

TANK LEVEL INDICATOR

Code: 18739

This simple, yet highly effective Tank Level Indicator provides an extremely accurate and informative indication of water level within a tank. The controller is coupled to a Hydrostatic Pressure Transducer, which provides a 4-20mA signal to the Process Meter. The Process Meter displays the level in very clear LED numerals

Features

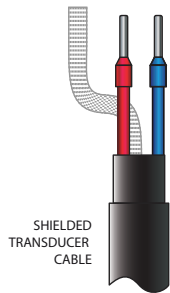
- Hydrostatic Pressure Transducer rating: 0-4m
- Process Meter has 2 relay outputs
- Display can be configured to read:
m/mm (depth), percentage (full) or litres (capacity)

Optional: Sewage/Waste water Transducer available



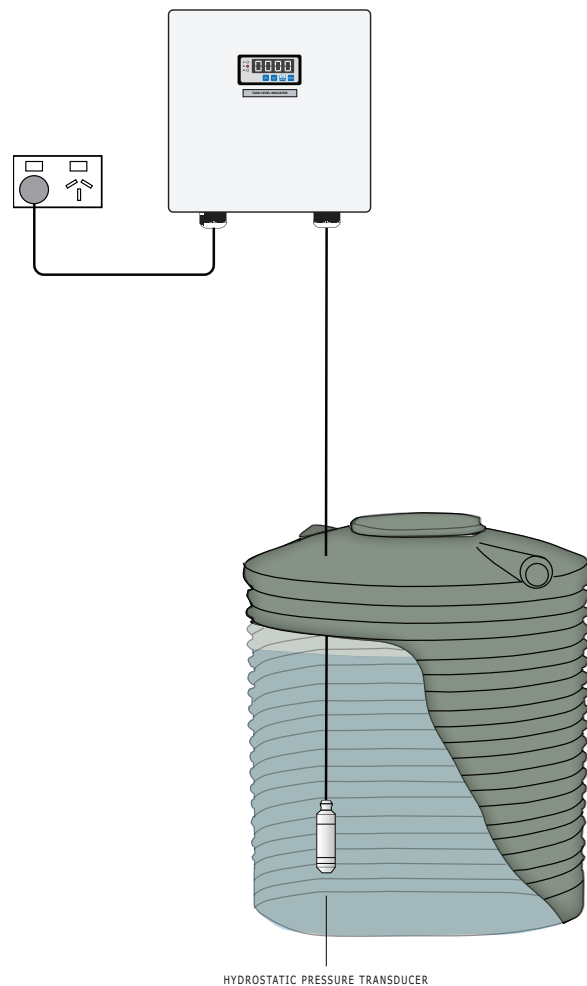
Connection Details

Earth	Active	Neutral	Shield	+	-	Relay 1	Relay 2
SUPPLY			Shield	Level Transducer		BMS	
240Vac				4-20mA		Volt/Free	



LEVEL TRANSDUCER

Schematic



HYDROSTATIC LEVEL TRANSDUCER

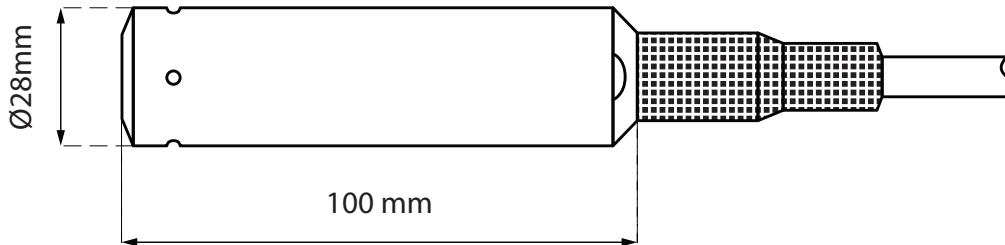
Functional Overview

This unit is designed to be used for potable/raw/rain water applications. (Not recommended for waste water. The unit is suited to 4-20mA applications where precise level readings are required.

Features

- Pressure Range: 0-0.4bar (0-4m)
- Small body diameter - 28mm
- Excellent repeatability and long term stability
- Excellent anti-interference ability
- Application: depth or level measurement in raw, rain, potable and ground water applications

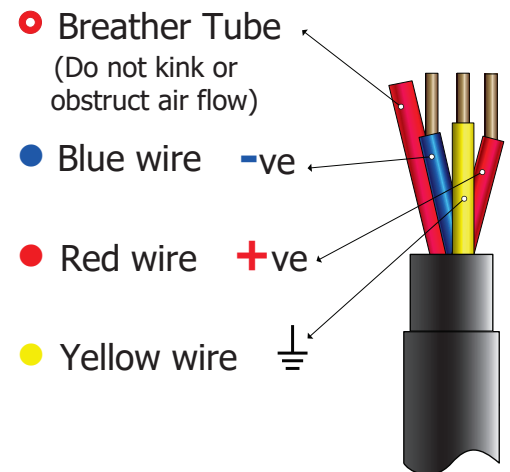
Dimensions



Specifications

Pressure Range:	0-0.4bar (0-4m)(0-40kPa)
Overload Pressure:	1.5 times full scale
Accuracy:	±1.0% F.S
Supply Voltage:	12-30Vdc Loop powered
Output Signals:	4-20mA Analog
Response Time:	10ms
Temperature Ranges:	Compensated Temperature: 0°C - 50°C Media: -10°C - 70°C Environment: -30°C - 85°C Storage: -40°C - 125°C
Temperature Compensation:	0.02%F.S./°C
Electrical Connection:	3 wires, Breather Tube
Protection Classification:	IP68
Housing Material:	316 Stainless Steel
Operating Life:	>1x10 ⁸ Pressure Cycles
Cable Details:	Length: 24m Diameter: Ø7.5mm OD Material: PUR Polyurethane

