

process measurement solutions



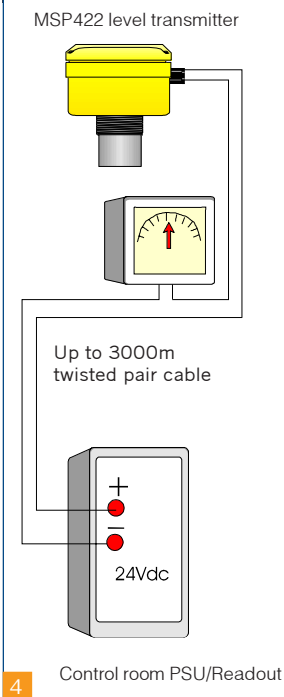
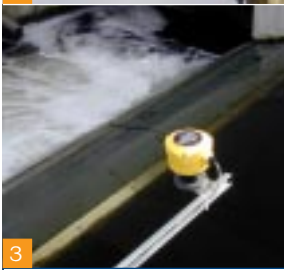
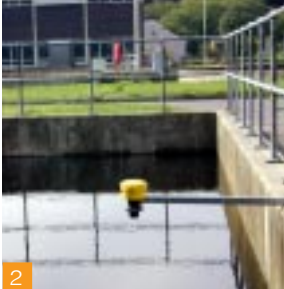
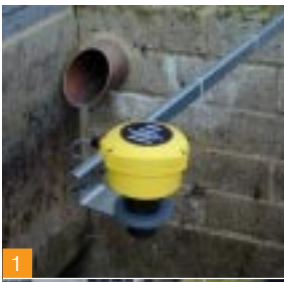
Mobrey MSP422

2 wire 24V loop powered
ultrasonic level transmitter

IP278



MSP422 Liquid level transmitter 2 wire 24Vdc loop powered



The MSP422 is the latest in a long and proven line of ultrasonic non-contact liquid level instruments from Solartron Mobrey.

This entry level transmitter is designed specifically for use in the many industrial applications where economical liquid level measurement with an analog 4–20mA output proportional to level is required.

The use of state of the art electronics coupled with time proven ultrasonic transducer technology has resulted in an easy to use instrument with the high reliability and quality readings usually associated with more expensive products.

Advantages

- ▶ Eliminates problems experienced with contacting instrumentation.
- ▶ Eliminates costly installation and mounting.
- ▶ Simplified set-up and operation.
- ▶ False target recognition and rejection.
- ▶ Minimal maintenance once installed.

M20 conduit thread
Cable gland supplied

Tough glass filled nylon housing and lid
IP66/IP67

2" BSPT Mounting thread
Economical mounting - optional mounting bracket kit available

Inert PVDF wetside material
Suits applications over most liquids



Once installed using the 2" thread, either directly to the vessel or on a suitable bracket above the liquid surface, 3 internal push buttons are used to programme the MSP422 with the tank depth and the range for the 4-20mA output.

A built-in 4 digit LCD display under the cover is provided to aid setting up.

Ultrasonic pulses transmitted from the transmitter face are reflected from the surface of the liquid and are received back by the same transmitter.

Measurement of the time delay between the transmit and the receive signals enables the microprocessor controlled electronics to calculate distance to the liquid level.

Once the MSP422 is programmed with the bottom reference of the application - usually the bottom of the tank - the liquid depth is calculated. The microprocessor controls the loop current to give a 4-20mA output signal, with the liquid level reading also available on the LCD display inside the enclosure.

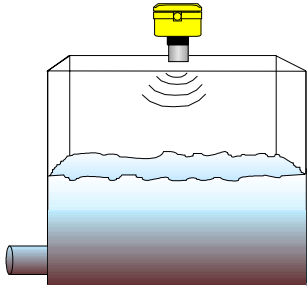
Features

- ▶ 2 Wire 24Vdc loop powered
- ▶ 8m Operating range
- ▶ Measures liquid height or distance to liquid
- ▶ Simple push button calibration
- ▶ Built-in 4 digit display
- ▶ Automatic temperature compensation

- 1 Drains sump
- 2 Settling tank
- 3 Inlet channel
- 4 Simple twisted pair wiring

