. In the storage mode float voltage is reduced to 2,2V/cell (26,4V for 24V battery) to minimise gassing and corrosion of the positive plates. Once a week the voltage is raised back to the absorption level to 'refresh' the battery. This feature prevents stratification of the electrolyte and sulphation, a major cause of early battery failure.

To increase battery life: temperature compensation

Every Skylla-IP65 comes with a battery temperature sensor. When connected, charge voltage will automatically decrease with increasing battery temperature. This feature is especially recommended for sealed lead-acid batteries and/or when important fluctuations of battery temperature are expected.

Battery voltage sense

In order to compensate for voltage loss due to cable resistance, the Skylla-IP65 is provided with a voltage sense facility so that the battery always receives the correct charge voltage.

Use as a power supply

As a result of the excellent control circuit, the Skylla-IP65 can be used as a power supply with perfectly stabilized output voltage if batteries or large buffer capacitors are not available.

Li-Ion (LiFePO4) ready

Simple charger on-off control can be implemented by connecting a relay or open collector opto coupler output from a Li-Ion BMS to the remote control port of the charger. Alternatively complete control of voltage and current can be achieved by connecting to the CAN bus port.

MODEL	PART No.	INPUT VOLTAGE RANGE	CHARGE VOLTAGE	Ah BATTERIES	DIMENSIONS HxWxD mm (")	WEIGHT kg (lbs)
12/70 IP65 (1+1)	23776W	90-265V AC / 45-65 Hz	14.4V	350-700 Ah	401x265x151 (16x10.5x6)	6 (14)
12/70 IP65 (3)	23777Y	90-265V AC / 45-65 Hz	14.4V	350-700 Ah	401x265x151 (16x10.5x6)	6 (14)
24/35 IP65 (1+1)	23778A	90-265V AC / 45-65 Hz	28.8V	150-350 Ah	401x265x151 (16x10.5x6)	6 (14)
24/35 IP65 (3)	23779C	90-265V AC / 45-65 Hz	28.8V	150-350 Ah	401x265x151 (16x10.5x6)	6 (14)

MICROPROCESSOR CONTROL

Skylla battery chargers have automatic three stage IUoUo charging. They are designed for use on battery banks with 24V DC / 48V DC. They have two outputs, two full charge output and one output limited to 4 A.

STANDARD FEATURES

Aluminium epoxy powder coated case with drip shield, circuit board protection with an acrylic coating, built-in temperature sensors, forced cooling, protection against output short circuit and over temperature, battery temperature sensor, compensation on cable voltage fall, feeder function.

SKYLLA



GMDSS

Power supply: The Skylla TG has proven itself to be an excellent battery charger and power supply for GMDSS applications. However, when using a standard Skylla charger, additional equipment is needed to perform the monitoring and alarm functions required for GMDSS.

No adjustments needed: The whole system is 'click and go': the panels are pre-programmed for GMDSS functionality. A simple, intuitive menu allows changing of settings if required.

Battery time to go: The Skylla GMDSS charger has a built-in battery controller. The capacity of the battery is fully monitored so the panel can even indicate the 'time to go' in case of a power supply black out.



new

VE.Net GMDSS panel - 67598W

SKYLLA GMDSS



MODEL	Part No.	INPUT VOLTAGE RANGE	CHARGE VOLTAGE (Absorption)	CHARGE CURRENT ⁽¹⁾	Ah BATTERIES	DIMENSIONS HxWxD mm (")	WEIGHT kg (lbs)
TG 24/30	64904J	120-230V AC / 45-65 Hz	28.5 VDC	30 A + 4 A	150/300	365 x 250 x 147 (14.4 x 9.9 x 5.8)	5.5 (12.1)
TG 24/30 GMDSS	66036V	120-230V AC / 45-65 Hz	28.5 VDC	30 A + 4 A	150/300	485 x 250 x 147 (19.1 x 9.9 x 5.8)	6 (13.2)
TG 24/50	64905L	230V AC / 45-65 Hz	28.5 VDC	50 A + 4 A	250/500	365 x 250 x 147 (14.4 x 9.9 x 5.8)	5.5 (12.1)
TG 24/50 GMDSS	67918M	120-230V AC / 45-65 Hz	28.5 VDC	50 A + 4 A	250/500	485 x 250 x 147 (19.1 x 9.9 x 5.8)	6 (13.2)
TG 24/50 3 phases	68895H	320-450V AC / 45-65 Hz	28.5 VDC	50 A + 4 A	250/500	365 x 250 x 257 (14.4 x 9.9 x 10.1)	13 (28.7)
TG 24/80	64906N	230V AC / 45-65 Hz	28.5 VDC	80 A + 4 A	400/800	365 x 250 x 257 (14.4 x 9.9 x 10.1)	10 (22)
TG 24/100	64907R	230V AC / 45-65 Hz	28.5 VDC	100 A + 4 A	500/1000	365 x 250 x 257 (14.4 x 9.9 x 10.1)	10 (22)
TG 24/100 3 phases	64908T	320-450V AC / 45-65 Hz	28.5 VDC	100 A + 4 A	500/1000	515 x 260 x 265 (20.0 x 10.2 x 10.4)	23 (48)

(1) 100 % output up to 40°C, 80% nominal output at 50°C and 60% of nominal at 60°C.

OPTIONAL: Skylla control panel - 65007G

TG 48/25 and TG 48/50 models are available on request.

Synchronised parallel operation

Several chargers can be synchronised with the CAN bus interface. This is achieved by simply interconnecting the chargers with RJ45 UTP cables. Please see the manual for details.

The right amount of charge for a lead-acid battery: variable absorption time

When only shallow discharges occur the absorption time is kept short in order to prevent overcharging of the battery. After a deep discharge the absorption time is automatically increased to make sure that the battery is completely recharged.

Preventing damage due to excessive gassing: the BatterySafe mode

If, in order to quickly charge a battery, a high charge current in combination with a high absorption voltage has been chosen, the Skylla-i will prevent damage due to excessive gassing by automatically limiting the rate of voltage increase once the gassing voltage has been reached

Less maintenance and aging when the battery is not in use: the Storage mode

The storage mode kicks in whenever the battery has not been subjected to discharge during 24 hours. In the storage mode float voltage is reduced to 2,2 V/cell (26,4 V for 24 V battery) to minimise gassing and corrosion of the positive plates. Once a week the voltage is raised back to the absorption level to 'refresh' the battery. This feature prevents stratification of the electrolyte and sulphation, a major cause of early battery failure.

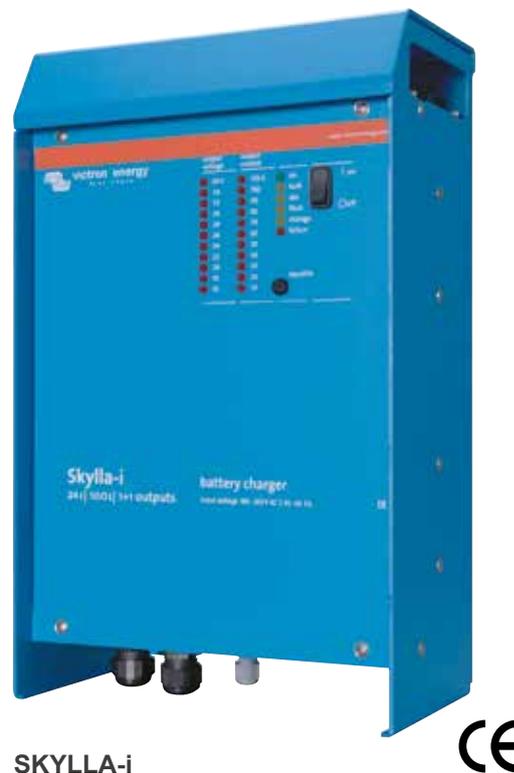
To increase battery life: temperature compensation

Every Skylla-i comes with a battery temperature sensor. When connected, charge voltage will automatically decrease with increasing battery temperature. This feature is especially recommended for sealed lead-acid batteries and/or when important fluctuations of battery temperature are expected.

Battery voltage sense

In order to compensate for voltage loss due to cable resistance, the Skylla-i is provided with a voltage sense facility so that the battery always receives the correct charge voltage.

- Power supply range: 180-265 VAC and 180-350 VDC
- This particular version has all the features of excellence present in the Skylla family and it adds other interesting features such as The Predisposition to charge Li-Ion (LiFePO₄) and the Synchronised parallel operation via CANbus interface
- The Skylla-I chargers, as the other Skylla units, are suitable for AC and DC (AC-DC and DC-DC operation), and as a power source due to the perfect stabilization of the output voltage



SKYLLA-i

MODEL	PART No.	INPUT VOLTAGE RANGE	CHARGE VOLTAGE	Ah BATTERIES	DIMENSIONS HxWxD mm ("")	WEIGHT kg (lbs)
i 24/80 (1+1)	68896K	180-265V AC / 45-65 Hz	28.8V	400-800	402x250x140 (15.8x9.9x5.5)	8.0 (17.6)
i 24/80 (3)	68897M	180-265V AC / 45-65 Hz	28.8V	400-800	402x250x140 (15.8x9.9x5.5)	8.0 (17.6)
i 24/100 (1+1)	68898P	180-265V AC / 45-65 Hz	28.8V	500-1000	402x250x140 (15.8x9.9x5.5)	8.0 (17.6)
i 24/100 (3)	68899S	180-265V AC / 45-65 Hz	28.8V	500-1000	402x250x140 (15.8x9.9x5.5)	8.0 (17.6)

(1+1) one full power output and a second one limited
 (3) three full current outputs

Developed for professional duty, **Phoenix** pure sine inverters are suitable for the widest range of applications.

The design criteria have been to produce a true sine wave inverter with optimised efficiency without compromise in performance. Employing hybrid HF technology, the result is a top quality product with compact dimensions, light in weight and capable of supplying power, problem-free, to any load. A unique feature of the **SinusMax** technology is very high start-up power. Phoenix inverters, in fact, are well suited to power up difficult loads such as: refrigeration compressors, electric motors and similar applications. Conventional high frequency technology does not offer such extreme performance.



PHOENIX INVERTER UP TO 1200 VA

Aluminium epoxy powder coated case with drip shield, circuit board protection with an acrylic coating, forced cooling with temperature sensors, remote connector, battery cables (1.5 m), output short circuit protection, over temperature protection. 48V input models also available



MODEL	PART No.	INPUT VOLTAGE RANGE DC	CONT. OUTPUT POWER - VA ⁽¹⁾	PEAK POWER-W		MAX. EFFIC. %	DIMENSIONS HxWxD mm (")	WEIGHT kg (lbs)
12/250 VE. Direct	20404P	9,2 – 17,0	250	400	OUTPUT*: 230V AC ± 2% - 50 Hz ± 2%	87	86x165x260 (3.4x6.5x10.2)	2,4 (5.3)
12/375 VE. Direct	20405S	9,2 – 17,0	375	700		89	86x165x260 (3.4x6.5x10.2)	3,0 (6.6)
12/500 VE. Direct	20809T	9,2 – 17,0	500	900		90	86x172x275 (3.4x6.8x10.8)	3,9 (8.6)
12/800 VE. Direct	21549Y	9,2 – 17,0	800	1600		91	105x216x305 (4.2x8.5x11.9)	5,5 (12.1)
12/1200 VE. Direct	22852E	9,2 – 17,0	1200	2200		91	117x232x327 (4.6x9.1x12.9)	7,4 (16.3)
24/250 VE. Direct	20406U	18,4 – 34,0	250	350		88	86x165x260 (3.4x6.5x10.2)	2,4 (5.3)
24/375 VE. Direct	20407W	18,4 – 34,0	375	700		89	86x165x260 (3.4x6.5x10.2)	3,0 (6.6)
24/500 VE. Direct	20810B	18,4 – 34,0	500	900		90	86x172x275 (3.4x6.8x10.8)	3,9 (8.6)
24/800 VE. Direct	21550G	18,4 – 34,0	800	1500		90	105x216x305 (4.2x8.5x11.9)	5,5 (12.1)
24/1200 VE. Direct	21802H	18,4 – 34,0	1200	2200		91	117x232x327 (4.6x9.1x12.9)	7,4 (16.3)

(1) Continuous output power at 25° C
*Output 120V-60Hz also available

Bluetooth built-in: fully configurable with a tablet or smartphone

- Low battery voltage alarm
- Low battery voltage cut-off and restart levels
- Dynamic cut-off: load dependent cut-off level
- Output voltage: 210 - 245V
- Frequency: 50 Hz or 60 Hz
- ECO mode on/off and ECO mode sense level
- Alarm relay

Monitoring:

- In- and output voltage, load and alarms

VE.Direct communication port

The VE.Direct port can be connected to a computer (VE.Direct to USB interface cable needed) to configure and monitor the same parameters.

Proven reliability

The full bridge plus toroidal transformer topology has proven its reliability over many years. The inverters are short circuit proof and protected against overheating, whether due to overload or high ambient temperature.

High start-up power

Needed to start loads such as power converters for LED lamps, halogen lamps or electric tools.

ECO mode

When in ECO mode, the inverter will switch to standby when the load decreases below a preset value. Once in standby the inverter will switch on for a short period every 2,5 seconds (adjustable). If the load exceeds the preset level, the inverter will remain on.

Remote on/off

A remote on/off switch or relay contact can be connected to a two pole connector. Alternatively, the H terminal (left) of the two pole connector can be switched to battery plus, or the L terminal (right) of the two pole connector can be switched to battery minus (or the chassis of a vehicle, for example). 48V input models also available



PHOENIX SMART 12/1600

MODEL	PART No.	INPUT VOLTAGE RANGE DC	CONT. OUTPUT POWER - VA ⁽¹⁾	PEAK POWER-VA		MAX. EFFIC. %	DIMENSIONS HxWxD mm (")	WEIGHT kg (lbs)
12/1600 Smart	22825B	9,3 – 17,0	1600	3000	OUTPUT: 230V AC ± 2% 50 Hz or 60 Hz ± 1%	92	485x219x125 (19.1x8.6x4.9)	12 (26.5)
12/2000 Smart	22826D	9,3 – 17,0	2000	4000		92	485x219x125 (19.1x8.6x4.9)	13 (28.7)
12/3000 Smart	23059R	9,3 – 17,0	3000	6000		93	533x285x150 (21x11.2x5.9)	19 (41.9)
24/1600 Smart	22827F	18,6 – 34,0	1600	3000		94	485x219x125 (19.1x8.6x4.9)	12 (26.5)
24/2000 Smart	22828H	18,6 – 34,0	2000	4000		94	485x219x125 (19.1x8.6x4.9)	13 (28.7)
24/3000 Smart	23060Z	18,6 – 34,0	3000	6000		94	485x285x150 (19.1x11.2x5.9)	19 (41.9)
24/5000 Smart	23758U	18,6 – 34,0	5000	10000		95	595x295x160 (23.4x11.6x6.3)	29 (63.9)

(1) Continuous output power at 25° C

1200VA - 5000VA PHOENIX INVERTERS

Developed for professional duty, the Phoenix range of inverters is suitable for the widest range of applications. The design criteria have been to produce a true sine wave inverter with optimized efficiency but without compromise in performance. A unique feature of the SinusMax technology is very high start-up power. Conventional high frequency technology does not offer such extreme performance. Phoenix inverters, however, are well suited to power up difficult loads such as refrigeration compressors, electric motors and similar appliances.

Up to 6 units can operate in parallel to achieve higher power output. Six 24/5000 units, for example, will provide 24kW / 30kVA output power. Operation in 3-phase configuration is also possible.

To transfer the load to another AC source: the automatic transfer switch.

If an automatic transfer switch is required we recommend using the MultiPlus inverter/charger instead. The switch is included in these products and the charger function of the MultiPlus can be disabled. Computers and other electronic equipment will continue to operate without disruption because the MultiPlus features a very short switchover time (less than 20 milliseconds).

Computer interface: All models have a RS-485 port. All you need to connect to your PC is our MK2 interface (see under accessories). This interface takes care of galvanic isolation between the inverter and the computer, and converts from RS-485 to RS-232.



PHOENIX 1200 VA



STANDARD FEATURES

Aluminum epoxy powder coated case with drip shield, circuit board protection with an acrylic coating, forced cooling with temperature sensors, protection against: output short circuit, overload, low battery voltage, reverse polarity, reverse voltage on output, input voltage ripple, high temperature.
Relay multifunction.

MODEL	PART No.	INPUT VOLTAGE RANGE V DC	CONT OUTPUT POWER VA ⁽¹⁾	PEAK POWER W		MAX. EFFIC %	DIMENSIONS HxWxD mm (")	WEIGHT kg (lbs)
C12/1200	64918W	9,5 – 17,0	1200	2400	OUTPUT: 230V AC ± 2% - 50 Hz ± 2%	92	375x214x110 (14.7x8.4x4.3)	10 (22)
C12/1600	64919Y	9,5 – 17,0	1600	3000		92	375x214x110 (14.7x8.4x4.3)	10 (22)
C12/2000	66407E	9,5 – 17,0	2000	4000		92	520x255x125 (20.5x10.0x4.9)	13 (28.6)
12/3000	66037X*	9,5 – 17,0	3000	6000		93	362x258x218 (14.2x10.1x8.6)	18 (39.7)
C24/1600	64922L	19,0 – 33,0	1600	3000		94	375x214x110 (14.7x8.4x4.3)	10 (22)
C24/2000	66408G	19,0 – 33,0	2000	4000		92	520x255x125 (20.5x10.0x4.9)	13 (28.6)
24/3000	64923N*	19,0 – 33,0	3000	6000		94	362x258x218 (14.2x10.1x8.6)	18 (39.7)
24/5000	66244C	19,0 – 33,0	5000	10.000		94	444x328x240 (17.5x12.9x9.4)	28 (61.7)

(1) Continuous output power at 25°C

All models are suitable for parallel (max 6 parallel units) and 3-phase operation

OPTIONAL: control panel Phoenix CC Inverter – 65006E

Also available 3000/5000 48V models

*Output 120V-60Hz also available

Two AC inputs with integrated transfer switch

The Quattro can be connected to two independent AC sources, for example shore-side power and a generator, or two generators: the Quattro will automatically connect to the active source.

Two AC outputs

The main output has no-break functionality. In the event of a grid failure, or shore or generator power being disconnected, the Quattro takes over the supply to the connected loads. This happens so fast (less than 20 milliseconds) that computers and other electronic equipment will continue to operate without disruption. The second output is live only when AC source is available. Loads that should discharge the battery, like a water heater for example can be connected to this output.

Virtually unlimited power thanks to parallel operation

Up to 10 Quattro's can operate in parallel. Ten units 24/5000/120, for example, will provide 40kW / 50kVA output power and 1200 Amp charging capacity.

Three phase capability

Three units can be configured for three-phase output and up to 6 sets of three units can be parallel connected to provide 75kW / 90kVA inverter power and more than 2000 Amp charging capacity.

Power Control - Dealing with limited generator, shore-side or grid power

The Quattro is a very powerful battery charger. It will therefore draw a lot of current from the generator or shore-side supply (16A per Quattro at 230 VAC). A current limit can be set for both AC inputs. The Quattro will then take account of the other AC loads and use whatever is spare for charging, thus preventing the generator or shore supply from being overloaded.

Power Assist – Boosting shore or generator power

Where peak power is so often required only for a limited period, the Quattro makes sure that insufficient shore or generator power is immediately compensated for by power from the battery. When the load reduces, the spare power is used to recharge the battery. With this feature, problems related to insufficient shore or generator power are solved once and for all. Air conditioning, an electric hob, a washing machine, a dish washer, a 16A shore connection, or even less than 16A, will not limit you in any way.



QUATTRO
5kVA



MODEL	PART No.	INPUT VOLTAGE RANGE	CONT. OUTPUT POWER ⁽¹⁾	OUTPUT: 230V AC ± 2% 50 Hz ± 2%	BATTERY CHARGE		DIMENSIONS HxWxD mm (")	WEIGHT kg (lbs)
					INPUT VOLTAGE RANGE	CHARGE CURRENT		
12/3000/120-50-50	69355D	9,5 - 17	3000		14.4V DC (absorption) 13.8V DC (float)	120A + 4A	362x258x218 (14.3x10.1x8.6)	19,0 (41.8)
12/5000/220-100-100	67437V	9,5 - 17	5000		14.4V DC (absorption) 13.8V DC (float)	220A + 4A	470x350x280 (18.5x13.8x11)	34,0 (74.9)
24/3000/70-50-50	69356F	19 - 33	3000		28.8V DC (absorption) 27.6V DC (float)	70A + 4A	362x258x218 (14.3x10.1x8.6)	19,0 (41.8)
24/5000/120-100-100	66097S	19 - 33	5000		28.8V DC (absorption) 27.6V DC (float)	120A + 4A	444x328x240 (17.4x12.9x9.4)	30,0 (66.1)
24/8000/200-100-100	67338T	19 - 33	8000		57,6V DC (absorption) 55,2V DC (float)	110A + 4A	470x350x280 (18.5x13.8x11)	41,0 (90.4)

(1) Continuous output power at 25°C
Also available 48V models

The MultiPlus is a powerful true sine wave inverter, a sophisticated battery charger that features adaptive charge technology, and a high-speed AC transfer switch in a single compact enclosure. **The MultiPlus is compatible with Lithium-ion batteries.**

Double AC outputs

The main output features a no-break function: when the shore power or the genset power fails, the MultiPlus takes charge of the active loads without discontinuity. The second output is active only when an AC source is connected. The loads that may discharge the batteries, like the boiler, shall be connected to the second output.

Parallel operation and three-phase configuratio

The MultiPlus are able to be installed in parallel up to 6 units. In addition to parallel connection, three units of the same model can be configured for three-phase output: up to 6 sets of three units can be parallel connected for a total output of 75KW /90kVA and a current of 2000A.

Power Control

The MultiPlus is a very powerful battery charger, drawing high currents from the genset or from the shore power (up to 10A per 5kVA Multi at 230 VAC). In order to avoid any generator or shore overload, a current limit can be set through the Multi Control Panel; this way the Multiplus will charge the battery with the current not used from the others AC loads on board.

Power Assist

In the event that the onboard load exceeds the available shore power, the inverter function works in parallel with the shore connection to boost the total energy available and avoid overload. This works just the same with a generator.

Four stage adaptive charger and dual battery charging

System configuratio

After installation, the MultiPlus is ready to work. If settings have to be changed, this can be done with the DIP switch setting procedure. Even parallel and 3-phase operation can be programmed with DIP switches. The VE.Net panel can be used as well for any setting modification

48V input models also available.



**MULTIPLUS
500VA - 1600VA**



MULTIPLUS 2000VA

MODEL	PART No.	INPUT VOLTAGE RANGE	CONT. OUTPUT POWER ⁽¹⁾	OUTPUT	BATTERY CHARGE		DIMENSIONS HxWxD mm (")	WEIGHT kg (lbs)
					INPUT VOLTAGE RANGE	CHARGE CURRENT		
12/500/20-16	20813H	9,5 – 17 V	500	230V AC ± 2% 50 Hz ± 2%	187-265 V AC / 45-55 Hz	20 A + 1 A	311x182x100 (12.2x7.2x3.9)	4,4 (9.7)
12/800/35-16	21623H	9,5 – 17 V	800			35 A + 1 A	360x240x100 (14.2x9.5x3.9)	6,4 (14.1)
12/1200/50-16	21711E	9,5 – 17 V	1200			50 A + 1 A	406x250x100 (16x9.8x3.9)	8,2 (18.1)
12/1600/70-16	23061B	9,5 – 17 V	1600			70 A + 1 A	470x265x120 (18.5x10.4x4.7)	10,2 (22.5)
12/2000/80-32	21869T	9,5 – 17 V	2000			80 A + 4 A	520x255x125 (20.5x10x4.9)	13 (28.7)
24/500/10-16	21554R	19 – 33 V	500			10 A + 1 A	311x182x100 (12.2x7.2x3.9)	4,4 (9.7)
24/800/16-16	21624K	19 – 33 V	800			16 A + 1 A	360x240x100 (14.2x9.5x3.9)	6,4 (14.1)
24/1200/25-16	21712G	19 – 33 V	1200			25 A + 1 A	406x250x100 (16x9.8x3.9)	8,2 (18.1)
24/1600/40-16	23062D	19 – 33 V	1600			40 A + 1 A	470x265x120 (18.5x10.4x4.7)	10,2 (22.5)
24/2000/50-32	21870B	19 – 33 V	2000			80 A + 4 A	520x255x125 (20.5x10x4.9)	13 (28.7)

(1) Continuous output power at 25°C. **Color Control GX** - 68999W is available to monitor and manage system functions.

The MultiPlus-II is a multifunctional inverter/charger with all the features of the MultiPlus, plus an external current sensor option which extends the PowerControl and PowerAssist function to 50A resp. 100A. The MultiPlus-II is ideally suited for professional marine, yachting, vehicle and land based off-grid applications. It also has built-in anti-islanding functionality, and an increasingly long list of country approvals for ESS application. Several system configurations are possible.

PowerControl and PowerAssist - Boosting the capacity of the grid or a generator: a maximum grid or generator current can be set. The MultiPlus-II will then take account of other AC loads and use whatever is extra for battery charging, thus preventing the generator or grid from being overloaded (PowerControl function).

PowerAssist takes the principle of PowerControl to a further dimension. Where peak power is so often required only for a limited period, the MultiPlus-II will compensate insufficient generator, shore or grid power with power from the battery. When the load reduces, the spare power is used to recharge the battery.

Two AC Outputs: the main output has no break functionality. The MultiPlus-II takes over the supply to the connected loads in the event of a grid failure or when shore/generator power is disconnected. This happens so fast (less than 20 milliseconds) that computers and other electronic equipment will continue to operate without disruption. The second output is live only when AC is available on the input of the MultiPlus-II. Loads that should not discharge the battery, like a water heater for example, can be connected to this output.

On-site system configuring, monitoring and control: settings can be changed in a matter of minutes with VEConfigure software (computer or laptop and MK3-USB interface needed).

Remote config ring and monitoring: install a Cerbo GX or other GX product to connect to the internet. Operational data can be stored and displayed on our VRM (Victron Remote Management) website, free of charge. When connected to the internet, systems can be accessed remotely, and settings can be changed.



MULTIPLUS-II



MODEL	PART No.	INPUT VOLTAGE RANGE	CONT. OUTPUT POWER ⁽¹⁾	CHARGE CURRENT	DIMENSIONS HxWxD mm (")	WEIGHT kg (lbs)
12/3000/120-32	21871D	9,5 - 17 V	3000	32 A	546x275x147 (21.5x10.8x5.8)	19 (41.9)
24/3000/70-32	23276Z	19 - 33 V	3000	32 A	499x268x141 (19.6x10.5x5.85)	19 (41.9)
24/5000/120-50	21872F	19 - 33 V	5000	50 A	565x328x141 (22.2x12.9x5.5)	30 (66.1)

OUTPUT: 230V AC ± 2% / 50 Hz ± 0,1%

BATTERY CHARGE INPUT VOLTAGE RANGE: 187-265 V AC / 45-65 Hz

(1) Continuous output power at 25°C.

Orion DC/DC Converters are designed to deliver a stable 12 Volt supply from a 24 Volt system. An inferior supply can cause irreparable damage to 12 Volt system, but the use of an Orion voltage converter prevents such problems. Next to converters from 24V to 12V, a wide range of other models is available.

NON ISOLATED RESIN ENCAPSULATED - IP67 ORION CONVERTERS

Completely encapsulated: waterproof, shockproof and ignition protected

Water, oil or dirt will not damage the Orion IP67 DC-DC Converter. The casing is made of cast aluminium and the electronics are moulded in resin.

Extra-long input and output cables

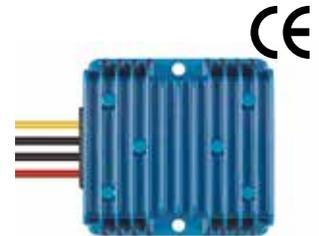
Thanks to the cables of 1.8 meters in length, intermediate cable interconnections to increase length even more will in most cases not be needed. This is an important reliability increasing feature in an area where IP67 protection grade is needed.

Wide input voltage range

With 15 to 40 Volts input range, a stable output is ensured during surges or sags due to other equipment connected to same battery.

Protected against overheating

It can be used in a hot environment such as a machine room.



ORION IP67 24/12 -10 -20

MODEL	PART No.	INPUT VOLTAGE RANGE	OUTPUT VOLTAGE - VDC	MAX OUTPUT CURRENT	TEMPERATURE CONTROL	DIMENSIONS HxWxD mm (")	WEIGHT kg (lbs)
Orion IP67 12/24-50	23080F	10-15	24	50	no	340x127x63 (13.4x5x2.5)	3 (6.6)
Orion IP67 24/12-5	69893J	15-40	12	5	no	25x43x20 (1.0x1.7x0.8)	0,1 (0.2)
Orion IP67 24/12-10	69894L	15-40	12	10	no	74x74x32 (2.9x2.9x1.3)	0,4 (0.8)
Orion IP67 24/12-20	69895N	15-40	12	20	no	74x74x32 (2.9x2.9x1.3)	0,45 (1)
Orion IP67 24/12-100	23081H	18-35	12	100	no	265x127x63 (10.4x5x2.5)	2,15 (4.7)

NON ISOLATED ORION CONVERTERS

Remote on-off connector

The remote on-off eliminates the need for a high current switch in the input wiring. The remote on-off can be operated with a low power switch or by the engine run/stop switch.

All models with adjustable output can also be used as a battery charger

For example to charge a 12 Volt starter or accessory battery in an otherwise 24V system.

All models with adjustable output can be paralleled to increase output current

Up to five units can be connected in parallel.

Easy to install

Delivery includes four Insulated Fastons Female Crimp 6.3 mm (eight Fastons in case of the Orion 24/12-40).



ORION DC-DC 24/12-40

MODEL	PART No.	INPUT VOLTAGE RANGE	OUTPUT VOLTAGE - VDC	MAX OUTPUT CURRENT	TEMPERATURE CONTROL	DIMENSIONS HxWxD mm (")	WEIGHT kg (lbs)
Orion 12/24-8	68126G	9-18	24	20	no	45x90x115 (1.8x3.5x4.5)	0,3 (0.7)
Orion 12/24-10*	64956E	9-18	20-30	20	no	45x90x125 (1.8x3.5x4.9)	0,4 (0.8)
Orion 12/24-20*	68882Y	9-18	20-30	30	yes	65x88x195 (2.6x3.5x7.7)	0,9 (2.0)
Orion 24/12-25*	68027E	18-35	10-15	25	no	65x88x160 (2.6x3.5x6.3)	0,7 (1.55)
Orion 24/12-40	68107C	18-35	13,2	40	yes	65x88x185 (2.6x3.5x7.3)	0,85 (1.9)
Orion 24/12-70*	68222C	18-35	10-15	70	yes	65x88x195 (2.6x3.5x7.7)	0,9 (2.0)

NON ISOLATED ORION-TR CONVERTERS

High efficiency

Using synchronous rectification, full load efficiency exceeds 95%.

IP43 protection

When installed with the screw terminals oriented downwards.

Screw terminals

No special tools needed for installation.



ORION-TR DC-DC 24/12-10

MODEL	PART No.	INPUT VOLTAGE RANGE	OUTPUT VOLTAGE - VDC	MAX OUTPUT CURRENT	CONT. OUTPUT CURRENT	DIMENSIONS HxWxD mm (")	WEIGHT kg (lbs)
Orion-Tr 24/12-5	20391H	18-35	12.7	7	5	53x51x27 (2.1x2x1.1)	0,1 (0.2)
Orion-Tr 24/12-10	20179K	18-35	12.5	12	10	73x94x37 (2.9x3.7x1.5)	0,2 (0.44)
Orion-Tr 24/12-15	20392K	18-35	12.5	20	15	73x94x45 (2.9x3.7x1.8)	0,3 (0.7)
Orion-Tr 24/12-20	20393M	18-35	12.5	25	20	73x94x45 (2.9x3.7x1.8)	0,3 (0.7)

ISOLATED ORION-TR CONVERTERS

Adjustable output voltage: can also be used as a battery charger

For example to charge a 12 Volt starter or accessory battery in an otherwise 24V system.

