5000mm Ultrasonic Level Sensor UM5000 Specification

MIC METERING (SHENZHEN) LIMITED



I.Product Features

The UM5000 integrated ultrasonic level gauge is an intelligent non-contact level measuring instrument. The product is small size, low power consumption, gain control, temperature compensation, and adopts advanced detection and calculation technology to improve the measurement accuracy of the instrument. It has a suppression function for interference signals to ensure the authenticity of the measurement results. The product can be widely used for measuring the liquid level of various liquids and the height of solid materials, as well as for measuring distance.

II. Application

Liquid level measurement Container water level monitoring Material level/height

III: Parameters

| Technical data | |
|----------------------------|-------------|
| General Specifications | |
| Sensing distance | 2505000mm |
| Adjustment range | 2505000mm |
| Unusable area | 0250mm |
| Standard target plate | 100mm×100mm |
| Transducer frequency About | 75 kHz |

| Response delay About | 125ms | | |
|---------------------------------------|---------------------------|--|--|
| Indicators/Operating means | | | |
| LED yellow | solid: NO LED flash: | | |
| LED red | flashing: | | |
| Electrical specifications | | | |
| Operating voltage U B | 924VDC ripple10%ss | | |
| No-load supply current | ≤20mA | | |
| Output | | | |
| Output type | 1 analogue output 420mA | | |
| Resolution | | | |
| Deviation of the characteristic curve | ±1% of full-scale value | | |
| Repeat accuracy | ±0.1% of full-scale value | | |
| Load impedance | >1k Ohm | | |
| Maximum switching current | | | |
| Temperature influence | ±1.5% of full-scale value | | |
| Ambient conditions | | | |
| Ambient temperature | -2570°C | | |
| Storage temperature | -4085°C | | |
| Mechanical specifications | | | |
| Protection grade | IP68 | | |
| Connection | PVC cable,4-PIN | | |
| Material | | | |

| Housing | PBT OR FRP | | |
|--|---------------------------------|--|--|
| Transducer | epoxy resin/hollow glass sphere | | |
| | | | |
| Weight | 150g | | |
| Compliance with standards and Directives | | | |
| Standard conformity | EN 60947-5-2:2007 | | |

IV. Wire connection



V: Adjusting the evaluation limits

The ultrasonic sensor features an analogue output with two teachable evaluation limits. These are set by applying the supply

voltage $-U_B$ or $+U_B$ to the TEACH-IN input. The supply voltage must be applied to the TEACH-IN input for at least 1 s.

indicate whether the sensor has recognised the target during the TEACH-IN procedure. The lower evaluation limit A1 is taught

with $-U_B$, A2 with $+U_B$.

Two different output functions can be set:

1. Analogue value increases with rising distance to object (rising ramp)

2. Analogue value falls with rising distance to object (falling ramp)

Evaluation limits may only be specified within the first 5 minutes after

Power on. To modify the evaluation limits later, the user may specify the desired values only after a new Power On.

TEACH-IN rising ramp (A2 > A1)

- Position object at lower evaluation limit
- TEACH-IN lower limit A1 with U_{B}
- Position object at upper evaluation limit
- TEACH-IN upper limit A2 with + U_{B}

TEACH-IN falling ramp (A1 > A2):

- Position object at lower evaluation limit
- TEACH-IN lower limit A2 with + U_{B}
- Position object at upper evaluation limit
- TEACH-IN upper limit A1 with U_{B}

Default setting

A1: unusable area

A2: nominal sensing range

Mode of operation: rising ramp

LED Displays (SMP80 series no led)

| Displays in dependence on operating mode | Red LED | Yellow LED |
|--|---------|----------------|
| TEACH-IN evaluation limit | | |
| Object detected | off | flashes |
| No object detected | flases | off |
| Object uncertain (TEACH-IN invalid) | on | off |
| Normal mode (evaluation range) | off | on |
| Fault | on | previous state |



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