Superior pressure sensors for general applications

with internal diaphragm
for relative and absolute pressure

Accuracy 1%, 0.5% or 0.25%

Description

Pressure sensors from tecsis are characterised by their high accuracy, reliability, resistance to corrosion and mechanical load. Due to their wide range of variants they are suitable for many different applications.

This pressure sensor P3278 is designed for critical industrial applications with harsh environments as well as for ambitious applications in research and development. The sensor offers continuous measuring ranges between 0 bar to 0.4 bar and up to the high pressure range of 0 bar to 1,600 bar. It is possible to combine all this pressure ranges with the most common industrial output signals, the most used international process connections and a wide number of electrical connections. For special measuring tasks (e.g.: correction of hydrostatic column) there is optional a zero point adjustment available.

Different accuracy classes, extended temperature ranges and customer specific pin configuration are also as an option available.

The pressure sensor P3278 is a high quality product and resistant against harsh environments in the process industry. Even the lowest temperaturs when used outdoors, extreme shock and vibration in machine building or with aggressive media in the chemical industry, this sensor can meet all requirements.

Features

- Measuring ranges from 0..0.4 bar to 0..1,600 bar
- Corrosion resistant, stainless steel design
- High overload protection
- Highly resistant to shock and vibration
- For dynamic or static measurements
- Good reproducibility
- Simple installation

Measuring Ranges

Over pressure			
Negative	-0.4...0 bar	to	-1...59 bar
Positive	0...0.4 bar	to	0...1,600 bar
Absolute pressure	0...0.4 bar	to	0...40 bar

Applications

Research and development
Process engineering
Plant and apparatus construction
Critical industrial applications

Model: P3278

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Technical data

Model	P3278				
Pressure type	negative or positive gauge pressure absolute pressure				
Output signal			Power supply:		
	4...20 mA		- 2-wire	8...36 VDC	
	20..4 mA		- 2-wire	8...36 VDC	
	0...10 VDC		- 3-wire	12...36 VDC	
	0,5...4,5 VDC		- 3-wire	8...36 VDC	
	0...5 VDC		- 3-wire	8...36 VDC	
	1...5 VDC		- 3-wire	8...36 VDC	
	0.5...4.5 VDC – ratio		- 3-wire	5 VDC ± 10%	
Accuracy of F.S. [1]	1.0% 0.5% 0.25%				
Non-repeatability	≤ ±0.1 %of F.S.				
Pressure range [bar] [2]	Relative pressure:			Absolute pressure:	Compound ranges:
	0...0,4	0...16	0...600	0...0.4 0...10	-0.4...0 -1...5
	0...0,6	0...25	0...1000	0...0.6 0...16	-0.6...0 -1...9
	0...1	0...40	0...1600	0...1 0...25	-1...0 -1...15
	0...1.6	0...60		0...1.6 0...40	-1...0.6 -1...24
	0...2.5	0...100		0...2.5	-1...1.5 -1...39
	0...4	0...160		0...4	-1...3 -1...59
	0...6	0...250		0...6	
	0...10	0...400			
Stability (annual)	≤ ± 0.1 % of F.S. at reference conditions				
Case	Stainless steel				
Zero-point adjustment (as an option) [3][4]	± 10% of F.S				
Process connection	EN 837	DIN 3852-E	ISO 228	SAE J514 E	ANSI/ASME B1.20.1
	G1/2 B	G1/2 A	M12 x 1.5	7/16-20 UNF BOSS	
	G1/4 B	G1/4 A	M20 x 1.5	7/16-20 UNF J514 sealing cone 74°	1/2 NPT
	G1/4 B female	M14x1.5		9/16-18 UNF BOSS	1/4 NPT
	G1/8 B				1/4 NPT female
					1/8 NPT
Wetted parts	Relative pressure range: ≤ 10bar / 150 psi: 316L > 10 bar / 150 psi: 316L + 13-8 PH Absolute pressure range: ≤ 1,000 bar / 10,000 psi: ASTM 630 + 13-8 PH > 1,000 bar / 10,000 psi 316L + 13-8 PH				
Overload protection	< 10 bar: 3-times (5-times on request) ≥ 10 bar: 2-times (3-times on request)				
Electr.Connection / IP rating	L-plug DIN EN 175301-803 A	IP65			
	L-plug DIN EN 175301-803 C	IP65			
	Circuit connector M12x1, 4-pin	IP67			
	Bajonett, 6-pin	IP67			
	Cable output	IP67 (option: IP68 and IP6K9K)			
	Cable output, FEP	IP68			

Current consumption	Current output: Current signal, max. 25 mA Voltage output: max. 12 mA		
Permissible load [Ω]	$\leq \frac{UB - 7.5V}{0.023A}$ for current output (2-wire) $> \frac{\text{max. voltage output}}{1mA}$ for voltage output (3-wire) > 4.5 kOhm for ratiometrical output (3-wire)		
Temperature hysteresis	0.1% of span at >80 °C		
Time response[5)]	3 ms – Current (2-wire) 2 ms – Voltage (3-wire) 2 ms – Ratiometric (3-wire)		
CE conformity[6)] pressure equipment directive EMV-directive	 97/23/EG 2004/108/EG, EN 61326 emission (Group 1, class B) and interference immunity (industrial application)		
Electrical protection	Short-circuit resistance, reverse polarity protection, resistance to over - voltage up to 40 VDC		
Insulation voltage [7)]	750 VDC		
Temperature range – storage – medium – ambient	 -40 .... 70 °C -30 .... 100 °C -30 .... 100 °C	Optional -40... +125°C -40... +125°C	With integrated cooling element -40... +200°C -40... +125°C
Weight	~ 0.2 kg		
Vibration resistance	20 g, 10…2000 Hz		
Shock resistance	100 g, 6 ms		

of.F.S. = of Full Scale

[1)] Including hysteresis, zero point and full scale error (corresponds to error of measurement per IEC 61298-2)