All models are short circuit proof and can be paralleled to increase output current

An unlimited number of units can be connected in parallel.

High temperature protected

The output current will reduce at high ambient temperature.

IP43 protection

When installed with the screw terminals oriented downwards.

Screw terminals

No special tools needed for installation.

Input fuse (not replaceable)

On 12V and 24V input models only.



ISOLATED ORION-TR DC-DC

MODEL	PART No.	INPUT VOLTAGE RANGE	OUTPUT VOLTAGE - VDC	MAX OUTPUT CURRENT	EFFICIENCY	DIMENSIONS HxWxD mm (")	WEIGHT kg (lbs)
Orion-Tr 12/12-9	20396U	8-17	10-15	12,5	87%	100x113x47 (3.9x4.5x1.9)	0,6 (1.3)
Orion-Tr 12/12-18	21588J	8-17	10-15	25	88%	130x186x70 (5.1x7.3x2.8)	1,3 (2.9)
Orion-Tr 12/12-30	23082K	10-17	10-15	40	87%	130x186x80 (5.1x7.3x3.2)	1,8 (4)
Orion-Tr 12/24-5	20398Y	8-17	20-30	6,3	88%	100x113x47 (3.9x4.5x1.9)	0,6 (1.3)
Orion-Tr 12/24-10	21681Y	8-17	20-30	12,5	88%	130x186x70 (5.1x7.3x2.8)	1,3 (2.9)
Orion-Tr 12/24-15	22903V	10-17	20-30	25	88%	130x186x80 (5.1x7.3x3.2)	1,8 (4)
Orion-Tr 24/12-9	20399A	16-35	10-15	12,5	85%	100x113x47 (3.9x4.5x1.9)	0,6 (1.3)
Orion-Tr 24/12-20	21682A	16-35	10-15	25	88%	130x186x70 (5.1x7.3x2.8)	1,3 (2.9)
Orion-Tr 24/12-30	23083X	20-35	10-15	45	88%	130x186x80 (5.1x7.3x3.2)	1,8 (4)
Orion-Tr 24/24-5	20073T	16-35	20-30	6,3	87%	100x113x47 (3.9x4.5x1.9)	0,6 (1.3)
Orion-Tr 24/24-12	20976N	16-35	20-30	15	88%	130x186x70 (5.1x7.3x2.8)	1,3 (2.9)
Orion-Tr 24/24-17	64968M	20-35	20-30	25	89%	130x186x70 (5.1x7.3x2.8)	1,6 (3.5)

ISOLATED ORION-TR SMART CC SERIES

Bluetooth Smart enabled

Any Bluetooth enabled smart phone, tablet or other device can be used to monitor, to change settings and to update the charger when new software features become available.

Fully programmable

- Battery charge algorithm (configurable) or fixed output.
- Smart alternator compatibility: engine running detection mechanism.

Remote on-off

A remote on/off switch or relay contact can be connected to a two-pole connector. Alternatively, the H terminal (right) of the two-pole connector can be switched to battery plus, or the L terminal (left) of the two pole connector can be switched to battery minus



ORION-TR SMART 12/12-30

Orion-Tr Smart	PART No.	INPUT VOLTAGE RANGE	OUTPUT VOLTAGE - VDC	MAX OUTPUT CURRENT	CONT. OUTPUT CURRENT	DIMENSIONS HxWxD mm (")	WEIGHT kg (lbs)
12/12-18 (220W)	23260H	8-17	12.2	25	18	130x186x70 (5.1x7.3x2.7)	1,3 (3)
12/24-10 (240W)	23261K	8-17	24.2	15	10	130x186x70 (5.1x7.3x2.7)	1,3 (3)
24/12-20 (240W)	23262M	16-35	12.2	25	20	130x186x70 (5.1x7.3x2.7)	1,3 (3)
24/24-12 (280W)	23263P	16-35	24.2	15	12	130x186x70 (5.1x7.3x2.7)	1,3 (3)
12/12-30 (360W)	23149S	10-17	12.2	40	30	130x186x80 (5.1x7.3x3.1)	1,8 (4)
12/24-15 (360W)	23151C	10-17	24.2	25	15	130x186x80 (5.1x7.3x3.1)	1,8 (4)
24/12-30 (360W)	23162H	20-35	12.2	45	30	130x186x80 (5.1x7.3x3.1)	1,8 (4)
24/24-17 (400W)	23155L	20-35	24.2	25	17	130x186x70 (5.1x7.3x2.7)	1,6 (3.5)

NON ISOLATED ORION-TR SMART CC SERIES

Bluetooth Smart enabled

Any Bluetooth enabled smart phone, tablet or other device can be used to monitor, to change settings and to update the charger when new software features become available.

Fully programmable

- Battery charge algorithm (configurable) or fixed output.
- Smart alternator compatibility: engine running detection mechanism.

Remote on-off

A remote on/off switch or relay contact can be connected to a two-pole connector. Alternatively, the H terminal (right) of the two-pole connector can be switched to battery plus, or the L terminal (left) of the two pole connector can be switched to battery minus



ORION-TR SMART 12/24-15

Orion-Tr Smart	PART No.	INPUT VOLTAGE RANGE	OUTPUT VOLTAGE - VDC	MAX OUTPUT CURRENT	CONT. OUTPUT CURRENT	DIMENSIONS HxWxD mm (")	WEIGHT kg (lbs)
12/12-30 (360W)	23150A	10-17	12.2	40	30	130x186x70 (5.1x7.3x2.7)	1,8 (4)
12/24-15 (360W)	23152E	10-17	24.2	25	15	130x186x70 (5.1x7.3x2.7)	1,8 (4)
24/12-30 (360W)	23525U	20-35	12.2	45	30	130x186x70 (5.1x7.3x2.7)	1,8 (4)
24/24-17 (400W)	23156N	20-35	24.2	25	17	130x186x70 (5.1x7.3x2.7)	1,6 (3.5)

ISOLATION TRANSFORMER

The isolation transformer eliminates any electrical continuity between AC shore power and the ship. It is essential for safety and eliminates the need for galvanic isolators and polarity alarms. The shore power is fed to the primary side of the transformer and the ship is connected to the secondary. The isolation transformer completely isolates the boat from the shore ground. By connecting all metal parts to the neutral output on the secondary side of the transformer, a GFCI (ground fault current interrupter) will trip or a fuse will blow in case of a short circuit.

Features

Aluminium epoxy powder coated case with drip shield, circuit board protection with an acrylic coating, toroidal transformer.



ISOLATION TRANSFORMER

MODEL	PART No.	WATT	DIMENSIONS HxWxD mm (")	WEIGHT kg (lbs)
2000W 115/230 V	64969P	2000 W	375x214x110 (14.8x8.4x4.3)	10 (22.0)
3600W 115/230 V	64970Y	3600 W	362x258x218 (14.2x10.1x8.5)	23 (50.7)
7000W 230 V	64972C	7000 W	362x258x218 (14.2x10.1x8.5)	26 (57.3)
3600W Auto 115/230 V*	69852U	3600 W	362x258x218 (14.2x10.1x8.5)	23 (50.7)

*Automatic input voltage detection

AUTOTRANSFORMERS 120/240 32A AND 100A

- An autotransformer or autostep down transformer is an electrical transformer with only one winding. An autotransformer, portions of the same winding act as both the primary and secondary sides of the transformer. The winding has at least three taps where electrical connections are made. Autotransformers have the advantages of often being smaller, lighter, and cheaper than typical dual-winding transformers, but autotransformers have the disadvantage of not providing electrical isolation.
- Autotransformers are often used to step up or step down voltages in the 110-115-120 volt range and voltages in the 220-230-240 volt range - for example. providing 120V (with taps) from 240V input, allowing equipment designed for 120 volts to be used with a 240 volt supply (as in using US electrical equipment with higher European voltages)
- Temperature protected. In case of overheating, the autotransformer is disconnected from the supply. Reset is manual
- Transformer type: toroidal
- Enclosure Aluminium. Protection category IP21



AUTOTRANSFORMER

MODEL	PART No.	INPUT/OUTPUT VOLTAGE	MAXIMUM 240V FEED CURRENT	DIMENSIONS HxWxD mm (")	WEIGHT kg (lbs)
32 A	68349D	120/ 240 V - 50/60Hz	32 A	375x214x110 (14.8x8.4x4.3)	10 (22.0)
100 A	68883A	120/ 240 V - 50/60Hz	100 A	425x214x110 (16.7x8.4x4.3)	14 (30.9)

GALVANIC ISOLATORS VDI-16, VDI-32, VDI-64

- Prevent galvanic corrosion due to dissimilar metals between boats
- Gold plated terminals provide superior corrosion resistance to marine environment
- Block DC current from flowing through shore power cable
- Ignition protected



VDI-32

MODEL	PART No.	PEAK CURRENT	MAX CURRENT	DIMENSIONS HxWxD mm (")	WEIGHT kg (lbs)
VDI-16	68884C	1600 A / 20 ms	16 A	60x120x200 (2.3x4.7x7.9)	1 (2.2)
VDI-32	69851S	1600 A / 20 ms	32 A	63x164x235 (2.4x6.5x9.2)	2 (4.4)
VDI-64	23078V	1600 A / 20 ms	64 A	64x164x224 (2.5x6.5x8.8)	2 (4.4)

BATTERY MONITORING

These accessories allow to control: voltage, charge/discharge current, SOC, remaining time in the battery. Using the dongle Bluetooth (opt), all the data can be monitored by smartphone. Standard with connection cables and shunt.

Mounting hole: 52 mm (2")

- BMV 700** - 69112A – monitoring 1 battery 9-90 VDC
- BMV 702** - 69151L – monitoring 2 batteries 9-90 VDC
- BMV 702 BLACK** - 69159D – monitoring 2 batteries 9-90 VDC
- BMV 712 Smart** - 21396Z – monitoring 2 batteries 9-90 VDC - Bluetooth included
- Temperature Sensor** - 69160M – Temperature sensor for BMV 702/712

Smart Shunt 500A-50mV - 23352N– monitoring batteries via Bluetooth / Victron Connect directly on your phone.

- Smart Shunt 1000A-50mV** - 23678W
- Smart Shunt 2000A-50mV** - 24988T



Smart Shunt 1000A-50mV

ARGO – DIODE BATTERY ISOLATORS

Battery isolators allow simultaneous charging of two or more batteries from one alternators, without connecting the batteries together. Discharging the accessory battery, for example, will not result in discharging the starter battery. The Argo battery isolators feature a low voltage drops thanks to the use of Schottky diodes: at low current the voltage drop is approximately 0,3V and at the rated output approximately 0,45 V. All models are fitted with a compensation diode that can be used to slightly increase the output voltage of the alternator. This compensates for the voltage drop over the diodes in the isolator.



ARGO

Alternator energize input

Some alternators need DC voltage on the B+ output to start charging. Obviously, DC will be present when the alternator is directly connected to a battery. Inserting a Diode or FET splitter will however prevent any return voltage/current from the batteries to the B+, and the alternator will not start. The new diode isolators have a special current limited energize input that will power the B+ when the engine run/stop switch is closed.

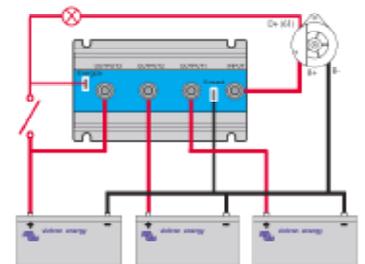
MODEL	PART No.	MAX CHARGE CURRENT	ALTERNATOR MAX CURRENT	No. of BATTERIES	DIMENSIONS HxWxD mm (")	WEIGHT kg (lbs)
80-2AC	67435R	80A	80A	2	60x120x90 (2.4x4.7x3.5)	0.6 (1.3)
100-3AC	64984K	100A	100A	3	60x120x115 (2.4x4.7x4.5)	0.8 (1.8)
120-2AC	64985M	120A	120A	2	60x120x115 (2.4x4.7x4.5)	0.8 (1.8)
140-3AC	64986P	140A	140A	3	60x120x150 (2.4x4.7x6.0)	1.1 (2.4)
160-2AC	64987S	160A	160A	2	60x120x150 (2.4x4.7x6.0)	1.1 (2.4)
180-3AC	64988U	180A	180A	3	60x120x200 (2.4x4.7x7.9)	1.5 (3.3)

ARGO FET BATTERY ISOLATORS

Differently from diode battery isolators, FET isolators have virtually no voltage loss. Voltage drop is less then 0,02 Volt at low current and averages 0,1 Volt at higher currents. When using ARGO FET battery isolators, there is no need to also increase the output voltage of the alternator. Care should be taken however to keep cable lengths short and of sufficient cross section.

Alternator energize input

The new ARGO FET isolators have a special current limited energize input that will power the B+ when the engine run/stop switch is closed.



ARGO FET

MODEL	PART No.	MAX CHARGE CURRENT	ALTERNATOR MAX CURRENT	No. of BATTERIES	DIMENSIONS HxWxD mm (")	WEIGHT kg (lbs)
100/2-FET	64989W	100A	100A	2	65x120x200 (2.6x4.7x7.9)	1.4 (3.1)
100/3-FET	64990E	100A	100A	3	65x120x200 (2.6x4.7x7.9)	1.4 (3.1)
200/2-FET	64991G	200A	200A	2	65x120x200 (2.6x4.7x7.9)	1.4 (3.1)
200/3-FET	64992J	200A	200A	3	65x120x200 (2.6x4.7x7.9)	1.4 (3.1)

The Ciryx battery combiner is a microprocessor controlled heavy duty relay that automatically connects batteries in parallel when one of them has reached a preset voltage (indicating that the battery has been charged) and disconnects when the voltage decreases below float level (indicating that one or more batteries have been discharged).

No voltage loss

Ciryx battery separators are an excellent replacement for diode isolators. The main feature is that there is virtually no voltage loss so that the output voltage of alternators or battery chargers does not need to be increased.

Prioritising the starter battery

In a typical setup the alternator is directly connected to the starter battery. The accessory battery and possibly also a bow thruster and other batteries are each connected to the starter battery by Ciryx battery combiners.

When a Ciryx senses that the starter battery has reached its connect voltage will engage, to allow for parallel charging of the other batteries.

Bidirectional voltage sensing

The Ciryx senses the voltage of both connected batteries. It will therefore also engage if for example the accessory battery has been charged by a battery charger.

Parallel connection in case of emergency

The Ciryx can also be engaged with a switch to connect manually batteries in parallel. This is especially useful in case of emergency when the starter battery is discharged or damaged.

12/24V auto ranging with Ciryx-i

The Ciryx-i 12/24-400 automatically detects system voltage.



CYRIX-i 12/24-400A



CYRIX-CT 12/24-120A



CYRIX-CT 12/24-230A

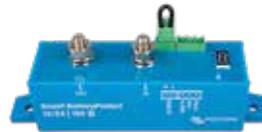
MODEL	PART No.	CONTINUOUS CURRENT	PEAK CURRENT	CONNECT VOLTAGE	DISCONNECT VOLTAGE	DIMENSIONS HxWxD mm (")	WEIGHT kg (lbs)
CT 12/24-120	68956B	120A	180	13÷13.8V & 26÷27.6V	11÷12.8V & 22÷25.7V	46x46x80 (1.8x1.8x3.2)	0.11 (0.24)
CT 12/24-230	69357H	230A	500	13÷13.8V & 26÷27.6V	11÷12.8V & 22÷25.7V	65x100x50 (2.6x3.9x2.0)	0.27 (0.6)
i 12/24-400	67064F	400A	2000	13÷13.8V & 26÷27.6V	10.5÷12.8V & 21÷25.6V	78x102x110 (3.0x4.0x4.3)	0.9 (1.9)

65A/100A/220A BATTERY PROTECTION

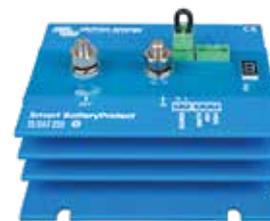
The Victron battery protection disconnects the battery from non essential loads before it is completely discharged (which would damage the battery) or before it has insufficient power left to crank the engine.



BP-65A Smart



BP-100A Smart



BP-220A Smart

MODEL	PART No.	MAX CONTINUOUS CURRENT	PEAK CURRENT	OPERATING VOLTAGE RANGE	LOAD DISCONNECT DELAY	DIMENSIONS HxWxD mm (")	WEIGHT kg (lbs)
BP-65	69853W	12/24V 65A	250A	6-35V	1 minute	40x48x106 (1.6x1.9x4.2)	0.2 (0.5)
BP-65 Smart	22835E	12/24V 65A	250A	6-35V	1 minute	40x48x106 (1.6x1.9x4.2)	0.2 (0.5)
BP-100	69854Y	12/24V 100A	600A	6-35V	1 minute	59x42x115 (2.4x1.7x4.6)	0.6 (1.3)
BP-100 Smart	22836G	12/24V 100A	600A	6-35V	1 minute	59x42x115 (2.4x1.7x4.6)	0.6 (1.3)
BP-220	69855A	12/24V 220A	600A	6-35V	1 minute	62x123x120 (2.5x4.9x4.8)	0.8 (1.8)
BP-220 Smart	22837J	12/24V 220A	600A	6-35V	1 minute	62x123x120 (2.5x4.9x4.8)	0.8 (1.8)

REMOTE CONTROL PANELS AND CONNECTION CABLES



System Control



GX Touch 50



DMC



CCGX



PHOENIX CC



Phoenix Inverter Control VE. Direct

MODEL	PART No.	DESCRIPTION
System Control Cerbo GX	23264S	Communication-centre to monitor the system
GX Touch 50	23265U	Accessory 5" display for Cerbo GX
GX Touch 70 new	21977W	Accessory 7" display for Cerbo GX
DMC 200/200A	66717W	Digital Multi Control 200/200A
DMC 200/200A GX	67920Y	Digital Multi Control 200/200GX for Multi (Plus) and Quattro
Color Control GX	68999W	Digital Remote Control
Phoenix CC Charger	65006E	Phoenix Charger Control Panel
Phoenix Inverter	66202K	Phoenix Inverter Control Panel
Phoenix Inverter Control VE. Direct	23003L	Phoenix Inverter VE. Direct Remote Control Panel
Skylla-i	68885E	Skylla-i Control GX Panel
Skylla CC	65007G	Skylla Control Panel
CW	65008J	On-Off switch battery charger
Battery Alarm GX	65009L	Battery Alarm Panel
VE. Direct Bluetooth Dongle	69545E	Dongle Bluetooth for remote monitoring data
Wifi Module Simple Wifi Modu	69536H	CCGX Wifi Module Simpl
Wifi Module Long Rang	69537K	CCGX Wifi Module Long Rang
UTP-1,8 RJ 45	67776U	UTP 1,8 m cable
UTP-3 RJ 45	20413R	UTP 3 m cable
UTP-5 RJ 45	65010V	UTP 5 m cable
UTP-10 RJ 45	65011X	UTP 10 m cable
UTP-15 RJ 45	65012Z	UTP 15 m cable
UTP-20 RJ 45	65013B	UTP 20 m cable
UTP-25 RJ 45	65014D	UTP 25 m cable
UTP-30 RJ 45	65015F	UTP 30 m cable
RS232/MK.2b	65018M	Connection KIT RS232/MK.2b Victron Interface
USB/RS232	65019P	Converter USB/RS232
MK2/USB	67082H	Converter Kit USB/MK.2 (CB Phoenix only)
MK3/USB new	21329H	VE.Bus/USB interface
VE.Direct Cable 0,3	69278N	VE.Direct cable - 0,3 m (CCGX to BMV70x)
VE.Direct Cable 0,9	20414T	VE.Direct cable -0,9 m (CCGX to BMV70x)
VE.Direct Cable 1,8	69266E	VE.Direct cable -1,8 m (CCGX to BMV70x)
VE.Direct Cable 3	21021C	VE.Direct cable -3 m (CCGX to BMV70x)
VE.Direct Cable 5	69479Y	VE.Direct cable -5 m (CCGX to BMV70x)
VE.Direct Cable 10	69543E	VE.Direct cable -10 m (CCGX to BMV70x)



The AGM Super Cycle batteries are the result of recent battery electrochemistry developments.

The paste of the positive plates is less sensitive to softening, even in case of repeated 100% discharge of the battery, and new additives to the electrolyte reduce sulfation in case of deep discharge.

Exceptional 100% depth of discharge (DoD) performance

Tests have shown that the Super Cycle battery does withstand at least three hundred 100% DoD cycles.

The tests consist of a daily discharge to 10,8V with $I = 0,2C_{20}$, followed by approximately two hours rest in discharged condition, and then a recharge with $I = 0,2C_{20}$.

The two hours rest period in discharged condition will damage most batteries within 100 cycles, but not the Super Cycle battery.

We recommend the Super Cycle battery for applications where an occasional discharge to 100% DoD, or frequent discharge to 60-80% DoD is expected

An additional advantage of the new chemistry is a slightly smaller size and less weight compared to our standard deep cycle AGM batteries.

The internal resistance is also slightly lower compared to our standard deep cycle AGM batteries.

Cycle life

≥ 300 cycles @ 100% DoD (discharge to 10,8V with $I = 0,2C_{20}$, followed by approximately two hours rest in discharged condition, and then a recharge with $I = 0,2C_{20}$)

≥ 700 cycles @ 60% DoD (discharge during three hours with $I = 0,2C_{20}$, immediately followed by recharge at $I = 0,2C_{20}$)

≥ 1000 cycles @ 40% DoD (discharge during two hours with $I = 0,2C_{20}$, immediately followed by recharge at $I = 0,2C_{20}$)



SUPER CYCLE AGM	PART No.	NOMINAL VOLTAGE	Ah C5	Ah C10	Ah C20	TERMINALS	DIMENSIONS mm (") WxDxH	WEIGHT kg (lbs)
12V/60Ah	21583Y	12 V	52	56	60	M5 insert	224x135x178 (8.8x5.3x7)	14 (30.9)
12V/100Ah	21402R	12 V	82	90	100	M6 insert	260x168x215 (10.2x6.6x8.5)	26 (57.3)
12V/125Ah	21584A	12 V	105	114	125	M8 insert	330x171x214 (13x6.7x8.4)	33 (72.7)
12V/170Ah	21403T	12 V	145	153	170	M8 insert	336x172x280 (13.2x6.8x11)	45 (99.2)
12V/230Ah	21404V	12 V	200	210	230	M8 insert	532x207x226 (20.9x8.1x8.9)	57 (125.7)



AGM



GEL



Deep cycle **AGM** batteries are more suitable for short-time delivery of very high currents (engine starting) than gel batteries.
Life: 7 – 10 years

AGM Type	PART No.	CAPACITY*	DIMENSIONS WxDxH mm (")	WEIGHT kg (lbs)
12/60	65022C	60 - 55 Ah	229x138x227 (9x5.4x8.9)	18 (39.7)
12/66	65023E	66 - 60 Ah	258x166x235 (10.1x6.5x9.2)	24 (52.9)
12/90	65024G	90 - 80 Ah	350x167x183 (13.8x6.6x7.2)	27 (59.5)
12/110	65645S	110 - 100 Ah	330x171x220 (13x6.7x8.7)	32 (70.5)
12/130	65025J	130 - 120 Ah	410x176x227 (16.1x6.9x8.9)	38 (83.7)
12/165	65026L	165 - 150 Ah	485x172x240 (19.1x6.7x9.4)	47 (103.6)
12/220	65027N	220 - 200 Ah	522x238x240 (20.5x9.3x9.4)	65 (143.0)

*value for 20 hours of discharging

GEL deep cycle batteries. Life: 12 years

GEL Type	PART No.	CAPACITY*	DIMENSIONS WxDxH mm (")	WEIGHT kg (lbs)
12/60	65028R	60 - 55 Ah	229x138x227 (9x5.4x8.9)	19 (41.9)
12/66	65029T	66 - 60 Ah	258x166x235 (10.1x6.5x9.2)	24 (52.9)
12/90	65030B	90 - 80 Ah	350x167x183 (13.8x6.6x7.2)	26 (57.3)
12/110	65646U	110 - 100 Ah	330x171x220 (13x6.7x8.7)	33 (72.7)
12/130	65031D	130 - 120 Ah	410x176x227 (16.1x6.9x8.9)	38 (83.7)
12/165	65032F	165 - 150 Ah	485x172x240 (19.1x6.7x9.4)	48 (105.8)
12/220	65033H	220 - 200 Ah	522x238x240 (20.5x9.3x9.4)	66 (145.5)
12/265	22887A	265 - 230 Ah	520x268x223 (20.4x10.5x8.8)	75 (165.3)

*value for 20 hours of discharging

Integrated BMS and safety switch

The SuperPack batteries are extremely easy to install, needing no additional components. The internal switch will disconnect the battery in case of over discharge, over charge or high temperature.

Abuse proof

A lead-acid battery will fail prematurely due to sulfation:

- If it operates in deficit mode during long periods of time (i.e. if the battery is rarely, or never at all, fully charged).
- If it is left partially charged or worse, fully discharged. A Lithium-Ion battery does not need to be fully charged. Service life even slightly improves in case of partial charge instead of a full charge. This is a major advantage of Li-ion compared to lead-acid. The SuperPack batteries will cut-off the charge or discharge current when the maximum ratings are exceeded.

Efficient

In several applications (especially off-grid solar), energy efficiency can be of crucial importance. The round-trip energy efficiency (discharge from 100% to 0% and back to 100% charged) of the average lead-acid battery is 80%.

The round-trip energy efficiency of a Li-ion battery is 92%.

The charge process of lead-acid batteries becomes particularly inefficient when the 80% state of charge has been reached, resulting in efficiencies of 50% or even less in solar systems where several days of reserve energy are required (battery operating in 70% to 100% charged state).

In contrast, a Li-ion battery will still achieve 90% efficiency even under shallow discharge conditions.

Can be connected in parallel

The batteries can be connected in parallel. Series connection is not allowed. Use in upright position only.



12,8/20



12,8/60



12,8/100



12,8/200



25,6/50

MODEL	12,8/20	12,8/60	12,8/100	12,8/200	25,6/50
Part No.	23097Z	22840X	22841Z	22842B	23098B
Nominal voltage	12,8 V	12,8 V	12,8 V	12,8 V	25,6 V
Nominal capacity @25°C	20 Ah	60 Ah	100 Ah	200 Ah	50 Ah
Nominal capacity @0°C	16 Ah	48 Ah	80 Ah	160 Ah	40 Ah
Nominal energy @25°C	256 Wh	768 Wh	1280 Wh	2560 Wh	1280 Wh
Cycle life @80% DoD and 25°C	2500 cycles				
Max. continuous discharge current	30 A	30 A	50 A	70 A	50 A
Peak discharge current (10 sec)	80 A	80 A	100 A	100 A	100 A
Charge voltage, absorption	14,2-14,4 V	14,2-14,4 V	14,2-14,4 V	14,2-14,4 V	28,4-28,8 V
Charge voltage, floa	13,5 V	13,5 V	13,5 V	13,5 V	27 V
Max. continuous charge current	15 A	30 A	50 A	70 A	50 A
Dimensions mm (") WxDxH	181x77x167 (7.1x3x6.6)	229x138x213 (9x5.4x8.4)	330x171x220 (13x6.7x8.7)	520x269x208 (20.5x10.6x8.2)	330x171x220 (13x6.7x8.7)
Weight kg (lbs)	3,5 (7.7)	9,5 (21)	14 (30.9)	31 (68.3)	14 (30.9)

LITHIUM-ION 12,8V & 25,6V SMART BATTERIES



Lithium-iron-phosphate (LiFePO₄ or LFP) is the safest of the mainstream li-ion battery types. The nominal voltage cell is 3,2V (lead-acid: 2V/cell). A 12,8V Li-ion battery therefore consists of 4 cells connected in series; and a 25,6V battery consists of 8 cells connected in series.



LFP

MODEL	LFP-SMART 12,8/60	LFP-SMART 12,8/100	LFP-SMART 12,8/160	LFP-SMART 12,8/200	LFP-SMART 12,8/330	LFP-SMART ^{new} 25,6/100	LFP-SMART 25,6/200
Part No.	68763P	22260C	23266W	68766W	22262G	24767A	23903A
Nominal voltage	12,8 V	12,8 V	12,8 V	12,8 V	12,8 V	25,6 V	25,6 V
Nominal capacity @25°C	60 Ah	100 Ah	160 Ah	200 Ah	330 Ah	100 Ah	200 Ah
Nominal capacity @ 0°C	48 Ah	80 Ah	130 Ah	160 Ah	260 Ah	80 Ah	160 Ah
Nominal capacity @ -20°C	30 Ah	50 Ah	80 Ah	100 Ah	160 Ah	50 Ah	100 Ah
Nominal energy @ 25°C	768 Wh	1280 Wh	2048 Wh	2560 Wh	4220 Wh	2560 Wh	5120 Wh
Maximum continuous discharge current	120 A	200 A	320 A	400 A	400 A	200 A	400 A
Recommended continuous discharge current	≤60 A	≤100 A	≤160 A	≤200 A	≤300 A	≤100 A	≤200 A
Maximum charge current	120 A	200 A	320 A	400 A	600 A	200 A	400 A
Recommended charge current	≤30 A	≤50 A	≤80 A	≤100 A	≤150 A	≤50 A	≤100 A
Power connection (threaded inserts)	M8	M8	M8	M8	M10	M8	M8
Dimensions mm (") HxWxD	199x187x147 (7.8x7.3x5.8)	197x321x152 (7.8x12.6x6)	237x321x152 (9.3x12.6x6)	237x321x152 (9.3x12.6x6)	265x359x206 (10.4x14.1x8.1)	197x650x163 (7.7x25.6x6.4)	317x631x208 (12.5x25.8x8.2)
Weight kg (lbs)	12 (26.5)	15 (33.1)	20 (44.1)	22 (48.5)	30 (66.1)	28 (61.7)	56 (123.6)

ACCESSORIES

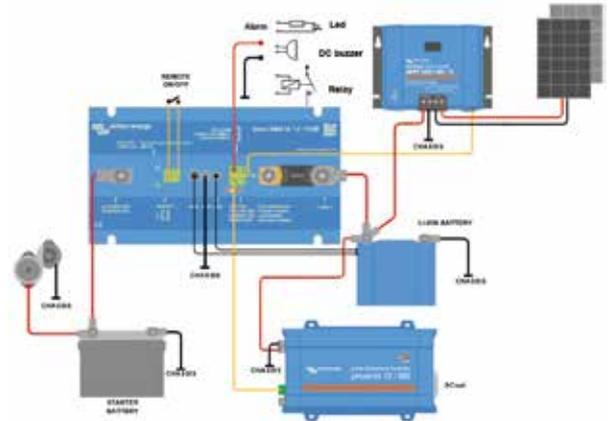
BMS 12/200 - 69015C
 VE.BUS BMS - 69016E
 SMALL BMS - 22839N

CABLES WITH M8 CIRCULAR CONNECTOR FOR LI-ION BATTERIES

Male to female 3 pole 1 m (3.3 ft) – 68886G
 Male to female 3 pole 2 m (6.6 ft) – 68887J
 Male to female 3 pole 3 m (9.8 ft) – 68888L
 Male to female 3 pole 5 m (16.4 ft) – 68889N



SMART BMS CL 12/100 - 23527Y
SMART BMS 12/200 - 21860Y



Battery Management system

The BMS connects to 12,8V Victron LiFePO4 (LFP) batteries. Up to 5 batteries may be connected in parallel. Can be used as a system on/off switch.

Alternator and battery protection

The input current is electronically limited to approximately 90% of the fuse rating. A 100A fuse, for example, will therefore limit the input current to approximately 90A.

