CS80

Intrinsically Safe Pressure Transducer

The CS80 pressure transducer is a high strength sensor designed for use in intrinsically safe areas. Approvals include CSA Class I, Division 1 Intrinsically Safe, Groups C, D (Class I, Zone 0 AEx ia IIB T4 Ga; Ex ia IIB T4 Ga) when used with an approved barrier. Groups A & B (Class I, Zone 0 AEx ia IIC T4 Ga; Ex ia IIC T4 Ga) approvals are available with millivolt output. All welded stainless steel construction and customizable configurations make the CS80 a versatile pressure transducer. The CS80 is an excellent solution for applications such as natural gas compression, oil exploration and Hydrogen compression and storage.

Features
- ≤ ±0.25% BFSL accuracy
- Pressures from 50 PSI up to 30,000 PSI (See model CS81 for pressures below 50 PSI)
- One piece design
- Reverse polarity and EMI protection

Specifications

<table>
<thead>
<tr>
<th>Performance</th>
<th>Thermal</th>
<th>Electrical</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accuracy</td>
<td>Operating Temperature</td>
<td>Output</td>
</tr>
<tr>
<td>Stability (1 Year)</td>
<td>Operating Temperature</td>
<td>Excitation</td>
</tr>
<tr>
<td>Pressure Cycles</td>
<td>(Electrical connection &quot;F&quot;, DIN 43650-A)</td>
<td>4-20mA</td>
</tr>
<tr>
<td>Overpressure</td>
<td>Media Temperature</td>
<td>10-28VDC</td>
</tr>
<tr>
<td>Burst Pressure</td>
<td>Media Temperature</td>
<td>5VDC, +/-0.5V</td>
</tr>
<tr>
<td>*Accuracy includes non-linearity, hysteresis and non-repeatability</td>
<td>Storage Temperature</td>
<td>3-5VDC, unsettled</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Specifications</th>
<th>Applications</th>
<th>Environmental</th>
</tr>
</thead>
<tbody>
<tr>
<td>Accuracy*</td>
<td>Natural gas compression</td>
<td>Yes</td>
</tr>
<tr>
<td>Stability (1 Year)</td>
<td>Oil exploration</td>
<td>IP Rating*</td>
</tr>
<tr>
<td>Pressure Cycles</td>
<td>Hydrogen compression / storage</td>
<td>IP65 minimum</td>
</tr>
<tr>
<td>Overpressure</td>
<td>Control panels</td>
<td>Vibration</td>
</tr>
<tr>
<td>Burst Pressure</td>
<td></td>
<td>Shock</td>
</tr>
<tr>
<td>2X minimum</td>
<td>*IP rating is dependent on electrical termination selected.</td>
<td>10g, 20 to 2000Hz</td>
</tr>
<tr>
<td>5X or 60,000 PSI, whichever is less</td>
<td>Contact factory for more information.</td>
<td>100g, 11 msec, 1/2 sine</td>
</tr>
<tr>
<td>*Accuracy includes non-linearity, hysteresis and non-repeatability</td>
<td>*IP rating applies when electrical connector is attached with the appropriate ingress protection.</td>
<td></td>
</tr>
</tbody>
</table>

Output Load

- See page 2 for load line curve
- 5k Ohms, min
- 5k Ohms, min
- >1M Ohms

Frequency Response

- ~250 Hz
- ~1 kHz
- ~1 kHz
- ~5 kHz

Zero Offset (of FS)

- ≤ ±0.5% typical ≤ ±1% max
- ≤ ±0.5% typical ≤ ±1% max
- ≤ ±0.5% typical ≤ ±1% max
- ≤ ±2% max

Span Tolerance (of FS)

- ≤ ±0.5% typical ≤ ±1% max
- ≤ ±0.5% typical ≤ ±1% max
- ≤ ±0.5% typical ≤ ±1% max
- ≤ ±2% max

