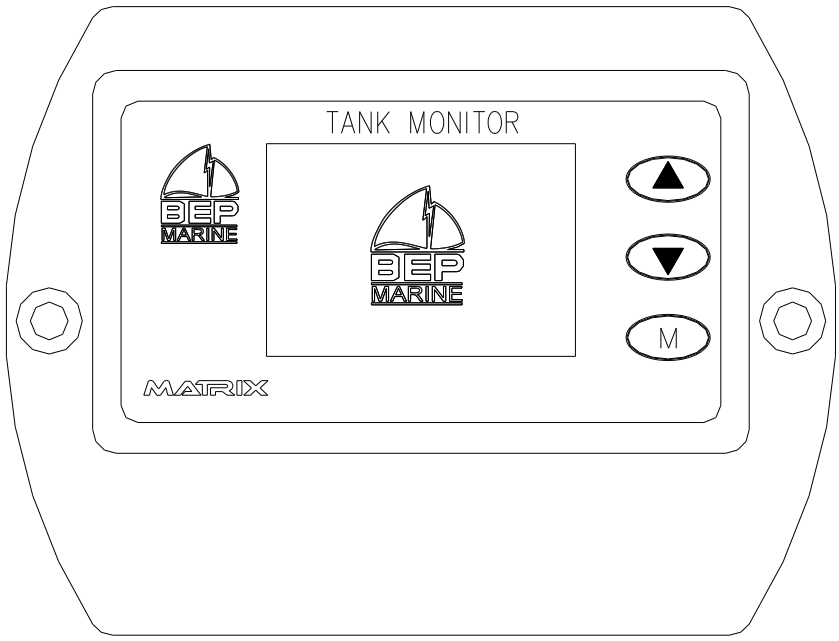
BEP 600-TLM-N
CONTOUR MATRIX
TANK MONITOR

