Mobrey Sludge Monitoring

MSL600 Sludge Blanket Level Monitoring

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 in just a few minutes. Local programming is carried out via an on-board membrane keypad.

Applications

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

The Principle

The MSL600 provides a means of sensing the presence of the sludge blanket and measuring its depth in the clarifier.
The MSL600 uses the sonar principle, with an ultrasonic pulse transmitted under water. Sophisticated echo processing allows the MSL600 to analyse the pulses of ultrasound which transmit vertically and reflect from the surface of the blanket.

The system captures the ultrasonic echoes reflected from the blanket interface even if the interface between the blanket and supernatant is not clearly defined. By 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 optimized for use with clarifiers and thickeners containing municipal and industrial wastewater treatment sludge.

The bridge mounted MSL600 is a stand alone unit with a clear display of the tank profile providing a range of current and relay outputs to the user for control and alarm purposes, including an option with Profibus DP digital communications. It 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.

* Not available in USA / Canada

Mobrey MSL600

Features

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

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.

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. Using the automatic self cleaning system on the MSL602 transducer - which is powered by an integral compressor within the MSL600 controller - maintenance cycles are reduced, thus reducing the lifetime cost of the system.

Mounting Bracket
Each MSL600 transducer is supplied complete with a universal mounting bracket and transducer guard which is available in either galvanised steel or stainless steel.

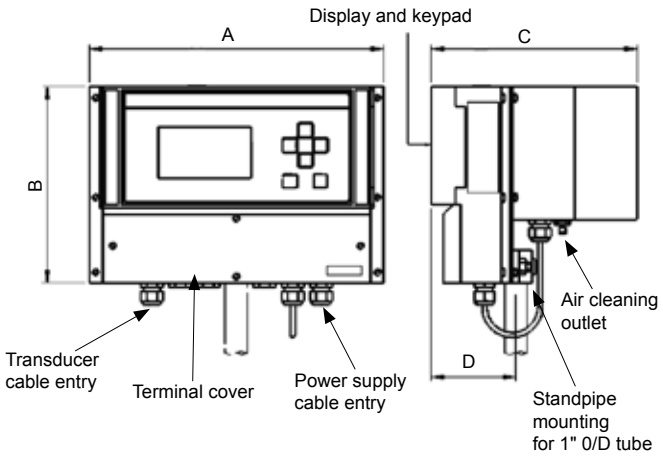
Integral Radio Link*
With the addition of the MSL601 all the outputs from the MSL600 may be transmitted to a remote location.

* Not available in USA / Canada.