Choosing the right fuse will:

- a. Protect the LFP battery against excessive charge current (important in case of a low capacity LFP battery).
- b. Protect the alternator against overload in case of a high capacity LFP battery bank (most 12V alternators will overheat and fail if running at maximum output during more than 5 minutes).

Starter battery protection

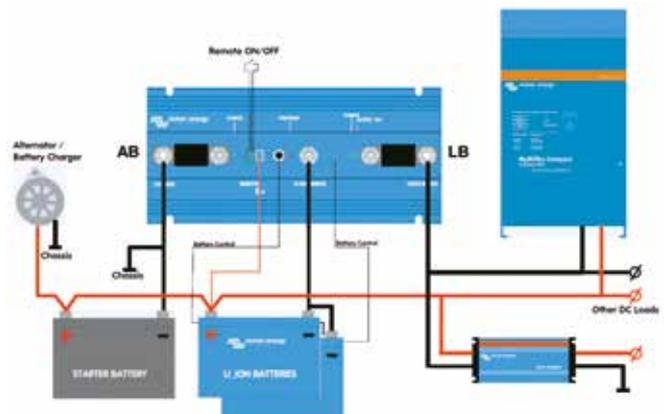
This function is similar to that of a Cyrix Battery Combiner or Argo FET Battery Isolator. Current can flow to the LFP battery only if the input voltage (= voltage on the starter battery) exceeds 13V. And current cannot flow back from the LFP battery to the starter battery, thus preventing eventual damage to the LFP battery due to excessive discharge.

Li-ion battery protection

Remote on/off input



BMS 12/200 - 69015C



A 12V BMS that protects the alternator (and wiring), and supplies up to 200A in any DC load (including inverters and inverter/chargers)

Why a Battery Management System (BMS) is needed:

- A LFP cell will be damaged if the voltage over the cell falls to less than 2,5V.
- A LFP cell will be damaged if the voltage over the cell increases to more than 4,2V.
- The cells of a LFP battery do not auto-balance at the end of the charge cycle.

Alternator/battery charger input (Power Port AB) - Features

- The first function of Power Port AB is to prevent the load connected to the LFP battery from discharging the starter battery.
- Control of transients and input voltage.
- Charge current is reduced to a safe level in case of cell unbalance or over temperature.
- The input current is electronically limited to approximately 80% of the AB fuse rating. Choosing the right fuse is very important.

Load/battery charger output/input (Power Port LB) - Features

- Maximum current in both directions: 200A continuous.
- Peak discharge current electronically limited to 400A.
- Battery discharge cut-off whenever the weakest cell falls below 3V.
- Charge current is reduced to a safe level in case of cell unbalance or over temperature.

Protects each individual cell of a Victron lithium iron phosphate (LiFePO4 or LFP) battery

The BMS will:

- shut down or disconnect loads in case of imminent cell under voltage,
- reduce charge current in case of imminent cell overvoltage or over temperature (VE.Bus products only),
- shut down or disconnect battery chargers in case of imminent cell overvoltage or over temperature..

Protects 12 V, 24 V and 48 V systems

Operating voltage range of the BMS: 9 to 70 V DC.

Communicates with all VE.Bus products

The VE.Bus BMS connects to a MultiPlus, Quattro or Phoenix inverter with a standard RJ45 UTP cable.

- Protection grade: IP20
- Standards: EN60950; EN61000-6-3; EN55014-1 ; EN61000-6-2 ; EN61000-6-1; EN 55014-2 and EN 50498



VE.BUS BMS



MODEL	VE.BUS BMS
Part No.	69016E
Input Voltage Range	9-70 Vdc
Current Draw, Normal Operation	10 Ma
Current Draw, Low Cell Voltage	2 Ma
Operating Temperature	-20 A +50°C
Weight kg (lbs)	0,09 (0.2)
Dimensions (")	30x105x72 (1.2x4.1x2.8)

BATTERY BALANCER

The Battery Balancer equalizes the state of charge of two series connected 12 V batteries, or of several parallel strings of series connected batteries.

When the charge voltage of a 24 V battery system increases to more than 27 V, the Battery Balancer will turn on and compare the voltage over the two series connected batteries. The Battery Balancer will draw a current of up to 1 A from the battery (or parallel connected batteries) with the highest voltage. The resulting charge current differential will ensure that all batteries will converge to the same state of charge.

If needed, several balancers can be paralleled.

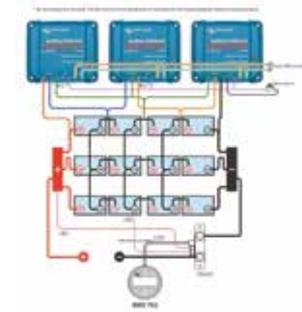
A 48 V battery bank can be balanced with three Battery Balancers.

IP20 protection

MODEL	BATTERY BALANCER
Part No.	69369R
Input voltage range	Up to 18V per battery, 36 V total
Turn on level	27,3 V +/- 1%
Turn off level	26,6 V +/- 1%
Stand-by current draw	0,7 mA
Midpoint deviation to start balancing	50 mV
Max. balancing current	0,7 A (when deviation > 100mV)
Alarm trigger level	210 mV
Alarm reset level	140 mV
Alarm relay	60 V / 1A
Alarm relay reset	Two terminals to connect a push button
Over temperature protection	Yes
Operating temperature	-30°C to +50°C
Dimensions mm (")	100 x 113 x 47 (3.94 x 4.45 x 1.85)
Weight kg (lbs)	0,6 (0.3)



Series connection



Parallel connection

- **Ultra-fast Maximum Power Point Tracking (MPPT):** Especially in case of a clouded sky, when light intensity is changing continuously, an ultra fast MPPT controller will improve energy harvest by up to 30% compared to PWM charge controllers and by up to 10 % compared to slower MPPT controllers
- **Load output:** Over-discharge of the battery can be prevented by connecting all loads to the load output. The load output will disconnect the load when the battery has been discharged to a preset voltage
- **BatteryLife:** intelligent battery management. The BatteryLife algorithm will monitor the state of charge of the battery and, if needed, day by day slightly increase the load disconnect level (i. e. disconnect the load earlier) until the harvested solar energy is sufficient to recharge the battery to nearly the full 100%
- **Resin encapsulated electronics**
- **Day/night timing and light dimming option**
- **Outstanding conversion efficiency :** No cooling fan. Maximum efficiency exceeds 98%. Full output current up to 40°C (104°F). No cooling fan
- **Advanced Maximum Power Point Detection in case of partial shading conditions:** If partial shading occurs, two or more maximum power points may be present on the power-voltage curve. Conventional MPPT's tend to lock to a local MPP, which may not be the optimum MPP. The innovative BlueSolar algorithm will always maximize energy harvest by locking to the optimum MPP
- **Flexible charge algorithm:** Fully programmable charge algorithm, and eight preprogrammed algorithms, selectable with a rotary switch
- **Extensive electronic protection:** Over-temperature protection and power derating when temperature is high. PV short circuit and PV reverse polarity protection. PV reverse current protection



MODEL	75/10	75/15	100/15	100/20	100/30	100/50	150/35
Part No.	21674B	21675D	22401U	23016W	21678K	21679M	21680W
Battery voltage	12V/24V auto detected						
Maximum output current	10 A	15 A		20 A	30 A	50 A	35 A
Maximum PV power	135W (12V) 270W (24V)	200W (12V) 400W (24V)		290W (12V) 580W (24V)	440W (12V) 880W (24V)	700W (12V) 1400W (24V)	500W (12V) 1000W (24V)
Maximum PV open circuit voltage	75 V		100 V			150 V	
Maximum efficiency	98%						
Self-consumption	100mA						
Low voltage load disconnect	11,1V/22,2V or 11,8V/23,6V or algorithm BatteryLife					-	
Load voltage load reconnect	13,1V/26,2V or 14V/28V or algorithm BatteryLife					-	
Operating temperature	-30°C ÷ +60°C						
Protection class	IP43 (electronic components) - IP22 (connections)						
Dimensions mm (")	100x113x40 (3.9x4.5x1.6)		100x113x47 (3.9x4.5x1.8)	100x113x50 (3.9x4.5x2)		130x186x70 (5.1x7.3x2.8)	
Weight kg (lbs)	0,4 (0.9)	0,5 (1.1)	0,6 (1.3)	0,7 (1.5)		1,3 (2.9)	

PWM-PRO CHARGE CONTROLLERS

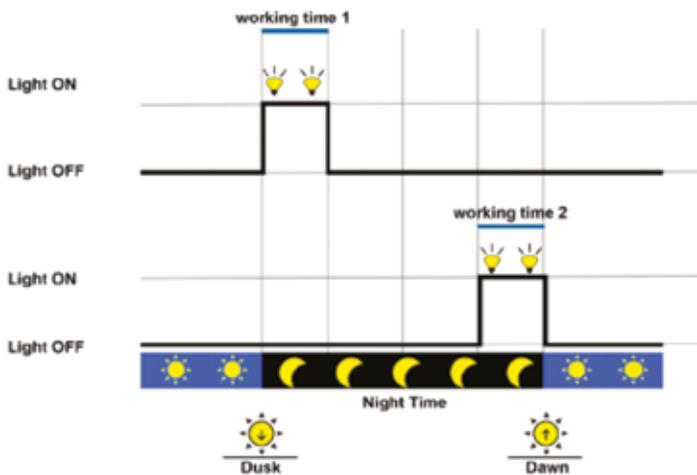
- **Programmable:** The BlueSolar PWM-Pro series is ready for use with its default settings. It also is fully programmable with help of the dedicated BlueSolar Pro Remote Panel.
- Low cost PWM controller
- Lighting control function, fully programmable with the Remote Panel (optional) - 69450 X
- Three stage battery charging (bulk, absorption, float), fully programmable with the Remote Panel (optional)
- Integrated battery monitor function (Remote Panel needed to display state of charge)
- Load output with low voltage disconnect and manual control (default setting)
- **Optional external temperature sensor** - 69898 V
- Load output protected against over load and short circuit
- Protected against reverse polarity connection of the solar panels and/or battery
- Protection category: IP30
- Certifications: IEC62103-1, EN61000-6-1, EN 61000-6-3, ISO 7637-2
- Warranty: 5 years



BlueSolar PWM-Pro10A



BlueSolar Pro Remote Panel (optional) - 69450X



MODEL	PWM-PRO 12/24-10	PWM-PRO 12/24-20	PWM-PRO 12/24-30
Part No.	69446G	69368N	69452B
Voltage	12 V 24 V	12 V 24 V	12 V 24 V
Rated load current	10 A 10 A	20 A 20 A	30 A 30 A
Maximum solar voltage	28 V 55 V	28 V 55 V	28 V 55 V
Self consumptions	<10mA	<10mA	<10mA
Low voltage load disconnect	11,1V / 22,2V	11,1V / 22,2V	11,1V / 22,2V
Low voltage load reconnect	12,6V / 25,2V	12,6V / 25,2V	12,6V / 25,2V
Operating temperature	-20 a + 50°C	20 a + 50°C	-20 a + 50°C
Dimensions mm (")	70x138x37 (2.8x5.4x1.5)	82x160x48 (3.2x6.2x1.8)	100x200x57 (3.9x7.9x2.2)
Weight kg (lbs)	0,15 (0.3)	0,3 (0.7)	0,5 (1.1)

FAAM



START SERIES

The designing of the START range was born from the need to satisfy the demand of a high starting current, great reliability, Lack of servicing and high safety. The use of a recombination watertight cover with a centralized degassing system and a special flame retardant pad represents a remarkable benefit for the safety and reliability of this battery.



MODEL	PART No.	V	AH/20 H	CCA (EN)	LENGTH L mm (")	WIDTH W mm (")	TOTAL HEIGHT H mm (")	WEIGHT kg (lbs)
62R22	23102N	12	62	530	242 (9.5)	175 (6.9)	190 (7.5)	14,5 (32)
80R42	23103R	12	80	750	352 (13.9)	175 (6.9)	190 (7.5)	19,8 (43.6)
00R52	23104T	12	100	800	352 (13.9)	175 (6.9)	190 (7.5)	21,3 (47)

CYCLES SERIES

CYCLES range satisfies the application needs through a new designing of inner electrodes concerning alloys, grids, thickness, new elaboration of active materials and special systems of inner separation. The batteries of the CYCLES range represent the best solution as regards performance, lifetime, reliability and safety due to their strong starting power, to the high cycling resistance and a strong inclination to charge acceptance.



MODEL	PART No.	V	AH/20 H	CCA (EN)	LENGTH L mm (")	WIDTH W mm (")	TOTAL HEIGHT H mm (")	WEIGHT kg (lbs)
60A22	23105V	12	60	680	242 (9.5)	175 (6.9)	190 (7.5)	18,5 (40.8)
70A32	23106X	12	70	760	278 (10.9)	175 (6.9)	190 (7.5)	20,3 (44.7)
80A42	23107Z	12	80	800	315 (12.4)	175 (6.9)	190 (7.5)	22,9 (50.5)
00A52	23367C	12	100	850	352 (13.9)	175 (6.9)	190 (7.5)	26 (57.3)

SMART SERIES

The batteries of SMART series are batteries for Super Heavy Duty use. They are designed with plates (e/electrodes) with high thickness and strenghtened structure to satisfy the need for high energies and high cyclical resistance with low-maintenance.

They are an excellent compromise among performances, long-lasting and cost, for the use on professional and pleasure boats.



MODEL	PART No.	V	AH/20 H	CCA (EN)	LENGTH L mm (")	WIDTH W mm (")	TOTAL HEIGHT H mm (")	WEIGHT kg (lbs)
62061	23109D	12	120	850	509 (20)	175 (6.9)	228 (9)	35 (77.2)
66061	23110M	12	160	950	513 (20.2)	223 (8.8)	223 (8.8)	43,8 (96.6)
72061	23111P	12	220	1200	518 (20.4)	273 (10.7)	242 (9.5)	56 (123.5)

UFLEX



MARINE PV SOLAR MODULES



Sunware solar modules, without glass, are functionally reliable, robust, light-weight, weather-proof and sea-water resistant: therefore they have been specially designed for marine applications on board.

The innovative manufacturing process, make them particularly suitable to be installed on the deck of the boat, avoiding vibrations and the negative effects of high temperature.

Self-cleaning and safe to step-on, SUNWARE modules are easy to bend and can therefore adhere to the deck (maximum bending 3%, i.e. bending of 3 cm per 1 m long module).

Each module is supplied complete with stainless steel back-plate, a sea-water proof and UV resistant cable (3 m long – red/blue 2x1.5 mmq).



SW-20
cable outlet on the front,
no ventilation required



SW-40
cable output on the back,
front side completely flat

Model	Part No.	Max. Power	No. of Cells	Nominal Voltage	I _{max}	I _{sc}	Dimensions HxWxD mm (")	Weight kg (lbs)
SW-20143 SW-40143	22112L 600100A	14 Wp	40	12 V	0.69 A	0.72 A	468x243x6 (18.4x9.6x0.2)	0,7 (1.5)
SW-20144 SW-40144	22113N 600101C	20 Wp	40	12 V	0.91 A	0.96 A	643x273x6 (25.3x10.7x0.2)	1,2 (2.6)
SW-20145 SW-40145	22114R 600102E	25 Wp	40	12 V	1.2 A	1.37 A	807x273x6 (31.8x10.7x0.2)	1,3 (2.9)
SW-20146 SW-40146	22115T 600103G	38 Wp	40	12 V	1.81 A	1.92 A	1154x273x6 (45.4x10.7x0.2)	2,2 (4.8)
SW-20163 SW-40163	21010X 600104J	25 Wp	38	12 V	1.36 A	1.44 A	426x481x6 (16.7x18.9x0.2)	1,3 (2.9)
SW-20164 SW-40164	21735V 600105L	38 Wp	39	12 V	1.8 A	1.92 A	599x481x6 (23.6x18.9x0.2)	1,8 (4)
SW-20165 SW-40165	21296V 600106N	50 Wp	39	12 V	2.4 A	2.54 A	772x481x6 (30.4x18.9x0.2)	2,3 (5.1)
SW-20166 SW-40166	22116V 600107R	75 Wp	39	12 V	3.62 A	3.84 A	1119x481x6 (44x18.9x0.2)	3,6 (8)
SW-20185 SW-40185	21364K 600109V	100 Wp	35	12 V	5.43 A	5.75 A	1012x689x6 (39.8x27.1x0.2)	4,7 (10.4)

ACCESSORIES



MID CLIPS AND SIDE CLIPS

- Part No. 64098H (2 clips)

- Part No. 64099K (4 clips)



PLUGS, SOCKETS AND CONNECTORS

- Male Socket: Part No. - 64100R

- Female Socket: Part No. - 64101T

- Plug: Part No. - 64102V

- Bulkhead kit: Part No. - 64104Z

- Bulkhead Connector: Part No. - 64103X

WLW-50W FEATURES

- Ultra-Light weight
- Easy and quick to install. Simple peel and stick
- Improves electrical redundancy and continuity
- Reduce reflectivity and increased light trapping
- Providing excellent wind and seismic resistance
- Module size, shape and colour customizable
- Superior low light & low sun angle performance

WM-110-FX-24L FEATURES

- Ultra-Light weight
- Higher open circuit voltage
- Easy and quick to install
- Built in crack tolerance
- Maintain module integrity and power maintenance
- Superior low light & low sun angle performance



WLW-50W



WM-110-FX-24L

MODEL	WLW-50W	WM-110-FX-24L
Part No.	23005R	23051Y
Rated Power (P max) in Watt	50	110
Number of cell in series	36	24
Max peak voltage (Vmp) (Volt)	18.6	12.89
Max peak current (Imp) (Amp)	2.70	8.54
Open circuit voltage (Voc) (Volt)	22.3	15.5
Short circuit current (Isc) (Amp)	2.90	8.81
Max system voltage (V DC)	600	100 V (IEC)/600 V (UL)
Max series fuse rating (Amp)	10	15
Power tolerance (%)	+3	+3
Operating temperature	-40°C to 85°C	-40°C to 85°C
Dimensions mm HxWxD (")	610x690x20 (24x27.2x0.8)	2030x373x21 (80x14.7x0.82)
Weight kg (lbs)	1.5±0.5 (3.3±1.1)	3.5±0.5 (7.7±1.1)

The Xunzel™ solar panels are very thin (3 mm – 0,12”), light and bendable up to 30°. Thanks to the innovative All-Back-Contact Technology, these solar panels supply higher power than conventional PV modules of same size. By adopting the Back-Contact technique, the wafer can be coated with flexible materials and finally forms the high efficiency flexible solar panel.

These panels offer high performances also early in the morning, late in the evening and even on cloudy days. They effectively absorb different wavelengths of light to generate more electricity. Furthermore, the hotter it gets, the better is their performance compared to competitor efficiency. Designed for boat and RVs applications, for off-grid solutions (telecom, ups-backup energy, street lighting, etc.)



FEATURES

- Easy to install. Ready to connect. Stainless steel rings (dia. 10 mm)
- Secure and easy wiring. Includes 3 m pre-assembled solar cable
- Completely waterproof and weatherproof junction box (IP65)
- Design: high quality, reliability and performance. Crystalline silicon cell panels with patented All-Back-Contact Technology. Very thin, light and bendable up to 30°
- Endurance: High quality UV resistant materials ensure a long life
- Electrical Connection: Junction box mounted at the front side for protection against corrosion. The Xunzel™ solar panels are delivered with pre-assembled cables for a quick and safe installation

Model	Part No.	Pmax Watt	Vmp Volt	Imp Amp	Voc Volt	Isc Amp	Dimensions mm (“)	Weight kg (lbs)
HD 50W	23364W	50W	17.36	2.88	20.8	3.11	600x500x3 (23.6x19.7x0.12)	1 (2.2)
HD 110W	23365Y	110W	18.56	5.97	21.9	6.32	1155x560x3 (45.5x22.1x0.12)	2,5 (5.51)

Ufle[®] uses top quality materials to factory build reliable and long lasting poly-crystalline PV Modules.

Ufle[®] prime quality main components are: high efficiency cells, reflection-free and power transmitting glasses, anodized aluminium frames. Back positioned mounting holes for easy of installation.

The Quality Management System is certified in compliance with **ISO 9001:2008 standards**.

Solar Modules manufactured by Ufle[®] are certified in accordance with **IEC61215** and **CE** standards
Standards: **EN 61730-1:2007+A1:2012+A2:2013+A11:2014; EN 61730-2:2007+A1:2012**

Product warranty: 12 years

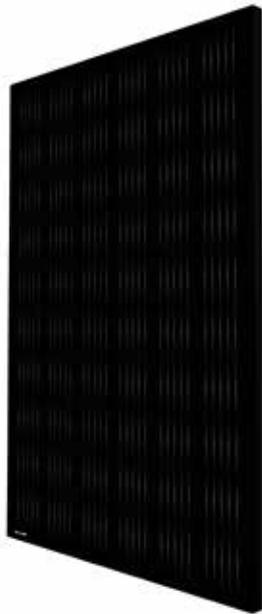
Performance warranty: 30 years linear



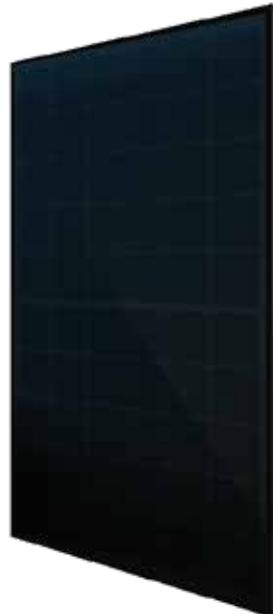
Model	Part No.	Pmax ^(I) Watt	Vmp ^(II) Volt	Imp ^(III) Amp	Voc ^(IV) Volt	Isc ^(V) Amp	Dimensions mm (")	Weight kg (lbs)
UFX005MM	21387Y	5	18.31	0.28	22.43	0.30	245x190x17 (9.6x7.5x0.7)	0,7 (1.5)
UFX100MM	69578AB	100	18.30	5.47	22.42	5.76	1015x668x30 (40x26.3x1.2)	7,7 (17)
UFX140MM	21865J	140	19.00	7.37	23.28	7.76	1250x668x30 (49.2x26.3x1.2)	9,5 (20.9)
UFX180MM	22908FA	180	19.47	9.25	23.85	9.74	1485x668x30 (58.5x26.3x1.2)	11 (24.2)
UFX010PM	69572MA	10	18.37	0.55	22.50	0.58	245x350x17 (9.6x13.8x0.7)	1,2 (2.6)
UFX020PM	69573PA	20	18.87	1.09	22.55	1.23	440x350x25 (17.3x13.8x1)	2 (4.4)
UFX040PM	69574SA	40	18.33	2.19	22.45	2.31	425x668x25 (16.7x26.3x1)	3,1 (6.8)
UFX060PM	69576WA	60	19.25	3.12	23.58	3.29	545x668x25 (21.4x26.3x1)	4 (8.8)
UFX080PM	69577YA	80	18.30	4.38	22.42	4.61	780x668x30 (30.7x26.3x1.2)	6,1 (13.4)
UFX100PM	69578AA	100	18.20	5.50	22.30	5.79	1015x668x30 (40x26.3x1.2)	8 (17.6)
UFX160PM	21742SA	160	18.34	8.73	22.47	9.19	1485x668x30 (58.5x26.3x1.2)	11 (24.2)
UFX285PM	23532RA	285	32.03	8.90	39.24	9.37	1650x992x35 (65x39x1.4)	18,4 (40.6)

MONO-CRYSTALLINE PV MODULES

- Electroluminescence tested (EL-Test)
- IP67 + 1 m cable
- High transmissivity and high resistance glass
- Frame with high mechanical resistance and inner tube
- Recyclable and environmentally friendly materials
- **Certific** : IEC 61215:2005; IEC 61730-1:2004 / IEC 61730-2:2004; Front load (snow) 5.400 Pa; Rear load (wind) 2.400 Pa; Fire Resistance Certified / Class 1 (UNI 9177); MCS (R.U); EEE016-20130528-001 (France); WEEE conformity in Germany; ETL Listed Mark (USA-Canada); PID Resistance (only poly-crystalline pv modules)



MEPV375HC



MEPV400UP



MEPV450HC

MODEL	MEPV375HC	MEPV400UP	MEPV450HC
Part No.	24951T	24950R	21840S
Nominal power, P _{mpp}	375W	400W	450W
Tolerance, P _{mpp}	0/+5W	0/+5W	±1W
Module area	1,82 m ²	1,79 m ²	2,2 m ²
Module efficiency	20,60%	22,30%	20,45%
I _{sc}	9,23A	12,05A	11,6A
V _{oc}	39,18V	42,10V	49,44V
I _{mpp}	8,76A	11,09A	10,85A
V _{mpp}	32,22V	36,10V	41,47V
Maximum voltage	1000 - 1500V	1500V	1000-1500V
α I _{sc}	0,04% / °C	0,046% / °C	0,046% / °C
β V _{oc}	-0,29% / °C	-0,246% / °C	-0,276% / °C
γ P _{max}	-0,37% / °C	-0,290% / °C	-0,381% / °C
Temperature range	-40°C / +85°C	-40°C / +85°C	-40°C / +85°C
NOCT	42°C ± 2°C	43°C ± 2°C	42°C ± 2°C
Dimensions mm (") HxWxD	1755x1038x35 (69.1x40.8x1.4)	1727x1039x30 (68x40.9x1.2)	2108x1048x35 (83x41.3x1.4)
Weight kg (lbs)	19,2 (42.3)	20 (44.1)	25 (55.1)

PROSTAR™ SERIES FEATURES

- 3 digits LCD display reading in sequence: Battery Current, PV Current, Loads Current
- Automatic voltage select for either 12 or 24V DC systems
- Automatic voltage select for either a sealed or flooded battery
- Full electronic protection against any consequence of reversed wire connection
- Instant disconnection/connection of all PV modules and loads by a button



SUNSAVER™ SERIES FEATURES

- Multi-colour status LED
- 3 LED's for battery state of charge with self-diagnostic
- Full electronic protection against reversed PV, battery or load wire connections
- Either a flooded or sealed battery can be selected with a simple jumper
- Encapsulated in epoxy compound for service in harsh environment
- Dead battery recovery



PROSTAR™ SERIES TECHNICAL SPECIFICATIONS

MODEL	PS15M	PS30M	PS15M-48V
Part No.	62643W	61737A	63072H
Nominal Voltage	12V DC	24V DC	48V DC
Rated solar current	15 Amp	30 Amp	15 Amp
Rated load current	15 Amp	30 Amp	15 Amp
Load disconnect/LVD reconnect	11,5 V/12,6V	11,5 V/12,6V	11,5 V/12,6V
Self consumption	22 mA	22 mA	28 mA
Dimensions mm	153 x 105 x 55	153 x 105 x 55	153 x 105 x 55
Weight	0,34 kg	0,34 kg	0,34 kg

SUNSAVER™ SERIES TECHNICAL SPECIFICATIONS

MODEL	SS 6 L	SS 10	SS 10 L	SS 20 L	SS10 L-24
Part No.	61213E	61415B	61192X	61734U	61938L
Nominal Voltage	12V DC	12V DC	12V DC	12V DC	24V DC
Rated solar current	6 A	10 A	10 A	20 A	10 A
Rated load current	6 A	10 A	10 A	20 A	10 A
Load disconnect/LVD reconnect	11,5 /12,6V	11,5 /12,6V	11,5 /12,6V	11,5 /12,6V	23/25,2V
LVD reconnect	Yes	No	Yes	Yes	Yes
Dimensions mm	152x55x34	152x55x34	152x55x34	152x55x34	152x55x34
Weight	0,23 kg	0,23 kg	0,23 kg	0,23 kg	0,23 kg

SunSaver DUO™ is a two battery solar controller with remote adjustable meter

FEATURES

- Will charge two separate and isolated batteries at the same time based on user selectable priorities
- Includes a backlit remote meter with LED display which may be mounted in or on a wall and displays information about the solar power system
- User adjustable via DIP switch or connection to a PC
- Two battery charging eliminates the added cost of two separate solar charging systems and the need for isolation between the batteries
- Will not be damaged by wiring mistakes during installation
- Epoxy encapsulated for environmental protection
- Options: Remote Temperature Sensor



TECHNICAL SPECIFICATIONS

MODEL	SunSaver DUO™
Part No.	66129C
Battery Voltage	12 Volt
Rated Solar Input	25 Amp
Max Solar Voltage	30 Volt
Max battery Voltage	15 Volt
Self Consumption	25 mA (controller and meter)
Operating Ambient Temperature	-40°C a +40°C
Dimensions	170 x 56 x 41 mm
Meter Hole size	76 mm
Largest wire	16 mm ²
Weight	0,26 kg

ELECTRONIC PROTECTION

- PV: Over Current, Short Circuit
- Reverse polarity
- Lightning
- High Temperature
- Reverse Current at Night

CERTIFICATIONS

- CE

The EcoBoost MPPT™ solar charge controller brings Morningstar's proprietary TrakStarTechnology™ to our new line of Essentials controllers and accessories. The EcoBoost controllers automatically detect 12 or 24 V system configuration. They are highly efficient and accurate controllers designed to ensure that batteries attain a complete state of charge. They are also sophisticated load controllers. Using this feature to manage DC power consumption protects the batteries from over discharge and helps ensure long term system reliability.

- **7 battery types:** with the possibility of customization
- **2 USB input:** to charge smartphones and tablets - 3A at 5V
- **Solar input electronic protection:** overload, short-circuit, high voltage, reverse polarity, high temperature, nighttime reverse current.
- **Load output electronic protection:** overload, short-circuit, high temperature, reverse polarity.
- **Battery electronic protection:** reverse polarity.
- **Load control:** Low Voltage Disconnect and Low Voltage Reconnect settings.
- **Lighting control:** dusk and dawn settings
- **Optional Meter:** provides access to system operational information including current and historical performance data. All EcoBoost "M" controllers include the meter
- **Operating temperature:** -40°C to +60°C
- **Tropicalization:** conformal coating, marine-rated terminals
- **Power terminals:** 2,5-16 mm² / 14-2AWG
- **Enclosure:** IP20
- **Dimensions:** 19,6x17,3x7,1 cm (7.7x6.8x2.8 in)
- **Weight:** 1,4 kg (3.1 lbs)
- **Certifications** CE, TUV Listed, IEC 62109, EN 62109-1, Emissions 55014-1, Immunity 55014-2
- **WARRANTY: 2 years**
- **Accessories:** Remote Temperature Sensor (RTS), mobile phone holder (included)



Model	EB-MPPT-20	EB-MPPT-20-M	EB-MPPT-30	EB-MPPT-30-M	EB-MPPT-40	EB-MPPT-40-M
Par No.	22296A	22264L	22297C	22265N	22298E	22266R
Max battery current	20 A	20 A	30 A	30 A	40 A	40 A
Load current rating	20 A	20 A	30 A	30 A	40 A	40 A
Maximum PV Open Circuit Voltage (VOC)	120 V					
Nominal battery voltage	12 or 24 V automatic sensing setting					
Max nominal operation power*						
12 V battery	300W @ 40C	300W @ 40C	400W @ 40C	400W @ 40C	560W @ 40C	560W @ 40C
24 V battery	600W @ 40C	600W @ 40C	800W @ 40C	800W @ 40C	1120W @ 40C	1120W @ 40C
Battery voltage range	10/35 V					
Self-consumption	<1.2 Watts					
Maximum combined USB charging output	3 at 5 V					

*Input power can exceed nominal maximum operating power, but controller will limit and provide its rated continuous maximum output current into batteries. This will not harm the controller.