INSTALLATION
AND
OPERATING INSTRUCTIONS



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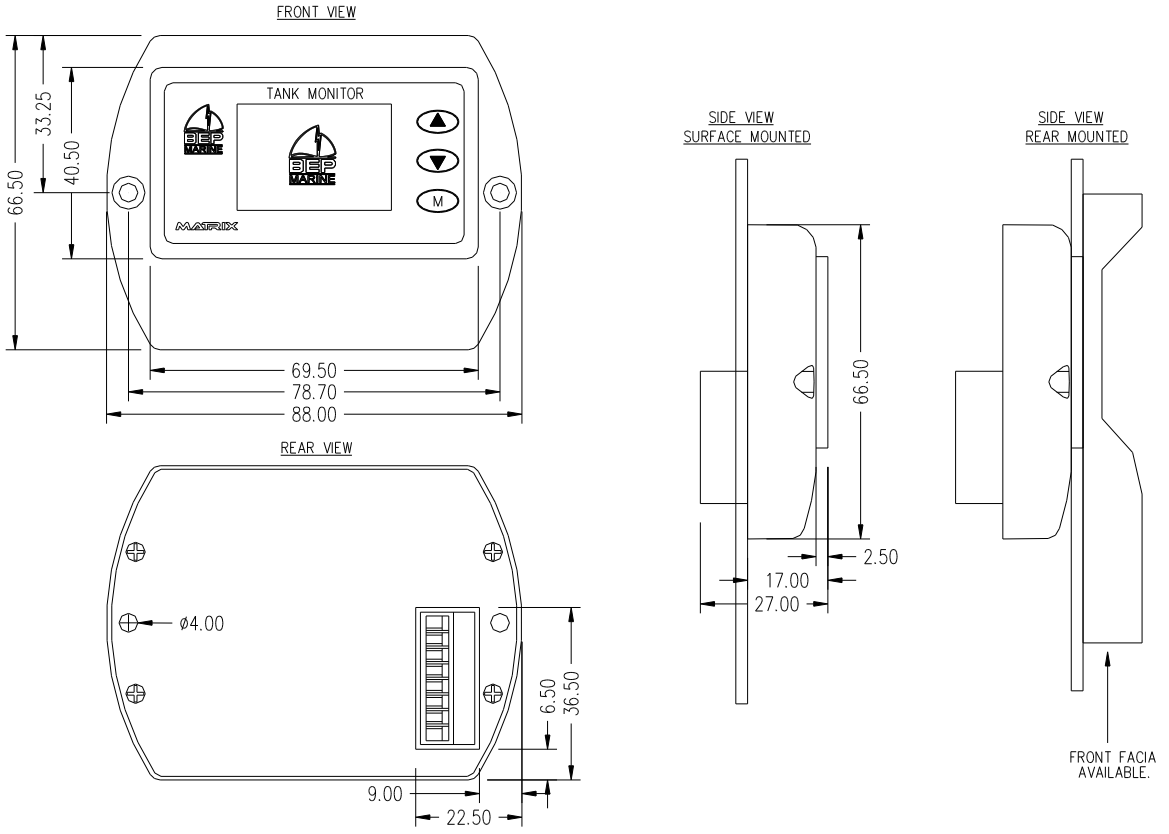
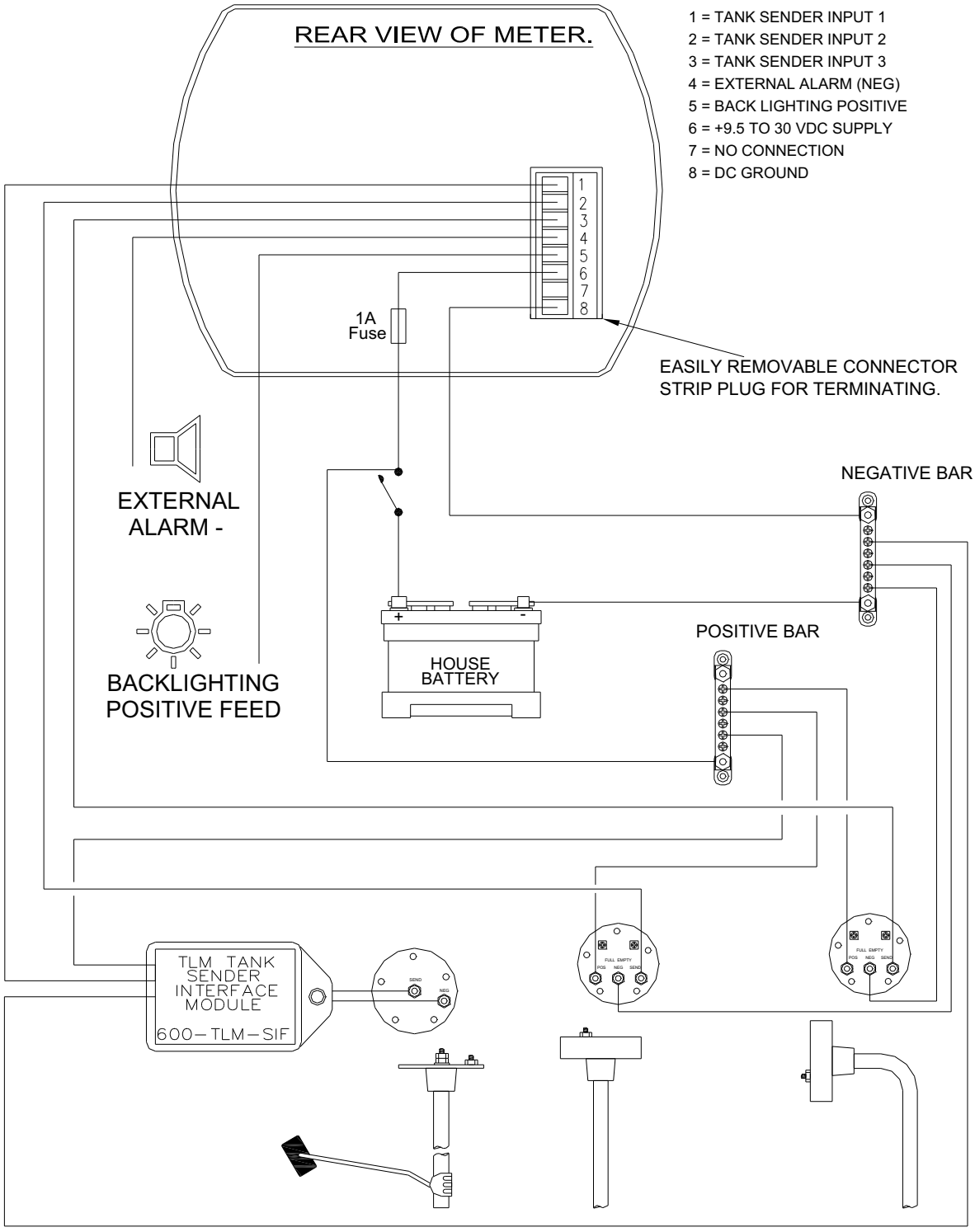
FEATURES

- Tank level monitoring for up to 3 tanks
- 14 selectable legends for tank descriptions eg. Fuel, water, black water
- independently adjustable Hi – Low tank level alarms for 3 tanks
- Tank levels displayed in graphic, percentage or units
- Audible alarm with mute function
- Power supply 10-35VDC
- Display is backlit for easy night time viewing
- Configured for use with 0-5V senders
- Can be used with 10-180Ω or 240-33Ω senders when used in conjunction with BEP 600-TLM-SIF



