Product Data Sheet

RockFord™ P500 Pressure Transmitter

With the RockFord P500 Pressure Transmitter, you'll gain more control over your plant. You'll be able to

reduce product variation and complexity as well as your total cost of ownership by leveraging one device

across a number of pressure, level and flow applications. You'll have access to information you can use to

diagnose, correct and even prevent issues. And with unparalleled reliability and experience, the RockFord

P500 is the industry standard that will help you perform at higher levels of efficiency and safety so you can

remain globally competitive.

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VIEW PRODUCT

APPROVE SERIAL NUMBER

Contents

APPLICATIONS

- Easy installation with all solutions fully assembled,
- leak-tested and calibrated
- Meet your application needs with an unsurpassed offering

FEATURES

- Reference accuracy 0.04% of span
- Installed total performance of 0.14% of span
- 10-year stability of 0.2% of URL
- SIL2/3 certified (IEC 61508)

Reference accuracy

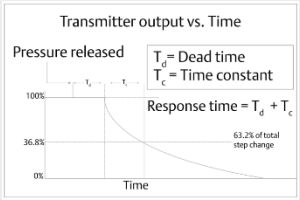
Stated reference accuracy equations include terminal based linearity, hysteresis, and repeatability. For wireless, FOUNDATION™ Fieldbus, and PROFIBUS® PA devices, use calibrated range in place of span.

Ranges 1–4	± 0.04% of span For spans less than 10:1, accuracy = $\pm\left[0{,}0075\left(\frac{URL}{Span}\right)\right]$% of Span
Range 5–11	± 0.075% of span For spans less than 10:1, accuracy =

Long term stability

±0.2% of URL for 10 years, ±50 °F (28 °C) temperature changes, and up to 1000 psi (68.95 bar) line pressure.

Dynamic performance

4 - 20 mA HART	FOUNDATION Fieldbus and PROFIBUS PA Protocols	Typical HART transmitter response time
100 ms	152 ms	

Ambient temperature effect per 50 °F (28 °C)

Range 1	±(0.025% URL + 0.125% span) from 1:1 to 10:1 ±(0.05% URL + 0.125% span) from 10:1 to 100:1
Range 2–4	±(0.025% URL + 0.125% span) from 1:1 to 30:1 ±(0.035% URL + 0.125% span) from 30:1 to 150:1
Range 5-11	±(0.1% URL + 0.15% span) from 1:1 to 5:1

Vibration effect

Less than ±0.1 percent of URL when tested per the requirements of IEC60770-1: 1999 field or pipeline with high vibration level (10–60 Hz 0.21 mm displacement peak amplitude/60–2000 Hz 3g).

Power supply effect

Less than ±0.005 percent of calibrated span per volt change.

Electromagnetic compatibility

Meets all industrial environment requirements of EN61326 and NAMUR NE-21. Maximum deviation

Range and sensor limits

Range	Minimum span	Upper (URL)	Lower (LRL)
1	0.3 mbar	6 Kpa (0…60 mbar)	–14.70 psig (–1.01 bar)
2	0.5 mbar	10 Kpa (0…100 mbar)	–14.70 psig (–1.01 bar)
3	2 mbar	40 Kpa (0…400 mbar	–14.70 psig (–1.01 bar)
4	5 mbar	100 Kpa (0…1 Bar)	–14.70 psig (–1.01 bar)
5	12.5 mbar	250 Kpa (0…2.5 Bar)	–14.70 psig (–1.01 bar)
6	25 mbar	400 KPa (0…4 Bar)	–14.70 psig (–1.01 bar)
7	50 mbar	1 MPa (0…10 Bar)	–14.70 psig (–1.01 bar)
8	150 mbar	4 MPa (0…40 Bar)	–14.70 psig (–1.01 bar)
9	500 mbar	10 MPa (0…100 Bar)	–14.70 psig (–1.01 bar)
10	1 Bar	20 MPa (0…200 Bar)	–14.70 psig (–1.01 bar)
11	2 Bar	40 MPa (0…400 Bar)	–14.70 psig (–1.01 bar)

4–20 mA HART® (output code A)

Power supply

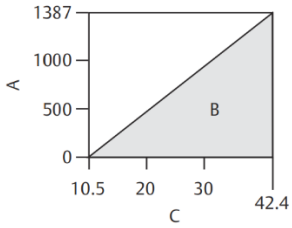
External power supply required. Standard transmitter (4–20 mA) operates on 10.5–42.4 Vdc with no load.