Applications

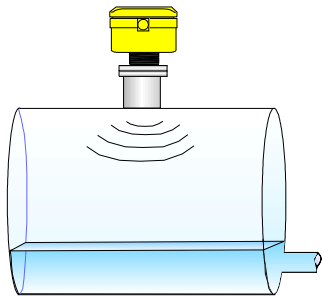
Filter bed level



1

One of the processes involved in water treatment and purification is filtration through a filter bed. The treated water is fed into a large tank or basin and allowed to filter under gravity through a sand blanket. The blanket removes any residual suspended solids. It is important to monitor the level of liquid above the blanket as this indicates the efficiency of the filter. Should the level start to rise, it may be that the filter is becoming blocked by accumulated debris and requires backwashing, or the outlet pipes or downstream process have a problem. The MSP422 will monitor water level and the plant PLC will take appropriate action according to the signal received.

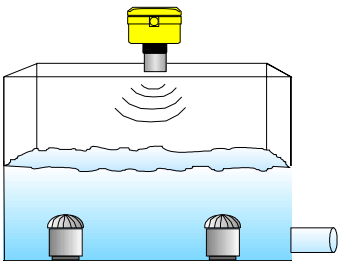
Storage tank levels



2

Many industrial processes rely on a steady supply of liquid for maximum efficiency, and produce finished product which needs to be stored prior to packaging and distribution. The MSP422 is used at the start of the process, in the feed or storage tanks of raw materials, right through to the finished product storage tanks. With an inert PVDF wetside and non-contact mounting above the liquid, the MSP422 is ideal for use over most liquids from caustic to aqueous right through to acidic. This also makes it ideal for use on CIP liquid storage tanks.

Effluent pits



3

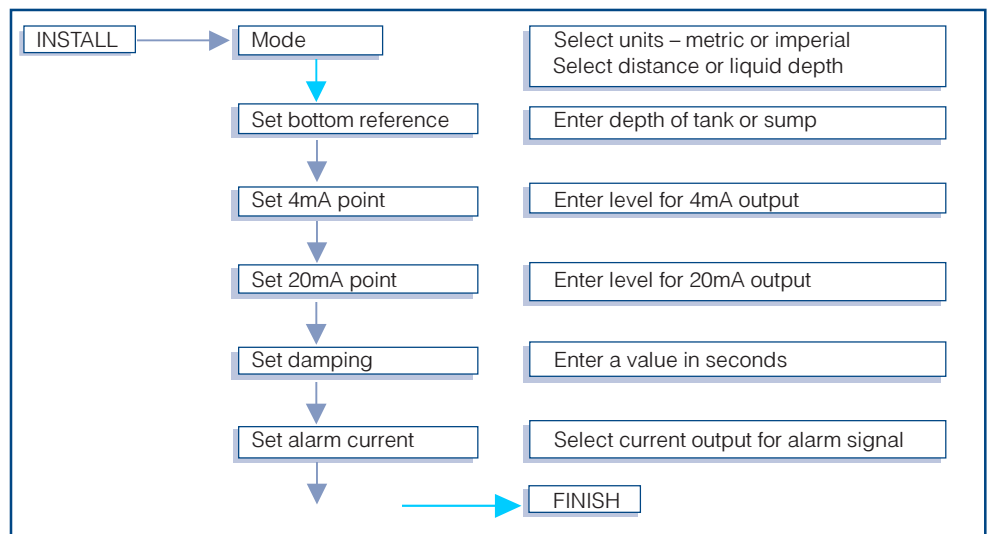
With the increasing regulatory pressures to treat waste products before discharge back to the water course, there are many sumps and pits to be monitored. The MSP422 is quickly and easily installed on a simple bracket over the sump and economical twisted pair cable is all that is required to provide power to the instrument and the signal back to the control area. Pumps can be protected and overflows prevented with this one simple measurement.

Reservoir level

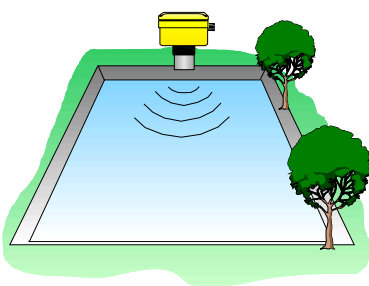
Control and balancing of our water supply is of course of vital importance, with rainfall and river supplies into reservoirs being crucial. It is always necessary to know the water level in reservoirs, and the MSP422 performs this task with ease. Mounted above the water level, usually in a sheltered position with easy access, the non-contact MSP422 delivers accurate readings in all weather conditions.