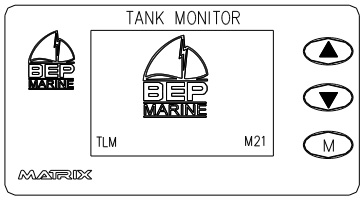
WIRING DIAGRAM



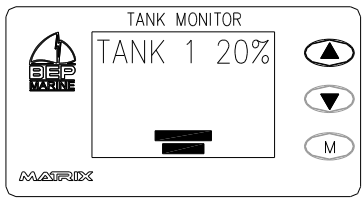
PLEASE NOTE: THIS DRAWING IS A WIRING OVERVIEW ONLY, IT'S PURPOSE IS TO SHOW METER CONNECTIONS FOR THE 600-TLM. IT IS NOT AN INSTALLATION DIAGRAM.

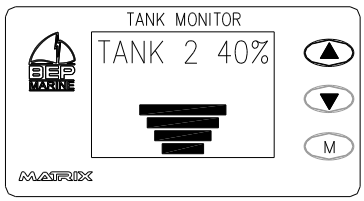
OPERATION

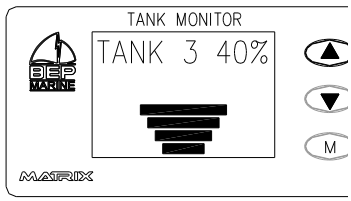
Apply Power
Power-up screen will show for 5 seconds.



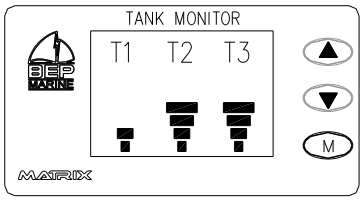
Changing between tanks:
To change the screen between tanks press either the up (▲) or down (▼) button.



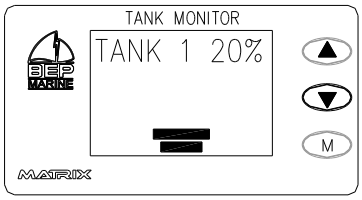


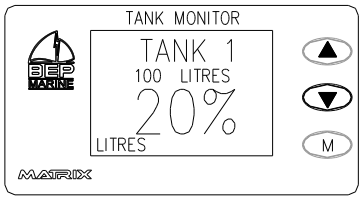


Viewing all 3 tanks simultaneously:
To view all tank levels at once press the "M" button.

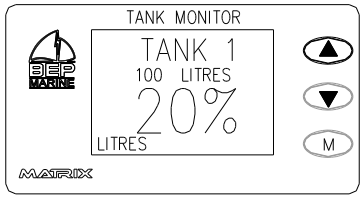


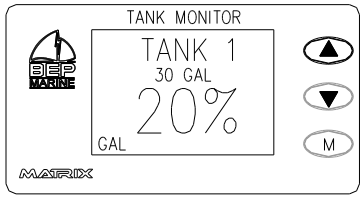
Changing display modes:
Press and hold the down (▼) button, the screen will change from the graphical to the numeric display. Repeat to reverse.

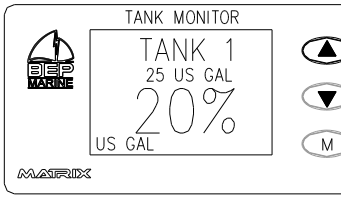




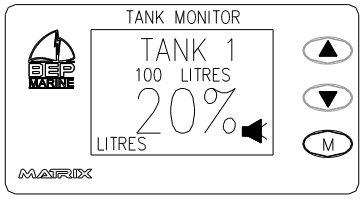
Changing tank level units:
Press and hold the up (▲) button, the units will scroll between litres, imperial gallons and US gallons.

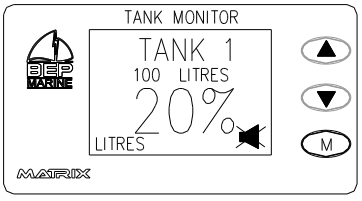






To mute the alarms:
To mute the alarms press and hold the "M" button.
To re-activate the alarms repeat the process.





