Dynisco SPX Industrial (2280/2281) Series
SMART GENERAL PURPOSE PRESSURE SENSORS

Description
The Dynisco SPX228X is an all welded construction smart industrial 4-20mA pressure transmitter designed for use in hazardous locations. Models are available in PSIG, PSIA, and PSIS. Optional pressure fittings and electrical terminations are available.

Features
- 4-20mA loop-powered output
- +/- 0.25% accuracy available
- Wide selection of pressure ranges available
- Turndown 3:1
- Configurations available for use in hazardous locations
- Remotely configurable via HART™
- Precise, repeatable pressure measurements
- Output supplied directly to DSC or PLC
- Meets CE requirements
- CE ATEX Intrinsically Safe Approved
- IECEx Intrinsically Safe Approved
- FM Explosion Proof Approved
- CSA Explosion Proof Approved
- SIL 2 Certified (Pressure Output)
- PL’c’ Certified (Relay Output)
- Additional approvals are available
### Performance Characteristics SPX2280 & SPX2281

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Output</td>
<td>4 - 20 mA, with optional HART™</td>
</tr>
<tr>
<td>Input Voltage</td>
<td>16 - 36 Vdc (Std); 16 - 30 Vdc (ATEX IS)</td>
</tr>
<tr>
<td>Accuracy</td>
<td>2280 ± 0.5%</td>
</tr>
<tr>
<td></td>
<td>2281 ± 0.25%</td>
</tr>
<tr>
<td>Repeatability</td>
<td>±0.1%</td>
</tr>
<tr>
<td>Rangeability</td>
<td>3:1 Turndown</td>
</tr>
<tr>
<td>Over Pressure</td>
<td>1.5 x FSO; 250 - 30,000 psi</td>
</tr>
<tr>
<td></td>
<td>1.2 x FSO; 35,000-72,500 psi</td>
</tr>
<tr>
<td>Zero Balance Adjustment Range</td>
<td>±5% FSO Maximum</td>
</tr>
<tr>
<td>Load Resistance</td>
<td>500 Ω @ 24 Vdc, 1,000 Ω @ 36 Vdc</td>
</tr>
<tr>
<td>Electronics Ambient Temperature</td>
<td>70°F (20°C)</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-20 to 185°F (-29 to 85°C)</td>
</tr>
<tr>
<td>Compensated Temperature Range</td>
<td>0 to 150°F (-18 to 65°C)</td>
</tr>
<tr>
<td>Span Shift (Temp Change)</td>
<td>All Models: 0.02% F.S./°F max (0.04% F.S./°C max)</td>
</tr>
<tr>
<td>Zero Shift (Temp Change)</td>
<td>All Models: 0.01% F.S./°F max (0.02% F.S./°C max)</td>
</tr>
<tr>
<td>Burst Pressure</td>
<td>250 psi: 10 X FSO</td>
</tr>
<tr>
<td></td>
<td>500 - 3,000 psi: 5 X FSO</td>
</tr>
<tr>
<td></td>
<td>5,000 - 10,000 psi: 3 X FSO</td>
</tr>
<tr>
<td></td>
<td>15,000 - 30,000 psi: 2.5 X FSO</td>
</tr>
<tr>
<td></td>
<td>40,000 - 72,500 psi: 1.5 X FS</td>
</tr>
</tbody>
</table>

### Mechanical Characteristics

| Standard Wetted Parts | 15-5 PH & 17-4 PH SST |

### Approvals & Certifications

- ATEX/IECEx Intrinsically Safe
- SIL 2 (pressure output) & PL’c’ (relay output)
- FM & CSA Explosion Proof
- Additional Approvals are Available
Ordering Guide for Models SPX2280 & SPX2281

Model
280
281

Option Code
Communications
A = No Protocol
B = HART™ Protocol

Pressure Units
B = BAR
C = KPa
K = Kgf/cm²
M = MPa
P = PSI

Pressure Reference
E = Absolute Pressure (Bar)
N = Absolute Pressure (Kgf/cm²)
H = Absolute Pressure (KPa)
R = Absolute Pressure (MPa)
A = Absolute Pressure (PSI)
B = Gage Pressure (Bar)
K = Gage Pressure (Kgf/cm²)
C = Gage Pressure (KPa)
M = Gage Pressure (MPa)
G = Gage Pressure (PSI)
D = Sealed Pressure (Bar)
L = Sealed Pressure (Kgf/cm²)
F = Sealed Pressure (KPa)
P = Sealed Pressure (MPa)
S = Sealed Pressure (PSI)

Pressure Range
13 = 250 psi 17.5 Bar 17.5 Kgf/cm² 1.75 MPa
14 = 500 psi 35 Bar 35 Kgf/cm² 3.5 MPa
15 = 750 psi 50 Bar 50 Kgf/cm² 5 MPa
16 = 1,000 psi 70 Bar 70 Kgf/cm² 7 MPa
17 = 1,500 psi 100 Bar 100 Kgf/cm² 10 MPa
20 = 3,000 psi 200 Bar 200 Kgf/cm² 20 MPa
21 = 5,000 psi 350 Bar 350 Kgf/cm² 35 MPa
22 = 7,500 psi 500 Bar 500 Kgf/cm² 50 MPa
23 = 10,000 psi 700 Bar 700 Kgf/cm² 70 MPa
24 = 15,000 psi 1,000 Bar 1,000 Kgf/cm² 100 MPa
25 = 20,000 psi 1,400 Bar 1,400 Kgf/cm² 140 MPa
27 = 30,000 psi 2,000 Bar 2,000 Kgf/cm² 200 MPa
28 = 35,000 psi 2,400 Bar 2,400 Kgf/cm² 240 MPa
29 = 40,000 psi 2,700 Bar 2,700 Kgf/cm² 270 MPa
30 = 50,000 psi 3,500 Bar 3,500 Kgf/cm² 350 MPa
31 = 60,000 psi 4,200 Bar 4,200 Kgf/cm² 420 MPa
32 = 72,500 psi 5,000 Bar 5,000 Kgf/cm² 500 MPa

