

### FEATURES:-

New Improved ASA  
Display Enclosure



- 4 digit Large LCD resettable totalizer (20mm high digits)
- Total displayed in LITRES.
- Easy reset of total via flip top lid.
- $\pm 2.5\%$  accuracy, at 0.7 - 8.0 m/s flow velocity
- Repeatability:  $\pm 1.0\%$
- 8+ year Battery life.
- Max. Process Temperature 80 °C
- Max. Operating Pressure: PVC Tee' options rated to 1100 kPa  
All Metal Tee options are rated 1600 kPa
- With simple installation pipe fittings/adapters.
- For pipe sizes from 20 to 100 mm
- Optional pulse output, via M12 IP67 plug set
- New Robust ASA-UV IP65 Display housing  
Dual Hinged robust lid protects LCD from sunlight.
- Slip insertion sensor design with locking cap allows simple removal from pipeline if cleaning rotor.
- Easy Access for re-calibration and user friendly smart 1 point re-calibration function –self calculation for a new K- factor.
- Optional External re-calibrate via Portable Device with RFID and EWM calibration software.
- Pulse Output is Disabled when lid is closed (code **-PNL**), or Live even when lid is closed (code **-P**).
- Option for continuous Live LCD (code **-NS**)



4 Digit Resettable  
or non-reset  
Running Total



MRTU4 – GAL50  
with 50mm (2")  
GAL Pipe Fitting

**MRTU4:** Ideal for slump stands, Irrigation & many other general water measurement & monitoring applications.  
Incorporating the widely used RPFS sensor design.



MRTU4 with PVC  
Pressure Pipe Adaptor  
Fittings



MRTU4 with  
Saddle Clamp Fittings  
for PVC or PP Rural

The **MRTU4** resettable counter flowmeter is designed and manufactured in Australia by ManuFlo. The **MRTU4** has a unique 'quick release' slip insertion stem section designed to be inserted to the ManuFlo 1" entry nipple adaptors (part BSPB etc) which allows the display head to be fitted to most 1" BSP female entries. Usually, the **MRTU4** is pre-fitted with a ManuFlo 'T' piece pipe adapter. Adapters are available for a range of pipe sizes from 20 to 100 mm diameters, and the adapter range includes Galvanized Iron tees, Class18 Cat19 PVC high pressure tees, and saddle-clamp agricultural poly-pipe fittings, the advantage being we pre-install the **MRTU4** for you on to the fitting and pre-calibrate on our NMI certified test rig (sizes 20mm - 100mm) to obtain the best K-factor value. Or optionally you may purchase our BSPB or BSPSS pipe adaptor nipples (1" BSP M external thread) in brass or optional version in 316 SS material.

The MRTU4 is suitable for medium to high flow range liquid flow measurement applications. Being internally battery powered, the unit is ideal in situations where no external power supply is accessible, making them totally portable resettable totaliser flowmeters and with optional pulse output to data logger or PLC. NOTE: As standard the pulse output is dormant when lid is closed. (Ideal for slumpstands where washout should not be registered if transmitting pulse to batch room).

The flowmeter's only moving part (a stainless steel alloy rotor which turns as liquid flows past it) allows registration in Litres (L) on the 4 digit Liquid Crystal resettable display counter. The main body component, consisting of the electronic counter board, is housed in a robust ASA-UV resistant IP65 lower enclosure and ASA-UV upper enclosure. The LCD display is visible through the toughened Polycarbonate window and sealed by a recessed gasket and 4 stainless steel screws. A special scratch resistant film allows optimal reading even in the harshest conditions. The impact resistant ASA-UV lid protects the LCD from prolonged sun exposure, contaminants and breakage.

To operate, open the hinged lid and the previously recorded total will be present, open and close the lid again and the Liquid Crystal Display is zeroed ready for a new batch measurement. Liquid flow turning the rotor blades causes counting on the display. The internal lithium battery has a typical life of 8+ years depending on environmental conditions.

<b>Flowrange and Accuracy</b>	±2.5% (0.6 - 8.0 m/sec velocity) ±1.5% (0.7 - 7.0 m/sec velocity, 10:1 flow curve)
<b>Display Readout</b>	• Counter: 4 digit (8 W x 20 H mm) in Litres (L) with optional 1 decimal point
<b>Calibration</b>	• via 3 internal pushbuttons • via PC with RFID reader and EWM Calibration software or ANDROID device with built-in NFC and EWM application
<b>Power Source</b>	3.6v 2100mAh Lithium battery
<b>Environmental</b>	IP65 0% to 75% relative humidity Up to 2000m Altitude
<b>Operating Ambient Temperature</b>	5 °C - 40 °C
<b>Max. Pressure Plastic Pipes</b>	1100 kPa for PVC Tee's, PVC & Poly saddle clamps
<b>Max. Pressure Metal Pipes</b>	1600 kPa for Galvanised Iron, Stainless steel and Gunmetal Tee pieces
<b>Pulse Output (optional)</b>	• via optional IP67 M12 plug set (5m lead). N-Channel MOSFET, 5-100VDC 1 Amps Max • 1 Litre per pulse, 100 Hz maximum, 5 ms pulse width
<b>External Reset Input (optional)</b>	Passive input via 2 wire volt free contact for PLC or external totaliser reset switch.
<b>Weight (head only, unpacked)</b>	0.4 kg