NOTES

1. **Tank Calibration**
   Tank 1 volume = _ _ _ _ _ _
   Tank 1 volume divided by 8 = _ _ _ _ _
   Tank 2 volume = _ _ _ _ _ _
   Tank 2 volume divided by 8 = _ _ _ _ _
   Tank 3 volume = _ _ _ _ _ _
   Tank 3 volume divided by 8 = _ _ _ _ _
   Example:
   Tank 1 volume = 1,000_ _ _ Litres
   Tank 1 volume divided by 8 = 125 _ _ _ Litres

2. **Tank calibration procedure**
   Always start tank calibration with an empty tank.
   Start by filling in the table on the right (see note 1).
   In the tank calibration menu select the tank to be calibrated ie tank 1. The screen will read T1 empty,
   Press ▲ to proceed to the next mark. The screen will read T1 mark1, now fill tank 1 with the quantity of fluid/water etc calculated in the table right under Tank 1 mark 1, now press ▲ to proceed to the next mark.
   The screen will now read T1 mark2, now add fluid/water etc to tank 2 so the total quantity of fluid in tank 1 equals the calculated quantity in the table right under Tank 1 mark 2. Now press ▲ to proceed to the next mark.
   Continue the process for steps 3,4,5,6,7 and full.
   IE Using the example numbers in note 1. With the tank empty and the screen reading T1 mark1 put 125 litres of fluid into the tank. Press ▲, now the screen will read T1 mark 2 put another 125 litres into the tank so that the tank contains 250 litres. Press ▲ to continue the process.

	MARK	Quantity
Example	1	1X125=125 Litres
	2	2X125=250 Litres
	TANK 1	
	EMPTY	0
	1	
	2	
	3	
	4	
	5	
	6	
	7	
	FULL	
	TANK 2	
	EMPTY	0
	1	
	2	
	3	
	4	
	5	
	6	
	7	
	FULL	
	TANK 3	
	EMPTY	0
	1	
	2	
	3	
	4	
	5	
	6	
	7	
	FULL	

There is a custom calibration mode to allow the user to manually enter the required sender output voltages for each marking point. This avoids the need of emptying the tank and then re-filling it. However the values must have been previously recorded for the selected tank and sender used.

To record the tank calibration values, the meter must have been calibrated using the procedure outlined above. Assuming proper meter calibration. In the tank calibration menu select custom calibration. Scroll thorough each marking point and record the sender output voltages displayed by the meter. These can then be manually entered in custom calibration mode at a later date.

Note. Calibration of the TLM is not necessary providing that the following conditions are met:

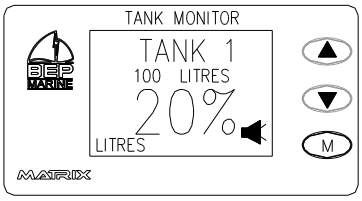
1. The tank has strait sides and a flat bottom i.e. rectangular
2. The probe reaches from the top to the bottom of the tank.

If these conditions are met then the default marking points should be valid. All that is required of the user is to enter the 'Maximum Tank Capacity'

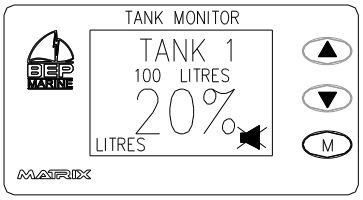
3. **Unused tanks**
   Any unused tanks/channels must be grounded. And the Low Alarm set to 0%, and the Hi alarm set to 100%.

