










Rosemount™ 8700M Class Division Approval Document



Rosemount 8700M Magnetic Flowmeter Platform

Order Code	8732EM Transmitter Rating	8705M and 8711M/L Flowtube Rating	Region	Agency	Certification Number
-	Ordinary Location *	Ordinary Location *	USA, Canada, EU, CU**	CSA or EAC	70081467X(CSA)
K5, KU	Explosion-Proof Class I Div 1; DIP	Explosion-Proof with Intrinsically Safe Electrodes Class I Div 1; DIP	USA	CSA	70081467X
N5, N6	Non-Incendive Class I Div 2; DIP	Non-Incendive with Intrinsically Safe Electrodes Class I Div 2; DIP	USA & Canada	CSA	70081467X
K6	Flameproof, Increased Safety, and Dust. Zone 1	Increased Safety with Intrinsically Safe Electrodes and Dust. Zone 1	USA & Canada	CSA	70081467X
ND	ATEX Dust	ATEX Dust	EU	DEKRA	14ATEX0071 X
N1	ATEX Non-Sparking or Increased Safety ATEX Dust	ATEX Non-Sparking or Increased Safety with Intrinsically Safe Electrodes and ATEX Dust	EU	DEKRA	14ATEX0071 X
K1	ATEX Flameproof with Increased Safety ATEX Dust	ATEX Increased Safety with Intrinsically Safe Electrodes and ATEX Dust	EU	DEKRA	14ATEX0071 X
NF	IECEX Dust	IECEX Dust	Global	DEKRA	IECEX DEK14.0031X
N7	IECEX Non-Sparking or Increased Safety IECEX Dust	IECEX Non-Sparking or Increased Safety with Intrinsically Safe Electrodes and IECEX Dust	Global	DEKRA	IECEX DEK14.0031X
K7	IECEX Flameproof with Increased Safety IECEX Dust	IECEX Increased Safety with Intrinsically Safe Electrodes and IECEX Dust	Global	DEKRA	IECEX DEK14.0031X
N8	EAC Non-Sparking EAC Dust	EAC Non-Sparking with Intrinsically Safe Electrodes and EAC Dust	Russia **	HAHMO ЛСБЭ	TC RU C-US.ГБ05.B.01269
K8	EAC Flameproof with Increased Safety EAC Dust	EAC Increased Safety with Intrinsically Safe Electrodes EAC Dust	Russia **	HAHMO ЛСБЭ	TC RU C-US.ГБ05.B.01269
N2	INMETRO Non-Sparking INMETRO Dust	INMETRO Non-Sparking with Intrinsically Safe Electrodes and INMETRO Dust	Brazil	DNV GL-INMETRO	DNV 18.0068 X
K2	INMETRO Flameproof with Increased Safety INMETRO Dust	INMETRO Increased Safety with Intrinsically Safe Electrodes INMETRO Dust	Brazil	DNV GL - INMETRO	DNV 18.0068 X
N9	KTL Non-Sparking KTL Dust	KTL Non-Sparking with Intrinsically Safe Electrodes and KTL Dust	Korea	KTL	16-KA4B0 – XXXX X****
K9	KTL Flameproof with Increased Safety KTL Dust	KTL Increased Safety with Intrinsically Safe Electrodes and KTL Dust	Korea	KTL	16-KA4B0 – XXXX X****
N3	NEPSI Non-Sparking NEPSI Dust	NEPSI Non-Sparking with Intrinsically Safe Electrodes and NEPSI Dust	China	NEPSI	GYJ15.1180X
K3	NEPSI Flameproof with Increased Safety NEPSI Dust	NEPSI Increased Safety with Intrinsically Safe Electrodes and NEPSI Dust	China	NEPSI	GYJ15.1180X
KN	CCOE Flameproof with Increased Safety	CCOE Increased Safety with Intrinsically Safe Electrodes	India	PESO	P354747/1
* Complies with only the local country product safety, electromagnetic, pressure and other applicable regulations. Cannot be used in a classified or zoned hazardous location environment. No ordering code required.					
** Customs Union (Russia, Belarus and Kazakhstan)					
*** Planned submittal or in process with Agency.					
**** Where "X" will vary depending upon the factory location and specific certification.					

Approval Markings and Logos

Symbol	Marking or Symbol Name	Region	Meaning of Marking or Symbol
	CE	European Union	Compliance with all applicable European Union Directives.
	ATEX	European Union	Compliance with Equipment and Protective systems intended for use in Potentially Explosive Atmospheres directive (ATEX) (2014/34/EU)
	C-tick	Australia	Compliance with Australian applicable electromagnetic compatibility standards
	CSA	US = United States C = Canada	Indicates that the product was tested and has met the applicable certification requirements for the noted countries.
	Eurasian Conformity (EAC)	Eurasian Customs Union (Russia, Belarus and Kazakhstan)	Compliance with all of the applicable technical regulations of the EAC Customs Union
	EAC Hazardous Location	Eurasian Customs Union (Russia, Belarus and Kazakhstan)	Compliance with Technical regulation, (TR CU 012/2011) – The safety of equipment for use in explosive environments.
	DNV GL - INMETRO	Brazil	Compliance with all of the applicable technical regulations of Brazil.
	NEPSI	China	Compliance with all of the applicable technical regulations of China.
	KTL	Korea	Compliance with all of the applicable technical regulations of Korea.

Product designated for Ordinary Location may be marked with CE, C-tick, FM, CSA and/or EAC logos.

European Directive Information

The most recent revision of the EU Declaration of Conformity can be found at www.emerson.com.

Certifications

Canadian Standards Association (CSA)

Ordinary Location Certification

The transmitter and flowtube have been examined and tested to determine that the design meets basic electrical, mechanical, and fire protection requirements by CSA, a nationally recognized testing laboratory (NRTL) as accredited by the Federal Occupational Safety and Health Administration (OSHA).

CLASS 2258 02 - PROCESS CONTROL EQUIPMENT - For Hazardous Locations – To Canadian Requirements.

N6 & N5	Class I, Groups A, B, C and D (Intrinsically Safe Output and Electrode circuit)
N6 & N5	Class I, Division 2, Groups A, B, C and D (Non-Incendive)
N6 & N5	Class II, Division 1, Groups E, F and G; Class III (Dust Ignition Proof)
K6	Class I, Zone 1 – Flame Proof, Increased Safety with Intrinsic safety
K6	Class II, Zone 21, - Protection by Enclosure

Magnetic Flow Meter – Model 8732EM Transmitter with integral or remote mount or Model 8712EM Transmitter remote mount to Model 8705M or Model 8711M/L Magnetic Flow Tubes. Enclosure Type 4X and IP66 Rated.

Temperature Class, Maximum Surface Temperatures, and Ambient temperature ranges are defined for Integral and Remote mount configurations on Rosemount Drawings 08732-2061 (Division Installation) or 08732-2066 (Zone Installation). Equipment provides IS and NON-IS connections in accordance with drawing 08732-2061 or 08732-2066.

CLASS 2258 82 - PROCESS CONTROL EQUIPMENT - For Hazardous Locations –To US Requirements

KU, K5	Class I, Division 1, Groups C and D (Explosion Proof)
N6, N5, KU, K5	Class I, Groups A, B, C and D (Intrinsically Safe Output and Electrode circuit)
N6, N5, KU, K5	Class I, Division 2, Groups A, B, C and D (Non-Incendive)
N6, N5, KU, K5	Class II, Division 1, Groups E, F and G; Class III (Dust Ignition Proof)
K6	Class I, Zone 1 – Flame Proof, Increased Safety with Intrinsic safety
K6	Class II, Zone 21, - Protection by Enclosure

Magnetic Flow Meter – Model 8732EM Transmitter with integral or remote mount or Model 8712EM Transmitter remote mount to Model 8705M or Model 8711M/L Magnetic Flow Tubes. Enclosure Type 4X and IP66 Rated.

Temperature Class, Maximum Surface Temperatures, and Ambient temperature ranges are defined for Integral and Remote mount configurations on Rosemount Drawings 08732-2061 (Division Installation) or 08732-2066 (Zone Installation). Equipment provides IS and NON-IS connections in accordance with drawing 08732-2061 or 08732-2066.

Special Conditions of Safe Use for Class/Division: 8732EM

- For use with the appropriate 8705M and 8711M/L Flow tubes only.
- When the 8732EM transmitter is integrally mounted to 8705M or 8711M/L Flow Tubes, the ambient temperature ranges marked on each product need to be taken into consideration before installation. The Ambient temperature range for 8732EM transmitter is $-40^{\circ}\text{C} \leq T_a \leq +60^{\circ}\text{C}$ and the ambient temperature range for 8705M or 8711M/L Flow Tubes is $-29^{\circ}\text{C} \leq T_a \leq +60^{\circ}\text{C}$. Therefore, the -29°C rating of the flow tubes will limit the overall cold temperature range of the complete system unless other approved temperature control methods are employed.
- When the 8732EM transmitter is integrally mounted to 8705W or 8711R/U flow tubes, the ambient temperature ranges marked on each product need to be taken into consideration before installation. The ambient temperature for 8732EM transmitter is -40°C to 60°C and the ambient temperature range for 8705W or 8711R/U flowtube is -50°C to 60°C . Therefore, the -40°C rating of the transmitter will limit the overall cold temperature range of the complete system unless other approved temperature control methods are employed.
- The intrinsically safe 4-20 mA and pulse output cannot withstand the 500 V isolation test between signal and ground, due to integral transient protection up to a voltage of 250 Vac. This must be taken into account upon installation.

Special Conditions for Safe Use (X) for Class Zone: 8732EM

- Warning – Ignition hazard, wetted parts may contain Titanium and Zirconium. For processes requiring EPL Ga and Gb rated equipment, suitability for use must be determined by the end user to eliminate ignition hazard due to impact or friction.
- When “Special Paint Systems” are applied, instructions for safe use regarding potential electrostatic charging hazard have to be followed.
- Terminals 1,2,3,4, for data communication, cannot withstand the 500 V isolation test between Signal and ground, due to integral transient protection. This must be taken into account upon Installation.

4. Conduit entries must be installed to maintain the enclosure ingress rating of IP66.
5. In order to maintain the ingress protection level on the M3 and M4 electrode housing, the copper crush washer that seals the electrode access plug shall be replaced when the plug is reinstalled. The copper crush washer is one time use only.
6. The flow tube and transmitter are not allowed to be thermally insulated.
7. The property class of the special fasteners which attach the Magnetic Flow Tube or Transmitter Remote Junction Box to the Magnetic Transmitter is A2-70 or A4-70 SST.
8. For information on the dimensions of the flameproof joints the manufacturer shall be contacted.
9. The Magnetic Flow Meter Tube contains nonconductive liners over the grounded tube. For process requiring EPL Ga, precautions shall be taken to avoid the liner being charged by the flow of nonconductive media.

Special Conditions of Safe Use for Class/Division: 8705M / 8711M/L

1. The flow tube is IP68 only when mounted remotely from the transmitter.
2. Options V1, V2, or V3 are not Type 4X Corrosion Resistant.
3. Options F0234, V1, V2, or V3 may be subject to electrostatic discharge. To avoid electrostatic charge build-up, do not rub the flowmeter with a dry cloth or clean with solvents.

Special Conditions for Safe Use (X) for Class Zone: 8705M / 8711M/L

1. Warning – Ignition hazard, wetted parts may contain Titanium and Zirconium. For processes requiring EPL Ga and Gb rated equipment, suitability for use must be determined by the end user to eliminate ignition hazard due to impact or friction.
2. When “Special Paint Systems” are applied, instructions for safe use regarding potential electrostatic charging hazard have to be followed.
3. Terminals 1,2,3,4, for data communication, cannot withstand the 500 V isolation test between Signal and ground, due to integral transient protection. This must be taken into account upon Installation.
4. Conduit entries must be installed to maintain the enclosure ingress rating of IP66.
5. In order to maintain the ingress protection level on the M3 and M4 electrode housing, the copper crush washer that seals the electrode access plug shall be replaced when the plug is reinstalled. The copper crush washer is one time use only.
6. The flow tube and transmitter are not allowed to be thermally insulated.
7. The property class of the special fasteners which attach the Magnetic Flow Tube or Transmitter Remote Junction Box to the Magnetic Transmitter is A2-70 or A4-70 SST.
8. For information on the dimensions of the flameproof joints the manufacturer shall be contacted.
9. The Magnetic Flow Meter Tube contains nonconductive liners over the grounded tube. For process requiring EPL Ga, precautions shall be taken to avoid the liner being charged by the flow of nonconductive media.

Special Conditions of Safe Use for Class/Division: 8712EM

1. For use with the appropriate 8705 and 8711 Flow tubes only.
2. The intrinsically safe 4-20 mA and pulse output cannot withstand the 500 V isolation test between signal and ground, due to integral transient protection up to a voltage of 250 Vac. This must be taken into account upon installation.

Special Conditions for Safe Use (X) for Class Zone: 8712EM

1. Warning – Ignition hazard, wetted parts may contain Titanium and Zirconium. For processes requiring EPL Ga and Gb rated equipment, suitability for use must be determined by the end user to eliminate ignition hazard due to impact or friction.
2. When “Special Paint Systems” are applied, instructions for safe use regarding potential electrostatic charging hazard have to be followed.
3. Conduit entries must be installed to maintain the enclosure ingress rating of IP66.
4. In order to maintain the ingress protection level on the M3 and M4 electrode housing, the copper crush washer that seals the electrode access plug shall be replaced when the plug is reinstalled. The copper crush washer is one time use only.
5. The flow tube and transmitter are not allowed to be thermally insulated.
6. The property class of the special fasteners which attach the Magnetic Flow Tube or Transmitter Remote Junction Box to the Magnetic Transmitter is A2-70 or A4-70 SST.
7. For information on the dimensions of the flameproof joints the manufacturer shall be contacted.
8. The Magnetic Flow Meter Tube contains nonconductive liners over the grounded tube. For process requiring EPL Ga, precautions shall be taken to avoid the liner being charged by the flow of nonconductive media.
9. When utilizing the keypad of Magnetic Flow Transmitter Model 8712EM, instruction for safe use regarding potential electrostatic charging hazard have to be followed.
10. Terminals for the output signals of the magnetic Flow Transmitters, cannot withstand the 500 V isolation test between signal and ground, due to integral transient protection. This must be taken into account upon Installation.

