

Bellmarine®

powered by Transfluid



TRANSFLUID®
industrial & marine

ELECTRIC PROPULSION SYSTEMS



drive with us

Intro



Electric boating starts at Bellmarine.

In the world of electric propulsion systems Bellmarine is the standard. Years of experience, quality, innovation and durability are a guarantee for pure boating pleasure.

Perfection in every detail

All parts installed below decks have to be of the highest quality; Moisture and salt will take their toll and have effect on the durability of your drive system. Only the best materials are suitable and each have been carefully selected by Bellmarine.

E-motion in propulsion

The Bellmarine systems are developed and produced in Italy and in the Netherlands. With thousands of electric propulsion systems in use Bellmarine has set the standard.

You are assured the highest quality and service. Also the price of a complete system will be a pleasant surprise.

Certificates

Batteries

Our battery System successfully passed all the DNV-GL tests including the new 2018 forced thermal runaway and this makes it compliant with Norwegian Maritime Authority (NMA) Propagation Test 1

All Bellmarine Systems are compliant with the European Standard lying down Technical Requirements for Inland Navigation vessels (ES-TRIN)

Electric Motors & Motor Controller

All Bellmarine Systems are compliant with the European Standard lying down Technical Requirements for Inland Navigation vessels (ES-TRIN)



Master Info

- 1 - All motors are Permanent Magnets AC, high efficiency, IP65
- 2 - Intermittent kW: S3 10% - 10' (1 minute at intermittent power then reduced for 9 minutes power to return to stable temperature)
- 3 - Battery: 48V, 96V and 144V can be of any chemistry and brand; 288V and 384V need to be Transfluid's battery.

BATTERY	max [Vdc]	min [Vdc]
48	61	44
96	115	82
144	169	121
288	346	247
384	462	330

To evaluate the battery characteristics in case of customer's supply please use the following formula giving the max (A) current required by Transfluid's motors:

$$I (A) = \frac{kW \times 1000}{V} \times 2$$

4 - RATINGS:

- Cruising speed: 70% of rated motor rpm
- Light Duty: air cooled motor, up to 200 hours/year, intermittent kW allowed
- Medium Duty: air cooled motor, up to 500 hours/year, only nominal kW allowed
- Medium Duty: liquid cooled motor, up to 1000 hours/year, intermittent kW allowed
- Heavy Duty: liquid cooled motor, up to 3000 hours per year, intermittent kW allowed, max 80% of time at rated rpm and load

5 - Separate thrust bearing is recommended above 20 kW

6 - For Torque calculation use the formula: $T (Nm) = \frac{kW}{rpm} \times 9550$

DriveMaster

Permanent magnet motors for installation on shaft lines; available with air or liquid cooling. Maximum efficiency, silent and compact solution. Regeneration via trailing propeller possible.

Air Cooled

Including:

- Motor with mounting brackets and silent blocks
- Motor with integrated thrust bearing
- Vector control inverter IP65
- Main switch and main fuse
- DC-DC converter 12 Vdc
- 1,5m cable for display, lever, key
- Quick install / easy connect / plug and play

Optional:

- NMEA2000 compatible (upon request)
- Regeneration kit



Light & Medium Duty

PRODUCT CODE	DESCRIPTION	MOTOR SIZE	Light & Medium Duty		BATTERY Vdc	MOTOR rpm
			NOMINAL kW	INTERMITTENT kW		
BV101489A	DriveMaster 2A	180-4	1.5	2	48	1500
BV100854A	DriveMaster 5A	180-8	4	5	48	1500
BV101529A	DriveMaster 7A	180-12	5	7	48	1500
BV101808A	DriveMaster 10A	220-20	8	10	48	1500
BV102008A	DriveMaster 8A	180-12	6	8	96	1500
BV102015A	DriveMaster 15A	220-20	10	15	96	1500
BV101288A	DriveMaster 25A	220-35	20	25	144	1500
BV102035A	DriveMaster 35A	300-50	30	35	144	1500
BV102050A	DriveMaster 50A	300-75	40	50	144	1500

DriveMaster

Liquid Cooled

Including:

