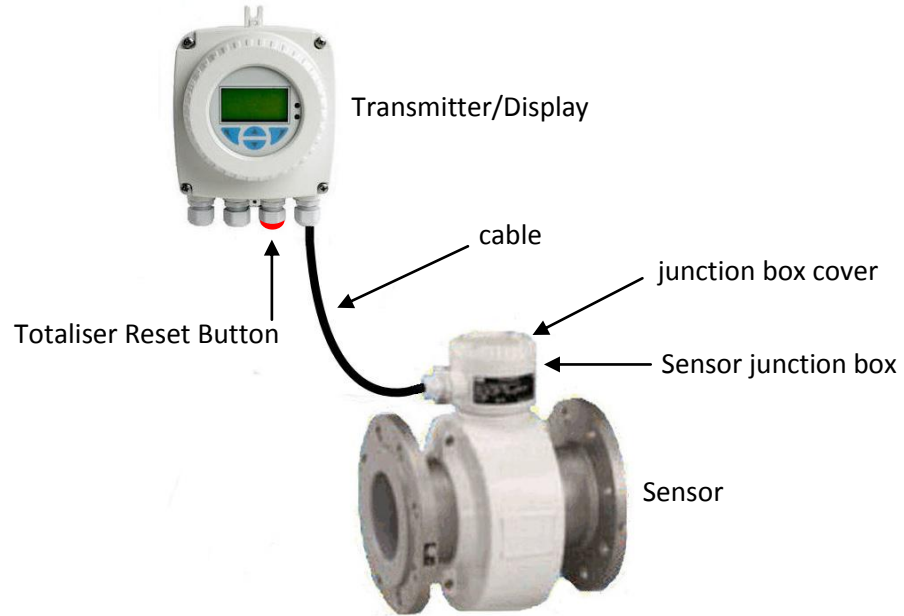
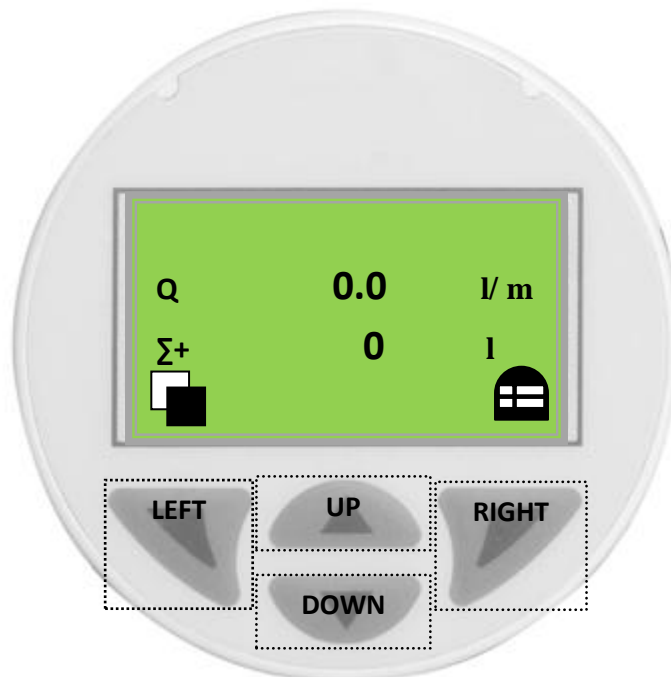


