



Certificate of Compliance

Certificate: 1896285

Master Contract: 238296

Project: 80060184

Date Issued: 2021-05-25

Issued To: Thermo Electric Company, Inc.
1193 McDermott Drive
West Chester, Pennsylvania, 19380
United States

Attention: Rick Donahue



Issued by:



Joshua Burdeshaw

PRODUCTS

CLASS – 2258 02 - PROCESS CONTROL EQUIPMENT For Hazardous Locations

Class I, Division 1, Groups B, C and D; Class II, Division 1, Groups E, F, G; Class III; T6...T4:

Explosion Proof / Dust Ignition protected Thermocouple and RTD assemblies **with terminal block, with flamepath fitting, less thermowell** – Series CH (Center Hub Enclosures). Electrical Rating: 24 Vdc, 30 mA max CL2/SELV. Ambient Temperature: -40°C to +85°C. Temperature Code T5. Not rated for process pressure. Model CS-CH-DB-aaabccd- followed by additional alphanumeric digits indicating assembly options.

Explosion Proof / Dust Ignition protected Thermocouple and RTD assemblies **with terminal block, with flamepath fitting, with thermowell** – Series CH (Center Hub Enclosures). Electrical Rating: 24 Vdc, 30 mA max CL2/SELV. Ambient Temperature: -40°C to +85°C. Temperature Code T5. MWP 10350 kPa/1500 psi. Model CS-CH-DB-aaabccd- followed by additional alphanumeric digits indicating assembly options.

Explosion Proof / Dust Ignition protected Thermocouple and RTD assemblies **with terminal block, with oil seal flamepath fitting, less thermowell** – Series BRG (Oil Seal Fitting). Electrical Rating: 24 Vdc, 30 mA max CL2/SELV. Ambient Temperature: -40°C to +85°C. Temperature Code T5. MWP 70 psi [480 kPa]. Model CS-BRG-DB-aaabccd- followed by additional alphanumeric digits indicating assembly options.



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Explosion Proof / Dust Ignition protected Thermocouple and RTD assemblies **with terminal block, with sealed fitting, less thermowell** – Series SF Series (Sealed Fitting). Electrical Rating: 24 Vdc, 30 mA max CL2/SELV. Ambient Temperature: -40°C to +85°C. Temperature Code T5. MWP 10350 kPa/1500psi. Model CS-SF-DB-aaabccd- followed by additional alphanumeric digits indicating assembly options.

Explosion Proof / Dust Ignition protected Thermocouple and RTD assemblies **with head mount transmitter, with flamepath fitting, less thermowell** – Series CH (Center Hub Enclosures). For Electrical Rating, Ambient Temperature, and Temperature Code as per installed transmitter ratings. Not rated for process pressure. Model CS-CH-DT-aaabccd- followed by additional alphanumeric digits indicating assembly options.

Explosion Proof / Dust Ignition protected Thermocouple and RTD assemblies **with head mount transmitter, with flamepath fitting, with thermowell** – Series CH (Center Hub Enclosures) For Electrical Rating, Ambient Temperature, and Temperature Code as per installed transmitter ratings. MWP 10350 kPa/1500 psi. Model CS-CH-DT-aaabccd- followed by additional alphanumeric digits indicating assembly options.

Explosion Proof / Dust Ignition protected Thermocouple and RTD assemblies **with head mount transmitter, with oil seal flamepath fitting, less thermowell** – Series BRG (Oil Seal Fitting). For Electrical Rating, Ambient Temperature, and Temperature Code as per installed transmitter ratings. MWP 480 kPa/70 psi. Model CS-BRG-DT-aaabccd- followed by additional alphanumeric digits indicating assembly options.

Explosion Proof / Dust Ignition protected Thermocouple and RTD assemblies **with head mount transmitter, with sealed fitting, less thermowell** – Series SF (Sealed Fitting). For Electrical Rating, Ambient Temperature, and Temperature Code as per installed transmitter ratings. MWP 10350 kPa/1500 psi. Model CS-SF-DT-aaabccd- followed by additional alphanumeric digits indicating assembly options.

