

CLASS I, DIVISION 2 PRESSURE TRANSDUCER

CS50 - CS51 - CS54



For all connections EXCEPT DIN 43650-A

Class I, Division 2 Groups A,B,C,D T4
 Ambient Temp: -40 to +80°C
 Process Temp: -40 to +125°C

CSA C22.2 NO. 61010-1 (3rd Edition, 2012)
 CSA C22.2 NO. 213-17
 ANSI/UL 121201-2018 Ed.9th
 ANSI/UL 61010-1-3rd Edition
 ANSI/UL 122701 Ed. 3rd

For DIN 43650-A ONLY:

Class I, Division 2 Groups A,B,C,D T4
 Ambient Temp: -20 to +80°C
 Process Temp: -40 to +105°C

CSA C22.2 NO. 61010-1 (3rd Edition, 2012)
 CSA C22.2 NO. 213-17
 ANSI/UL 121201-2018 Ed.9th
 ANSI/UL 61010-1-3rd Edition
 ANSI/UL 122701 Ed. 3rd



WARNING! READ BEFORE INSTALLATION!



Caution must be taken when installing and operating the CS50, CS51 and CS54 in known Class I, Division 2, Groups A,B,C,D T4 hazardous locations. Any mis-use or improper installation may impair the equipment's intended use and/or protection ratings.

Thoroughly read and understand the following instructions prior to installation.

Please call Core Sensors at (862) 245-2673 if you are unsure about any of the following precautions or instructions.

WARNING INSTRUCTIONS



WARNING indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.



ELECTROSTATIC DISCHARGE (ESD) Precaution indicates user should take proper grounding precautions to prevent any potential damages from ESD.

ELECTRICAL INSTALLATION (Installation électrique)



To prevent ignition of flammable or combustible atmospheres, disconnect power before servicing.

AVERTISSEMENT - Pour éviter l'inflammation des atmosphères inflammables ou combustibles, débranchez l'alimentation avant de procéder à l'entretien.



Suitable for use in Class I, Division 2, Groups A, B, C, D hazardous locations and non-hazardous locations only.

AVERTISSEMENT - Convient pour une utilisation dans les zones dangereuses de Classe I, Division 2, Groupes A, B, C, D et dans des emplacements non dangereux uniquement.



The CS5x series sensors shall be supplied by Class 2 or limited energy source only in accordance with CSA 61010-1-12.

AVERTISSEMENT - Les capteurs de la série CS5x doivent être alimentés par une source d'énergie de classe 2 ou limitée uniquement conformément à la norme CSA 61010-1-12.



EXPLOSION HAZARD - Do not disconnect equipment unless power has been switched off or the area is known to be non-hazardous.

AVERTISSEMENT - RISQUE D'EXPLOSION - Ne déconnectez pas l'équipement à moins que l'alimentation ait été coupée ou que la zone ne soit pas dangereuse.



EXPLOSION HAZARD - Substitution of components may impair suitability for Class I, Division 2.

AVERTISSEMENT - RISQUE D'EXPLOSION - La substitution de composants peut nuire à la classe I, division 2.



The enclosure is manufactured from light metal. In rare cases, ignition sources due to impact and friction sparks could occur. This shall be considered during installation.

AVERTISSEMENT - L'enceinte est fabriquée à partir de en métal léger. Dans de rares cas, des sources d'inflammation dues à des chocs et à des étincelles de frottement peuvent se produire. Cela doit être pris en compte lors de l'installation.



Potential Electrostatic Charging Hazard — See Special Conditions for Safe Use



AVERTISSEMENT - Risque potentiel de décharges électrostatiques - Voir condition spéciale pour une utilisation sûre

SPECIAL CONDITIONS FOR SAFE USE

1. Under certain extreme circumstances, exposed plastic and unearthed metal parts of the enclosure of models CS5X 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 of CS5X is made from light metal, in rare cases, ignition sources due to impact and friction sparks could occur. 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. For Class I Division 2 hazardous area, 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.