EcoPulse™ is a pulse width modulation (PWM) solar charge controller within Morningstar's Essential Series™ of products which provides essential off-grid battery regulation functions. Metered and non-metered versions of this product are available at 10, 20, and 30 amp charge ratings for 12 and 24 volt battery systems

- **4-Stage charging:** Bulk, Absorption, Float, Equalize.
- **PV electronic protection:** overload, short-circuit, high voltage, reverse polarity, high temperature, nighttime reverse current.
- **Load electronic protection:** overload, short-circuit, high temperature, reverse polarity.
- **Battery electronic protection:** reverse polarity.
- **Load control:** Low Voltage Disconnect and Low Voltage Reconnect.
- **Lighting control:** Dusk to Down.
- **Operating temperature:** -40°C a +45°C
- **Tropicalization:** conformal coating, marine-rated terminals
- **Terminals:** 2,5-16 mm² / 14-6AWG
- **Enclosure:** IP20
- **Dimensions:** 15,3 x 10,5 x 5,5 cm
- **Weight:** 0,4 kg
- **Certifications** CE
- **WARRANTY:** 2 years
- **Accessories:** Remote temperature sensor (RTS)



MODEL	EC-10	EC-10M	EC-20	EC-20M	EC-30	EC-30M
Part No.	21419J	21420T	21421V	21422X	21423Z	21424B
Display	No	Yes	No	Yes	No	Yes
Max PV open circuit voltage	60 V					
Load current rating	10 A	10 A	20 A	20 A	30 A	30 A
Nominal battery voltage	12/24 VDC					
Battery voltage range	10/35 VDC					
Self-consumption	<22mA	<40mA	<22mA	<40mA	<22mA	<40mA

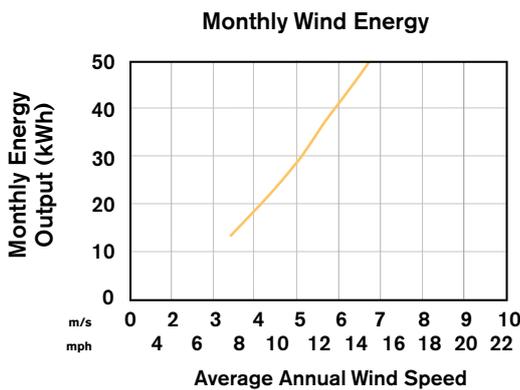
Quiet, reliable energy for sea and shore

AirBreeze/Airx Marine is trusted by sailors around the world and recommended as the best high-energy output turbine by Yachting Monthly. Its optimized electronic controls deliver energy quietly and efficiently. Extensive third party testing and certification shows more consistent output than the competition. AirBreeze/Airx Marine is part of the latest generation of AIR products – the world’s best-selling wind turbines – with more than 135,000 units sold in more than 120 countries.

High performance in marine environments

We recommend AirBreeze for all small battery-charging applications in coastal areas or offshore: boats, docks and other marine uses. The AirBreeze is an ideal wind turbine for hybrid systems with solar to offset those cloudy or stormy periods. AirBreeze is built and backed by the worldwide leader in small wind.

- Improved reliability backed by a lifetime warranty
- Quiet operation
- Energy in light winds
- Lightweight; unique design is simple and easy to install
- Stop switch included
- Corrosion resistant paint tested to SAE J2334 standard
- Marine grade O-ring seal
- Stainless steel external fasteners
- Anodized blade hub



AIR BREEZE	Air Breeze M1 12V	Air Breeze M2 24V	AirX Marine 12V	AirX Marine 24V
Part No.	68070F	68071H	63034Z	63035B
Energy	app. 3200 Ah/month at 5,8 m/s (11.3 knots)		30kW h/m at 5,8 m/s (13 mph)	
Rotor Diameter	1.17 m (6 in)			
Weight	5.9 kg (13 lb)			
Shipping dimensions	686 x 318 x 229 mm (27 x 12.5 x 9 in)			
Mount	48 mm (1.9 in) outer diameter			
Startup Wind Speed	3.13 m/s (7 mph)		3.58 m/s (8 mph)	
Voltage	12 or 24 V DC			
Turbine Controller	Microprocessor-based smart internal regulator			
Overspeed protection	Electronic torque control			
Survival Wind Speed	49.2 m/s (110 mph)			

3 BLADE WIND GENERATORS



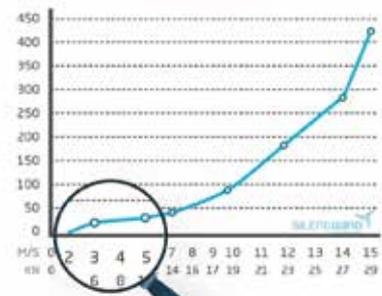
- Generator type: permanent magnet generator, 3 phase
- Integrated electronic/manual stop switch
- Very light: 6,8 kg only
- Hand laminated, UV-resistant carbon blades, successfully tested according to DIN EN 61400-2 at hurricane speed 122km/h.
- Low noise
- Very good start-up performance due to low cogging torque at 2,2 m/s wind speed
- Supplied with external hybrid controller for wind and solar energy with multi-function LCD display (for 12V and 24V models). It can be connected to photovoltaic modules.

- **Applications:** universal application for marine, land and professional systems with low, middle and high wind
- **Warranty:** 3 years
- **Certificatio** : DIN VDE protection class II; CE; RohS

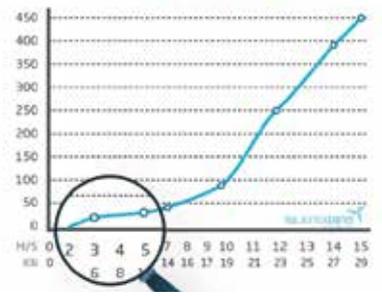
Model	SLW-420-12	SLW-450-24	SLW-500-48
Part No.	20381EA	20382GA	20383JA
Rated voltage	12 VDC	24 VDC	48 VDC
Rated power	420 W	450 W	500 W
Rated wind speed	14,5 m/s	14,5 m/s	14,5 m/s
Start-up wind speed	2,2 m/s	2,2 m/s	2,2 m/s
Start-up charging	2,8 m/s	2,8 m/s	2,8 m/s
Rotor diameter	1,15 m	1,15 m	1,15 m
Rotor speed range	550-1700 rpm	550-1700 rpm	550-1700 rpm
Packing dimensions mm (")	780 x 400 x 210 (30.7 x 15.8 x 8.3)	780 x 400 x 210 (30.7 x 15.8 x 8.3)	780 x 400 x 210 (30.7 x 15.8 x 8.3)
Dry weight kg (lbs)	6,8 (15)	6,8 (15)	6,8 (15)



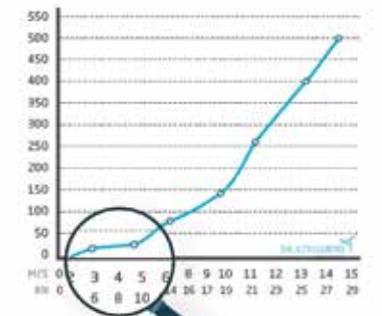
POWERCURVE 12V BOOSTER 2V



POWERCURVE 24V BOOSTER 4V



POWERCURVE 48V BOOSTER 8V



WIND/SOLAR HYBRID CHARGE CONTROLLER

The LCD multifunction display shows all main operating values (W, A, V/ Ah, kWh, Ah).

Battery system voltage automatically detected. Maximum power input of the solar panel: 550 Wp.

- **Bluetooth connection with dedicated App**

Part No.	20384L (12 V) - 20385N (24 V) - 20386R (48 V)
Rated battery voltage	12, 24 or 48 VDC
Max wind gen. power input	600 W /40 A (12 V) /30 A (24 V) /15 A (48 V)
Max solar mod. power input	300 W /50 VOC /20 A (12 V) /10 A (24 V) /5 A (48 V)
Display data	V, A, V/Ah, kWh, Ah
Battery type	Flooded / GEL / AGM
Dimensions mm (")	220 x 150 x 82 (8.7 x 5.9 x 3.2)
Dry weight kg (lbs)	2,8 (6.2)

3 BLADE SPARE KIT

68485M - Three blade kit for AirBreeze™ and AirX™

POLE AND MOUNTING KIT (OPTIONAL)

68689E - Reinforced pole for high wind speed

68690N - Mounting kit



The Superwind 350 is a small wind turbine for professional use, which even under extreme conditions works autonomously and automatically.

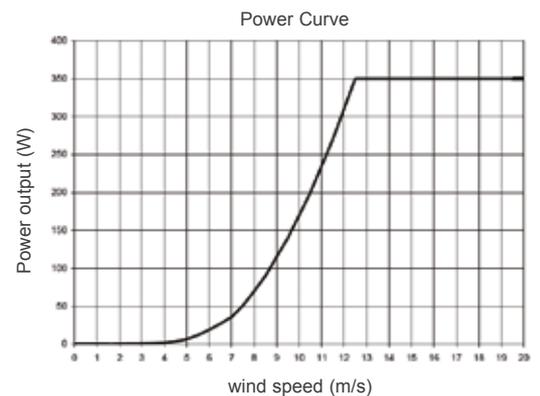
- **Features:**
 - Adjust the speed and power by varying the pitch of the blades
 - Carbon fiber reinforced blades
 - Alternator with permanent magnet, three-phase rectifier
 - Stop: Short circuit of the generator
 - Superwind 350 is often used in mixed wind / photovoltaic systems
- **Applications:**

Ideal fields of application for example are navigational aids, traffic control systems, environmental monitoring stations or transmitters, but also sailing yachts, campers, summer cottages and mountain shelters.

SUPERWIND	Superwind 350 12V	Superwind 350 24V
Part No.	65726S	65727U
Max power at 12,5 m/s	350 W	350 W
Voltage	12 V DC	24 V DC
Cut-in wind speed	3,5 m/s	3,5 m/s
Cut-off wind speed	none	none
Rotor diameter	1,20 m	1,20 m
Rotor speed	500-1300 rpm	500-1300 rpm
Rotor thrust (operation)	70 N	70 N
Rotor thrust (extreme wind speed)	220 N	220 N
Dry weight kg (lbs)	11,5 (25.3)	11,5 (25.3)

ACCESSORIES

- CRM 12V Charge controller - 65728W
- CRM 24V Charge controller - 65729Y
- Stop switch - 65730G
- Installation Kit - 65731J



- 3 phase brushless wind turbines. The cross-ventilated 'savonius' vertical axis rotor coupled with the well proven axial flux alternator.
- Quiet; reliable.
- Robust design, almost indestructible: these vertical axis wind turbine are designed & proven to survive 120mph Antarctic winds.
- Compact and lightweight, can be installed in a variety of positions with ease
- Marine quality finish, high quality components and lasting performance
- High efficiency due to anticipated start-up charge
- Charge controller included (only LE-v150™ model)

• **Applications:**

Trickle charging for batteries installed on boats and land.
 Polar stations for monitoring air pollution.
 Buoys and marine lights. Telecom systems.
 Signaling systems that require low energy.

• **Warranty:** 2 years

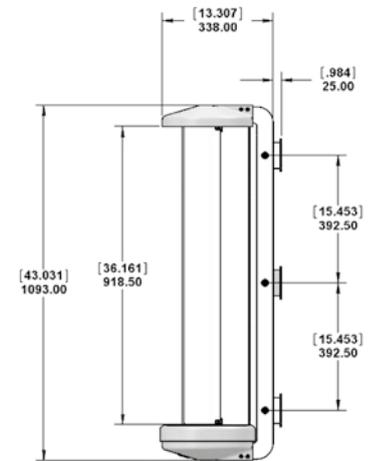


LE-v50™

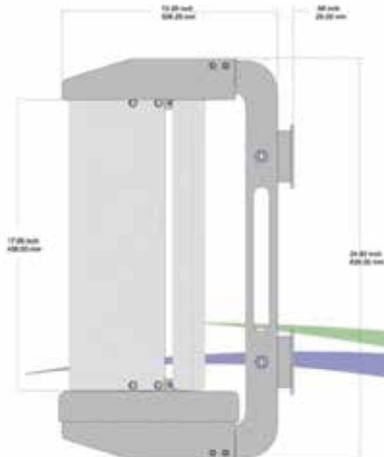
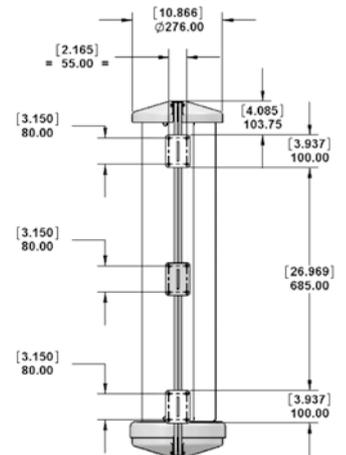


LE-v150™

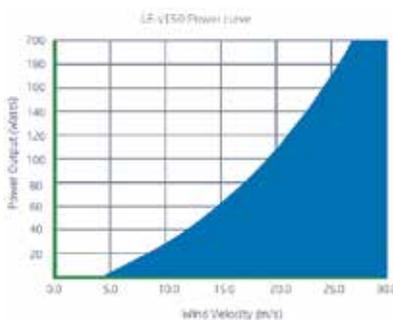
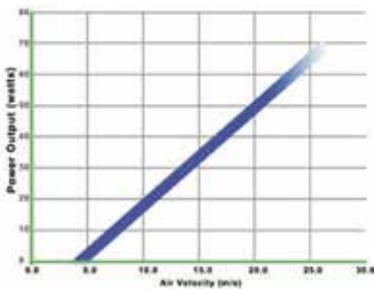
Model	LE-v50	LE-v150
Part No.	68641Z (12 V) 68642B (24 V)	69771U (12 V) 69772W (24 V)
Voltage	12 or 24 V	12 or 24 V
Nominal power	11 W @ 8 m/s (15,5 knots)	24 W @ 8 m/s (17,8 knots)
Peak power	70 W	200 W
Cut-in wind speed	4 m/s (7,7 knots)	3 m/s (9 knots)
Rotor diameter	200 mm (7.92)	270 mm (10.6")
Dry weight kg (lbs)	9 (19.9)	13 (28.7)



LE-v150™



LE-v50™



EneOn®

ENERGY ON BOARD



Your energy

Whether you sail for leisure or for work, Eneon® is able to provide all the energy you need, ensuring safety, comfort and maximum performance. The variety of Eneon® product range offers tailor-made solutions to meet every need.

Eneon® means innovation, reliability, safety and sustainability. With Eneon® the advanced technologies meet the experience of those working in the industry for many years.

A safe choice

Wherever you are sailing and in any weather condition, Eneon® is a safe choice. Eneon's reliability is also expressed in its international warranty: a network of official distributors and workshop around the world ensures parts and immediate assistance.

POWER RANGE

Eneon compact, silent and reliable Generating Sets from 3 to 40 kVA are designed to improve the comfort both on board sailing and engine powered boats and to satisfy even the most demanding shipowners.



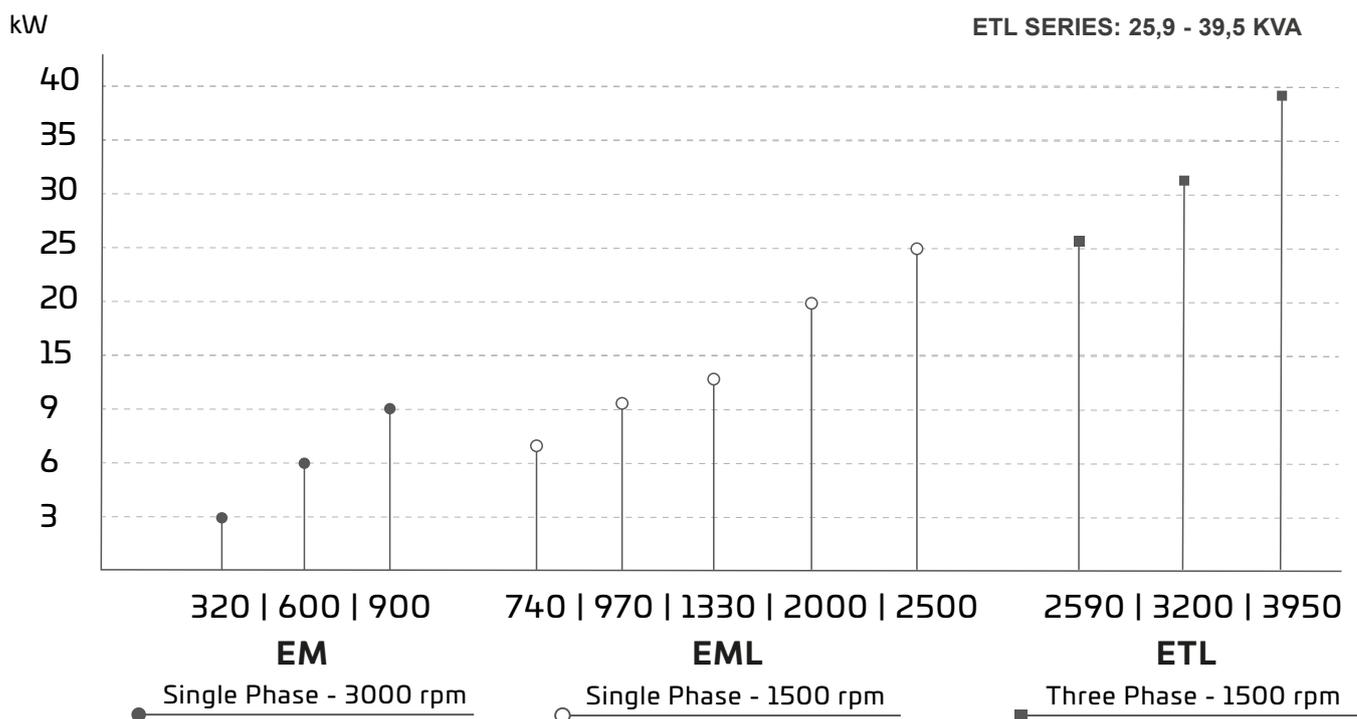
EM SERIES: 3,2 - 9 KVA



EML SERIES: 7,4 - 25 KVA



ETL SERIES: 25,9 - 39,5 KVA



Features

- Connection on one side
- Electronic management
- Easy maintenance
- Local and remote control
- Reduced dimensions and noise level

Standards applied

- CE certifie
- Power: ISO 8528
- Directive Machinery: 2006/42/CE - 89/392CEE - 98/37/CE
- Electromagnetic compatibility: 2004/108/CE - 89/336/CEE - 93/68/CEE
- Acoustic emission: 2005/88/CE - 2000/14/CE (sound proof version only)

Standard equipment

- **Sound proof canopy:** Made entirely from marine grade aluminum (LEGA 5754 H111) powder coated,.
- **EOB-3000[®] control panel:** Waterproof control panels for engine protection with LCD display.
Supplied separately for all the generators.
On board the generators there is a selector for manual start bypassing the control panel.
- **Generating set anchor brackets:** 4 steel brackets to attach the generator to the floor of the boat.
- **Emergency button:** Emergency button positioned on the Generating Set to allow for the immediate shutdown in case of danger or damage.
- **Manuals:** User and installation manuals of the generating set along with relative engine and alternator user manuals.

Optional equipment

- Silenced muffler kit
- Sea water intake kit
- Siphon breaker
- Water gas separator
- Electrical fuel pump
- Diesel prefilter with water separator
- Diesel water separator
- Manual oil extraction pump



EM600

MODEL	EM320	EM600	EM900
Part No.	24705B	24706D	24707F
Max power kVA (kW)	3.2 (3.2)	6.0 (6.0)	9.0 (9.0)
Phase	Single phase	Single phase	Single phase
Current (A)	14.00	26.00	40.00
Voltage	230 V	230 V	230 V
Frequency	50 Hz	50 Hz	50 Hz
Engine cooling system	Sea water/air	Heat exchanger	Heat exchanger
Noise level db(A) @ 7 meters	54	54	54
Engine model	YANMAR L70N	KUBOTA Z482	KUBOTA D722
Round per minute	3000	3000	3000
No. of cylinders	1	2	3
Dimensions soundproof version mm (")	560x405x510 (22.1x15.9x20.1)	650x480x530 (25.6x18.9x20.9)	750x480x530 (29.5x18.9x20.9)
Weight soundproof version kg (lbs)	87 (191.8)	128 (282.2)	155 (341.7)

EML SERIES: SINGLE PHASE 1500 RPM MARINE GENERATORS

Features

- Connection on one side
- Electronic management
- Easy maintenance
- Local and remote control
- Reduced dimensions and noise level

Standards applied

- CE certifie
- Power: ISO 8528
- Directive Machinery: 2006/42/CE - 89/392CEE - 98/37/CE
- Electromagnetic compatibility: 2004/108/CE - 89/336/CEE - 93/68/CEE
- Acoustic emission: 2005/88/CE - 2000/14/CE (sound proof version only)

Standard equipment

- **Sound proof canopy:** Made entirely from marine grade aluminum (LEGA 5754 H111) powder coated,.
- **EOB-1500[®] control panel:** Waterproof control panel for engine protection with LCD display, installed onboard the generators.
- **Generating set anchor brackets:** 4 steel brackets to attach the generator to the floor of the boat.
- **Emergency button:** Emergency button positioned on the Generating Set to allow for the immediate shutdown in case of danger or damage.
- **Manuals:** User and installation manuals of the generating set along with relative engine and alternator user manuals.

Optional equipment

- Silenced muffler kit
- Sea water intake kit
- Siphon breaker
- Water gas separator
- Electrical fuel pump
- Diesel prefilter with water separator
- Diesel water separator
- Manual oil extraction pump



EML1330

MODEL	EML740	EML970	EML1330	EML2000	EML2500
Part No.	24708H	24709K	24710U	24711W	24712Y
Max power kVA (kW)	7.4 (7.4)	9.7 (9.7)	13.3 (13.3)	20.0 (20.0)	25.0 (25.0)
Phase	Single phase	Single phase	Single phase	Single phase	Single phase
Current (A)	32.00	42.00	57.00	87.00	108.00
Voltage	230 V	230 V	230 V	230 V	230 V
Frequency	50 Hz	50 Hz	50 Hz	50 Hz	50 Hz
Engine cooling system	Heat exchanger	Heat exchanger	Heat exchanger	Heat exchanger	Heat exchanger
Noise level db(A) @7m	54	54	54	54	54
Engine model	KUBOTA D1105-BG	KUBOTA V1505-BG	KUBOTA D1703-BG	KUBOTA V2403-BG	KUBOTA V2403-BG
Round per minute	1500	1500	1500	1500	1500
No. of cylinders	3	4	3	4	4
Dimensions soundproof version mm (")	910x540x670 (35.8x21.3x26.4)	1010x540x675 (39.8x21.3x26.6)	1020x600x730 (40.2x23.6x28.7)	1130x600x730 (44.5x23.6x28.7)	1130x600x730 (44.5x23.6x28.7)
Weight soundproof version kg (lbs)	286 (630.5)	316 (696.7)	360 (793.7)	430 (948)	448 (987.7)

Features

- Connection on one side
- Electronic management
- Easy maintenance
- Local and remote control
- Reduced dimensions and noise level

Standards applied

- CE certifie
- Power: ISO 8528
- Directive Machinery: 2006/42/CE - 89/392CEE - 98/37/CE
- Electromagnetic compatibility: 2004/108/CE - 89/336/CEE - 93/68/CEE
- Acoustic emission: 2005/88/CE - 2000/14/CE (sound proof version only)

Standard equipment

- **Sound proof canopy:** Made entirely from marine grade aluminum (LEGA 5754 H111) powder coated..
- **EOB-1500[®] control panel:** Waterproof control panel for engine protection with LCD display, installed onboard the generators.
- **Generating set anchor brackets:** 4 steel brackets to attach the generator to the floor of the boat.
- **Emergency button:** Emergency button positioned on the Generating Set to allow for the immediate shutdown in case of danger or damage.
- **Manuals:** User and installation manuals of the generating set along with relative engine and alternator user manuals.

Optional equipment

- Silenced muffler kit
- Sea water intake kit
- Siphon breaker
- Water gas separator
- Electrical fuel pump
- Diesel prefilter with water separator
- Diesel water separator
- Manual oil extraction pump



ETL3200

MODEL	ETL2590	ETL3200	ETL3950
Part No.	24713A	24714C	24715E
Max power kVA (kW)	25.9 (20.7)	32.0 (25.6)	39.5 (31.6)
Phase	Three phase	Three phase	Three phase
Current (A)	37.00	46.00	57.00
Voltage	400/230V+N	400/230V+N	400/230V+N
Frequency	50 Hz	50 Hz	50 Hz
Engine cooling system	Heat exchanger	Heat exchanger	Heat exchanger
Noise level db(A) @7m	54	54	54
Engine model	KUBOTA V2403-BG	KUBOTA V3300-BG	KUBOTA V3300T-BG
Round per minute	1500	1500	1500
No. of cylinders	4	4	4
Dimensions soundproof version mm (")	1130x600x730 (44.5x23.6x28.7)	1590x700x900 (62.6x27.6x35.4)	1590x700x900 (62.6x27.6x35.4)
Weight soundproof version kg (lbs)	448 (987.7)	670 (1477.1)	680 (1499.1)

MODEL	DESCRIPTION	GEN	S/W Kit	Exhaust Kit	Separator	Siphon breaker
EM320 - 3,2 kW	3,2 kW, 230 V, soundproofed	24705B	22662Z	22630K	22631M	22657G
EM600 - 6,0 kW	6,0 kW, 230 V, soundproofed	24706D	22629B	22630K	22631M	22657G
EM900 - 9,0 kW	9,0 kW, 230 V, soundproofed	24707F	22629B	22630K	22631M	22657G
EML740 - 7,4 kW	7,4 kW, 230 V, soundproofed	24708H	22663B	22665F	22668M	22657G
EML970 - 9,7 kW	9,7 kW, 230 V, soundproofed	24709K	22663B	22665F	22668M	22657G
EML1330 - 13,3 kW	13,3 kW, 230 V, soundproofed	24710U	22663B	22666H	22669P	22657G
EML2000 - 20 kW	20 kW, 230 V, soundproofed	24711W	22663B	22666H	22669P	22657G
EML2500 - 25 kW	25 kW, 230 V, soundproofed	24712Y	22663B	22666H	22669P	22657G
ETL2590 - 20,7 kW	20,7 kW, 400/230 V+N, soundproofed	24713A	22663B	22666H	22669P	22657G
ETL3200 - 25,6 kW	25,6 kW, 400/230 V+N, soundproofed	24714C	22664D	22667K	22670Y	22657G
ETL3950 - 31,6 kW	31,6 kW, 400/230 V+N, soundproofed	24715E	22664D	22667K	22670Y	22657G

Kit A/M (Sea water kit): include hose holder, nipples, ball valve, through hull and water filter
 Exhaust Kit: include silenced muffler, reinforced ss clamps and exhaust hose

Maintenance kits also available for all the genset models: include air filter, fuel filter and s.w pump impeller for EM320 model, Oil filter, fuel filter, belt, s.w. pump impeller and zinc anodes for all the other model



Silencers



Siphon breaker



Water/gas separator

• **The absorption layer**

A thick layer of fire zero rated foam which soaks up noise and stops it bouncing around the engine space.

• **The transmission layer**

A high density barrier provides the highest possible mass and gives the best noise reduction. The damping layer weighs 5kgs per square meter – more than the lead sheet used in older materials.

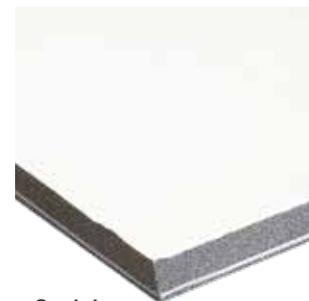
• **The isolation layer**

This thin layer of foam has a crucial function: It acts like the gap in double glazing and stops the noise which hits the transmission layer being carried through to the bulkhead – just like the gap in double glazing.

The multi-layer construction used in Halyard[®] materials offers the best possible acoustic result in a thicknesses which can be accommodated in the tightest engine space, beating simpler materials many times as thick.



Maritex



Sealglass



Re-inforced Silver Polyester

PROTECTIVE SKIN

• **Maritex**

An immensely tough fibreglass cloth with a sealed metallised skin so it cannot absorb oil. It won't tear or fray. It looks heavy duty, and it is fire zero rated. Maritex is simply the best facing in the Halyard[®] range.

Maritex is fire zero rated to BS 476 parts 6 and 7.

• **Sealglass**

A tough off-white glass cloth, sealed against oil. The cloth is extremely tough and will not tear. The material meets the ISO 9094 fire requirements of the EU Recreational Craft Directive.

• **Re-inforced Silver Polyester**

This facing meets the requirements of the Recreational Craft Directive. It provides a seal to keep oil out. You can pierce it, but it has a reinforcing layer behind it. It will burn, but once laminated in place it meets the ISO 9094 fire requirements of the EU Recreational Craft Directive. In a fire the facing will burn, but not the foam behind it.

NOTE: for more specifications and application indications, see the Halyard[®] section of the catalog

SCAMO EXHAUST HOSE

Hardwall corrugated (CAJ) and smooth cover (NAJ) rubber hose.

Extremely flexible. Marine exhaust hose suitable also for cooling the heat exchangers on pleasure boats up to 24 m.

Standards **SAE J 2006:2003 R2 - ISO 13363:2004 Type 2 Class B.**

Approved: **LLOYD'S REGISTER N. 96/00126 - R.I.NA N. DIP 075110CS**

• **TEMPERATURE RANGE:** -30°C +100°C

Hoses available with internal diameter 40/50/60/90 mm, in 20 m coil (in case of different lengths requested please contact our sales department)

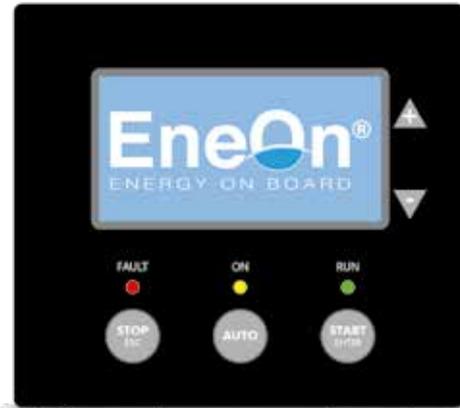


CAJ



NAJ

EOB-3000® CONTROL PANEL



new

EOB-3000® Control panel

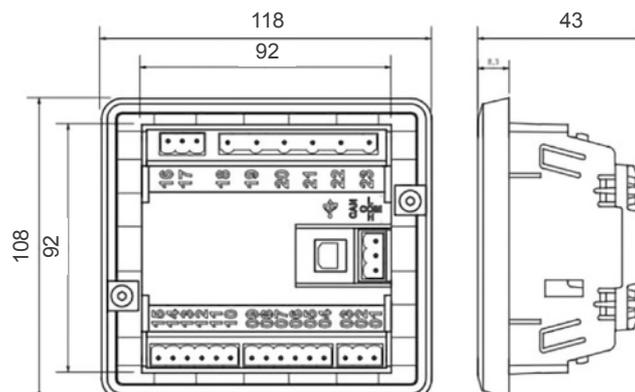
EOB-3000® is the most advanced and complete command and control board for Eneon® Generators, EOB-3000® is available as standard across the EM 3000 rpm range . It allows to monitor all the major electrical and mechanical parameters of the generator, to have it constantly under control. EOB-3000® control panel is installed remotely, and cable connected to the EM series generators. EOB-3000® control panel is not expandable

Alarms

- Low oil pressure
- High water temperature
- High exhaust riser temperature
- Battery Charger fault
- Starting fault
- Mechanical fault
- Low frequency
- High frequency
- Low battery voltage
- Low alternator voltage
- High alternator voltage
- Maintenance request
- Overload

Measurements

- Gen voltage (Vac)
- Current (A)
- Frequency (Hz)
- Battery voltage (Vcc)
- Oil pressure (bar)
- Engine temperature (°C)
- Counter



EOB-3000® Dimensions

EOB-1500[®] CONTROL PANEL



new

EOB-1500[®] Control panel

EOB-1500[®] control panel is available as standard across the 1500 rpm EML/ETL Eneon[®] generators.

