AquaRanger MUA5L/W/F Panel/Rack

Ultrasonic level meter/radar

MUA5L - Wall Mount

MUA5L - Band Assembly

MUA5W - Wall Mount

MUA5W - Band Mount

- **STD or Atex transducers with measuring ranges up to 50m**
- **Connection with standard three-core shielded cables up to 3000m**
- **Does not require dedicated grounded metal conduits**
- **No need for coaxial cables**

- **Reduced dead zone from 200 mm depending on the associated tractor**
- **Output 4 ÷ 20mA isolated, max. 500Ω**
- **Data Logger**
- **Modbus RTU or Profibus DPV0 or Profibus DPV1**
- **8GB memory on removable micro SD card on request**

AquaRanger is an ultrasonic level gauge consisting of a transducer and control electronics.
IT was developed to meet the control and automation needs of water and liquid treatment equipment in general. IT IS versatile, easy to programme and maintenance-free. It is easy to install: simply place the transducer vertically on the liquids to be controlled and make the connections. It is used as level measurement in tanks or as a flow meter in open channels or weirs.
The AcquaRanger 5 model can use two transducers and can be used as a differential level gauge for controlling grids or bulkheads. Depending on the model, IT can handle up to 3 or 5 lifting pumps. It can be connected to tank loading and unloading systems to allow strict control of lifting. It adapts to the most diverse requirements and does not require the intervention of a specialist for installation and programming. IT can be programmed via the keyboard or by means of a special infrared calibrator (which allows operating in utmost safety) or remotely, using a PC and dedicated software. The Atex-certified model can also be used on flammable liquids. It requires no maintenance, as the sensors measure without contact and have no moving parts subject to wear.

Continuous product development may lead to changes in the data displayed

Features

STANDARD

- *Backlit display.*
- *6 digits + 12 text characters*
- *Bargraph display*
- *Alarm status indication*
- *Configuration marker*

- *Programming via integrated keyboard or calibrator infrared (only for rack-mounted models or panel) or via PC (RS232 with dedicated software)*

- *12 pre-programmed tank shapes*
- *32-point linearizer*
- *Multiple alarm functions*
- *Full vacuum control*

- *5 relé SPTD 5A @ 240Vca*
- *Transducers with threaded or flange connections Teflon-coated or sanitary flange*
- *Foamed transducers with orientation joint for solids*

- *Multiple alarm functions*
- *Full vacuum control*

ON REQUEST

- *Auxiliary inputs*
- *2-wire transmitter for level or speed signal input*

- *Storage of measured data on datalogger via RS 232*
- *RS 485 Modbus RTU or Profi bus DPV0 digital outputs or DPV1 + datalogger*

- *External watertight connector*

Infrared calibrator (on request)

Panel Mounting

TERRY FERRARIS
MISURE PER L'AUTOMAZIONE

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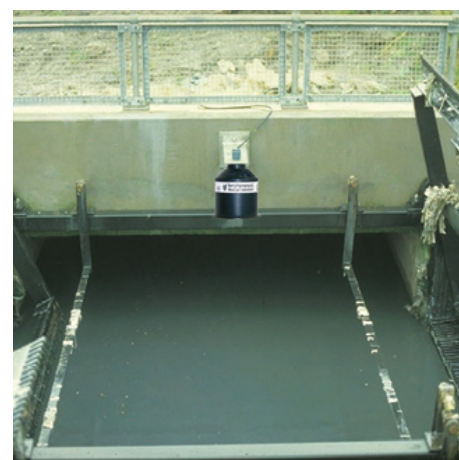
Functions

