

CERTIFICATE OF COMPLIANCE

Certificate Number 20140321-E187133
Report Reference E187133-19990218
Issue Date 2014-MARCH-21

Issued to: DOVER FLEXO ELECTRONICS INC
217 PICKERING RD
ROCHESTER NH 03867

**This is to certify that
representative samples of**

TELEMETERING EQUIPMENT FOR USE IN HAZARDOUS
LOCATIONS

Refer Addendum page for models

Have been investigated by UL in accordance with the
Standard(s) indicated on this Certificate.


Standard(s) for Safety:

UL 913-Standard for Intrinsically Safe Apparatus and
Associated Apparatus for Use in Class I, II, and III, Division
1, Hazardous (Classified) Locations, ANSI/ISA-12.12.01-
2013-Standard for Nonincendive Electrical Equipment for
Use in Class I and II, Division 2 and Class III, Divisions 1
and 2 Hazardous (Classified) Locations, UL 61010-1-
Standard for Electrical Equipment for Measurement,
Control, and Laboratory Use; Part 1: General
Requirements

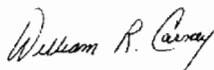
Additional Information:

See the UL Online Certifications Directory at
www.ul.com/database for additional information

Only those products bearing the UL Listing Mark should be considered as being covered by UL's
Listing and Follow-Up Service.

The UL Listing Mark generally includes the following elements: the symbol UL in a circle:  with the
word "LISTED"; a control number (may be alphanumeric) assigned by UL; and the product category
name (product identifier) as indicated in the appropriate UL Directory.

Look for the UL Listing Mark on the product.



William R. Carney, Director, North American Certification Programs
UL LLC

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contact a local UL Customer Service Representative at www.ul.com/contactus



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This is to certify that representative samples of the product as specified on this certificate were tested according to the current UL requirements.

Associated apparatus, Class I, Division 2, Groups A, B, C and D

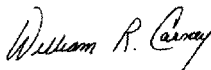
Associated apparatus, Class I, Division 2, Groups A, B, C and D

Class I, Division 1, Groups A, B, C and D

Tension Transducer Models C, F, RS, TR, RF, LT, VNW, and NW (NW only without Indicator option);
Tension indicating Meter Part No. 723-1420, intrinsically safe for use in Class I, Groups A, B, C and D
Hazardous Locations when installed in accordance with Control Drawing No. 811-2380

Class I, Division 2, Groups A, B, C, and D

Tension indicating Meter Part Nos. 723-1420 and 723-2660, non-incendive for use in Class I, Division 2, Groups A, B, C, and D Hazardous Locations when installed in accordance with Control Drawing No. 811-2380



William R. Carney, Director, North American Certification Programs

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DESCRIPTION

PRODUCT COVERED:

Associated apparatus, Class I, Division 2, Groups A, B, C and D.

* Fireguard **II** Tension Indicator Model **Ti30**, provides intrinsically safe outputs for use in Class I, Groups A, B, C and D Hazardous Locations when installed in accordance with Control Drawing No. **811-2380**.

Class I, **Division 1**, Groups A, B, C and D.

* Tension Transducer Models **C, F, RS, TR, RF, LT, VNW, and NW (NW only without Indicator option)**; Tension indicating Meter Part No. **723-1420**, intrinsically safe for use in Class I, Groups A, B, C and D Hazardous Locations when installed in accordance with Control Drawing No. **811-2380**.

Class I, **Division 2**, Groups A, B, C, and D.

Tension indicating Meter Part Nos. **723-1420 and 723-2660**, non-incendive for use in Class I, Division 2, Groups A, B, C, and D Hazardous Locations when installed in accordance with Control Drawing No. **811-2380**.

GENERAL:

* All transducers measure web tension for a variety of applications. When applied, they form a full Wheatstone measuring bridge configuration. The operating principle is the same, but there are only mechanical differences in design. **Models C, RS, and F** all contain one-half of the Wheatstone bridge in each device. These transducers all need to be used in pairs. **Models TR, NW, RF, VNW, and LT** all contain the full Wheatstone bridge in each device. They are self-contained sensing devices. With the exception of Model **LT**, all transducers use in their standard configuration one 90 ohm strain gauge per bridge arm, and an excitation voltage of +5 V dc. The output voltage in any case is 100 mV/V of excitation. The Model **LT** transducer uses four 800 ohm strain gauges per transducer, and the excitation voltage is always +10 V dc. The output voltage is 50 mV/V of excitation.

TECHNICAL CONSIDERATIONS (NOT FOR FIELD REPRESENTATIVE'S USE):*USL indicates investigation to United States Standards:**

UL 913, Fifth Edition, Revision 1997-02-21
ANSI/ISA-12.12.01-2013
UL 61010-1, Third Edition

RATINGS:

The Fireguard Tension Indicator Model Ti30 is as follows:

Power Input - 24 V dc, 10 W maximum
Control Output - 0-1 mA/4-20 mA/0-10 V dc
Optional Analog Meter Power - 5 V dc @ 95 mA
Optional Digital Meter Power - 5 V dc @ 300 mA

MARKING:

Refer to ILL. 1 for Model Ti30 marking label. Terminal markings are permanent printing or laser jetting or silk screening. Refer to ILL. 2 for transducer label. Refer to ILLs. 3 and 4 for tension meter labels, 723-1420 and 723-2660, respectively.

INSTALLATION WIRING DIAGRAM:

Each system is to be supplied with a copy of the Dover Flexo Electronics Control Drawing No. 811-2380 as shown in ILL. 5.

DOCUMENTATION:

Documentation such as an instruction manual shall be provided. Documentation shall also include an explanation of symbols used on the product, the complete electrical rating of the device as described in the electrical rating section of the Procedure; a description of all input/output connections; assembly, location and mounting requirements; instructions for use, technical specifications, name and address of manufacturer or supplier, and a statement of environmental conditions as noted below.

Temperature: Maximum ambient temperature of 50°C.

Maximum relative humidity of 95 percent non-condensing

The following warning statement or equivalent wording, shall also be included in the documentation:

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

ASSEMBLY AND CONSTRUCTION DETAILS:

The assembly and construction details are shown in the following figures, illustrations and descriptive pages. All dimensions are nominal unless otherwise noted. Refer to ILL. 6 for assembly drawing.