Where:

aaa = connection head

AL = Aluminum

may be one of the following:

International Metal Engineering Style 1080AE Enclosure Type 4; or

Limatherm Components Sp. z o.o. Style XD-AD4-N2/CD-N2/13-SPUsh (Single ½” NPT conduit) or XD-AD4-N3/CD-N2/13-SPUsh (Single ¾” NPT conduit). Enclosure Type 4X.

AL2 = Aluminum

Limatherm Components Sp. z o.o. Style XD-AD4-N2/N2-N2/13-SPUsh (Dual ½” NPT conduit) or XD-AD4-N3/N3-N2/13-SPUsh (Dual ¾” NPT conduit). Enclosure Type 4X

SS = 316SS

International Metal Engineering Style 1080SE Enclosure Type 4X

The AL, AL2, and SS enclosures may have a terminal block or one of the following temperature transmitter(s) installed:



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Honeywell temperature transmitter model STT700 Rated 35 Vdc, 4-20 mA max. Ambient Temperature: T4 (Ta=-40°C to +70°C)

LTA = Large transmitter with aluminum housing. Enclosure Type 4X/IP66/67

Honeywell STT700 (UU, UV); or

Honeywell STT750 (A, C); or

Honeywell STT850 (A, C)

LTS = Large transmitter with stainless steel housing. Enclosure Type 4X/IP66/67

Honeywell STT700 (XX, XZ); or

Honeywell STT750 (E, G); or

Honeywell STT850 (E, G)

The LTA and LTS enclosures may have one of the following temperature transmitter(s) installed:

Honeywell STT700 Rated 35 Vdc, 25 mA max. Ambient Temperature: T6 (Ta=-40°C to +65°C) T5 (Ta=-40°C to +85°C)

Honeywell STT750 Rated 42 Vdc, 4-20 mA max. Ambient Temperature: T6 (Ta=-40°C to +65°C) T5 (Ta=-40°C to +85°C) T4 (Ta=-40°C to +85°C); or

Honeywell STT850 – HART/DE Rated 42 Vdc, 4-20 mA max. Ambient Temperature: T6 (Ta=-40°C to +65°C) T5 (Ta=-40°C to +85°C) T4 (Ta=-40°C to +85°C); or

Honeywell STT850 – FIELDBUS Rated 32 Vdc, 25 mA max. Ambient Temperature: T6 (Ta=-40°C to +65°C) T5 (Ta=-40°C to +85°C) T4 (Ta=-40°C to +85°C)

b = conduit opening

5 = 1/2" NPT

7 = 3/4" NPT

cc = fitting/union/nipple extension

2S = flame path fitting only

3S = flame path fitting/union

4S = flame path fitting/union/nipple

d = fitting/union/nipple material

R = 316SS

X = other material

Conditions of use:

1. This equipment must be returned to the manufacturer for any repair or maintenance. Partial assemblies or Field Replacement Kits shall not be provided.



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2. External sources of heating and cooling may be present. It is the responsibility of the end user to ensure that the rated ambient temperature is not exceeded, and the external surface temperature of exposed surfaces does not exceed the assigned temperature code.
3. Under certain extreme circumstances, the painted surface of the enclosure of this equipment may generate an ignition-capable level of electrostatic charge. Therefore, the equipment shall not be installed in a location where the external conditions are conducive to the build-up of electrostatic charge on such surfaces. In addition, the equipment shall only be cleaned with a damp cloth.
4. This equipment may only be powered by a power supply unit with a limited energy electric circuit in accordance with CAN/CSA C22.2 No. 61010-1-12 and ANSI/UL 61010-1, or Class 2 as defined in the Canadian Electrical Code C22.1, Section 16-200 and/or National Electrical Code (NFPA 70), article 725.121.