PROCEDURE TO REPLACE THE PROCESSMASTER SENSOR



PROCESSMASTER FLOWMETER

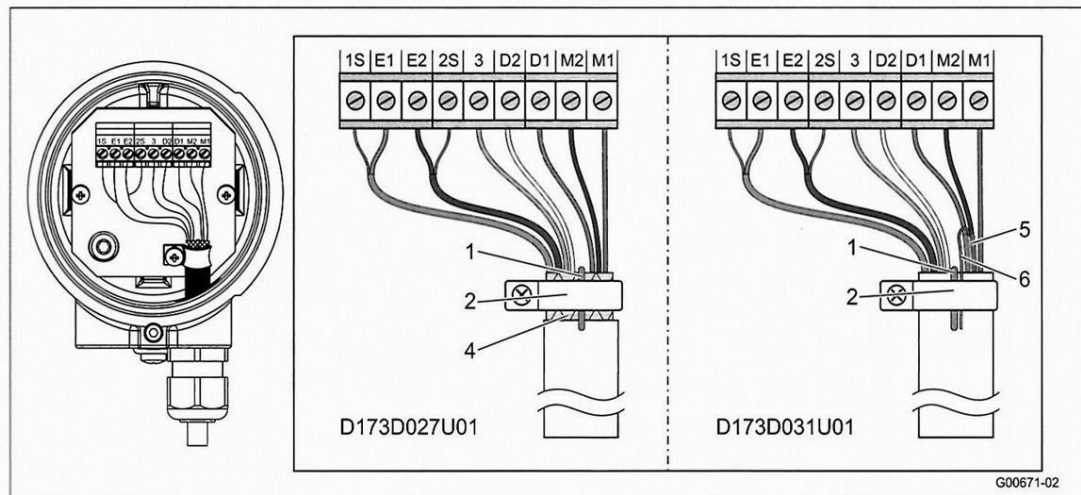
FLOWMETER TRANSMITTER/DISPLAY MENU NAVIGATION



Process Display shown (the normal operating display that shows total and flowrate).

1. Power off the flowmeter.
2. Unscrew the sensor's junction box cover.
3. Take note of the cable connections and colours in the junction box as the replacement sensor must be wired in the same way.

The cabling will match one of the two connection diagrams below.



- 1 Ground wire
- 2 Grounding clamp
- 4 Wire mesh shield (D173D027U01 only)

- 5 Foil shield D1, D2 (D173D031U01 only)
- 6 Foil shield continuity wire D1, D2 (D173D031U01 only)

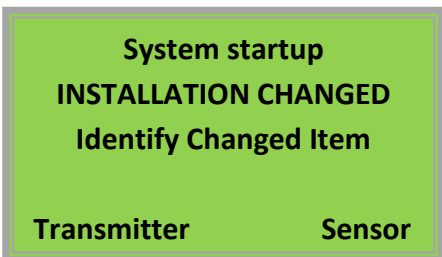
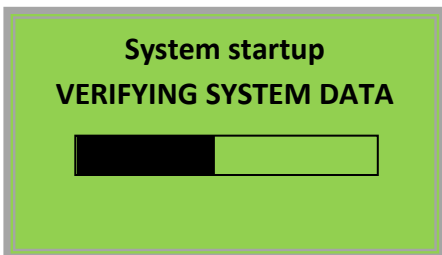
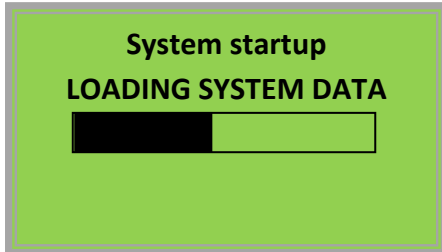
Terminal	Description, wire color
M1	Magnet coil, brown
M2	Magnet coil, red
D1	Data line, orange
D2	Data line, yellow
PE	Shield
3	Measurement potential, green
2S	Shield for E2
E2	Signal line, blue
E1	Signal line, violet
1S	Shield for E1

4. In the flowmeter sensor's junction box, disconnect the wiring of the old sensor.
5. Remove the old sensor and replace with the new sensor.
6. In the new sensor's junction box, re-connect the wiring the same as was noted in Step 3.
7. At this point it is desirable, but not essential, that the pipe where the sensor is located be full of liquid.

If the pipe is not full, then an empty pipe alarm will (correctly) later result, which may be distracting during this procedure.