ALARMS AND ALARMS MUTE

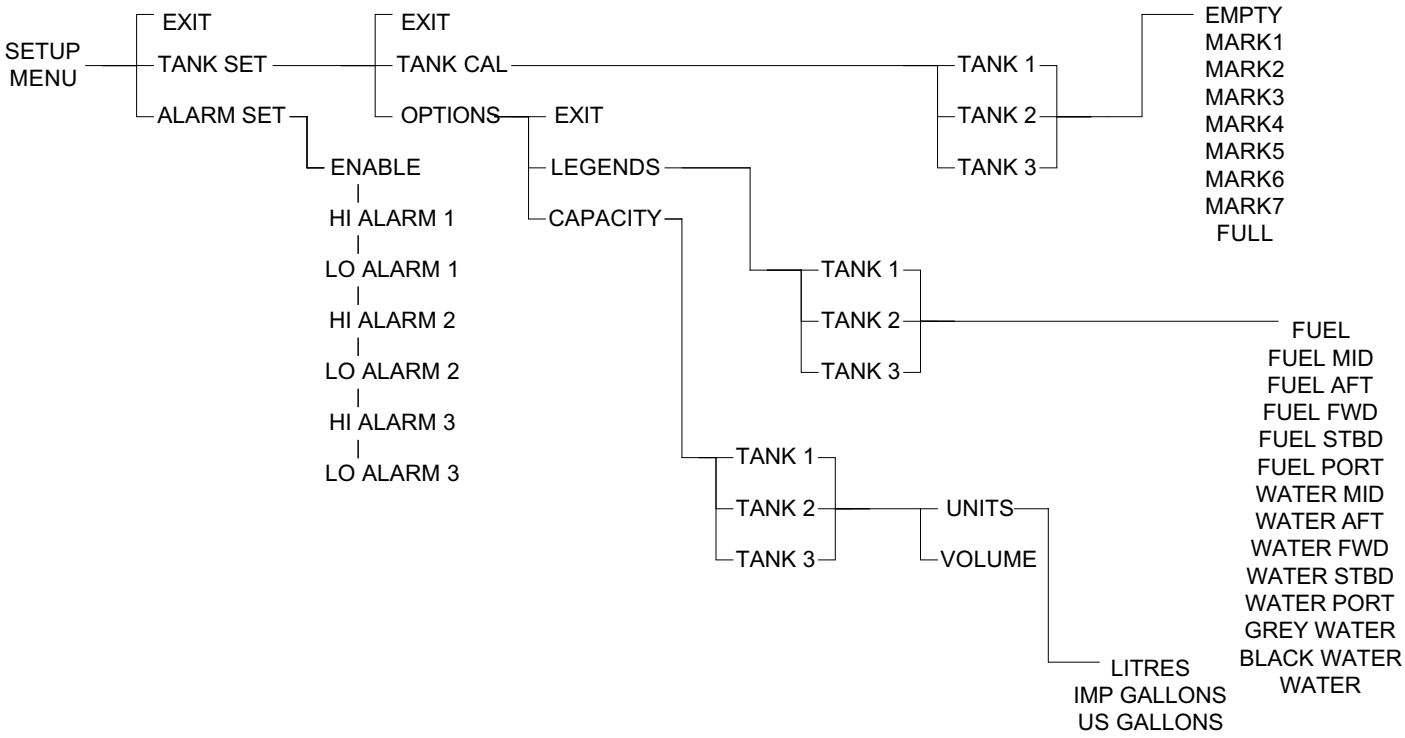
When an alarm condition occurs, the alarm will sound and the corresponding display will flash.



To permanently mute any alarm, press the M button for 2 seconds. The display will show the alarm mute symbol.
The alarm mute mode will remain set even when the power is removed.

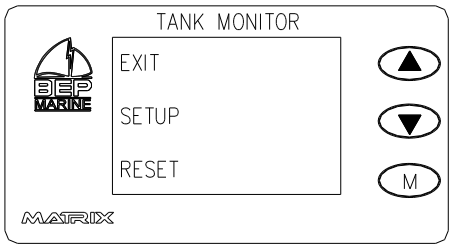


MENU FLOW CHART

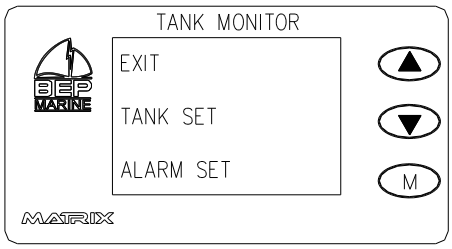


SET UP AND PROGRAMMING

To enter programming mode:
Hold both the ▲ and M buttons down simultaneously for approx. 3 seconds. The button opposite the text activates the function.
Ie Press ▲ to exit programming mode.
Press ▼ to enter setup mode.
Press M to reset the meter to factory presets.

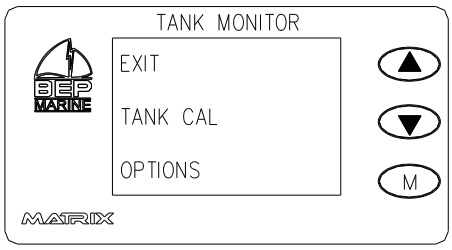


Meter setup:
Press ▼ enter the meter setup menu
Press ▲ for Up (increase value)
Press ▼ for Down (decrease value)
Press M to Enter (next screen)

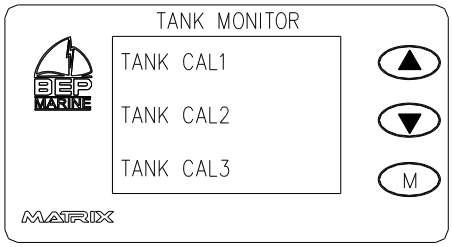


Tank setup procedures:
Press ▼ to enter the tank setup mode

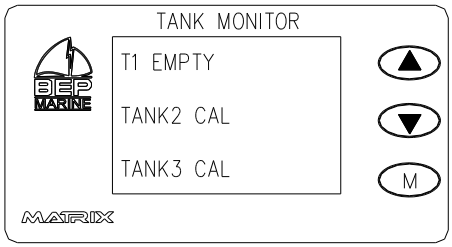
To calibrate the tanks:
Press ▼ to enter the tank calibration menu