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1. Equipment Markings – See section VI in the tables on the following pages
 - a. EU-Type Examination Certificate (ATEX): DEKRA 14ATEX0071_X
 - b. Certificate of Conformity (IEC Ex): IECEX DEK 14.0031X
2. Required Documentation:
 - a. 08732-2060 Installation Drawing Model 8732EM, 8712EM, 8705M, 8711-M/L ATEX/IECEX Hazardous (Ex) Locations
3. Referenced Documentation:
 - a. 00825-0X00-4444.pdf, Transmitter Quick Installation Guide (Where X = Communications Protocol Code)
 - b. 00825-0100-4727.pdf, Sensor Quick Installation Guide
4. The Required and Referenced Documents listed above address the following items:
 - a. Instructions for safety i.e.
 - i. Putting into service
 - ii. Use
 - iii. Assembling and dismantling
 - iv. Maintenance, overhaul and repair
 - v. Installation
 - vi. Adjustment
 - b. Where necessary, training instructions
 - c. Details which allow a decision to be made as to whether the equipment can be used safely in the intended area under the expected operating conditions
 - d. Electrical parameters, maximum surface temperatures and other limit values
 - i. Electrical –
 1. See document 08732-2060

Rosemount 8732EM and 8712EM Flow Transmitter	
<i>Power input</i>	90 - 250VAC, 0.45A, 40VA 12 - 30VDC, 0.25A, 3W 12 - 42VDC, 1.2A, 15W
<i>Pulsed circuit</i>	<i>Internally powered (Active): Outputs up to 12VDC, 12.1mA, 73mW</i> <i>Externally powered (Passive): Input up to 28VDC, 100mA, 1W</i>
<i>4-20mA output circuit</i>	<i>Internally Powered (Active): Outputs up to 25mA, 24VDC, 600mW</i> <i>Externally Powered (Passive): Input up to 25mA, 30VDC, 750mW</i>
<i>MODBUS</i>	<i>Internally Powered (Active): Outputs up to 100mA, 3.3VDC, 100mW</i>
<i>Fieldbus</i>	<i>Externally Powered (Passive): 9-32VDC,</i>
<i>Profibus</i>	<i>Externally Powered (Passive): 9-32VDC,</i>
<i>Um</i>	250V
<i>Coil excitation output</i>	500mA, 40V max, 9W max
Rosemount 8705-M and 8711-M/L Flowtube⁽¹⁾	
<i>Coil excitation input</i>	500mA, 40V max, 20W max
<i>Electrode circuit</i>	5V, 200uA, 1mW

(1) Provided by the transmitter

- e. Special Conditions for Safe Use (X): 8732EM
 - i. When “Special Paint Systems” are applied, instructions for safe use regarding potential electrostatic charging hazard have to be followed.
 - ii. Conduit entries must be installed to maintain the enclosure ingress rating of IP66.
 - iii. Terminals for the output signals of the Magnetic Flow Transmitters, cannot withstand the 500 V isolation test between signal and ground, due to integral transient protection up to a voltage of 250 Vac. This must be taken into account upon installation.

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- iv. The property class of the special fasteners which attach the Magnetic Flow Tube or Transmitter Remote Junction Box to the Magnetic Transmitter is A2-70 or A4-70 SST.
 - v. For information on the dimensions of the flameproof joints the manufacturer shall be contacted.
- f. Special Conditions for Safe Use (X): 8712EM
- i. When “Special Paint Systems” are applied, instructions for safe use regarding potential electrostatic charging hazard have to be followed.
 - ii. Conduit entries must be installed to maintain the enclosure ingress rating of IP66 or IP69K.
 - iii. When utilizing the keypad of Magnetic Flow Transmitter Model 8712EM, instructions for safe use regarding potential electrostatic charging hazard have to be followed.
 - iv. Terminals for the output signals of the Magnetic Flow Transmitters, cannot withstand the 500 V isolation test between signal and ground, due to integral transient protection up to a voltage of 250 Vac. This must be taken into account upon installation.
- g. Special Conditions for Safe Use (X): 8705M and 8711M/L
- i. The Magnetic Flow Tubes wetted parts may contain Titanium and Zirconium. It is the responsibility of the end user to eliminate ignition hazards due to impact or friction for processes that require EPL Ga or Gb.
 - ii. The Magnetic Flow Tube contains non conductive liners covering the grounded flow tube. For process requiring EPL Ga, precautions shall be taken to avoid the liner being charged by the flow of nonconductive media.
 - iii. In order to maintain the ingress protection level on the M3 and M4 electrode housing of the Magnetic Flow Tubes, the copper crush washer that seals the electrode access plug shall be replaced when the plug is reinstalled. The copper crush washer is one time use only.
 - iv. The property class of the special fasteners which attach the Magnetic Flow Tube or Transmitter Remote Junction Box to the Magnetic Transmitter is A2-70 or A4-70 SST.
 - v. When “Special Paint Systems” are applied, instructions for safe use regarding potential electrostatic charging hazard have to be followed.
 - vi. For information on the dimensions of the flameproof joints the manufacturer shall be contacted.
 - vii. Conduit entries must be installed to maintain the enclosure ingress rating of IP66.
- h. Where necessary, the essential characteristics of tools which may be fitted to the equipment.
- i. No proprietary tools required.
- i. List of the standards, including the issue date, with which the equipment is declared to comply:
- i. ATEX - EN 60079-0: 2012 +A11, EN 60079-1: 2014, EN 60079-7: 2015, EN 60079-11: 2012, EN 60079-15: 2010, EN 60079-26: 2015, EN 60079-31: 2014
 - ii. IECEx - IEC 60079-0: 2011, IEC 60079-1: 2014, IEC 60079-7: 2015 IEC 60079-11: 2011, IEC 60079-15: 2010, IEC 60079-26: 2014, IEC 60079-31: 2013
- j. Supply wire requirements; Use 10 - 18 AWG wire rated for the proper temperature of the application. For wire 10 - 14 AWG use lugs or other appropriate connectors. For connections in ambient temperatures above 122°F (50 °C), use a wire rated for 194 °F (90 °C).
- k. Contact address; Emerson -Rosemount, Micro Motion Inc
12001 Technology Drive
Eden Prairie
MN 55344, United States of America

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Nomenclature Magnetic Flow Transmitter Model 8732EM and electrical data

8732EM R 1 B 2 K1 ... M4 RT50 ... SH ... V1 ... F090...
 I II III IV V VI VII VIII IX X

Designation	Explanation	Value	Explanation	
I	Model	8732EM	Magnetic Flow Transmitter – Field Mount	
II	Transmitter Mount	R T	Remote Mount Integral Mount	
III	Transmitter Power Supply	1 2 3	AC (90 - 250 Vac, 50 / 60 Hz), not for Ex nA DC (12 - 42 Vdc) DC (12 – 30 Vdc)	
IV	Outputs	A B F M P	Non-I.S.: 4 - 20 mA with digital HART Protocol & Scalable Pulse Output I.S.: 4 - 20 mA Intrinsically Safe Output with digital HART Protocol & Intrinsically Safe Scalable Pulse Output I.S.: Foundation Fieldbus / FISCO Intrinsically Safe & Intrinsically Safe Scalable Pulse Output Non-I.S.: Modbus RS-485 I.S.: Profibus & Intrinsically Safe Scalable Pulse Output	
V	Conduit entries	1 or 4 2 or 5	½-14 NPT female CM20, M20 female	
VI	Safety Approval Option	K1 ATEX	⊕ II 2 (1) G Ex db eb [ia Ga] IIC T6...T3 Gb ⊕ II 2 D Ex tb IIIC T80 °C...T200 °C Db	
			K7 IECEX	Ex db eb [ia Ga] IIC T6...T3 Gb Ex tb IIIC T80 °C...T200 °C Db
				Ex db [ia Ga] IIC T6...T3 Gb * Ex tb IIIC T80 °C...T200 °C Db
			K9 IECEX	Ex db eb [ia Ga] IIC T6...T3 Gb Ex tb IIIC T80 °C...T200 °C Db
		N1 ATEX		⊕ II 3 (1) G Ex nA [ia Ga] IIC T4...T3 Gc *** ⊕ II 3 (1) G Ex ec [ia Ga] IIC T4...T3 Gc *** ⊕ II 2 D Ex tb IIIC T80 °C...T200 °C Db
			N7 IECEX	Ex nA [ia Ga] IIC T4...T3 Gc *** Ex ec [ia Ga] IIC T4...T3 Gc *** Ex tb IIIC T80 °C...T200 °C Db
				ND ATEX
		NF IECEX	Ex tb IIIC T80 °C...T200 °C Db [Ex ia Ga] IIC **	
			NOTE: * Integral Mount (see II) option only ** Intrinsically Safe Output (see IV) option only *** DC Transmitter Power Supply only (12 - 42 Vdc)	
		VII	Display Option	M4 M5
VIII	Remote Cable Option	RTxx ****	Standard Temperature Component	
		RHxx ****	Extended Temperature Component	
			NOTE: **** Length = xx x 10 ft, max. 500 ft	
IX	Options	-- SH Vx	Aluminum, standard paint Stainless Steel Electronics Housing Special Paint Systems *****	
X	Specials	F090x	Special Paint Systems *****	
			NOTE: ***** Subject to special conditions for safe use.	

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Nomenclature Magnetic Flow Transmitter Model 8712EM and electrical data

8712EM R 2 B 2 N7 ... M4 RT50 ... Vx ... F090...
 I II III IV V VI VII VIII IX X

Designation	Explanation	Value	Explanation
I	Model	8712EM	Magnetic Flow Transmitter – Field Mount
II	Transmitter Mount	R	Remote Mount
III	Transmitter Power Supply	1 2 3	AC (90 - 250 Vac, 50 / 60 Hz) DC (12 - 42 Vdc) DC (12 - 30 Vdc)
IV	Outputs	A B F M P	Non-I.S.: 4 - 20 mA with digital HART Protocol & Scalable Pulse Output I.S.: 4 - 20 mA Intrinsically Safe Output with digital HART Protocol & Intrinsically Safe Scalable Pulse Output I.S.: Foundation Fieldbus / FISCO Intrinsically Safe & Intrinsically Safe Scalable Pulse Output Non-I.S.: Modbus RS-485 I.S.: Profibus & Intrinsically Safe Scalable Pulse Output
V	Conduit entries	1 2	½-14 NPT female CM20, M20 female
VI	Safety Approval Option	N1 ATEX N7 IECEX N9 IECEX ND ATEX NF IECEX	Ⓢ II 3 (1) G Ex nA ic [ia Ga] IIC T4 Gc ** Ⓢ II 3 (1) G Ex ec ic [ia Ga] IIC T4 Gc ** Ⓢ II 2 D Ex tb IIIC T80 °C Db Ex nA ic [ia Ga] IIC T4 Gc ** Ex ec ic [ia Ga] IIC T4 Gc ** Ex tb IIIC T80 °C Db Ex nA ic [ia Ga] IIC T4 Gc ** Ex ec ic [ia Ga] IIC T4 Gc ** Ex tb IIIC T80 °C Db Ⓢ II 2 D Ex tb IIIC T80 °C Db Ⓢ II 2 D Ex tb IIIC T80 °C Db Ⓢ II (1) G [Ex ia Ga] IIC * Ex tb IIIC T80 °C Db Ex tb IIIC T80 °C Db [Ex ia Ga] IIC * NOTE:* Intrinsically Safe Output (see IV) option only ** DC Transmitter Power Supply only (12 - 42 Vdc)
VII	Display Option	-- M4 M5	Without LOI and keypad LOI + keypad Display
VIII	Remote Cable Option	Rxx	Standard Temperature Component NOTE: *** Length = xx x 10 ft, max. 500 ft
IX	Options	-- Vx	Aluminum, standard paint Special Paint Systems ****
X	Specials	F090x	Special Paint Systems **** NOTE: **** Subject to special conditions for safe use.

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Nomenclature Magnetic Flow Tube Model 8705-M and electrical data

8705 ... S A 005 ... M4 K1 ... G1 L1 B3 ... J1 SC ... V1 ... SH ... F090x
 I II III IV V VI VII VIII IX X XI XII XIII XIV

Designation	Explanation	Value	Explanation
I	Model	8705	Magnetic Flow Tube
II	Electrode Material	Custom	See special conditions for safe use
III	Electrode Types	Custom	Seal of electrodes comply with IEC 61010-1.
IV	Line Size	005 to 360	½" NPS (15 mm) to 36" NPS (900 mm)
V	Electrode Housing *	M0 M1 M2 M3 M4	Category 2 G or 3 G, EPL Gb or Gc Category 2 G or 3 G, EPL Gb or Gc Category 1/2 G or 1/3 G, EPL Ga/Gb or Ga/Gc Category 1/2 G or 1/3 G, EPL Ga/Gb or Ga/Gc Category 1/2 G or 1/3 G, EPL Ga/Gb or Ga/Gc
VI	Safety Approvals	K1 ATEX	⊕ II 1/2 G Ex eb ia IIC T5...T3 Ga/Gb *
			⊕ II 2 D Ex tb IIIC T80 °C...T200 °C Db
			⊕ II 2 G Ex eb ib IIC T5...T3 Gb **
			⊕ II 2 D Ex tb IIIC T80 °C...T200 °C Db
		K7 IECEx	Ex eb ia IIC T5...T3 Ga/Gb *
			Ex tb IIIC T80 °C...T200 °C Db
		K9 IECEx	Ex eb ib IIC T5...T3 Gb **
			Ex tb IIIC T80 °C...T200 °C Db
		N1 ATEX	⊕ II 1/3 G Ex nA ia IIC T5...T3 Ga/Gc * line sizes 8"- 36"
			⊕ II 1/3 G Ex ec ia IIC T5...T3 Ga/Gc * line sizes 8"- 36"
⊕ II 2 D Ex tb IIIC T80 °C...T200 °C Db			
⊕ II 3 G Ex nA ic IIC T5...T3 Gc * line sizes 0.5" - 6" / **			
⊕ II 3 G Ex ec ic IIC T5...T3 Gc * line sizes 0.5" - 6" / **			
⊕ II 2 D Ex tb IIIC T80 °C...T200 °C Db			
N7 IECEx	Ex nA ia IIC T5...T3 Ga/Gc * line sizes 8"- 36"		
	Ex ec ia IIC T5...T3 Ga/Gc * line sizes 8"- 36"		
	Ex tb IIIC T 80 °C...T200 °C Db		
	Ex nA ic IIC T5...T3 Gc * line sizes 0.5" - 6" / **		
ND ATEX	⊕ II 2 D Ex tb IIIC T80 °C...T200 °C Db		
	⊕ II 2 D Ex tb IIIC T80 °C...T200 °C Db		
NF IECEx	Ex tb IIIC T80 °C...T200 °C Db		
	NOTE:* Electrode Housing M2, M3 and M4 only ** Electrode Housing M0 and M1 only		
VII	Grounding rings material	Custom	See special conditions for safe use
VIII	Lining protector material	Custom	See special conditions for safe use
IX	Mounting Configuration	B3	Integral Mount with Model 8732EM
X	Optional conduit entries	J1	CM20, M20 female
XI	Remote Junction Box (RJB) material	--	Aluminum, standard paint
		SJ	316 Stainless steel
XII	Special paint options	Vx	Special Paint Systems ***
XIII	Wrapper (housing) material	--	Carbon Steel (w. Aluminum RJB), standard paint
		SH	316 Stainless Steel (w. Stainless Steel RJB)
XIV	Specials	F090x	Special Paint Systems ***
			NOTE: *** Subject to special conditions for safe use.