<b>COMPONENTS:</b>	<b>MATERIALS of CONSTRUCTION:</b>
<b>MRT Housing</b>	Upper section ASA-UV, lower section ABS-UV with 316 stainless steel fasteners (x4)
<b>Viewing Window</b>	Polycarbonate (c/w 3M 'anti scratch' protection film)
<b>Housing Gasket</b>	Neoprene
<b>Body / Bushes</b>	Delrin / Delrin
<b>O-Rings</b>	Nitrile
<b>Rotor</b>	Stainless Steel 17-4PH
<b>Axle</b>	Tungsten Carbide
<b>Lock Cap</b>	Polypropylene
<b>Nipple Adaptor</b>	PVC or Brass or 316 SST
<b>Pipe Fitting Range</b>	Refer Page 6

**PIPE SIZE versus FLOW RANGE GUIDE**

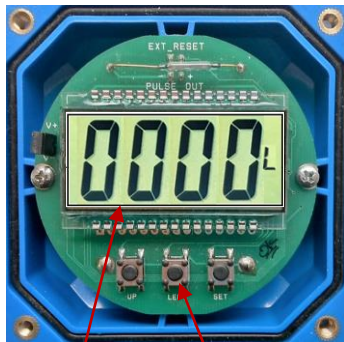
Pipe Size (mm)	Flowrange (Litres/minute)	
	Min @ ± 2.5%	Max @ ± 2.5%
20	13	160
25	23	235
32	32	385
40	50	600
50	90	940
63	130	1300
65	140	1400
75	160	1600
80	200	2410
90	265	2670
100	300	3760



*Irrigation Application  
MRTU4-GAL50*

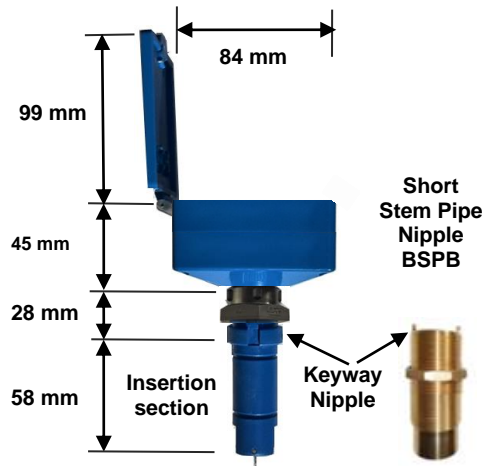


*Water Slumpstand at a Premix Concrete Batch Plant  
MRTU4-GAL25-T2 25mm size flowtube*



4 digit Totaliser display      3 x calibration buttons

Internal view - PCB



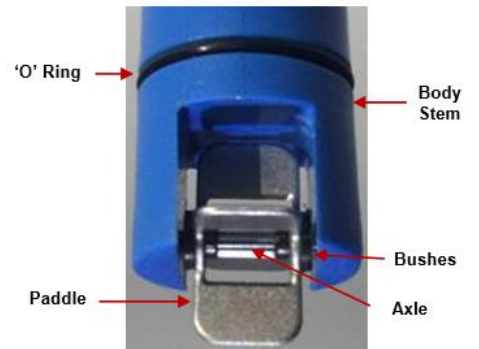
Standard 'Short Stem' body, pipe ID up to 100mm  
ID Side view dimensions

ABS-UV lid



Lid closure magnet  
Totaliser reset magnet

Pulse Output cabling:  
BLACK = pulse (Collector)  
BLUE = 0v (Emitter)



Paddlewheel Sensor

With optional IP67-rated Pulse Output plug set.  
≤ 100mm : 1 pulse / Litre; > 110mm: 1 pulse / 10 Litres

**Warning:** The pulse output signal from the MRT is an open drain (open collector) dry contact, with fixed positive pulse width of 5mS (10mS total duration) with maximum 100Hz frequency capability. Therefore, is suitable primarily for LCD pulse counters & Dataloggers. In many instances, this pulse may not drive PLC inputs when connected directly and the specifications of your PLC/Logger input should be checked for suitability prior to purchase. You may consider purchasing from ManuFlo our UIC pulse booster card which will safely interface between the flowmeter and connected device refer <http://www.manuelectronics.com.au/pdfs/UIC.pdf> For a full explanation and specifications of the pulse output please click the following link from Manuflo's website <http://www.manuelectronics.com.au/pdfs/MRT%20Flowmeter%20Pulse%20output.pdf>

SPARE PARTS	
Code	Description
MRT-TC	Top cover including hinged lid with magnets & SS screws
MRT-CU	Special anti-scratch film from 3M
PW-N	Paddlewheel (rotor) and bushes
PWAH	Axle manufactured from Tungsten Carbide

**Adapter Tee keyway fittings are available in:**

1. PVC Class 18 Cat. 19 (glue-ends) pressure pipe sizes: 20, 25, 32, 40, 50, 65, 80 & 100 mm.  
PVC high pressure saddle clamps: 50, 80, 100mm.
2. Galvanized Iron threaded connections:  
BSP (F): pipe sizes 25, 32, 40 and 50 mm; BSP (M) pipe sizes 80 and 100mm (includes 600mm length of same diameter pipe).
3. Copper/Brass BSP (male) threaded connection end process pipe tube tees 20 and 25 mm.
4. Polypipe saddle clamps in pipe sizes 50, 63, 75, up to 90mm, PVC saddles 40, 50, 80 up to 100mm.
5. Stainless steel 25, 32, 40 and 50mm, others fabricated on request.

