



# Certificate of Compliance

**Certificate:** 70184381

**Master Contract:** 272694

**Project:** 70184381

**Date Issued:** 2019-05-01

**Issued To:** Core Sensors LLC  
13D Great Meadow Lane  
East Hanover, New Jersey, 07936  
United States

**Attention:** Sam Franzblau

*The products listed below are eligible to bear the CSA Mark shown with adjacent indicators 'C' and 'US' for Canada and US or with adjacent indicator 'US' for US only or without either indicator for Canada only.*



**Issued by:** *Anil Sodhi*  
Anil Sodhi

## PRODUCTS

**CLASS 2258 02** - PROCESS CONTROL EQUIPMENT - For Hazardous Locations

**CLASS 2258 82** - PROCESS CONTROL EQUIPMENT - For Hazardous Locations – Certified to U.S. Standards

**Class I, Division 2, Groups A, B, C, D, T4**

The **CS5x** series models: CS50/CS51/CS54-x-x-xxxxx-x-x-a-b-xxx-xx, pressure sensor for fluid pressure measurement; where code 'a' is the electrical output, code 'b' is the permitted electrical connection, and "x" is any alphanumeric digit. The available electrical output is either a 2-wire current loop, 3-wire voltage signal, or 4-wire millivolt signal. The maximum working pressure is 207 MPa (30,000 PSI). Install the sensor as per drawing # 00551.

The electrical and temperature ratings for model; CS5x-x-x-xxxxx-x-x-a-b-xxx-xx:

Order code 'a'	Electrical Output Type	Ratings	Temperature
1	1-5 VDC	28VDC, 800mW max.	Ambient: -40°C to 80°C Process: -40°C to 125°C
3	1-6 VDC		
4	4-20 mA		
5	0-5 VDC		



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7	0-10 VDC		For electrical connection option 'F' only: Ambient: -20°C to 80°C Process: -40°C to 105°C
F	1-10 VDC		
K	Regulated Millivolt		
2	0.5-4.5 VDC RATIOMETRIC	7VDC, 275mW max.	
8	0.5-2.5 VDC NON-RATIOMETRIC		
9	10mV/V		
B	20mV/V		

Where code "b" = F, H, P, Y, Z

- 'F' (DIN 43650A with conduit),
- 'H' (Turck® Mini-Fast®),
- 'P' (Conduit with cable),
- 'Y' (Turck® Lokfast® M12),
- 'Z' (Conduit with cable gland).

**Conditions of Acceptability:**

1. Under certain extreme circumstances, exposed plastic and unearthed metal parts of the enclosure may store an ignition capable of an electrostatic charge. Therefore, the user/installer shall implement provisions to prevent the buildup of electrostatic charge, i.e. locate the equipment where a charge-generating mechanism is unlikely to be present, and clean with a damp cloth.
2. Because the enclosure is made from light metal, in rare cases, ignition sources due to impact and friction sparks could occur. This shall be considered during installation and operation. Use care not to cause impacts or scrapes with other metal objects during installation.
3. The end user shall ensure appropriate earthing of the metallic accessories upon installation.
4. The final installation of the device in Hazardous area shall meet the requirements of CEC (for Canada) and NEC (for USA) for wiring method that is subject to acceptance of local authority having jurisdiction.
5. Do not connect or disconnect the equipment when energized in an explosive atmosphere.
6. The CS5x series sensors shall be supplied by Class 2 or limited energy source only in accordance with CSA 61010-1-12.
7. The equipment is for use under atmospheric conditions only, the permissible pressure range is 0.8 to 1.1 bar (80 to 110 kPa) and the permissible normal oxygen content is typically 21 % v/v.

**CLASS 2258 04 - PROCESS CONTROL EQUIPMENT - Intrinsically Safe Entity - For Hazardous Locations**

**CLASS 2258 84 - PROCESS CONTROL EQUIPMENT - Intrinsically Safe Entity - For Hazardous Locations – CERTIFIED TO U.S. STANDARDS**

**Ex ia IIB T4 Ga**

**Class I, Zone 0, AEx ia IIB T4 Ga**

**Class I, Division 1, Groups C, D, T4; Ex ia**



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The **CS8x** series models: CS80/CS81/CS82/CS84-x-x-xxxxx-x-x-a-x-xxx-xx, pressure sensor for fluid pressure measurement; where code “a” is the electrical output, and “x” is any alphanumeric digit. The permitted electrical output is either 2-wire current loop, 3-wire voltage signal or 4-wire millivolt signal. The maximum working pressure is 207 MPa (30,000 PSI). Install the sensor as per drawing # 00091.

IS Entity parameters defined in control drawing # 00091 are as below:

CS8x output type	Electrical Output Code “a”	IS Entity Parameters with integral connector	IS Entity Parameters with cable	Temperatures
4-20mA, millivolt (regulated)	4, K	U <sub>i</sub> = 28V, I <sub>i</sub> = 93mA, P <sub>i</sub> = 650mW, C <sub>i</sub> = 0.27uF, L <sub>i</sub> = 0uH	U <sub>i</sub> = 28V, I <sub>i</sub> = 93mA, P <sub>i</sub> = 650mW, C <sub>i</sub> = 0.32uF, L <sub>i</sub> = 155uH (max. cable length 1000 ft.)	Ambient temperature: -40°C...+80°C Ambient temperature: -20°C...+80°C (sensor with DIN 43650A connector) Process Temperature: -40°C...+125°C Process Temperature: -40°C...+105°C (sensor with DIN 43650A connector)
1-5V, 1-6V, 1-10V voltage	1, 3, F	U <sub>i</sub> = 28V, I <sub>i</sub> = 93mA, P <sub>i</sub> = 650mW, C <sub>i</sub> = 0.643uF, L <sub>i</sub> = 0uH	U <sub>i</sub> = 28V, I <sub>i</sub> = 93mA, P <sub>i</sub> = 650mW, C <sub>i</sub> = 0.649uF, L <sub>i</sub> = 23.30uH (max. cable length 150 ft.)	
0-5V, 0-10V voltage	5, 7	U <sub>i</sub> = 22V, I <sub>i</sub> = 73mA, P <sub>i</sub> = 400mW, C <sub>i</sub> = 0.883uF, L <sub>i</sub> = 0uH	U <sub>i</sub> = 22V, I <sub>i</sub> = 73mA, P <sub>i</sub> = 400mW, C <sub>i</sub> = 0.889uF, L <sub>i</sub> = 23.25uH (max. cable length 150 ft.)	
0.5-4.5V ratiometric, 0.5-2.5V non-ratiometric	2, 8	U <sub>i</sub> = 4.94V, I <sub>i</sub> = 504mA, P <sub>i</sub> = 620mW, C <sub>i</sub> = 0.258uF, L <sub>i</sub> = 0uH	U <sub>i</sub> = 4.94V, I <sub>i</sub> = 504mA, P <sub>i</sub> = 620mW, C <sub>i</sub> = 0.265uF, L <sub>i</sub> = 23.25uH (max. cable length 150 ft.)	

**Ex ia IIC T4 Ga**  
**Class I, Zone 0, AEx ia IIC T4 Ga**  
**Class I, Division 1, Groups A, B, C, D, T4; Ex ia**

The **CS8x** series model code: CS80/CS81/CS82/CS84-x-x-xxxxx-x-x-a-x-xxx-xx, pressure sensor for fluid pressure measurement; where code “a” is the electrical output, and “x” is any alphanumeric digit. The permitted electrical output is 4-wire millivolt signal. The maximum working pressure is 207 MPa (30,000 PSI). Install the sensor as per drawing # 00091.

IS Entity parameters defined in control drawing # 00091 are as below:



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CS8x output type	Electrical Output Code "a"	IS Entity Parameters with integral connector	IS Entity Parameters with cable	Temperatures
10mV/V, 20mV/V	9, B	U <sub>i</sub> = 28V, I <sub>i</sub> = 93mA, P <sub>i</sub> = 650mW, C <sub>i</sub> = 0.004uF, L <sub>i</sub> = 0uH	U <sub>i</sub> = 28V, I <sub>i</sub> = 93mA, P <sub>i</sub> = 650mW, C <sub>i</sub> = 0.01uF, L <sub>i</sub> = 23.25uH (max. cable length 150 ft.)	Ambient temperature: -40°C...+80°C Ambient temperature: -20°C...+80°C (sensor with DIN 43650A connector) Process Temperature: -40°C...+125°C Process Temperature: -40°C...+105°C (sensor with DIN 43650A connector)

**Conditions of Acceptability:**

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4. The final installation of the device in Hazardous area shall meet the requirements of CEC (for Canada) and NEC (for USA) for wiring method that is subject to acceptance of local authority having jurisdiction.
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### **APPLICABLE REQUIREMENTS**

CAN/CSA C22.2 No. 61010-1-12	Safety Requirements for Electrical Equipment for Measurement, Control and Laboratory Use - Part 1: General Requirements - Third Edition
CSA Std. C22.2 No. 213-2017	Non-Incendive Electrical Equipment for Use in Class I, Division 2 Hazardous Locations
CAN/CSA-C22.2 No. 60079-0: 2015	Explosive Atmospheres - Part 0: Equipment - General requirements
CAN/CSA-C22.2 No. 60079-11:14	Explosive Atmospheres – Part 11: Equipment protection by intrinsic safety "i"
ANSI/ISA-61010-1 3 <sup>rd</sup> Edition	Safety Requirements for Electrical Equipment for Measurement, Control and Laboratory Use - Part 1: General Requirements - Third Edition
ANSI/UL-121201, 9 <sup>th</sup> Edition	Nonincendive Electrical Equipment for Use in Class I and II, Division 2 and Class III, Divisions 1 and 2 Hazardous (Classified) Locations
ANSI/UL 60079-0:2013 6 <sup>th</sup> Edition	Electrical Apparatus for Explosive Gas Atmospheres - Part 0: General Requirements
ANSI/UL 60079-11:2013 6 <sup>th</sup> Edition	Electrical apparatus for Explosive Gas Atmospheres - Part 11: Intrinsic Safety "i"



## *Supplement to Certificate of Compliance*

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*The products listed, including the latest revision described below,  
are eligible to be marked in accordance with the referenced Certificate.*

### **Product Certification History**

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<b>Project</b>	<b>Date</b>	<b>Description</b>
70184381	2019-05-01	Original cCSAus Certification of the pressure transducer model CS5x and CS8x series with the following markings: Ex ia IIB/IIC T4 Ga; Class I, Zone 0, AEx ia IIB/IIC T4 Ga; Class I, Div. 1, Groups A, B, C, D, T4; Class I, Div. 2, Groups A, B, C, D, T4; $-40^{\circ}\text{C} \leq \text{Ta} \leq +80^{\circ}\text{C}$ Process temperature: $-40^{\circ}\text{C}$ to $+125^{\circ}\text{C}$ . Measuring working pressure is 207MPa.