[2)] Also in PSI, kPA, MPa and kg/cm² available

[3)] In 0.05% steps, customer side

[4)] Only with L-plug DIN175301-803 A, L-plug DIN175301-803 C or circular connector M12x1, 4-pin

[5)] Settling time per IEC 62594

[6)] EC Declaration of Conformity on request

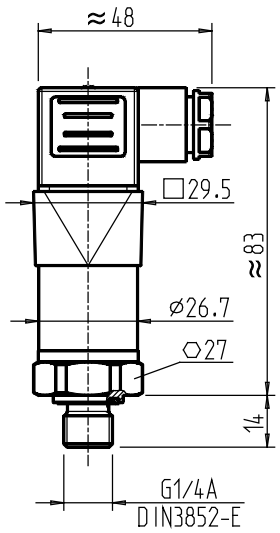
[7)] NEC Class 02 power supply

Reference conditions (according IEC 61298-1)

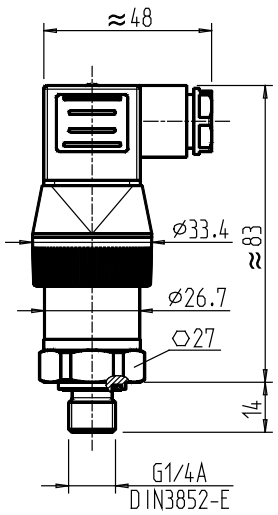
Temperature:	15…25°C
Atmospheric pressure:	860…1060 mbar
Humidity:	45….75% relative
Power supply:	24 VDC (5 VDC with ratiometric output)
Mounting position:	Calibrated in vertical mounting position with pressure connection facing downwards

Dimensions in mm

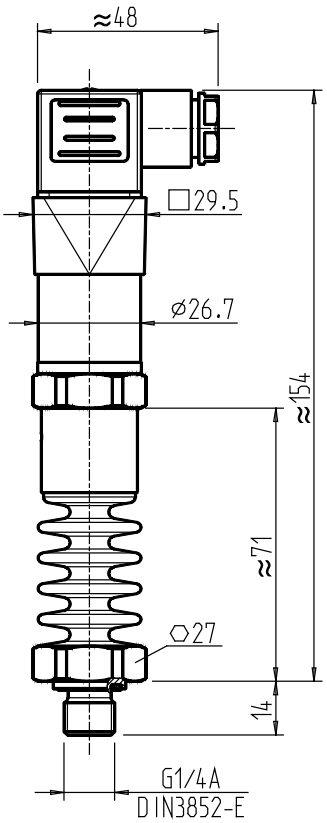
L-plug DIN 175301-803 A



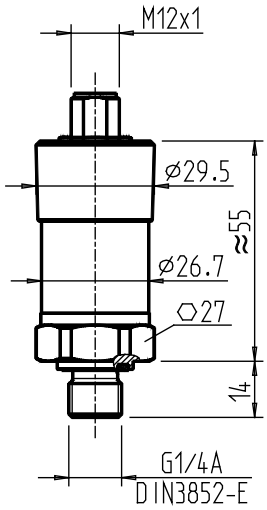
L-plug DIN 175301-803 A and zero point adjustment



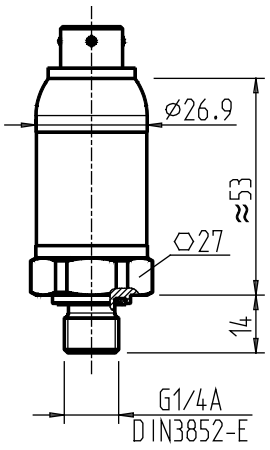
L-plug DIN 175301-803 A and cooling element



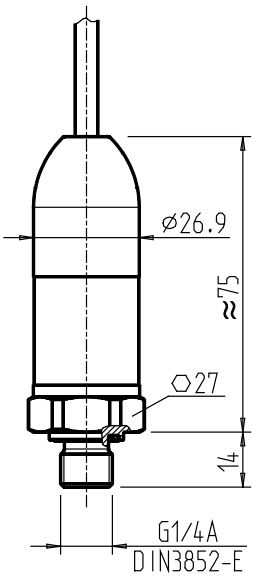
Circlar connector M12x1 (4-pin)



Bayonet connector (6-polig)



Cable output



Electrical connection

L-plug DIN 175301-803 A

	2-wire	3-wire
U_+	1	1
U_-	2	2
S_+	-	3
shield (option)	4	4

L-plug DIN 175301-803 C

	2-wire	3-wire
U_+	1	1
U_-	2	2
S_+	-	3
shield (option)	4	4

Circuit connector M12 x 1 (4-pin)

	2-wire	3-wire
U_+	1	1
U_-	3	3
S_+	-	4
Shield (option)	case	Case

Bayonet connector (6-pin)

	2-wire	3-wire
U_+	A	A
U_-	B	B
S_+	-	C
shield	case	case

Order details

1. Model
2. Measuring range
3. Output signal
4. Options

Cable output

	2-wire	3-wire
U_+	Brown (BN)	Brown (BN)
U_-	Blue (BU)	Blue (BU)
S_+	-	Black (BK)
Shield	Grey (GY)	Grey (GY)

Electrical protective measures

Do not apply with ratiometric output signal.

-Short circuit protection: S+ to U-
-Reverse polarity protection: U+ to U-
-Overvoltage protection: DC 40 V
-Isolation voltage: DC 750 V

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