\*\*Further custom made fittings are available on request.

**Insertion to Pipe** (see FIG 1 below):

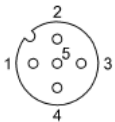
Ideally the **MRTU4** is purchased factory fitted, and calibrated on our test rig with the chosen pipe adapter fitting (listed above) however should you wish to mount to your own pipe fittings, you must ensure the ManuFlo nipple adaptor option is mounted correctly so that the **MRTU4** rotor is in line with flow direction and the end of the nipple adaptor is protruding max. one centimeter (10mm) past the Internal Diameter of the pipe so that when the sensor is inserted in to the nipple adaptor it resides at the optimum position to capture flow.

**For Tapping into Existing or Larger Pipe Works** (see FIG 1):

Use ManuFlo **BSPB**, Brass or **BSPSS** Stainless Steel pipe adapter keyway nipple - with locknut, which has a 1" OD BSP thread for screwed insertion into 1"(female BSP) half-sockets which can be welded directly to pipe, the BSPB fittings can be coupled to any 1" BSP female entries including saddle clamps.

**Using optional pulse output:**

Connect M12 mating connector to flowmeter as per the diagram below. To ensure environmental suitability rating of connector pair, use a tool to tighten the connector.



Pin 3 – 0V (Blue)  
Pin 4 - Pulse (Black)

**Installation Conditions:**

1. Hydraulic conditions must ensure the **MRTU4** flowmeter has a **full pipe** flow section when measuring (see FIG 3).
2. To maintain the stated accuracy curve, lengths of **straight pipe section** (i.e. without any restrictions bends, taps or valves), of the same diameter as the pipe adapter fitting, must be in place for a minimum **10 x pipe diameters** on the incoming (upstream) side, and **5 x diameters** on the exit (downstream) side, of the flowmeter. This will help eliminate flow turbulence to ensure optimum accuracy performance. (see FIG 4).
3. The **MRTU4** can be installed in horizontal, inclined or vertical pipe positions. (Note if mounted in horizontal or inclined pipe, make sure insertion position of sensor is at top or 45° from top, not on the underside).

