

Industrial Pressure Transmitter for High Temperature ED 513



Application	Measurement of absolute and relative pressure of gases and liquids for temperatures up to 200°C
Construction	Rugged industrial version in stainless steel. Zero point and sensitivity adjustable
Pressure range	100 mbar ... 400 bar
Output signal	0 ... 20 mA, 4 ... 20 mA, 0 ... 5 V DC, 0 ... 10 V DC
Medium temperature	-40 ... 200°C
Static error band	≤ 0,25% FS typ., ≤ 0,15% FS typ.
Electrical connection	Plug or cable
Pressure connection	Male thread G $\frac{1}{2}$ DIN 3852 O-Ring-/Silcoflon PFA, Nitril NBR, Viton FPM
Type of protection	IP 65, IP 67
EMC	Protected for industrial environments, conforming to EN 50081-2, EN 50081-1 and EN 50082-2
Accessories	Test certificate



Selection Chart

Ordering example:	ED 513 / 3 1 4 2 1 1 / 155		
System design	ED 513 EDX 513	Order-code	Pressure range
Pressure type	Gauge pressure 3 Absolute pressure 4	Pressure range	Order-code
Static error band (T _{amb} = 25°C)	0,4% FS (T _{max} = 25°C), comp. temp. range 0... 50°C 1 0,2% FS (T _{max} = 25°C), comp. temp. range 0... 50°C 2 0,4% FS by adjusted temperature ¹⁾ 7 0,2% FS by adjusted temperature ¹⁾ 8	126 0 ... 100 136 0 ... 160 A56 0 ... 200	D06 0 ... -100 D25 0 ... -200 D56 0 ... -500
Electrical connect.	Cable 2 m IP 65 1 Plug Fischer ²⁾ IP 67 2 Plug DIN 41 524 (Binder) IP 65 3 Plug DIN 43 650 IP 65 4	146 0 ... 250 156 0 ... 400 A56 0 ... 500 166 0 ... 600	H55 -100 ... 100 H75 -200 ... 200 H85 -500 ... 500
Output signal	I _A = 0 ... 20 mA 1 I _A = 4 ... 20 mA 2 U _A = 0 ... 10 V DC 4 U _A = 0 ... 5 V DC 5	025 0 ... 1 035 0 ... 1,6 A15 0 ... 2	D85 0 ... -1 H05 -1 ... 1 S25 -1 ... 3
Pressure connect.	Male thread G $\frac{1}{2}$ DIN 3852, stainless steel 1.4435 1	045 0 ... 2,5 065 0 ... 4 A25 0 ... 5 065 0 ... 6	S25 -1 ... 5 S45 -1 ... 9
Diaphragm	Stainless steel 1.4404/316 L 1 Hastelloy C-276 2	075 0 ... 10 085 0 ... 16 A35 0 ... 20	
Pressure range	Also other pressure ranges and versions in Pa, psi, H ₂ O etc. available	095 0 ... 25 105 0 ... 40 A45 0 ... 50	
		115 0 ... 60 125 0 ... 100 135 0 ... 160	
		A55 0 ... 200 145 0 ... 250 155 0 ... 400	

¹⁾ Adjusted temperature

If the adjustment of the medium is above 25°C, the temperature must be advised with the order code /9007/XXXX.

Ordering example: adjustment at 150°C, order code /9007/0150.

The compensated temperature range is ± 25°C of the adjusted temperature. If the adjusted temperature is above 175°C, the compensated range will always be 150°C to 200°C.

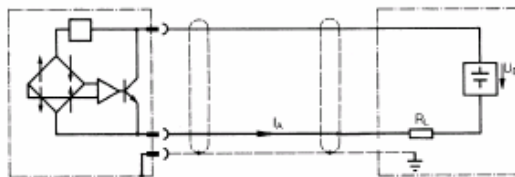
²⁾ Cable socket connector included.

³⁾ Version 4 ... 20 mA only

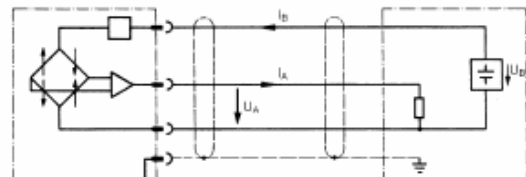
Special Designs see D6.901 E / Accessories see D6.911 E

Electrical Connection (Pin assignments and cable colours see D0.320 E)

