

T.2

hex 22
Stainless steel
1.4305 / AISI 303

Robust pressure transmitters

Stainless steel housing (1.4305 / AISI 303, SW22)



- Pressure transmitters specially for low pressures, including vacuum applications
- High overpressure protection (up to 3 x)
- Long life time even under high pressure change rates
- Housing and wetted parts are made of stainless steel providing excellent media compatibility
- Suitable for hydrogen and oxygen 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
- Custom variants (e.g. cleaned for oxygen applications) are available on request

Technical details

Type:	0645	0650	0660
Output signal:	0.5 – 4.5 V ratiometric	0 – 10 V (3-wire)	4 – 20 mA (2-wire)
Supply voltage U_B :	5 VDC ± 10 % max. 6.5 VDC	12 – 32 VDC	10 – 32 VDC
Permissible load apparent ohmic resistance:	$\geq 4,7 \text{ k}\Omega$	$\geq 4,7 \text{ k}\Omega$	$\leq (U_B - 10 \text{ V}) / 20 \text{ mA}$
Idle power consumption:	approx. 5 mA		< 4 mA

Type:		0645 / 0650 / 0660							
Standard pressure ranges p _{nom} :		-1 – 0 bar (vacuum)	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	8 bar	12 bar	20 bar	32 bar	80 bar	200 bar
Burst pressure ¹⁾ :		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 bar/ms at p _{nom}							
Permitted pressure change rate:		≤ 1 bar/ms							
Accuracy:		±0.5 % full scale (FS) at room temperature, ±0.25 % BFSL							
Long term stability:		< ±0.2 % of full scale (FS) per year							
Repeatability ²⁾ :		±0.1 % FS							
Temperature error ²⁾ :		±0.02 % of full scale (FS) / °C; -1 ... 1 bar ±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: -40 °C ... +100 °C (-40 °F ... +212 °F)							
		with FKM seal: -20 °C ... +125 °C (-4 °F ... +257 °F)							
Wetted parts material	Housing:	Stainless steel 1.4305 / AISI 303							
	Measuring cell:	Stainless steel 1.4404 / AISI 316L							
	Seal material:	NBR or FKM							
Standard sensor oil:		Fluorine oil (not suitable for food applications)							
Insulation resistance:		> 100 MΩ (500 VDC, Ri > 42Ω)							
Response time 10 – 90%:		< 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.

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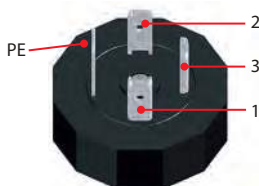
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0645 / 0650 / 0660

Electrical connectors and threads

DIN EN 175301-803-A



0645 + 0650	0660
1: Uv+	1: Uv+
2: Gnd	2: I _{out}
3: U _{out}	3: nc
PE	⏚

IP65

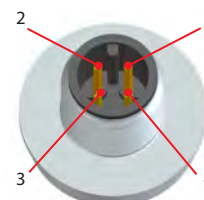
x ~ 60 mm (without coupler socket)

x ~ 76 mm (with coupler socket)

d ~ Ø 30 mm

Order number: **013**

M 12 – DIN EN 61076-2-101 A



0645 + 0650	0660
1: Uv+	1: Uv+
2: U _{out}	2: nc
3: Gnd	3: I _{out}
4: nc	4: nc

IP67

x ~ 54 mm

d ~ Ø 22 mm

Order number: **002**

ISO 15170-A1-4.1



0645 + 0650	0660
1: Uv+	1: Uv+
2: Gnd	2: nc
3: U _{out}	3: I _{out}
4: nc	4: nc

IP67

x ~ 65 mm

d ~ Ø 27 mm

Order number: **004**

Cable connection



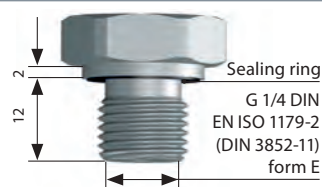
0645 + 0650	0660
1: Uv+	1: Uv+
2: U _{out}	2: nc
3: Gnd	3: I _{out}

IP67

x ~ 44 mm (+ 20 mm Bend relief)
Cable length ~ 2 m

d ~ Ø 22 mm

Order number: **011**



Thread code: **41**

0645 / 0650 / 0660

Order matrix for pressure transmitters

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	Type	Pressure range	Pressure connection	Seal material	Electrical connection
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0.5 – 4.5 V, ratiometric	0645
0 – 10 V, 3-wire	0650
4 – 20 mA, 2-wire	0660

Pressure range Max. overpressure¹⁾

-1 – 0 bar (vacuum, approx. -29.6 inHg)	3 bar	000
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

G 1/4 – DIN EN ISO 1179-2 (DIN 3852-11), form E	41
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Seal material – Application areas

NBR	Hydraulic/machine oil, heating oil, air, nitrogen, water, etc.	-40 °C ... 100 °C (-40 °F ... 212 °F)	1
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
M 12x1 – 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



Order number:	06XX	XXX	41	X	XXX
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¹⁾ Static pressure, dynamic pressure 30 to 50% lower. Values refer to the hydraulic or pneumatic part of the pressure transmitter.