- Motor with mounting brackets and silent blocks
- Motor with integrated thrust bearing
- Vector control inverter IP65
- Main switch and main fuse
- DC-DC converter 12 Vdc
- 1,5m cable for display, lever, key
- Quick install / easy connect / plug and play
- Inlet and outlet liquid connections

Optional:

- NMEA2000 compatible (upon request)
- DP280 ratio $i = 1.59 - 2.01 - 2.41 - 2.87 - 3.35 - 3.97 - 5.01$
- Regeneration kit



Medium & Heavy Duty

PRODUCT CODE	DESCRIPTION	MOTOR SIZE	NOMINAL kW	INTERMITTENT kW	BATTERY Vdc	MOTOR rpm
BV101608W	DriveMaster 3W	180-4	2.5	3	48	1500
BV100854W	DriveMaster 7W	180-8	5	7	48	1500
BV100808W	DriveMaster 10W	180-12	8	10	48	1500
BV100810W	DriveMaster 15W	220-20	10	15	48	1500
BV101610W	DriveMaster 20W EVO	220-20 (*)	15	20	48	1500
BV100812W	DriveMaster 20W	220-20	15	20	96	1500
BV101288W	DriveMaster 30W	220-35	25	30	144	1500
BV101642W	DriveMaster 45W	300-50	35	45	144	1500
BV101580W	DriveMaster 55W	300-75	45	55	144	1500

(*) Special



• Complete the scope of supply by adding control throttle, display, cooling kit, coupling, shaft with propeller

SailMaster

Permanent magnet motors with Sail Drive transmission; available with air or liquid cooling.
Ideal for sail boats with regeneration via trailing propeller.

Air Cooled

Reduction ratio $i=2$

Propeller rpm = motor rpm/i

Including:

- Motor with mounting flange
- Vector control inverter IP65
- Main switch and main fuse
- DC-DC converter 12 Vdc
- 1,5m cable for display, lever, key
- Quick install / easy connect / plug and play
- Leg SD25 by Yanmar

Optional:

- NMEA2000 compatible (upon request)
- Regeneration kit



(Propeller not included)

Light & Medium Duty

PRODUCT CODE	DESCRIPTION	MOTOR SIZE	NOMINAL kW	INTERMITTENT kW	BATTERY Vdc	MOTOR rpm
BV101492A	SailMaster 2A	180-4	1.5	2	48	1500
BV101611A	SailMaster 5A	180-8	4	5	48	1500
BV101901A	SailMaster 7A	180-12	5	7	48	1500
BV101922A	SailMaster 10A	220-20	8	10	48	1500
BV101933A	SailMaster 8A	180-12	6	8	96	1500
BV101955A	SailMaster 12A	180-12	8	12	96	3000
BV101944A	SailMaster 15A	220-20	10	15	96	1500
BV101476A	SailMaster 20A	220-20	15	20	96	3000



- Complete the scope of supply by adding control throttle, display, cooling kit.



SailMaster

Liquid Cooled

Reduction ratio $i = 2$

Propeller rpm = motor rpm/i

Including:

- Motor with mounting flange
- Vector control inverter IP65
- Main switch and main fuse
- DC-DC converter 12 Vdc
- 1,5m cable for display, lever, key
- Quick install / easy connect / plug and play
- Inlet and outlet liquid connections
- Leg SD25 by Yanmar

Optional:

- NMEA2000 compatible (upon request)
- Regeneration kit



(Propeller not included)

Medium & Heavy Duty

PRODUCT CODE	DESCRIPTION	MOTOR SIZE	NOMINAL kW	INTERMITTENT kW	BATTERY Vdc	MOTOR rpm
BV100881W	SailMaster 3W	180-4	2.5	3	48	1500
BV100882W	SailMaster 7W	180-8	5	7	48	1500
BV101474W	SailMaster 10W	180-12	8	10	48	1500
BV101475W	SailMaster 15W	220-20	10	15	48	1500
BV101955W	SailMaster 18W	180-12	12	18	96	3000
BV101476W	SailMaster 25W	220-20	20	25	96	3000



• Complete the scope of supply by adding control throttle, display, cooling kit.