**Rosemount 8700M Magnetic Flowmeter Platform
IECEx & ATEX Approval Document**

24 January 2019
08732-AP02, Rev AG

Nomenclature Magnetic Flow Tube Model 8711-M/L and electrical data

8711 ... S A 15F L ... K1 ... G1 ... J1 SC ... V1 ... F090x
I II III IV V VI VII VIII IX X XI

Designation	Explanation	Value	Explanation
I	Model	8711	Magnetic Flow Tube
II	Electrode Material	Custom	See special conditions for safe use
III	Electrode Types	Custom	Seal of electrodes comply with IEC 61010-1.
IV	Line Size	015 to 080	1½" NPS (40 mm) to 8" NPS (900 mm)
V	Mounting Configuration	L M	Remote Mount from Transmitter Integral Mount with Transmitter
VI	Safety Approvals	K1 ATEX	⊕ II 2 G Ex eb ib IIC T5...T3 Gb ⊕ II 2 D Ex tb IIIC T80 °C...T200 °C Db
		K7 IECEx	Ex eb ib IIC T5...T3 Gb Ex tb IIIC T80 °C...T200 °C Db
		K9 IECEx	Ex eb ib IIC T5...T3 Gb Ex tb IIIC T80 °C...T200 °C Db
		N1 ATEX	⊕ II 3 G Ex nA ic IIC T5...T3 Gc ⊕ II 3 G Ex ec ic IIC T5...T3 Gc ⊕ II 2 D Ex tb IIIC T80 °C...T200 °C Db
		N7 IECEx	Ex nA ic IIC T5...T3 Gc Ex ec ic IIC T5...T3 Gc Ex tb IIIC T80 °C...T200 °C Db
		ND ATEX	⊕ II 2 D Ex tb IIIC T80 °C...T200 °C Db
		NF IECEx	Ex tb IIIC T80 °C...T200 °C Db
VII	Grounding rings material	Custom	See special conditions for safe use
VIII	Optional conduit entries	J1	CM20, M20 female
IX	Remote Junction Box material	-- SJ	Aluminum, standard paint * 316 Stainless steel *
			NOTE: * Flow Tube with Carbon Steel wrapper (housing)
X	Special paint options	Vx	Special Paint Systems **
XI	Specials	F090x	Special Paint Systems ** NOTE: ** Subject to special conditions for safe use.



ROSEMOUNT™

EU Declaration of Conformity No: RFD 1094 Rev. K

We,

**Emerson – Rosemount, Micro Motion Inc.
12001 Technology Drive
Eden Prairie, MN 55344
USA**

declare under our sole responsibility that the product(s),

**Rosemount 8700M
Magnetic Flowmeter Platform
Transmitters: 8732EM and 8712EM
Flow Tubes (Sensors): 8705M, 8711M/L and 8721**

to which this declaration relates, is in conformity with the provisions of the European Union Legislation, including the latest amendments, as shown in the attached schedule.

Assumption of conformity is based on the application of harmonized or applicable technical standards and, when applicable or required, a European Union Legislation notified body certification, as shown in the attached schedule.

(signature)

14 February 2019

(date of issue)

Mark Fleigle

(name - printed)

Vice President - Technology and Product Development

(function name - printed)



ROSEMOUNT™

Schedule EU Declaration of Conformity No. RFD 1094 Rev. K

EMC Directive 2014/30/EU

All Models

EN 61326-1: 2013

LVD Directive 2014/35/EU

All Models

EN 61010-1: 2010

PED Directive 2014/68/EU

Equipment without the 'PD' option is NOT PED compliant and cannot be used in the EEA without further assessment unless the installation is exempt under Article 1, paragraph 2 of the PED Directive 2014/68/EU.

Model 8705-M Magnetic Flowmeter Sensor with Option "PD", in Line Sizes 1.5" - 36"

QS Certificate of Assessment – 12317-2018-CE-USA-ACCREDIA

Module H Conformity Assessment

ASME B31.3: 2016

Model 8705-M with Option "PD", in Line Sizes .5" – 1.0"

Sound Engineering Practice

ASME B31.3: 2016

Model 8711-M/L Magnetic Flowmeter Sensor with Option "PD", in Line Sizes 1.5" - 8"

QS Certificate of Assessment - 12317-2018-CE-USA-ACCREDIA

Module H Conformity Assessment

ASME B31.3: 2016

Model 8721 Magnetic Flowmeter Sensor, all sizes:

Sound Engineering Practice

ASME B31.3: 2016



ROSEMOUNT™

Schedule

EU Declaration of Conformity No. RFD 1094 Rev. K

ATEX Directive 2014/34/EU

Magnetic Flow Transmitters 8732EM, 8712EM and Flow Tubes 8705-M, 8711-M/L,

DEKRA 14ATEX0071 X – CERTIFICATE

Equipment Marking Summary:



II 2 (1) G	Ex db eb [ia Ga] IIC T6...T3 Gb	II 3 G	Ex nA ic IIC T5...T3 Gc
II 2 (1) G	Ex db [ia Ga] IIC T6...T3 Gb	II 3 G	Ex ec ic IIC T5...T3 Gc
II 3 (1) G	Ex nA [ia Ga] IIC T4...T3 Gc	II 2 D	Ex tb IIIC T 80 °C...T 200 °C Db
II 3 (1) G	Ex ec [ia Ga] IIC T4...T3 Gc	II 3 G	Ex nA ic [ia Ga] IIC T4 Gc
II (1) G	[Ex ia Ga] IIC	II 3 G	Ex ec ic [ia Ga] IIC T4 Gc
II 1/2 G	Ex eb ia IIC T5...T3 Ga/Gb	II 2 D	Ex tb IIIC T 80 °C Db
II 2 G	Ex eb ib IIC T5...T3 Gb		
II 1/3 G	Ex nA ia IIC T5...T3 Ga/Gc		
II 1/3 G	Ex ec ia IIC T5...T3 Ga/Gc		

EN 60079-0 : 2012 +A11: 2013
 EN 60079-7 : 2015
 EN 60079-15 : 2010

EN 60079-1 : 2014
 EN 60079-11 : 2012
 EN 60079-26 : 2015

EN 60079-31 : 2014

PED Notified Body

DNV GL Business Assurance S.r.l. [Notified Body Number: 0496]
 Via Energy Park 14
 Vimercate, 20871 Italy

ATEX Notified Body

DEKRA Certification B.V. [Notified Body Number: 0344]
 Meander 1051, 6825 MJ Arnhem
 P.O. Box 5185, 6802 ED Arnhem
 The Netherlands

ATEX Quality Assurance Notified Body

DNV Nemko Presafe AS [Notified Body number: 2460]
 P.O. Box 73, Blindern
 0314 Oslo, Norway