**Class I, Division 1, Groups B, C and D; Class II, Division 1, Groups E, F, G; Class III; T6...T4
Ex db IIC T5 Gb**

Explosion Proof / Flame Proof / Dust Ignition Protected Temperature Transmitter assemblies **with terminal block, with flamepath fitting, less thermowell** – Series CH (Center Hub Enclosures). Electrical Rating: 24 Vdc, 30 mA max CL2/SELV. Ambient Temperature: -40°C to +85°C. Temperature Code T5. Not rated for process pressure. Model CS-CH-ZB-aaabccd- followed by additional alphanumeric digits indicating assembly options.

Explosion Proof / Flame Proof / Dust Ignition Protected Thermocouple and RTD assemblies **with terminal block, with flamepath fitting, with thermowell** – Series CH (Center Hub Enclosures). Electrical Rating: 24 Vdc, 30 mA max CL2/SELV. Ambient Temperature: -40°C to +85°C. Temperature Code T5. MWP 10350 kPa/1500 psi. Model CS-CH-ZB-aaabccd- followed by additional alphanumeric digits indicating assembly options.

Explosion Proof / Flame Proof / Dust Ignition Protected Thermocouple and RTD assemblies **with terminal block, with oil seal flamepath fitting, less thermowell** – Series BRG (Oil Seal Fitting). Electrical Rating: 24 Vdc, 30 mA max CL2/SELV. Ambient Temperature: -40°C to +85°C. Temperature Code T5. MWP 480 kPa/70 psi. Model CS-BRG-ZB-aaabccd- followed by additional alphanumeric digits indicating assembly options.

Explosion Proof / Flame Proof / Dust Ignition Protected Thermocouple and RTD assemblies **with terminal block, with sealed fitting, less thermowell** – Series SF (Seal Fitting). Electrical Rating: 24 Vdc, 30 mA max CL2/SELV. Ambient Temperature: -40°C to +85°C. Temperature Code T5. MWP 10350 kPa/1500 psi. Model CS-SF-ZB-aaabccd- followed by additional alphanumeric digits indicating assembly options.

Explosion Proof / Flame Proof / Dust Ignition Protected Thermocouple and RTD assemblies **with head mount transmitter, with flamepath fitting, less thermowell** – Series CH (Center Hub Enclosure). For Electrical Rating, Ambient Temperature, and Temperature Code as per transmitter ratings. Not rated for process pressure. Model CS-CH-ZT-aaabccd- followed by additional alphanumeric digits indicating assembly options.

Explosion Proof / Flame Proof / Dust Ignition Protected Thermocouple and RTD assemblies **with head mount transmitter, with flamepath fitting, with thermowell** – Series CH (Center Hub Enclosure). For Electrical Rating, Ambient Temperature, and Temperature Code as per transmitter ratings. MWP 10350 kPa/1500 psi. Model CS-CH-ZT-aaabccd- followed by additional alphanumeric digits indicating assembly options.



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Explosion Proof / Flame Proof / Dust Ignition Protected Thermocouple and RTD assemblies **with head mount transmitter, with oil seal flamepath fitting, less thermowell** – Series BRG (Oil Seal Fitting). For Electrical Rating, Ambient Temperature, and Temperature Code as per transmitter ratings. MWP 480 kPa/70 psi. Model CS-BRG-ZT-aaabcc- followed by additional alphanumeric digits indicating assembly options.

Explosion Proof / Flame Proof / Dust Ignition Protected Temperature Transmitter assemblies **with head mount transmitter, with sealed fitting, less thermowell** – Series SF (Sealed Fitting). For Electrical Rating, Ambient Temperature, and Temperature Code as per transmitter ratings. MWP 10350 kPa/1500 psi. Model CS-SF-ZT-aaabcc- followed by additional alphanumeric digits indicating assembly options.

Where:

aaa = connection head

AL = Aluminum

Limatherm Components Sp. z o.o. Style XD-AD4-N2/CD-N2/13-SPUsh (Single 1/2" NPT conduit) or XD-AD4-N3/CD-N2/13-SPUsh (Single 3/4" NPT conduit). Enclosure Type 4X.

