

*process measurement solutions*



# Mobrey sludge monitoring

MSL600 sludge blanket  
level monitoring

IP261



# MSL600 sludge blanket monitoring



MSL600 control unit

## Description

The MSL600 sludge blanket monitor is a microprocessor based system, with an abundant range of built-in, display, control and alarm features. Easy to use menu driven programming allows complete configuration of the unit. Local programming is carried out via a membrane keypad.

## The principle

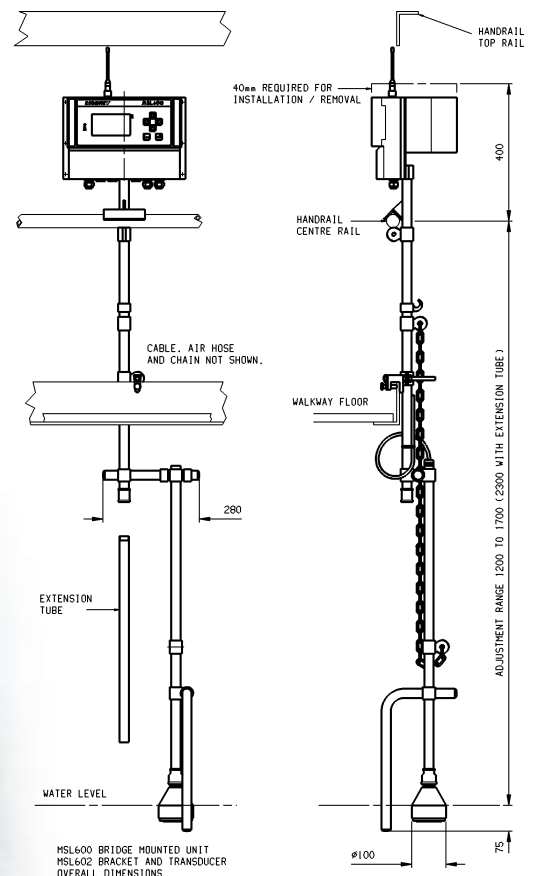
The MSL600 uses the sonar principle, with an ultrasonic pulse transmitted under water. Sophisticated echo processing allows the MSL600 to analyse the pulse of ultrasound which transmits vertically and reflects from the surface of the sludge blanket. The system captures the ultrasonic echoes reflected from the blanket interface. Knowing the speed of sound in the supernatant the depth of the sludge blanket is then determined from the time of flight of the echo.

## The system

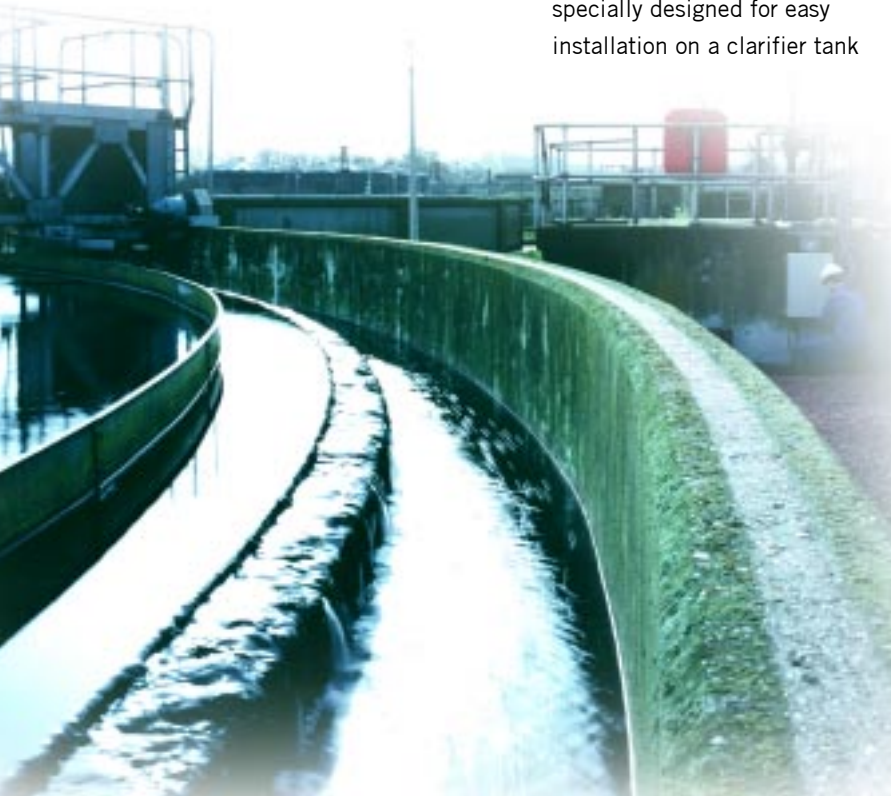
The system comprises an ultrasonic transducer and a bridge mounted control unit. These are specially designed for easy installation on a clarifier tank

bridge using a mounting bracket, supplied with the system. The system is optimised for use with clarifiers and thickeners containing municipal and industrial wastewater treatment sludge. The MSL600 provides a means of sensing the presence of the sludge blanket and measuring its depth in the clarifier. It also provides a range of current and relay outputs to the user for control and alarm purposes.

