



Application

- ✓ Sensitive Industrial Applications
- ✓ Process Automation
- ✓ Severe Industrial environments demanding a better ingress protection

Special Features

- ✓ Strong structure and material
- ✓ High accuracy and precision
- ✓ Polarity protection and anti-jamming circuit

Description

3103 InstruMate transmitter has a very high quality silicon sensor which makes all the difference when accuracy is your concern. High precision and excellent repeatability make 3103 pressure transmitter to be the best choice for precision demanding applications.

This robust transmitter with Zero & Span adjustment screw and 0.25% BFSL accuracy is the best choice to combine with InstruMate diaphragm seals.

Two special features of polarity protection and anti-jamming circuits are embedded in every InstruMate pressure transmitter.

Default Specification

Gauge Pressure ranges (bar)	Permissible over pressure	Compensated medium temperature	Permissible medium temperature
0...0.05	400% FS	-10...70°C	-25...125°C
0...0.1	300% FS	-10...70°C	-25...125°C
0...0.16	300% FS	-10...70°C	-25...125°C
0...0.25	300% FS	-10...70°C	-25...125°C
0...0.4	200% FS	-10...70°C	-25...125°C
0...0.6	300% FS	-10...70°C	-25...125°C
0...1	200% FS	-10...70°C	-25...125°C
0...1.6	200% FS	-10...70°C	-25...125°C
0...2.5	200% FS	-10...70°C	-25...125°C
0...4	200% FS	-10...70°C	-25...125°C
0...6	200% FS	-10...70°C	-25...125°C
0...10	200% FS	-10...70°C	-25...125°C
0...16	200% FS	-10...70°C	-25...125°C
0...25	200% FS	-10...70°C	-25...125°C
0...40	200% FS	-10...70°C	-25...125°C
0...60	200% FS	-10...70°C	-25...125°C
0...100	200% FS	-10...70°C	-25...125°C
0...160	200% FS	-10...70°C	-25...125°C
0...250	150% FS	-10...70°C	-25...125°C
0...400	150% FS	-10...70°C	-25...125°C
0...600	150% FS	-10...70°C	-25...125°C
0...1000	130 % FS	-10...70°C	-25...125°C

Compound & Vacuum ranges (bar)	Permissible over pressure	Compensated medium temperature	Permissible medium temperature
-0.025...+0.025	150% (dry & clean gas only)	-10...70°C	-25...125°C
-0.05...+0.05	400% FS	-10...70°C	-25...125°C
-0.06...+0.1	300% FS	-10...70°C	-25...125°C
-0.1...+0.15	200% FS	-10...70°C	-25...125°C
-0.2...+0.2	200% FS	-10...70°C	-25...125°C
-0.3...+0.3	300% FS	-10...70°C	-25...125°C
-0.5...+0.5	400% FS	-10...70°C	-25...125°C
-1...0	300% FS	-10...70°C	-25...125°C
-1...0.6	300% FS	-10...70°C	-25...125°C
-1...+1.5	300% FS	-10...70°C	-25...125°C

Compound & Vacuum ranges (bar)	Permissible over pressure	Compensated medium temperature	Permissible medium temperature
-1...+3	200% FS	-10...70°C	-25...125°C
-1...+5	200% FS	-10...70°C	-25...125°C
-1...+9	200% FS	-10...70°C	-25...125°C
-1...+15	200% FS	-10...70°C	-25...125°C
-1...+24	200% FS	-10...70°C	-25...125°C

Absolute Pressure ranges (bar)	Permissible over pressure	Compensated medium temperature	Permissible medium temperature
0...0.25	300%FS	-10...70°C	-25...125°C
0...0.4	200%FS	-10...70°C	-25...125°C
0...1	200%FS	-10...70°C	-25...125°C
0...1.6	200%FS	-10...70°C	-25...125°C
0...2.5	200%FS	-10...70°C	-25...125°C
0...4	200%FS	-10...70°C	-25...125°C
0...6	200%FS	-10...70°C	-25...125°C
0...10	200%FS	-10...70°C	-25...125°C
0...16	200%FS	-10...70°C	-25...125°C
0...25	200%FS	-10...70°C	-25...125°C

Technical details applicable on Model 3103

Reference Conditions	Ambient Temperature	15...25°C
	Atmospheric Pressure	860...1060 mbar
	Humidity	45%...75%
	Power Supply	24V DC
Load	Current (2-wire)	
	Voltage (3-wire)	
	Ratiometric (3-wire)	
Ingress protection	Angular Connector Form A	IP65
	Angular Connector Form C	IP65
	Circular Connector M12x1	IP67
	Cable Outlet	IP67
Rated Insulation Voltage	500 V DC	
Polarity Protection	YES	
Anti-Jamming Circuit	YES	

* Other pressure ranges or pressure units available as option.

Permissible Temperature Ranges

Permissible temperature ranges	
Storage	-35...+75 °C
Ambient	-20...+75 °C
Temperature Error (within 0...80 °C)	$\leq \pm 0.035 \times (t_2 - t_1)$ % of the span for ranges less than 350 mbar $\leq \pm 0.02 \times (t_2 - t_1)$ % of the span for ranges over 350 mbar

* t_1 Reference temperature.

* t_2 Ambient temperature.