8. Switch on the power supply to the flowmeter.

After switching on the power supply, the following messages are displayed one after the other in the Transmitter/Display LCD window:



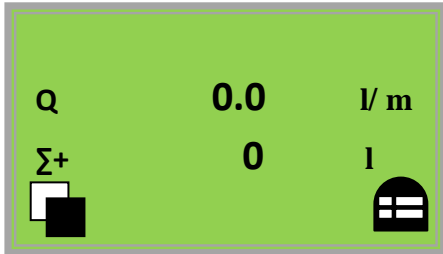
this will only be displayed the first time the flowmeter is powered up after the sensor has been changed

9. MOST IMPORTANT: On the Transmitter/Display, press the RIGHT pad  to select "Sensor" (do NOT select "Transmitter", else important configuration data will be lost)

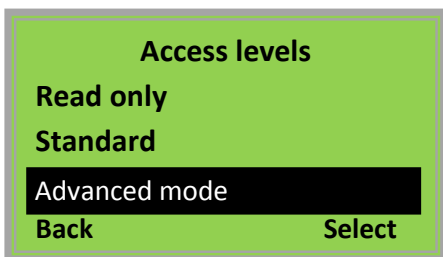
The calibration data of the flowmeter sensor is loaded from the sensor memory into the transmitter, and the transmitter settings are stored in the sensor memory.

Now check that the parameters are all correctly set, via the “Easy Setup” menu function:

10. Use RIGHT pad  to select configuration level.



11. Use UP  or DOWN  pads to highlight “Advanced mode” then use the RIGHT pad  to choose “Select” to confirm the selection.



12. The password should be activated (you are asked to enter a password), in which case use the UP or DOWN pads to scroll to number “4” then press LEFT pad (Next), scroll to number “1” then press RIGHT pad (OK).

If the password is not activated (you are not asked to enter a password), proceed to step 13.



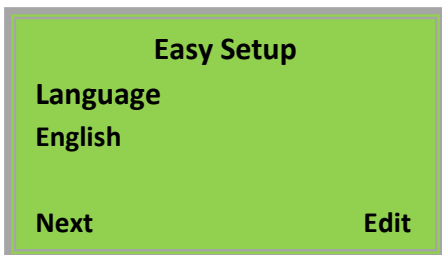
13. Use UP or DOWN pad to navigate to “Easy Setup” then use RIGHT pad to choose “Select”



14. Language should be set to “English”. If so, use LEFT pad to go to the next menu

If Language is not set to “English”, then:

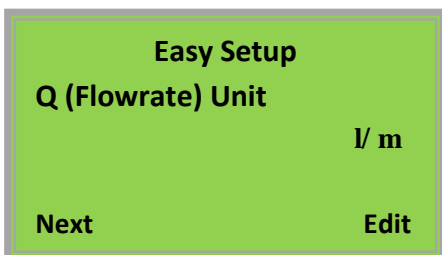
- use RIGHT pad to call up edit mode
- use UP or Down pads to select the desired language (“English”).
- use RIGHT pad to confirm selection.
- use LEFT pad to go to the next menu.



15. Q (Flowrate) Unit should be set to “l/m”. If so, use LEFT pad to go to the next menu.

Otherwise:

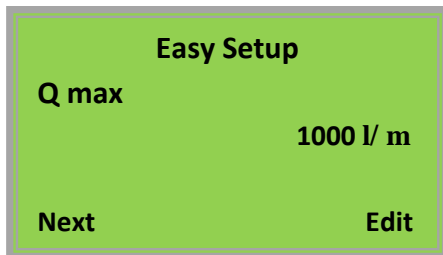
- Use RIGHT pad to call up edit mode.
- Use the UP or Down pads to select the desired unit (l/m).
- Use RIGHT pad to confirm selection.
- use LEFT pad to go to the next menu.



16. Q max should be set to "1000 l/m" (the 20mA analogue output will represent Qmax).
If so, use LEFT pad to go to the next menu.