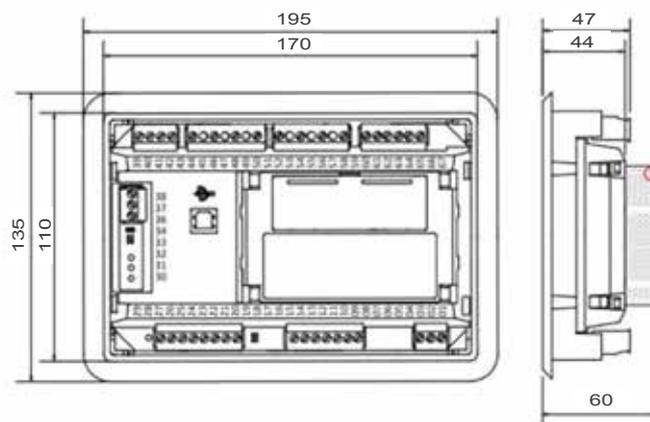
It allows to monitor all the major electrical and mechanical parameters of the generator, to have it constantly under control and it is equipped with a J1939 communication bus to connect external devices that extend the functionalities of the control unit. The EOB-1500 control is standard installed onboard the generators, by ordering an optional panel + cable kit it is possible to install a second remote panel.

Alarms

- Low oil pressure
- High water temperature
- High exhaust riser temperature
- Battery Charger fault
- Starting fault
- Mechanical fault
- Low frequency
- High frequency
- Low battery voltage
- Low alternator voltage
- High alternator voltage
- Maintenance request
- Overload

Measurements

- Gen voltage (Vac)
- Current (A)
- Frequency (Hz)
- Battery voltage (Vcc)
- Oil pressure (bar)
- Engine temperature (°C)
- Counter



EOB-1500[®] Dimensions

ACCESSORIES FOR THE INSTALLATION



Seawater filtering kit



Diesel prefilter with water separator



Oil extraction pump



VTR Halyard Silencers, available on request



Halyard thermoplastic water/gas separator, available on request



Diesel water separator



Electrical fuel pump



Siphon breaker

BALMAR[®]

WWW.BALMAR.NET

DC CHARGING SOLUTIONS



ALTERNATORS



Balmar® supply high efficiency DC charging systems and battery monitors.

Balmar® alternators performances:

- Less generator use
- More charging Amps at low RPM
- 30% faster, more complete charging
- Longer battery bank life
- Less fuel consumption

HOW TO SELECT THE CORRECT CHARGING SYSTEM

- **Determine your electrical load:** all your device loads and expected duty cycles will clarify your expected daily battery discharge requirements. Add a safety factor
- **Identify your battery bank technology and capacity:** how many batteries are in your bank and what is the total storage capacity? What type of batteries are employed? (Different technologies require different charging programs)
- **Select your alternator output:** the correct charging load depends on the battery technology and capacity. For example, an AGM battery can accept a 50% charge loads so a 300 Ah bank of AGMs can accept 150 A of charging for the alternator. Therefore you could support at least a 150 A alternator to charge your bank as quickly as possible
- **Select the alternator mounting style present on your engine:** most mounting styles are either 1" - 2" single foot, 3.15" - 4" saddle
- **Determine your belt and pulley requirements:** a belt/pulley conversion kit may be required to handle your alternator PTO load
- **Select additional charging systems options:** kit greatly simplify belt tensioning. The smartgauge battery monitor provides accurate state of charge information
- Balmar high-efficiency alternators can replace standard alternators on engines or be installed as additional alternators.

6-SERIES CHARGING SYSTEM

- Best-selling alternator series
- Available in outputs ranging from 70 A to 150 A
- 12 V and 24 V configuration with four popular mounts
- Max RPM 12000
- Dual fan cooling
- Gas or diesel engines
- Patented SmartReady voltage regulation
- Multi-stage external regulation provides seven selectable programs tailored to your battery technology
- Pulley conversion kits for your engine as required
- USCG Title 33, CE, ISO 8846 and SAE J1171 Certifie
- Available with insulated terminals (IG)



6-SERIES

6-SERIES	REGULATOR	MOUNTING	ALTERNATOR PART No.			
			Single pulley	Dual pulley	Poly-K6	Poly-J10
70 A 12 V	ARS-5H	1-2" Single foot	20548R	20546L	20547N	
	part No. - 20596C	3.15" Saddle mount	20551D	20549T	20550B	-
100 A 12 V	ARS-5H	1-2" Single foot	20554K	20552F	20553H	
	part No. - 20596C	3.15" Saddle mount	20557S	20555M	20556P	-
120 A 12 V	ARS-5H	1-2" Single foot		20558U	20560E	20559W
	part No. - 20596C	3.15-4" Saddle mount	-	20561G	20563L	20562J
150 A 12 V	ARS-5H	4" Saddle mount		23575K	23596U	23598Y
	part No. - 20596C		-	23576M	23597W	23599A
70 A 24 V	MC-624-H	1-2" Single foot		20564N	20566T	20565R
	part No - 20480G	3.15-4" Saddle mount	-	20567V	20569Z	20568X

XT SERIES ADVANCED TECHNOLOGY CHARGING SYSTEMS

- 170A or 250A in a Small Case Package
- Up to 180A at Idle Speeds
- Patented Smart Ready® Technology
- Dual Fan Cooling, High Airflow Frame
- Ideal for Large Battery Banks
- USCG Title 33, ISO 8846 and SAE J1171 Certified



170A XT Series

XT-SERIES	REGULATOR	MOUNTING	ALTERNATOR PART No.		
			Dual pulley	Poly-K6	Poly-J10
170 A 12 V	MC-618-H part No. - 21931V	1-2" Single foot 3.15" Saddle mount	20570H	20572M	20571K
			20573P	20576W	20575U
250 A 12 V	MC-618-H part No. - 21931V	1-2" Single foot 3.15" Saddle mount	24934T	24935V	24936X
			24932N	24844S	24933R

94LY-SERIES LARGE CASE ALTERNATORS

MID DUTY-CYCLE, large case.

- Extra heavy duty windings, diodes & brushes
- Isolated ground termination
- Corrosion resistant powder coated finish
- Maximum RPM:6000
- USCG title 33 ignition protection Compliant
- IG (Insulated terminals)
- External regulation required MC-618-H (12V), MC-624-H (24V)



94LY Series

MODEL	PART No.	VOLT	AMPS	MOUNTING	MINIMUM PULLEY
94LY-12-165-IG	20583T	12	165	Dual Foot 3.15" (Hitachi-style)	1/2" Dual pulley
94LY-12-210-IG	20584V	12	210	Dual Foot 3.15" (Hitachi-style)	1/2" Dual pulley
94LY-24-140-IG	20585X	24	140	Dual Foot 3.15" (Hitachi-style)	1/2" Dual pulley

97EHD-SERIES EXTRA LARGE CASE ALTERNATORS

HEAVY DUTY-CYCLE, extra large case.

- Designed for extended duty operation
- Bi-directional cooling fan
- Maximum RPM: 7000
- External regulation required MC-618-H (12V), MC-624-H (24V)
- USCG Title 33 Compliant
- IG (Insulated terminals)
- For large diesel applications like Caterpillar, Cummins, MTU and John Deere to service extensive house battery loads



97EHD Series

MODEL	PART No.	VOLT	AMPS	MOUNTING STYLE	MINIMUM PULLEY
97EHD-185-12-IG	21945G	12	185	Dual Foot 4" (J180-style)	1/2" Dual pulley
97EHD-265-12-IG	20592U	12	265	Dual Foot 4" (J180-style)	1/2" Dual pulley
97EHD-85-24-IG	21946J	24	85	Dual Foot 4" (J180-style)	1/2" Dual pulley
97EHD-110-24-IG	21947L	24	110	Dual Foot 4" (J180-style)	1/2" Dual pulley
97EHD-190-24-IG	20593W	24	190	Dual Foot 4" (J180-style)	1/2" Dual pulley

98-SERIES EXTRA LARGE CASE ALTERNATORS

MAXIMUM DUTY-CYCLE, extra large case.

- 98 series can produce up to 5kw DC output (as a small generator)
- Highly efficient brushless design
- Isolated ground termination
- Dual cooling fans, oversized bearings
- High amperage diodes
- Maximum RPM: 7000
- External regulation required MC-618-H (12V), MC-624-H (24V)
- USCG Title 33, CE, ISO 8846 and SAE J1171 Compliant
- IG (Insulated terminals)
- High amperage diodes



98 Series

MODEL	PART No.	VOLT	AMPS	MOUNTING STYLE	MINIMUM PULLEY
98-12-310-IG-BL	20594Y	12	310	Dual Foot 4" (J180-style)	1/2" Dual pulley
98-24-220-IG-BL	20595A	24	220	Dual Foot 4" (J180-style)	1/2" Dual pulley

96-SERIES 48V ALTERNATORS

MID-DUTY CYCLE, large case

- 60A (2.9 kW) or 100A (4.8 kW) at 48 Volts
- Low Turn-On Thresholds
- Low Power Take Off at Idle Speed
- Designed for External Regulation using the Balmar MC-620-H Regulator
- Ideal for 48V Lithium Battery Banks
- Max RPM: 12000

New 96-Series Alternators from Balmar establish a new standard for emerging 48V battery banks and inverter systems.

Paired with the New MC-620 Regulator, now you can combine the advantages of Balmar's legendary multi-stage regulation capability in a 48V charging system. Offered in two power packages of 60A and 100A, these high power alternators provide 2.9 kW and 4.8 kW of charging power, respectively.

48V systems fill the need for ever-increasing power needs from DC battery systems. DC air-conditioning and cooking, for example, can stretch 12V and 24V systems beyond practical application. The benefits of a 48V system include much more efficient components, such as chargers and inverters, manageable cable sizes, and of course higher output alternators in reasonable package sizes. Lithium batteries can be charged at very high rates – a 48V system can accomplish this in a cost effective way. With a lower (1325 RPM for 60A and 2200 RPM for 100A) cut-in speed than the competition, the 96-Series starts making power earlier at low RPM, limiting the need for complex pulley schemes or over-throttling the engine at idle.

Note: MC-620-H charge controller requires 12V power supply, cannot be powered by 48V



96-48-60-K6



96-48-100-K8



MC-620-H - 21952D

MODEL	PART No.	VOLT	AMPS	GROUNDING	POWER TAKE OFF	MOUNTING STYLE	STANDARD PULLEY
96-48-60-K6	21948N	48	60	Case	Up to 8 HP	Dual Foot 4" (J180-style)	K6 (2.7" dia.)
96-48-60-K6-IG	21949R	48	60	Isolated	Up to 8 HP	Dual Foot 4" (J180-style)	K6 (2.7" dia.)
96-48-100-K8	21950Z	48	100	Case	Up to 11 HP	Dual Foot 4" (J180-style)	K8 (2.5" dia.)
96-48-100-K8-IG	21951B	48	100	Isolated	Up to 11 HP	Dual Foot 4" (J180-style)	K8 (2.5" dia.)

CHARGE CONTROLLER	PART No.	VOLTAGE INPUT	BATTERY PROFILES
MC-620-H	21952D	12V	Universal, Deep Cycle Flooded, Gell Cell, AGM, Spiral Wound Flooded, Standard Flooded, Halogen, Lithium

APM Series - Alternator Protection Module

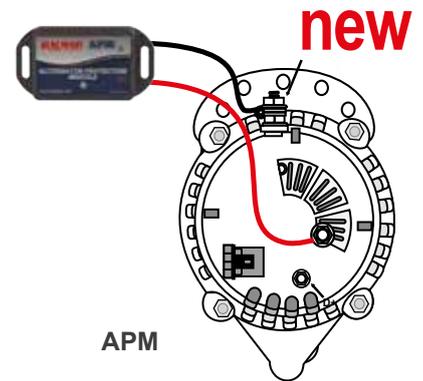
The Balmar APM provides best-in-class surge protection using the latest technology developed for the automotive industry. It can protect alternators from damaging effects:

- Battery switch disconnects
- Lithium battery BMS disconnects
- Surges from solenoids, combiners, starters and other motors.

The Balmar APM excels in both short duration and longer duration spikes, where other products fail.

APM-12 - 24845U - Alternator protection module, 12V

APM -24 - 24874B - Alternator protection module, 24V



APM

MAX CHARGE MC-618-H AND MC-624-H REGULATORS

- 8 selectable programs for marine batteries (also Lithium LiFePO batteries)
- Exclusive belt load manager function
- Alternator and battery temperature sensing and control
- Maximum field current: 15A (MC-618-H) and 10A (MC-624-H)
- Can be used in twin engine applications with Centerfielder II
- Provided with 54" cable harness
- Integrate with SG200 for programming and Data Display

MC-618-H -12V - 21931V

MC-624-H -24V - 20480G



MC-618-H -12V



MC-624-H -24V

MAX CHARGE MC-612-H DUAL VOLTAGE REGULATOR

- To control two alternators on a single engine
- Dual alternator and battery temperature sensors
- Provided with twin 54" (1,4 m) cable harness
- Same programming functions as the MC-618-H model

MC-612-H DUAL VOLTAGE - 21957P



ARS-5-H VOLTAGE REGULATOR

- Smooth start for alternator to reduce belt stress
- 5 selectable programs for marine batteries
- Appropriate for 6-series alternators (120 A and below)
- Easy installation and programming mode
- Single engine, single alternator applications only
- 9 A maximum field current
- Provided with 54" cable harness

ARS-5 - 20596C



DDC -12/24 DIGITAL DUO CHARGE

The DDC is a solid state battery combiner

- Controls voltage and current between house and start batteries
- Eliminates the need for an isolator, relay or manually operated battery switch
- Used in concert with Max Charge or ARS-5 regulator or any other regulator
- Works in both 12 and 24 V applications
- House and start batteries can be different technologies
- Start battery temperature sensing available with the MC-TS-B sensor cable



DDC-12/24 - 20791A

CFII-12/24 CENTERFIELDER II: TWIN ENGINE CHARGING BALANCER

- Balances charging in twin engine applications
- Eliminates alternator chatter by unifying field current
- For use with Max Charge Regulators only
- Works in both 12V and 24V applications
- Can be used with the DDC to charge a second battery
- Isolates the alternator and regulator when only one engine is running



CFII-12/24 - 20792C

TEMPERATURE SENSORS

- For use with either Max Charge or ARS-5-H voltage regulators
- Interchangeable for 12 and 24 V systems
- Battery sensor can be used with the Digital Duo Charge (DDC)

MC-TS-A - 20481J - Alternator temperature sensor - Cable length 54" (1,4 m)

MC-TS-B - 20482L - Battery temperature sensor - Cable length 240" (6 m)

MC-TS-B30 - 21958S - Battery temperature sensor - Cable length 354" (9 m)



MC-TS-A



MC-TS-B

ALTERNATOR ACCESSORIES

UBB - 20793E - Universal adjustment arm and belt buddy combination



Learns & Displays All Critical Battery Parameters:

- State of Charge (SoC%)
- State of Health (SoH%)
- Charge/Discharge Current Flow
- Time Remaining
- History, Faults & Alerts

Support for All Common Battery Chemistries & Voltages:

- Including Lead Acid, Lithium (LiFePO4), Standard AGM, TPPL AGM, Carbon Foam AGM, and GEL Batteries
- Supports 12V-48V Battery Banks

Intelligent, Self-Calibrating Accuracy:

- Typically 97% Accurate
- Auto-Calibrating
- Does not Lose Accuracy with Age

Large, Bright Color Display:

- Sunlight Readable, Configurable & Dimmable
- 60 Degree Viewing Angle
- Fits in Standard 2 1/16" (54 mm) Gauge Socket

Expandable Architecture:

- Support Multiple Displays (Optional)
- Supports Multiple Battery Banks (Optional)
- Standard Support for 2 Start Batteries (Voltage Only)
- Simple, easy-to-install Point-to-Point Network
- Connection between SG200 and MC-618 via SG2-0403 (5m) and SG2-0400 (10m) cables/adapters

Optional Smartphone/Bluetooth® Gateway:

- Free iOS and Android Apps (Requires Bluetooth® Gateway PN SG2-0300)
- View All Parameters on your Phone
- Download Product Updates

SG2-0403 - comm cable SG200, 5 m, includes SG2-0404 3-way adapter for MC-618

SG2-0400 - comm cable SG200, 10 m, includes SG2-0404 3-way adapter for MC-618



SG200 - 23070C

- Includes:
- Color display
 - Smart shunt
 - Smart link comm cable



SG205 - 21953F

- Includes:
- Smart shunt
 - Bluetooth Gateway (no display)



SMART SHUNT



SG2-0403 - 21955K



SG2-0400 - 24924P



SG210 - 21954H

- Includes:
- Color display
 - Smart shunt
 - Smart link comm cable
 - Bluetooth Gateway

Halyard



A marine engine exhaust system ejects the cooling water as well as silencing the engine's combustion noise and removing the exhaust gasses. The system must create minimal restriction to the flow of exhaust gasses, known as back pressure, or the engine may be damaged.

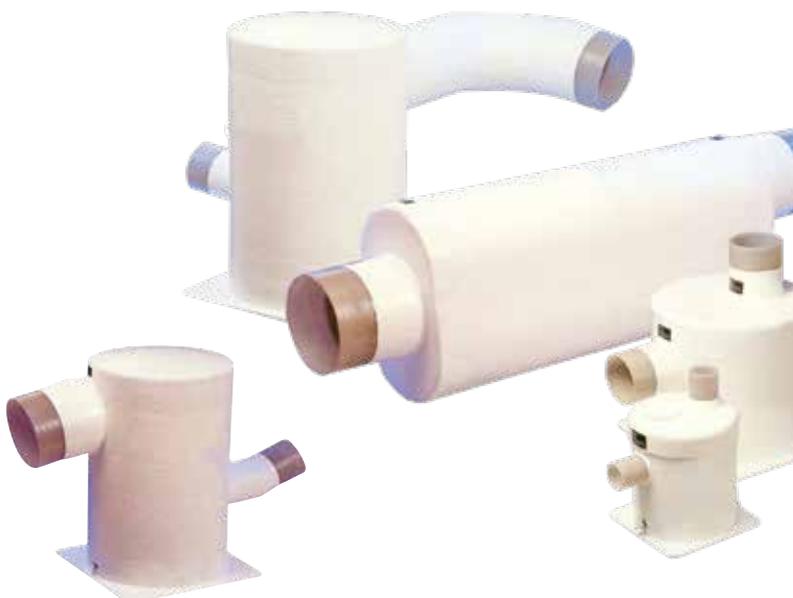
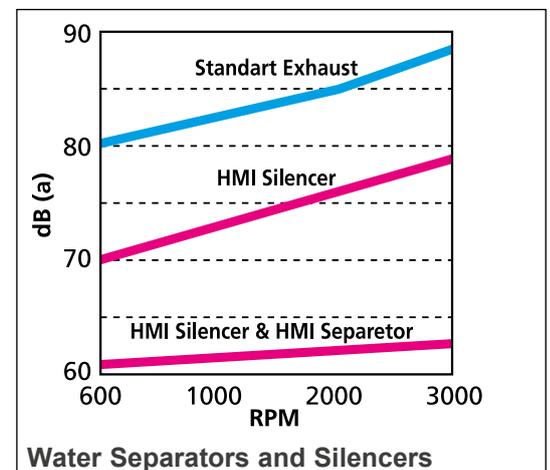
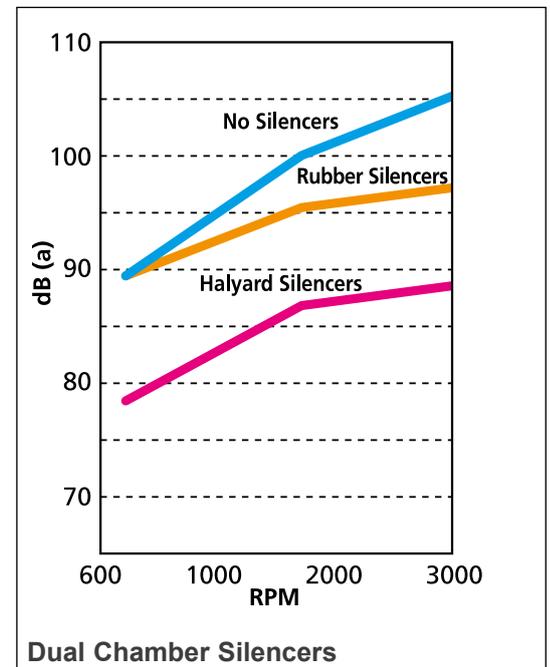
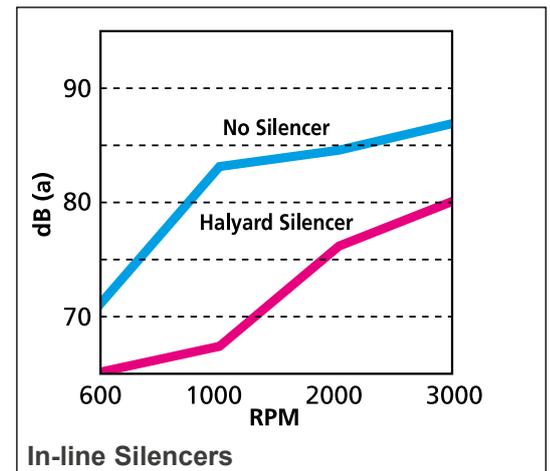
Halyard® produces GRP silencers using specialist resins, allowing Halyard® silencers to survive remarkably high temperatures if the cooling water supply blocks for short periods. Halyard® silencers are usually made from filament wound GRP tube, manufactured in our own plant, which is hand-laminated with flat sheet bases. Every single silencer produced is pressure tested individually to guard against leaks.

GRP is used as the base material to avoid the corrosion and acoustic problems of welded stainless units, and to avoid the low melting points of plastic silencers. Although normal marine exhausts run at between 40°C and 60°C, Halyard® silencers will remain operational after exposure to 300°C or more, while a plastic unit will melt at around 150°C.

Halyard® GRP silencers are approved by Lloyds Register.

Here are four main objectives achieved by Halyard®:

1. To reduce noise by between 40% and 90%.
2. To cool the exhaust, and eject the engine cooling water through the exhaust without excessive back pressure.
3. To minimise the risk of water running back up the exhaust and into the engine cylinders, causing serious engine damage.
4. To site the outlets at the stern of the boat to minimise exhaust fumes on board.

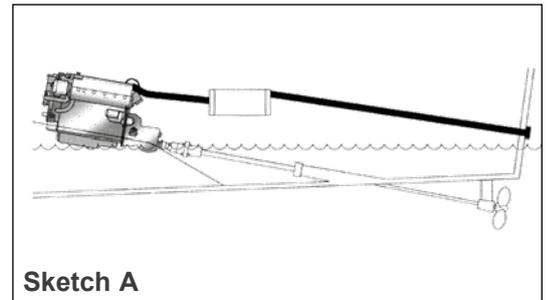


WHERE'S THE WATERLINE?

Marine exhausts are cooled by sea water, so it's essential that the water cannot run back up the exhaust and into the engine's cylinders. The resulting damage can be catastrophic. A few simple rules need to be followed, and engine installers should seek expert advice if in any doubt.

ENGINE WELL ABOVE WATERLINE

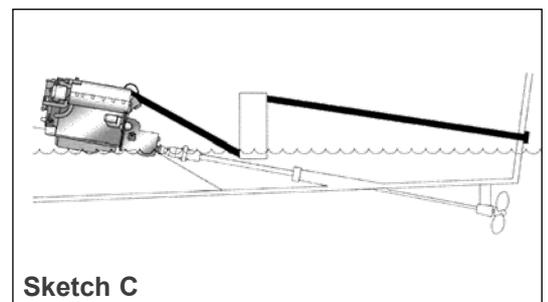
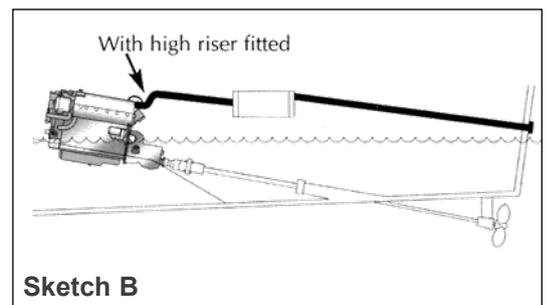
This engine is sited well above the waterline, and the exhaust system has a downhill gradient of 1 in 8, or steeper, as it scope to the stern. The water will naturally run down the slope and away from the engine. A standard in-line silencer will achieve a noise reduction of approximately 40%. A dual chamber silencer will achieve up to 80%. (Sketch A)



ENGINE JUST ABOVE WATERLINE

Water could run back into the engine if the vessel pitches on its mooring – or a wave could do the same. There are two solutions:

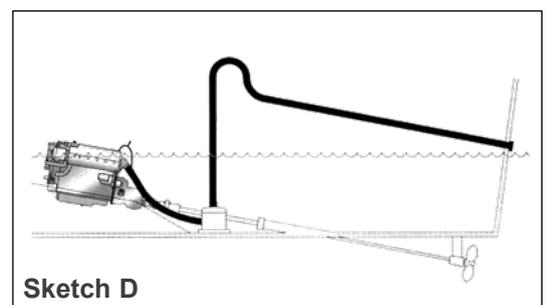
1. Fit a "high riser". This is an extension to the exhaust outlet on the engine taking it well above water-line to create a 1 in 8 gradient from the water injection on the engine down to the stern. An in-line silencer can then be used with a noise reduction of around 40%. Alternatively you might get the necessary height by using a Dual Chamber silencer, with a noise reduction of around 80%. (Sketch B)
2. Fit a dual chamber silencer. The dual chamber silencer means the hose scope steeply down from engine to silencer, and again from silencer to stern. The geometry needs careful checking, but it can solve the problem and it offers a noise reduction up to 80%. (Sketch C)



ENGINE NEAR OR BELOW WATERLINE

Most displacement craft have their engines low down. The sketch shows a typical water-trap silencer positioned below and behind the engine. The hose from this silencer runs gradually down to the stern. Water in the system drains into the silencer when the engine is stopped. A wave coming up the stern is unlikely to climb over the gooseneck. (Sketch D)

Siphon breakers should always be used in the cooling water supply to installations of this type. Normal lift silencers reduce noise by 45% or so. You can add a water separator to increase this around 90%.



Halyard® Lift silencers are designed for use with engines positioned on, or below waterline. Halyard® Lift Silencers are as popular with generators as they are with propulsion engines.

SIDE IN, TOP OUT LIFT SILENCERS

The side in, top out lift silencer is the best selling small lift silencer in the Halyard® range.

Every unit is pressure tested and gel-coated for a durable and smart appearance.

Lengths available in the following pages

TOP IN, TOP OUT LIFT SILENCERS

In many applications a top inlet unit will be easier to use. The noise result and cost are the same as the side inlet units, and the same rigorous quality tests apply.

Lengths available in the following pages

LIFT SILENCERS END TO END

These low lying units can be very useful in sailing yachts, where the silencer needs to be secured alongside the propeller shaft. The moulded ends are used on smaller units.

Lengths available in the following pages



Halyard® in-line silencers are used where the engine is well above the water-line, or where a high-riser has been fitted to achieve a 1 in 8 gradient from the engine to the transom outlet. They are simple to specify and fit, and ideally need to be 0,5m to 1m behind the engine. The internal design requires the exhaust gasses and water to bubble through a layer of water on the bottom of the silencer to reduce noise. They offer excellent noise reduction and are widely used on both pleasure and commercial engines.

ROUND IN-LINE SILENCERS

These silencers are made from enormously strong filament wound tube, giving the maximum possible protection if the exhaust back-fires. Every unit is pressure tested before being gel-coated. They must be installed within 5 degrees of horizontal.

Lengths available in the following pages



OVAL IN-LINE SILENCERS

Our oval silencers are hand-moulded for use where the round body unit cannot be accommodated. They give the same excellent results and every single unit is pressure tested and gel-coated. The inlets can be angled to ease the connection to the engine and positioned on the end or the side.

Lengths available in the following pages



DUAL CHAMBER SILENCERS - LLOYDS APPROVED

Halyard® Dual Chamber silencers is the best wet-exhaust silencer on the market today.

Exhaust noise reductions of up to 80% can be achieved and the back pressure created by the unit is minimal.

Most units are hand-built with inlet and outlet positioned to suit the particular craft.

The quality standards applied are designed to give a life in excess of ten years on a privately owned craft.

Lengths available in the following pages



EXHAUST WATER SEPARATORS



Halyard developed the concept of water separation and now designs and produces systems for engines ranging from small diesel generators through to mighty power providers on super-yachts and commercial craft.

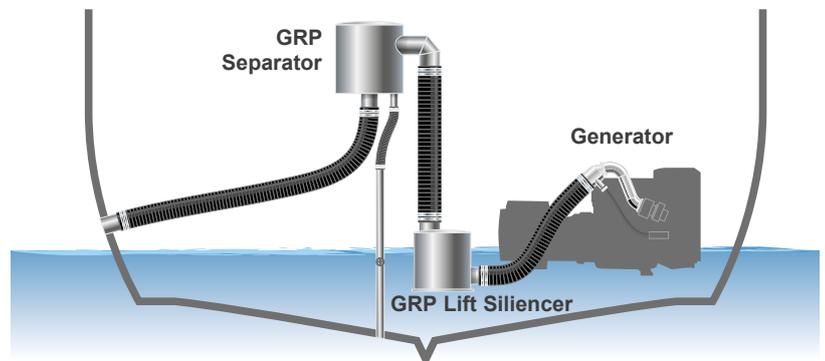
Fitting a water separator into the exhaust to replace the gooseneck removes water once it has done its cooling job, draining this quietly away below waterline. Back pressure is reduced dramatically. The separator removes the principal cause of back pressure and stops the splashing noise which accompanies every marine engine ticking over in a harbour – or on a generator splashing away in a quiet haven somewhere, to the fury of nearby boats.



EXHAUST WATER SEPARATORS MS SERIES

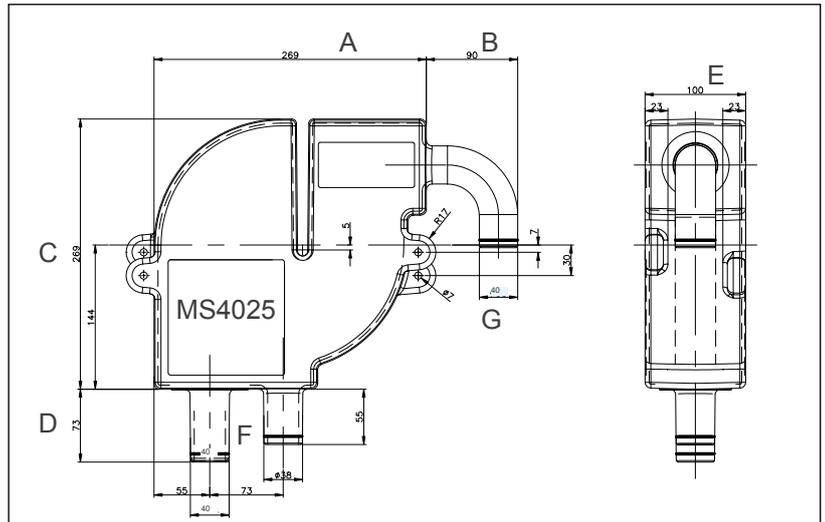
The MS Series of exhaust water separators covers a wide range of exhaust diameters, for generators and propulsion engines with cooling water flow rates of up to 65 liters per minute. The MS unit will remove all but a tiny trickle of water.