Programming

Time is precious in industry, so the faster an instrument can be commissioned, the better. MSP422 is simplicity itself – using 3 push buttons to navigate the menu, the instrument can be commissioned in under 5 minutes.



The MSP422 can also be programmed to ignore echoes from false targets, such as ladders or pump tops. If a false target is present, the user can enter the “Lrn” sub-routine of the programme and when the instrument picks-up the false signal, it is told to ignore this from then on.



4

1 Filter bed level

2 Storage tank levels

3 Effluent pits

4 Reservoir level

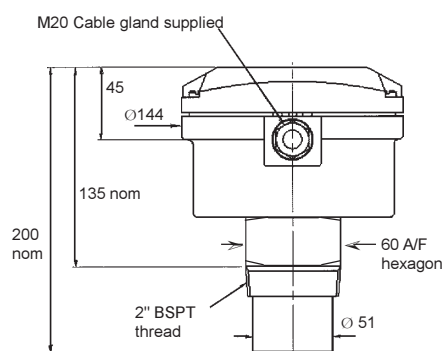
Technical specification

Measuring range:	0.3 - 8 metres
Resolution:	Better than 1m
Accuracy:	+/- 1% of measuring range under stable operating conditions
Operating temp:	-20 to +70°C
Operating pressure:	-0.25 to 3 bar (20°C)
Ultrasonic cone:	+/- 6° (3 dB point)
Current output:	4-20mA
Smoothing:	Site adjustable 1-99 seconds
Supply voltage:	Loop powered, 12V - 30Vdc (reverse polarity protected)

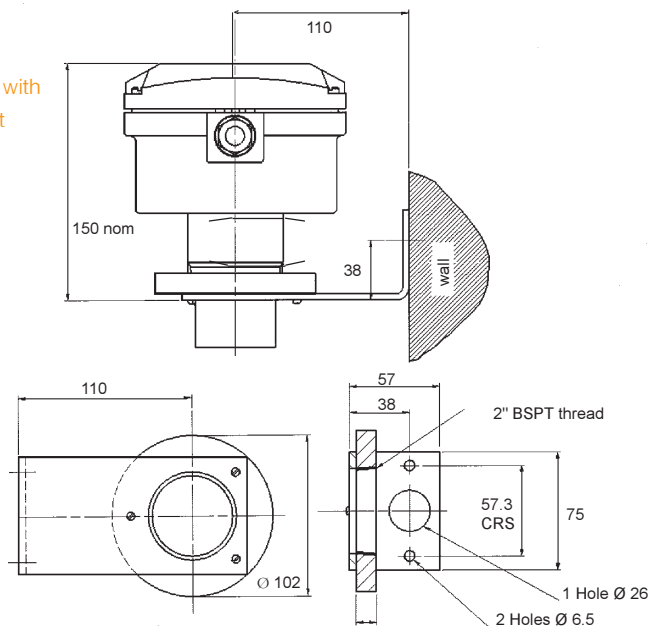
Weatherproof:	IP66/IP67 as standard
Electromagnetic compatibility:	Emissions: EN50081-1
	Immunity: EN50082-2
Materials of construction:	Glass filled nylon housing, PVDF wetside
Mounting thread size:	2" BSPT
Cable gland:	M20 thread in housing and fitted with a plastic cable gland to accommodate cable 4-7mm in diameter
Recommended cable type:	Single twisted pair, screened, max. length 3000m
Weight:	850kg

Dimensions

Threaded mounting



MSP422 shown with optional bracket mounting kit



Ordering information

Model	Mobrey ultrasonic liquid level transmitter		
MSP	Code	Output	
	422	4-20mA	
		Code	Mounting thread / Operating units
		B	2" BSPT / metric units
		N	2" NPT / imperial units
		Code	Wetside material
		2	PVDF
		Code	Integral temperature compensation
		8	Yes
MSP	422	- N	2 8 Typical ordering information

Stocked model

MSP422-N28

Note: This model is usually available from stock with short lead time, subject to quantity ordered and material availability.

Accessories

MSP-BRK3: A kit comprising a stainless steel bracket and PVC threaded boss to allow fixing to a wall or support.

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