Dynisco

PT46X4 Series Pressure Sensors With SIL2

SIL2 AND PL'c' RATING WITH LOCAL AND REMOTE REZEROING CAPABILITY

Features

- Adjustable zero and span, via side-mounted pots
- Accuracy better than ±0.5%
- DyMax® coated stainless steel wetted parts
- 4-20 mA output
- 0-500 to 0-30,000 psi
- Internal 80% shunt calibration
- 3rd-party agency analysis (exida™) and self-certified based on FMEDA analysis and internal audit
- Output signal meets Performance Level 'c' as defined by the Machinery Directive (Category 1)
- Meets the following compliance directives, when properly installed and used:
  - SIL2
  - Machinery Directive EN ISO 13849-1

Description

The PT46X4 Series pressure sensor is a ±0.5% sensor ideal for general melt pressure measurements requiring simple installation, repeatability and reliability. The PT46x4 sensor provides the industry standard 4-20 mA amplified signal designed to work with DCS and PLCs. The PT46X4 comes equipped with adjustable zero and span side-mounted potentiometers. PT46X4 Series mA sensors can be rezeroed in two ways: locally via the zero potentiometer, or remotely via shorting two pins together (contact closure). Optional thermocouple or RTD configurations are available to provide melt temperature. The PT46X4 features a 1/2-20 UNF thread for simple and easy installation in standard transducer mounting holes. The 4-20 mA output signal is rated PL'c' as described in the Machinery Directive EN ISO 13849-1. The PT46X4 Series mA sensors are self-certified based on the evaluation reports of the respected third-party agency, exida™. The PT46X4 Series mA sensors have undergone extensive FMEDA analysis (Failure Mode Effects and Diagnostic Analysis). The FMEDA reports show that these sensors have been evaluated for random failure requirements and meet Performance Level 'c' (PL'c') as well as SIL2 (Safety Integrity Level 2). The information in the FMEDA report can be used by the customer's system designer as part of the overall qualification of the device in the system for PL'c' or SIL compliance. The PT46X4 Series can be equipped with a safety relay, separate from the signal output. Called Guardian, this optional relay signal has an application specific pressure threshold setting that will place a machine in a safe mode as described in the Machinery Directive EN ISO 13849-1.

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Performance Characteristics	
Output:	4-20 mA
Input Voltage:	14-36 Vdc
Accuracy:	±0.5% FSO combined error (Including Linearity, Repeatability & Hysteresis)
Repeatability:	±0.2% FSO
Configuration:	Four-arm bonded foil Wheatstone bridge strain gage
Load Resistance:	0-1,100 Ohms
Over Pressure:	2x FSO or 35,000 psi (which-ever is less)
Internal Shunt Calibration (R-Cal):	80% FSO ±0.5%
Insulation Resistance:	1,000MΩ @ 50 Vdc
MECHANICAL CHARACTERISTICS	
Diaphragm Temp, Max:	750°F (400°C)
Zero Shift (temp chg):	25 psi/100°F Typical (45 psi/100°C)
Electronics Operating Temp:	-20° to 185°F (-29° to 85°C)
Zero Shift (temp chg):	±0.05% FS/°F max (±0.10% FS/°C max)
Mounting Torque:	500 inch/lbs. max
Standard Wetted Parts:	DyMax® coated 15-5 PH SST

APPROVALS & SELF CERTIFICATIONS	
CE:	Directive 2004/108/EC
PL'c':	EN ISO 13849-1 meeting the performance requirements of a safety-related part of a control system for Performance Level 'c' (PL'c') safety system when installed per Category 1
SIL2 :	Safety Integrity Level 2

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Ordering Guide for PT46X4 Series

X PT46 X 4 XX X/XX XXX

Temperature
blank = No temperature sensor
T = J Type thermocouple

Transducer Configuration
0 = Rigid stem, no flexible capillary
2 = Rigid stem with flexible capillary
3 = Rigid stem, flexible capillary with temperature sensor

Pressure Range

5C	= 500 psi
7.5C	= 750 psi
1M	= 1,000 psi
1.5M	= 1,500 psi
3M	= 3,000 psi
5M	= 5,000 psi
7.5M	= 7,500 psi
10M	= 10,000 psi
15M	= 15,000 psi
20M	= 20,000 psi
30M	= 30,000 psi

Safety & Compliance
SIL2 = Safety Integrity Level 2
GCx = Guardian safety relay option
This relay option adds a SIL2/PL'c' relay to the SIL2/PL'c' compliant sensor

Capillary Length
blank = No Flex
18" = 18 inches, 46 cm Flex
30" = 30 inches, 76 cm Flex

Snout Length
3" = 3 inches, 7.6 cm
6" = 6 inches, 15 cm
9" = 9 inches, 23 cm
12" = 12.5 inches, 32 cm