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HAZARDOUS (Ex) LOCATION CONTROL AND INSTALLATION DRAWING MODEL 8732EM AND 8712EM MAGNETIC FLOWTUBE TRANSMITTERS MODEL 8705-M AND 8711-M/L MAGNETIC FLOWTUBES																																													
TABLE OF CONTENTS																																													
A	<table border="1"> <thead> <tr> <th>PAGE</th> <th>TITLE</th> </tr> </thead> <tbody> <tr> <td style="text-align: center;">2</td> <td>GAS ENVIRONMENT - CLASS I DIVISION 1 - US-NEC-ONLY - SENSORS AND ALLOWED INTEGRAL MOUNT CLASS I DIVISION 1 TRANSMITTERS</td> </tr> <tr> <td style="text-align: center;">3</td> <td>GAS ENVIRONMENT - CLASS I DIVISION 1 - US-NEC-ONLY - SENSORS AND ALLOWED REMOTE MOUNT CLASS I DIVISION 1 OR CLASS I DIVISION 2 TRANSMITTERS</td> </tr> <tr> <td style="text-align: center;">4</td> <td>GAS ENVIRONMENT - CLASS I DIVISION 1 SENSOR TEMPERATURE CODE VS. PROCESS TEMPERATURE LIMITS</td> </tr> <tr> <td style="text-align: center;">5</td> <td>GAS ENVIRONMENT - CLASS I DIVISION 2 SENSORS AND ALLOWED INTEGRAL MOUNT CLASS I DIVISION 2 TRANSMITTERS</td> </tr> <tr> <td style="text-align: center;">6</td> <td>GAS ENVIRONMENT - CLASS I DIVISION 2 SENSORS AND ALLOWED REMOTE MOUNT CLASS I DIVISION 2 OR CLASS I DIVISION 2 TRANSMITTERS</td> </tr> <tr> <td style="text-align: center;">7</td> <td>GAS ENVIRONMENT - CLASS I DIVISION 2 SENSOR TEMPERATURE CODE VS. PROCESS TEMPERATURE LIMITS</td> </tr> <tr> <td style="text-align: center;">8</td> <td>DUST ENVIRONMENT - CLASS II/III DIVISION 1 SENSORS AND ALLOWED INTEGRAL MOUNT CLASS II/III DIVISION 1 TRANSMITTERS</td> </tr> <tr> <td style="text-align: center;">9</td> <td>DUST ENVIRONMENT - CLASS II/III DIVISION 1 SENSORS AND ALLOWED REMOTE MOUNT CLASS II/III DIVISION 1 TRANSMITTERS</td> </tr> <tr> <td style="text-align: center;">10</td> <td>DUST ENVIRONMENT - CLASS II/III DIVISION 1 SENSORS TEMPERATURE CODE VS. PROCESS TEMPERATURE LIMITS</td> </tr> <tr> <td style="text-align: center;">11</td> <td>GAS ENVIRONMENT - COIL AND ELECTRODE CIRCUIT WIRING</td> </tr> <tr> <td style="text-align: center;">12</td> <td>DUST ENVIRONMENT - COIL AND ELECTRODE CIRCUIT WIRING</td> </tr> <tr> <td style="text-align: center;">13</td> <td>GAS ENVIRONMENT - OUTPUT WIRING</td> </tr> <tr> <td style="text-align: center;">14</td> <td>GAS ENVIRONMENT - INTRINSICALLY SAFE ENTITY CONCEPTS</td> </tr> <tr> <td style="text-align: center;">15</td> <td>GAS ENVIRONMENT - FISCO CONCEPT</td> </tr> <tr> <td style="text-align: center;">16</td> <td>GAS AND DUST ENVIRONMENT - FM TO CSA COMPATIBILITY</td> </tr> <tr> <td style="text-align: center;">17</td> <td>GAS AND DUST ENVIRONMENT- US-NEC-ONLY - 8705-Wx AND 8711-R/U SENSORS WITH 8732EM AND 8712EM TRANSMITTERS</td> </tr> </tbody> </table>											PAGE	TITLE	2	GAS ENVIRONMENT - CLASS I DIVISION 1 - US-NEC-ONLY - SENSORS AND ALLOWED INTEGRAL MOUNT CLASS I DIVISION 1 TRANSMITTERS	3	GAS ENVIRONMENT - CLASS I DIVISION 1 - US-NEC-ONLY - SENSORS AND ALLOWED REMOTE MOUNT CLASS I DIVISION 1 OR CLASS I DIVISION 2 TRANSMITTERS	4	GAS ENVIRONMENT - CLASS I DIVISION 1 SENSOR TEMPERATURE CODE VS. PROCESS TEMPERATURE LIMITS	5	GAS ENVIRONMENT - CLASS I DIVISION 2 SENSORS AND ALLOWED INTEGRAL MOUNT CLASS I DIVISION 2 TRANSMITTERS	6	GAS ENVIRONMENT - CLASS I DIVISION 2 SENSORS AND ALLOWED REMOTE MOUNT CLASS I DIVISION 2 OR CLASS I DIVISION 2 TRANSMITTERS	7	GAS ENVIRONMENT - CLASS I DIVISION 2 SENSOR TEMPERATURE CODE VS. PROCESS TEMPERATURE LIMITS	8	DUST ENVIRONMENT - CLASS II/III DIVISION 1 SENSORS AND ALLOWED INTEGRAL MOUNT CLASS II/III DIVISION 1 TRANSMITTERS	9	DUST ENVIRONMENT - CLASS II/III DIVISION 1 SENSORS AND ALLOWED REMOTE MOUNT CLASS II/III DIVISION 1 TRANSMITTERS	10	DUST ENVIRONMENT - CLASS II/III DIVISION 1 SENSORS TEMPERATURE CODE VS. PROCESS TEMPERATURE LIMITS	11	GAS ENVIRONMENT - COIL AND ELECTRODE CIRCUIT WIRING	12	DUST ENVIRONMENT - COIL AND ELECTRODE CIRCUIT WIRING	13	GAS ENVIRONMENT - OUTPUT WIRING	14	GAS ENVIRONMENT - INTRINSICALLY SAFE ENTITY CONCEPTS	15	GAS ENVIRONMENT - FISCO CONCEPT	16	GAS AND DUST ENVIRONMENT - FM TO CSA COMPATIBILITY	17	GAS AND DUST ENVIRONMENT- US-NEC-ONLY - 8705-Wx AND 8711-R/U SENSORS WITH 8732EM AND 8712EM TRANSMITTERS
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D	<p>! WARNING: EXPLOSION HAZARD - PRODUCT INSTALLATION SHALL COMPLY WITH INFORMATION AS STATED IN THIS DOCUMENT.</p> <p>1. WIRING METHOD SUITABLE FOR APPROPRIATE CLASS AND DIVISION AND PROTECTION TYPE.</p> <p>2. TRANSMITTER MUST NOT BE CONNECTED TO EQUIPMENT GENERATING MORE THAN 250V.</p> <p>3. COMPONENTS REQUIRED TO HAVE HAZARDOUS (Ex) LOCATION APPROVAL MUST BE APPROVED FOR THE GAS GROUP APPROPRIATE TO AREA CLASSIFICATION.</p> <p>4. SEAL APPROVED FOR USE IN APPROPRIATE CLASS AND DIVISION AND GAS GROUP.</p> <p>5. THE ELECTRODE CIRCUIT AND WIRING MUST BE INSTALLED AS INTRINSICALLY SAFE WHEN THE FLOWTUBE IS INSTALLED IN A CLASS I DIVISION 1 AREA WITH THE 'KU' OR 'K5' OPTION; OR WHEN THE 'K5', 'K5', 'N5', OR 'N6' IS USED WITH FLAMMABLE PROCESS FLUIDS.</p> <p>6. THE INTRINSICALLY SAFE 4-20mA AND DIGITAL OUTPUTS MUST USE TWISTED PAIR WITH AN INDIVIDUAL SHIELD FOR THE PAIR. IT IS ALSO RECOMMENDED TO USE SHIELDED TWISTED PAIR FOR THE PULSE OUTPUT.</p> <p>7. USA-INSTALLATION SHALL BE IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE (NEC), NFPA-70, AND ANSI/ISA-RP1206-01. CANADA-INSTALLATION SHALL BE IN ACCORDANCE WITH THE CANADIAN ELECTRICAL CODE (CEC) PART I (C22.1). "INSTALLATION OF INTRINSICALLY SAFE SYSTEMS FOR HAZARDOUS (CLASSIFIED) LOCATIONS".</p> <p>8. CONTROL EQUIPMENT CONNECTED TO BARRIER MUST NOT USE OR GENERATE MORE THAN 250V.</p> <p>9. ASSOCIATED APPARATUS MANUFACTURER'S INSTALLATION DRAWING MUST BE FOLLOWED WHEN INSTALLING THIS EQUIPMENT.</p> <p>10. THE TRANSMITTER IS NOT CAPABLE OF PASSING THE 500V ISOLATION TEST ON TERMINALS DUE TO INTEGRAL TRANSIENT PROTECTION. THIS MUST BE TAKEN INTO ACCOUNT UPON INSTALLATION.</p> <p>11. THE ROSEMOUNT CABLING KITS, FOR INTRINSICALLY SAFE ELECTRODES, INCLUDE A CERTIFICATE OF CONFORMITY (COC) FROM THE MANUFACTURER FOR CAPACITANCE PER FOOT & INDUCTANCE PER FOOT. THESE PARAMETERS ARE ONLY REQUIRED FOR THE ENTITY CONCEPT METHOD OF INSTALLATION.</p> <p>12. FOR ALL INSTALLATIONS MAXIMUM TERMINAL TIGHTENING TORQUE IS 10.6 IN LBS.</p>																																												
E																																													
F	<p>13. - WARNING - EXPLOSION HAZARD - DO NOT DISCONNECT WHILE CIRCUIT IS LIVE UNLESS AREA IS KNOWN TO BE NON-HAZARDOUS. - AVERTISSEMENT - RISQUE D'EXPLOSION. NE PAS DEBRANCHER TANT QUE LE CIRCUIT EST SOUS TENSION, A MOINS QU'IL NE S'AGISSE D'UN EMPLACEMENT NON DANGEREUX. - WARNING - AFTER DE-ENERGIZING, DELAY 10 MINUTES BEFORE OPENING. - AVERTISSEMENT - APRÈS MISE HORS TENSION, ATTENDRE 10 MINUTES AVANT L'OUVERTURE. - WARNING - POTENTIAL ELECTROSTATIC CHARGING HAZARD - SEE INSTRUCTIONS. - AVERTISSEMENT - DANGER POTENTIEL DE CHARGES ELECTROSTATIQUES - VOIR INSTRUCTIONS)</p> <p>14. DIDDO TERMINALS ARE NOT POPULATED. THE DIDDO OPTION (AX) IS NOT AVAILABLE WITH INTRINSICALLY SAFE OUTPUTS. 15. NO REVISION TO THIS DRAWING WITHOUT PRIOR CSA APPROVAL.</p> <p>16. WHEN THE 8732EM TRANSMITTER IS INTEGRALLY MOUNTED TO 8705-M OR 8711-M/L FLOW TUBES, THE AMBIENT TEMPERATURE RANGES MARKED ON EACH PRODUCT NEED TO BE TAKEN INTO CONSIDERATION BEFORE INSTALLATION. THE AMBIENT TEMPERATURE FOR 8732EM TRANSMITTER IS -40°C ≤ Ta ≤ 60°C AND THE AMBIENT TEMPERATURE RANGE FOR 8705-M OR 8711-M/L FLOWTUBES IS -29°C ≤ Ta ≤ 60°C. THEREFORE, THE -29°C RATING OF THE FLOWTUBES WILL LIMIT THE OVERALL COLD TEMPERATURE RANGE OF THE COMPLETE SYSTEM UNLESS OTHER APPROVED TEMPERATURE CONTROL METHODS ARE EMPLOYED.</p> <p>17. WHEN THE 8732EM TRANSMITTER IS INTEGRALLY MOUNTED TO 8705-W OR 8711-R/U FLOW TUBES, THE AMBIENT TEMPERATURE RANGES MARKED ON EACH PRODUCT NEED TO BE TAKEN INTO CONSIDERATION BEFORE INSTALLATION. THE AMBIENT TEMPERATURE FOR 8732EM TRANSMITTER IS -40°C ≤ Ta ≤ 60°C AND THE AMBIENT TEMPERATURE RANGE FOR 8705-W OR 8711-R/U FLOWTUBES IS -50°C ≤ Ta ≤ 60°C. THEREFORE, THE -40°C RATING OF THE TRANSMITTER WILL LIMIT THE OVERALL COLD TEMPERATURE RANGE OF THE COMPLETE SYSTEM UNLESS OTHER APPROVED TEMPERATURE CONTROL METHODS ARE EMPLOYED.</p> <p>18. TRANSMITTER OUTPUTS ARE CONSIDERED INTRINSICALLY SAFE WHEN INSTALLED IN ACCORDANCE TO INTRINSICALLY SAFE CONCEPTS AND INSTALLATION REQUIREMENTS WITHIN THIS DOCUMENT.</p>																																												
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! WARNING: EXPLOSION HAZARD - PRODUCT INSTALLATION SHALL COMPLY WITH INFORMATION AS STATED IN THIS DOCUMENT.

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REVISION TABLE											
REVISION	ECO NO.	APP'D	DATE								
AG	1082138	P.M.K.	5/24/18								
DESCRIPTION											
1) ADDED FIELDBUS, PROFIBUS AND FISCO CONCEPT INFORMATION											

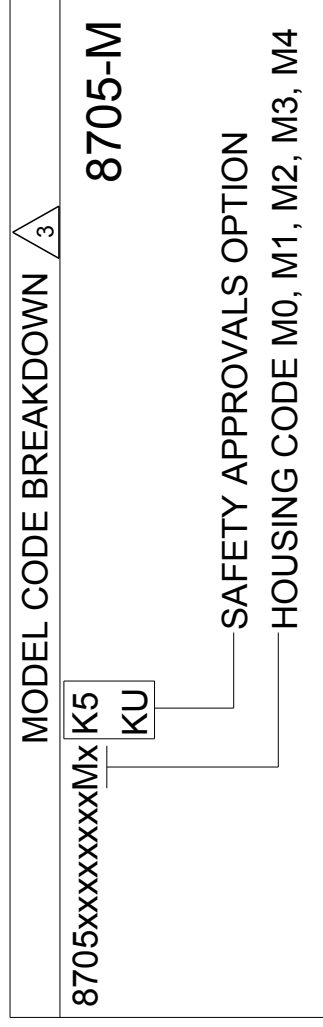
DRAWING NO. 08732-2061

CONFIDENTIAL AND PROPRIETARY INFORMATION IS CONTAINED HEREIN AND MUST BE HANDLED ACCORDINGLY.	SURFACE FINISH UNLESS OTHERWISE SPECIFIED	125	3RD ANGLE	SIZE	C	SCALE	-	REV	AG
TITLE ROSEMOUNT INSTALLATION DRAWING									
CSA CANADIAN AND USA CLASS DIVISION									
DR.	N. BOND	2/18/14	DRAWING NO.		08732-2061				
APP'D	E. MESSENGER	6/13/14	DOC TYPE		SHEET 1 OF 17				
DO NOT SCALE PRINT CAD MAINTAINED (PROJ)									

GAS ENVIRONMENT - CLASS I DIVISION 1 - US-NEC-ONLY - SENSORS AND TRANSMITTERS

EXPLOSION-PROOF INTEGRAL MOUNT CONFIGURATIONS

MODEL 8705-M INTEGRAL MOUNT CONFIGURATION WITH SAFETY APPROVAL OPTION 'K5' OR 'KU'



[US-NEC ONLY]
EXPLOSION-PROOF FOR CLASS I DIV 1 GRPS CD: T3...T6 WITH CARBON STEEL HOUSING (-29°C ≤ Ta ≤ 60°C) SEE TABLE 1 FOR PROCESS TEMPERATURE LIMITS AND ALLOWED MOUNTING CONFIGURATIONS 16

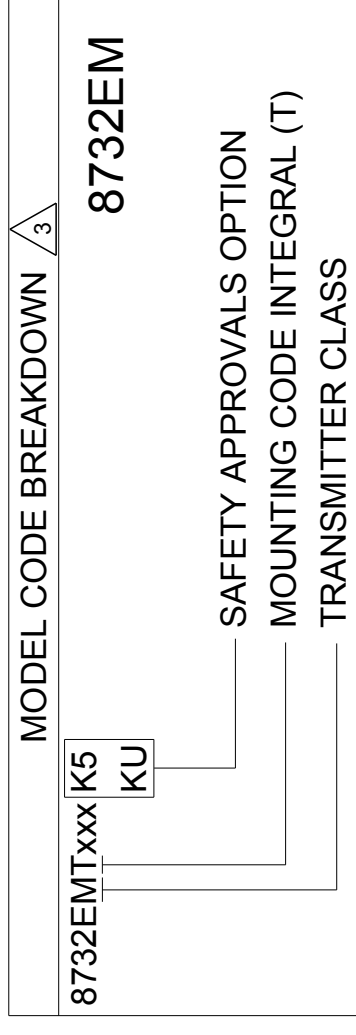
MODEL 8711-M INTEGRAL MOUNT CONFIGURATION WITH SAFETY APPROVAL OPTION 'K5' OR 'KU'