ENVIRONMENTAL RATINGS (61010-1)

Pollution Degree	3
Overvoltage Category	II
Maximum Use Altitude	2000m above sea level

MOUNTING

The CS50 can be mounted in any orientation with negligible effects on the output.

The CS51 & CS54 should be mounted with the process connection side facing down when possible. This is the orientation used during calibration. Low pressure transducers feature an oil-filled cavity behind the diaphragm which will cause changes in the output when the orientation is changed.

No special hardware or mounting plates are required.

PROCESS CONNECTION INSTALLATION

For NPT threaded installations, Teflon tape or an equivalent sealant must be applied to the threads prior to installation.

Proper sealing elements such as O-rings must be installed prior to installation for non self-sealing threads, e.g. SAE, BSPP, Metric Straight threads. Chemical compatibility between the sealing element and media being measured must be confirmed prior to use. Some high pressure connection require a metal-to-metal seal.

When tightening, use a wrench around the hex located above the process connection threads. **DO NOT** use the housing or electrical end of the sensor to tighten. See figure 1 below for the proper tightening location.



Figure 1

MAINTENANCE/CLEANING

To prevent any unnecessary down-time and maximize the life-span of the pressure sensor:

- Ensure contacts of the electrical connections are dry and free from foreign debris. Use a dry cloth to wipe down the electrical contacts.
- Ensure pressure port is free from debris as any clogged debris can effect the accuracy of the readings. Rinse the pressure port with generic 70/30 water/alcohol mixture. Do not insert any probe, such as a screwdriver or even a cotton swab, into the pressure port as it may cause permanent damage to the pressure sensing elements.
- Inspect pressure sensor for any physical damage. If any is detected, discontinue use and contact factory.
- The CS5X has no field serviceable parts. Please contact factory if service is required.

WIRING GUIDES

To avoid ignition of flammable or combustible atmospheres, ensure the following precautions are taken prior to and during the wiring process:

- Follow the proper ESD control procedures prior to handling the pressure transducer.
- Before making any electrical connections, ground the body of the pressure transducer.
- When uninstalling the pressure transducer, disconnect the ground last.
- Ensure that the wiring specifications conforms to local electrical code and has a temperature rating greater than 80°C.
- Ensure lockout devices are installed where applicable.

DIN 43650, FORM A

Electrical connection option “F”

Output	Pin 1	Pin 2	Pin 3	Wide Pin
Voltage (3-wire)	+V	Ground	Signal	Case
4-20mA (2-wire)	+V	-V	Case	N/A

TURCK® MINI-FAST®

Electrical connection option “H”

Output	Pin 1	Pin 2	Pin 3	Pin 4
Voltage (3-wire)	Signal	+V	Case	Ground
4-20mA (2-wire)	-V	+V	N/A	Case

CONDUIT WITH CABLE

Electrical connection option “P, Z”

Output	Red	Black	Green	White	Drain
mV (4-wire)	+V	+Signal	-Signal	Ground	Case
Voltage (3-wire)	+V	Ground	Case	Signal	N/A
4-20mA (2-wire)	+V	-V	Case	N/A	N/A

TURCK® LOKFAST® M12

Electrical connection option “Y”

Output	Pin 1	Pin 2	Pin 3	Pin 4
Voltage (3-wire)	+V	Case	Ground	Signal
4-20mA (2-wire)	+V	Case	-V	N/A

ELECTRICAL RATINGS

Output	Supply Voltage
1-5 VDC	10—28 VDC
1-6 VDC	
4-20 mA	
0-5 VDC	
0-10 VDC	
1-10 VDC	
Millivolt (Regulated Excitation Voltage)	7 VDC MAX
0.5—4.5 VDC RATIOMETRIC	
0.5—2.5 VDC NON-RATIOMETRIC	
10mV/V	
20mV/V	