

DR6411 Submersible Level Transmitter



1. Overview

DR6411 with high accuracy $\pm 0.25\%FS$ is a liquid level sensor for industrial level measurement. Using a highly reliable solid piezoresistive pressure cell, with zero and full span compensated under $-10^{\circ}C \sim 80^{\circ}C$, the level sensor guarantees good accuracy and stability. By special amplifier circuit accurately measuring the linear relationship between liquid level static pressure and horizontal depth, DR6411 liquid level sensor offers higher stability and reliability in various industrial applications. It outputs analog 4-20mA DC and 0/1V~5/10V DC signals to meet different application requirements. The full stainless steel sealed construction and water-proof and oil-proof cable make it submersible under water for long-term measurement and ensure a long life. In addition, the intrinsic safe version is available for ex-proof applications.

2. Applications

- Petroleum, chemical, electric power
- City water supply and drainage
- Water or oil tank, hydrology, reservoir, riverway and ocean
- Hydrological monitoring

3. Features

- Sealed stainless steel construction; high performance amplifier circuit
- Triple lightning protection
- Short circuit protection and reverse polarity protection
- Protection class IP68
- Trimming compensating zero and span thermal error
- Using highly reliable and stable solid piezoresistive pressure sensor
- Water-proof and oil-proof cable

4. Technical Specifications

Parameter	Specification	Parameter	Specification
Range	1, 2, 5, 10, 20, 50, 100, 200 mH ₂ O	Zero thermal drift	≤±0.03%FS/°C (≤10mH ₂ O); ≤±0.02%FS/°C (>10mH ₂ O)
Over pressure	200%FS	Span thermal drift	≤±0.03%FS/°C (≤10mH ₂ O); ≤±0.02%FS/°C (>10mH ₂ O)
Accuracy	± 0.25% FS / ± 0.5% FS	Compensated Temp.	-10°C ~ +80°C
Stability	±0.2%FS(1 year)	Working temp.	-10°C ~ +70°C
Output	4mA~20mA DC(2-wire); 0/1V~5/10V DC(3-wire)	Storage Temp.	-30°C~+70°C
Load	≤(U-11)/0.02Ω(2-wire); ≥10k(3-wire)	Insulation resistance	500MΩ@500V DC
Housing	Stainless steel 304	Protection level	IP68
Diaphragm	Stainless steel 316L	Power supply	11V~30VDC; 12V~30VDC
Sealing ring	Viton	Cable	Φ7.5mm Polyethylene Special Cable

5. Ordering Guide

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Range: [0~X]mH₂O (X: the actual measured pressure. Standard ranges: 1, 2, 5, 10, 20, 50, 100, 200 mH₂O)

Output Signal

Code	Output signal
E	4mA~20mA DC
V1	1V~5V DC
V2	0V~5V DC
V3	0V~10V DC

Construction Material

Code	Diaphragm	Housing
M1	SS 316L	SS 304
M2	SS 316L	SS 316L
E	Polyethylene Cable	
U	Polyurethane Cable	

Example Order Code: DR6411- [0~10]mH₂O E M1 U

6. Project Selection Note

Important: The standard DR6451 accuracy published by FANDE is $\pm 0.25\%$ FS / $\pm 0.5\%$ FS. If a project requires $\pm 0.1\%$ FS accuracy, this requirement should be confirmed with FANDE before order placement. Cable length and measurement range should also be confirmed according to the installation conditions.

7. FAQ

Q: How to protect level transmitter against lightning strikes?

A: Most of the input liquid level transmitters are installed outdoors and are prone to lightning strikes, as a result, the liquid level sensor damaged. In addition to the advantages of stainless steel housing, high-strength cable with ventilation duct and shielding layer and sealing, DR6411 liquid level sensor has triple lightning protection, which can realize 10kv/5ka lightning protection application and reduce the risk of lightning stroke.

Q: What's the measuring accuracy?

A: Accuracy represents the error between the measured value and the true value being measured. In addition, the error is relative to the gauge's full scale. Therefore, when calibrated to 0.1% of full scale, the example 60.00 psi digital hydraulic gauge has an accuracy of ± 0.06 psi.

Q: What are the causes of zero point drift?

A: Zero drift or bias describes gradual change in the scale zero of a measuring instrument. And the main factor of this change is ambient condition. Most importantly, this influence will result in a constant error in the entire measurement range of the instrument. Help of calibration technology, the calibration commands can recover the effects of zero drift on site.

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