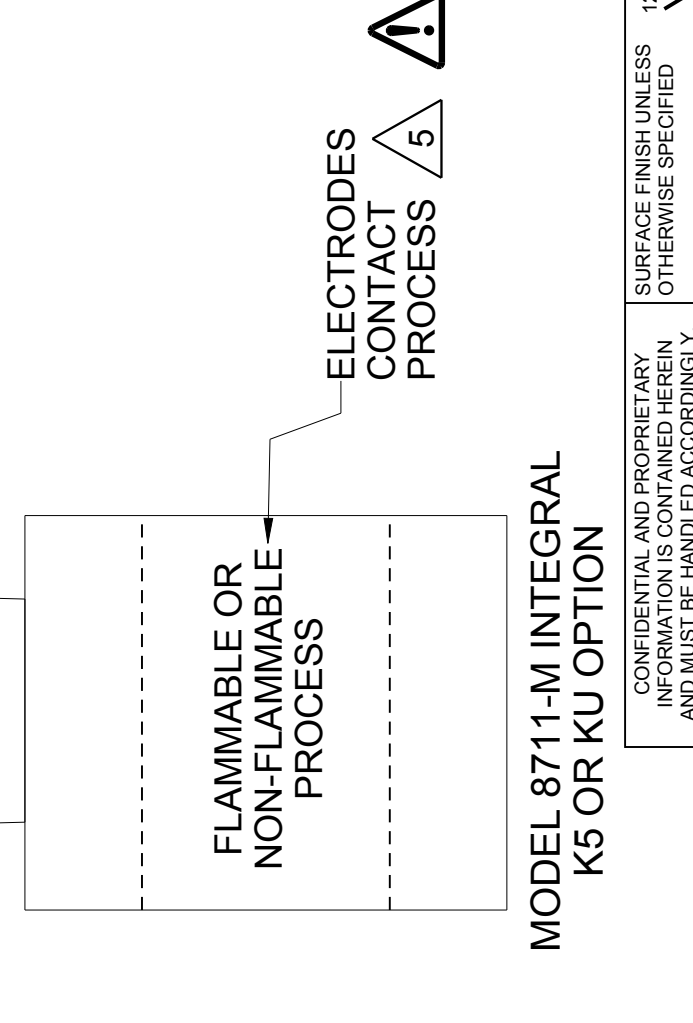
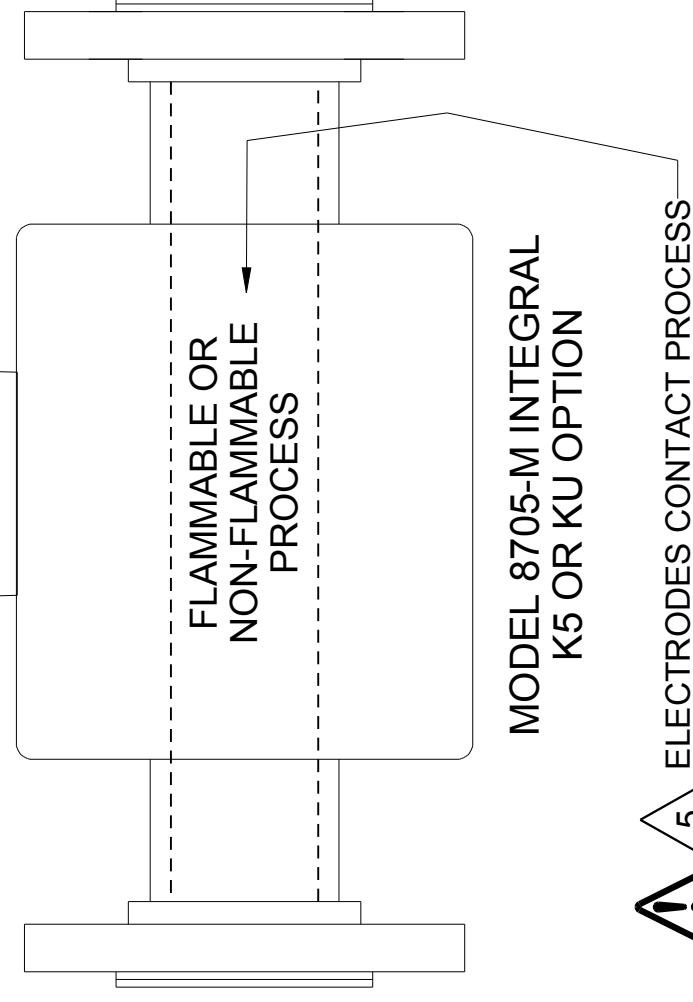
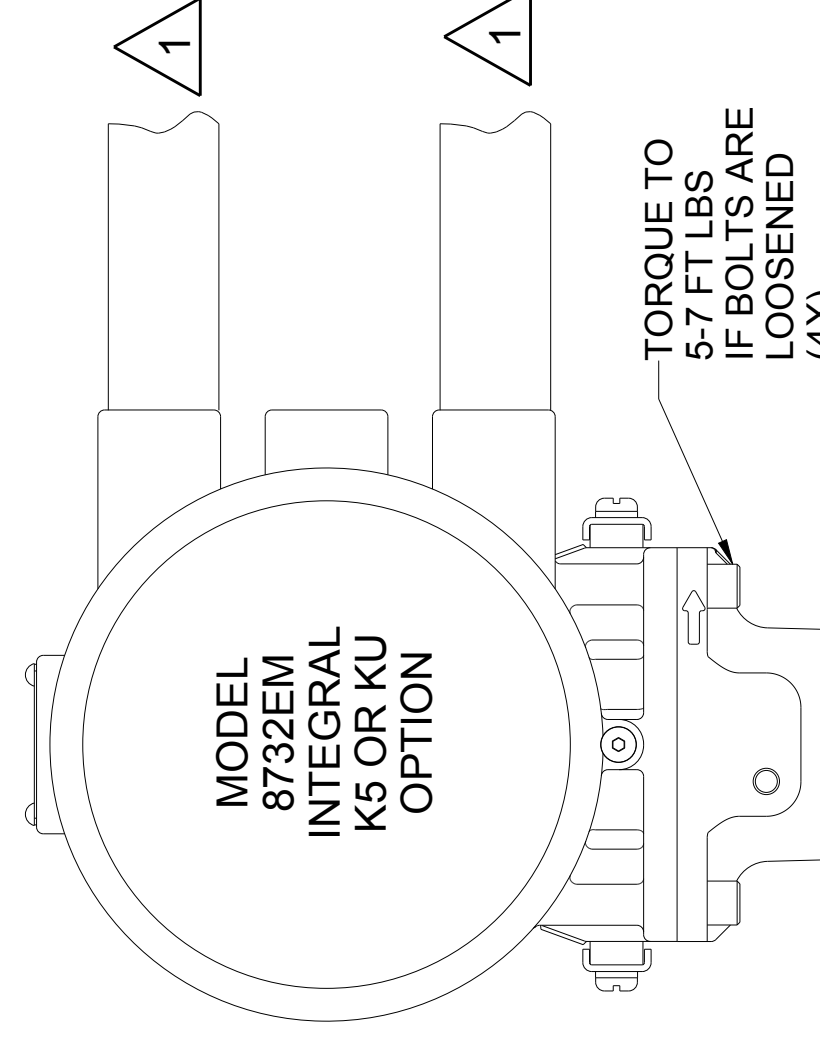
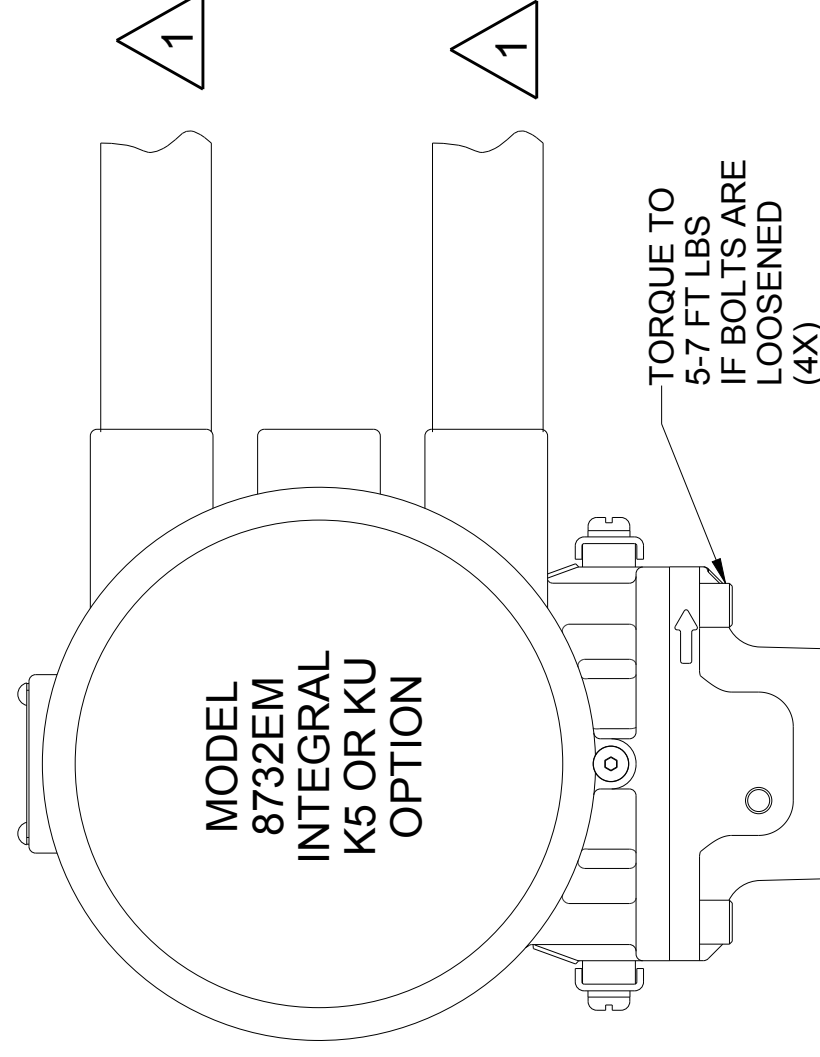
[US-NEC ONLY]
EXPLOSION-PROOF FOR CLASS I DIV 1 GRPS CD: T3...T6 WITH CARBON STEEL HOUSING (-29°C ≤ Ta ≤ 60°C) SEE TABLE 2 FOR PROCESS TEMPERATURE LIMITS AND ALLOWED MOUNTING CONFIGURATIONS 16

ALLOWED INTEGRAL MOUNT TRANSMITTER CONFIGURATIONS

MODEL 8732EM INTEGRAL MOUNT CONFIGURATION WITH SAFETY APPROVAL OPTION 'K5' OR 'KU'



[US-NEC ONLY]
EXPLOSION-PROOF FOR CLASS I DIV 1 GRPS CD: T6 FACTORY SEALED SEE TABLE 1 OR TABLE 2 FOR PROCESS TEMPERATURE LIMITS AND ALLOWED MOUNTING CONFIGURATIONS 16



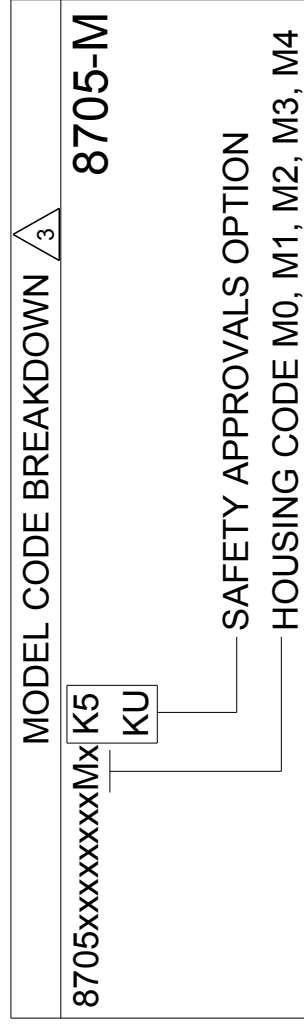
DRAWING NO. 08732-2061

CONFIDENTIAL AND PROPRIETARY INFORMATION IS CONTAINED HEREIN AND MUST BE HANDLED ACCORDINGLY.	SURFACE FINISH UNLESS OTHERWISE SPECIFIED 125	3RD ANGLE V	SIZE C	SCALE -	REV AG
EMERSON TITLE ROSEMOUNT					
INSTALLATION DRAWING					
CSA CANADIAN AND USA CLASS DIVISION					
DR.	N. BOND	2/18/14	DRAWING NO.	08732-2061	
APPD.	E. MESSENGER	6/13/14	DOC TYPE	SHEET2 OF 17	
DO NOT SCALE PRINT CAD MAINTAINED (PROJ) PRODUCT CODE					
UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES (mm). REMOVE ALL BURRS AND SHARP EDGES.					
X ± .1 [2.5]		.XX ± .02 [0.5]		.XXX ± .010 [0.25]	
FRACTIONS ± 1/32		ANGLES ± 2°			

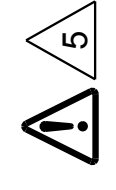
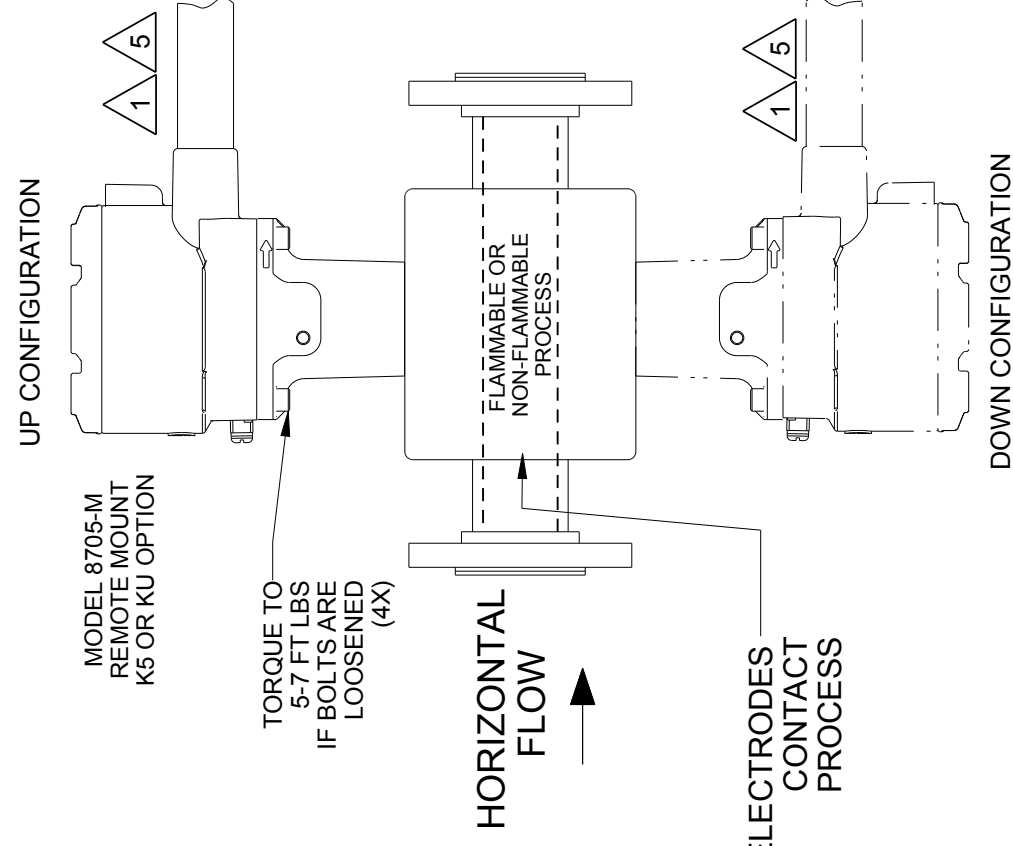
GAS ENVIRONMENT - CLASS I DIVISION 1 - US-NEC-ONLY - SENSORS AND ALLOWED REMOTE MOUNT CLASS I DIVISION 1 OR CLASS I DIVISION 2 TRANSMITTERS

EXPLOSION-PROOF SENSOR REMOTE MOUNT CONFIGURATIONS

MODEL 8705-M REMOTE CONFIGURATION
WITH SAFETY APPROVALS OPTION 'K5' OR 'KU'



