

P01 Series Pressure Sensor

The P01 series pressure transducer combines the latest Application Specific Integrated Circuit (ASIC) technology with proven piezoresistive sensors. The measuring bridge is printed directly on one side of the diaphragm by means of Thick-Film technology. The rear part of the diaphragm can be exposed directly to the medium to be measured. The 303SS housing surrounds a pressure transducer designed for general use wherever a rugged, reliable pressure transducer is required.



Features

- Ceramic piezoresistive principle
- Max. measuring range 50 bar
- RoHS compliance (Lead-Free)

Applications

- Industrial air compressors
- Water supply and drainage systems
- Mechanical and plant engineering

Advantages

- Working temperature range -25°C ...85°C
- Compatible for nearly all aggressive media
- Impact and vibration resistance
- Temperature compensated

Standards

- EN 60770
- EN 61000-6-2 Series
- EN 61000-6-3 Series
- IEC 60068-2: 2005

Absolute maximum ratings

Symbol	Parameter	Min.	Max.	Unit
P_n	Operating pressure range (Gauge)	0	50	bar
P_m	Prove pressure	3 times P_n		
P_b	Burst pressure	5 times P_n		
T_a	Ambient operating temperature	-25	85	°C
T_m	Working media temperature	-30	105	°C

Stresses above these ratings may cause permanent damage. Exposure to absolute maximum ratings for extended periods may degrade reliability.

Specifications

Symbol	Parameter	Test condition	Min.	Typ.	Max.	Unit
P_n	Operating pressure range ^{*1} (Gauge)	P01010BXXX		10		bar
		P01016BXXX		16		
		P01020BXXX		20		
		P01030BXXX		30		
		P01042BXXX		42		
		P01050BXXX		50		
BFSL	Best fitting straight line			0.2	0.3	% F.S
ϵ_L	Accuracy include linearity, hysteresis and repeatability errors	$T_a = 25\text{ °C}$		0.4	0.5	%
TEB	Total error band	@ P_n , $T_a = -25\text{ °C} \dots 85\text{ °C}$			2	%
T_R	Response time			5	10	mS

*1 Pressure range can be customized according to requirements

General characteristics

Symbol	Parameter	Value	Unit	Comment
m-HSE	Housing material	AISI 304		AISI 316L optional
m-SR	Seal ring material	HNBR		
m-WM	Wetted materials	Al ₂ O ₃		Ceramic
IP	Sealing grade	IP65 - IP67		Depending on the electrical connector
F_m	Mounting torque	≤ 30	Nm	±10%
VIBR	Random vibration	10	g	50 - 2000 Hz X/Y/Z Axis
SHORT	Short circuit protected	Yes		
m	Mass	50	grams	

Name Guide Description

	<u>P01</u>	<u>XXXB</u>	<u>X</u>	<u>XX</u>	<u>X</u>
Series	P01: Piezoresistive pressure sensor				
Pressure (Gauge)	010B; 0 - 10bar 030B; 0 - 30bar 016B; 0 - 16bar 042B; 0 - 42bar 020B; 0 - 20bar 050B; 0 - 50bar				
Output	A: 0.5-4.5 VDC ratio output from 5 VDC excitation B: 4-20mA from 10.5 to 30 VDC excitation C: 0-10VDC output from 14 to 30 VDC excitation D: 1 to 5 VDC output from 10.5 to 30 VDC excitation Customized				
Electrical connector	01: RK03FB 02: Packard Metri-Pack 150				
Pressure connector	A: G1/4" male B: 1/4"-18 NPT male C: 1/8"-27 NPT male D: 7/16"-20 UNF male E: 7/16"-20 UNF female Customized				

Notes

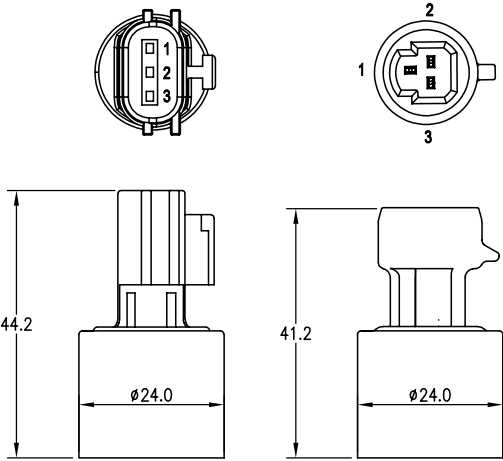
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Dimension (mm)

Electrical connector
and main body

Code 01: RK03FB

Code 02: Packard Metri-Pack 150

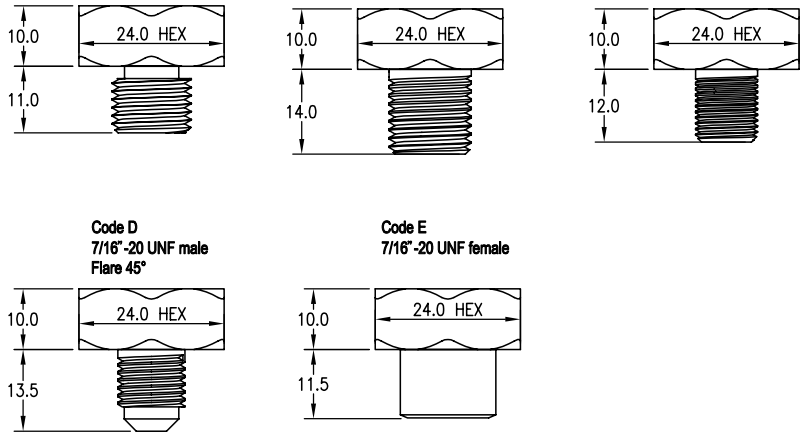


Pressure connector

Code A
G 1/4" male
with O-Ring seal

Code B
1/4"-18 NPT male

Code C
1/8"-27 NPT male



Electrical Connector Code	01	02
	RK03FB	Packard Metri-Pack 150
sealing level	IP67	IP65
Material	PPS	PA66
Pin connection 0.5 – 4.5 V, 1 – 5 V, 0 – 10 V output	1. GND, 2. V _{OUT} , 3. V _{DD}	1. V _{OUT} , 2. GND, 3. V _{DD}
Pin connection 4-20mA output	1. NULL, 2. -, 3. +	1. -, 2. NULL, 3. +

Safety and Environment



The product is to be installed by manufacturer trained personnel or competent person trained in accordance with manufacturer installation instructions.

With respect to applicable standards IEC 61010-1/ EN 61010-1 *safety requirements for electrical equipment for measurement, control and laboratory use part 1 general requirements*, the product should be used in limited energy secondary circuits.



Risk of electrical shock

Certain parts of the module can carry hazardous voltage during the operation process of the product because hazardous live voltage of primary conductor, power supply occurs, injury and/or serious damage will be caused if this warning is ignored.

Conducting parts must be inaccessible after installation of the product. Additional protection including shield or protective housing could be used according to IEC 60664 Insulation coordination for equipment within low-voltage supply systems.

Disconnection of the main supply will protect against possible injury and serious damage.



ESD protection

Damage from an ESD event will occur if the personnel is not well grounded when handling.

Important notice

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