AL2 = Aluminum

Limatherm Components Sp. z o.o. Style XD-AD4-N2/N2-N2/13-SPUsh (Dual 1/2" NPT conduit) or XD-AD4-N3/N3-N2/13-SPUsh (Dual 3/4" NPT conduit). Enclosure Type 4X

The AL, and AL2 enclosures may have a terminal block or one of the following temperature transmitter(s) installed:

Honeywell temperature transmitter model STT700 Rated 35 Vdc, 4-20 mA max. Ambient Temperature: T4 (Ta=-40°C to +70°C)

LTA = Large transmitter with aluminum housing. Enclosure Type 4X/IP66/67

Honeywell STT700 (UU, UV); or
Honeywell STT750 (A, C); or
Honeywell STT850 (A, C)

LTS = Large transmitter with stainless steel housing. Enclosure Type 4X/IP66/67

Honeywell STT700 (XX, XZ); or
Honeywell STT750 (E, G); or
Honeywell STT850 (E, G)

The LTA and LTS enclosures may have one of the following temperature transmitter(s) installed:

Honeywell STT700 Rated 35 Vdc, 25 mA max. Ambient Temperature: T6 (Ta=-40°C to +65°C) T5 (Ta=-40°C to +85°C)

Honeywell STT750 Rated 42 Vdc, 4-20 mA max. Ambient Temperature: T6 (Ta=-40°C to +65°C) T5 (Ta=-40°C to +85°C) T4 (Ta=-40°C to +85°C); or



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Honeywell STT850 – HART/DE Rated 42 Vdc, 4-20 mA max. Ambient Temperature: T6 (Ta=-40°C to +65°C) T5 (Ta=-40°C to +85°C) T4 (Ta=-40°C to +85°C); or

Honeywell STT850 – FIELDBUS Rated 32 Vdc, 25 mA max. Ambient Temperature: T6 (Ta=-40°C to +65°C) T5 (Ta=-40°C to +85°C) T4 (Ta=-40°C to +85°C)

b = conduit opening

5 = 1/2" NPT

7 = 3/4" NPT

cc = fitting/union/nipple extension

2S = flame path fitting only

3S = flame path fitting/union

4S = flame path fitting/union/nipple

d = fitting/union/nipple material

R = 316SS

X = other material

Conditions of use:

1. This equipment must be returned to the manufacturer for any repair or maintenance. Partial assemblies or Field Replacement Kits shall not be provided.
2. Zone 1 locations: Aluminum enclosures that contain by mass, more than 7.5% in total of magnesium, titanium and zirconium must be provided with adequate protection to avoid an ignition hazard due to impact or friction
3. External sources of heating and cooling may be present. It is the responsibility of the end user to ensure that the rated ambient temperature and the external surface temperature per the temperature code of the equipment is not exceeded.
4. Under certain extreme circumstances, the painted surface of the enclosure of this equipment may generate an ignition-capable level of electrostatic charge. Therefore, the equipment shall not be installed in a location where the external conditions are conducive to the build-up of electrostatic charge on such surfaces. In addition, the equipment shall only be cleaned with a damp cloth.
5. This equipment may only be powered by a power supply unit with a limited energy electric circuit in accordance with CAN/CSA C22.2 No. 61010-1-12 and ANSI/UL 61010-1, or Class 2 as defined in the Canadian Electrical Code C22.1, Section 16-200 and/or National Electrical Code (NFPA 70), article 725.121.



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APPLICABLE REQUIREMENTS

CAN/CSA Standard C22.2 No. 0-10	General Requirements - Canadian Electrical Code, Part II
CSA C22.2 No. 25-1966	Enclosures for Use in Class II Groups E, F, and G Hazardous Locations
CSA C22.2 No. 30:20	Explosion-Proof Enclosures for Use in Class I Hazardous Locations
CAN/CSA Standard C22.2 No. 94:20	Enclosures for Electrical Equipment, Environmental Considerations
CAN/CSA-C22.2 No. 61010-1-12 + Amd 1 – 18	Safety requirements for electrical equipment for measurement, control, and laboratory use — Part 1: General requirements
CAN/CSA-E60079-0:02	Electrical apparatus for explosive gas atmospheres - Part 0: General requirements
CAN/CSA-E60079-1-02	Electrical Apparatus for Explosive Gas Atmospheres--Part 1: Construction and Verification Test of Flameproof Enclosures of Electrical Apparatus
CAN/CSA - C22.2 No. 60529:05	Degrees of Protection Provided By Enclosures (IP Code)