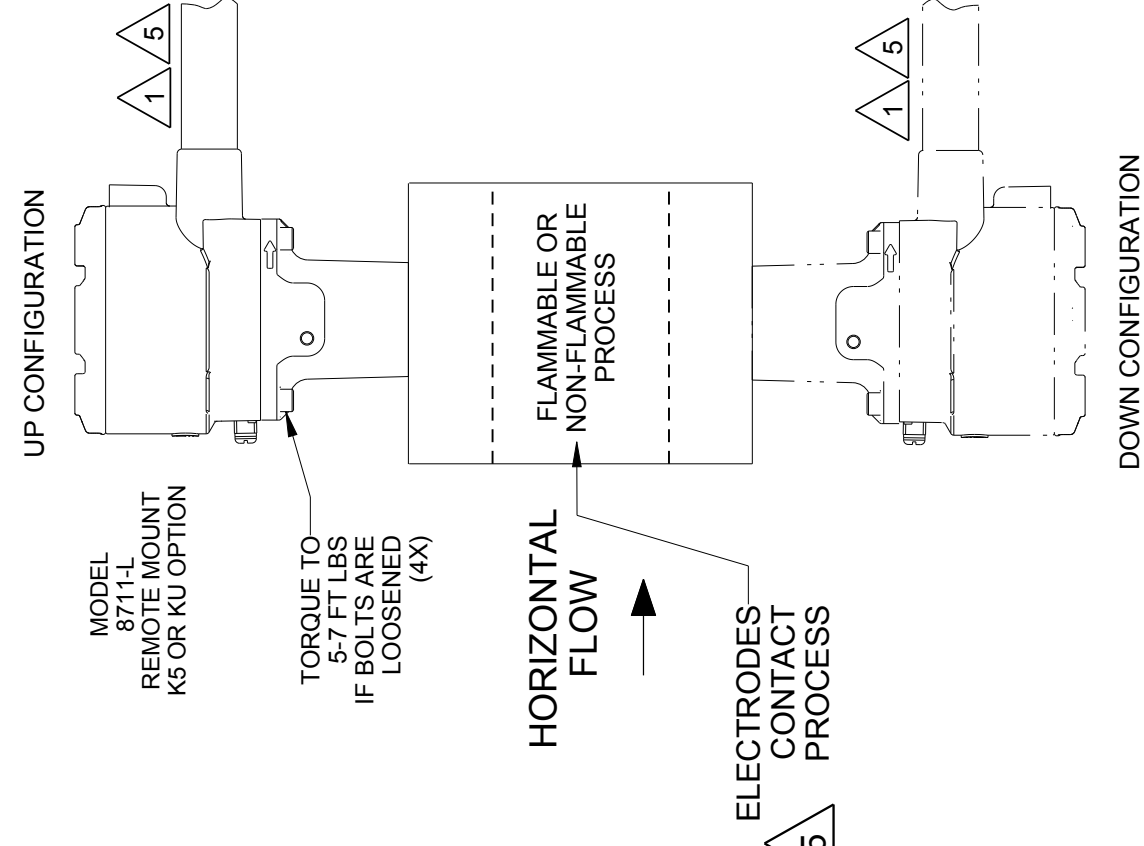
[US-NEC ONLY]
EXPLOSION-PROOF FOR CLASS I DIV 1 GRPS CD: T3...T6
WITH CARBON STEEL HOUSING (-29°C ≤ Ta ≤ 60°C)
SEE TABLE 1 FOR PROCESS TEMPERATURE LIMITS AND
ALLOWED MOUNTING CONFIGURATIONS



MODEL 8711-L REMOTE CONFIGURATION
WITH SAFETY APPROVALS OPTION 'K5' OR 'KU'

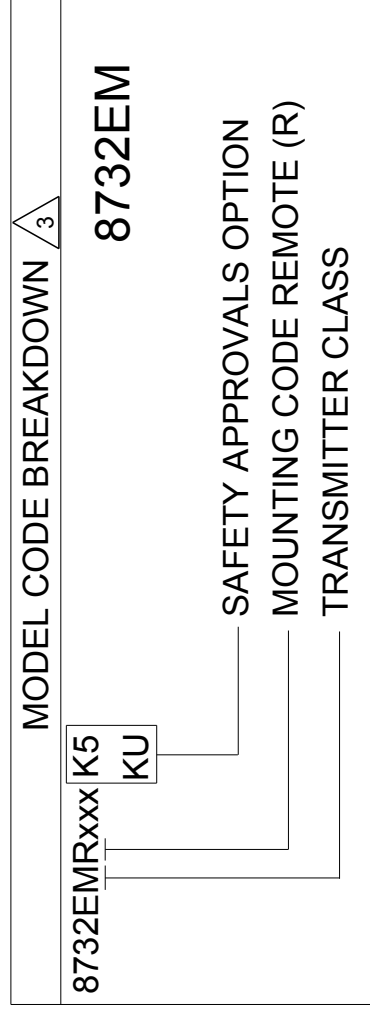


[US-NEC ONLY]
EXPLOSION-PROOF FOR CLASS I DIV 1 GRPS CD: T3...T6
WITH CARBON STEEL HOUSING (-29°C ≤ Ta ≤ 60°C)
SEE TABLE 2 FOR PROCESS TEMPERATURE LIMITS AND
ALLOWED MOUNTING CONFIGURATIONS

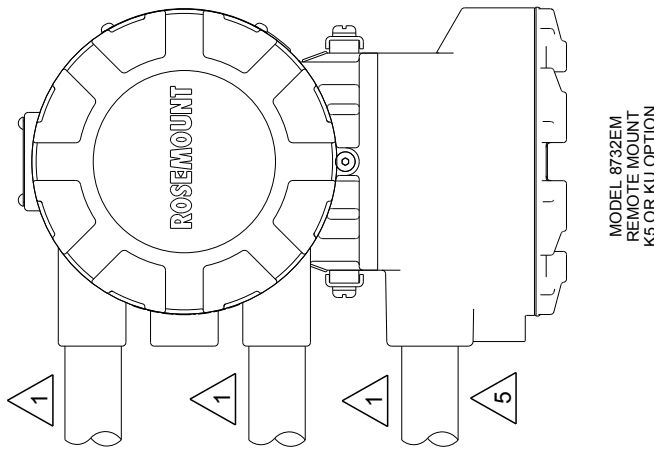


ALLOWED REMOTE MOUNT TRANSMITTER CONFIGURATIONS

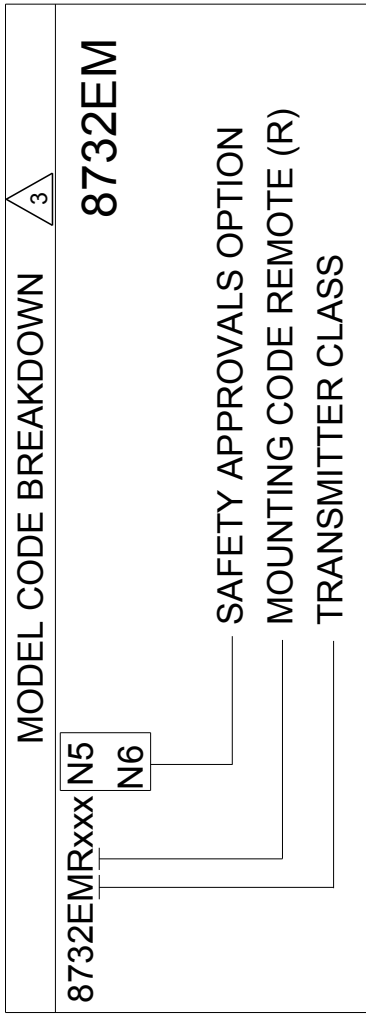
MODEL 8732EM REMOTE MOUNT CONFIGURATION
WITH SAFETY APPROVALS OPTION 'K5' OR 'KU'



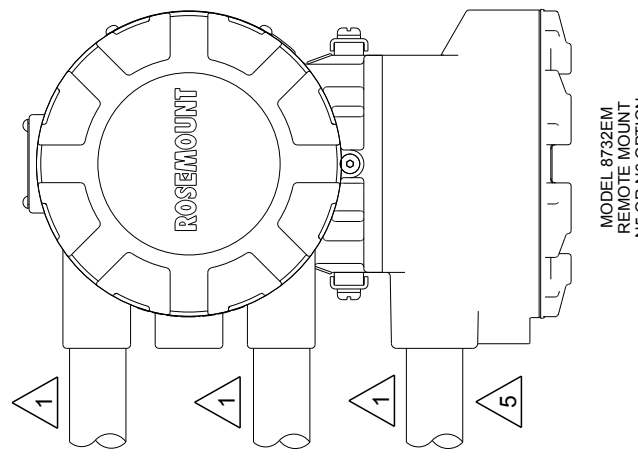
[US-NEC ONLY]
EXPLOSION-PROOF FOR CLASS I DIV 1 GRPS CD: T6
FACTORY SEALED
AMBIENT TEMPERATURE (-40°C ≤ Ta ≤ 60°C)



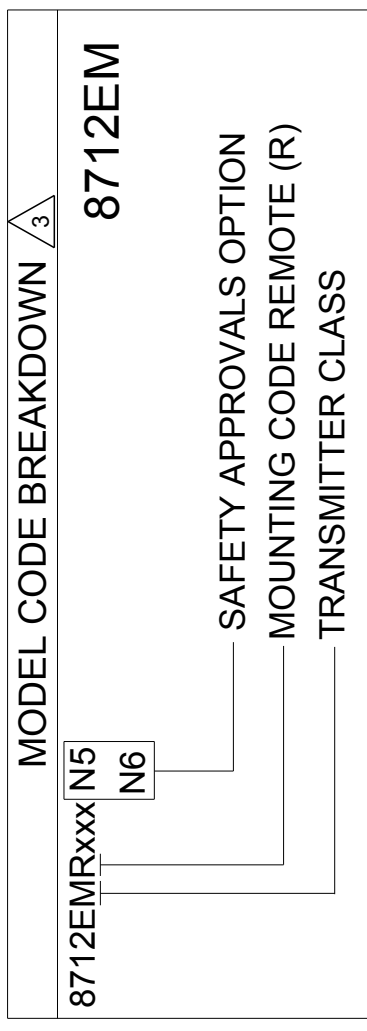
MODEL 8732EM REMOTE MOUNT CONFIGURATION
WITH SAFETY APPROVALS OPTION 'N5' OR 'N6'



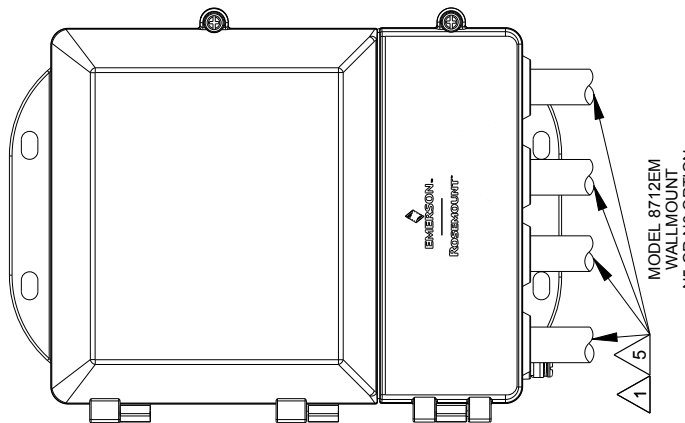
[US-NEC ONLY]
NON-INCENDIVE FOR CLASS I DIVISION 2 GRPS ABCD: T4
AMBIENT TEMPERATURE (-40°C ≤ Ta ≤ 60°C)



MODEL 8712EM REMOTE MOUNT CONFIGURATION
WITH SAFETY APPROVALS OPTION 'N5' OR 'N6'



[US-NEC ONLY]
NON-INCENDIVE FOR CLASS I DIVISION 2 GRPS ABCD: T4
AMBIENT TEMPERATURE (-40°C ≤ Ta ≤ 60°C)



EMERSON
TITLE
INSTALLATION DRAWING
ROSEMOUNT
CSA CANADIAN AND USA CLASS DIVISION

DR. N. BOND 2/18/14 DRAWING NO. 08732-2061
APPD. E. MESSENGER 6/13/14

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INFORMATION IS CONTAINED HEREIN
AND MUST BE HANDLED ACCORDINGLY.

UNLESS OTHERWISE SPECIFIED
DIMENSIONS IN INCHES (mm). REMOVE
ALL BURRS AND SHARP EDGES.

X ± .1 (2.5)	ANGLES ± .2°
.XX ± .02 (0.5)	
.XXX ± .010 (0.25)	
FRACTIONS ± .132	

SURFACE FINISH UNLESS OTHERWISE SPECIFIED 125
3RD ANGLE
SIZE C
SCALE -
REV AG
DRAWING NO. 08732-2061

GAS ENVIRONMENT - CLASS I DIVISION 1 SENSOR TEMPERATURE CODE VS. PROCESS TEMPERATURE LIMITS

TABLE 1

8705-M: EXPLOSION-PROOF MAXIMUM ALLOWABLE PROCESS TEMPERATURE VS. TEMPERATURE CODE AND TRANSMITTER MOUNTING CONFIGURATION			
Line Size	Maximum Allowable Process Temperature (°C)	Explosion-Proof Temperature Code	Transmitter Mounting Configuration
1/2"	60	T6	Integral/Remote
	90	T5	Integral/Remote
	120	T4	Integral/Remote
	180	T3	Remote
1"	60	T6	Integral/Remote
	90	T5	Integral/Remote
	120	T4	Integral/Remote
	180	T3	Remote
1.5"	60	T6	Integral/Remote
	90	T5	Integral/Remote
	105	T4	Integral/Remote
	170	T3	Remote
	60	T6	Integral/Remote
	90	T5	Integral/Remote
2"	60	T6	Integral/Remote
	90	T5	Integral/Remote
	105	T4	Integral/Remote
	170	T3	Remote
	60	T6	Integral/Remote
	90	T5	Integral/Remote
2.5"	60	T6	Integral/Remote
	90	T5	Integral/Remote
	110	T4	Remote
	170	T3	Remote
	60	T6	Integral/Remote
	90	T5	Integral/Remote
3"	60	T6	Integral/Remote
	90	T5	Integral/Remote
	115	T4	Remote
	175	T3	Remote
	60	T6	Integral/Remote
	90	T5	Integral/Remote
4"	60	T6	Integral/Remote
	90	T5	Integral/Remote
	115	T4	Remote
	175	T3	Remote
	60	T6	Integral/Remote
	90	T5	Integral/Remote
5"	60	T6	Integral/Remote
	90	T5	Integral/Remote
	120	T4	Remote
	175	T3	Remote
	60	T6	Integral/Remote
	90	T5	Integral/Remote
6"	60	T6	Integral/Remote
	90	T5	Integral/Remote
	120	T4	Remote
	180	T3	Remote
	60	T6	Integral/Remote
	90	T5	Integral/Remote
8-36"	60	T6	Integral/Remote
	90	T5	Remote
	120	T4	Remote
	180	T3	Remote**

**LINE SIZES 8" AND GREATER WITH HORIZONTAL FLOW SHOULD BE MOUNTED WITH REMOTE JUNCTION BOX (RJB) DOWN OR TO THE SIDE

TABLE 2

8711-ML: EXPLOSION-PROOF MAXIMUM ALLOWABLE PROCESS TEMPERATURE VS. TEMPERATURE CODE AND TRANSMITTER MOUNTING CONFIGURATION				
Line Size	Maximum Allowable Process Temperature (°C)	Explosion-Proof Temperature Code	Remote Junction Box Orientation	Transmitter Mounting Configuration
1.5"	60	T6	Any	Integral/Remote
	80	T5	Any	Remote
	100	T4	Any	Remote
	160	T3	Down Or To The Side Only	Remote
2"	60	T6	Any	Integral/Remote
	80	T5	Any	Remote
	100	T4	Any	Remote
	160	T3	Down Or To The Side Only	Remote
3"	60	T6	Any	Integral/Remote
	80	T5	Any	Remote
	110	T4	Any	Remote
	170	T3	Down Or To The Side Only	Remote
	60	T6	Any	Integral/Remote
	80	T5	Any	Remote
4"	115	T4	Any	Remote
	175	T3	Down Or To The Side Only	Remote
	60	T6	Any	Integral/Remote
	80	T5	Any	Remote
6"	115	T4	Any	Remote
	180	T3	Down Or To The Side Only	Remote
	60	T6	Any	Integral/Remote
	80	T5	Any	Remote
	115	T4	Any	Remote
	175	T3	Down Or To The Side Only	Remote
8"	60	T6	Any	Integral/Remote
	80	T5	Any	Remote
	115	T4	Any	Remote
	180	T3	Down Or To The Side Only	Remote

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UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES (mm). REMOVE ALL BURRS AND SHARP EDGES.