Performance

Performance factors	
Zero Point and Span Adjustability	By potentiometers ($\pm 10\%$)
Long-term Stability	Less than 0.2% of span per year
Non-linearity	$\leq \pm 0.2\%$ of span
Non-repeatability	$\leq \pm 0.125\%$ of span
Accuracy ¹	$\pm 0.25\%$ BFSL

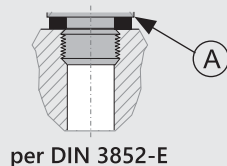
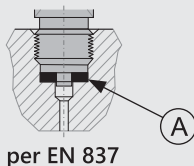
* Strong Electromagnetic sources can increase the instrument measuring error.

1. Including non-linearity, hysteresis, zero offset and end value deviations

Threads and Seals

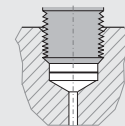
Parallel threads

Seal the sealing face (A) with flat gasket, lens-type sealing ring or InstruMate profile sealing materials.



Tapered Threads

Wrap threads with sealing material (e.g. PTFE tape).



NPT, R and PT

Process Connections




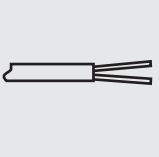
Standard	Sizes
EN 837	G 1/8 B
	G 1/4 B
	G 1/4 Female
	G 3/8 B
	G 1/2 B
DIN EN ISO 1179-2	G 1/4 A
	G 1/4 Female
	G 1/2 A
ANSI/ASME B1.20.1	M14 x 1.5
	1/8 NPT
	1/4 NPT
	1/4 NPT Female
	1/2 NPT
SAE J514 E	7/16-20 UNF O-ring BOSS
	7/16-20 UNF with 74° taper
	M20 x 1.5
	G 1/2 male / G 1/4 Female
DIN 16288	M20 x 1.5
ISO 7	R 1/4
	R 3/8
	R 1/2
KS	PT 1/4
	PT 1/2
	PT 3/8

* Process connection is SS316 by default. other materials available as option.

* Other process connections as option.

* T-type restrictor screw for process connection is available as option.

Pin Assignments

Angular Connector DIN 175301-803 A				Angular Connector DIN 175301-803 C			
		2-wire	3-wire			2-wire	3-wire
	U _B	1	1		U _B	1	1
	0V	2	2		0V	2	2
	S+	-	3		S+	-	3
Circular Connector M12x1 (4-pin)				Cable Outlet, unshielded			
		2-wire	3-wire			2-wire	3-wire
	U _B	1	1		U _B	red	red
	0V	3	3		0V	black	black
	S+	-	4		S+	-	green

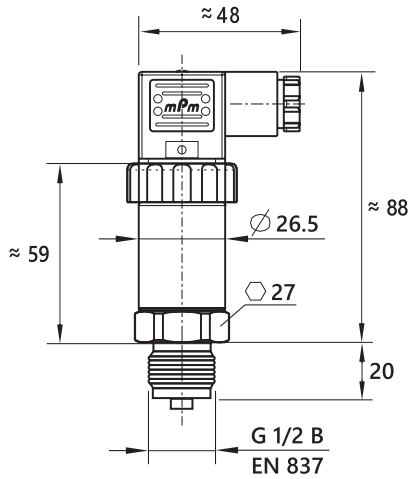
- * U_B Positive power Supply terminal
- * 0V Negative power Supply terminal
- * S+ Analogue output

Output Signal

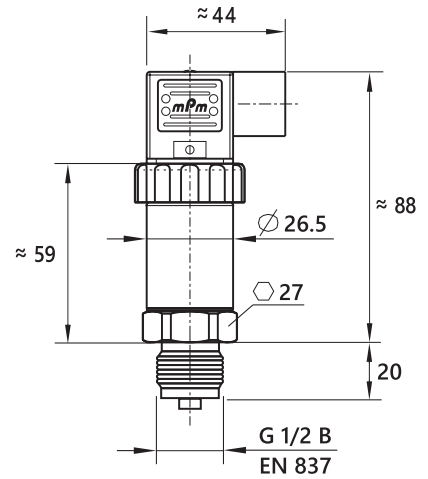
Standard	4...20 mA	Current (2 wire)
Option	0...10 V	Voltage (3 wire)
Option	0...5 V	Voltage (3 wire)

Dimensions (in mm)

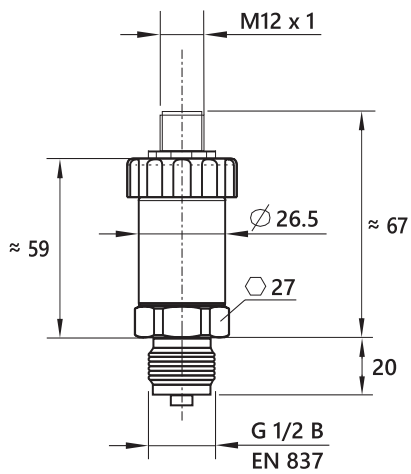
■ Angular Connector form A



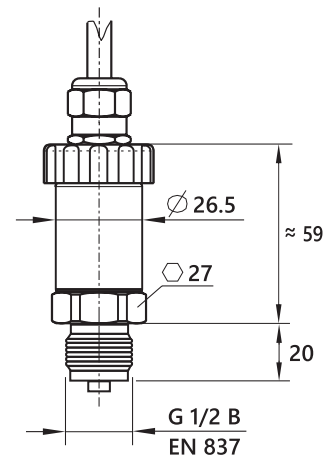
■ Angular Connector form C



■ Circular Connector M12x1



■ Cable Outlet



How To Order

Product Group Name	Model	Output Signal	Process connection	Electrical connection	Range	Options
<i>Example:</i> Pressure Transmitter	3103	4...20 mA	G 1/2 B	Angular Form A	0...25 bar	-

Or simply order by item number on the basis of your previous purchases.

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