Lift silencer and separator with discharge above waterline



HIGH TEMPERATURE POLYOLEFIN MS 4000 SERIES

- Two sizes cover exhaust diameters of 40 mm (1.6")
- Maximum water flow rate: 18 litres per minute

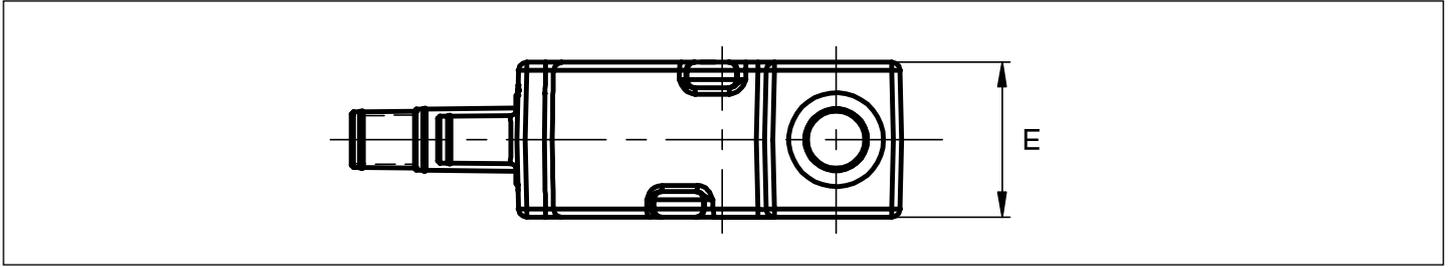


PART No.	HALYARD REF.	HALYARD PART No.	A mm	B mm	C mm	D mm	E mm	F mm	G mm
66902R	MS4025	H012752	269	90	269	73	100	40	40

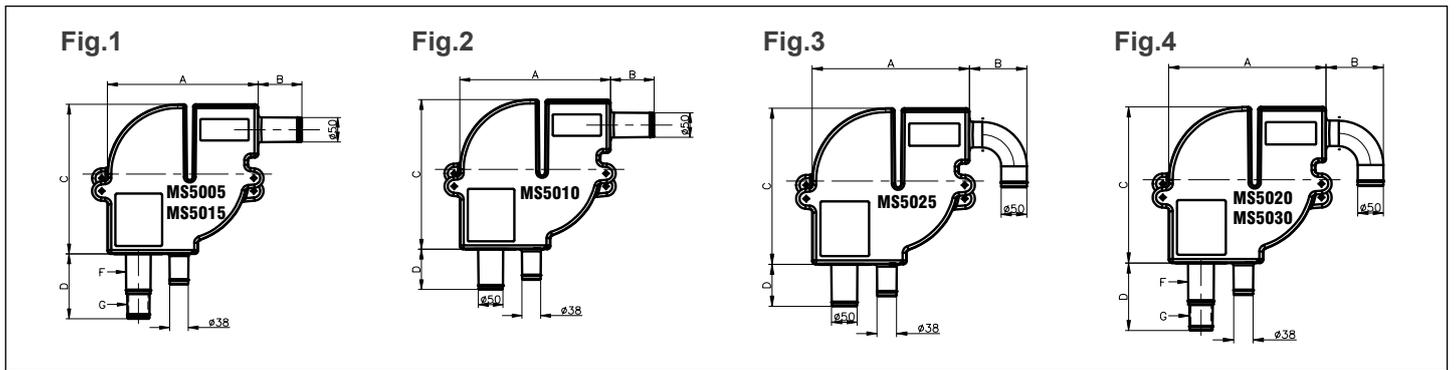
HALYARD® CAN SUPPLY ON REQUEST EXHAUST SEPARATORS COMPLETE WITH STANDARD HOSES (UP TO 160°C) OR SILICON HOSES (UP TO 270°C), AND COMPLETE WITH SILICON FITTINGS AND BRONZE SIPHON BREAK. For any further information, please contact our Technical Service.

HIGH TEMPERATURE POLYOLEFIN MS 5000 SERIES

- Three sizes cover exhaust diameters of 45 mm, 50 mm, 63 mm (1 3/4", 2", 2 1/2")
- Maximum water flow rate: 42 litres per minute

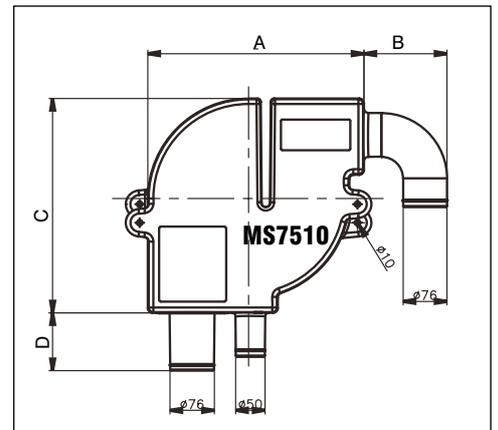
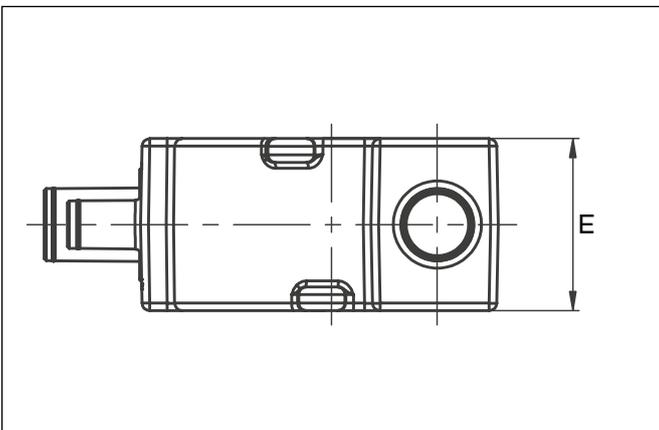


PART No.	HALYARD REF.	HALYARD PART No.	A mm	B mm	C mm	D mm	E mm	F mm	G mm	FIG.
66710F	MS5005	H010257	306	89	306	133	125	50	45	1
66812P	MS5010	H010258	306	89	306	83	125	50	50	2
66711H	MS5015	H010261	306	89	306	164	125	63	60	1
66708V	MS5020	H010259	306	112	306	133	125	50	45	4
66882M	MS5025	H010260	306	112	306	83	125	50	50	3
66709X	MS5030	H010262	306	112	306	164	125	63	60	4



MS 7000 SERIES

- Size covers exhaust diameter: 75 mm (3")
- Maximum water flow rate: 65 litres per minute



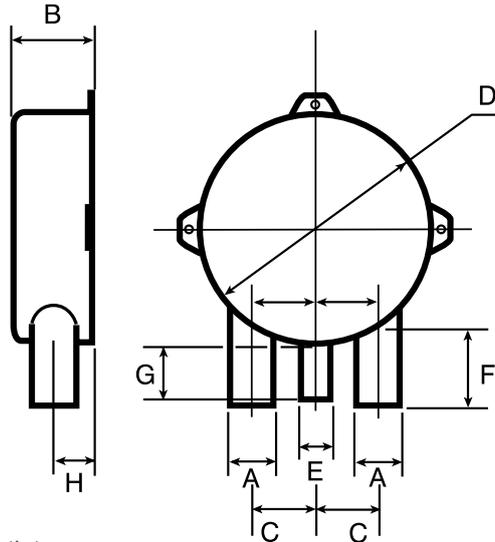
PART No.	HALYARD REF.	HALYARD PART No.	A mm	B mm	C mm	D mm	E mm	
66884S	MS7510	H008363	90 deg. outlet	371	143	371	100	180

GRP MID-GEN EXHAUST WATER SEPARATORS - LLOYDS APPROVED

PART No.	HALYARD REF.	HALYARD PART No.	A mm (")	B mm	C mm	D mm	E mm (")	F mm	G mm	H mm
22905Z	HFS020	H014054	51 - (2)	125	75	305	38 - (1.5)	96	76	65
65843W	HFS025	H001511	63 - (2.5)	140	100	346	38 - (1.5)	144	100	70
65844Y	HFS030	H001514	76 - (3)	140	110	398	51 - (2.0)	144	100	70
65845A	HFS035	H001515	89 - (3.5)	140	110	398	51 - (2.0)	144	107	70
65568A	HFS040	H001516	102 - (4.0)	170	110	398	51 - (2.0)	144	107	85
69724J	HFS050	H007116	127 - (5.0)	175	125	494	63 - (2.5)	140	107	88
22777T	HFS060	H010304	152 - (6.0)	215	151	594	63 - (2.5)	175	107	105



LOW PROFILE SEPARATOR



Universal separators:

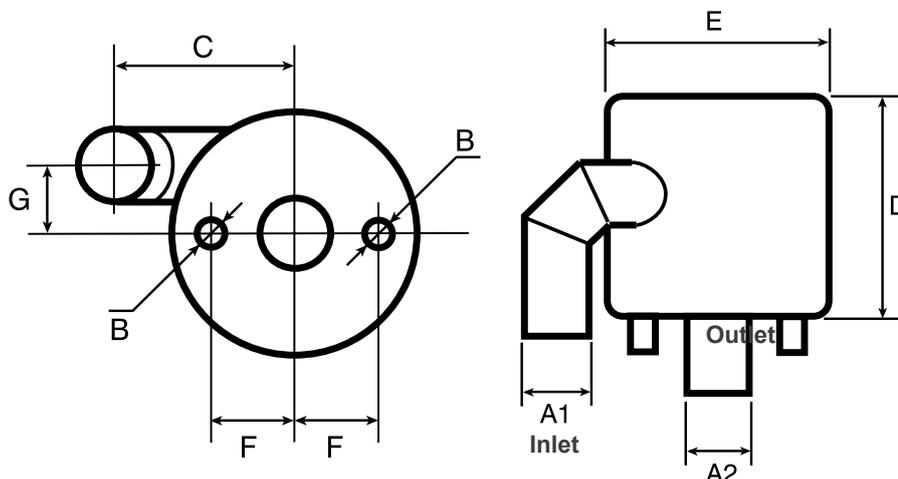
"A" hoses can be used both as inlet or outlet

GRP GENERAL SEPARATOR - LLOYDS APPROVED

PART No.	HALYARD REF.	HALYARD PART No.	A1 mm	A2 mm	B mm	C mm	D mm	E mm	F mm	G mm
65846C	HWS035	H001688	89	89	38	264	356	346	120	110
65847E	HWS040	H001689	102	102	38	283	356	346	120	100
65848G	HWS050	H001690	127	127	51	310	406	398	150	110
65849J	HWS060	H001691	152	152	51	335	406	398	158	100

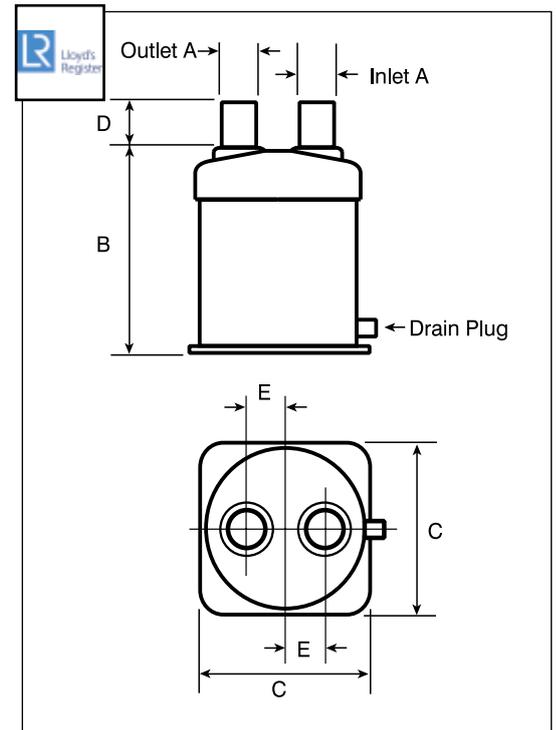


GENERAL SEPARATOR



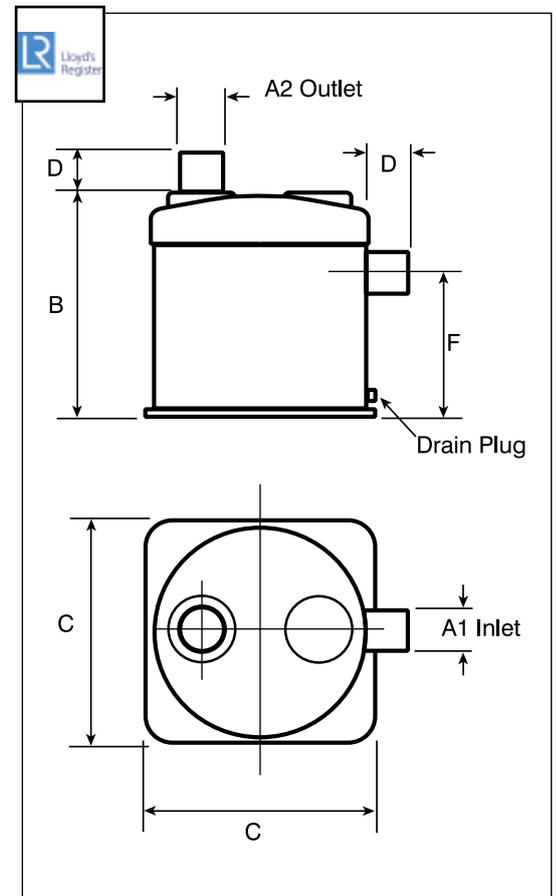
LIFT SILENCERS - TOP IN TOP OUT

PART No.	HALYARD REF.	A mm (")	B mm	C mm	D mm	E mm	WEIGHT Kg
65850T	HTT005	38 - (1.50)	158	200	50	44	1,4
65852X	HTT025	40 - (1.62)	158	200	50	44	1,5
65853	HTT030	40 - (1.62)	230	200	50	44	1,9
65854	HTT040	45 - (1.77)	158	200	50	44	1,5
65855D	HTT045	45 - (1.77)	230	200	50	44	1,9
65856F	HTT055	51 - (2.00)	158	200	72	44	1,6
65857H	HTT065	51 - (2.00)	255	275	51	68	3,3
65858K	HTT070	51 - (2.00)	305	324	80	84	4,9
65896U	HTT085	60 - (2.36)	255	275	73	68	3,5
65897W	HTT090	63 - (2.50)	255	275	64	68	3,6
65898Y	HTT110	76 - (3.00)	255	275	76	68	3,7
65899A	HTT115	89 - (3.50)	305	324	90	84	5,6
65900F	HTT120	102 - (4.00)	305	324	102	70	5,6
65901H	HTT125	125 - (5.00)	370	446	128	83	10,4
65902K	HTT130	152 - (6.00)	370	446	127	102	10,7



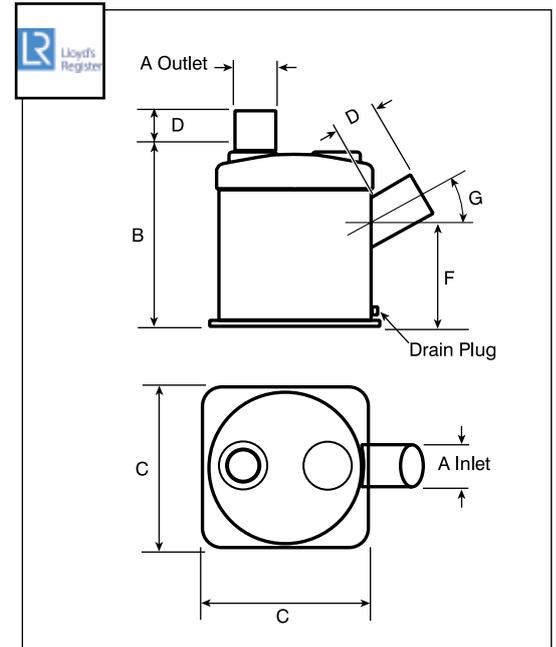
LIFT SILENCERS - SIDE IN TOP OUT

PART No.	HALYARD REF.	A1 mm (")	A2 mm (")	B mm	C mm	D mm	F mm	WEIGHT Kg
65903M	HST005	38 - (1.50)	38 - (1.50)	169	200	38	95	1,5
65904P	HST010	38 - (1.50)	38 - (1.50)	230	200	38	139	1,8
65905S	HST025	40 - (1.62)	40 - (1.62)	169	200	38	95	2,2
65906U	HST035	40 - (1.62)	40 - (1.62)	255	275	55	165	3,3
65907W	HST055	45 - (1.77)	45 - (1.77)	230	200	50	139	1,9
65908Y	HST105	51 - (2.00)	51 - (2.00)	230	200	51	139	1,9
65769L	HST110	51 - (2.00)	51 - (2.00)	255	275	51	165	3,3
65909A	HST115	51 - (2.00)	51 - (2.00)	305	324	81	200	4,9
65910J	HST145	60 - (2.36)	60 - (2.36)	305	324	75	200	5,1
65911L	HST150	60 - (2.36)	60 - (2.36)	255	275	74	165	3,5
65912N	HST165	63 - (2.50)	63 - (2.50)	255	275	64	165	3,5
65913R	HST200	76 - (3.00)	76 - (3.00)	255	275	76	165	4,4
65914T	HST205	76 - (3.00)	76 - (3.00)	305	324	100	184	6,0
65793H	HST210	89 - (3.50)	89 - (3.50)	305	324	90	184	5,6
65770V	HST215	102 - (4.00)	102 - (4.00)	305	324	102	184	5,6
65915V	HST220	127 - (5.00)	127 - (5.00)	370	446	102	222	10,0
65916X	HST225	127 - (5.00)	127 - (5.00)	343	342	114	219	6,6
65917Z	HST230	152 - (6.00)	152 - (6.00)	370	446	127	254	11,4
65918B	HST235	152 - (6.00)	203 - (8.00)	370	446	152	222	12,4
65919D	HST240	203 - (8.00)	203 - (8.00)	585	500	200	392	15,6



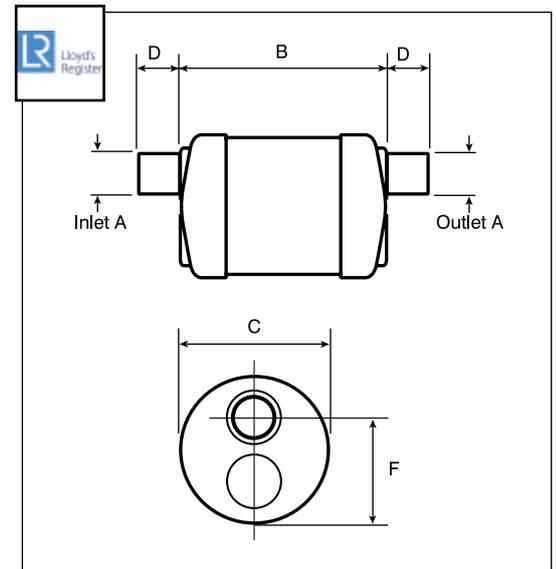
LIFT SILENCERS - SIDE ANGLE IN TOP OUT

PART No.	HALYARD REF.	A mm (")	B mm	C mm	D mm	F mm	G °	WEIGHT Kg
65920M	HAT015	60 - (2.36)	270	275	60	175	30	3,6
65921P	HAT020	76 - (3.00)	270	275	76	175	30	3,9
65922S	HAT025	89 - (3.50)	305	324	91	184	30	5,5
65923U	HAT030	89 - (3.50)	266	275	89	152	30	4,4
65924W	HAT035	102 - (4.00)	480	324	130	300	35	7,8
65925Y	HAT040	102 - (4.00)	305	324	85	184	35	5,7
65926A	HAT043	114 - (4.50)	480	324	135	300	35	7,9
65927C	HAT045	127 - (5.00)	480	324	140	300	35	8,7
65928E	HAT050	152 - (6.00)	370	446	200	222	35	11,2



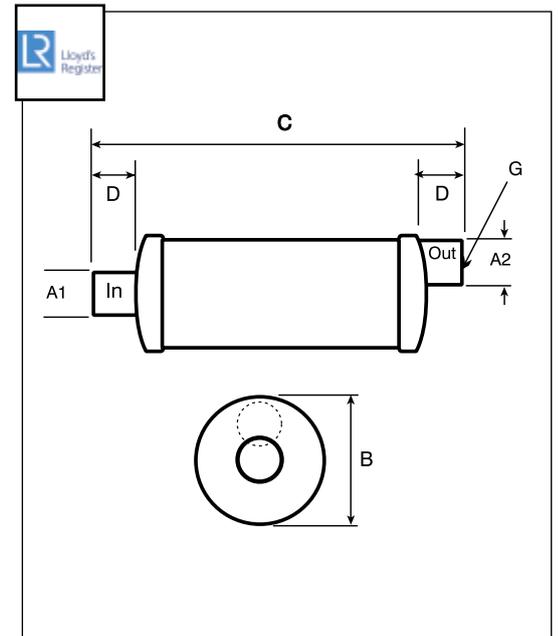
LIFT SILENCERS - END IN END OUT

PART No.	HALYARD REF..	A mm (")	B mm	C mm	D mm	F mm	WEIGHT Kg
65929G	HEE005	38 - (1.50)	250	178	55	141	1,7
65930R	HEE010	40 - (1.62)	250	178	65	133	1,8
65931T	HEE020	45 - (1.77)	250	178	65	133	1,8
65932V	HEE035	51 - (2.00)	310	178	65	133	2,1
65933X	HEE040	51 - (2.00)	420	254	65	195	4,2
65934Z	HEE045	51 - (2.00)	250	178	65	133	1,8
65935B	HEE060	60 - (2.36)	310	254	75	195	3,7
65936D	HEE065	60 - (2.36)	420	254	75	195	4,4
65937F	HEE070	63 - (2.50)	420	254	75	195	4,4
65938H	HEE080	76 - (3.00)	420	254	80	195	4,7
65939K	HEE090	89 - (3.50)	465	254	89	188	5,2
65940U	HEE095	102 - (4.00)	462	305	102	222	6,8
65941W	HEE100	114 - (4.50)	462	305	114	220	7,0
65942Y	HEE105	127 - (5.00)	599	305	126	220	8,8



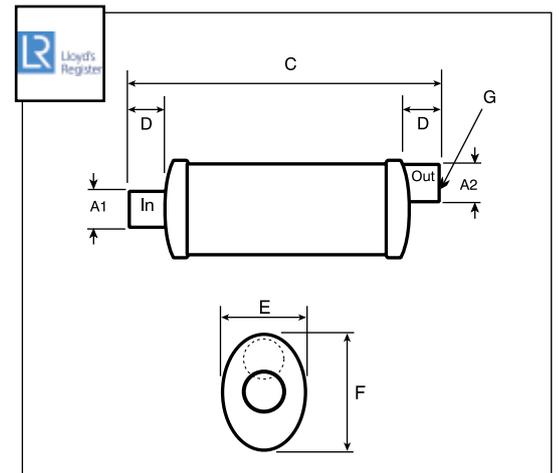
IN-LINE SILENCERS - ROUND BODY

PART No.	HALYARD REF.	A1 mm (")	A2 mm (")	B mm	C mm	D mm	G mm	WEIGHT Kg
65943A	HILR003	60 - (2.36)	60 - (2.36)	152	212	70	40	1,8
65944C	HILR005	76 - (3.00)	76 - (3.00)	203	335	75	59	3,5
65945E	HILR010	89 - (3.50)	89 - (3.50)	203	390	100	53	4,2
65946G	HILR015	102 - (4.00)	102 - (4.00)	254	465	102	68	6,4
65947J	HILR020	114 - (4.50)	114 - (4.50)	254	502	114	61	6,8
65948L	HILR025	127 - (5.00)	127 - (5.00)	254	546	127	55	7,9
65949N	HILR030	127 - (5.00)	152 - (6.00)	305	762	127	65	12,1
65950X	HILR035	152 - (6.00)	152 - (6.00)	305	661	152	65	11,4
65951Z	HILR040	152 - (6.00)	203 - (8.00)	398	880	200	91	22,0
65952B	HILR045	203 - (8.00)	203 - (8.00)	395	880	201	88	23,0
65954F	HILR050	254 - (10.00)	254 - (10.00)	446	1092	254	87	32,0
65955H	HILR055	305 - (12.00)	305 - (12.00)	489	1308	305	87	41,0



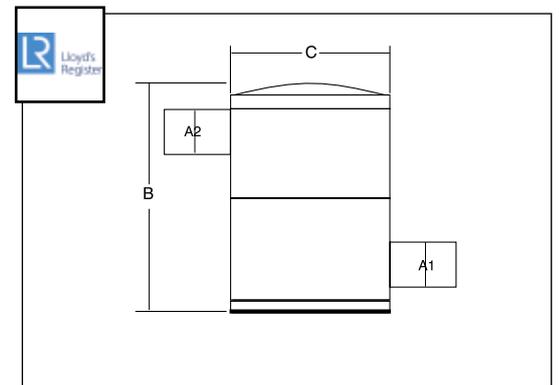
IN-LINE SILENCERS - OVAL BODY

PART No.	HALYARD REF.	A1 mm (")	A2 mm (")	C mm	D mm	E mm	F mm	G mm	WEIGHT Kg
65956K	HILO005	127 - (5.00)	127 - (5.00)	520	140	225	385	118	10,8
65957M	HILO006	127 - (5.00)	152 - (6.00)	640	150	225	385	105	10,6
65958P	HILO010	152 - (6.00)	152 - (6.00)	640	150	225	385	105	9,5
65959S	HILO012	152 - (6.00)	203 - (8.00)	928	203	270	420	93	12,2
65960A	HILO015	203 - (8.00)	203 - (8.00)	876	203	270	420	93	16,3
65961C	HILO016	203 - (8.00)	254 - (10.00)	758	203	295	465	87	21,6
65962E	HILO020	254 - (10.00)	254 - (10.00)	1092	254	365	630	164	39,0



DUAL CHAMBER SILENCER

PART No.	HALYARD REF.	A1 mm (")	A2 mm (")	B mm	C mm
65964J	HDC025	102 - (4.00)	102 - (4.00)	600	446
65965L	HDC035	127 - (5.00)	127 - (5.00)	700	446
65966N	HDC040	127 - (5.00)	152 - (6.00)	800	446
65967R	HDC045	152 - (6.00)	152 - (6.00)	800	446
65968T	HDC050	152 - (6.00)	203 - (8.00)	800	446
65969V	HDC055	203 - (8.00)	203 - (8.00)	900	648
65970D	HDC060	203 - (8.00)	254 - (10.00)	900	650
65971F	HDC065	254 - (10.00)	254 - (10.00)	1000	650
65972H	HDC070	305 - (12.00)	305 - (12.00)	1000	630



HIGH TEMPERATURE EXHAUST HOSE

Halyard® produces a wide range of standard exhaust hoses, some of which are reinforced to reach high temperatures up to 100°C.

SILICON EXHAUST HOSES

For really high temperatures Halyard® can provide silicone exhaust hose, in two grades, handling temperatures of 180°C and 260°C (on request).

NOTE: Exhaust hoses have to be ordered in length, minimum length 1m, max length see charts page 283, increment 1m.

STAINLESS STEEL EXHAUST HOSE CLAMPS

Exhaust hoses should be fitted using tough “T” Bar clamps like these illustrated in figure, doubled wherever possible. Halyard® stocks clamps to suit hoses up to 406 mm (16”) external diameter, in stainless steel.

PART No.	HALYARD PART No.	Ø HOSE CLAMP mm (“)	MATERIAL
21829E	H000507	47-51 (1.8-2)	W4 S/S
24937Z	H000509	55-59 (2.1-2.3)	W4 S/S
24938B	H000512	68-73 (2.7-2.9)	W4 S/S
23291V	H000514	79-85 (3.1-3.3)	W4 S/S
68207G	H000517	97-104 (3.8-4.1)	W4 S/S
24939D	H024248	126-134 (5-5.2)	300SS
24940M	H024250	159-167 (6.2-6.6)	300SS
24904H	H024252	211-227 (8.3-8.9)	300SS
24922K	H024253	262-278 (10.3-10.9)	300SS
24941P	H024254	316-332 (12.4-13)	300SS



SILICONE BELLOWS

Flexible exhaust bellows are important to isolate engine vibration from the exhaust system, particularly where a silencer or rigid section is close to the engine. Our bellows cover a wide range of sizes up to 356 mm (14”) exhaust systems, and they will take temperatures up to 180°C (260°C on special order).



WIRE REINFORCED STANDARD RANGE EXHAUST HOSE – TEMPERATURE RATING: CONTINUOUS 100°C

PART No.	HALYARD PART No.	INT. DIA. Ø mm (")	BEND RADIUS mm (")	MAX LENGTH m
21959U	HS32	32 - (1.25)	130	60
66342C	HS38	38 - (1.50)	150	60
21960C	HS40	40 - (1.58)	160	60
66344G	HS44	45 - (1.77)	170	60
66239K	HS51	51 - (2.01)	180	60
66345J	HS60	60 - (2.36)	190	60
66346L	HS63	63.5 - (2.50)	200	60
66347N	HS76	76 - (3.00)	250	60
21961E	HS90	90 - (3.55)	330	60
66349T	HS102	102 - (4.00)	410	60
66240U	HS127	127 - (5.00)	560	60
66351D	HS152	152 - (6.00)	680	12



SILICONE EXHAUST HOSE - TEMPERATURE RATING: CONTINUOUS 180°C

PART No.	HALYARD PART No.	INT. DIA. Ø mm (")	MAX. LENGTH m (')	HOSE CLAMP
24978P	SS38	38 (1.5)	11 (36)	H000508
24979S	SS41	41 (1.6)	6 (19)	H000508
24980A	SS45	45 (1.8)	12 (39)	H000509
24981C	SS51	51 (2)	12 (39)	H000511
24982E	SS60	60 (2.3)	12 (39)	H000513
66665D	SS63	63,5 (2.5)	6 (19)	H000513
24984J	SS76	76 (3)	12 (39)	H000515
24985L	SS89	89 (3.5)	12 (39)	H000517
24986N	SS102	102 (4)	12 (39)	H24247
69418B	SS127	127 (5)	12 (39)	H000487
21809Y	SS152	152 (6)	12 (39)	H024248
24889R	SS203	203 (8)	6 (19)	H024252
24890Z	SS254	254 (10)	6 (19)	H024252



FLEXIBLE SILICONE BELLOWS - TEMPERATURE RATING: CONTINUOUS 180°C

PART No.	HALYARD PART NO.	INT. DIA. Ø mm (")		LENGTH mm
67515N	CB1076	76 (3)	Silicon bellow 76 mm	170
67516R	CB1090	89 (3.5)	Silicon bellow 90 mm	220
67336N	CB1102	102 (4)	Silicon bellow 102 mm	220
67075L	CB1127	127 (5)	Silicon bellow 127 mm	220
67076N	CB1152	152 (6)	Silicon bellow 152 mm	220
67517T	CB1203	203 (8)	Silicon bellow 203 mm	220
67518V	CB1254	254 (10)	Silicon bellow 254 mm	250
67520F	CB2305	305 (12)	Double silicon bellow 305 mm	350



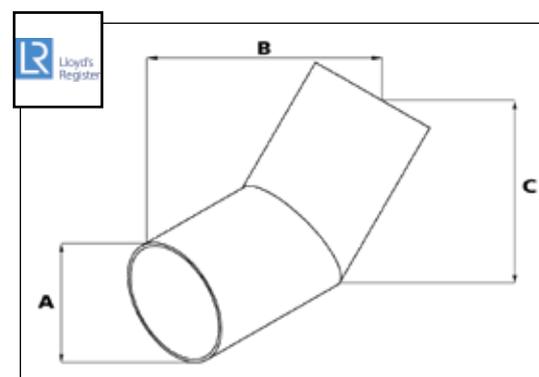
Halyard® makes a full range of GRP bends and adaptors, all fabricated from our special high temperature GRP tube and designed to get you round 45, 90 and 180 degrees bends, or to couple hoses of differing diameters.



