

# CERTIFICATE OF CONFORMITY



1. **HAZARDOUS (CLASSIFIED) LOCATION ELECTRICAL EQUIPMENT PER US REQUIREMENTS**
2. **Certificate No:** FM16US0209X
3. **Equipment:** N2910 and N2920 Float and Tape Transmitter (FTT)  
**(Type Reference and Name)** N8200 Current Output Level Transmitter (COT).  
Transmitter
4. **Name of Listing Company:** Varec, Inc.
5. **Address of Listing Company:** 5834 Peachtree Corners East, Suite A  
Peachtree Corners, GA 30092  
USA
6. The examination and test results are recorded in confidential report number:  
3021811 dated 25<sup>th</sup> May 2005
7. FM Approvals LLC, certifies that the equipment described has been found to comply with the following Approval standards and other documents:  
FM Class 3600:2018, FM Class 3610:2018, FM Class 3615:2018, FM Class 3810:2018,  
ANSI/ISA 60079-0:2013, ANSI/ISA 60079-1:2015, ANSI/ISA 60079-11:2014, ANSI/NEMA 250:2003,  
ANSI/IEC 60529:2004
8. If the sign 'X' is placed after the certificate number, it indicates that the equipment is subject to specific conditions of use specified in the schedule to this certificate.
9. This certificate relates to the design, examination and testing of the products specified herein. The FM Approvals surveillance audit program has further determined that the manufacturing processes and quality control procedures in place are satisfactory to manufacture the product as examined, tested and Approved.

## Certificate issued by:

J. E. Marquedant  
VP, Manager, Electrical Systems

8 November 2018

Date

To verify the availability of the Approved product, please refer to [www.approvalguide.com](http://www.approvalguide.com)

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## 10. Equipment Ratings:

### **N2910 Float and Tape Transmitter (FTT). N8200 Current Output Level Transmitter (COT).**

Explosionproof for Class I, Division 1, Groups C and D Hazardous (Classified) Locations with a T5 temperature class and a maximum ambient temperature range of -25°C to 85°C.

Flameproof for use in Class I, Zone 1, AEx db, Group IIB Hazardous (Classified) Locations with a temperature code of T5 with a Gb equipment protection level at a maximum ambient temperature range of -20°C to 85°C.

### **N2920 Float and Tape Transmitter (FTT)**

Explosionproof for Class I, Division 1, Groups C and D Hazardous (Classified) Locations with a T5 temperature class and a maximum ambient temperature range of -25°C to 85°C.

Explosionproof with Associated Intrinsically Safe outputs for Class I, Division 1, Groups C, and D; with a T5 temperature class and a maximum ambient temperature range of -25°C to 85°C.

Flameproof for use in Class I, Zone 1, AEx db, Group IIB Hazardous (Classified) Locations with a temperature code of T5 with a Gb equipment protection level at a maximum ambient temperature range of -20°C to 85°C.

Flameproof with Associated Intrinsically Safe outputs for Class I, Zone 1[0], AEx db [ia Ga], Group IIB Hazardous (Classified) Locations with a temperature code of T5 with a Gb equipment protection level at a maximum ambient temperature range of -20°C to 85°C.

Explosionproof for Class I, Division 1, Groups C and D Hazardous (Classified) Locations with a T5 temperature class and a maximum ambient temperature range of -40°C to 85°C.

Explosionproof with Associated Intrinsically Safe outputs for Class I, Division 1, Groups C, and D; with a T5 temperature class and a maximum ambient temperature range of -40°C to 85°C.

Flameproof for use in Class I, Zone 1, Group IIB Hazardous (Classified) Locations with a temperature code of T5 at a maximum ambient temperature range of -40°C to 85°C.

Enclosure is rated for Indoors / Outdoors (Type 4 / IP66) as indicated for each model.

