

T.3

hex 22

stainless steel

1.4404 / AISI 316L

Robust pressure transmitters

Stainless steel housing 1.4404 / AISI 316L, hex 22



- Pressure transmitters especially for low pressures, including vacuum applications
- Long life time even under high pressure change rates
- Housing and wetted parts are made of stainless steel 1.4404 providing excellent media compatibility when used in seawater, chemical and process technology applications
- The highly-sensitive piezo-resistive sensor in the measuring cell filled with oil guarantees high level of accuracy, repeatability and long-term stability
- The availability of different sealing materials enables deployment in a broad temperature range and with a diverse array of media

Robust pressure transmitters

Technical details

	0675	0680	0690
Output signal:	0.5 - 4.5 V ratiometric	0 - 10 V (3-wire)	4 - 20 mA (2-wire)
Supply voltage U_{V+} :	5 VDC \pm 10 % max. 6,5 VDC	12 - 32 VDC	10 - 32 VDC
Permissible load / apparent ohmic resistance:	\geq 4.7 k Ω	\geq 4.7 k Ω	$\leq (U_{V+} - 10 \text{ V}) / 20 \text{ mA}$
Idle power consumption:	approx. 5 mA		< 4 mA

		0675 / 0680 / 0690								
Standard pressure ranges p_{nom} :		-1 - 0 bar (vacuum)	-1 - 1 bar (compound)	0 - 1 bar	0 - 4 bar	0 - 6 bar	0 - 10 bar	0 - 16 bar	0 - 40 bar	0 - 100 bar
Overpressure protection p_u ¹⁾ :		3 bar	3 bar	3 bar	8 bar	12 bar	20 bar	32 bar	80 bar	200 bar
Burst pressure ¹⁾ :		10 bar	10 bar	10 bar	20 bar	30 bar	35 bar	40 bar	100 bar	250 bar
Mechanical life expectancy:		10,000,000 pulsations at rise rates to 1,000 bar/s at p_{nom}								
Permitted pressure change rate:		\leq 1,000 bar/s								
Accuracy:		\pm 0.5 % full scale (FS) at room temperature, \pm 0.25 % BFSL								
Long term stability:		< \pm 0.2 % of full scale (FS) per year								
Repeatability ²⁾ :		\pm 0.1 % FS								
Temperature error ²⁾ :		\pm 0.02 % of full scale (FS) / °C; -1 ... 1 bar \pm 0.03 % of full scale (FS) / °C								
Compensated temperature range:		-10 °C ... +70 °C (14 °F ... 158 °F)								
Temperature range ambient:		-40 °C ... +100 °C (-40 °F ... 212 °F)								
Temperature range media:	with NBR seal:	-30 °C ... +100 °C (-22 °F ... +212 °F)								
	with EPDM seal:	-30 °C ... +125 °C (-22 °F ... +257 °F)								
	with FKM seal:	-20 °C ... +125 °C (-4 °F ... +257 °F)								
Wetted parts material	Housing:	Stainless steel 1.4404 (AISI 316L)								
	Measuring cell:	Stainless steel 1.4404 (AISI 316L)								
	Seal material:	NBR, EPDM or FKM								
Standard sensor oil:		Fluorine oil ³⁾								
Insulation resistance:		> 100 M Ω (35 VDC)								
Response time 10 - 90 %:		\leq 2 ms								
Vibration resistance:		20 g at 4 - 2000 Hz sine wave; DIN EN 60068-2-6								
Shock resistance:		half sine wave 500 m/s ² ; 11ms; DIN EN 60068-2-27								
Protection class		Refer to the electrical connections								
Electromagnetic compatibility:		EMC 2014/30/EU, EN 61000-6-2:2005, EN 61000-6-3:2007								
Max. length of connection cable:		30 m								
Protection against reverse polarity, short-circuit and overvoltage:		Built-in								
Weight:		approx. 80 g (DIN EN 175301 approx. 110 g, cable output approx. 135 g)								

¹⁾ Static pressure. Dynamic value is 30 to 50% lower. Values refer to the hydraulic/pneumatic part of the pressure transmitter.

