Emflux Electromagnetic Flow Meter

Replacing M300 Transmitter with M500 Transmitter

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V1.1

Step One - EXTRACTING PARAMETERS FROM THE M300

If the M300 is still operational:

- Power up the M300
- Once the M300 has completed its start-up sequence, press the **TICK** button
- Use the arrows to enter the passcode **121** then press **TICK**
- Using the up and down arrows, scroll through the menu recording the following parameters:

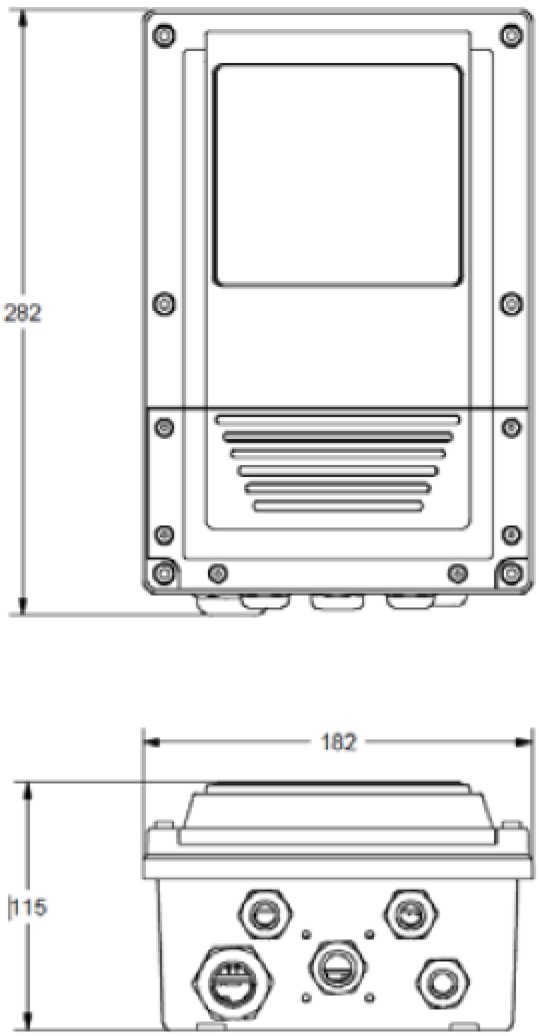
Pipe Size Units		Low Flow Cut Off	
Pipe Size		Digital Output 1	
Flow Tube Factor		Full Scale Freq / Vol Pulse 1	
Flow Tube Zero		Digital Output 2	
Display Units		Full Scale Freq / Vol Pulse 2	
Totaliser Units		Full Scale 4-20mA 1	
Flow Full Scale		Reverse Flow	

If the M300 does not power up then the following information may be recorded under the bottom cover. Contact your Aquamonix distributor for more details.

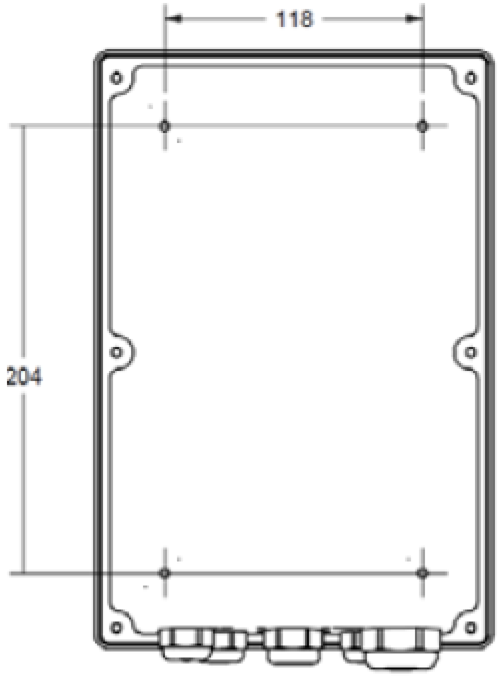
Step Two - MOUNTING THE M500

- Replace the M300 unit with the NEW M500 unit
    - NOTE – the M500 is dimensionally different to the M300 some modification to the host mounting plate may be required.

