



Certificate of Compliance

Certificate: 2495722

Master Contract: 252935

Project: 70007290

Date Issued: July 24, 2014

Issued to: Hohner Automation Limited
Units 14-16, Whitegate Industrial Estate
Wrexham, UK, LL13 8UG
UK
Attention: Carl Collinge

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:

Ian Henderson
Ian Henderson

PRODUCTS

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 US Standards

Class I, Div. 1, Groups A, B, C, D T4:

Ex ia IIC T4:

Class I Zone 0 AEx ia IIC T4:

Class II, Division 1, Groups E, F, G T4; Class III:

AEx iaD 20 T135°C:

Model Number abcd-XXef-ghij-klmn OR abcdef-gh-XXij-klmn-opqr OR abcdefgh/X/ijk/lmno/pqrs OR abcde-fg-Xh-ij-klmn-opqr OR as a special product sheet (as per part code system 1,2,3 or 4) DIN19234 Shaft Encoder.



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Where:

XX = 02 = DIN 19234 (FACTORY CALIBRATED WITH ANY SUITABLE BARRIER)
X = 1,2,3 or 4 = DIN 19234 (FACTORY CALIBRATED WITH ANY SUITABLE BARRIER)

a,b,c,d,e,f,g,h,i,j,k,l,m,n,o,p,q,r,s = each combination of up to six alphanumeric characters (up to 20 characters in total) indicate Series Type, Shaft Size, Cable Length or connector, Termination (Radial or Axial), Cable Length and Material & Ramp Angle reviewed under this certification and OPTIONAL Special Product attributes that are not relevant to CSA certification (See the Appendix section).

Intrinsically safe powered by one or more Certified Safety Barrier and installed as specified by Control Drawing EX-INS-DIN19234-02 which consists of three different build options each with the following safety parameters:

For all options: Temperature Code T4; $-40^{\circ}\text{C} \leq T_{\text{amb}} \leq +90^{\circ}\text{C}$; IP6X.

Option 1- Encoder having up to 2 Channels

When each Channel is supplied with

$U_i = 13.3\text{V}$ $I_i = 63\text{mA}$ $P_i = 0.270\text{W}$ $C_i = 0$ $L_i = 0$

Option 2- Encoder having up to 3 Channels

For each channel, either

$U_i = 13.3\text{V}$ $I_i = 19.1\text{mA}$ $P_i = 0.180\text{W}$ $C_i = 0$ $L_i = 0$

Or:

When each Channel is supplied with

$U_i = 10.8\text{V}$ $I_i = 28\text{mA}$ $P_i = 0.180\text{W}$ $C_i = 0$ $L_i = 0$

Option 3- Encoder having up to 6 Channels

When each Channel is supplied with

$U_i = 13.3\text{V}$ $I_i = 21\text{mA}$ $P_i = 0.09\text{W}$ $C_i = 0$ $L_i = 0$

Notes:

1) As the light metal alloy is used at the accessible surface of this equipment, in the event of rare incidents, ignition sources due to impact and friction sparks could occur. This shall be considered by the local authority having jurisdiction when the Encoders are being installed in the hazardous location

2) For build option three (up to 6 channels), the following configurations are permitted for the associated apparatus:

- A single 8-channel device (of which a maximum of 6 channels are used): all 6 channels must be internally referenced to the same common line such that the maximum voltage does not exceed 13.3V;
- Two multi-channel devices (of which a maximum of 6 channels are used): within each device, all channels must be internally referenced to the same common line such that the maximum voltage does not exceed 13.3V. However, intrinsic safety does not depend on this common line being infallibly connected between the two multi-channel devices. If such an infallible connection is not made, then, for system assessment purposes, a total voltage of 26.6V shall be assumed.



