ME2008-FT Flowrate/Totaliser

Flowrate / Reset Total / Grand Totaliser Up to 8 channels

FEATURES

- **Up to 4 Dual-Channel Modules (DCMs) can be mounted on Motherboard, for the creation of a 2, 4, 6, or 8 channel unit.**
- **Flowrate in Litres/Second to 2 decimal places.**
- **7 digit Resetable Totaliser in Litres for manual batching.**
- **7 digit Grand Totaliser in Litres for inventory records.**
- **Input Pulse scalable for use with most types of Flowmeters.**
- **All parameters and entries are fully programmable via a plug-in hand held keypad.**

INTRODUCTION

The ME2008-FT is a microprocessor-based flowrate totaliser unit for monitoring up to 8 flowmetering stations. The ME2008-FT can be used with a wide range of signal output flowmeters.

The unit consists of:

1x	**MOTHERBOARD** (with power supply) complete with pushbutton to select (or scroll) menu functions, individual buttons for manual reset of each batch display and a button for a master reset of all totals, all enclosed in a wall/panel mount ABS enclosure.
4x	**DUAL CHANNEL MODULES (DCM) plugable PCBs** with dual-line LCD displays with backlight.
1x	Hand held **plug-in programmer** for entering calibration parameters and clearing of grand totals.

Flowmeters of various sizes can be connected to the inputs. ME2008-FT accepts 8 external pulses from flowmeters.

OPERATION

When switching power on, via power switch, the display will show Manuflo V1.0, push select button to show resettable totalisers in litres. Push the select button and all the displays will then show flowrate in litres per second. Push select button again to show grand totals in litres.
When liquid flow starts, the ME2008-FT begins to log the totals, push select button to display instantaneous flowrate in Litres/second. Using the display toggle button you can shift the display to show the resettable totals, push the respective reset button to reset the channel. Push display shift toggle to then display grand totals. Keep pushing at anytime to display the desired readings. (All activity is logged on the grand totalisers for inventory data management).

INSTALLATION WIRING

Find an appropriate position to mount the ME2008-FT housing box, preferably within visual distance to operator. Using flexible wires, wire the flowmeters to the ME2008-FT according to the diagrams:

- Figure 1. Motherboard Wiring Diagram, on page 3
- Figure 2. Dual Channel Module (DCM), on page 3.

The normal order of connections is:

1. Connect 240V supply (L is active load, N is neutral, E is earth) to the Motherboard (Figure 1, page 3) plug X10 (a 4-pin green-coloured plug). Keep all power off during process.

2. Using shielded cable, connect flowmeters (with no earthing on the bodies of the flowmeters) to the Dual Channel Modules (DCMs), as shown in Figure 22 (page 3) . Use minimum 2-core shielded cable per flowmeter to the DCM's X5 plug (6-pin, green coloured). If using one flowmeter per channel, use Pulse 1A and Pulse 2A, and +12 VDC and S (Shield) = OV which are both common for flowmeters.

PROGRAMMING THE FLOWMETERS

The entry of program parameter data is achieved with a 4-button keypad programmer (see Figure 1 below) that is plugged onto the 5-pin inline Data Entry Plug-In plug rail located on each Dual Channel Module (as shown in Figure 2 on page 3). The programmer plug is keyed so that it can only be plugged in the correct way.

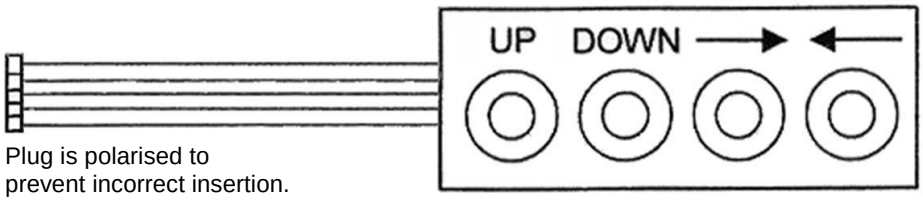

Figure 1. Programmer

Each Dual Channel Module (DCM) is programmed one at a time. Plug the Programmer into the DCM to be programmed (the programming plug location is shown in Figure 2 on page 3). To start programming, push either arrow button **(→ ←) on the Programmer**. Cursor (digit) will flash on the DCM display. Push UP or DOWN to change numeric values. Push arrows to scroll through the individual numeric settings. Once programming is completed, push either arrow button **(→ ←)** until no digits are blinking, data is now entered into memory.