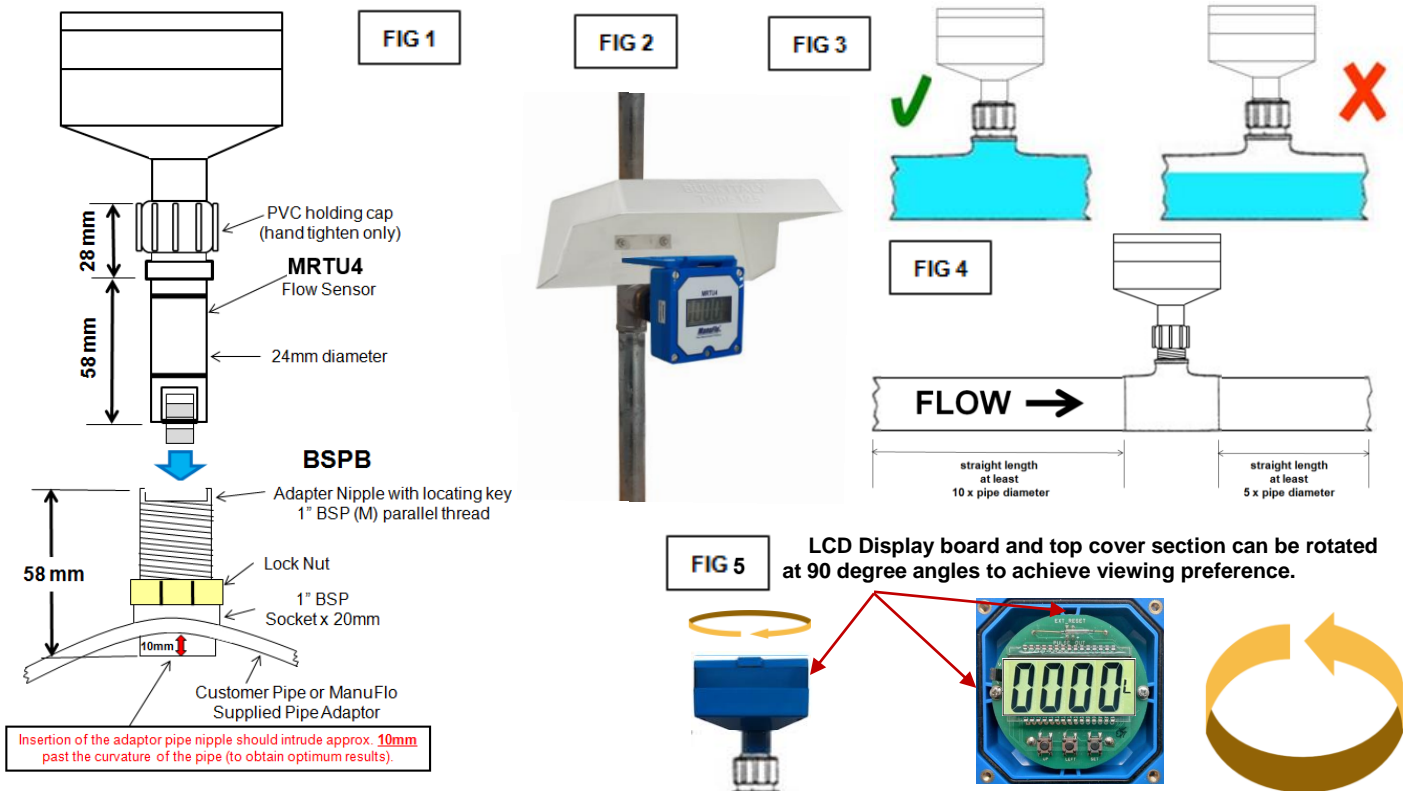
**Exposure to Weather:**

To prevent LCD fading due to prolonged use in direct sunlight **close lid after viewing**. You may also consider a weatherproof housing around the flowmeter in particularly exposed areas (see FIG 2).

**4. Display Head Rotation:**

After removing holding screws the **MRTU4** top cover and LCD board may be rotated in 90° increments to obtain optimum viewing angle (see FIG 5). Ensure the top cover is sealed properly after re-locating head.





## MAINTENANCE

MRTU4

### Recommended Periodic Checks:

With clean liquids, sensor check of the paddle wheel is recommended once every year. In applications with reclaimed or contaminated fluids, regular monthly (at least quarterly) maintenance checks are recommended.

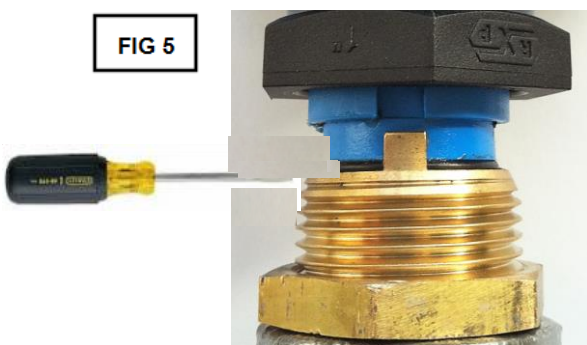
### Removal of MRTU4 from Pipe adaptor Fitting 'Square' Keyway Type Nipple Adaptor:(see FIG 5)

- 1 - Unscrew the black PVC locking cap (anti-clockwise).
- 2 - Hold the neck of the Tee piece in your left hand grasp the enclosure firmly with your right hand and pull upwards (do not twist) until the sensor pops out of the fitting. If the sensor won't release go to step 3.
- 3 - Place a small to medium sized flat thin bladed screwdriver in the join where the sensor meets the nipple adaptor (See FIG 5), twist the screw driver to prize the two apart then pull upwards again until the sensor is released.

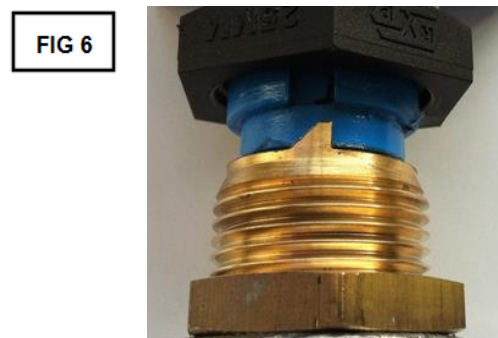
### Removal of MRTU4 from Pipe adaptor Fitting 'Triangular' Keyway Type Nipple Adaptor:(see FIG 6)

- 1 - Unscrew the black PVC locking cap (anti-clockwise).
- 2 - Hold the neck of the Tee piece in your left hand grasp the enclosure with your right hand and turn slowly anti-clockwise until the sensor pops out of slot then pull upwards out of socket.

\*\*When returning the sensor to nipple adaptor insert so the keyway and slots line up then pull down until they locate. Screw the black lock nut clockwise to hold the sensor in place (hand tightened only).



Standard fitting 'Square' Keyway



New 'Triangular' turn replace fitting

## Cleaning:

- 1 - If the paddlewheel (rotor) and or sensor body is coated with scale, immerse the sensor section in diluted hydrochloric acid, scour gently if required.
- 2 - **For ease of removal or refitting of sensor we strongly recommend to lubricate the body O-rings using petroleum jelly.**
- 3 - If the paddlewheel requires servicing, push out the axle using a small hole punch or similar implement, remove the paddle wheel and service or replace rotor and/or axle as required (spare parts available from ManuFlo).

## Removing the Top Cover:

The top cover should not be removed inside the initial 12 months warranty period otherwise warranty may be voided. But in the event that the cover is opened it is imperative that the O ring seal is pushed into the groove before fastening the screws to close the unit up again, otherwise it will become crimped and thus leave a cavity for water to ingress between the top and bottom cover, this invariably results in destruction of the PCB (refer photo right).



## Fault Diagnosis & Rectification:

- If the LCD display is blank, the MRTU4 may be in sleep mode because it is not receiving input pulses from the paddlewheel. The LCD is reawakened once flow restarts, or by closing and re-opening the lid.
- If the flowmeter ceases to count, the paddlewheel may be blocked, remove inspect and clean as described above.
- If the MRTU4 counts when there is no flow, a nearby 50Hz AC field is probably causing false counts. Move the flowmeter away from the 50Hz field, or move the source of the field if practical.
- When not in use, keep the outer lid should be closed. If prolonged direct exposure to sunlight causes the LCD to fade or discolour, return the MRTU4 to ManuFlo for servicing.
- Should the device still not operate please return or contact ManuFlo Support.