Connection Detail



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Setting Up Tank Display in mm

1. First calculate the maximum range of the transducer in mm.
2. Second calculate transducer height from the bottom of the tank (mm). Recommended approx 100mm.
3. Use the following formula to calculate the 'Hi C' value.

$$\text{Hi C} = \text{Transducer Range (mm)} + \text{Transducer height from bottom (mm)}$$

Example: $\text{Hi C} = 4000 \text{ (mm)} + 100 \text{ (mm)}$
 $= 4100 \text{ mm}$



4. Press and hold the button , until the screen is reading 'rEI 1'
5. Push the button  until the screen is showing 'input', Press the  button
6. Press  button until the screen is reading 'Hi C'. Press the  button
7. Enter in calculated value. Use the  and  buttons to change the number that is flashing.
To go to the next digit, press the  button.
8. Once you have successfully entered the new value, press and hold the  button until "Set?" appears on the screen. Press  again.
9. Press  until it returns to the main reading screen.
10. Further adjustment may be required if exact measurements are not used












Setting Up Tank Display in %

1. First calculate the Height of the tank at full (mm) where 100% will be displayed.
2. Second calculate transducer height from the bottom of the tank (mm). Recommended approx 100mm.
3. Use the following formula to calculate the 'Hi C' value.

$$\text{Hi C} = \frac{\text{Transducer Range (mm)}}{(\text{Tank full (mm)} - \text{Transducer height (mm)})} \times 100$$

Example: $\text{Hi C} = \frac{4000 \text{ (mm)}}{(1100 \text{ (mm)} - 100 \text{ (mm)})} \times 100$
 $= 4 \times 100$
 $= 400\%$



4. Press and hold  the button, until the screen is reading 'rEI 1'
5. Push the button  until the screen is showing 'input', Press the  button
6. Press  button until the screen is reading 'Hi C'. Press the  button
7. Enter in calculated value. Use the  and  buttons to change the number that is flashing.
To go to the next digit, press the  button.
8. Once you have successfully entered the new value, press and hold the  button until "Set?" appears on the screen. Press  again.
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Setting Up Tank Display in Kilo Litres.












1. First calculate the height of the tank (mm) and volume (kl).
2. Second calculate transducer height from the bottom of the tank (mm). Recommended approx 100mm.
3. Use the following formula to calculate the 'Hi C' value.

$$\text{Hi C} = \frac{\text{Transducer Range (mm)}}{(\text{Tank full (mm)} - \text{Transducer height (mm)})} \times \text{Volume (kl)}$$

Example:

$$\begin{aligned} \text{Hi C} &= \frac{4000 \text{ (mm)}}{(1100 \text{ (mm)} - 100 \text{ (mm)})} \times 40 \\ &= 4 \times 40 \\ &= 160 \text{ kl} \end{aligned}$$



4. Press and hold the button , until the screen is reading 'rEI 1'
5. Push the button  until the screen is showing 'input', Press the  button
6. Press  button until the screen is reading 'Hi C'. Press the  button
7. Enter in calculated value. Use the  and  buttons to change the number that is flashing.
To go to the next digit, press the  button.
8. Once you have successfully entered the new value, press and hold the  button until "Set?" appears on the screen. Press  again.
9. Press  until it returns to the main reading screen.
10. Further adjustment may be required if exact measurements are not used

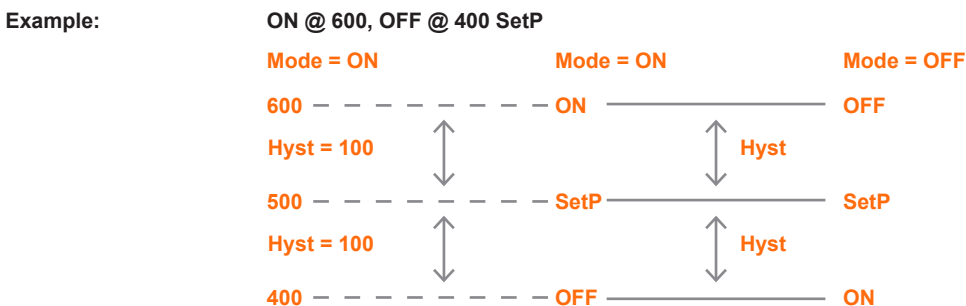
Setting relay outputs

1. Work out switch on and switch off values.
2. Work out whether the relay will switch on when increasing (ON) or decreasing (OFF) level.
3. Use the following example to work out the setpoint, hysteresis and mode.














Mode: ON (Increasing), OFF (Decreasing)

SetP: = Middle point between on and off

Hyst: = Value from middle point to on or off



Note: Increasing is for pump down or high level, decreasing is for tank fill or low level.

4. Press and hold the button , until the screen is reading 'rEI 1'
5. Press  or  until the required relay 'rEI 1' and 'rEI 2' is displayed then press .
6. Press  or  until 'SetP' is displayed and press .
7. Enter in calculated value. Use the  and  buttons to change the number that is flashing.
To go to the next digit, press the  button.
8. Once you have successfully entered the new value, press and hold the  button until "Set?" appears on the screen. Press  again.
9. Go to step 6 and complete settings for **Mode** and **Hyst**.
10. Press  until it returns to the main reading screen.