OutboardMaster

Permanent magnet motors in the Outboard version; available with air or liquid cooling.
 Long-lasting outboard designed for work boats or for frequent use.
 Air or liquid cooled.

Air Cooled

Reduction ratio $i=2$
 Propeller rpm = motor rpm/i

Including:

- Motor with mounting brackets
- Vector control inverter IP65
- Anti ventilation / cavitation plate (incl. anode)
- Main switch and main fuse
- DC-DC converter 12 Vdc
- 1,5m cable for display, lever, key
- Quick install / easy connect / plug and play
- Leg SD25 by Yanmar

Optional:

- NMEA2000 compatible (upon request)



(Propeller not included)

Light & Medium Duty

PRODUCT CODE	DESCRIPTION	MOTOR SIZE	NOMINAL	INTERMITTENT	BATTERY	MOTOR
			kW	kW		
BV101966A	OutboardMaster 7A	180-12	5	7	48	1500
BV101978A	OutboardMaster 10A	220-20	8	10	48	1500
BV101977A	OutboardMaster 8A	180-12	6	8	96	1500
BV101500A	OutboardMaster 12A	180-12	8	12	96	3000
BV101988A	OutboardMaster 15A	220-20	10	15	96	1500
BV101999A	OutboardMaster 20A	220-20	15	20	96	3000

Liquid Cooled

Reduction ratio $i=2$
 Propeller rpm = motor rpm/i

Including:

- As above
- Inlet and outlet liquid connectors

Medium & Heavy Duty

PRODUCT CODE	DESCRIPTION	MOTOR SIZE	NOMINAL	INTERMITTENT	BATTERY	MOTOR
			kW	kW		
BV101966W	OutboardMaster 10W	180-12	8	10	48	1500
BV101977W	OutboardMaster 15W	220-20	10	15	48	1500
BV101500W	OutboardMaster 18W	180-12	12	18	96	3000
BV101988W	OutboardMaster 25W	220-20	20	25	96	3000



- Complete the scope of supply by adding control throttle, display, cooling kit.



Accessories

Propeller shaft assembly

Motor - Propeller Shaft Couplings

PRODUCT CODE	DESCRIPTION	
101219A ...	Motor - shaft clamping Ø 25 mm bore	To be used in combination with propeller shaft Ø 25 mm. (produced in Stainless Steel)
101220A ...	Motor - shaft clamping Ø 30 mm bore	To be used in combination with propeller shaft Ø 30 mm. (produced in Stainless Steel)
GAB3M20 ...	Motor - shaft B3M20 coupling	To be used in combination with propeller shaft Ø 35 mm or Ø 40 mm with rubber blocks (needs separate thrust bearing)

(•••) According to machined bores



Propeller Shaft

by ELICHE RADICE

PRODUCT CODE	DESCRIPTION	Ø DIA mm	MAX TORQUE Nm	LENGHT mm	CAN BE SHORTENED
100427	Ecoline 25	25 *	50	1500	
BV104429	Proline 25	25	70	1500	
BV104431	Proline 30	30	120	1700	
BV104433	Proline 35	35	190	2000	
BV104435	Proline 40	40	280	2000	

(*) Without bracket - SS316 stern tube

Including:

- Stern tube (Aluminum)
- Shaft (SS316)
- Nose with zinc (anode)
- Nut and washer (nose)
- Water lubricated axial seal (rubber)
- Bracket to be resined (Bronze)

$$Nm = \frac{kW}{rpm} \times 9550$$

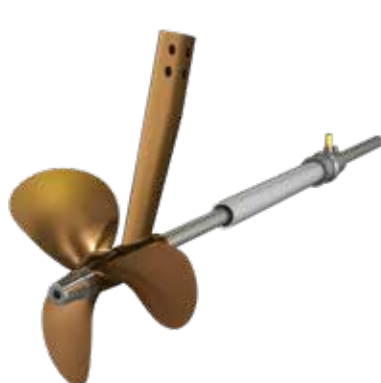
Propeller (three blades) FPP

by ELICHE RADICE

- Material: Bronze Cu2 - Dynamic balancing

PRODUCT CODE	Ø DIA inch (mm)	Ø SHAFT mm	PITCH inch
BV105001 ...	12 (305)	25	from 8 to 11
BV105003 ...	13 (330)	30	8 - 13
BV105005 ...	14 (355)	30	8 - 14
BV105007 ...	15 (380)	35	8 - 14
BV105009 ...	16 (405)	35	9 - 16
BV105011 ...	17 (430)	35	10 - 16
BV105013 ...	18 (455)	40	10 - 16