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11. The marking of the equipment shall include:

**N2910 Float and Tape Transmitter (FTT).**

**N8200 Current Output Level Transmitter (COT).**

Class I, Division 1, Groups C and D, T5;  $-25^{\circ}\text{C} \leq T_a \leq +85^{\circ}\text{C}$

Class I, Zone 1, AEx db IIB T5 Gb;  $-20^{\circ}\text{C} \leq T_a \leq +85^{\circ}\text{C}$

Type 4 / IP66

**N2920 Float and Tape Transmitter (FTT)**

Class I, Division 1, Groups C and D, T5;  $-25^{\circ}\text{C} \leq T_a \leq +85^{\circ}\text{C}$

Class I, Division 1, Groups C and D, T5;  $-25^{\circ}\text{C} \leq T_a \leq +85^{\circ}\text{C}$  Entity: 28-013355

Class I, Division 1, Groups C and D, T5;  $-40^{\circ}\text{C} \leq T_a \leq +85^{\circ}\text{C}$

Class I, Division 1, Groups C and D, T5;  $-40^{\circ}\text{C} \leq T_a \leq +85^{\circ}\text{C}$  Entity: 28-013355

Class I, Zone 1, AEx db IIB T5 Gb;  $-20^{\circ}\text{C} \leq T_a \leq +85^{\circ}\text{C}$

Class I, Zone 1[0] , AEx db [ia Ga] IIB T5 Gb ;  $-20^{\circ}\text{C} \leq T_a \leq +85^{\circ}\text{C}$ ; Entity: 28-013355

Class I Zone 1, IIB T5  $T_a = -40^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$

Class I Zone 1, IIB T5  $T_a = -40^{\circ}\text{C}$  to  $+85^{\circ}\text{C}$ ; Refer to control drawing 28-013355

Type 4 / IP66

12. **Description of Equipment:**

**The Model N2910 Float & Tape Transmitter (FTT)** is a precision digital instrument designed to mount directly to most mechanical float and tape tank gauges and transmit level to an inventory management system. The Model N2910 FTT contains two discrete inputs for connection to ancillary devices, when the AC power option is installed two additional discrete inputs are available. When the AC power option is installed in the device, six contact outputs which are software driven normally opened or closed outputs are provided. The N2910 FTT has a magnetic encoder. The Model N2910 FTT has a 380 cast aluminum alloy enclosure.

Electrical data:

The Model N2910 FTT requires an electrical input of 20-65 VDC power which is supplied through the main communications board. Power can also be supplied with 40-65 VAC, 110 VAC or 220-240 VAC at 50/60 Hz. One or two junction boxes are required when powered by 40-65 VAC, 110 VAC or 220-240 VAC at 50/60 Hz. When the N2910 FTT is ordered with no limit switches, then one junction box is required.

**The Model N2920 Float & Tape Transmitter (FTT)-** with display is a precision digital instrument designed to mount directly to most mechanical float and tape tank gauges and transmit level data to an inventory management system. The display and HART Master I/O module are utilized in the N2920 FTT and each is contained within a separate Junction box. The Model N2920 FTT is similar in design to the N2910 Float & Tape Transmitter (FTT) as it contains two discrete inputs for connection to ancillary devices, and when the AC power option is installed two additional discrete inputs are available. When the AC power option is installed in the device, six contact outputs are also available that are software driven normally open or as closed outputs. The N2920 Float & Tape Transmitter (FTT) has a magnetic encoder and is contained within a 380 cast aluminum alloy enclosure. For ambient temperatures of  $-40^{\circ}\text{C}$  a Quintex Line bushing is used to make connections between enclosures.

Electrical data:

The Model N2920 Float & Tape Transmitter (FTT) requires an electrical input of 20-65 Vdc power which is supplied through the main communications board. With an optional power pcb the N2920 Float & Tape Transmitter (FTT) can also be supplied with 40-65 VAC, 110-120VAC or 220-240VAC at 50/60 Hz. One or two junction boxes are required when powered by 40-65VAC, 110-120VAC or 220-240VAC at 50/60 Hz.

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**The Model N8200 Current Output Level Transmitter (COT)** is an electromechanical device that is mechanically coupled to a liquid level indicating gauge head. The drive shaft of the device is coupled to a worm gear that drives the shaft of a potentiometer. Rotation causes current flow in the instrument output loop. The current loop variations are carried through a conductor pair to a central receiver or indicator to provide the signal to remotely display the level of the liquid in a tank. The Model N8200 COT shares the same 380 cast aluminum alloy enclosure with the Model N2910 FTT.

