



Certificate of Compliance

Certificate: 70197724 **Master Contract:** 154402 (078055_0_000)
Project: 70197724 **Date Issued:** 2018-10-24
Issued to: Minco Products Incorporated
7300 Commerce Lane
Minneapolis, Minnesota 55432
USA
Attention: Rob Bohland

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: *Ronald (Ron) Bell*
Ronald (Ron) Bell

PRODUCTS

CLASS - C225802 - PROCESS CONTROL EQUIPMENT-For Hazardous Locations-

Ex eb IIC Gb

Model B217137 Resistance Temperature Detector, Tambient -50°C to 180°C,
In type of protection increased safety Ex e IIC; Ii=10mA; Pi = 1.5W; Ui = 20V.
Install per document SPI-00-0935

Pi	T _{Amax} for Temperature Class T6	T _{Amax} for Temperature Class T5	T _{Amax} for Temperature Class T4	T _{Amax} for Temperature Class T3
10mW	78 °C	93 °C	128 °C	180 °C
50mW	70 °C	85 °C	120 °C	180 °C
100mW	60 °C	75 °C	110 °C	175 °C
170mW	45 °C	60 °C	95 °C	160 °C

Conditions of Acceptability

- i) The Type B217137 RTDs are components intended to be built into the stator slots of rotating electrical machines.
- ii) Components are intended for use in other equipment where the suitability of the combination is to be determined in the end use application.



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iii) Instructions provided with the product shall be followed in detail to assure safe operation.

CLASS - C225882 - PROCESS CONTROL EQUIPMENT-For Hazardous Locations - Certified to US Standards

Class I, Zone 1, AEx eb IIC Gb

Model B217137 Resistance Temperature Detector, Tambient -50°C to 180°C,
 In type of protection increased safety Ex e IIC; Ii=10mA; Pi = 1.5W; Ui = 20V.
 Install per document SPI-00-0935

Pi	T _{Amax} for Temperature Class T6	T _{Amax} for Temperature Class T5	T _{Amax} for Temperature Class T4	T _{Amax} for Temperature Class T3
10mW	78 °C	93 °C	128 °C	180 °C
50mW	70 °C	85 °C	120 °C	180 °C
100mW	60 °C	75 °C	110 °C	175 °C
170mW	45 °C	60 °C	95 °C	160 °C

Conditions of Acceptability

- iv) The Type B217137 RTDs are components intended to be built into the stator slots of rotating electrical machines.
- v) Components are intended for use in other equipment where the suitability of the combination is to be determined in the end use application.
- vi) Instructions provided with the product shall be followed in detail to assure safe operation.

CLASS - C225804 - PROCESS CONTROL EQUIPMENT-For Hazardous Locations- Entity Parameters

Class I, Division 1, Groups A, B, C, D
Ex ia IIC Ga

Model B217137 Resistance Temperature Detector, Tambient -50°C to 180°C,
 In type of protection Ex ia IIC with entity parameter: Ui = 20V; Pi = 170 mW; Ci = 84 pf; Li = 4 uH (including cable length of 3 m.)
 Install per document SPI-00-0935

When used in type of protection Intrinsic Safety EX ia IIC, the relation between maximum ambient temperature T_{Amax}, Temperature code and the maximum input power Pi is shown in the following table:

Pi	T _{Amax} for Temperature Class T6	T _{Amax} for Temperature Class T5	T _{Amax} for Temperature Class T4	T _{Amax} for Temperature Class T3
10mW	78 °C	93 °C	128 °C	180 °C
50mW	70 °C	85 °C	120 °C	180 °C
100mW	60 °C	75 °C	110 °C	175 °C
170mW	45 °C	60 °C	95 °C	160 °C



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Conditions of Acceptability

- vii) The Type B217137 RTDs are components intended to be built into the stator slots of rotating electrical machines.
- viii) Components are intended for use in other equipment where the suitability of the combination is to be determined in the end use application.
- ix) Instructions provided with the product shall be followed in detail to assure safe operation.

CLASS - C225884 - PROCESS CONTROL EQUIPMENT- For Hazardous Locations- Entity Parameters – Certified to U.S. Standards

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

Model B217137 Resistance Temperature Detector, Tambient -50°C to 180°C,
 In type of protection Ex ia IIC, Ui = 20V; Pi = 170 mW; Ci = 84 pf; Li = 4 uH (including cable length of 3 m.)
 Install per document SPI-00-0935

When used in type of protection Intrinsic Safety EX ia IIC, the relation between maximum ambient temperature T_{Amax} and the maximum input power Pi is shown in the following table:

Pi	T _{Amax} for Temperature Class T6	T _{Amax} for Temperature Class T5	T _{Amax} for Temperature Class T4	T _{Amax} for Temperature Class T3
10mW	78 °C	93 °C	128 °C	180 °C
50mW	70 °C	85 °C	120 °C	180 °C
100mW	60 °C	75 °C	110 °C	175 °C
170mW	45 °C	60 °C	95 °C	160 °C

Conditions of Acceptability

- x) The Type B217137 RTDs are components intended to be built into the stator slots of rotating electrical machines.
- xi) Components are intended for use in other equipment where the suitability of the combination is to be determined in the end use application.
- xii) Instructions provided with the product shall be followed in detail to assure safe operation.

APPLICABLE REQUIREMENTS

C22.2 No. 60079-0:2015	Explosive atmospheres – Part 0: Equipment – General requirements
C22.2 No. 60079-7:2016	Explosive atmospheres — Part 7: Equipment protection by increased safety “e”
C22.2 No. 60079-11:2014	Explosive atmospheres — Part 11: Equipment protection by intrinsic safety “i”
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	UL Standard for Safety Electrical Equipment For Measurement, Control, and Laboratory Use; Part 1: General Requirements, 3 rd . Ed.
UL 60079-0: 2013	Standard for Safety – Explosive Atmospheres – Part 0: Equipment – General Requirements, Ed. 6



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UL 60079-7: 2017	Standard for Safety – Explosive Atmospheres – Part 7: Equipment Protection by Increased Safety “e”, Ed. 5
UL 60079-11:2014	Standard for Safety – Explosive Atmospheres – Part 11: Equipment Protection by Intrinsic Safety “I”, Ed. 6

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.

1. registered trademark, trade name, manufacturer’s name, or other recognized symbol of identification of the manufacturer;
2. Model designation or equivalent as specified in Products section above;
3. Complete electrical rating including as in Products section above,
4. Symbol 1 (d.c. direct current) from Table 1 of IEC 61010-1, 3rd Edition — — —.
5. Temperature code;
6. Applicable hazardous locations Designation as specified in products section above;
7. Manufacturers date code or equivalent;
8. Cautions, warnings and additional markings as may be required;
9. cCSAus Mark.
10. CSA Certificate: CSA.18.70197724

Nameplate adhesive label material approval information:

The Label is UL recognized, CSA, and C-U Recognized, and is suitable for temperatures of -50 to 180°C.



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
70197724	2018-10-24	Original assessment of Model B217137 Resistance Temperature Detector for CSAc-us Certification as Increased Safety for Class I, Zone 1: Ex/AEx e IIC, Gb; and Class I, Division 1, Groups ABCD and Class I, Zone 0: Ex/AEx ia IIC.