Otherwise:

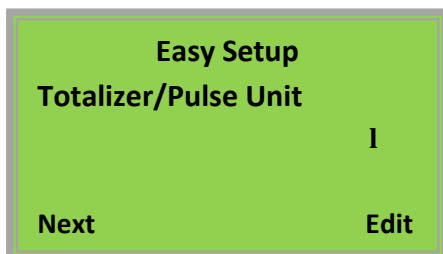
- Use RIGHT pad to call up edit mode.
- Use the UP or Down pads to select the desired unit (1000 l/m).
- Use RIGHT pad to confirm selection.
- use LEFT pad to go to the next menu.



17. Totalizer/Pulse Unit should be set to "l" for Litres. If so, use LEFT pad to go to the next menu.

Otherwise:

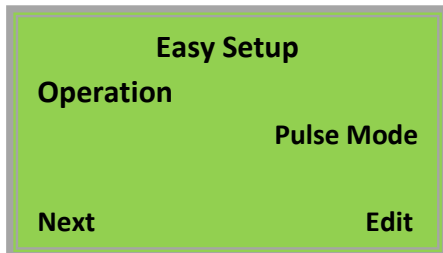
- Use RIGHT pad to call up edit mode.
- Use the UP or Down pads to select the desired unit (l).
- Use RIGHT pad to confirm selection.
- use LEFT pad to go to the next menu.



18. Operation should be set to "Pulse Mode". If so, use LEFT pad to go to the next menu.

Otherwise:

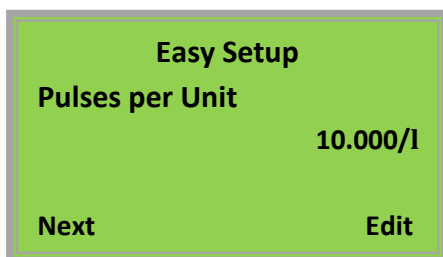
- Use RIGHT pad to call up edit mode.
- Use the UP or Down pads to select the desired operating mode (Pulse Mode).
- Use RIGHT pad to confirm selection.
- use LEFT pad to go to the next menu.



19. Pulses per Unit should be set to "10.000/!". If so, use LEFT pad to go to the next menu.

Otherwise:

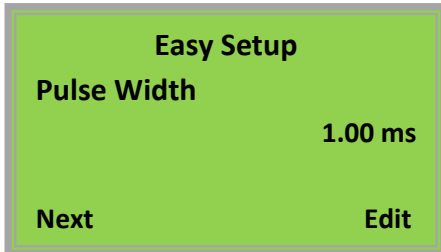
- Use RIGHT pad to call up edit mode.
- Use the UP or Down pads to select the desired unit (10.000).
- Use RIGHT pad to confirm selection.
- use LEFT pad to go to the next menu.



20. Pulses Width should be set to "1.00 ms". If so, use LEFT pad to go to the next menu.

Otherwise:

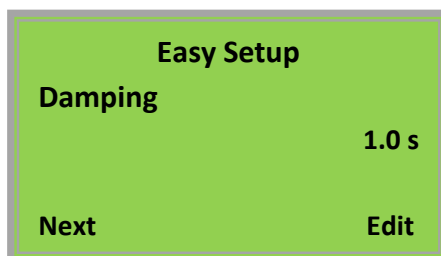
- Use RIGHT pad to call up edit mode.
- Use the UP or Down pads to select the desired value (1.00 ms).
- Use RIGHT pad to confirm selection.
- use LEFT pad to go to the next menu.