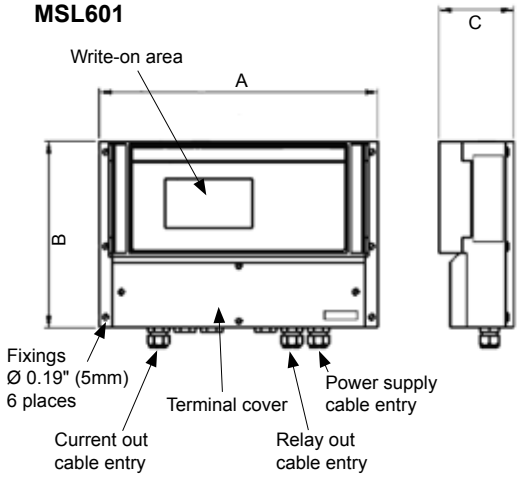
Dimensions

Controllers

MSL600

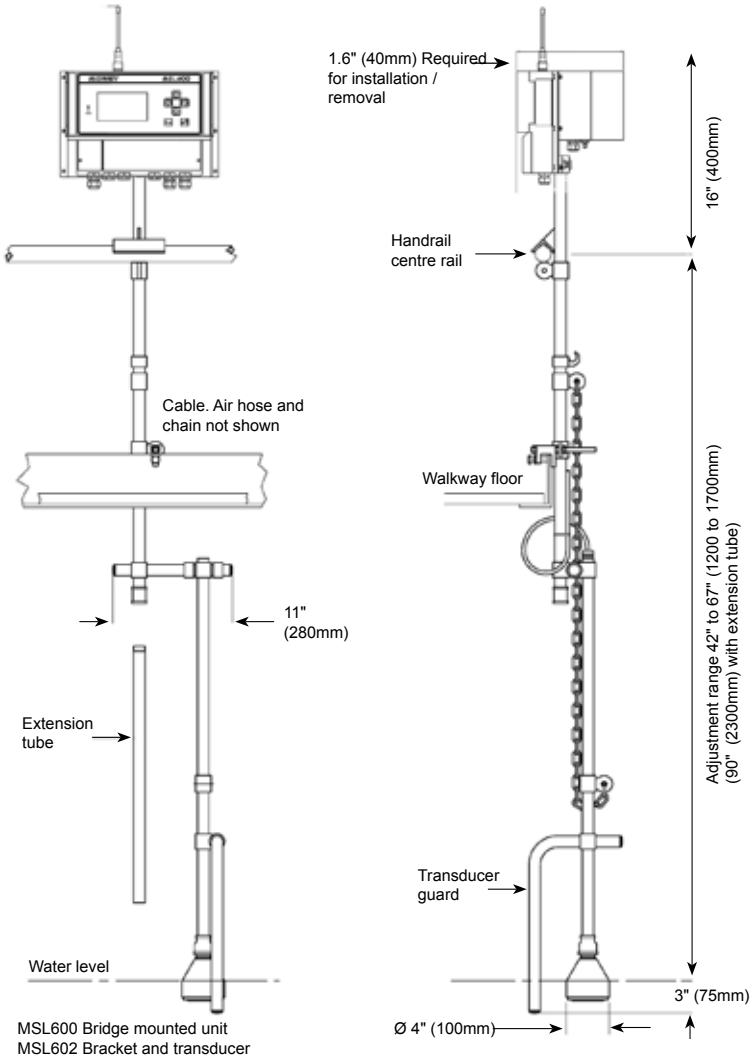


MSL601



M20 Cable glands fitted into 0.8" (20mm) entries are supplied as standard (on CE units) suitable for Ø 0.3" (8mm) cable. UL units are supplied undrilled.

Mounting assembly



MSL600 Bridge mounted unit
MSL602 Bracket and transducer

Dimensions in. and mm	MSL600 Bridge mount controller (CE)	MSL601 Remote controller (CE)
A inches	14	14
A mm	355	355
B inches	9.3	9.3
B mm	237	237
C inches	9.75	3.75
C mm	248	95
D inches	4	N/A
D mm	102	N/A

Mobrey MSL600

Specifications

Technical specification

	Imperial	Metric: CE marked
Range	23ft maximum	7.0m maximum
Dead band	1ft minimum	0.3m minimum
Accuracy	+/- 1.4"	+/- 35mm
Resolution	1"	25mm
Temperature	Control unit: -4˚F to +130˚F	-20˚C to +55˚C
	Sensor: -40˚F to +150˚F	-40˚C to +65˚C
Power supply	110V ac or 240V ac, 50/60Hz	
Enclosure rating	IP66	
Sensor rating	IP68	
Sensor material	Ceramic face, PTFE cleaning nozzle, UPVC body	
Sensor cable	Fully encapsulated with 33ft (10m) cable and air clean neoprene hose	
Outputs MSL600/601	2 programmable relays SPDT 1 fault relay SPDT 0/4-20mA isolated	
Communications	Profibus DP option (replaces 4-20mA signal (Not available on models with radio module)	
Cleaning	Automatic timed air-purge via integral air compressor	

Specifications

Ordering information: Bridge Mounting Controller

MSL600	Controller with integral air clean compressor		
Code	Model		
Z0	No radio module fitted	115/230V ac	Bracket/wall mount
Z1	433MHz for Europe	115/230V ac	Bracket/wall mount
Z2	458MHZ for UK	115/230V ac	Bracket/wall mount
Z4	472MHZ for Australia / Asia / China	115/230V ac	Bracket/wall mount
S	Other countries frequencies on request	115/230V ac	Bracket/wall mount
DP	Controller, Profibus DP compatible without radio link*	115/230V ac	Bracket/wall mount

MSL600 -	Z1	Typical ordering information: controller

Notes:
When ordering MSL600 please state clearly the country in which the unit will be operating.
If remote transmission of data is required then the MSL601 must be ordered as well (not available in USA / Canada).
* Supplied complete with GSD file (V3.0) allowing configuration of the Profibus master.

Ordering information: Transducer

MSL602	MSL600 transducer with integral galvanised mild steel mounting bracket and 33ft (10m) cable/hose
MSL602/SS	MSL600 transducer with integral 316L stainless steel mounting bracket and 33ft (10m) cable/hose
MSL602/1	MSL600 transducer with 33ft (10m) cable / hose, no mounting bracket

Ordering information: Remote Mount Unit (optional)

MSL601	Controllers - Remote mount unit with integral radio link		
Code	Model		
Z1	433MHz for Europe	115/230V ac	Wall
Z2	458MHZ for UK	115/230V ac	Wall
Z4	472MHZ for Australia / Asia / China	115/230V ac	Wall
S	Other countries frequencies on request	115/230V ac	Wall

MSL601 -	Z4	Typical ordering information: remote mount unit

Notes:
When ordering MSL601/S please state clearly the country in which the unit will operate.

Mobrey MSL600

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