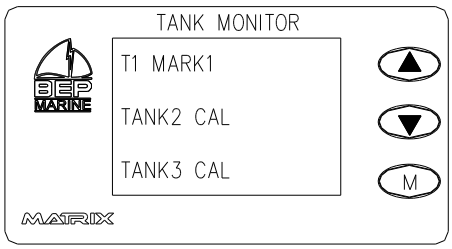
Select the tank to be callibrated:
Press ▲ to calibrate tank 1
Press ▼ to calibrate tank 2
Press M to calibrate tank 3

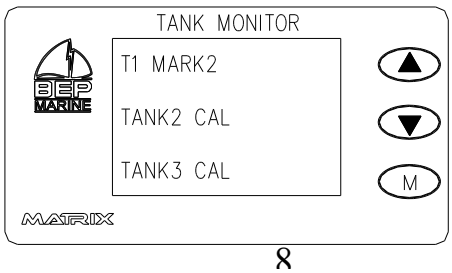


To calibrate a tank (example tank 1):
Press ▲ to proceed through the calibration sequence for tank 1
Press ▼ to proceed through the calibration sequence for tank 2
Press M to proceed through the calibration sequence for tank 3

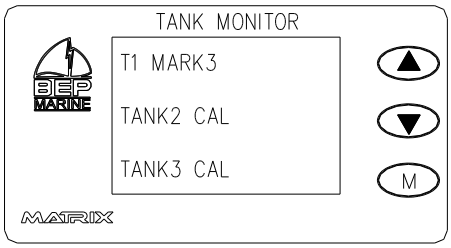


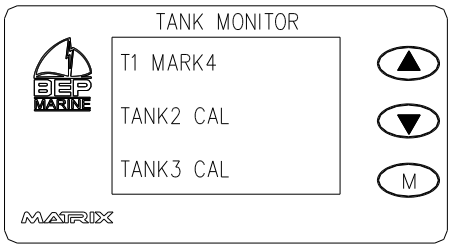
Tank calibration procedure
Always start tank calibration with an empty tank.
Start by filling in the table (on page 6).
In the tank calibration menu select the tank to be calibrated ie tank 1. The screen will read T1 empty,
Press ▲ to proceed to the next mark. The screen will read T1 mark1, now fill tank 1 with the quantity of fluid/water etc calculated in the table (on page 6) under Tank 1 mark 1, now press ▲ to proceed to the next mark.
The screen will now read T1 mark2, now add fluid/water etc to tank 2 so the <u>total quantity of fluid</u> in tank 1 equals the calculated quantity in the table (on page 6) Tank 1 mark 2, now press ▲ to proceed to the next mark.

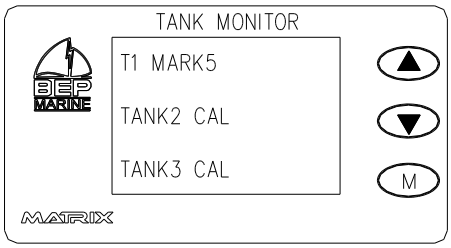


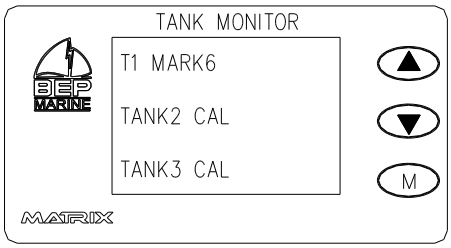


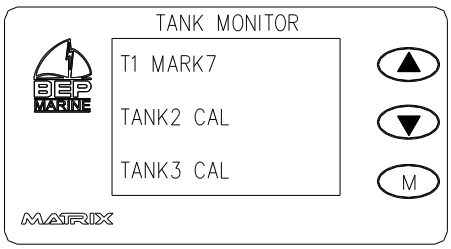
Continue the process for steps 3,4,5,6,7 and full.IE Using the example numbers in note 1. With the tank empty and the screen reading T1 mark1 put 125 litres of fluid into the tank. Press ▲, now the screen will read T1 mark 2 put another 125 litres into the tank so that the tank contains 250 litres. Press ▲ to continue the process.