Unplug the Programmer, then plug it in to the next module and repeat data entry to programme another module. The handheld plug-in programmer must be unplugged after all parameters have been setup.

See OPERATING INSTRUCTIONS on page 4, for program menu display and description. Note: For guide to entering complete data safety features for each flowmeter type, see Flowmeters Data Guide on page 6.

CALIBRATION ADJUSTMENT

The K Factor (the number of pulses output by a flowmeter per volume of liquid delivered).
Manu Electronics will supply the unit with K-factor already configured for your needs, taking into account the flowmeter.
The user can verify on-site that the displayed Total and Flowrate are correct, by collecting a volume of liquid in a known volumetric container.
If required, the Calibration Value can be adjusted by the user to fine tune the displayed Total:

- Increasing the Calibration Value will decrease the Total displayed on the LCD.
- Decreasing the Calibration Value will increase the Total displayed on the LCD.

Example: If the Calibration Value is '0002.10', and the Total displayed is 1% higher than actual, then to lower the displayed Total by 1%, the Calibration Value must be increased by 1% (i.e increased by 1% x 0002.10 = 0.021) to a new value of '0002.12 rounded'.

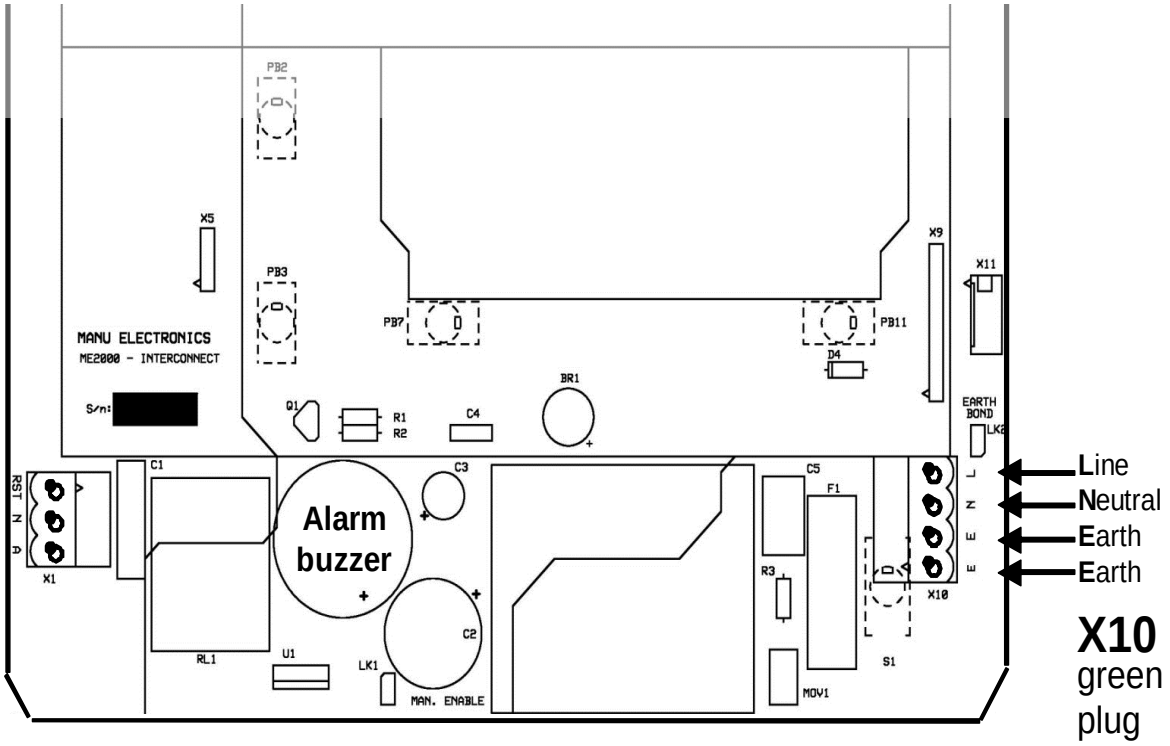

Figure 1. Motherboard Wiring Diagram

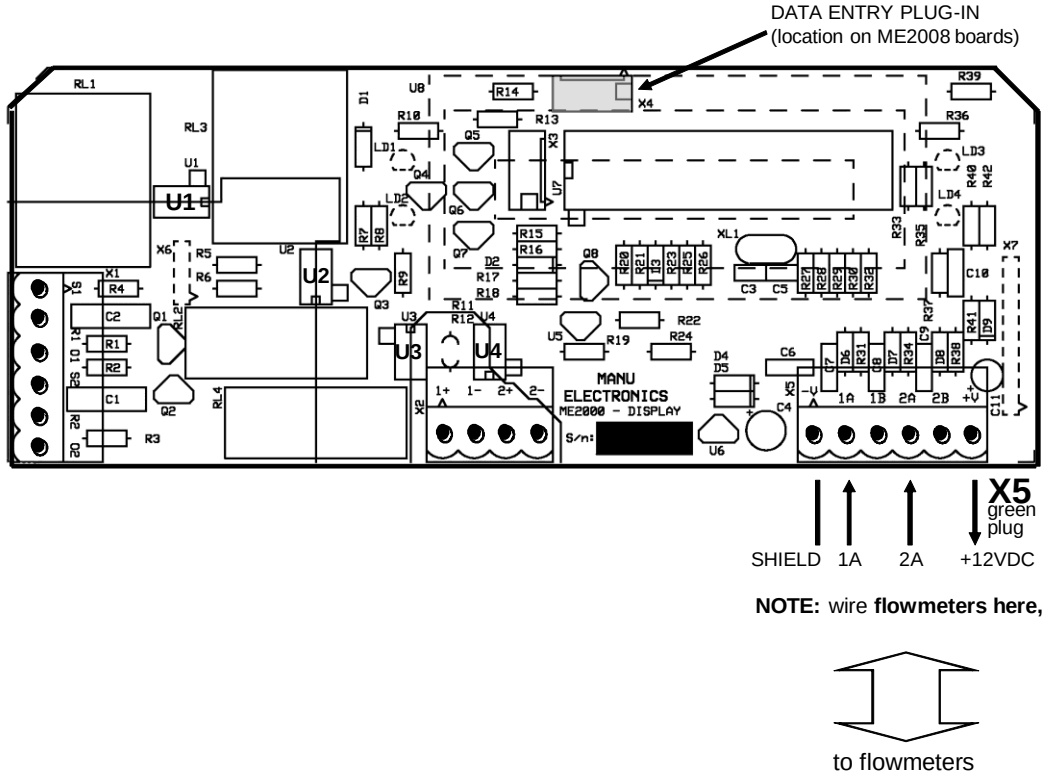

Figure 2. Dual Channel Module (DCM)

OPERATING INSTRUCTIONS

* Switch on power to the ME2008 interface safety unit. * Scroll through the settings by pressing SELECT. Refer to the Display Diagram below for procedures and settings of required parameters. * See “Flowmeter Data Guide” on page 5 for recommended data for each flowmeter type/size characteristics/flowrates.

ME2008 Display Diagram

⇒ Power On:

MANU ELECTRONICS ME2008-FT V1.0	Software version.

⇒ 1. Push Select:

BATCH (1) 0000000 0000000	**Batching** function display in **“LITRES”.**

⇒ 2. Push Select:

Flow (l/s) 000.00 000.00	**Flow Rate** Function in Litres/second (to 1 decimal places).

⇒ 3. Push Select:

Total (l) 0000000 0000000	**Grand Total** accumulation. To reset: push 2 buttons at once on 4-button programmer.

⇒ 4. Push Select:

Input (p/l) 1000.00 1000.00	**K-factor / Calibration**: sets pulse input value per Litre, according to flowmeter used e.g. MES20 1000pulses/Litre, MES25 555pulses/Litre.

⇒ 5. Push Select:

BATCH (1) 0000000 0000000	Returns to Batch (1) display.