DIMENSIONS (mm)



M5 BOLT MOUNTING HOLE POSTIONS

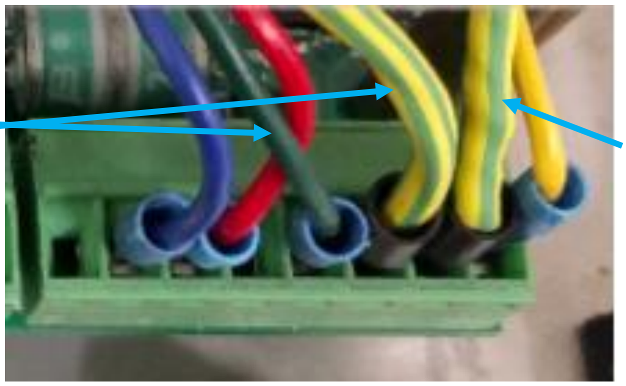


Step Three – RE-WIRING THE M500

- Remove the bottom cover of the M500
- Run all meter cabling via the glands into the bottom of the M500

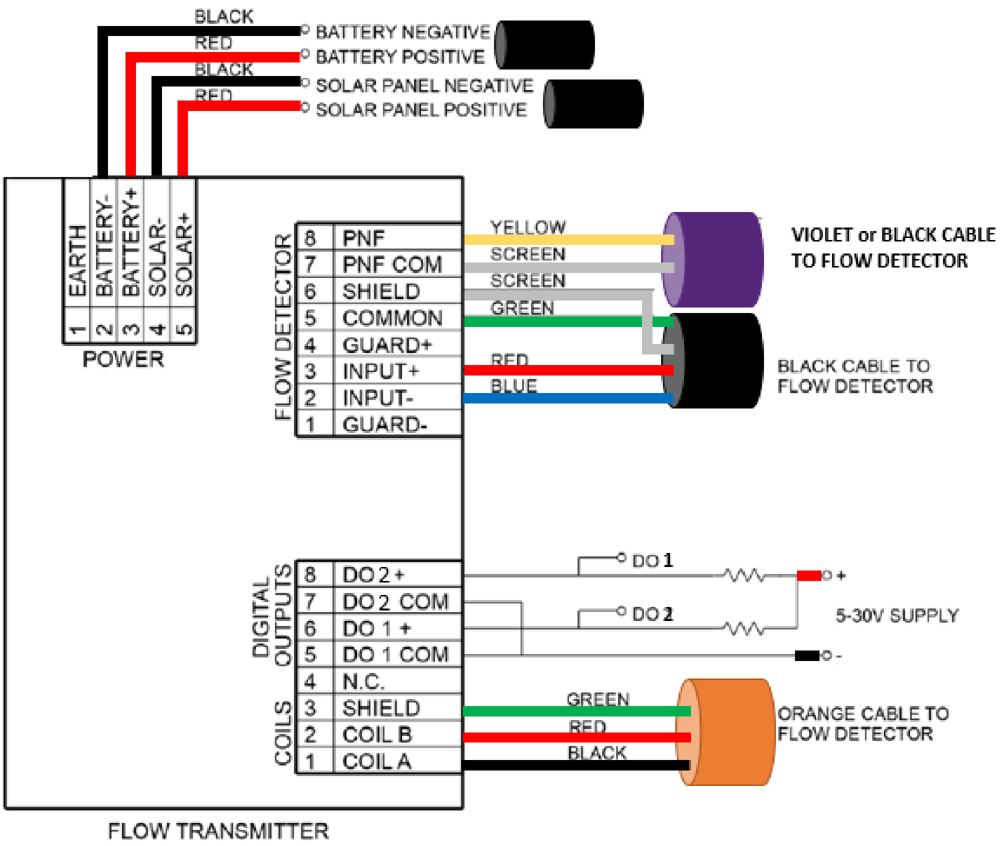
- Separate the green wire and the screen on the signal cable
- Expose the screen in the PNF cable (pipe not full electrode)