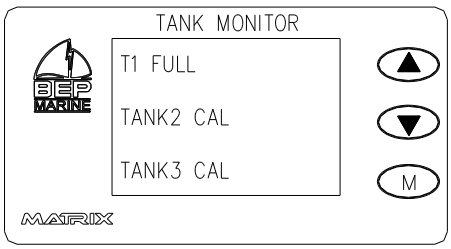




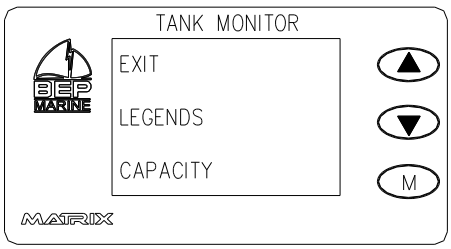




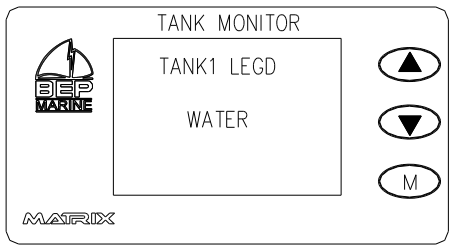




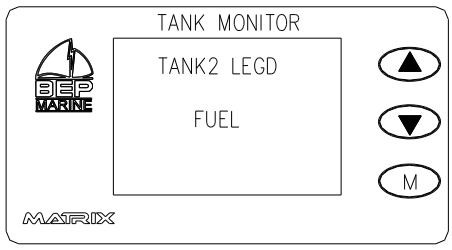
Setting the tank legends:
At the Tank Set menu select options by pressing M
Select the legends menu by pressing ▼



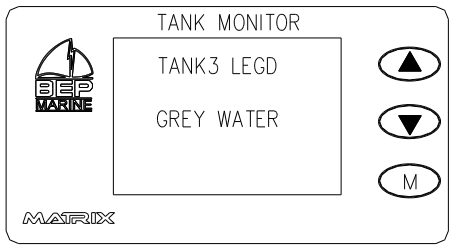
Select the legend for tank 1:
Use ▲/▼ to scroll through the label options
Press M to confirm the option
Options: Water, Black water, Grey water, Water port, Water stbd, Water fwd, Water aft, Water mid, Fuel port, Fuel stbd, Fuel fwd, Fuel aft, Fuel mid, Fuel



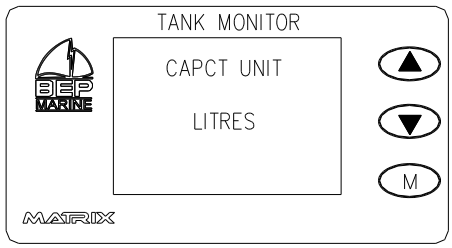
Select the legend for tank 2:
Use ▲/▼ to scroll through the label options
Press M to confirm the option
Options: Water, Black water, Grey water, Water port, Water stbd, Water fwd, Water aft, Water mid, Fuel port, Fuel stbd, Fuel fwd, Fuel aft, Fuel mid, Fuel



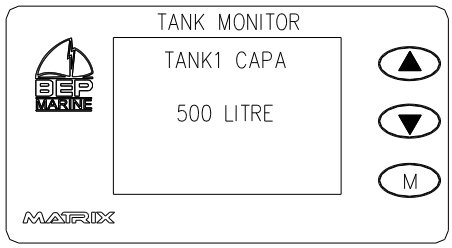
Select the legend for tank 3:
Use ▲/▼ to scroll through the label options
Press M to confirm the option
Options: Water, Black water, Grey water, Water port, Water stbd, Water fwd, Water aft, Water mid, Fuel port, Fuel stbd, Fuel fwd, Fuel aft, Fuel mid, Fuel



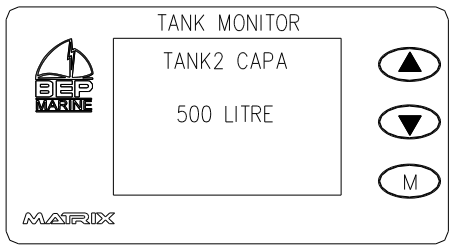
Setting tank capacity:
At the options menu press M for the capacity menu
Press ▲/▼ to select the capacity unit
Press M to confirm the option
Options: Litres, US Gallons, Imperial Gallons



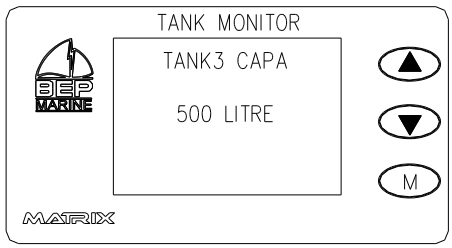
Setting tank 1 capacity:
Use ▲/▼ to scroll tank 1 capacity up and down
Press M to confirm the option
Range: 0-4000



Setting tank 2 capacity:
Use ▲/▼ to scroll tank 2 capacity up and down
Press M to confirm the option
Range: 0-4000