-DEC TOLERANCES-
X ± .1 [2.5]
.XX ± .02 [0.5]
.XXX ± .010 [0.25]
FRACTIONS ± 1/32 ANGLES ± 2°

SURFACE FINISH UNLESS OTHERWISE SPECIFIED



3RD ANGLE



SIZE C

SCALE -

REV AG



ROSEMOUNT

TITLE
INSTALLATION DRAWING

CSA CANADIAN AND USA CLASS DIVISION

DR. N. BOND 2/18/14 DRAWING NO. 08732-2061
APPD. E. MESSENGER 6/13/14

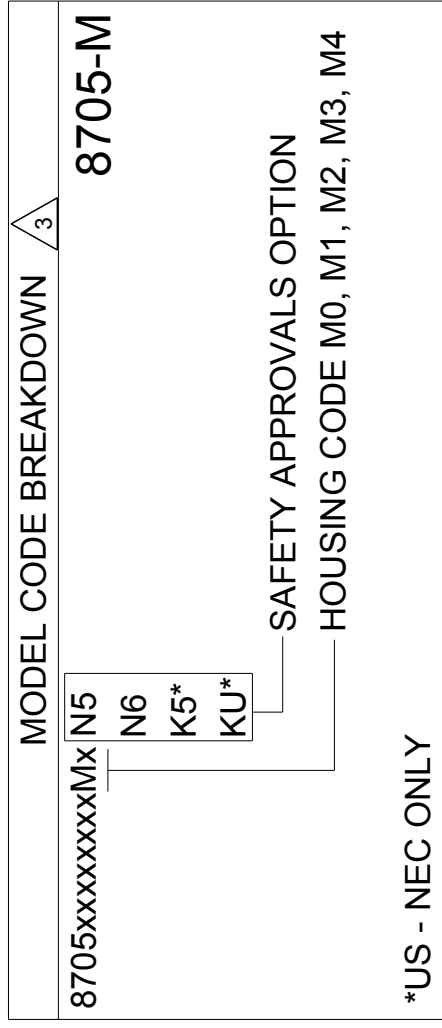
DO NOT SCALE PRINT CAD MAINTAINED (PROJ) PRODUCT CODE SHEET 4 OF 17

DRAWING NO. 08732-2061

GAS ENVIRONMENT - CLASS I DIVISION 2 SENSORS AND ALLOWED INTEGRAL MOUNT CLASS I DIVISION 2 TRANSMITTERS

NON-INCENDIVE SENSOR INTEGRAL MOUNT CONFIGURATIONS

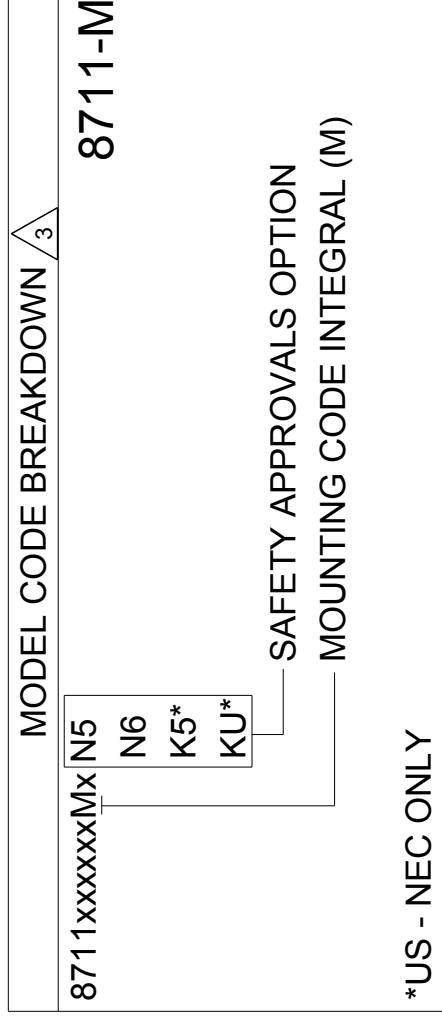
MODEL 8705-M INTEGRAL MOUNT CONFIGURATION
WITH SAFETY APPROVAL OPTION 'N5', 'N6', 'K5', OR 'KU'



*US - NEC ONLY

NON-INCENDIVE FOR CLASS I, DIV. 2, GRPS A,B,C,D; T3...T5
WITH CARBON STEEL HOUSING (-29°C ≤ Ta ≤ 60°C)
SEE TABLE 3 FOR PROCESS TEMPERATURE
LIMITS AND ALLOWED MOUNTING CONFIGURATIONS

MODEL 8711-M INTEGRAL MOUNT CONFIGURATION
WITH SAFETY APPROVAL OPTION 'N5', 'N6', 'K5', OR 'KU'

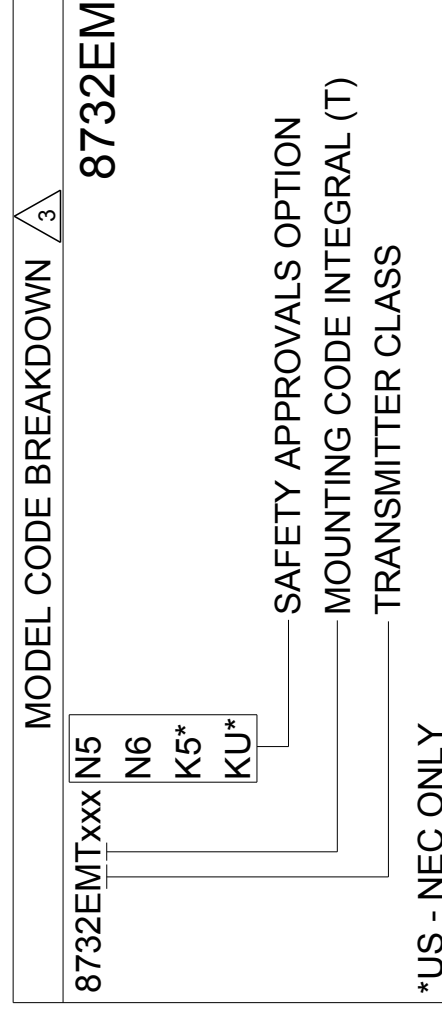


*US - NEC ONLY

NON-INCENDIVE FOR CLASS I, DIV. 2, GRPS A,B,C,D; T3...T5
WITH CARBON STEEL HOUSING (-29°C ≤ Ta ≤ 60°C)
SEE TABLE 4 FOR PROCESS TEMPERATURE
LIMITS AND ALLOWED MOUNTING CONFIGURATIONS

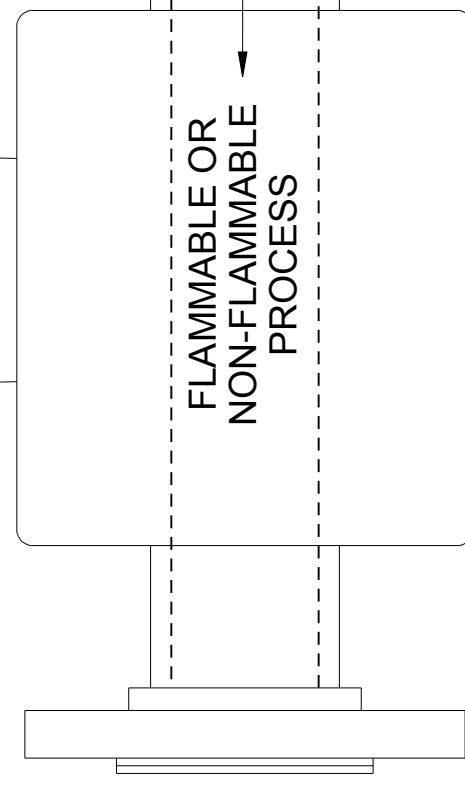
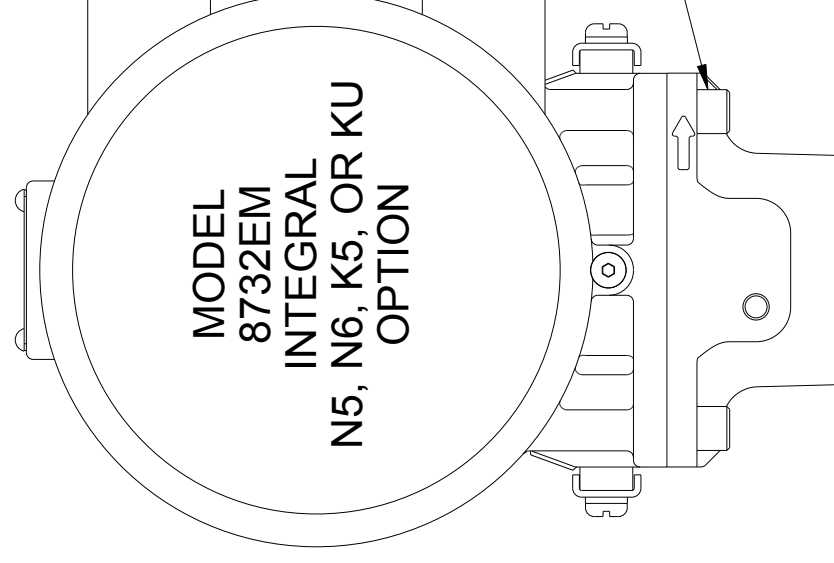
ALLOWED INTEGRAL MOUNT TRANSMITTER CONFIGURATIONS

MODEL 8732EM INTEGRAL MOUNT CONFIGURATION
WITH SAFETY APPROVAL OPTION 'N5', 'N6', 'K5', OR 'KU'



*US - NEC ONLY

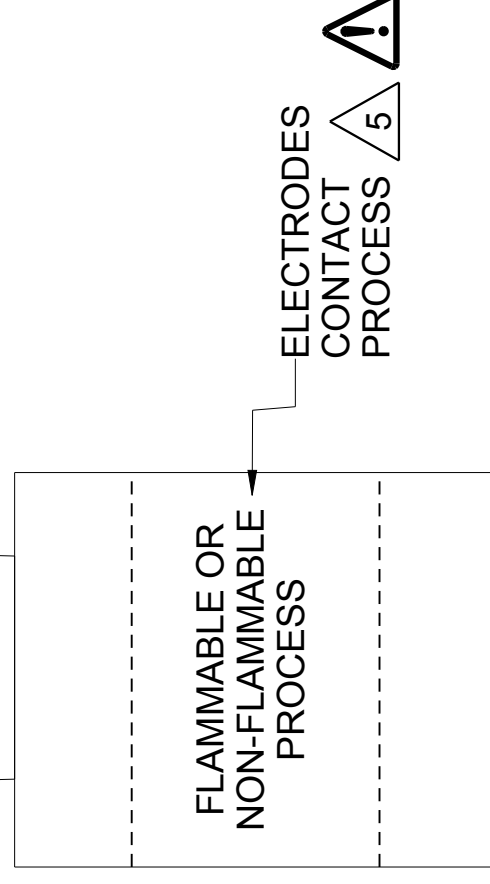
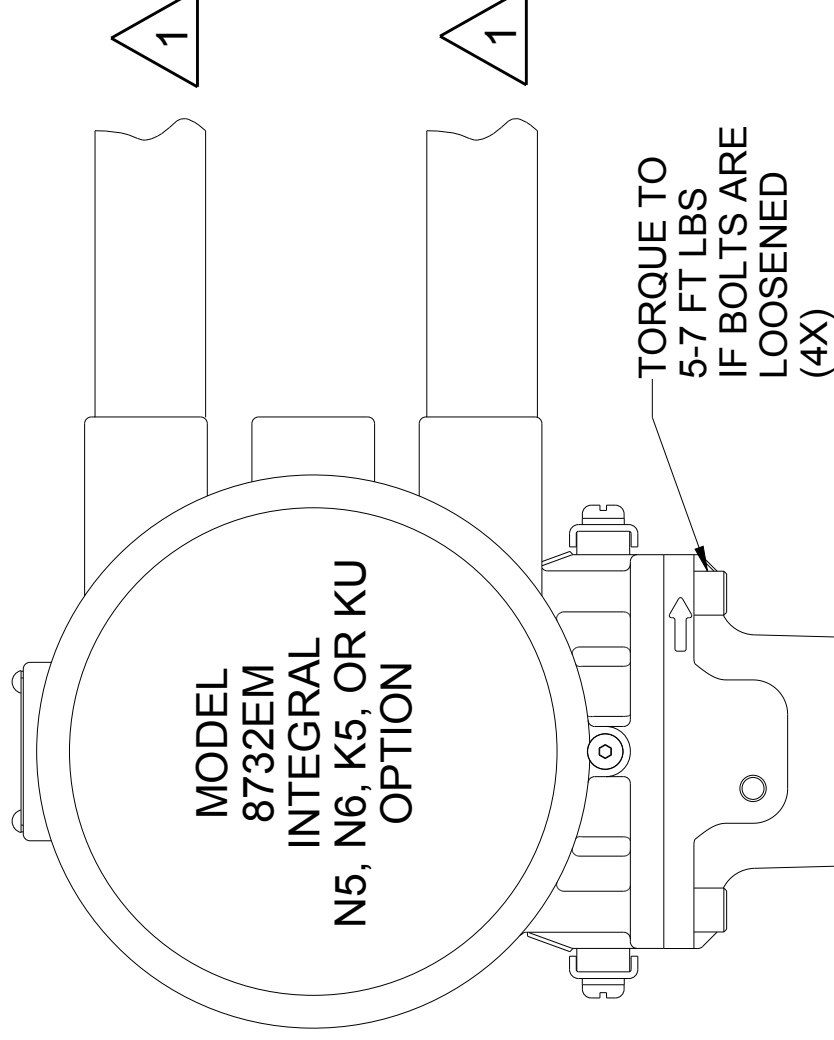
NON-INCENDIVE FOR CLASS I, DIV. 2, GRPS A,B,C,D; T4
SEE TABLE 3 OR TABLE 4 FOR PROCESS TEMPERATURE
LIMITS AND ALLOWED MOUNTING CONFIGURATIONS



MODEL 8705-M INTEGRAL
N5, N6, K5, OR KU OPTION



ELECTRODES CONTACT PROCESS



MODEL 8711-M INTEGRAL
N5, N6, K5, OR KU OPTION



ELECTRODES CONTACT PROCESS

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AND MUST BE HANDLED ACCORDINGLY.