21. Damping should be set to "1.0 s". If so, use LEFT pad to go to the next menu.

Otherwise:

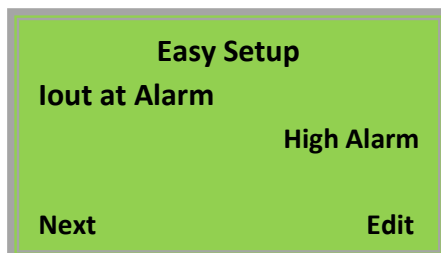
- Use RIGHT pad to call up edit mode.
- Use the UP or Down pads to select the desired value (1.0 s).
- Use RIGHT pad to confirm selection.
- use LEFT pad to go to the next menu.



22. lout at Alarm should be set to "High Alarm". If so, use LEFT pad to go to the next menu.

Otherwise:

- Use RIGHT pad to call up edit mode.
- Use the UP or Down pads to select the desired unit (High Alarm).
- Use RIGHT pad to confirm selection.
- use LEFT pad to go to the next menu.



23. Low Alarm Value should be set to “3.5000 mA”. If so, use LEFT pad to go to the next menu.

Otherwise:

- Use RIGHT pad to call up edit mode.
- Use the UP or Down pads to select the desired unit (3.5000).
- Use RIGHT pad to confirm selection.
- use LEFT pad to go to the next menu.



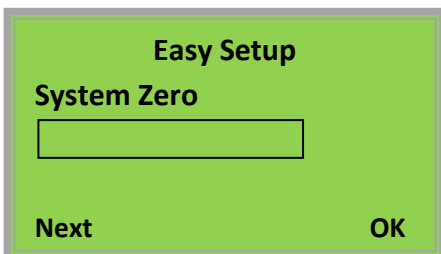
24. High Alarm Value should be set to “21.8000 mA”. If so, use LEFT pad to go to the next menu.

Otherwise:

- Use RIGHT pad to call up edit mode.
- Use the UP or Down pads to select the desired unit (21.8000).
- Use RIGHT pad to confirm selection.
- use LEFT pad to go to the next menu.



25. Press the LEFT pad (Next) to go to Step 26, as System Zero is not used in this procedure.

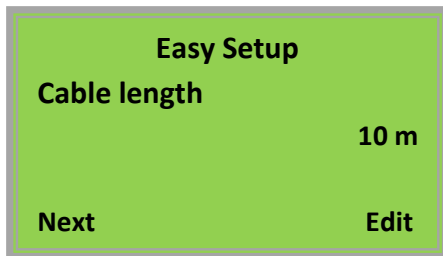


26. The Cable length should be set to the length of cable in metres between the sensor and the transmitter/display.

If this value is correct for your installation, then press the LEFT pad to go to the next menu.

Otherwise:

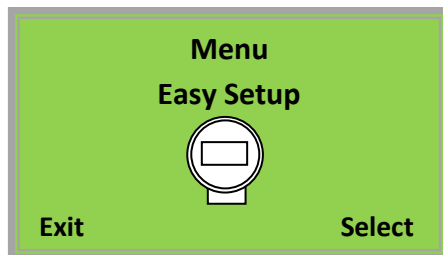
- Use RIGHT pad to call up edit mode.
- Use the UP or Down pads to select the desired length (e.g. 10 m).
- Use RIGHT pad to confirm selection.
- use LEFT pad to go to the next menu



Note:

This is the cable length in metres between your transmitter and sensor.

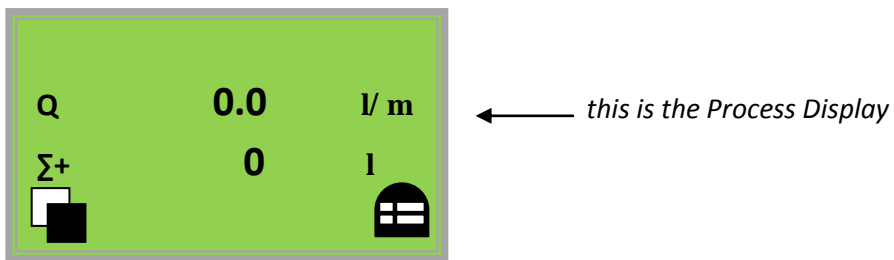
27. All the important parameters have been set, so the Easy Setup menu appears again.