## FLOWMETER ORDERING CODE

## MRTU4

Base Model	Code Position A	B	C	D	E	F	G	H	I
MRTU4 -	Refer to Pipe Adaptor Selection (Page 6)	Pulse -	P Scale -	T Units -	T DP -	Sleep -	Reset -	ER -	CAL
<b>Pulse Output Options:</b>									
Without pulse output (Default)		0							
With pulse output ('pulse live' lid open or closed)		P							
With pulse output ('pulse not live' when lid closed)		PNL							
<b>Pulse Output Scaling</b>									
1 Pulse / Litre (Default)			1						
0.1 pulse / Litre (10 pulses/litre 25mm only)			0.1						
<b>Totaliser Display Units:</b>									
Litres (Default)				L					
<b>Totaliser Decimal Place:</b>									
Without Decimal Place (Default)					0				
With 1 Decimal Place					1				
<b>Sleep Mode (Battery Conservation):</b>									
Sleep in 5 Minutes (Default)- LCD Turns off after 5 mins. without flow - value can be adjusted from 5 to 999.9 mins.						S5			
Sleep Function Off - Display is always live (reduced battery life but still >5 years in most applications)							SO		
<b>Totaliser Reset Options:</b>									
Reset (Default) Totaliser is reset each time the lid is closed							R		
Wake Reset - Wakes the display and retains Total (unless lid closed twice)							WR		
Reset Disabled - Totaliser reset function disabled (running total only)							RD		
<b>External Reset Option:</b>									
No external reset (Default)								0	
External Reset - Totaliser reset via external input (includes IP67 plug and socket c/w 5m cable)								ER	
<b># Calibration Preference (based on application):</b>									
Standard (Default) - Factory standard calibration orientation: Pipe sizes 20mm & 25mm Vertical, >25mm calibrated in Horizontal plane									S
Vertical - Flowmeter calibrated in the vertical plane to match customers application									V
Horizontal - Flowmeter calibrated in the horizontal plane to match customers application									H

# MRTU4 flowmeter sizes 20 - 25mm are factory calibrated in the 'vertical up' position, sizes 32mm > are calibrated in the horizontal plane with a small incline. For these larger sizes there can be a difference (approx. 5%) in the calibration 'K-Factor' from horizontal to vertical calibration, this difference is noticeably greater for flow downward position where gravity plays a part. If the accuracy is critical to your application you should specify your preferred calibration position at order placement.

## Example:

Base Model	Pipe Adaptor	B	C	D	E	F	G	H	I
MRTU4 -	GAL25-T2	P	1	L	0	S5	WR	0	S

## Position Selection Description:









- Code A: GAL25-T2 .....25mm GAL pipe adaptor with straight pipe lengths  
 Code B: P.....Pulse output  
 Code C: 1.....Pulse output 1 pulse / Litre  
 Code D: L.....Totaliser in Litres

Code E: 0..... Totaliser without decimal point  
 Code F: S5..... Display sleep after 5 minutes inactivity  
 Code G: 0..... Reset lid function  
 Code H: 0..... Without external reset  
 Code I: S..... Standard factory calibration orientation

**Populate for your selection:** (If no selection made MRTU4 will be supplied as per 'Default' factory settings highlighted in blue above)

Base Model	Pipe Adaptor	A	B	C	D	E	F	G	H	I

**\*\* Pipe fitting options for the MRTU4 are as per the following table however other fitting types may also be available on request\*\***

Material	GAL	PVC	PVC	Polypropylene	Polypropylene	STAINLESS	BRASS	BRASS
Type	T-Piece	slip T-piece	Saddle Clamp	SaddleClamp	SaddleClamp	T-Piece	T-piece	Socket
For	Gal pipe	Pressure pipe	Pressure pipe	PVC Irrigation pipe	Poly Pipe Black	S/Steel pipe	Brass pipe	
20 mm		PVC20					BRA20	
25 mm	GAL25 (-T2)	PVC25				SS25	BRA25	
32 mm	GAL32	PVC32				SS32		
40 mm	GAL40	PVC40	PVC40SC	SCP40	SC40	SS40		BSOC: 1" BSP Brass pipe socket adaptor suites <b>BSPB &amp; BSPSS</b> nipple
50 mm	GAL50	PVC50	PVC50SC	SCP50	SC50	SS50		
63 mm					SC63			
65 mm		PVC65		SCP65				
75 mm					SC75			
80 mm	GAL80	PVC80	PVC80SC	SCP80	SC80			
80 mm	GAL80-F (Table D flanged)							
90 mm					SC90			
100 mm	GAL100	PVC100	PVC100SC	SCP100				
100 mm	GAL100-F (Table D flanged)							
								
	Galvanised Iron, threaded ends BSP(female). 2000 kPa NOTE: 25mm can be supplied with straight pipe sections already fitted (Part GAL25-T2)	PVC T-piece Class 18, Cat 19  Glue-in (female) 1100 kPa	PVC 1400 kPa	PVC 1000 kPa	Poly-pipe agricultural Saddle Clamps.  1000 kPa	Stainless Steel 316 T-piece.  BSP (female) threaded entry 2000 kPa	Brass T-piece  BSP (female) threaded entry 2000 kPa	1" BSP Brass pipe socket adaptor & <b>BSPB BSPB-LS BSPSS</b> nipple adaptors (see Fig 1 Page 3)