		Level	Volume	Pump control	Switch	Capacity
Features	Three control/alarm relays					
	Five control/alarm relays	•	•	•	•	•
	Compatible with the entire UTF family of transducers - XX	•	•	•	•	
	UTF-3HR high-precision transducer					•
	Applications: liquids, solids and powders	•	•			
	I.S. transducer option (Eex ia)	•	•	•	•	•
	Mounting version: front wall , 19" rack panel	•	•	•	•	•
	Volumetric Conversion (12 tank shapes)		•			
Alarm functions	Max/Min Level	•	•	•	•	•
	In-band/out-of-band	•	•	•	•	•
	Filling and emptying speed	•	•	•	•	•
	Max/Min Temperature	•	•	•	•	•
	System failure (echo loss)	•	•	•	•	•
	Pump Efficiency (equipment failure/alarm)			•		
	Filling/draining control (start/stop)	•	•		•	
	Alarm/differential control using two transducers					•
Pump control functions	Fixed control			•	•	
	Fixed control with backup			•	•	
	Alternating fixed control			•	•	
	Alternating fixed control with backup			•	•	
	Fixed command with backup and fixed command			•	•	
	Time ratio command			•	•	
	Time reporting command with backup			•	•	
	FOFO (alternating Prim-On/Prim-Off fixed control)			•	•	
	Standby command report			•		
	2 pump sets (total 4 pumps)			•		
Advanced pump control functions	Run-on pump			•		
	COMPRESSOR START-UP DELAY			•		
	Switch-off delay			•		
	Pump movement			•		
	Anti-fouling			•		
	"Storm" control			•		
	Ventilation control			•		
	Exhaust valve control			•		
Data logger	Running pump, hours of operation			•		
	Number of pump starts			•		
	Minimum and maximum recorded temperature	•	•	•	•	•
	Card with Modbus RTU or Profi bus DP output	•	•	•	•	•
Diff.	Differential (using two transducers)				•	
	Control conducted on level difference				•	•
Flow rate in channels and/or weirs	Simple exponent (Venturi, Parshall, trapezoidal weir etc.)					•
	Primary element to BS3680 standards: Channels: rectangular with flat or U-shaped bottom					•
	Primary element to BS3680 standards: Thin-walled weirs (standard 'V')					•
	Primary element to BS3680 standards: Thin-walled weirs: Rectangular & 'V' 90° and 60°					•
	Primary element to BS3680 standards: Other types (Palmer-Bowlus, 'H' channel, etc.)					•
	Universal Flow Calculation (32 points)					•
	Penstock control using time steps				•	•
	Area x Speed: analogue input for speed sensor					•

Technical specifications

Speedy Doppler effect speed sensor	
Relay	no. 5 SPDT 5A @ 240Vca
Dimensions (wall mounting)	235 x 184 x 120mm (L xH xP)
Cable input	no. 10 inputs: 5 x PG11, 1 x PG9 underneath | 4 x PG11 at the back
Weight	1.5 kg
Enclosure material	Polycarbonate, flame resistant UL94-V2
Transducer cable	Three-pole shielded Std = 5m. Various lengths up to 150m on request
Maximum distance	3000m
Rack mounting	10HP (50.4mm) x 160mm x 3U (128.5mm) x 172.5mm (W x H x D)
Panel mounting	72 x 144 x 203mm (LxH xP)
Band mounting	200 x 112 x 108mm (LxH xP)
Protection rating	Wall mounting: IP65 | Band mounting: IP64 (up to IP 68 on request) | Panel mounting: IP65
Electronic temperature	-20°C ÷ 60°C
Flammable atmosphere	Safe zone: compatible with transducer approval (see transducer specifications)
EC approval	Approval: EMC BS EN 50081-1:1992 emissions, BS EN 50082-2:1995 low voltage directive immunity and BS EN 61010-1:1993
Accuracy	±0.25% or 6mm (whichever is larger)
Solution	±0.1% or 2mm (whichever is larger), 1mm with transducer UTF03HR
Transducers	UTF Series - XX temperature compensated
Temperature compensation probe	Standard internal to transducer, external on request
Working range	Depending on transducer, 125mm to 40m (75mm to 2.5m using UTF03HR flow measurement transducer)
Echo processing	Digital, patented
Analogue output	Insulated 4 to 20mA or 0 to 20mA max. 500Ω (freely programmable) resolution 0.1%
Digital output	Full duplex RS232 via RJ11 port
Display	6 digits plus 12 text characters, plus bargraph with direction indicators, remote communication/programming/run/test mode indicators
Remote programming	Via infrared calibrator
Local Programming	Via integrated keyboard
Programming via PC	Via RS232 (RJ11 port) and dedicated SW on request
RS232 connector	STD internal RJ11 on request external IP 67
Security Programming	Via password (freely programmable)
data storage	Via non-volatile RAM plus battery backup
Power supply	115Vca +5% -10% 50/60Hz, 230Vca +5% -10%, 18 ÷ 36Vcc
Consumption	10W max (typical 6W)
Modem	GSM/SMS dual band external with/without SIM card available on request
Datalogger	(on request) 256 Kb with programmable time intervals
Outlet	Modbus RTU or Profibus DPV0 or DPV1

The AquaRanger 5 must be mounted in a safe area. See transducer specification for mounting in explosion-proof zone.