Load limitations

Maximum loop resistance is determined by the voltage level of the external power supply described

by: Max. loop resistance = 43.5 (power supply voltage - 10.5)

Communication requires a minimum loop resistance of 250 ohms.



A. Load (Ωs)
B. Operating region
C. Voltage (Vdc)

Temperature limits

Ambient

- –40 - +185 °F (–40 - +85 °C)
- With display: –40 - +176 °F (–40 to +80 °C)

Process

- Silicone fill sensor: –40 - +250 °F (–40 - +121 °C)
- Inert fill sensor: –40 - +185 °F (–40 - +85 °C)

Humidity limits

- 0–100 percent relative humidity

Damping

4–20 mA HART

Analog output response to a step input change is user-enterable from 0.0 to 60 seconds for one time constant. This software damping is in addition to sensor module response time

FOUNDATION™ Fieldbus

- Transducer block: User configurable
- AI Block: User configurable

PROFIBUS PA

AI Block only: User configurable

RockFord P500 Pressure Transmitter

Ordering information

RockFord P500 In-Line Pressure Transmitters are the industry standard for gage and absolute pressure measurement. The in-line, compact design allows the transmitter to be connected directly to a process for quick, easy and cost effective installation.

- Loop Integrity and Plugged Impulse Line Diagnostics detect issues that might compromise the integrity of the output signal
- Safety certification and proof testing (code QT and T9).It has an electrode cleaning function

CONFIGURE VIEW PRODUCT

Online product configurator

Many products are configurable online using our product configurator.
Select the Configure button or visit VIEW PRODUCT > Rockford-inc.com/global to start.
With this tool's built-in logic and continuous validation, you can configure your products more quickly and accurately.

Specifications and options

The purchaser of the equipment must specify and select the product materials, options, and components.

Model codes

Model codes contain the details related to each product. Exact model codes will vary; an example of a typical model code is shown in Figure 1.

Figure 1: Model Code Example

P500	4-O1-1-A-S-A-1-M1-L-A-A1	CTF-CMF-S1
1	2	3

1. Required model components (choices available on most)
2. Additional options (variety of features and functions that may be added to products)

Optimizing lead time

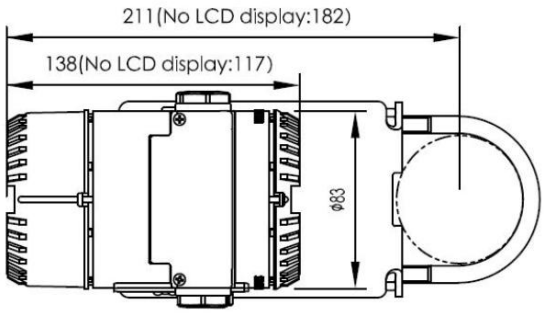
The starred offerings (★) represent the most common options and should be selected for the fastest delivery. The non-starred offerings are subject to additional delivery lead time.