MARKINGS

The manufacturer is required to apply the following markings:

- Products shall be marked with the markings specified by the particular product standard.
- Products certified for Canada shall have all Caution and Warning markings in both English and French.

Additional bilingual markings not covered by the product standard(s) may be required by the Authorities Having Jurisdiction. It is the responsibility of the manufacturer to provide and apply these additional markings, where applicable, in accordance with the requirements of those authorities.

The products listed are eligible to bear the CSA Mark, without any adjacent indicators, indicating that products have been manufactured to the requirements of Canadian Standards.

The following marking appear on a nametag attached to RTD/T/C assembly and is mechanically fastened thru the use of drive screws or screws or rivets or stainless wiring with crimp lock. (See drawing C/D6385 for reference)

- Manufacturers name “Thermo Electric Co., Inc.”, or CSA Master Contract number “238296” adjacent the CSA Mark, in lieu of manufacturers name.
- Model designation, as specified in the PRODUCTS section, above.
- Complete electrical rating, as specified in the PRODUCTS section, above.
- Ambient temperature rating, as specified in the PRODUCTS section, above.
- Date code / Serial number traceable to month and year of manufacture.



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- Enclosure type ratings, as specified in the PRODUCTS section, above. (On applicable models)
 - The CSA mark, as shown on the Certificate of Compliance.
 - Year and Certificate number for this report, “07.1896285” located adjacent to CSA Mark, or “CSA 07CA1896285”.
 - Hazardous Location designation, as specified in the PRODUCTS section, above.
 - Temperature code, as specified in the PRODUCTS section, above.
 - Maximum Working Pressure, as specified in the PRODUCTS section, above.

Additionally, the equipment shall be permanently marked with the following:

- The wiring compartment shall include a specification that the field installed wiring shall be rated for a temperature of $\geq 85^{\circ}\text{C}$.
- The following words shall be visible on the exterior of the equipment:
“OPEN CIRCUIT BEFORE REMOVING COVER” or “WARNING – KEEP COVER TIGHT WHILE CIRCUITS ARE ALIVE” and “KEEP COVER TIGHT WHILE CIRCUITS ARE ALIVE”, AND
“ATTENTION: NE PAS OUVRIR SAUF DE TENSION OU ZONE EST CONNU POUR ÊTRE NON DANGEREUX” or equivalent;

The words: “A SEAL SHALL BE INSTALLED WITHIN 50 mm OF THE ENCLOSURE”, and “UN SCCELLEMENT DOIT ÊTRE INSTALLÉ À MOINS DE 50 mm DU BOÎTIER”, or equivalent wording.



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

Project	Date	Description
80060184	2021-05-25	Update of report 1896285 to include alternate transmitter models Honeywell STT700 and Honeywell STT750/STT850 and update drawings CD6385 Rev. H, CD6327 Rev. D, and SKG1170 Rev. C. Update from CSA 142 to Includes update to C22.2 No. 61010-1.
80033014	3/13/2020	Update to report 1896285 to allow interchangeability of certified transmitters and updated two drawings.
2519239	5/23/2012	Update to report 1896285 to include updated label drawing to resolve FIR.
2472070	1/11/2012	Update to Report 1896285 to include models designated with only IECEx enclosures to be used for submittal to INMETRO in separate project.
2286848	9/28/2010	Update of report 1896285 to expand Temperature range to +85 C and evaluation to Type 4X, IP66.
1896285	12/28/2007	CSA certification of RTD and TC assemblies, series CH, OS, LT, SF and CF