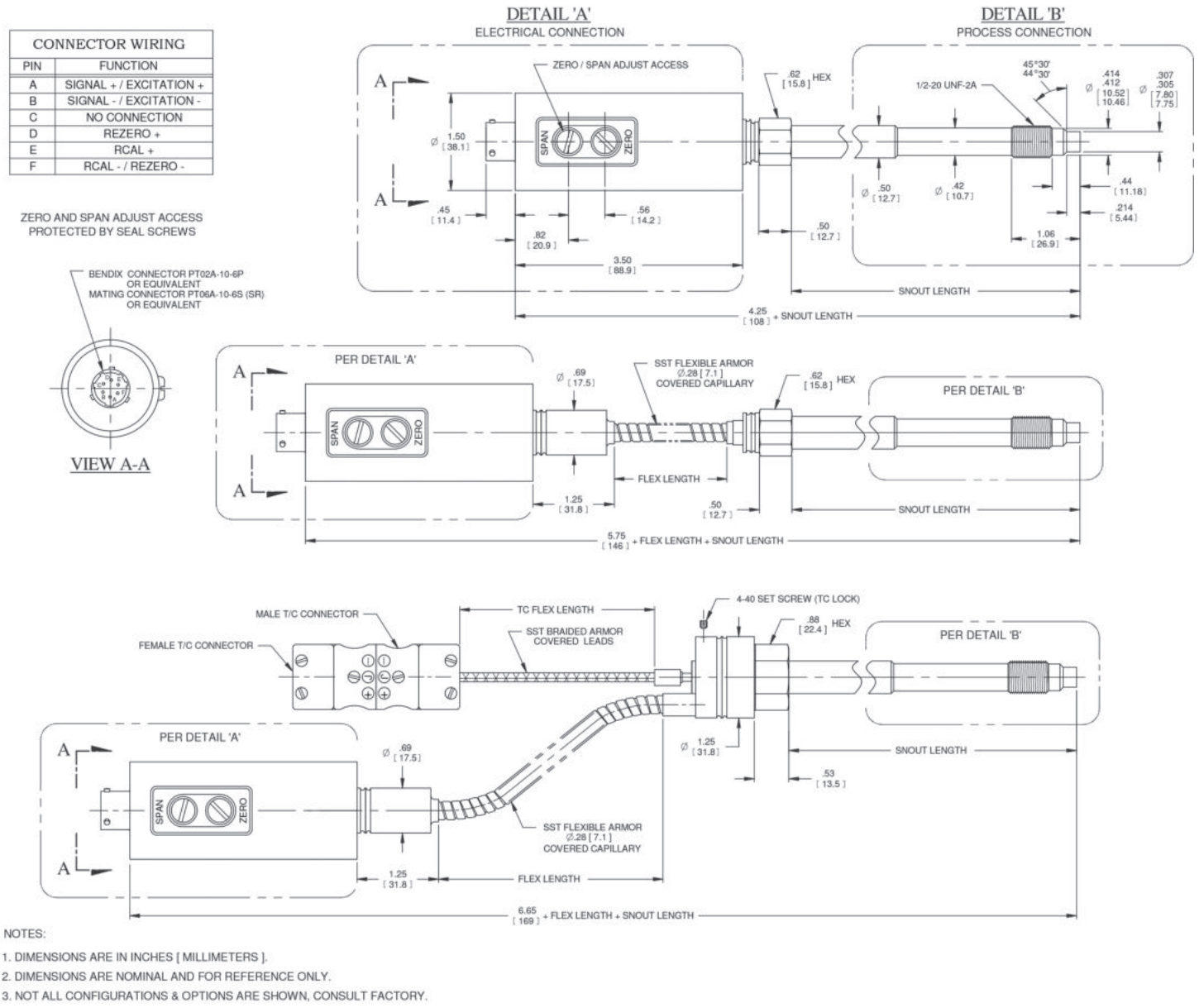
Standard mating connector Dynisco P/N 711600 or 6-pin mating connector cable assembly. Accuracy may be affected if non-standard configurations are used. For additional options please consult factory.

ACCESSORIES AND OTHER OPTIONS

Cleaning Tool Kit, Machining Tool Kit, Guardian (Machinery Directive) Safety Relay; NaK Fill; UPR Process Indicator , ATC Process Controller. For additional options please contact the factory.

Dimensions

CONNECTOR WIRING	
PIN	FUNCTION
A	SIGNAL + / EXCITATION +
B	SIGNAL - / EXCITATION -
C	NO CONNECTION
D	REZERO +
E	RCAL +
F	RCAL - / REZERO -



NOTES:

1. DIMENSIONS ARE IN INCHES [MILLIMETERS].
2. DIMENSIONS ARE NOMINAL AND FOR REFERENCE ONLY.
3. NOT ALL CONFIGURATIONS & OPTIONS ARE SHOWN, CONSULT FACTORY.

For Guardian drawings and 8-pin wiring diagrams see "Guardian" at www.Dynisco.com.