I_A = 4 ... 20 mA



I_A = 0 ... 20 mA, U_A = 0 ... 5 V, U_A = 0 ... 10 V



Design and specifications subject to change without notice

D6.153 E / 8.02



Technical Data

Pressure range 1	0 ... +P	bar		0,1	0,16...0,25	0,4...0,6	1...1,6	2...4	5...10	16...25	40...60	100...160	200...400	
Maximum Pressure	P max.	bar		4	4	6	10	15	30	75	100	250	600	
Pressure range 2	-P ... 0/-P ... 0 ... +P	bar		0...-0,1	0...-0,2	0...-0,5	0...-1	-0,1...-0,1	-0,2...-0,2	-0,5...-0,5	-1...-1	-1...-3	-1...-5	-1...-9
Maximum Pressure	P max.	bar		4	4	6	10	4	4	6	10	15	30	30
Deviation of characteristic curve (T _{med} = 25°C)	ED 513/x1	± % FS	≤	0,25 typ./0,4 max. (see diagramm D0.320)										
	ED 513/x2	± % FS	≤	0,15 typ./0,2 max. (see diagramm D0.320)										
Hysteresis and reproducibility		± % FS	≤	0,2 (p < 0,4 bar) / 0,1 (p ≥ 0,4 bar)										
TC zero point ¹⁾	pressure range 1	± % FS/10 K	≤	1,8	1,0	0,3	0,3	0,3	0,25	0,25	0,25	0,25	0,25	0,25
	pressure range 2	± % FS/10 K	≤	1,8	1,0	1,0	0,3	0,3	1,0	0,8	0,5	0,3	0,3	0,3
TC sensitivity ¹⁾		± % FS/10 K	≤	0,25										
Operating temp. (medium)		°C		-40 ... 200 (see diagram medium pressure)										
Housing temperature		°C		-20 ... 80										
Storage temperature		°C		-40 ... 80										
Supply voltage U _B	I _A = 0 ... 20 mA	V DC		16 ... 30										
	I _A = 4 ... 20 mA	V DC		10 ... 30										
	U _A = 0 ... 5 V DC	V DC		9 ... 30										
	U _A = 0 ... 10 V DC	V DC		14 ... 30										
Reverse polarity protection for supply U _B				yes										
Short circuit proof output				yes										
Overvoltage protection				yes										
Load (R _L + R _{L,ext})	I _A = 0 ... 20 mA	Ohm	≤	500										
	I _A = 4 ... 20 mA	Ohm	≤	1000 (see diagram D0.320)										
	U _A = 0 ... 5 V DC	kOhm	≥	5										
	U _A = 0 ... 10 V DC	kOhm	≥	10										
Zero point adjusting range		± % FS		2										
Insulation resistance at 750 V DC		MOhm	≥	1,2										
Type of protection (DIN 40 050, IEC 144)				according selection chart										
EMC emission (EN 50 081-1 and 2)				fulfilled										
EMC immunity (EN 50 082-2)				fulfilled										
	IEC 1000-4-2 / EN 61000-4-2	level 3 (8 kV)		fulfilled										
	IEC 1000-4-3 / EN 50140	level 3 (10 V/m)		fulfilled										
	IEC 1000-4-4 / EN 61000-4-4	level 4 (4 kV)		fulfilled										
	IEC 1000-4-6 / EN 50141	level (10 kV)		fulfilled										
Weight		kg		0,35										

¹⁾ Calibration temperature ±25°C

Construction and Function

The pressure transmitter ED 513 consists of a pressure connection body provided with cooling radiator and a welded stainless steel or hastelloy diaphragm and a stainless steel case to house the electronic circuitry and the electrical connection. The piezoresistive pressure sensor is mounted within the body of the transmitter and separated from the diaphragm by the transmission/cooling oil.

The pressure being measured is transmitted from the diaphragm and the transmission liquid to the piezoresistive silicon sensor.

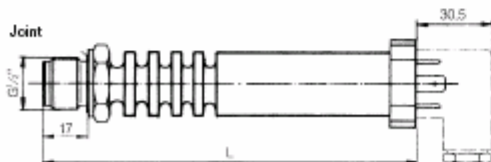
An amplifier converts the pressure sensor's bridge signal to the desired level. The amplifier and associated electronics are encapsulated to give an optimal protection against shock and vibration.

The pressure transmitter is designed with a G $\frac{3}{8}$ pressure connection similar to DIN 3852. The sealing is provided at the thread with an O-ring, specially designed for high temperatures.

Electrical connection with plug DIN 43 650 and cable: For the adjustment of the zero point and span, the two potentiometers are accessible after unscrewing the ring under connector. The zero point and span can be adjusted externally with a screw-driver.

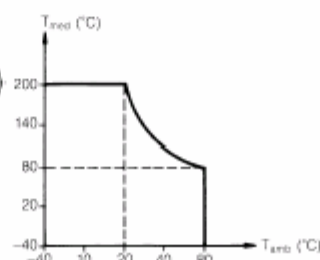
Electrical connection with round plug IP 67: The potentiometers for zero point and span are accessible from externally.

Dimensions



p (bar)	L (mm)
0.1 ... ≤ 10	171
<10 ... 400	179

Ambient Temperature
Allowed Ambient Temp. Range as a function of medium temp.



Medium pressure
Admissible medium pressure as a function of medium temperature