⇒

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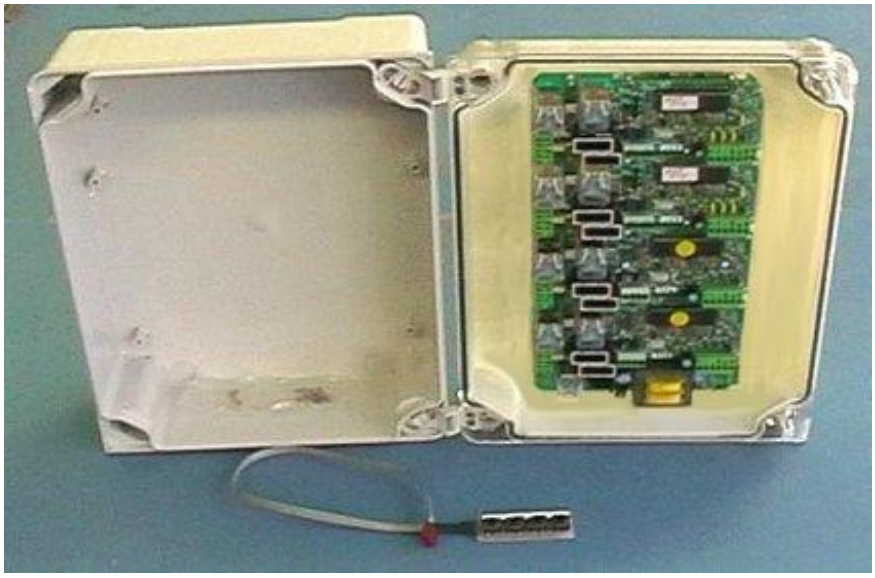
ME2008 - SPECIFICATIONS

Display	One 2x16 character dot matrix backlit display per Dual Channel Module (DCM).
Motherboard	Accepts up to 4 plug-in Dual Channel Modules.
Power Supply	240 vac (See options guide for other voltages), via Motherboard plug X2.
Supply to Flowmeters	12 VDC (10mA per flowmeter), via X4 plug.
Pulse Inputs	NPN sink pulse or Reed Switch pulses, 2 flowmeters per module. Input calibration to 2 decimal places. Most types of flowmeters can be connected and calibrated.
Input count speed	2 kHz maximum.
Commands	Individual resets: 8 momentary push buttons for each channel total reset. Master Reset: 1 pushbutton. SELECT: 1 pushbutton.
Power ON/OFF	Via “Power” switch.
Wiring/Connection	Connected to five mated plugs, allows unplugging of PCBs for easy replacement.
Fuse	1 Amp. Fuse holder on motherboard.
Enclosure & Dimensions	IP58 ABS lid/box. Size: 310mm L x 245mm W x 140mm D.
Weight (with 3 modules)	2.0 kg

Display Functions

Operation	**Via plug-in 4-button hand-held programmer.**
Volume displayed	In Litres, 7 digits.
Flowrate display	In Litres per Second, to 2 decimal place.
Grand Total	In total Litres, 7 digits
Input calibration	Pulses per Litre, to 9999.99



ME2008 8-channel unit, opened,with plug-in Programmer.

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FLOWMETER DATA GUIDE FOR ME2008 DATA ENTRY

ME2008 setup data for various flowmeters:

Manu Flowmeters

Model No	Description	Input pulses/Litre
MES20	20 mm pulse flowmeter	1000.00
RPFS-P	**Rota Pulse Paddlewheel with a 150mm pipe diameter**	**0002.10**

Many other types of flowmeters can be used with the ME2008.

ME2008-FT - Program Record Sheet

Serial Number : _____ **Date** : _____

ME2008-FT Part No. : **Software Version** : _____

Config _____

Voltages : _____

Display in: ☐ **Litres** ☐

		Channel							
		1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
Flowmeter Model (part no.)									
K-FACTOR (CALIBRATION) If not known: Set input parameter to 1, then run liquid, divide volume by count = pulses per unit.									
Input Pulses	**per Litre**								

Date Programmed : _____ Date Commissioned : _____

By : _____ By : _____

Comments : _____

_____

If in doubt, contact ManuFlo on phone +61 2 9938 1425 or +61 2 9905 4324.

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