PTH
PRESSURE TRANSDUCER
SERIES 20

p max **40 - 100 - 250 - 400** bar

DESCRIPTION

This series of pressure transducers has been designed in order to be used for the main industrial applications and on moving machines.

The main feature of this transducer is to ensure its functioning also in bad working conditions, especially for what concerns the fluid temperature range which can go from a minimum of - 40 °C up to a maximum of + 120 °C

The functioning of this transducer is based on the strain-gauge principle, which is powered by an electric circuit developed according to the SMT technology which ensures a high reliability and maximum resistance to vibrations and mechanical stress.

Every component which is in contact with the fluid is made of stainless steel and the transducer is completely fluid-proof.

The protection class of the electrical connection is IP65 for the version with DIN connector, while the version with the M12 connector has a protection class IP67.

They are available with current output signal 4 ÷ 20 mA or with voltage output signal 0 ÷ 10 V and they have the reverse polarity protection.

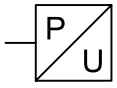
These transducers are available in 4 different pressure ranges, from 40 to 400 bar.

TECHNICAL CHARACTERISTICS (see paragraph 3)

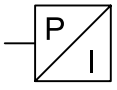
Nominal pressure P_N		bar	40 - 100 - 250 - 400
High dynamic pressure		% P_N	75
Maximum pressure		% P_N	200
Class of precision		% P_N	0,5
Output signal	voltage current	V mA	0 ÷ 10 4 ÷ 20
Working temperature range		°C	-40 / +120

HYDRAULIC SYMBOLS

PTH-*/20E0-*



PTH-*/20E1-*



1 - IDENTIFICATION CODE

P	T	H	-		/	20	E		-	

Pressure transducer

High dynamic performance

Nominal pressure
040 = 40 bar **250** = 250 bar
100 = 100 bar **400** = 400 bar
(other pressure values are available upon request)

Series N. (the overall and mounting dimensions remain unchanged from 20 to 29)

Integrated electronics with analogic output

Output signal
0 = 0 ÷ 10 V
1 = 4 ÷ 20 mA **(standard)**
(Other types of output signal are available on request)

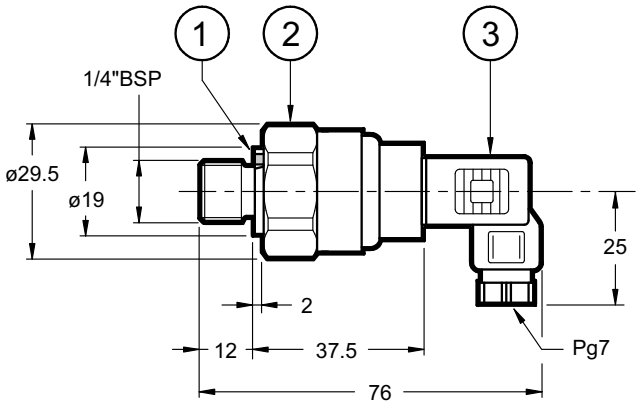
Electrical connection
K10 = Reduced electrical connector DIN 43650 **(standard)**
K12 = electrical connector M12 (on request)

NOTE: the standard hydraulic connection is with threaded port of G 1/4 DIN 3852 and integrated seal.
Other types of connection are available upon request.

2 - OVERALL AND MOUNTING DIMENSIONS

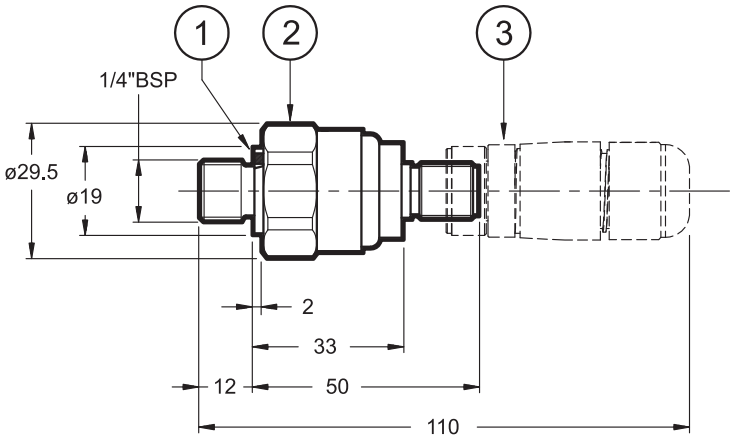
PTH-*/20E*-K10

dimensions in mm



1	Integrated plain seal in viton
2	Hexagonal: spanner 27 Tightening torque 25 Nm max
3	Reduced electrical connector DIN 43650 **delivered with the transducer**

PTH-*/20E*-K12



1	Integrated plain seal in viton
2	Hexagonal: spanner 27 Tightening torque 25 Nm max
3	Electrical connector 5 pin M12 - IP67 PG7 EC5S/M12L/10 cod. 3491001001 (**to be ordered separately**)

3 - TECHNICAL CHARACTERISTICS

Nominal pressure P_N	bar	**40**	**100**	**250**	**400**
Maximum pressure	x P_N	x 2	x 2	x 2	x 2
Cracking pressure	x P_N	x 6	x 5	x 4	x 3,5

