



Certificate of Compliance

Certificate: 2418967

Master Contract: 252935

Project: 70063396

Date Issued: June 16, 2016

Issued to: Hohner Automation Limited
Units 14-16
Whitegate Industrial Estate
Wrexham, Wales, LL13 8UG
UNITED KINGDOM

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 (indicating that products have been manufactured to the requirements of both Canadian and US Standards) or with adjacent indicator 'US' for US only or without either indicator for Canada only



Issued by:

Sarita Singh

PRODUCTS

CLASS 2258 02 - PROCESS CONTROL EQUIPMENT - For Hazardous Locations

Ex d IIC T5 Gb; Ex tb IIIC T92°C Db

R&M Series, Optical Shaft Encoders; electrical ratings: 30V dc max., 5W max. Ambient temperature ranges: Ta = -40°C/-20°C to +60°C. IP66/X7.

Nomenclature: Part code Structure 1

YXXX-XXXX-XXXX-ZZZZ
a b c c-d d e e - f f f f - g g g g

- a = replaced by either R or M Product Code;
- b = E/U indicates -20°C to +60°C or L/W indicates -40°C to +60°C;
- c = Shaft size, variable e.g. K5 is 12x20mm shaft;



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- d = Electronic circuit, variable e.g. 13 is 5-24V Line Driver Circuit or special products per 'Nomenclature: Part Code Structure 2';
- e = Connection Type, variable e.g. conduit with seal within 50mm of enclosure, blanking element/plug, Cable or variable;
- f = Resolution, variable – not affecting certification;
- g = optional variables not affecting certification;

In addition, when any identifier remains as 'XX', the equipment may also be identified by the following identifier shown in Nomenclature: Part code Structure 2

SPY- XXXX
SPh – j j j j

- h = replaced by either R or M Product Code (Covered by Certification);
- j = unique identifier for special electronic circuit or optional variables not affecting certification, variable e.g. 0020

NOTE: Any variable or special must still maintain the scope of this certification in terms of the electrical parameters, materials used, mechanical dimensions, NEC/CEC wiring methods, markings, temperature specifications and anything else that is covered by this certification.

Condition of Acceptability:

1. Fasteners shall be hexagon socket head type, 316 stainless steel (A4-70) and with a minimum yield stress of 450 N/mm².
2. Flameproof joints are not intended to be repaired.
3. All components relied upon for safety and PCBs that are to be mounted in the equipment shall have the relevant approvals as dictated by the standards in the applicable requirements section of this report.
4. The factory tests detailed in this report shall be applied to 100% of production once the final equipment is fully assembled.
5. Once all PCBs are fitted the equipment shall not exceed the voltage and power ratings stated in this report.
6. Shaft Size, although variable - designated with identifier 'c', are constructed to maintain minimum width of 9.7mm, maximum gap of 0.15mm, and surface finish of 6.3µm.
7. Electronic Circuitry and Special electronic circuitry, although variable - designated with identifier 'd' and potentially 'j', are configured to maintain maximum power ratings up to 30Vdc, 5W.
8. Connection types, although variable – designated by identifier 'e', are to be suitably certified entry devices or suitably certified blanking elements/plugs for unused entries per the CEC. Lengths of connections are not covered by certification.



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Project: 70063396

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CLASS 2258 82 - PROCESS CONTROL EQUIPMENT – For Hazardous Locations – Certified to US Standards

**Class I, Zone 1, AEx d IIC T5 Gb; Zone 21 AEx tb IIIC T92°C Db;
Class II, Div2, Groups E, F, G T92°C**

R&M Series, Optical Shaft Encoders; electrical ratings: 30V dc max., 5W max. Ambient temperature ranges:
Ta = -40°C/-20°C to +60°C. IP66/X7.

Nomenclature: Part code Structure 1

YXXX-XXXX-XXXX-ZZZZ
a b c c-d d e e - f f f f - g g g g

- a = replaced by either R or M Product Code
- b = E/U indicates -20°C to +60°C or L/W indicates -40°C to +60°C
- c = Shaft size, variable e.g. K5 is 12x20mm shaft
- d = Electronic circuit, variable e.g. 13 is 5-24V Line Driver Circuit or special products per ‘Nomenclature: Part Code Structure 2’
- e = Connection Type, variable e.g. conduit with seal within 50mm of enclosure, blanking element/plug, Cable or variable
- f = Resolution, variable – not affecting certification
- g = optional variables not affecting certification

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Certificate: 2418967
Project: 70063396

Master Contract: 252935
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APPLICABLE REQUIREMENTS

CSA Std. C22.2 No. 0-10	General Requirements
CAN/CSA-C22.2 No. 61010-1-12	Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use – Part 1: General Requirements
UL 61010-1-2012, (3rd Edition)	Safety Requirements for Electrical Equipment for Measurement, Control, and Laboratory Use – Part 1: General Requirements
CAN/CSA-C22.2 No. 60079-0:15	Explosive atmospheres — Part 0: Equipment — General requirements
CAN/CSA-C22.2 No. 60079-1:11	Explosive atmospheres — Part 1: Equipment protection by flameproof enclosures “d”
CAN/CSA-C22.2 No. 60079-31:15	Explosive atmospheres — Part 31: Equipment dust ignition protection by enclosures “t”
CAN/CSA-C22.2 No. 60529:05	Degrees of protection provided by enclosures (IP Code)
ANSI/ISA 60079-0 (12.00.01)-2013	Explosive atmospheres — Part 0: Equipment — General requirements
ANSI/ISA-60079-1 (12.22.01)-2009 (R2013)	Explosive atmospheres — Part 1: Equipment protection by flameproof enclosures “d”
ANSI/ISA 60079-31:15	Explosive atmospheres — Part 31: Equipment dust ignition protection by enclosures “t”



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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 shown with adjacent indicators 'C' and 'US' for Canada and US (indicating that products have been manufactured to the requirements of both Canadian and U.S. Standards) or with adjacent indicator 'US' for US only or without either indicator for Canada only.

Method of marking is engraving, which can be applied directly to the lid, housing or on a stainless steel plate as shown on drawing RR-LB-001-02.

The following specifications will appear on the main label:

- Submitters' Name, Trade Mark or Master contract;
- Catalog/Model Number Designation: As specified in the PRODUCTS section, above;
- Hazardous Location Designation: As specified in the PRODUCTS section, above;
- Certificate No. : CSA 11.2418967
- Complete Electrical Ratings: As specified in the PRODUCTS section, above;
- Temperature Code T5: As specified in the PRODUCTS section, above;
- CSA monogram with C and US indicators.
- Warning: DO NOT OPEN WHEN AN EXPLOSIVE GAS OR DUST ATMOSPHERE MAY BE PRESENT (and French equivalent)
- Warning: MAX CABLE ENTRY TEMPERATURE IS 85°C SELECT SUITABLE CABLE (and French equivalent)
- Warning: SEAL REQUIRED WITHIN 50 mm OF ENCLOSURE” (and French equivalent) - (Applies only to conduit variants)