**GAL80 - 80mm Galvanized Iron pipe adapter (80mm φ x 600mm long)**

**IMPORTANT:**

**The display head is factory programmed according to the pipe size, and the display head and its pipe adapter are calibrated together to operate as one unit.**

**DO NOT remove the flowmeter and place it on a different sized pipe adapter, because the display will require re-calibration before it can measure properly on the new pipe size.**



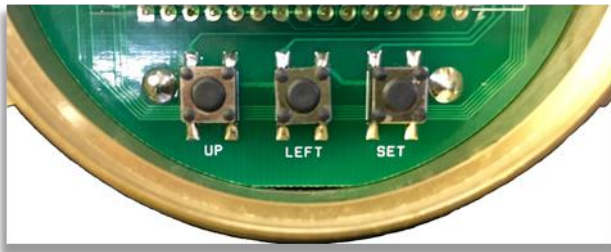
Each flowmeter is wet tested on a calibration rig prior to shipping so there is no reason to calibrate them inside the 12 month warranty period (which is why we place warranty void seals on the enclosure). Once the warranty period has expired it is preferred to carry out calibration via the 'NFC' (Near Field Communication) software method. This software is available free from our website click on the following link and download to a PC prior to loading to an ANDROID NFC enabled smart phone.

**Original 'Push button method'**

Calibration is via the three internal pushbuttons (marked **UP**, **LEFT** and **SET**) located underneath screen.

- Note: The calibration (K-factor) characteristics can vary up to 6% between horizontal or vertical runs.
- Run liquid through the MRTU4 into a calibrated vessel or load cell, until at least 50 Litres is displayed on the MRTU4. For accuracy, keep flowrate continuous and above minimum flow range for the pipe size.
- Compare the actual amount collected against what is displayed on the MRTU4. If the amount collected matches the amount displayed within ±2%, then no adjustment to calibration is necessary.
- **Formula:**  $Percentage\ error = (Amount\ displayed - Amount\ collected) / Amount\ displayed \times 100$
- If the percentage error is more than ±2%, please follow **1 point calibration** procedure.
- **To access buttons**, open the hinged lid and remove the four SST screws holding the viewing window to the enclosure. Set the viewing window aside in a safe place you will now be able to see the green electronics board.

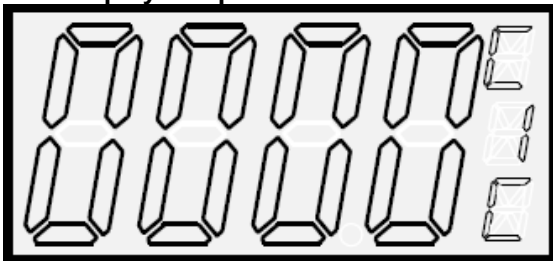
**Adjusting the Calibration Value using the internal Calibration push buttons SET, LEFT and UP.**  
Internal Push Buttons **UP**, **LEFT** and **SET**



**1 Point Calibration Function:** (User friendly, No calculations needed)

**Step 1.** Press **UP** button for approximately 5 seconds

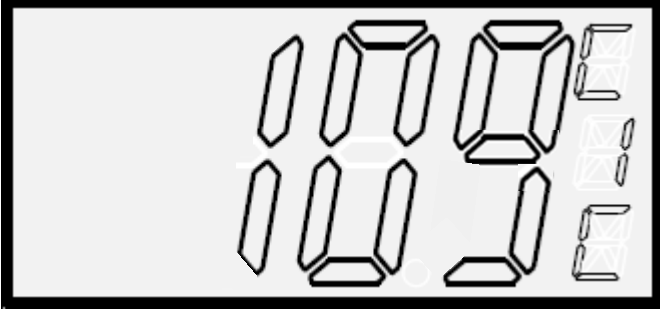
LCD display in 1 point calibration mode.



**Step 2.** Start flow (Run liquid through the MRTU4)

- Calibration will automatically start upon flow detection.
- Display must have at least 100 counts or more to have an accurate calibration before stopping the flow.

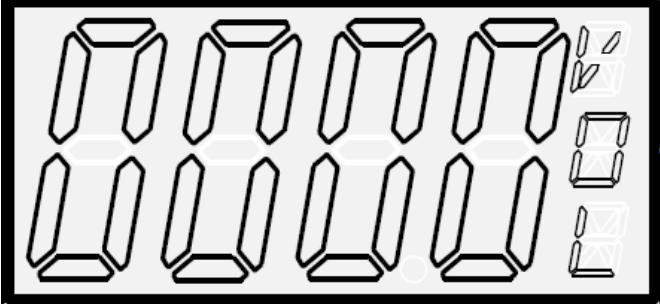
**Example: Display = 109 C (counts)**



**Step 3. Stop flow**

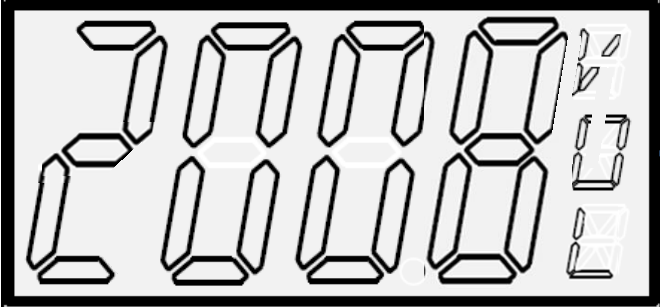
- After flow is completely stopped, wait for approximately 10 seconds and the display will update to allow entry of collected amount of liquid in litres.