GRP 45 DEGREES BENDS

PART No.	HALYARD PART No.	A mm	B mm	C mm	WEIGHT kg
21172A	H45050	76	213	142	0,6
21696M	H45060	102	243	173	0,7
21697P	H45070	127	339	230	1,2
65711C	H45075	152	376	263	2
21352C	H45080	203	710	438	4,5

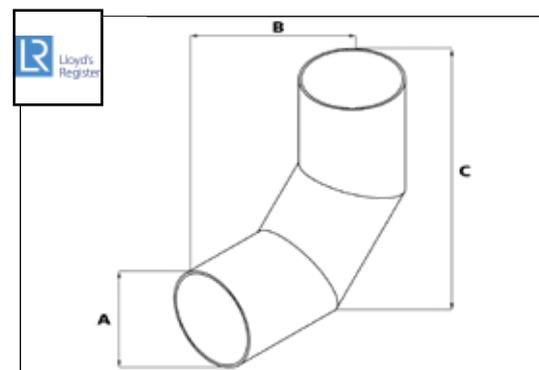
Diameters available from 2" to 10"



GRP 90 DEGREES BENDS

PART No.	HALYARD PART No.	A mm	B mm	C mm	WEIGHT kg
67210P	H90050	76	197	197	0,8
68450S	H90055	89	229	229	1
21698S	H90060	102	242	242	1,2
66624N	H90070	127	308	308	1,8
66123P	H90075	152	358	358	2,5

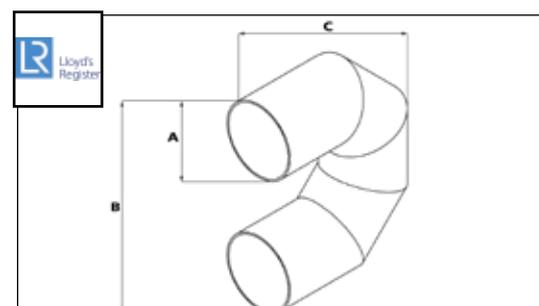
Diameters available from 1,5" to 12"



GRP 180 DEGREES BENDS

PART No.	HALYARD PART No.	A mm	B mm	C mm	WEIGHT kg
21173C	H180050	76	187	214	1,1
21699U	H180060	102	228	293	1,8
21700Z	H180075	152	327	427	3,6

Diameters available from 1,75" to 8"



Halyard® exhaust units are infinitely stronger than the plastic and GRP units on the market. Halyard® uses 3 mm thick 316 stainless to ensure that the risks of damage when manoeuvring a craft are reduced to the absolute minimum. All units are designed so that the flap, at rest, is shrouded by the stainless rim to prevent damage if the vessel nudges a harbour wall.

BULKHEAD EXHAUST UNITS - NEOPRENE FLAP VALVE

Units to accept exhaust hose up to and including 100 mm (4") hose have neoprene flaps. Each has a really generous tail allowing "T" bar exhaust hose clamps to be used to secure the hose. Smaller sizes have 3 countersunk fixing holes. The 90 mm and 100 mm (3.5" and 4") units have 4 bolt holes and a bolting flange which fits right around the unit inside the hull.

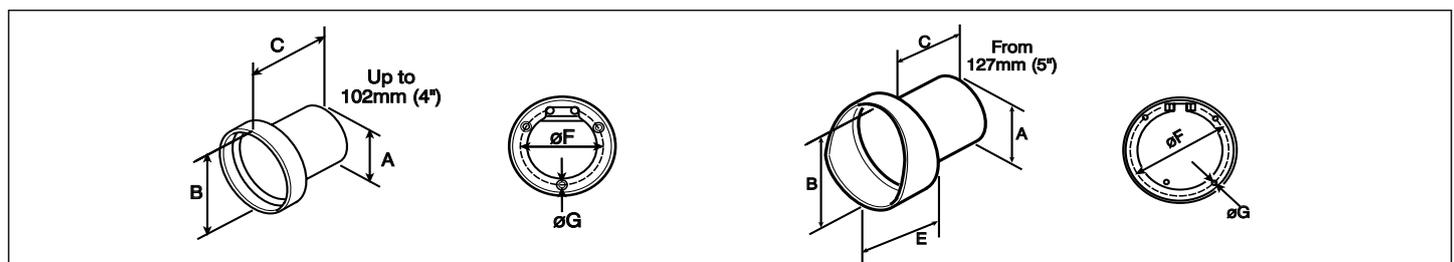
BULKHEAD EXHAUST UNITS - STAINLESS FLAP VALVE

Units from 125 mm (5") upwards all have stainless flaps lined with neoprene. All have tails with plenty of space to use proper "T" bar clamps to secure the hose. Between 4 and 8 bolt holes are provided and all units have bolting flanges to fit around the unit inside the hull.



PART No.	HALYARD PART No.	A mm/inch	B mm	C mm	E mm	FIXING PCD F	G mm	N° FIXING HOLE	FLAP MATERIAL	FLANGE
66885U	HF004	45 - (1.75)	89	80	25	65	5,5	3	NBR	N
66886W	HF005	51 - (2.00)	102	80	25	80	5,5	3	NBR	N
66887Y	HF006	60 - (2.38)	114	87	25	90	5,5	3	NBR	N
66890L	HF010	76 - (3.00)	127	95	30	102	6,5	3	NBR	N
66891N	HF015	90 - (3.5)	140	110	35	118	6,5	4	NBR	Y
66892R	HF020	102 - (4.0)	152	123	35	130	6,5	4	NBR	Y
66685K	HF025	127 - (5.0)	195	145	78	165	9	4	SS	Y
66684H	HF030	152 - (6.0)	220	175	90	190	9	4	SS	Y
66893T	HF035	203 - (8.0)	273	220	100	240	11	4	SS	Y

NBR = Nitrile SS = Stainless Steel



HALYARD® QUALITY

Marine diesels create very high noise levels – often well over 100 decibels. Engines are always located close to the boat user, generally in engine spaces made from GRP, timber, or steel. Noise insulation changes all this. It adds a soft facing to hard bulkheads to absorb noise and stop it bouncing around and growing. It features a clever multi-layer construction to make a thin material more effective than simple insulations many times thicker.

- **The absorption layer**

A thick layer of fire zero rated foam which soaks up noise and stops it bouncing around the engine space.

- **The transmission layer**

A high density barrier provides the highest possible mass and gives the best noise reduction. The damping layer weighs 5kgs per square meter – more than the lead sheet used in older materials.

- **The isolation layer**

This thin layer of foam has a crucial function: It acts like the gap in double glazing and stops the noise which hits the transmission layer being carried through to the bulkhead – just like the gap in double glazing.

The multi-layer construction used in Halyard® materials offers the best possible acoustic result in a thicknesses which can be accommodated in the tightest engine space, beating simpler materials many times as thick.



Maritex

PROTECTIVE SKIN

- **Maritex**

An immensely tough fibreglass cloth with a sealed metallised skin so it cannot absorb oil. It won't tear or fray. It looks heavy duty, and it is fire zero rated. Maritex is simply the best facing in the Halyard® range.

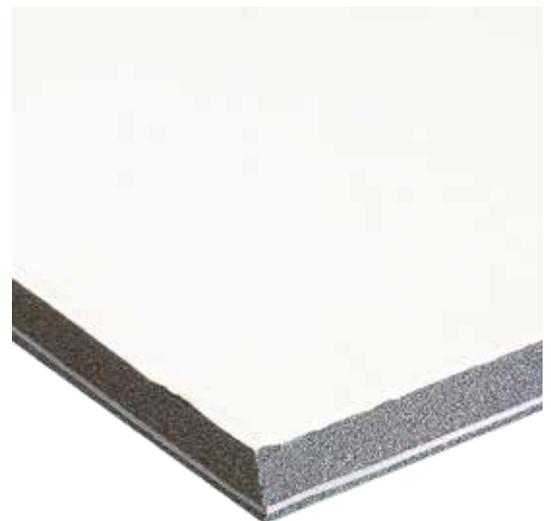
Maritex is fire zero rated to BS 476 parts 6 and 7.

- **Sealglass**

A tough off-white glass cloth, sealed against oil. The cloth is extremely tough and will not tear. The material meets the ISO 9094 fire requirements of the EU Recreational Craft Directive.

- **Re-inforced Silver Polyester**

This facing meets the requirements of the Recreational Craft Directive. It provides a seal to keep oil out. You can pierce it, but it has a reinforcing layer behind it. It will burn, but once laminated in place it meets the ISO 9094 fire requirements of the EU Recreational Craft Directive. In a fire the facing will burn, but not the foam behind it.



Sealglass

HOW TO CHOOSE THE PROPER THICKNESS

- 45mm (1.75") and 60 mm (2.36").

This unique double damper material was invented by Halyard® and is designed to give the best possible result for the minimum thickness and weight. It is used where big turbo-charged engines are involved, or for vessels where noise is a particular problem. Supplied with 2 sheets 1000 mm x 600 mm (39" x 24") per box.

- 2mm (1.25").

The standard thickness used throughout the industry. Today's fire zero rated foams have increased the weight and made this material even more effective. 32 mm is the choice for any installation where the builder wants an excellent result at a sensible cost. Remember, you can always double layer it in critical areas.

Supplied with 4 sheets 1000 mm x 600 mm (39" x 24") per box.

- 12mm (0.5").

The budget material when thickness or cost are crucial. Although it is only 12mm or half an inch thick, this material is highly effective and will reduce noise by 50% if used properly. You can also double layer it in places.

Supplied with 4 sheets 1000 mm x 600 mm (39" x 24") per box.



Re-inforced Silver Polyester

12 mm (1/2") Materials - All are supplied with 4 sheets 1000 x 600mm (39" x 24") per box: tot 2,4 m²		
66383T	S3002	Maritex faced material
66384V	S3004	Sealglass faced material
66385X	S3003	Reinforced silver polyester faced material

12 mm (1/2") Self-adhesive materials - All are supplied with 4 sheets 1000 x 600mm (39" x 24") per box: tot 2,4 m²		
66386Z	S5002	Maritex faced material
66387B	S5004	Sealglass faced material
66388D	S5003	Reinforced silver polyester faced material

32mm (1.25") Materials - All are supplied with 4 sheets 1000mm x 600mm (39" x 24") per box: tot 2,4 m²		
66007M	S3017	Maritex faced material
66389F	S3015	Sealglass faced material
66390P	S3016	Reinforced silver polyester faced material

32mm (1.25") Self-adhesive materials - All are supplied with 4 sheets 1000mm x 600mm (39" x 24") per box: tot 2,4 m²		
66391S	S5017	Maritex faced material
66392U	S5015	Sealglass faced material
66393W	S5016	Reinforced silver polyester faced material

45mm (1.75") Materials - All are supplied with 2 sheets 1000mm x 600mm (39" x 24") per box: tot 1,2 m²		
66394Y	S3039	Maritex faced material
66395A	S3037	Sealglass faced material
66396C	S3038	Reinforced silver polyester faced material

45mm (1.75") Self-adhesive materials* - All are supplied with 2 sheets 1000mm x 600mm (39" x 24") per box: tot 1,2 m²		
66397E	S5039	Maritex faced material
66398G	S5037	Sealglass faced material
66399J	S5038	Reinforced silver polyester faced material

*Self-adhesive materials have to be fixed when ceiling mounted

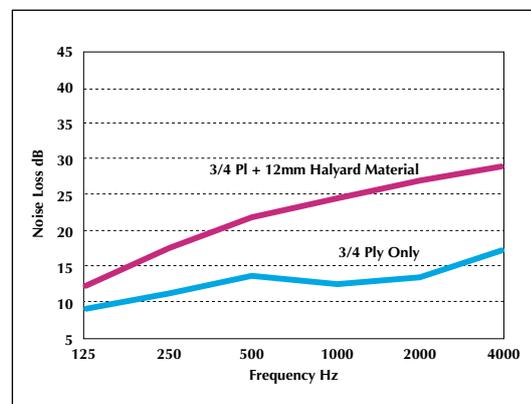
60mm (2.36") SilentWave (1.2 sq metre packs)		
21963J	S3018	Foil faced

JOINING TAPES		
66400P	S4021	20m x 50mm (65'x2") Sealglass tapes
66008P	S4025	5m x 50mm (16'x2") Maritex tapes
21964L	S4026	20m x 50mm (65'x2") Maritex tapes
66402U	S4036	50m x 50mm (164'x2") Re-inforced silver polyester tapes

PACKAGING

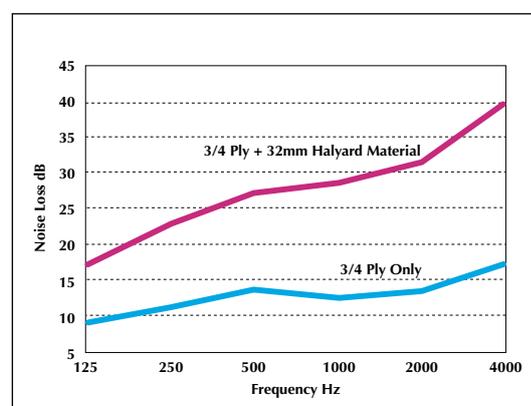
- 12 mm (1/2") and 32 mm (1.25") Materials
Every sheet is 1000mm x 600mm (39"x24"). 4 sheets per box: total 2,4 m² (26 sq ft). Weight per box: 14 kg (12 mm) and 19 kg (32 mm).

- 45mm (1.75") and 60mm (2.36") Materials
Every sheet is 1000mm x 600mm (39"x24"). 2 sheets per box: total 1,2 m² (13 sq ft). Weight per box: 16 kg.



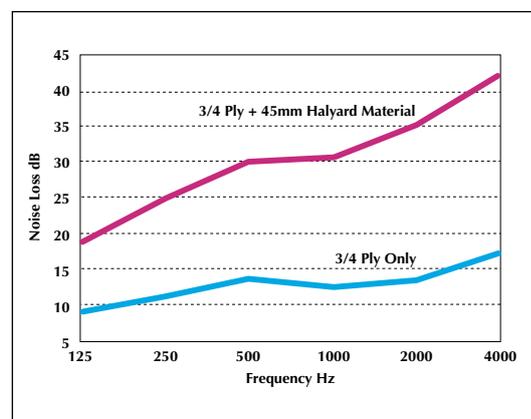
12 MM (1/2") MATERIALS

These material offers around 12dB reduction at 1000Hz and above, but its efficiency reduces with the heavier noises of lower frequencies. The overall reduction will give excellent results with smaller, lighter engines.



32 MM (1.25") MATERIALS

The 32 mm materials offer a startling 15dB reduction at 1000Hz. Noise doubles every three decibels, so this is nearly three times as good as the 12mm. It also holds a good performance at lower frequencies, making it excellent with larger engines.



45 MM (1.75") MATERIALS

These materials offer more noise reduction than other. They are suggested when noise is a serious problem.

Marine diesel water cooled exhaust systems are designed to take temperatures of only 120°C.

The uncooled exhaust gasses may reach more than 500°C. To cool the gasses, the exhaust depends on a free flow of cooling raw water from the engine. This flow can be cut off by a plastic bag, seaweed being sucked into the raw water intake or by damage to the raw water impeller.

The exhaust gas temperature will rise immediately and the exhaust system will overheat and may be seriously damaged.

In most situations the exhaust alert alarm will sound before any damage occurs.

An exhaust temperature alarm must measure the temperature inside the exhaust system to be effective, external mounted sensors will not respond quickly enough as they must wait for the heat to penetrate the hose or GRP.

The Halyard Exhaust Alert is designed to protect the exhaust system and should not be regarded as an engine protection device, although it will beat the engine temperature sensors to react.



Helm display

Halyard's new Exhaust Alert provides a class leading exhaust overheat alert system housed in a stylish new standard 52mm diameter, IP67 waterproof gauge. The new system incorporates self test functionality and is supplied as a 12 / 24 Volt dual voltage unit to suit either supply. Available with a choice of chrome or black bezel and black or white gauge faces to compliment your existing gauges.



Sensor



Removable sensor

HALYARD PART No.	PART No.	SYSTEM DESCRIPTION
H021247	23963V	Single engine single station gauge with through hose sensor with 16 m cable
H021248	23964X	Single engine single station gauge with removable through hose sensor with 16 m cable
H021249	23965Z	Single engine dual station gauges with through hose sensors with 16 m cable
H021250	23966B	Single engine dual station gauges with removable through hose sensors with 16 m cable
H021251	23967D	Twin engine single station gauge with through hose sensor with 16 m cable
H021252	23968F	Twin engine single station gauge with removable through hose sensor with 16 m cable
H021253	23969H	Twin engine dual station gauges with through hose sensors with 16 m cable
H021254	23970S	Twin engine dual station gauges with removable through hose sensors with 16 m cable

VELAIR



COMPACT 7 - SUPER COMPACT UNIT

In order to have a solution even when spaces are minimal, VELAIR introduces the Compact 7, the super-compact air conditioning self contained unit that in just 43cm in length and 26cm in width develops 7000 BTU/h of cooling power. 7000 BTU model is built with a stainless steel tray and fan body, with possibility to have up to 3 air outlets.

Advantages:

- Unit extremely compact in dimensions and light weight
- Brushless fan with high efficiency and low noise
- Max electrical power consumption 660 W (in cooling)
- New wall touch display included
- Heat pump reverse cycle operation to heat the environment in winter

Easy to install:

With its compact dimensions and low weight, the Compact 7 can be installed on all types of boats. The Compact 7 can be installed with 2 or 3 air outputs, 100 mm diameter, without the need to use any T or Y additional dividers.



Ø 100 mm three air outputs application example



WIFI: REMOTE CONTROL VIA SMARTPHONE



A Wi-Fi module has been introduced into the panel. This function allows to reach, monitor and set-up your unit through a dedicated app. When you are on board, the smartphone will speak directly with the unit. When away from the boat, the communication will take place through internet, therefore a wi-fi network in the marina or a router on board is required. This allows to turn on the air conditioning or heat pump in advance, in order to arrive on board finding the cabins at a comfortable temperature and humidity level. A free app is available for IOS and Android Store



ON-OFF COMPACT SERIES TECHNICAL SPECIFICATIONS

MODEL	Compact 7
Part No.	20379UW
Cooling capacity	7000 BTU/h
Power supply voltage	230 V - 50 Hz*
Cooling power consumption	3,0 A
Protection	10 A
Wire size (minimum)	2,5 mm ²
Maximum air flo	350 m ³ /h
Flange diameter	2x 100 mm
Minimum opening for return air grill	360 cm ²
Minimum opening for supply air grill (rec.)	150 cm ²
Seawater minimum flow rat	8 l/min
Dimimensions mm (") WxHxD	433x280x260 (17.1x11x10.2)
Weight kg (lbs)	23 (50.7)

*Also available in 115V - 60 Hz version

CONTROL PANEL

The units are supplied with a wall-mounted touch control digital panel, easy to install as, being very thin, it can be applied on the wall itself, without the classic rectangular cut. A simple round hole is enough to pass the data cable.



ELECTRIC CONTROL BOX

The units are extremely easy to install thanks to the prewired electrical box with a cable bundle that allows the optimal positioning around the machine itself. Unlocking the four screws, it's possible to access directly to the terminal block to connect the power supply and the sea water pump.

VSD INVERTER DRIVEN SELF-CONTAINED AIR CONDITIONING SYSTEMS REVERSE CYCLE FUNCTION

VELAIR



VARIABLE SPEED DRIVE



VELAIR APP



Self-contained-VSD air conditioners provides the best of the existing technology: Twin Rotary compressor with brushless DC motor and inverter that constantly controls speed and delivered cooling power (Variable Speed Drive); Constant Flow brushless fan (only i10 and i16); electronic expansion valve; R32 refrigerant for i10 and i16; R410 refrigerant for i21.

Available in three sizes: 10.000, 16.000 and 21.000 BTU/h max output.

The inverter technology, already used in residential air-conditioning, offers the following **benefit** in marine applications:

- No current peaks during start-up
- Highest energy efficiency: overall reduction of electricity consumption (-40%)
- Perfectly running with small generators or battery powered (through inverter)
- Compressor noise and vibrations almost zero
- Constant temperature of the air flow
- Wi-fi connection for smartphone available through a dedicated app
- Heat pump reverse cycle operation to heat the environment in winter
- Constant Flow technology fan (only i10 and i16)

new



Compact i10 VSD SMART

The compressor continuously changes its running speed depending from ambient and set temperature. The compressor operates at maximum power to cool rapidly the cabins, but reaching the set temperature, it reduces the power and electric consumption. In this way it maintains the optimal comfort level with the minimum consumption. The inverter works between 20 and 100 Hz.

Self-contained-VSD VELAIR units meet EMC 2004/108/EC directives.

TECHNICAL SPECIFICATIONS

MODEL	Compact i10 VSD SMART new	Compact i16 VSD SMART new	Compact i21 VSD
230V - 50/60 Hz Part No.	24831GW	24832JW	24765WW
115V - 50/60 Hz Part No.	24831GU	24832JU	-
Cooling capacity range	4000 - 10000 BTU/h	6500 - 16000 BTU/h	7000 - 21000 BTU/h
Power supply voltage	1 PH 230V - 50/60 Hz 1 PH 115V - 50/60 Hz	1 PH 230V - 50/60 Hz 1 PH 115V - 50/60 Hz	1 PH 230V - 50/60 Hz
Power consumption cooling (max)	2.9 A @230 V 6.0 A @115 V	4.1 A @230 V 8.5 A @115 V	6.1 A @230 V
Protection	10 A (230/115V)	10 A (230/115V)	10 A
Cable size (min)	2,5 mm ² (230V) - 4 mm ² (115V)	2,5 mm ² (230V) - 4 mm ² (115V)	4 mm ² (230V)
Max air flo	400 m ³ /h	550 m ³ /h	800 m ³ /h
Air exit duct (for max capacity)	1 x Ø 100 mm - 1 x Ø 3.9"	1 x Ø 125 mm - 1 x Ø 4.9"	3 x Ø 152 mm - 3 x Ø 6"
Min. opening for return air grill	400 cm ²	600 cm ²	800 cm ²
Min. opening for supply air grill (recommended)	250 cm ²	300 cm ²	400 cm ²
Min. seawater flow rat	12 l/min	15 l/min	20 l/min
Dimensions WxHxD mm (")	571x320x323* (22.5x12.6x12.7)	650x330x355* (25.6x13x14)	730x445x323* (28.7x17.5x12.7)
Weight kg (lbs)	25 (55.1)	28 (61.7)	40 (88.2)

*Measures including electric panel



VARIABLE SPEED DRIVE

This inverter driven chiller range provides the best of the existing technology: brushless DC motor with inverter that constantly control speed and delivered power by the compressor (Variable Speed Drive). They also use R410A eco-friendly refrigerant.

Two sizes available: 42.000 e 62.000 BTU/h with modular combination to obtain systems with higher cooling power

Benefit in marine applications:

- No current peaks during start-up phase
- Highest energy efficiency: Overall reduction of electricity consumption (-45%)
- It can operates with small generators
- Compressor noise and vibrations almost zero
- Small dimensions and weights compared to the cooling capacity
- Stable water outlet temperature

Comfort: The compressor continuously changes the running speed and consequently its cooling power. In this way, the chiller water loop temperature remains constant, regardless of power drawn by the fancoils. This guarantees the maximum comfort - thanks to the temperature stability of air- and the best efficiency, adapting continuously the cooling power to the real need. As result, the compressor will operate at maximum power to cool rapidly the cabins, but coming closer to the set temperature, it will reduce the power and, as well, the electricity consumption.

Reliability: "Brushless DC" compressors, together with variable capacity operation, eliminate the typical ON/OFF function of the traditional systems. This allows a much longer lifetime to all the electrical and mechanical components.

Silence: Thanks to its function and its sound proofing cover, the compressor has minimal sound levels. This is appreciated especially during night operation.

NIGHT mode: It is possible to limit the maximum output power to a preselected value (factory 40%) simply pressing a button. This means the possibility to limit the max current requested, with no risk to break down the shore power if weak and, in double genset applications, it is possible to use the small and quiet generator during the night.

Modular: A number of units can be combined together in order to obtain the desired max. cooling power: for example, to get 250.000 BTU/h as max power, it is enough to install 4 units of 62.000 BTU/h in parallel. The units will regulate automatically in order to guarantee always the pre-determined value temperature with the lowest energy consumption.

Inverter-VSD Uflex VELAIR chillers units meet EMC 2004/108/EC directives.



i42 - VSD

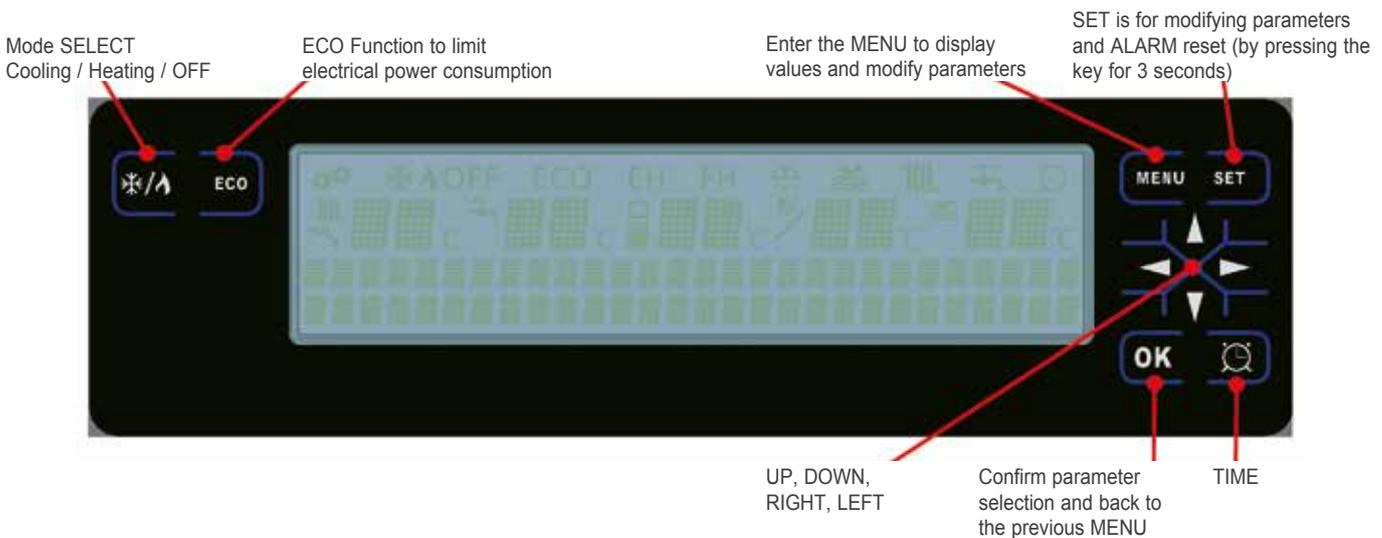
INVERTER DRIVEN CHILLERS VARIABLE SPEED DRIVE – REVERSE CYCLE FUNCTION

VELAIR

MODEL	Chiller i42 VSD	Chiller i62 VSD
Part No.	69338D	69339F
Cooling capacity range	18000 - 42000 BTU/h	30000 - 62000 BTU/h
Power supply voltage	1PH - 230V – 50/60 Hz	1PH - 230V – 50/60 Hz
Power consumption cooling (max)	10,5 A	16 A
Power consumption cooling (max) with "NIGHT MODE" activated	4,5 A	6,1 A
Min water flow rate chiller circui	35 l/min	45 l/min
Chiller loop pipe diameter	25 mm	25 mm
Min seawater flow rate	30 l/min	40 l/min
Seawater loop pipe diameter	20 mm	25 mm
Dimensions WxHxD mm (")	473x436x331 (18.6x17.2x13)	473x436x431 (18.6x17.2x17)
Weight kg (lbs)	48 (105.8)	64 (141.1)

The digital control panel can be placed on the chiller or remoted in a control room.

The main functions can be controlled from any centralised on-board control system by three simple switches.

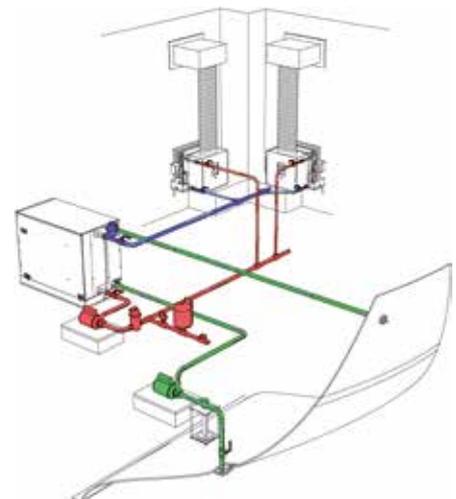


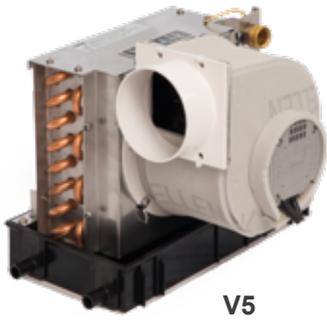
SYSTEM COMPONENTS

For a complete installation the following components are needed:

- Fancoils
- Seawater pump
- Water pump for chilled loop
- Seawater loop components (sea water intake, water outlet, strainer, safety valve and pipeline)
- Chilled water loop components (insulated pipes, fittings, valves, bleeders, accumulator tank and glycols)
- Air ducting parts (insulated pipe, dividers, transition box, air grills)

Please contact our Technical Service for a correct choice of required accessories.





