



FANDESENSOR

DR3431 High-Precision Industrial Pressure Transmitter



Product Description

The DR3431 Series Pressure Transmitter utilizes a high-precision pressure sensing element integrated with a dedicated digital signal-conditioning circuit. It converts measured pressure into standard linear industrial output signals (4–20 mA, 0/1–5 VDC, or RS485). Featuring a robust housing and high-stability digital signal processing, the DR3431 is designed for demanding process control applications across petroleum, chemical processing, metallurgy, electric power, and hydrogeology industries.

KEY FEATURES & HIGHLIGHTS

- **Wide Measuring Range:** Options from -0.1...0 MPa up to 0.01...100 MPa.
- **High Accuracy Options:** Standard $\pm 0.5\%$ FS with available $\pm 0.2\%$ FS high-precision grade.
- **Multiple Output Signals:** 4–20 mA DC (2-wire loop), 0/1–5 VDC (3-wire), and RS485 digital output.
- **Rugged Construction:** 304 Stainless Steel housing with 316L SS isolated corrugated diaphragm.
- **Superior Protection:** IP65 ingress protection, robust overload capabilities (up to 2x FS or min 110 MPa).
- **Integrated Display Support:** Supports digital LCD display module and local zero/span configuration.

TECHNICAL SPECIFICATIONS

Performance Parameters	
Measuring Range	-0.1...0 to 0.01...100 MPa
Pressure Types	Gauge Pressure, Absolute Pressure, Sealed Gauge Pressure
Accuracy Class	$\pm 0.2\%$ FS / $\pm 0.5\%$ FS (Includes non-linearity, hysteresis, and repeatability)
Long-Term Stability	Max. $\pm 0.3\%$ FS / year
Overload Pressure	2 × Full Scale (FS) or 110 MPa (whichever is lower)
Zero Temperature Drift	0.03% FS/°C (≤ 100 kPa) 0.03% FS/°C (≥ 100 kPa)
Span Temperature Drift	0.03% FS/°C (≤ 100 kPa) 0.02% FS/°C (≥ 100 kPa)
Electrical & Signal Specifications	
Power Supply	11 to 28 VDC
Output Signals	• 4–20 mA DC (2-wire current loop) • 0–5 VDC / 1–5 VDC (3-wire voltage) • RS485 Digital Communication
Load Resistance	• 2-wire (Current): $\leq (U - 10) / 0.02 \Omega$

	• 3-wire (Voltage): $\geq 10\text{ k}\Omega$
Electrical Connection	Terminal block inside junction head with cable gland (M20×1.5)

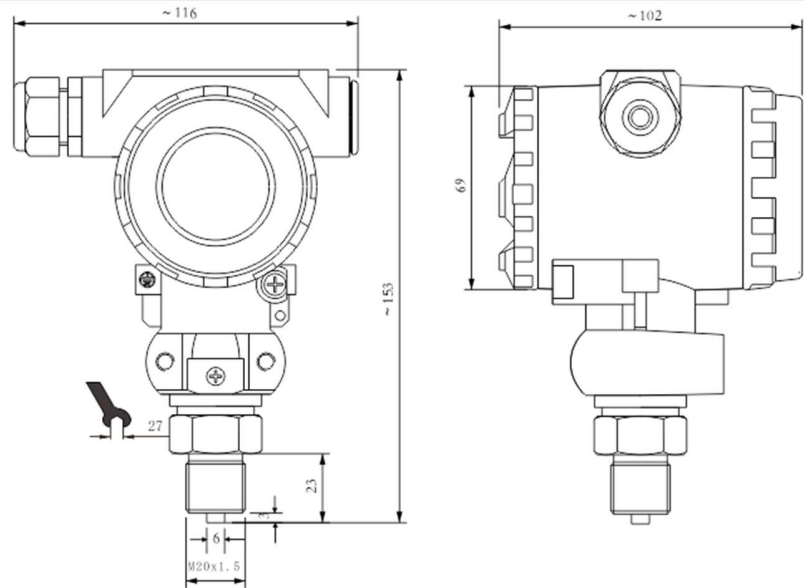
Environmental & Mechanical Specifications	
Compensated Temp. Range	0 to +50 °C
Operating Temperature	-30 to +70 °C
Storage Temperature	-40 to +70 °C (Humidity: 45–75% RH non-condensing)
Ingress Protection	IP65
Wetted Materials	304 Stainless Steel (Sensor Housing), 316L Stainless Steel (Diaphragm)
Housing Material	304 Stainless Steel / Heavy-duty Die-Cast Aluminum Alloy (Field Enclosure)
Sealing Ring Options	FKM (Viton) / NBR
Process Connection	M20×1.5 Male Thread (Standard), G1/2, NPT1/2 (Optional)

ELECTRICAL CONNECTION & WIRING

Output Configuration	Terminal (+)	Terminal (-)	Terminal (Signal / RS485)
4–20 mA (2-Wire Loop)	Power + (V+)	Power - / Signal + (Out)	—
0/1–5 VDC (3-Wire Voltage)	Power + (V+)	GND (Common -)	Signal Output (V_OUT)
RS485 (Digital Output)	Power + (V+)	GND (-)	RS485-A / RS485-B

MECHANICAL DIMENSIONS & SEALING

Mechanical Dimensions & Installation Notes	
Key Dimensions	Enclosure Width: ~116 mm Enclosure Depth: ~102 mm Total Height: ~153 mm Hex Size: SW27
Parallel Threads (M20x1.5, G1/2)	Sealed via elastomeric sealing ring (FKM/NBR) on the flush sealing surface.
Tapered Threads (NPT, R, PT)	Sealed via PTFE tape or appropriate thread sealant applied to male threads.



ORDERING STRUCTURE / MODEL SELECTION

Model	Pressure Range	Pressure Type	Output Signal	Accuracy	Process Connection
DR3431	[Range] e.g. 0–1.6 MPa 0–10 MPa	[G] Gauge [A] Absolute [S] Sealed gauge	[A] 4–20 mA (2-wire) [V] 0–5 VDC (3-wire) [R] RS485 Modbus	[2] $\pm 0.2\%$ FS [5] $\pm 0.5\%$ FS	[C1] M20×1.5 male [C2] G 1/4" male [C3] G 1/2" male [C4] 1/2" NPT male [C5] 1/4" NPT male [C6] Custom

** Specifications are subject to change without prior notice for technical updates. Contact sales@fandesensor.com for customized pressure ranges and OEM specifications.*