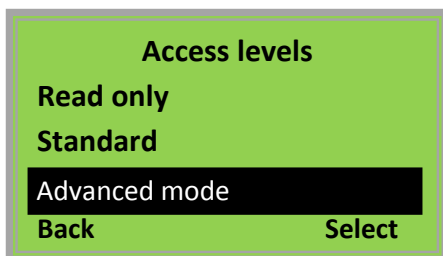
Use the LEFT pad (Exit) to switch to the Process Display (which is the normal operating display that shows total and flowrate)

Enabling "Empty Pipe Detection"

28. On the Process Display, use the RIGHT pad  to select configuration level.



29. Use UP or DOWN pads to highlight "Advanced mode" to highlight "Advanced mode" then use the RIGHT pad  to choose "Select" to confirm the selection.



30. The password should be activated (you are asked to enter a password), in which case use the UP or DOWN pads to scroll to number "4" then press LEFT pad (Next), scroll to number "1" then press RIGHT pad (OK).

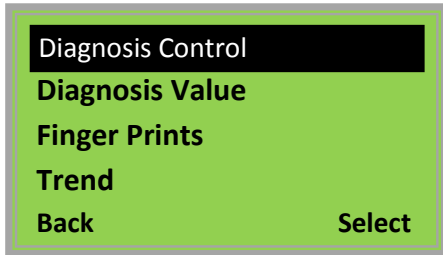
If the password is not activated (you are not asked to enter a password), proceed to step 31.



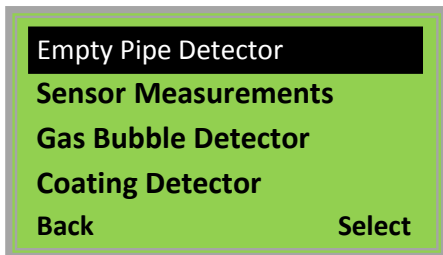
31. Use UP or DOWN pad to navigate to "Diagnostics" then use RIGHT pad to choose "Select"



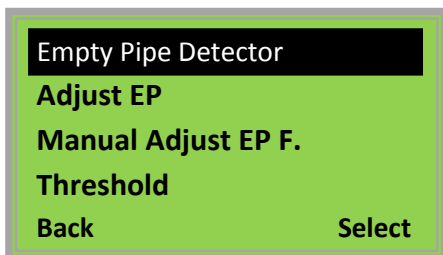
32. Use UP or DOWN pad to highlight "Diagnosis Control" then use RIGHT pad to choose "Select"



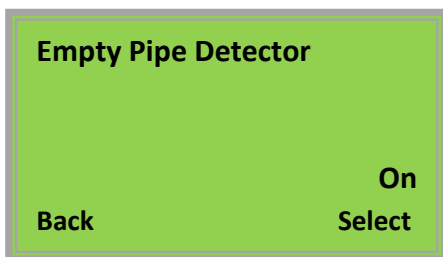
33. Use UP or DOWN pad to highlight "Empty Pipe Detector" then use RIGHT pad to choose "Select".



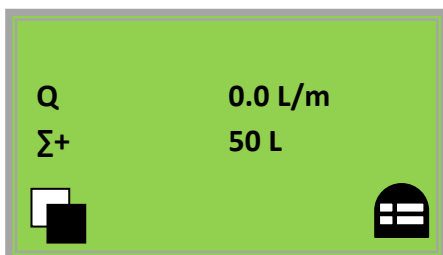
34. Use UP or DOWN pad to highlight "Empty Pipe Detector" then use RIGHT pad to choose "Select".