### Electrical data:

The Model N8200 COT requires an electrical input of 15-48 VDC or 120 VAC or 220 to 240 VAC at 50/60 Hz. Additional information can be found in the Installation and Operations Manuals listed with documentation.

### **N2910-abcdefg. Float and Tape Transmitter (FTT).**

- a = Approval Certification: FM.
- b = Power Input: 0, 1, or 2.
- c = Communications: NA, MS, MB, or LJ.
- d = Range: 0, 1, 2, 3, 4, 5, or 6.
- e = Limit Switches: N, A, B, or C.
- f = Addition Junction Box: 0, or 1.
- g = Digital Inputs / Outputs: A, or B.

### **N2920-aabccdefghi. Float and Tape Transmitter (FTT).**

#### **Entity Parameters:**

U<sub>o</sub> = 28V, I<sub>o</sub> = 120mA, P<sub>o</sub> = 840mW

|         |      |       |
|---------|------|-------|
| Gp      | IIB  | IIA   |
| Co (uF) | .65  | 2.15  |
| Lo (mH) | 9.87 | 19.75 |

- aa = Approval Certification: FC or FM.
- b = Power Input: 1, or 2.
- cc = Communications: BP, MB, MS, or LJ.
- d = Limit Switches: 0, 1, or 2.
- e = Limit Switches Range: N, A, B, C, D, E, or F.
- f = Digital Inputs/Outputs: 1, or 2.
- g = Analog Inputs / Outputs: N, A, B, or C.
- h = Hart Inputs / Outputs (Hart Master): 1.
- i = Display Orientation: A, B, or C.

### **N2920-aabccdefghi. Float and Tape Transmitter (FTT).**

- aa = Approval Certification: FC or FM.
- b = Power Input: 1, or 2.
- cc = Communications: BP, MB, MS, or LJ.
- d = Limit Switches: 0, 1, or 2.
- e = Limit Switches Range: N, A, B, C, D, E, or F.
- f = Digital Inputs/Outputs: 1, or 2.
- g = Analog Inputs / Outputs: N, A, B, or C.
- h = Hart Inputs / Outputs (Hart Master): 0.
- i = Display Orientation: A, B, or C.

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## **N8200abcde. Current Output Level Transmitter (COT).**

a = Input Power Type: 0, 1, or 2.

b = Level Range: 1, to 8.

c = Approval Certification: 0.

d = General Options: 0, to 5.

e = Junction Box: 0, or 1.

### 13. **Specific Conditions of Use:**

1. Consult the manufacturer if dimensional information on the flameproof joints is necessary.

### 14. **Test and Assessment Procedure and Conditions:**

This Certificate has been issued in accordance with FM Approvals US Certification Requirements.

### 15. **Schedule Drawings**

A copy of the technical documentation has been kept by FM Approvals.

### 16. **Certificate History**

Details of the supplements to this certificate are described below:

| <b>Date</b>                   | <b>Description</b>  |
|-------------------------------|---|
| 25 <sup>th</sup> May 2005     | Original Issue  |
| 5 <sup>th</sup> May 2017      | <u>Supplement 8:</u><br>Report Reference: 3058770 dated 5 <sup>th</sup> May 2017<br>Description of the Change: Update to New Certificate format. Update made ANSI/ISA 60079-0:2013 and added ANSI/ISA 60079-11:2014 in section 7, Associated Intrinsically Safe in sections 10 and 11. Minor updates to section 12. Added specific conditions of use in section 13. |
| 22 <sup>nd</sup> May 2017     | <u>Supplement 9:</u><br>Report Reference: 3058770 Reissue Supplement 8 dated 15 <sup>th</sup> May 2017<br>Description of the Change: Corrected minor typographical error in section 12 entity parameters.   |
| 8 <sup>th</sup> November 2018 | <u>Supplement 10:</u><br>Report Reference: 3063488 dated 8 <sup>th</sup> November 2018<br>Description of the Change: Update made to Standards and added Low Temperature version. Update company address   |

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