**LCD display, 10 seconds after flow stops.**



**Step 4. Enter volume collected in Litres.**

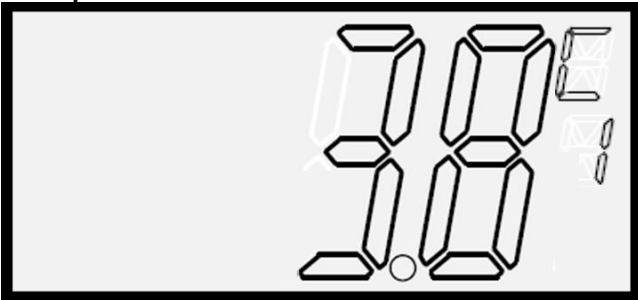
**Example: Volume = 2008 Litres**



- Press **LEFT** button to select desired digit to be change.
- Press **UP** button to change the value of selected digit.
- Press **SET** to lock in the changed value.

**Step 5. Press SET to display Gear Rate.**

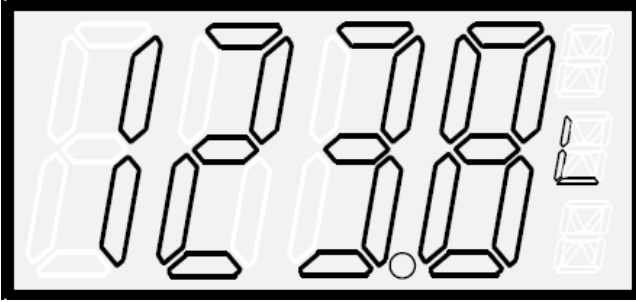
**Example: Gear Rate: 3.8 Counts/Litre**



**Note:**

Gear Rate value will be shown for approximately 5 seconds then display will revert to counting mode (main display), this is the indication that the meter has been successfully re-calibrated.

**Example: Display in Litres (L) with optional decimal point**



**Step 6.** Verify that the meter has been properly re-calibrated.

- Do one or more test run and verify if the MRTU4 displayed amount is now within  $\pm 2\%$  error.
- If satisfied, properly mount the glass window and locking ring back to its original state.
- Otherwise, repeat Steps 1 to 6

*(Further calibration method -see next page)*

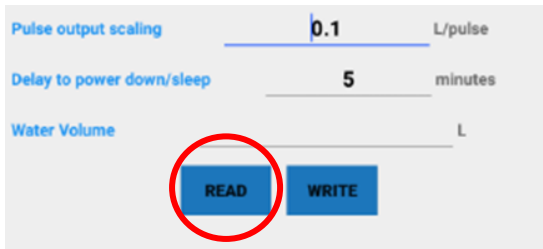
## **CALIBRATION (remote NFC method)**

As well as the push button method calibration, to avoid having to open the enclosure and thus breaking the initial factory seal of the MRT flowmeters calibration can also be performed using an ANDROID SMART Phone and the **EWM03-APP** which can be downloaded from the Manu Electronics web site at the following link

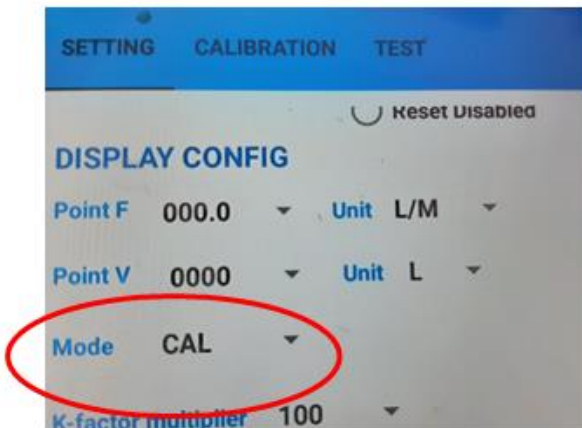
[www.manuelectronics.com.au/pdfs/MRTU4\\_EWM03\\_REV02.zip](http://www.manuelectronics.com.au/pdfs/MRTU4_EWM03_REV02.zip)

### **1 Point Calibration Procedure:**

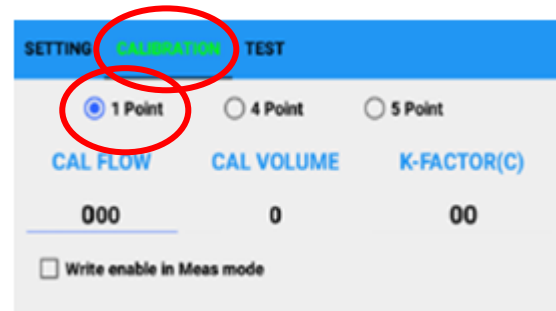
**Step 1.** Place your Smart phone on the face of the flowmeter move it around until you hear an audible beep indicating communications between the flowmeters RFID reader and the NFC antenna of the phone. Press **'READ'** and wait for the data from the flowmeter to upload to the phone.