Required model components

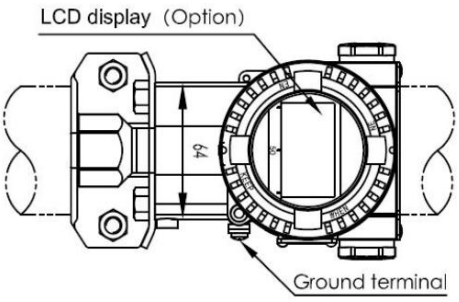
Model	Suffix Codes	Description	
P500	.....	In-Line Pressure Transmitter gauge type	
Pressure type	-1	6 Kpa (0…60 mbar)	★
	-2	10 Kpa (0…100 mbar)	★
	-3	40 Kpa (0…400 mbar	★
	-4	100 Kpa (0…1 Bar)	★
	-5	250 Kpa (0…2.5 Bar)	★
	-6	400 KPa (0…4 Bar)	★
	-7	1 MPa (0…10 Bar)	★
	-8	4 MPa (0…40 Bar)	★
	-9	10 MPa (0…100 Bar)	★
	-10	20 MPa (0…200 Bar)	★
	-11	40 MPa (0…400 Bar)	★
Transmitter output	-O1	4‑20 mA with Digital Signal Based on HART Protocol	★
	-O2	FOUNDATION fieldbus Protocol	★
	-O3	PROFIBUS PA Protocol	★
Process connection style	-1	1/2 NPT Male	★
	-2	1/2 NPT FeMale	★
	-3	G 1/2 Female	★
	-4	1/4 NPT Male	★
	-5	M20 × 1.5	★
Isolating diaphragm	-A	316L stainless steel	★
	-B	Alloy C-276	★
	-C	Gold-plated 316 stainless stee	★
	-D	Gold-plated alloy C-276	
	-E	Monel 400 (Alloy 400 - K400)	★
Sensor fill fluid	-S	Silicone Oil	★
	-F	Fluorinated Oil	★
	-V	Vegetable Oil	★
	-I	Inert	★
Housing material	-A	Aluminum	★
	-S	Stainless steel	★
Conduit entry size	-1	1/2 NPT Male	★
	-2	M20 × 1.5	★
Mounting bracket	-N	NON	★
	-M1	Bracket for 2-in. pipe or panel mounting, all stainless steel	★
	-M2	316SST bracket with 316SST bolts	★
Display	-N	NON	★
	-B	Backlit LCD display	★
	-L	LCD display	★
Configuration buttons	-N	NON	★
	-A	Analog zero and span	
Accuracy	-A1	±0.035% (1KPa…40MPa)	
	-A2	±0.005% (Over 40MPa)	
5-Point calibration	- CTF	5-Point calibration	★
Material traceability certification	- CMF	Material traceability certification	★
Explosion Proof	-S1	Explosion Proof, Ex d ia [ia] q IIC T6	★

Dimensions in mm

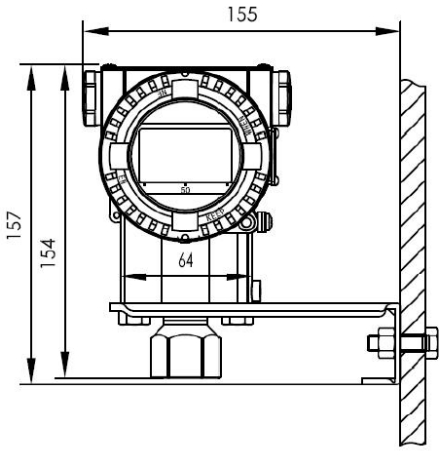
Horizontal Impulse Piping



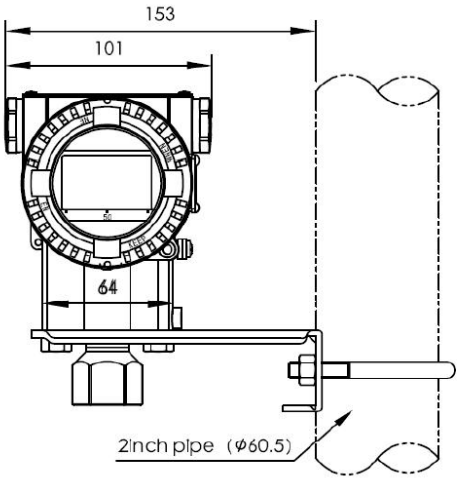
Horizontal Impulse Piping Type (front side)



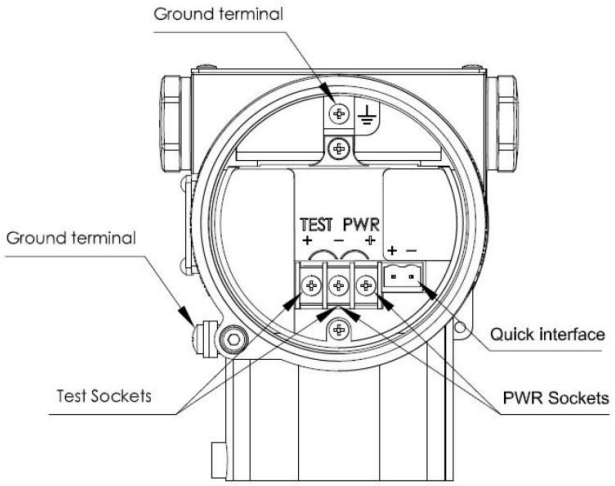
Horizontal Impulse Wall mounting Type



Vertical Impulse Piping Type



6. TERMINAL CONFIGURATION



Note：Quick interface functionally equivalent to the signal terminal

All statements concerning scope of delivery, application, practical use and operating conditions of the sensors and processing systems correspond to the information available at the time of printing.
Subject to change without prior notice

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