The bridge mounted MSL600 is a stand alone unit which can also communicate to an optional remote mounted unit situated off the clarifier bridge, via an integral radio telemetry link with a 500m range. The radio telemetry option is made available to cater for applications both with and without moving bridges, where transmitting small signals through slip rings or over long distances via expensive cable runs may be problematic.



MSL600 and mounting assembly



# Important MSL600 features

## Human machine interface

In common with other Solartron Mobrey control units the MSL600 makes use of the intuitive Solartron Mobrey Human Machine Interface (HMI).

The user can program and interrogate the system using the integral keypad and Liquid Crystal Display (LCD) without the need for regular reference to the manual.

For the more experienced user the HMI also facilitates rapid navigation of the menu structure and system parameters.

## Integral radio link

With the addition of the MSL601 all the outputs from the MSL600 may be transmitted to a remote location.

The MSL600 system incorporates several unique design features which promote trouble free operation, give installation flexibility and allow ease of installation.

## Self cleaning

A key feature of the MSL600 is its transducer self cleaning facility.

The system is designed for applications where the transducer may be mounted in a hostile environment where there is the likelihood of the transducer becoming coated or otherwise fouled.

A fouled transducer is far less efficient at transmitting sonar pulses into the supernatant. Using the automatic self cleaning system on the MSL600 transducer the maintenance cycles are reduced, thus increasing the life cost of the system.

Experience suggests that any moving mechanical cleaning devices are themselves prone to fouling. It is for this reason that the MSL600 uses an air purge cleaning function. Extensive site trials show that this method is very effective in keeping the face of the transducer free from any coating growth or build up of floating debris.

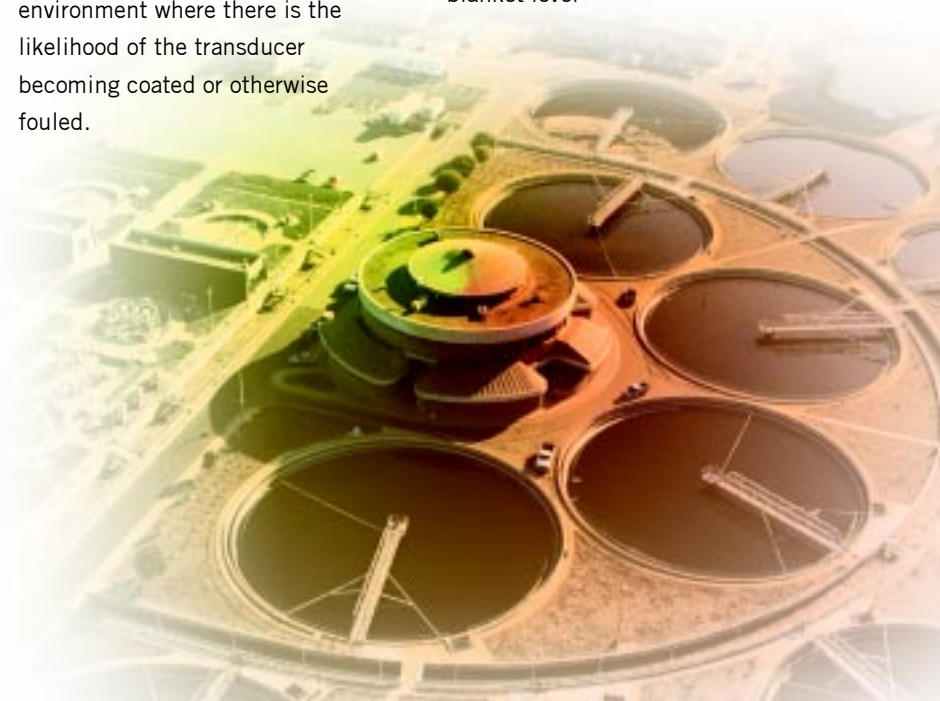
The integral cleaning compressor is powered by the MSL600 control unit.