35. Use the UP or DOWN pads if necessary to select "On", then use RIGHT pad to choose "Select".



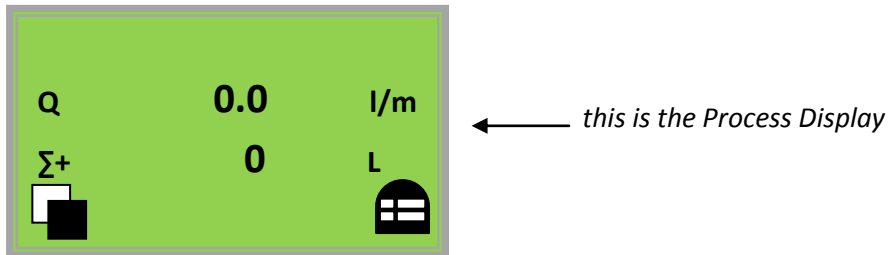
36. Exit programming mode by pressing LEFT pad "Back/Exit" until display is the Process Display.



← this is the Process Display

Enabling the external reset button

37. From the Process Display, Use RIGHT pad to select configuration level.

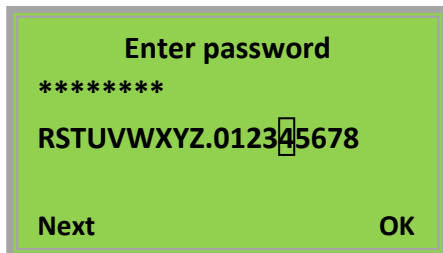


38. Use UP or DOWN pad to highlight "Advanced mode" then use RIGHT pad "Select" to confirm selection.

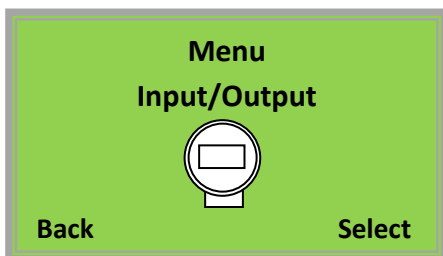


39. The password should be activated (you are asked to enter a password), in which case use the UP or DOWN pads to scroll to number "4" then press LEFT pad (Next), scroll to number "1" then press RIGHT pad (OK).

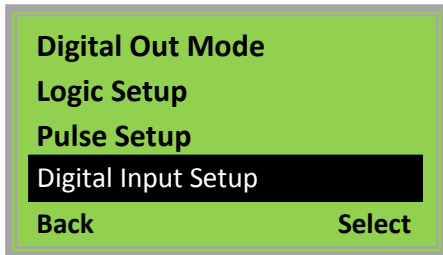
If the password is not activated (you are not asked to enter a password), proceed to step 40.



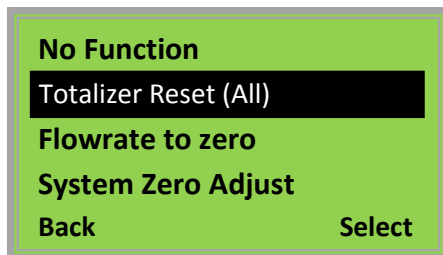
40. Use UP or DOWN pad to navigate to "Input/Output" then use RIGHT pad to choose "Select"



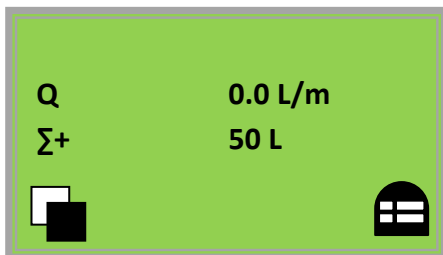
41. Use UP or DOWN pad to highlight "Digital Input Setup" then use RIGHT pad to choose "Select"



42. Use UP or DOWN to highlight "Totalizer Reset (All)" then use RIGHT pad to choose "Select"



43. Exit programming mode by pressing LEFT pad "Back" until the display is the Process Display.



← *this is the Process Display*

Test the external reset button

44. After a batch, test that the totaliser reset button works correctly by pressing the totaliser reset button and seeing the total reset on the display.