(•••) According to pitch

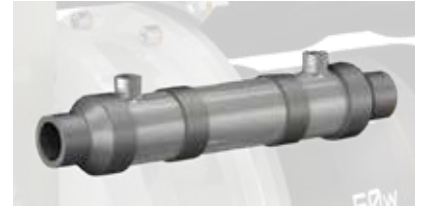


Accessories

Liquid Cooling

Water cooling accessories for all Systems.

Depending on the location of sailing there are two types of water cooling for motor and controller. The controller and motor are not salt water resistant, so when it you will be sailing in salt water, you must choose for the closed loop cooling system instead of cooling with external water.



Fresh water cooling

PRODUCT CODE	DESCRIPTION	
100798A	Fresh water cooling kit	Includes: self priming pump, 2 x hull fittings, ball valve, bronze water strainer, 5 m hose, hose barbs and SS hose clamps.



Closed loop cooling

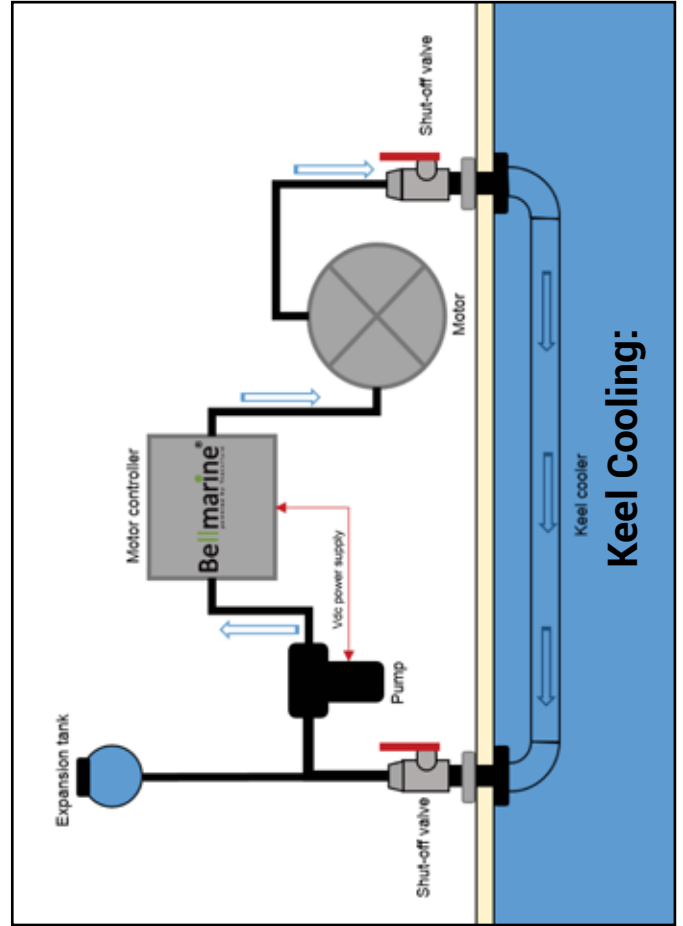
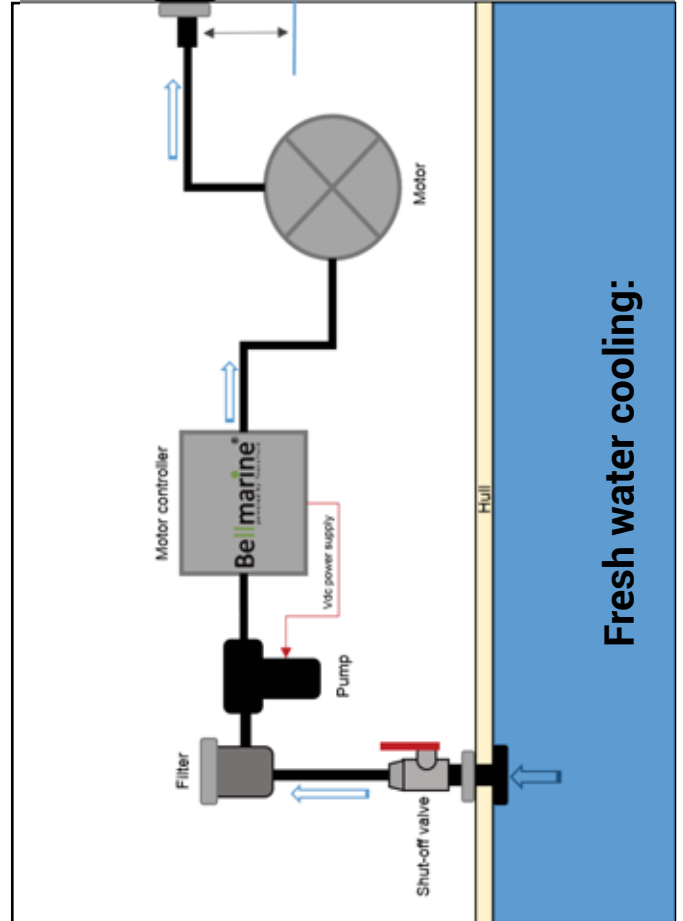
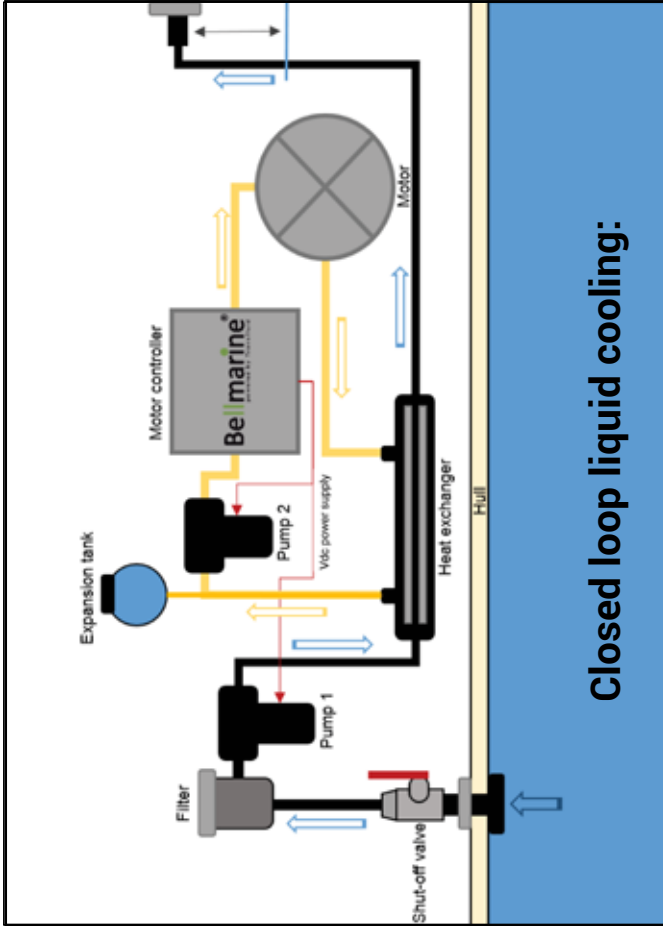
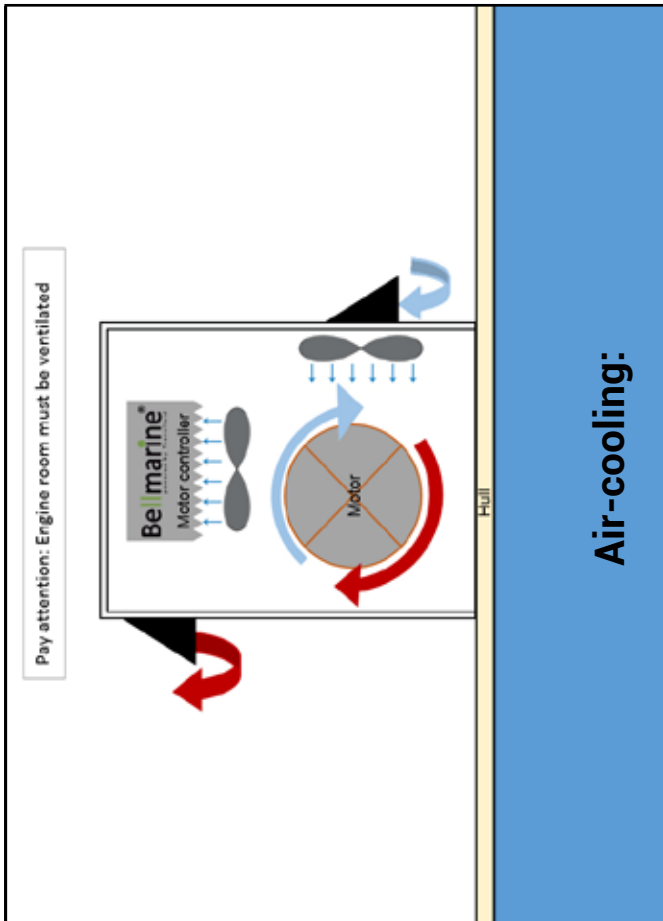
PRODUCT CODE	DESCRIPTION		SIZE	POWER ADVISE
101446	Cooling System with install connections kit	Includes: circulation pump, self priming pump, heat exchanger, 2x hull fittings, ball valve, bronze water strainer, 5 m hose, expansion vessel, hose barbs and SS hose clamps.	S	Up to 20 kW
101447			M	20 to 55 kW
101448			L	55+ kW