²⁾ Within the compensated temperature range.

³⁾ not suitable for food applications

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Electrical connectors and threads

DIN EN 175301 - 803 - A

Pin	0675 / 0680	0690
1	U_{V+}	U_{V+}
2	Gnd	I_{out}
3	U_{out}	nc
PE		

IP65

$x \sim 60$ mm without socket device
 $x \sim 76$ mm with socket device

$d \sim \varnothing 30$ mm

Connection code: 013

M12 - DIN EN 61076 - 2 - 101 A

Pin	0675 / 0680	0690
1	U_{V+}	U_{V+}
2	U_{out}	nc
3	Gnd	I_{out}
4	nc	nc

IP67

$x \sim 54$ mm

$d \sim \varnothing 22$ mm

Connection code: 002

ISO 15170 - A1 - 4.1

Pin	0675 / 0680	0690
1	U_{V+}	U_{V+}
2	Gnd	nc
3	U_{out}	I_{out}
4	nc	nc

IP67

$x \sim 65$ mm

$d \sim \varnothing 27$ mm

Connection code: 004

Cable connection

1: red
 2: white
 3: black

Pin	0675 / 0680	0690
1	U_{V+}	U_{V+}
2	U_{out}	nc
3	Gnd	I_{out}

IP67

$x \sim 44$ mm (+ 20 mm bend relief)
 Cable length ~ 2 m

$d \sim \varnothing 22$ mm

Connection code: 011

Sealing ring
 G1/4 DIN
 EN ISO 1179-2
 (DIN 3852-11)
 form E

Thread code: 41

0675 / 0680 / 0690

Article matrix for pressure transmitters

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	Type	Pressure range	Pressure connection	Seal material	Electrical connection
	↓	↓	↓	↓	↓
0.5 - 4.5 V ratiometric	0675				
0 - 10 V, 3-wire	0680				
4 - 20 mA, 2-wire	0690				

Pressure range	Max. Overpressure ¹⁾	
-1 – 0 bar (Vacuum, approx. -29.6 inHg)	3 bar	000
-1 – 1 bar (Compound pressure range) ²⁾	3 bar	V01
0 - 1 bar (approx. 14.5 PSI)	3 bar	100
0 - 4 bar (approx. 58 PSI)	8 bar	400
0 - 6 bar (approx. 87 PSI)	12 bar	600
0 - 10 bar (approx. 145 PSI)	20 bar	101
0 - 16 bar (approx. 232 PSI)	32 bar	161
0 - 40 bar (approx. 580 PSI)	80 bar	401
0 - 100 bar (approx. 1,450 PSI)	200 bar	102

Pressure connection ↓

G1/4 – DIN EN ISO 1179-2 (DIN 3852-11), form E	41
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Seal material – Application areas ↓

NBR	Hydraulic/machine oil, air, nitrogen, water, etc.	-30 °C ... +100 °C (-22 °F ... +212 °F)	1
EPDM ³⁾	Brake fluid, water, acetylene, hydrogen, etc.	-30 °C ... +125 °C (-22 °F ... +257 °F)	2
FKM	Hydraulic fluids (HFA, HFB, HFD), petrol/gasoline, etc.	-20 °C ... +125 °C (-4 °F ... +257 °F)	3

Electrical connection ↓

DIN EN 175301-803-A (DIN 43650-A); socket device included	013
M12x1 – DIN EN 61076-2-101 A	002
Bayonet ISO 15170-A1-4.1 (DIN 72585-A1-4.1)	004
Cable connection (length of cable 2 m standard)	011

Article number	06XX	XXX	41	X	XXX

¹⁾ Static pressure, dynamic pressure 30 to 50% lower. Values refer to the hydraulic or pneumatic part of the pressure transmitter.

²⁾ Other compound pressure ranges on request.

³⁾ For oxygen applications, the EPDM diaphragm can only be used up to 10 bar and a media temperature of max. +60°C.