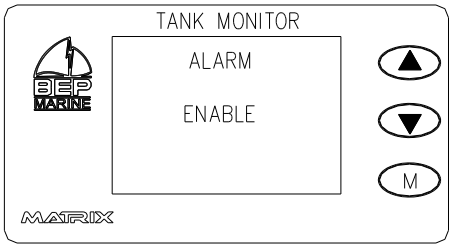


Setting tank 3 capacity:
Use ▲/▼ to scroll tank 3 capacity up and down
Press M to confirm the option
Range: 0-4000

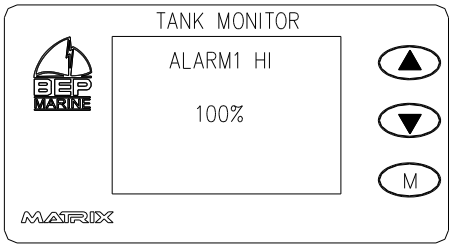


Setting the alarms:
At the setup menu press M for the alarm menu

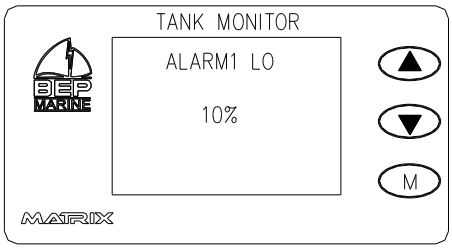
Press ▲/▼ to scroll between the alarms being enabled and disabled



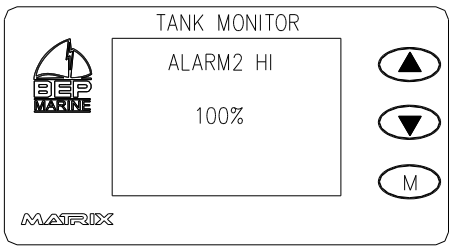
Setting Hi alarm for tank 1:
Use ▲/▼ to scroll the high alarm up and down for tank 1
Press M to confirm option



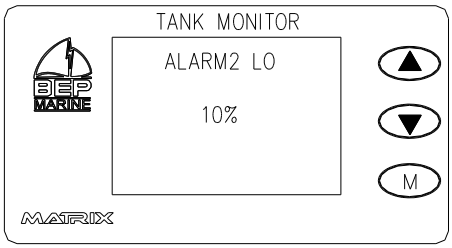
Setting Lo alarm for tank 1:
Use ▲/▼ to scroll the low alarm up and down for tank 1
Press M to confirm option



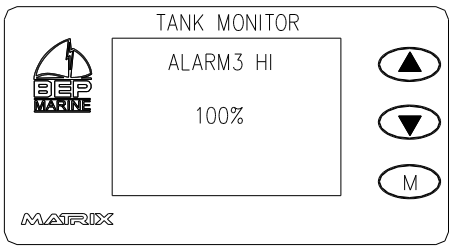
Setting Hi alarm for tank 2:
Use ▲/▼ to scroll the high alarm up and down for tank 2
Press M to confirm option



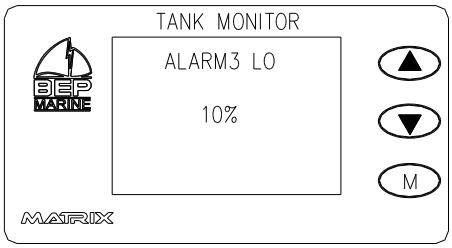
Setting Lo alarm for tank 2:
Use ▲/▼ to scroll the low alarm up and down for tank 2
Press M to confirm option



Setting Hi alarm for tank 3:
Use ▲/▼ to scroll the high alarm up and down for tank 3
Press M to confirm option



Setting Lo alarm for tank 3:
Use ▲/▼ to scroll the low alarm up and down for tank 3
Press M to confirm option



USER NOTES

OTHER BEP MARINE PRODUCTS

CONTOUR DC CIRCUIT BREAKER PANELS
CONTOUR AC CIRCUIT BREAKER PANELS
CONTOUR DOUBLE POLE BREAKER PANELS
SPRAY PROOF PANELS
600-DCM DC MONITOR
600-ACM AC MONITOR
600-VM DIGITAL VOLT METER
701 225AMP BATTERY SWITCH
720 500AMP BATTERY SWITCH
722 300AMP ELECTRIC BATTERY SWITCH
710 50,90 & 200AMP VOLTAGE SENSITIVE RELAYS
BATTERY DISTRIBUTION CLUSTERS
BATTERY MANAGEMENT PANELS
501 TIMER MODULE
600-GD AND 600-GDL GAS DETECTORS

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AvCostanera Norte v Pte
Castillo – Edifico
Costanera Uno – 1425
Buenos Aires
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Fax + 5411 4312 5258
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