green & screen separated

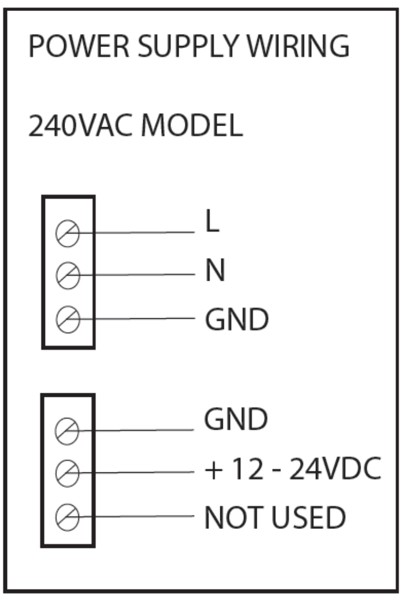


Expose screen in PNF cable

Terminate cables to the M500 as per the wiring diagram



- Run power cabling to the M500 via glands and connect as per wiring diagram



Step Four – SETTING UP THE M500

- Connect power to the M500 and watch the front screen as it starts up. It will cycle through a diagnostic screen indicating the firmware version and results of a self-check
- Confirm the firmware version is **MR6.7**
- Confirm all parameters have **PASS** beside them (ESN will show an alpha numeric number)

Step Five - CONVERTING THE M300 FLOW TUBE FACTOR AND FLOW TUBE ZERO

TUBE FACTOR CALCULATION

The M300 flow tube factor (TF) needs to be converted before entering it into the M500 using the following formula:

$$\boxed{\text{M500 TF} = 195.34(\text{M300 TF})^2 - 3293.2(\text{M300 TF}) + 17637}$$

Example:

M300 TF = 5.535

M500 TF = $195.34\text{x}(5.535)^2 - 3293.2\text{x}(5.535) + 17637$

M500 TF = 5393.6

TUBE ZERO CALCULATION

The M300 flow tube zero (TZ) need to be multiplied by 10,000 before entering it into the M500.

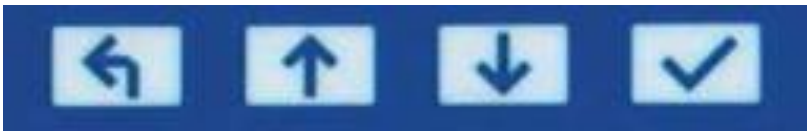
Example:

M300 TZ = -0.0024

M500 TZ = -0.0024 x 10000

M500 TZ = -24

M500 Keypad



RETURN UP DOWN TICK

NOTE: Contact your Aquamonix Distributor for the 4 digit passcode required for this step.

Step Six - CONFIGURING THE M500

- Hold down the **TICK** key and an access screen should appear
- The cursor will be under the first digit, tap the **TICK** key to highlight the first digit
- Use the **UP** arrow to enter **6** at the first digit, then tap the **TICK** key
- Tap the **DOWN** arrow to move the cursor under the second digit, then tap the **TICK** key to highlight it
- use the **UP** arrow to enter **2** at the second digit, then tap the **TICK** key
- Using the passcode supplied by your Aquamonix distributor, repeat the process until the screen shows _ _ _ _ **Contact us for passcode**
- Tap the **RETURN** key (left hand side key) to access the menu
- Enter the *0. CALIBRATION MENU* by tapping the **TICK** key
- Enter the parameters recorded from the M300 as follows:

  Pipe size units

  Nominal pipe diameter

  Meter ID

  Flow full scale

  Tube zero (newly calculated TZ)

  Tube factor #1 (newly calculated TF)

  Coil current (200mA)

- When all parameters are entered tap the **RETURN** key to return to the main menu

CHANGING FLOW RATE UNITS

Should you wish to change the flow rate units displayed on the front screen of the M500:

- Move down to *2. UNITS MENU* and tap the **TICK** key
- Go into *2.1 FLOW VOLUME UNITS* by tapping the **TICK** key
- From the dropdown menu select the flow units required, eg Litres
- Exit menu *2.1* by tapping the **RETURN** key
- Go down to *2.3 FLOW TIME UNITS* and tap the **TICK** key
- From the dropdown menu select the flow time units required eg Seconds (in this example the display is set to show Litres per Second)

If you wish to change the Totaliser units:

- Move down to *2.5 TOTALISER UNITS* and tap the **TICK** key
- Select the required totaliser units from the dropdown menu, eg MegaLitres

Tap the **RETURN** key to exit the programming menu and go back to the front display screen.

You should now have an operation M500 Transmitter.

For more assistance, please contact your local Aquamonix Distributor or contact us below.

Emflux is proudly manufactured by

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