## Applications

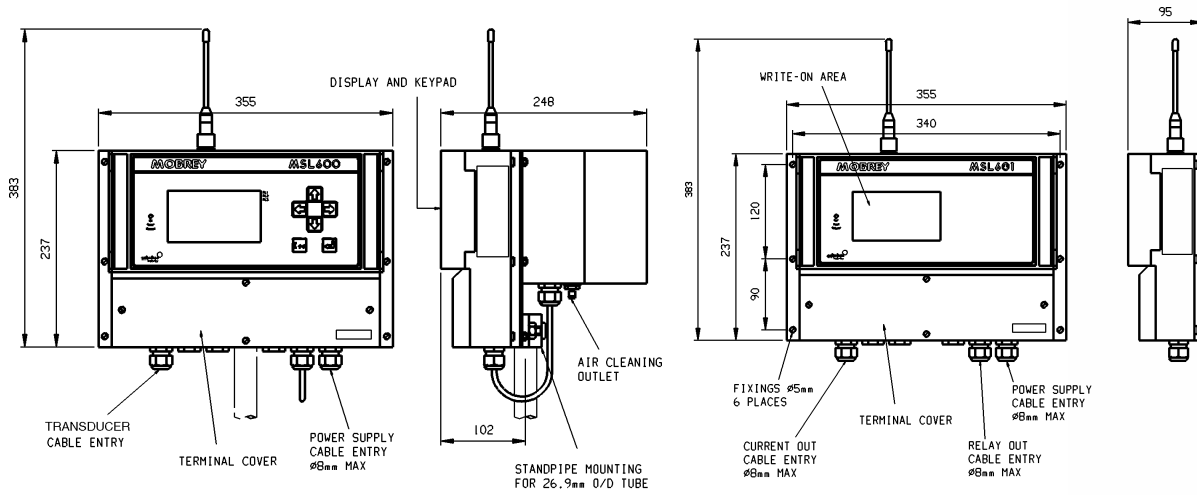
- ▶ Primary and secondary clarifiers in municipal and industrial waste water applications
- ▶ Circular rotating or static clarifiers
- ▶ Rectangular clarifiers with moving or static bridges
- ▶ Lamella clarifiers (providing there are no obstructions in the way of the transducer)
- ▶ Picket fence thickener sludge blanket level



- 1 GAC filter bed
- 2 Picket fence thickener
- 3 Secondary clarifier
- 4 Primary settlement tank



## Dimensions



## Specification

MSL600 BRIDGE MOUNTED UNIT			
Range	7.0m maximum	Enclosure rating	IP66
Dead band	0.3m minimum	Sensor rating	IP68
Accuracy	+/- 35mm	Echo processing	Solartron Mobrey
Resolution	25mm	Communications	RS232, Radio modem
Temperature		Outputs MSL600 & MSL601	2 programmable relays SPCO 1 fault relay SPCO 0/4-20mA isolated
Control unit	-20°C to +55°C	Cleaning	Via intergral air compressor
Sensor	-40°C to +65°C		
Power supply	110Vac or 240V ac, 50/60Hz		

## Ordering information

Code	Description										
<b>MSL600</b>	Bridge mount unit (with integral radio link and cleaning compressor)										
	<table border="1"> <thead> <tr> <th>Code</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td><b>Z1</b></td> <td>433MHz Europe</td> </tr> <tr> <td><b>Z2</b></td> <td>458MHz UK</td> </tr> <tr> <td><b>Z3</b></td> <td>464MHz USA &amp; Canada</td> </tr> <tr> <td><b>Z4</b></td> <td>472MHz Australia (Others on request)</td> </tr> </tbody> </table>	Code	Description	<b>Z1</b>	433MHz Europe	<b>Z2</b>	458MHz UK	<b>Z3</b>	464MHz USA & Canada	<b>Z4</b>	472MHz Australia (Others on request)
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<b>MSL600</b>	<b>Z1</b> Typical order number, an MSL600Z1 with a 433MHz radio link										

Code	Description										
<b>MSL601</b>	Remote mount unit with integral radio link (Optional)										
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<b>MSL601</b>	<b>Z1</b> Typical order number, an MSL601Z1 with a 433MHz radio link										

Code	Description
<b>MSL602</b>	MSL transducer and mounting bracket

**NOTE:** It is IMPORTANT to state the country in which the unit will be used in order that the correct frequency radio link can be fitted.

The control units, mounting bracket and transducer are also sold separately as spares, please contact the sales office for further details.

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