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APPLICABLE REQUIREMENTS

CSA C22.2 No. 0-10	General Requirements - Canadian Electrical Code, Part II
CAN/CSA C22.2 No. 142-M1987	Process Control Equipment
CAN/CSA-C22.2 No. 157-92	Intrinsically Safe and Non-Incendive Equipment for Use in Hazardous Locations
CAN/CSA-C22.2 No. 60079-0:11	Explosive atmospheres — Part 0: Equipment — General requirements
CAN/CSA-C22.2 No. 60079-11:11	Explosive atmospheres — Part 11: Equipment protection by intrinsic safety “i”
CAN/CSA C22.2 No. 60529-05	Degrees of protection provided by enclosures (IP Code)
UL 916 (4th Ed.)	Energy Management Equipment
UL 913 (7th Ed.)	Intrinsically Safe Apparatus and Associated Apparatus for Use in Class I, II and III, Division 1, Hazardous Locations
ANSI/UL 60079-0:09 (5th Ed.)	Electrical Apparatus for Explosive Gas Atmospheres - Part 0: General Requirements
ANSI/UL 60079-11:09 (5th Ed.)	Electrical apparatus for Explosive Gas Atmospheres - Part 11: Intrinsic Safety “i”
ANSI/ISA-61241-0 (12.10.02)-2006	Electrical Apparatus for Use in Zone 20, Zone 21 and Zone 22 Hazardous (Classified) Locations – General Requirements
ANSI/ISA-61241-11 (12.10.04)-2006 (R2011)	Electrical Apparatus for Use in Zone 20, Zone 21 and Zone 22 Hazardous (Classified) Locations – Protection by Intrinsic Safety “iD”
ANSI/NEMA IEC 60529-2004	Degrees of protection provided by enclosures (IP Code)

The following standards were used in whole or in part as a guideline:

IEC 60079-0 (Ed. 5)	Explosive atmospheres – Part 0: Equipment – General requirements
IEC 60079-11 (Ed. 5)	Explosive atmospheres – Part 11: Equipment protection by intrinsic safety “i”

MARKINGS

The label material shall be an engraved stainless steel plate secured into position by stainless steel drive pins or screws OR markings can be engraved directly onto the housing, located in a visible position on the outside of the enclosure. The following marking details appear:

- Manufacturer’s name, “Hohner Automation”, or CSA Master Contract Number “252935”, adjacent to the CSA Mark in lieu of Manufacturer’s name.
- Model number: As specified in the PRODUCTS section, above.
- Electrical ratings/ Entity Parameters: As specified in the PRODUCTS section, above.
- Ambient temperature rating: As specified in the PRODUCTS section, above (may be abbreviated).
- Manufacturing date in MMY format, or serial number, traceable to month of manufacture.
- Enclosure designation: As specified in the PRODUCTS section, above.
- The CSA Mark, as noted on page 1 of the Certificate of Conformity.
- Hazardous Location designation: As specified in the PRODUCTS section, above.
- Temperature Code: As specified in the PRODUCTS section, above.
- The following words:



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- “Ex ia”
- “INTRINSICALLY SAFE”
- “WARNING– EXPLOSION HAZARD – SUBSTITUTION OF COMPONENTS MAY IMPAIR INTRINSIC SAFETY” (Equivalent wording is acceptable).
- “WARNING– TO PREVENT IGNITION OF FLAMMABLE OR COMBUSTIBLE ATMOSPHERES, DISCONNECT POWER BEFORE SERVICING”.
- “12.2495722X” (Certificate number) adjacent to the CSA Monogram
- “CAUTION – DO NOT OPEN WHEN AN EXPLOSIVE ATMOSPHERE MAY BE PRESENT”
- The following alternate markings are acceptable for CLASS 2258 04 (Canada):
- “Class I Zone 0 Ex ia IIC T4”

Note - Jurisdictions in Canada may require these markings to also be provided in French language. It is the responsibility of the manufacturer to provide bilingual marking, where applicable, in accordance with the requirements of the Provincial Regulatory Authorities. It is the responsibility of the manufacturer to determine this requirement and have bilingual wording added to the "Markings".