DR6401 General Level Transmitter

Fully sealed submersible liquid level transmitter for reliable continuous hydrostatic level measurement.



Product Overview

The FANDE DR6401 is a general-purpose submersible liquid level transmitter featuring fully sealed stainless steel construction, a high-reliability solid piezoresistive pressure sensor and dedicated transmitter circuitry. It measures liquid hydrostatic pressure directly and converts it into a standard electrical output for continuous level monitoring and control. Its IP68 construction and waterproof, oil-resistant cable support long-term submerged operation.

Key Features

- Fully sealed stainless steel construction
- IP68 protection for submerged installation
- High-reliability and stable solid piezoresistive pressure sensor
- Short-circuit protection
- Reverse-polarity protection
- Waterproof and oil-resistant cable
- 4–20 mA current output or voltage output options
- Suitable for long-term continuous liquid level monitoring

Applications

- Petroleum, chemical and electric power industries
- City water supply and drainage
- Water tanks and oil tanks
- Hydrology and reservoir monitoring
- River and ocean hydrological monitoring
- Industrial liquid level measurement

Technical Specifications

Parameter	Specification
Measuring Range	1, 2, 5, 10, 20, 50, 100, 200 mH_2O
Overpressure	200% FS
Accuracy	±0.25% FS / ±0.5% FS
Long-Term Stability	±0.3% FS (1 year)
Output	4–20 mA DC, 2-wire; 0/1–5/10 V DC, 3-wire
Load Resistance	≤(U−11)/0.02 Ω, 2-wire; ≥10 kΩ, 3-wire
Power Supply	11–30 VDC, 2-wire; 12–30 VDC, 3-wire
Zero Thermal Drift	≤±0.03% FS/°C (≤10 mH_2O); ≤±0.02% FS/°C (>10 mH_2O)
Span Thermal Drift	≤±0.03% FS/°C (≤10 mH_2O); ≤±0.02% FS/°C (>10 mH_2O)
Compensated Temperature	0°C to +50°C
Working Temperature	−10°C to +70°C
Storage Temperature	−30°C to +70°C
Insulation Resistance	500 MΩ @ 500 VDC
Protection Level	IP68
Housing	Stainless steel 304
Diaphragm	Stainless steel 316L
Sealing Ring	Viton
Cable	Ø7.5 mm polyethylene special cable

Ordering Guide

Item	Code	Description
Range	[0–X] mH_2O	X = actual measured range; 1, 2, 5, 10, 20, 50, 100, 200 mH_2O
Output	E	4–20 mA DC
Output	V1	1–5 V DC
Output	V2	0–5 V DC
Output	V3	0–10 V DC
Construction	M1	316L stainless steel diaphragm / 304 stainless steel housing
Construction	M2	316L stainless steel diaphragm / 316L stainless steel housing
Cable material	E	Polyethylene
Cable material	U	Polyurethane

Typical model: DR6401-[0~10]mH_2O-E-M1-E

Electrical Connection

The DR6401 uses a color-coded cable for field wiring. For submersible installations, the atmospheric vent tube inside the cable must remain unobstructed and protected from moisture.

Cable Color	2-Wire System	3-Wire System
Red	Power (+): +V	Power (+): +V
Black	Signal (+): +OUT	Signal (+): +OUT
White	N/A	Common (GND)

Construction & Materials

The standard construction uses stainless steel 304 for the housing and sensor body, a 316L stainless steel diaphragm and fluororubber (FKM/Viton) seals. The sensing assembly is fully sealed for submerged operation.

Installation & Safety Instructions

- Do not touch the pressure-sensitive diaphragm; the sensing element is fragile and contact may cause permanent damage.
- Before installation, verify the measuring range, medium compatibility and temperature limits.
- Ensure protective grounding is implemented according to equipment and installation requirements.
- Keep the atmospheric vent tube in the cable unobstructed and free from moisture.
- Under normal operating conditions, the transmitter requires no routine maintenance.
- For cleaning, use clean water and a non-abrasive cloth.

Troubleshooting

Symptom	Recommended Check
No Signal	Check cable connections for breaks or incorrect wiring.
Significant Measurement Error	Confirm that operating temperature is within the specified range.
Signal Jumps	Check for EMC interference sources such as inverters and use shielded cables where appropriate.
Constant Output	If output remains constant despite pressure changes, inspect the transmitter for possible damage.

Selection Notes

- Select the measuring range according to the actual liquid level and installation depth.
- Confirm that the measured medium is compatible with the wetted materials before ordering.
- For demanding outdoor installations, additional lightning protection may be considered.
- Special designs and configurations may be available for specific applications; contact FANDE for technical confirmation.