Keel cooling

PRODUCT CODE	DESCRIPTION	
101531A	Cooling System with install connections kit	Includes: Circulation pump, 5 m hose, expansion vessel, 2x hull fittings, 2x ball valves, and SS brackets, hose barbs and SS hose clamps.





Bellmarine designed hard and software which easily combine with the powerful range of nautical products of Raymarine. The Axiom multifunction displays deliver the speed and simplicity of the Lighthouse III user interface, which ensures smooth operation of the touchscreen.

Now it is possible to integrate your electric propulsion 1 or 2 Bellmarine motor system information into your complete boat system and have everything on one well-arranged screen including GPS speedometer and chart plotter.

With the standard integrated Wi-Fi function, you will always have an extra screen on your tablet or smartphone.



Raymarine display – Axiom+ 7, 9 & 12

Our system is supplied complete with special motor controller software and adapter cable installed

Your choice is supplied with the Actisense NMEA 2000® backbone in a single device and is pre assembled with the Bellmarine custom page.

- **Every display / cable set is supplied with the Actisense NMEA2000 backbone and 2m cable**
The standard length of the cable set = 5 meter.
- Adding the 'NMEA2000 configuration kit' for visualizing all system features see on the option kits

PRODUCT CODE	MODEL	DESCRIPTION
BV101516A	Bellmarine MFD Axiom+ 7	7" Multi functional display incl. integrated Wi-Fi incl. A2K-SBN4, cable set
BV101417A	Bellmarine MFD Axiom+ 9	9" Multi functional display incl. integrated Wi-Fi incl. A2K-SBN4, cable set
BV108128	Bellmarine MFD Axiom+ 12	12" Multi functional display incl. integrated Wi-Fi incl. A2K-SBN4, cable set

- Models with integrated RealVision sonar module on request



Accessories

Display

For every System a display and cable set is highly recommended for monitoring and control.