Output signal		**E0**	**E1**
		0 ÷ 10 V	4 ÷ 20 mA
Max current consumption	mA	≤ 12	23
Supply voltage	DC V	12 ÷ 30	10 ÷ 28
Load resistance	KΩ	2,5	see par.. 4.2
Response time	ms	< 1	
Class of precision	% P_N	0,5	
Hysteresis	% P_N	± 0,2	
Repeatability	% P_N	± 0,05	
Linearity	% P_N	± 0,2	
Stability after 1 million cycles	% P_N	± 0,1	
Working temperature range	°C	- 40 / + 120	
Thermal drift from 0 to + 100 °C	% P_N	± 1	

In compliance with EC standards	Emission 61000-6-3	Immunity 61000-6-2
Vibration resistance	> 20 G	
Pressure connection	G 1/4" with integrated seal	
Electrical connection	3 poles + earth DIN 43650 reduced connector for K10 connection	
	M12x1 4 pin straight connector for K12 connection (upon request)	
Protection class (EN 60529)	IP 65 for K10 connection	IP 67 for K12 connection
Ambient temperature range	- 20 / + 80 for K10 connection	- 25 / + 85 for K12 connection
Body material	AISI 304	
Mass	0,1 kg	

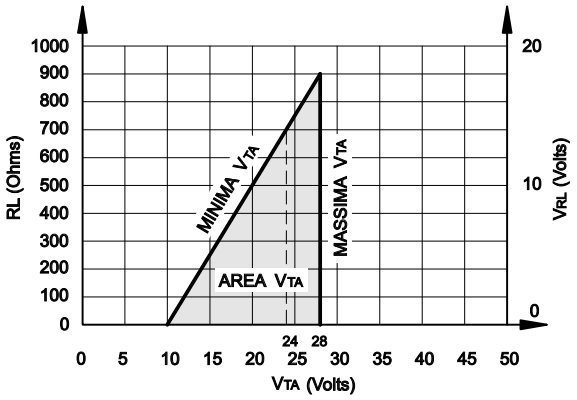
4 - TRANSDUCER VOLTAGE

4.1 - PTH-*/20E0-*

These transducers have been equipped with voltage stabilizer which supplies the electric circuit with constant voltage, independently from power supply voltage.
We recommend a stabilized power supply voltage of 24 VDC.

4.2 - PTH-*/20E1-*

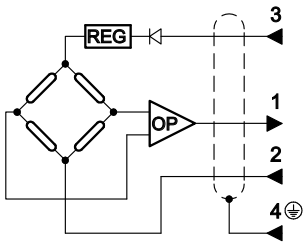
We report the functioning diagram of the transducer.
The VTA area represents the functioning zone of the transducer related to the chosen load resistance R_L . We recommend a power supply voltage of 24 VDC and a load resistance of 700 Ohm.

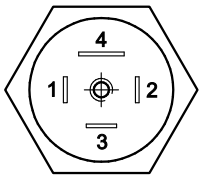


N.B. Outside the VTA area the correct functioning of the transducer is not assured.

5 - WIRING DIAGRAMS

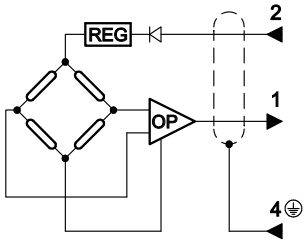
PTH-*/20E0-K10

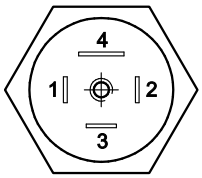




1 = output 0 ÷ 10 V
2 = 0 V
3 = 12 ÷ 30 VDC
4 (indicated on the connector by the symbol ⏚) = GND

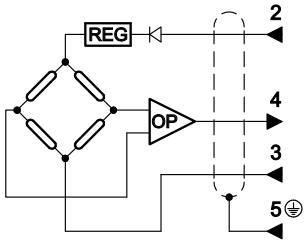
PTH-*/20E1-K10

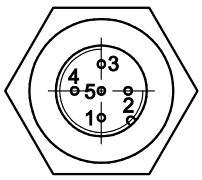




1 = output 4 ÷ 20 mA
2 = 10 ÷ 28 VDC
3 = not connected
4 (indicated on the connector by the symbol ⏚) = GND

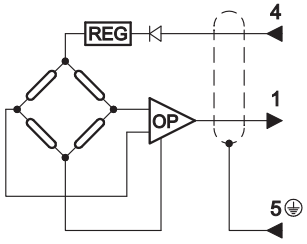
PTH-*/20E0-K12

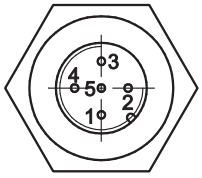




1 = not connected
2 = 10 ÷ 30 VDC
3 = 0 V
4 = output 0 ÷ 10 V
5 = GND

PTH-*/20E1-K12





1 = output 4 ÷ 20 mA
2 = not connected
3 = not connected
4 = 10 ÷ 28 Vdc
5 = GND

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