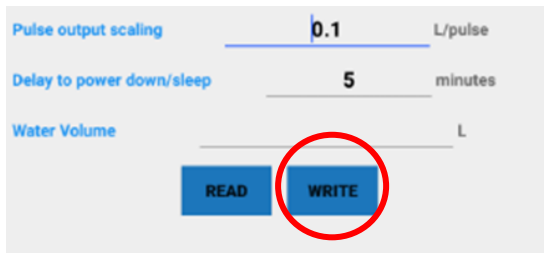
**Step 2.** Go to 'Mode' and under the drop-down menu select **'CAL'**



**Step 3.** Tap on the **'CALIBRATION'** heading at top of screen (cursor line will move to that heading) Tap on **'1 Point'** and enter all '00's at data points **'CAL FLOW'**, **CAL VOLUME** & **'K-FACTOR'**



**Step 4.** Return cursor to '**SETTING**' then place your Smart phone back on the face of the flowmeter move it around until you hear an audible beep. Press '**WRITE**' and wait for the data from the phone to upload to the flowmeter, wait up to 10 seconds then remove the phone at this point the flowmeter screen will go in to 'CAL Mode' with 'C1C' on the display.



**Flowmeter LCD Display in CAL Mode**

## **NFC CALIBRATION**

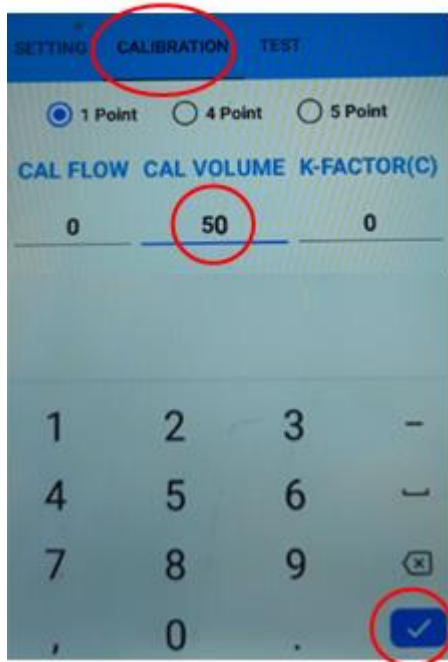
**Step 5.** Start flow (Run liquid through the MRT flowmeter into a verified measuring vessel or weigh scale)

- Calibration will automatically start upon flow detection.
- Display must have at least 100 counts or more to have an accurate calibration before stopping the flow.

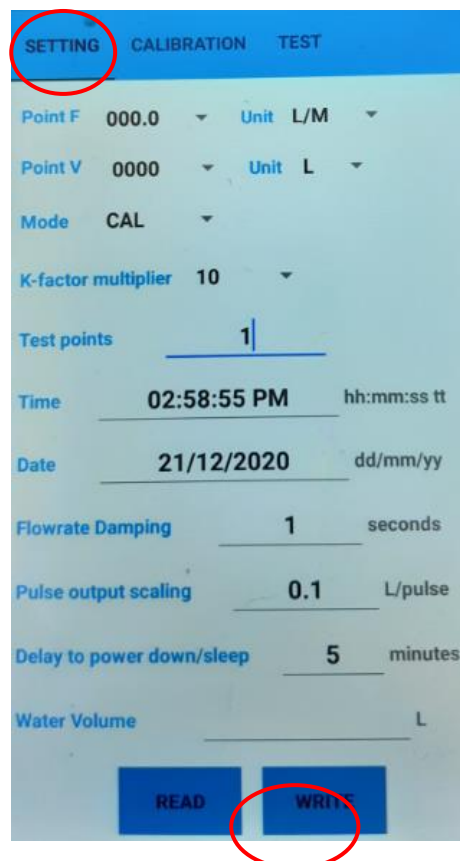


**Flowmeter Display once water flow has stopped 'C1' is indicated And numbers shown is Counts/Litre or (Gear Rate/K-FACTOR).**

**Step 6.** Stop the flow and make a note of 'actual volume' recorded. Enter the actual volume figure under 'CAL VOLUME' on the Phone e.g. '50 Litres' then press  to save.



**Step 7.** Return to 'SETTING' place the phone back on the face of the flowmeter and press 'WRITE' to upload the actual volume recorded to flowmeter.





**Step 8.** Remove the phone from the flowmeter after approx.10 seconds Display will now show all 000's and 'F0' is indicating it is now in 'Test Mode'.



**Step 9.** Run a small amount of water through the meter to flush the pipes (this will not be recorded) then stop the flow. Display will indicate 'F1' and return to zero.

## NFC CALIBRATION

**Step 10.** Turn on water flow again and carry out at least 1 (or better 2) volume tests through the meter following calibration.



After water has been stopped and a period of 10 seconds has elapsed the Display will indicate all 000's and return to the 'Run mode' with 'L' Litre indication.



This ends the NFC calibration procedure.

**Note:** If your application involves varying flow rates, 4 and 5 point calibrations can also be carried out at various flow rates to build up an accurate flow curve, the procedure is the same as the 1 point calibration.

## NOTES:

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