- With cable adapter



TF Easy



TF1



TF Pro



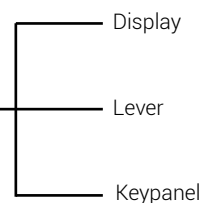
TF2

PRODUCT CODE	DESCRIPTION	
BVTE3281C	TF Easy	Display with battery status indication, motor power, motor rpm, motor temperature, controller temperature, eco meter, battery amps, battery voltage and mode selection. For any type of battery. Incl. cable set for monitoring and control
BVTE3281D	TF Pro - Full Colour	Colour display with battery status indication, motor power, motor rpm, motor temperature, controller temperature, eco meter, battery amps, battery voltage and mode selection. For any type of battery. Incl. cable set for monitoring and control
BVTE3281A	TF1 - Full Colour	Colour display with battery status indication, motor power, motor rpm, motor temperature, controller temperature, eco meter, battery amps, battery voltage and mode selection. For any type of battery. Incl. cable set for monitoring and control
BVTE3281B	TF2 - Full Colour	Colour display for twin screw system with battery status indication, motor power, motor rpm, motor temperature, controller temperature, eco meter, battery amps, battery voltage and mode selection. For any type of battery. Incl. cable set for monitoring and control
BVTE3280A	Extension cable length 2,5m	Signal cable between dashboard and engine room
BVTE3280B	Extension cable length 5m	
BVTE3280C	Extension cable length 10m	
BVTE3280D	Extension cable length 15m	
BVTE3280E	Extension cable length 20m	



Motor controller

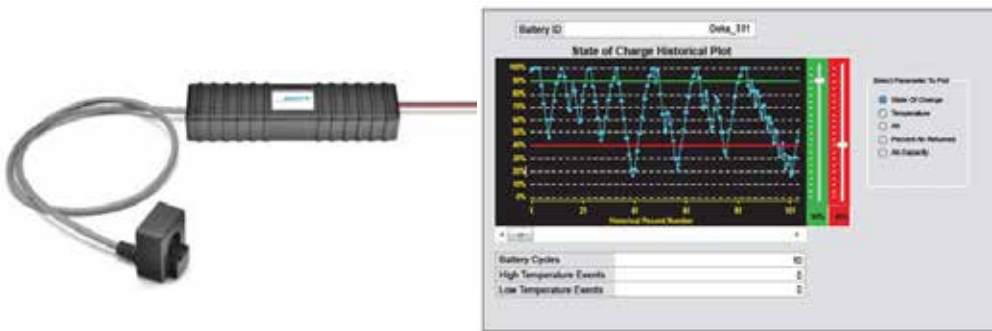
Extension



Accessories

ACUITY - Battery condition monitoring system

All our propulsion Systems can be enhanced with a “state of art” battery condition monitoring system. ACUITY constantly measures and logs the precise condition of your battery. This detailed information will be displayed on your display, including the multifunctional displays from Raymarine. Also the historic data can be downloaded to a PC with a USB interface. Acuity requires special motor controller software. Only available for lead acid battery technology.



Acuity accurate battery management

PRODUCT CODE	MODEL	
101466	Acuity 24–48 VDC	Standalone unit
101542	Acuity 72–144 VDC	Standalone unit
101559	Acuity USB Interface + Software	Configuration and monitoring PLC software and interface

Option kits

PRODUCT CODE	DESCRIPTION
101640	Regeneration / during sailing Includes custom cable set and motorcontroller setup
100332	Help and Configuration on Distance interface: Diagnose or configure your Bellmarine system on distance: USB / PLC interface OEM 1314k-4401 v4.3.3 pc program station.
BVTE3281E	NMEA2000 configuration kit Includes display TF Easy for diagnostic + Software

Accessories

Bellcontrol Throttle

- Water resistant (IP67)
- Electronic hall-sensor technology 0-5 Volt.
- With adapter cable
- Double control station available upon request

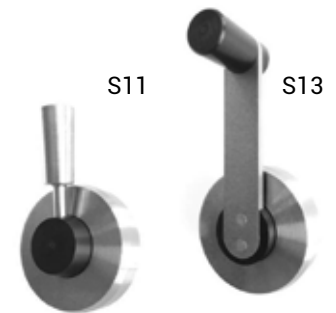
Top mounting single

P. CODE	DESCRIPTION	TYPE	TOP MOUNT
101429	Bellcontrol Casual - SS	TC1-11	Stainless Steel version with black delrin base, top mount, IP67 (contactless hall effect sensor, 0-5V output)
101431	Bellcontrol Sport - SS	TC1-13	Stainless Steel / Sport version with black delrin base, top mount, IP67 (contactless hall effect sensor, 0-5V output)