Process Connection
A = 1/8-27 NPTF Internal
B = 1/4-18 NPTF Internal
C = 7/16-20 UNF Internal
D = F-250-C Autoclave
E = 1/4-18 NPTF External
F = 1/2-14 NPTF External
G = 7/16-20 UNF External
H = R1/4 Metric
K = 3/4-16 UNF External
L = 1/2-14 BSP External
M = 1/2-14 NPSM External
N = F-562-C Autoclave
P = 1" BSP Internal
R = F-375-C Autoclave

Electrical Connections
AC = PT1H-10-6P Connector
CA = 1/2-14 NPT Conduit with 42" Leads
AF = PCIH-12-8P Connector Threaded Style

Wiring Connections
4 = 2 Wire Conduit
5 = 2 Wire Connector

1 Other configurations are available. Please consult factory.
Smart General Purpose Pressure Sensors for Hazardous Locations

Drawing SPX2281

- Ftg = 5 - 20,000 PSIG
- B Ftg = 5 - 20,000 PSIG
- C Ftg = 5 - 10,000 PSIG
- D Ftg = 5 - 60,000 PSIG

Where: R Ftg = 5 - 60,000 PSIG

**Fitting - R** (and Fittings A thru D)
(PRESSURE LISTED ABOVE)

18 AWG STRANDED, CABLE WIRE

LEAD LENGTH
(42 in., std (107cm)

1.48 ( 37.7mm )

4.00 (101.6mm )

5.48 + END FITTING ± .12 (3.1mm)
(139.2mm)

**Pressure Fitting Quick Reference**

<table>
<thead>
<tr>
<th>Suffix</th>
<th>DESCRIPTION</th>
<th>TYPE</th>
</tr>
</thead>
<tbody>
<tr>
<td>- A</td>
<td>1/8-27 NPTF</td>
<td>INT. Thread</td>
</tr>
<tr>
<td>- B</td>
<td>1/4-18 NPTF</td>
<td>Conduit Flg</td>
</tr>
<tr>
<td>- C</td>
<td>MS33649-4</td>
<td>EXT. Thread</td>
</tr>
<tr>
<td>- D</td>
<td>F-250-C</td>
<td>INT. Thread</td>
</tr>
<tr>
<td>- E</td>
<td>1/4-18 NPTF</td>
<td>Conduit Flg</td>
</tr>
<tr>
<td>- F</td>
<td>1/2-14 NPTF</td>
<td>EXT. Thread</td>
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<tr>
<td>- G</td>
<td>MS33656-4</td>
<td>INT. Thread</td>
</tr>
<tr>
<td>- H</td>
<td>1/4-18 UNSF</td>
<td>INT. Thread</td>
</tr>
<tr>
<td>- I</td>
<td>R 1/4</td>
<td>EXT. Thread</td>
</tr>
<tr>
<td>- J</td>
<td>3/4-16 UNF</td>
<td>INT. Thread</td>
</tr>
<tr>
<td>- L</td>
<td>1/2-14 BSP</td>
<td>INT. Thread</td>
</tr>
<tr>
<td>- M</td>
<td>1/2-14 NPSM</td>
<td>INT. Thread</td>
</tr>
<tr>
<td>- N</td>
<td>F-562-C</td>
<td>INT. Thread</td>
</tr>
<tr>
<td>- P</td>
<td>1&quot; BSP</td>
<td>INT. Thread</td>
</tr>
<tr>
<td>- R</td>
<td>F-375-C</td>
<td>INT. Thread</td>
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</tbody>
</table>
8 - PIN PC
O-RING WITH PUSH BUTTONS
PCIH-12-8P

8 - PIN PC
WELDED WITH PUSH BUTTONS
PCIH-12-8P

8 - PIN PC
WELDED WITH HALLS
PCIH-12-8P

NOTE:
1. THESE CONNECTOR OPTIONS ARE AVAILABLE ON MOST OF THE CONFIGURATIONS SHOWN ON THE PREVIOUS SHEETS.

GUARDIAN CONNECTOR WIRING

<table>
<thead>
<tr>
<th>PIN</th>
<th>FUNCTION</th>
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<tbody>
<tr>
<td>A</td>
<td>POWER +</td>
</tr>
<tr>
<td>B</td>
<td>SIGNAL -</td>
</tr>
<tr>
<td>C</td>
<td>POWER -</td>
</tr>
<tr>
<td>D</td>
<td>NO CONNECTION</td>
</tr>
<tr>
<td>E</td>
<td>Rcal -</td>
</tr>
<tr>
<td>F</td>
<td>Rcal +</td>
</tr>
<tr>
<td>G</td>
<td>RELAY CONTACT</td>
</tr>
<tr>
<td>H</td>
<td>RELAY CONTACT</td>
</tr>
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</table>

Instruments
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