V5



V12

MODEL	V5	V12	V20
Part No.	23398P	23399S	23729L
Cooling capacity (BTU/h)	5000	12000	20000
Power supply	1PH / 230 V / 50 Hz	1PH / 230 V / 50 Hz	1PH / 230 V / 50 Hz
Fan absorption (W)	90	170	340
Width (mm)	390 (15.3)	540 (21.3)	697 (27.4)
Depth (mm)	275 (10.8)	315 (12.4)	318 (12.5)
Height (mm)	265 (10.4)	300 (11.8)	295 (11.6)
Weight (kg)	5,5 (12.1)	9,0 (19.8)	13,5 (29.7)
N° Fan speed	3	3	3
Air flow (m ³ /h)	250	500	1100
Air outlet diameter	1x100	1x125	2x125

VFC-DSP

VFC-DSP - 24600L - Digital control panel

- Illuminated touch screen display with embedded temperature sensor and WI-FI connectivity.
- Constant flow fan with 3 adjustable speeds.
- Summer and winter operation mode.
- Chiller call ready
- Predisposition for the addition of solenoid valve
- Possibility to control multiple machines from a single display



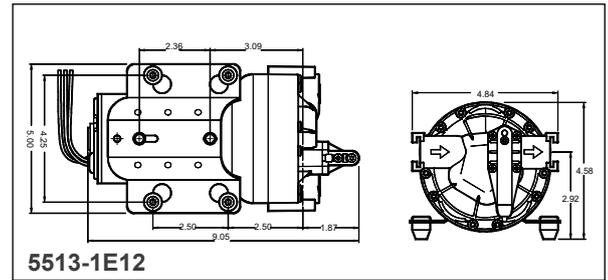
230V / 50Hz SEAWATER PUMPS

VELAIR

5513-1E12 – 63799K

Self priming diaphragm seawater Pump

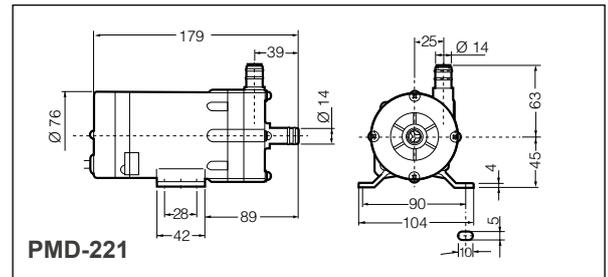
- Max flow rate: 18 l/min (5.0 GPM)
- Input power: 200 W
- Self priming up to 3,0 m (9.8')
- F1/2" connection
- Weight: 3,6 kg (7.9 lbs)



5513-1E12

PMD-221 – 69886M

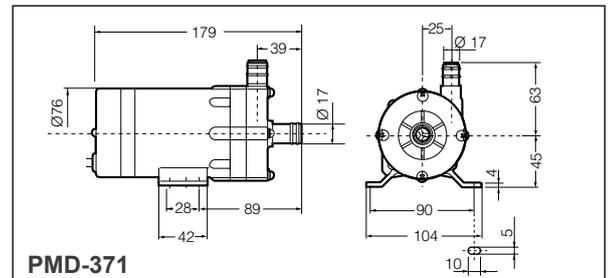
- Magnetic drive seawater centrifugal Pump
- Max flow rate: 15 l/min (4.0 GPM)
- Input power: 31 W
- Max Head: 2,6 m (8.5')
- M3/4" (19 mm) connection
- Weight: 1,7 kg (3.75 lbs)



PMD-221

PMD-371 – 25021Z

- Magnetic drive seawater centrifugal Pump
- Max flow rate: 25 l/min (6.5 GPM)
- Input power: 43 W
- Max Head: 3,1 m (10.2')
- M3/4" (19 mm) connection
- Weight: 1,7 kg (3.75 lbs)

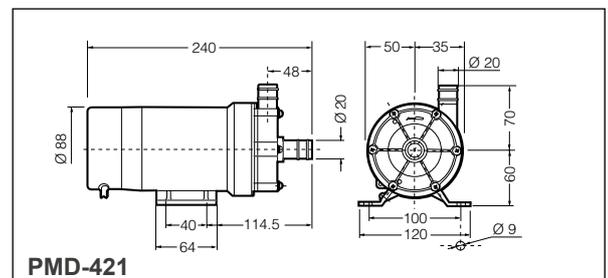


PMD-371

PMD-421 – 69696G

Magnetic drive seawater Centrifugal Pump

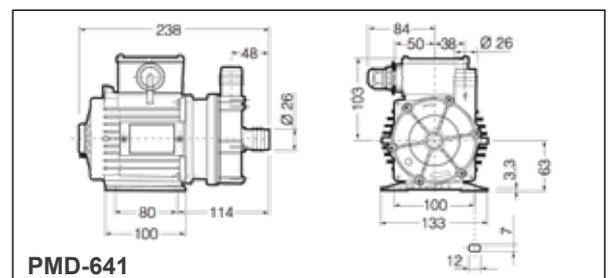
- Max flow rate: 35 l/min (9.2 GPM)
- Input power: 75 W
- Max Head: 4,0 m (13.1')
- M3/4" (19 mm) connection
- Weight: 3,4 kg (7.5 lbs)



PMD-421

PMD 641 – 20349J

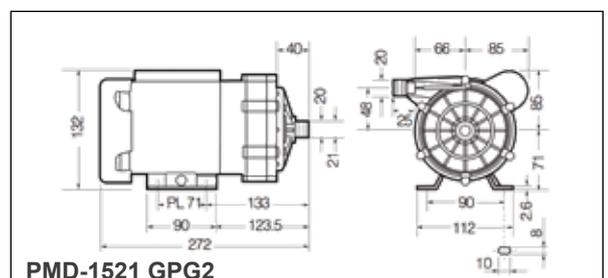
- Magnetic drive seawater centrifugal Pump
- Flow rate: 55 l/min @2m (20 l/min @8m)
- Input power: 155 W
- Max Head: 5,0 m (16.4')
- M1" (25 mm) connection
- Weight: 4,8 kg (10.6 lbs)



PMD-641

PMD 1521 GPG2 – 20345A

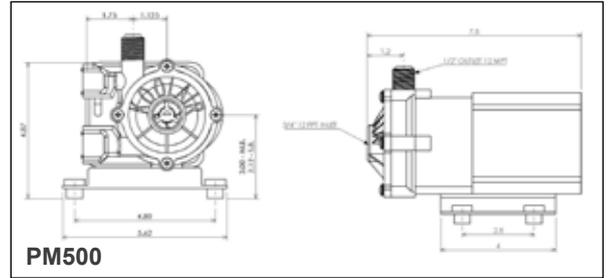
- Magnetic drive seawater centrifugal Pump
- Flow rate: 60 l/min @2m (35 l/min @8m)
- Input power: 230 W
- Max Head: 13,0 m (42.6')
- M1" (25 mm) connection
- Weight: 7,5 kg (16.5 lbs)



PMD-1521 GPG2

PM500 – 22746F

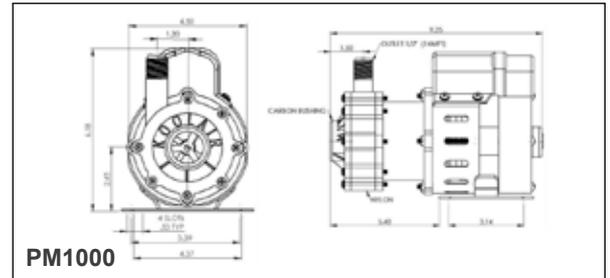
- Seawater centrifugal Pump
- Max flow rate: 32 l/min (8.5 GPM)
- Input power: 120 W
- Max Head: 6 m (20')
- Connection: in F3/4" / out MPT 1/2"
- Weight: 3,85 kg (8.5 lbs)



PM500

PM1000 – 23042X

- Seawater centrifugal Pump
- Max flow rate: 64 l/min (17 GPM)
- Input power: 220 W
- Max Head: 8 m (27')
- Connection: in F1" / out MPT 1/2"
- Weight: 4,5 kg (10 lbs)

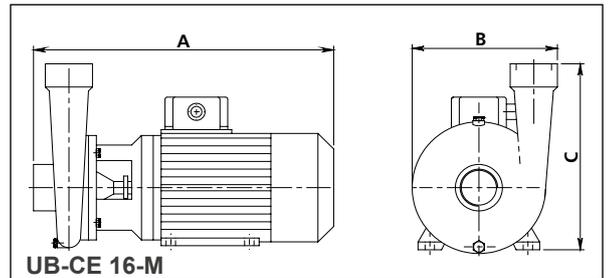


PM1000

230 V – 50 HZ CENTRIFUGAL PUMPS FOR SEAWATER/CHILLED WATER APPLICATIONS

UB-CE 16-M – 67960L

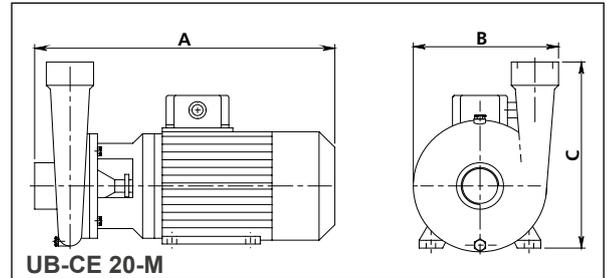
- Seawater centrifugal Pump
- Flow rate: 40 l/min
- Input power: 390 W
- Max Head: 7,0 m (23.0')
- F1/2" in/out connection
- Dimensions: A=266 mm, B=122 mm, C= 138 mm
- Weight: 5,6 kg (12.3 lbs)



UB-CE 16-M

UB-CE 20-M – 67964V

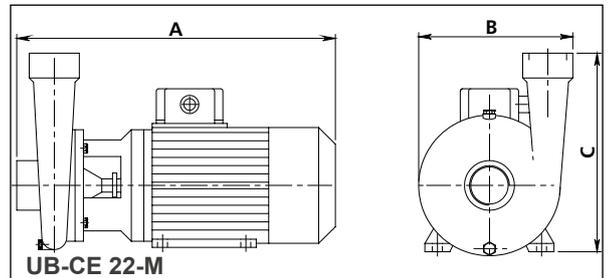
- Seawater centrifugal Pump
- Flow rate: 80 l/min
- Input power: 600 W
- Max Head: 14,0 m (46.0')
- F1" in/out connection
- Dimensions: A=303 mm, B=154 mm, C= 161 mm
- Weight: 9,1 kg (20 lbs)



UB-CE 20-M

UB-CE 22-M – 67967B

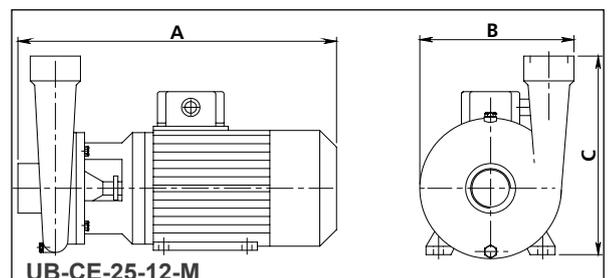
- Seawater centrifugal Pump
- Flow rate: 120 l/min
- Input power: 1000 W
- Max Head: 21 m (68.9')
- F1" in/out connection
- Dimensions: A=303 mm, B=174 mm, C= 181 mm
- Weight: 10,3 kg (22.7 lbs)



UB-CE 22-M

UB-CE-25-12-M – 20848D

- Seawater centrifugal Pump
- Flow rate: 200 l/min
- Input power: 1300 W
- Max Head: 24 m (78.7')
- F1" in/out connection
- Dimensions: A=313 mm, B=173 mm, C= 230 mm
- Weight: 14,5 kg (31.9 lbs)



UB-CE-25-12-M

MULTI-UNITS RELAY BOX

Relay to control a unique seawater pump by different AC units

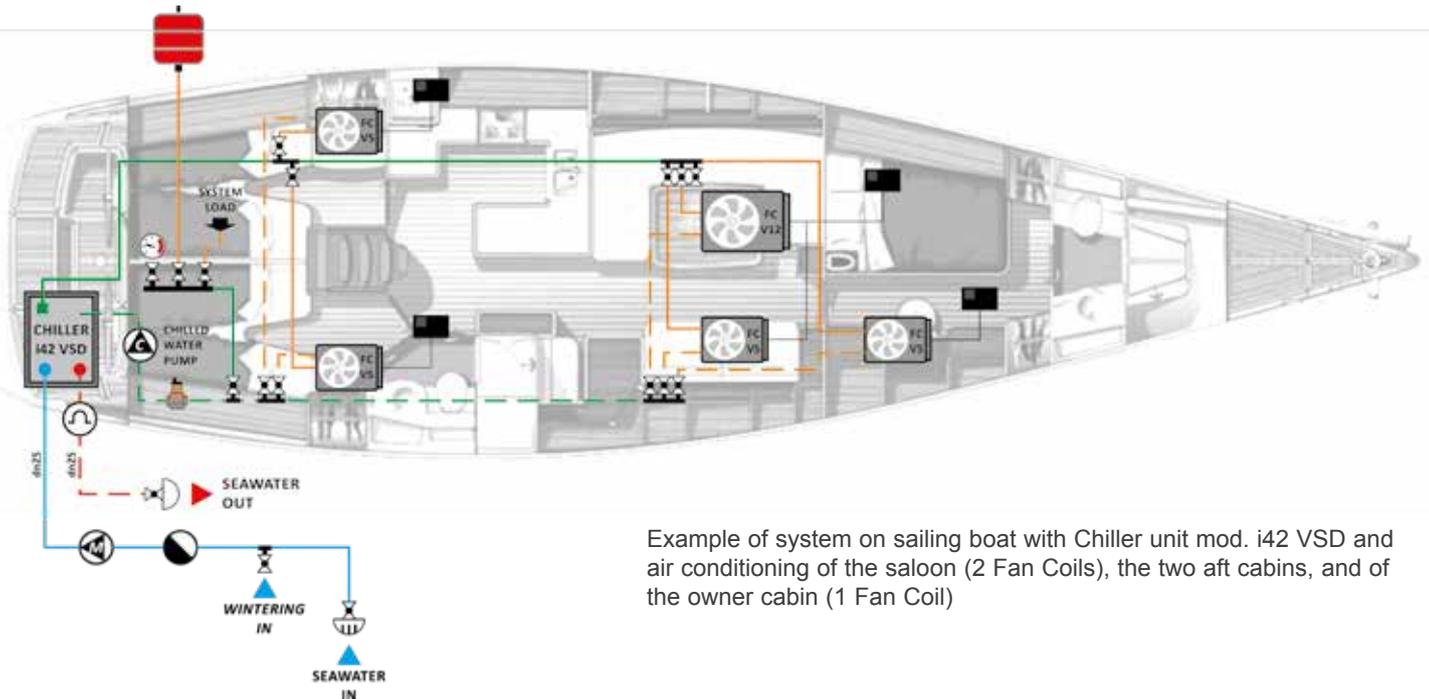
- 23391ZV - Relay Box 1 pump/2 units 230V (30A max)
- 23392BV - Relay Box 1 pump/3-6 units 230V (30A max)
- 23415LV - Relay Box 1 pump/2 units 115V (30A max)
- 23416NV - Relay Box 1 pump/3-6 units 115V (30A max)

23988M

VELAIR compact air conditioner retrofit kit with condensator temperature sensor + remotable room temperature sensor with 10 m cable



SEAWATER CIRCUIT / FRESHWATER-GLYCOL CIRCUIT COMPONENTS CHILLER SYSTEMS



Example of system on sailing boat with Chiller unit mod. i42 VSD and air conditioning of the saloon (2 Fan Coils), the two aft cabins, and of the owner cabin (1 Fan Coil)

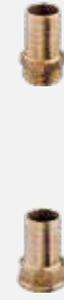
Seawater circuit kit (nickel plated brass)

Seacock, on/off valve, water strainer, hose fittings, through hull include

69475P	1/2" through hull kit
24684W	3/4" through hull kit
69488Z	1" through hull kit
69532Z	Ø int. 16 mm transparent reinforced hose - per meter
69645N	Ø int. 20 mm transparent reinforced hose - per meter
20346C	3 outlet manifold 3/4"M x 3/4"F with valve - 1/2"M connectors - Ø int. 16 mm

HYDRAULIC COMPONENTS FOR CHILLER SYSTEMS

 SEA WATER INTAKE	M	1"	69469V
	M	3/4"	24646M
	M	1/2"	69431T
 SCUPPERS	M	1"	24647P
	M	3/4"	69646R

	VALVES	F/F	1"	69471F
		F/F	3/4"	24648S
		F/F	1/2"	21354G
	FILTERS	F/F	1"	69470D
		F/F	3/4"	24649U
		F/F	1/2"	69433X
	TEE	F/F/F	1"	24650C
		F/F/F	3/4"	24651E
	HOSE ADAPTOR	M	1" 25 mm	69638S
		M	1" 20 mm	24652G
		M	1" 20 mm	69468T
		M	3/4" 25 mm	24653J
		M	3/4" 20 mm	24654L
		M	3/4" 16 mm	24655N
		M	1/2" 16 mm	69430R
		F	1" 25 mm	20473K
		F	3/4" 20 mm	69474M
		F	3/4" 16 mm	24658V
		F	1/2" 20 mm	24659X
		F	1/2" 16 mm	24660F
	DUAL NIPLES	M/M	1"	69472H
		M/M	3/4"	24661H
		M/M	1/2"	24662K
	REDUCED DUAL NIPLES	M/F	1 1/4" to 1"	24663M
		M/F	1" to 3/4"	24664P
		M/F	1" to 1/2"	24665S
		M/F	1" to 1/2"	69733K
	MANIFOLDS	M/F	1" 2 vie	24668Y
		M/F	1" 3 vie	24669A
	CAPS	F	1"	24670J
		F	3/4"	21304R
		M	1"	24671L
		M	3/4"	20348G
	EXPANSION CHAMBERS	Max. press 8 bar - 3/4"	5 lt	24666U
		Max. press 8 bar - 3/4"	8 lt	24007A
	PRESSURE GAUGES	-	-	20450X
	DEAERATOR	M	1"	24674T
	INSULATED HOSES FRESH WATER-GLYCOL	-	DNi 16	24681P/M
		-	DNi 20	24693X/M
		-	DNi 25	24682S/M

T ADAPTER (CONNECTION: IN CONDITIONER/OUT HOSE)

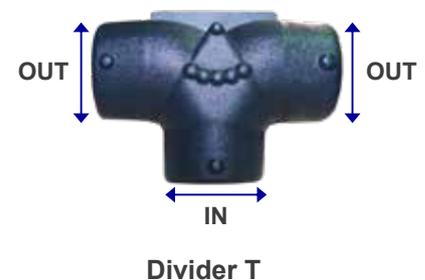
PART No.	DESCRIPTION
62419R	T ADAPT. 100IN 100/100OUT AT444
62420Z	T ADAPT. 125IN 100/100OUT AT544
62421B	T ADAPT. 125IN 125/100OUT AT554
62422D	T ADAPT. 125IN 125/125OUT AT555
62423F	T ADAPT. 150IN 125/100OUT AT654
63899P	T ADAPT. 150IN 100/100OUT AT644

Y ADAPTER (CONNECTION: IN CONDITIONER/OUT HOSE)

PART No.	DESCRIPTION
62424H	Y ADAPT. 100IN 100/100OUT AY444
62425K	Y ADAPT. 125IN 100/100OUT AY544
62426M	Y ADAPT. 125IN 125/100OUT AY554
62427P	Y ADAPT. 125IN 125/125OUT AY555
62428S	Y ADAPT. 150IN 125/100OUT AY654
62875U	Y ADAPT. 150IN 100/100OUT AY644
63546D	Y ADAPT. 150IN 125/125OUT AY655

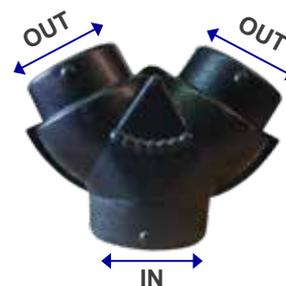
AIR DIVIDERS T (HOSE TO HOSE CONNECTION)

Ø IN mm (")	Ø OUT/OUT mm (")	PART No.
100 (4)	80/80 (3/3)	63902Z
100 (4)	100/100 (4/4)	62225B
125 (5)	100/100 (4/4)	62226D
125 (5)	125/100 (5/4)	63904D
125 (5)	125/125 (5/5)	63905F
150 (6)	100/100 (4/4)	63107A
150 (6)	125/100 (5/4)	63906H
150 (6)	125/125 (5/5)	62227F
150 (6)	150/125 (6/5)	63907K
150 (6)	150/150 (6/6)	63908M



AIR DIVIDERS Y (HOSE TO HOSE CONNECTION)

Ø IN mm (")	Ø OUT/OUT mm (")	PART No.
100 (4)	100/100 (4/4)	62876W
125 (5)	100/100 (4/4)	62220R
125 (5)	125/100 (5/4)	62221T
125 (5)	125/125 (5/5)	63910Y
150 (6)	100/100 (4/4)	62222V
150 (6)	125/100 (5/4)	62223X
150 (6)	125/125 (5/5)	62224Z
150 (6)	150/100 (6/4)	61344O



Divider Y

FITTINGS FOR TRANSITION BOXES

Ø HOSE mm (")	ROUND HOSE RING	OVAL HOSE RING
80 (3)	61651P	-
100 (4)	62204T	62206X
125 (5)	62205V	62207Z
150 (6)	63912C	62208B
200 (8)	-	61319P



TRANSITION BOXES (WITHOUT FITTINGS)

Transition boxes (without fittings)	
69534D	TB-04x04 mm 100x100
62216A	TB-06x04 mm 150x100
62217C	TB-08x04 mm 200x100
62531J	TB-08x06 mm 200x150
62555Z	TB-08x08 mm 200x200
62218E	TB-10x04 mm 250x100
62576H	TB-10x06 mm 250x150
62219G	TB-10x08 mm 250x200
61331J	TB-12x04 mm 300x100
63918R	TB-16x04 mm 400x100



20645N - Bend 90° outlet - 125 mm

TRANSITION BOXES (WITH HOSE CONNECTIONS)

Ring back (straight)	
64252R	TB-04x04-04OB mm 100x100 c/ racc. back mm 100
64253T	TB-06x04-04OB mm 150x100 c/ racc. back mm 100
64254V	TB-08x04-04OB mm 200x100 c/ racc. back mm 100
64255X	TB-08x04-05OB mm 200x100 c/ racc. back mm 125
64256Z	TB-10x04-05OB mm 250x100 c/ racc. back mm 125



TRANSITION BOXES (WITH HOSE CONNECTIONS)

Ring side (long side)

64257B	TB-08x04-04OS mm 200x100 c/ racc. long side mm 100
64258D	TB-08x04-05OS mm 200x100 c/ racc. long side mm 125
64259F	TB-10x04-04OS mm 250x100 c/ racc. long side mm 100
64260P	TB-10x04-05OS mm 250x100 c/ racc. long side mm 125
61336O	TB-12x04-06OS mm 300x100 c/ racc. long side mm 150



Ring end (short side)

64261S	TB-04x04-04RE mm 100x100 c/ racc. short side mm 100
64262U	TB-06x04-04RE mm 150x100 c/ racc. short side mm 100
64263W	TB-08x04-04RE mm 200x100 c/ racc. short side mm 100
64264Y	TB-10x04-04RE mm 250x100 c/ racc. short side mm 100
64265A	TB-10x06-05RE mm 250x150 c/ racc. short side mm 125



Insulated, flexible duct (aluminum/insulation)

67112P	Air hose Ø int. mm 100
69139X	Air hose Ø int. mm 125
67113S	Air hose Ø int. mm 150
20471F	mm 50 reinforced aluminum tape



Insulated, flexible duct (aluminum/insulation)

600116S	Ø int 80 mm air duct for 75 mm round grill applications
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SUPPLY ROUND GRILLS (NO PLENUM REQUIRED)

Round plastic supply grills

62209D	mm 100 (4") round damper vent, black
62210M	mm 100 (4") round damper vent, white
69615D	mm 75 (3") round damper vent, white
69428E	mm 100 (4") round grill, white (not closeable)
69616F	mm 100/75 (4"/3") round adapter
20648V	mm 125/100 (5"/4") round adapter



RETURN AIR GRILLS

Anodized aluminum return air grills

69490K	mm 250x150
69422S	mm 300x200
61380Z	mm 300x300
69423U	mm 400x250
61381A	mm 400x400
66706R	mm 600x150



Teak return air grills (with air filter)

69494U	mm 250x150
69497A	mm 300x200
69498C	mm 400x250



White aluminum return air grills (with air filter)

20864B	mm 250x150
69605A	mm 300x200
20865D	mm 400x250

*Black aluminum models are also available



Anodized aluminum supply air grills

20652K	mm 297x53
20651H	mm 475x55
69466N	mm 100x100
69022Z	mm 150x100
69023B	mm 200x100
63074M	mm 200x200
69021X	mm 250x100
69421P	mm 250x150
21319E	mm 300x100



Teak supply air grills

64195F	mm 100x100
64534B	mm 150x100
64535D	mm 200x100
64536F	mm 200x150
61652S	mm 250x100
61653U	mm 250x150
64361W	mm 250x250
22187V	mm 300x100



RETURN AIR GRILLS

Teak supply damper vents (closeable)

69492P	mm 100x100
69493S	mm 200x100
69910F	mm 250x100
69506Y	mm 250x150



White aluminum supply air grills

69914P	mm 100x100
69915S	mm 200x100
69916U	mm 250x100
22791L	mm 300x100



Black aluminum supply air grills

20881B	mm 200x100
69630Z	mm 250x100
69631B	mm 400x100



White aluminum supply grills (closeable)

69533B	mm 100x100
69917W	mm 200x100
69918Y	mm 250x100



 **wallas[®]**





22GB



30GB

Wallas® diesel heaters are a good system, extremely easy to install, to heat boats up to 15 m (50 ft). The sound level equals to the level of whispering in the library, thanks to the laminar burning combustion.

The sound of burning cannot be heard from the exhaust pipe and the boat next to yours can enjoy the silence as well.

The power consumption is the lowest compared to its competitors and enable you to keep your boat warm, even with small battery capacity. To ensure the highest quality, every single Wallas® product is manually tested before delivery.

Warranty: 3 years.



50 Spartan Air

TECHNICAL SPECIFICATIONS

MODEL	22GB	30GB	50 Spartan Air
Part No	22750W	22095P	22751Y
Fuel	Diesel	Diesel	Diesel
Power (W)	1000-2500	1000-3200	1400-4500
Operating voltage (V)	12	12	12
Fuel consumption (l/h)	0,1-0,25	0,1-0,33	0,16-0,46
Electricity consumption (A)	0,7-1,2	1,0-2,0	0,7-4,5
Heat min-max air flow (³ /h)	51-79	61-103	102-227
Dimensions W x D x H mm (")	424x140x278 (16.7x5.5x10.9)	424x140x278 (16.7x5.5x10.9)	424x165x307 (16.7x6.5x12.1)
Weight kg (lbs)	10 (22)	10 (22)	15 (33.1)

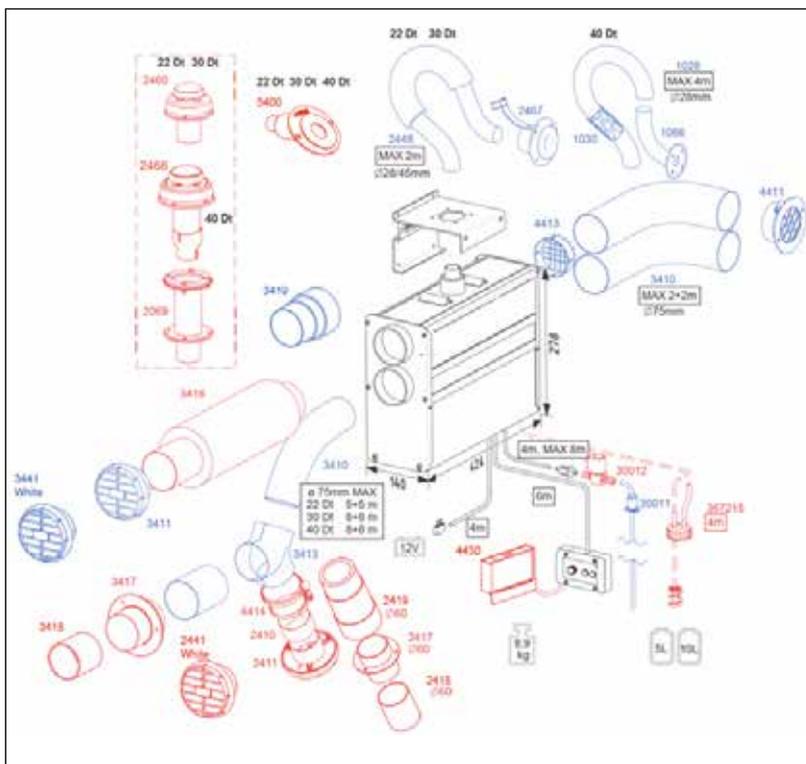
Elegant control panel features:

- Smooth PI-controlled thermostat adjustment
- Manual temperature adjusting
- Two-step air boost function
- Automatic shutdown in case of temperature increase
- Protection of accidental start and stop
- Recessed mounting

The **Wallas® Remote Control** allows you to turn on and shut down the heater remotely, so you may heat up your boat from your home, at the desired temperature. You may use a Smartphone, a tablet or a pc to manage the heating of your boat. The Remote Control displays temperature in C° and F° and shows battery voltage in order to know, in real-time, the battery charge status.



CONTROL PANEL



REMOTE CONTROL - 69238Z

ACCESSORIES

A wide range of accessories are available for the installation. The heater box includes: heater, control panel, mounting bracket, 4 m of the fuel hose, fuel filter, 4 m power cable and the fuse box with fuse. You need to order separately drainpipe and air ducting components.



HULL LEAD-THROUGH - 69228W



DECK LEAD-THROUGH - 69227U



WARM AIR VENTILATION

The Wallas® stove heaters are perfect for marine applications. They do not run on gas, so you do not need gas bottles on board and they do not require current generators to be electrically powered. Under the elegant hob, there is a diesel burner powered by engine fuel tank.

The Wallas stoves aspire the combustion air from the cabin and carry the exhaust gases outside. Thanks to this feature, the cool air is forced to enter by creating a positive effect of washing with fresh air recycling, which reduces the humidity inside the boat and the mold growing.

Main advantages:

- Safe. No exposed flame means safety and no moisture added to the cabin. Non-explosive fuel.
- No humidity. Combustion gases are diverted outside.
- Easy cleaning thanks to the smooth glass-ceramic hob.
- With heat blower lid, you can transform your stove into a 2kW cabin heater.



85NDT



85NDT



85DP



88DU



85DT



85DP



88DU



Nordic DT
(85 DT + cover 270)

TECHNICAL SPECIFICATIONS

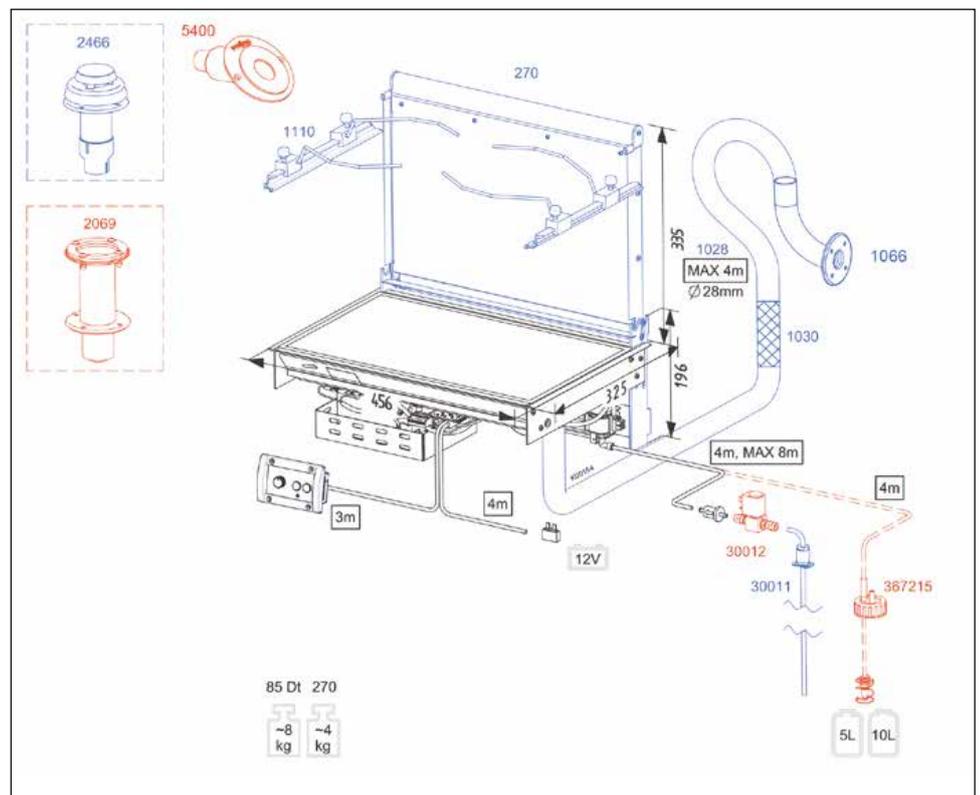
MODEL	85DT	85DP	88DU	Nordic DT (85DT+270)
Part No.	69377P	69378S	69379U	69380C
Fuel	Diesel	Diesel	Diesel	Diesel
Power	900 - 1900W	900 - 1900W	900 - 1900W	900 - 1900W
Operating voltage	12 V	12 V	12 V	12 V
Fuel consumption	0,09 – 0,19 l/h			
Electricity consumption	0,35 A	0,35 A	0,9 A	0,85 A
Dimensions W x D x H mm (")	456x325x159 (17.9x12.8x6.3)	475x370x162 (18.7x14.6x6.4)	466x316x172 (18.3x14.6x6.8)	456x325x196 (17.9x12.8x7.7)
Weight kg (lbs)	8 (17.6)	10 (22.0)	9 (19.8)	12 (26.5)

ACCESSORIES

85NDT, 85 DT + 270

A large range of accessories is available for installation. In addition to components for the exhaust line (thru-hull for bulkhead, deck or transom), you may install other useful accessories such as the vented cover to transform the stove into a heater (for 85DT and 85DP models) and pot holders, pivoting brackets, etc.

22752A - Vented cover for 85DT
21471L - Vented cover for 85DP



VELAIR

MARINE AIR CONDITIONERS



EneOn[®]

ENERGY ON BOARD

MARINE GENERATORS



UFLEX

TRIM TABS





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