Side mounting

P. CODE	DESCRIPTION	TYPE	SIDE MOUNT
101423	Bellcontrol Casual - SS	S11	Stainless Steel version, side mount, IP67 (contactless hall effect sensor, 0-5V output)
101425	Bellcontrol Sport - SS	S13	Stainless Steel / sport version, side mount, IP67 (contactless hall effect sensor, 0-5V output)



Top mounting dual

P. CODE	DESCRIPTION	TYPE	TOP MOUNT - DUAL CONTROL
101433	Bellcontrol Casual - SS	TC2-11	Stainless Steel version with black delrin base, dual joystick top mount, IP67 (contactless hall effect sensor, 2x 0-5V output)
101435	Bellcontrol Sport - SS	TC2-13	Stainless Steel / sport version with black Delrin base, dual joystick top mount, IP67 (contactless hall effect sensor, 2x 0-5V output)



TFcontrol Throttle

- Water resistant (IP67)
- With adapter cable
- Double control station available upon request
- Mandatory for 288 and 384V systems

P. CODE	DESCRIPTION	TYPE	TOP MOUNT
GMTE3274..A	Single station for single screw	TFC1-11	Stainless handle, top mount, IP67 (0-5V output)
GMTE3274..B	Single station for twin screw	TFC2-11	Stainless handle, top mount, IP67 (0-5V output)



Accessories

Battery LiFePO4

Based on lithium iron phosphate cells (LiFePO4), a technology that is safe and has the best performance/cost ratio, with integrated BMS to maintain the cells always equalized and efficient. Box is stainless steel IP65.

Long lifespan

- More than 4,000 cycles

The lifespan is 3 times longer than traditional batteries, making the cost per cycle lower. Maintenance-free, planned service is avoided, having no need of topping up or periodical checks. The conditions of the battery can be easily verified thanks to integrated diagnosis systems. No gas emissions during charge and discharge, so no special charging rooms are required. They may be charged at any place with maximum safety.

Suited for every application

Having no gas emissions, these batteries are suited also for marine and many industrial applications.

Apply Transfluid-Bellmarine for CAN-bus wires kit; 2m, 5m, 10m, 15m, 20m. (for battery and battery charger)

General Specifications

Capacity Ah	Contin. discharge A	Pulse discharge A	Continuous charge A	Pulse charge A	Operating Temperature °C	Box Material	Protection Class
100	100	200	50	100	0/60 (-20/60 optional)	SS316	IP65
200	200	400	100	200			
300	300	600	150	300			
400	400	800	200	400			
600	600	1200	300	600			
800	800	1600	400	800			

48V

Energy kWh	Architecture	Dimension Single Box *	Number Of Modules	Total Weight
10.3	Single Module	620x677 h352 mm	1	130 kg
20.5	2P	620x677 h352 mm	2 + MCR	260 kg
30.8	3P	620x677 h352 mm	3 + MCR	390 kg
41.0	4P	620x677 h352 mm	4 + MCR	520 kg

96V

Energy kWh	Architecture	Dimension Single Box *	Number Of Modules	Total Weight
9.6	Single Element	506x876 h293 mm	1	130 kg
19.2	Single Element	619x955 h352 mm	1	230 kg
28.8	3P	506x876 h293 mm	3 + MCR	390 kg
38.4	2P	619x955 h352 mm	2 + MCR	460 kg
57.6	3P	619x955 h352 mm	3 + MCR	690 kg
76.8	4P	619x955 h352 mm	4 + MCR	920 kg

144V

Energy kWh	Architecture	Dimension Single Box *	Number Of Modules	Total Weight
30.8	3S	620x677 h352 mm	3	390 kg
61.4	3S - 2P	620x677 h352 mm	6 + MCR	780 kg
92.2	3S - 3P	620x677 h352 mm	9 + MCR	1170 kg
122.9	3S - 4P	620x677 h352 mm	12 +MCR	1560 kg



MCR dimensions:
300x350xh160 mm, weight: 10.7 kg

For 288 V and 384 V battery pack, contact Transfluid (with DNV-GL & NMA type approval)

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Electric Boating starts at Bellmarine



TRANSFLUID®

industrial & marine

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