For wiring information, visit http://www.core-sensors.com/wiring

Electrical

<table>
<thead>
<tr>
<th>Output</th>
<th>4-20mA</th>
<th>1-5V, 1-6V</th>
<th>0.5-4.5V</th>
<th>0.5-2.5V</th>
<th>10 mV/V</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excitation</td>
<td>10-28VDC</td>
<td>10-28VDC</td>
<td>5VDC, +/-0.5V</td>
<td>3-5VDC, unsettled</td>
<td>SVDC, typical</td>
</tr>
<tr>
<td>Current Consumption</td>
<td>20mA, typical</td>
<td>&lt;10mA</td>
<td>&lt;10mA</td>
<td>&lt;3mA</td>
<td>&lt;5mA</td>
</tr>
<tr>
<td>Output Load</td>
<td>See page 2 for load line curve</td>
<td>5k Ohms, min</td>
<td>5k Ohms, min</td>
<td>5k Ohms, min</td>
<td>&gt;1M Ohms</td>
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<tr>
<td>Frequency Response</td>
<td>~250 Hz</td>
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<tr>
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MODEL NUMBER CONFIGURATION

CS80- X X XXXXX X X X XXX -XX

Model Family
CS80- IS Pressure Transducer

Process Connection
1 = 1/2” NPT Male
2 = 1/4” NPT Male
4 = 7/16-20 UNF Male
8 = F250C Female Autoclave (≥ 10,000 PSI)
C = G1/4 Male, Form E

Wetted Material
A = 316L SS
B = 17-4PH
C = Hastelloy C276 (special order item)
D = Inconel 718 (special order item)

Pressure Range
Insert 5-digit pressure code, max 30,000 PSI
(i.e. 30000 = 30,000 PSI)
Consult factory for pressures above 10,000 PSI

Pressure Unit
P = PSI
B = Bar

Pressure Reference
G = Gauge
V = Vacuum (Gauge)
C = Vacuum (Sealed Gauge)
S = Sealed Gauge

Cable Length (Meters)
00 = No cable
01 = 1 meter
02 = 2 meters
03 = 3 meters

Options
000 = No Special Options

Electrical
A = M12x1
B = Deutsch DT04-4P
C = Packard 3-Pin
D = Mini-DIN, Form C
E = Deutsch DT04-3P
F = DIN 43650, Form A
L = Cable (See “Cable Length”)
Z = 1/2” Conduit w/ Cable Gland (See “Cable Length”)

Output
1 = 1-5V
2 = 0.5-4.5V ratiometric
3 = 1-6V
4 = 4-20mA
8 = 0.5-2.5V non-ratiometric
9 = 10mV/V

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00 = No cable
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DIMENSIONS

*Dimensions are for reference only

We are committed to delivering the highest quality instrumentation on every order.

Core Sensors warrants that all items shipped will be free of defects in material and workmanship for a period of one (1) year from the date of shipment.

View complete warranty information online at www.core-sensors.com.

Caution must be taken when installing and operating the CS80 in known Class I, Division 1 hazardous locations. Please review the Intrinsically Safe Operating Instructions prior to installation. Call Core Sensors at (862) 245-2673 if you are unsure about any of the instructions or to request a copy. Instruction manuals can also be found on the CS80 product web page.
### ENTITY PARAMETERS

<table>
<thead>
<tr>
<th>Parameter</th>
<th>Value</th>
</tr>
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<tbody>
<tr>
<td><strong>Manufacturer</strong></td>
<td>Core Sensors</td>
</tr>
<tr>
<td><strong>Model</strong></td>
<td>CS80</td>
</tr>
<tr>
<td><strong>Release Date</strong></td>
<td>06/19</td>
</tr>
</tbody>
</table>

*All specifications subject to change without notice.*

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**NOTE**

1. Us installations must be in accordance with local electrical codes (NSF/ANSI 70, Article 504, and ASME A1.16).