UNLESS OTHERWISE SPECIFIED
DIMENSIONS IN INCHES (mm). REMOVE
ALL BURRS AND SHARP EDGES.

-DEC TOLERANCES-	
X ± .1	[2.5]
.XX ± .02	[0.5]
.XXX ± .010	[0.25]
FRACTIONS ± 1/32	ANGLES ± 2°

DO NOT SCALE PRINT | CAD MAINTAINED (PROJ) | PRODUCT CODE

SURFACE FINISH UNLESS OTHERWISE SPECIFIED

125°

3RD ANGLE

SIZE C

SCALE -

REV AG

EMERSON
ROSEMOUNT

TITLE
INSTALLATION DRAWING

CSA CANADIAN AND USA CLASS DIVISION

DR. N. BOND 2/18/14 DRAWING NO. 08732-2061

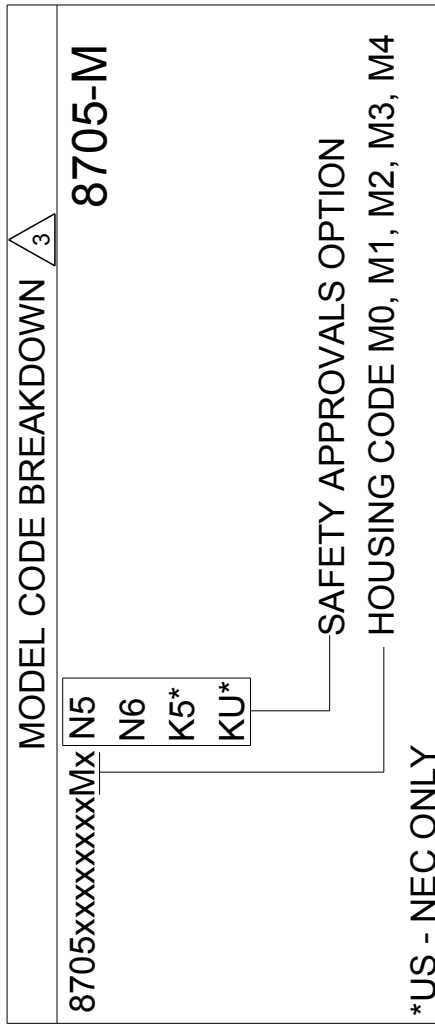
APPD. E. MESSENGER 6/13/14 SHEET 5 OF 17

08732-2061
DRAWING NO.

GAS ENVIRONMENT - CLASS I DIVISION 2 SENSORS AND ALLOWED REMOTE MOUNT CLASS I DIVISION 1 OR CLASS 1 DIVISION 2 TRANSMITTERS

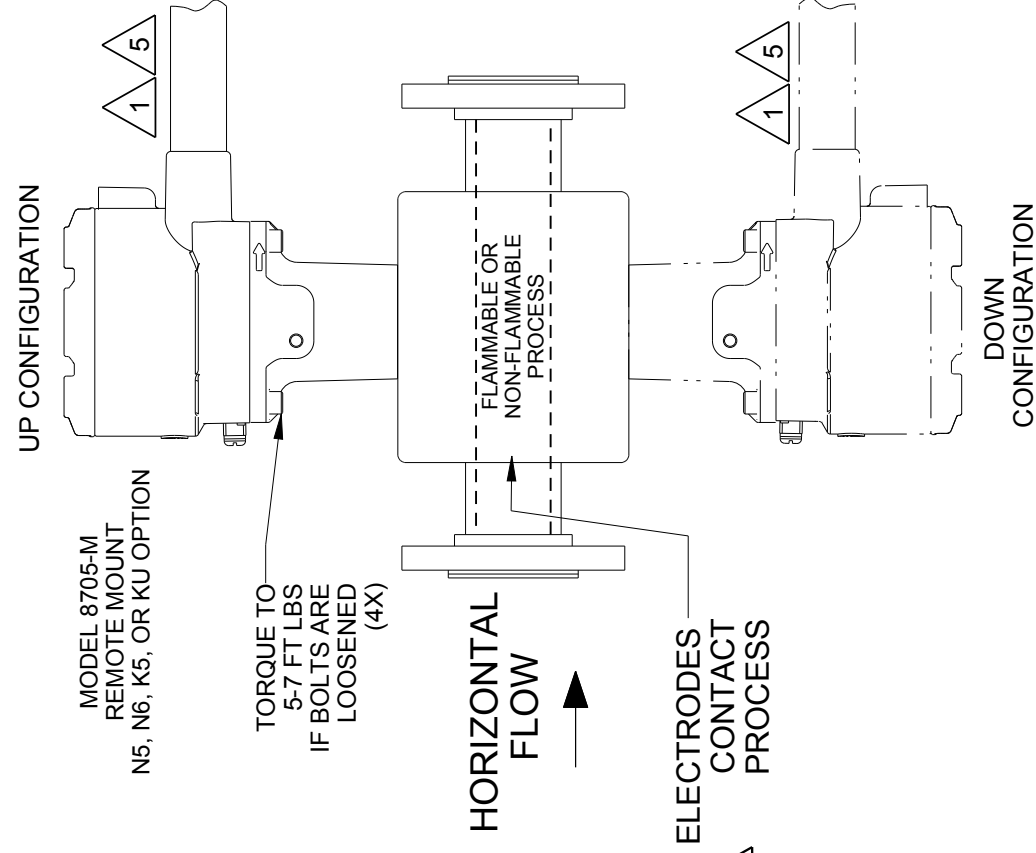
NON-INCENDIVE SENSOR REMOTE MOUNT CONFIGURATIONS

MODEL 8705-M REMOTE CONFIGURATION WITH SAFETY APPROVAL OPTION 'N5', 'N6', 'K5', OR 'KU'



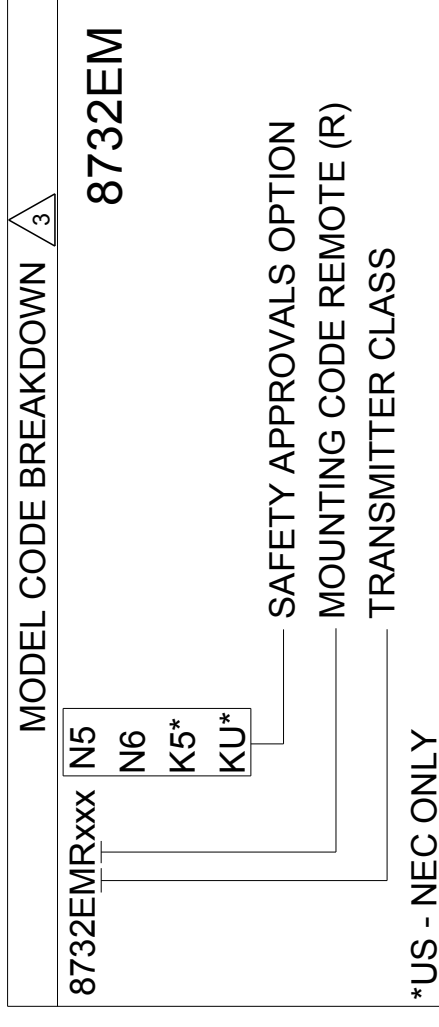
*US - NEC ONLY

NON-INCENDIVE FOR CLASS I, DIV. 2, GRPS A,B,C,D; T3...T5 WITH CARBON STEEL HOUSING (-29°C ≤ Ta ≤ 60°C) SEE TABLE 4 FOR PROCESS TEMPERATURE LIMITS AND ALLOWED MOUNTING CONFIGURATIONS



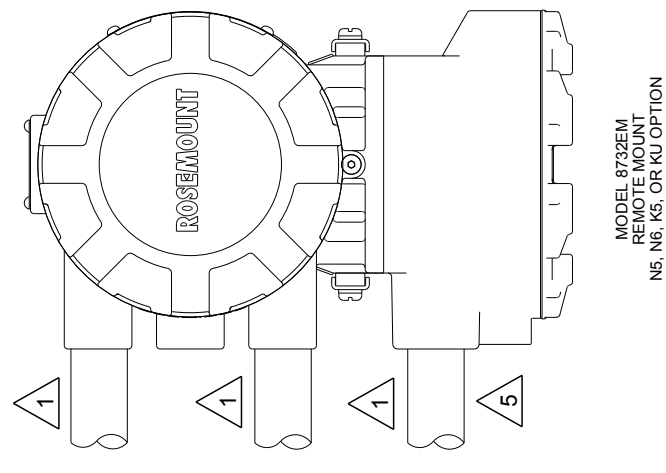
ALLOWED REMOTE MOUNT TRANSMITTER CONFIGURATIONS

MODEL 8732EM REMOTE MOUNT CONFIGURATION WITH SAFETY APPROVAL OPTION 'N5', 'N6', 'K5', OR 'KU'

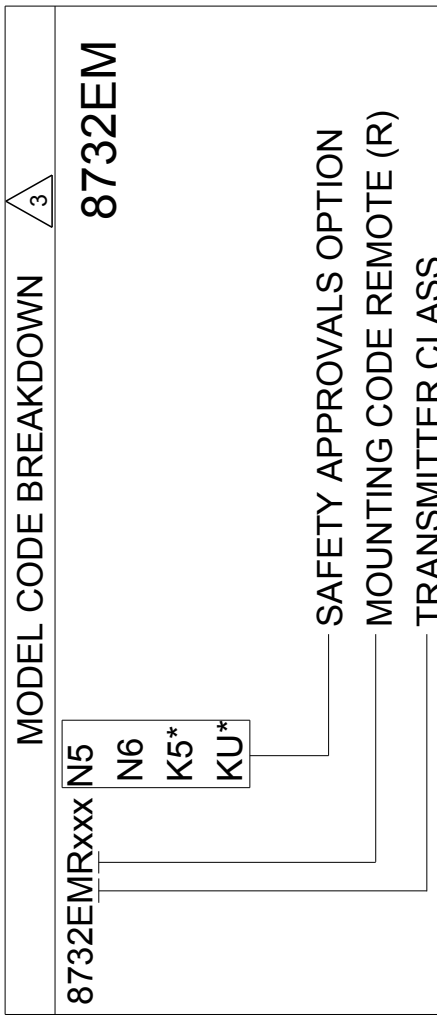


*US - NEC ONLY

[US-NEC ONLY] EXPLOSION-PROOF FOR CLASS I DIV 1 GRPS CD: T6 FACTORY SEALED AMBIENT TEMPERATURE (-40°C ≤ Ta ≤ 60°C)

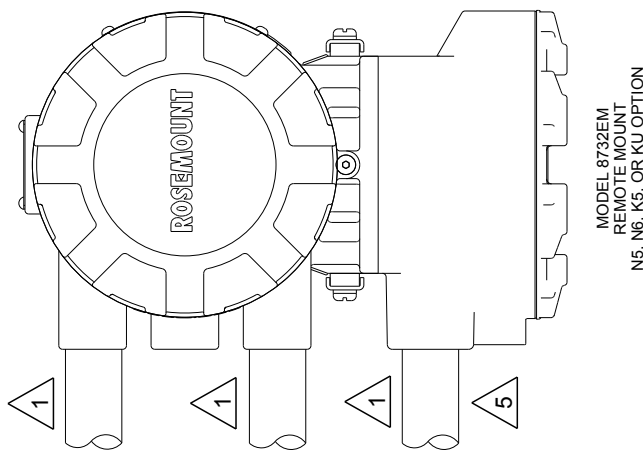


MODEL 8732EM REMOTE MOUNT CONFIGURATION WITH SAFETY APPROVAL OPTION 'N5', 'N6', 'K5', OR 'KU'

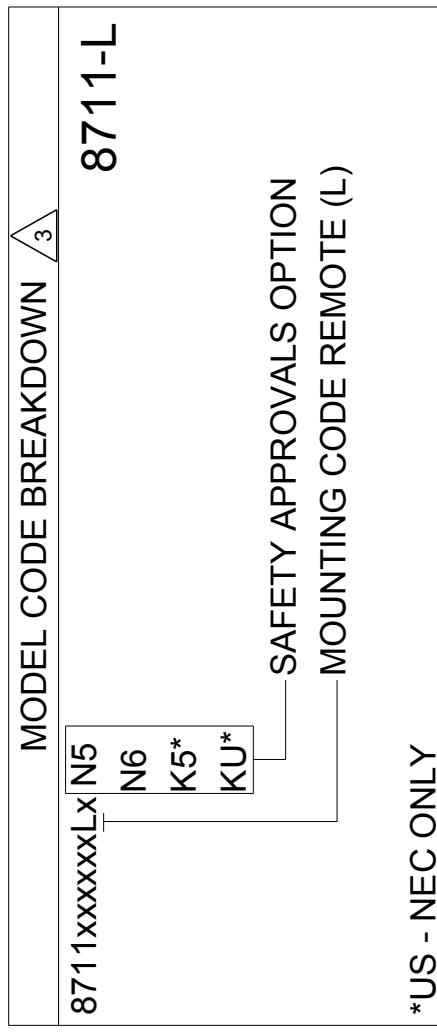


*US - NEC ONLY

NON-INCENDIVE FOR CLASS I DIVISION 2 GRPS ABCD: T4 AMBIENT TEMPERATURE (-40°C ≤ Ta ≤ 60°C)

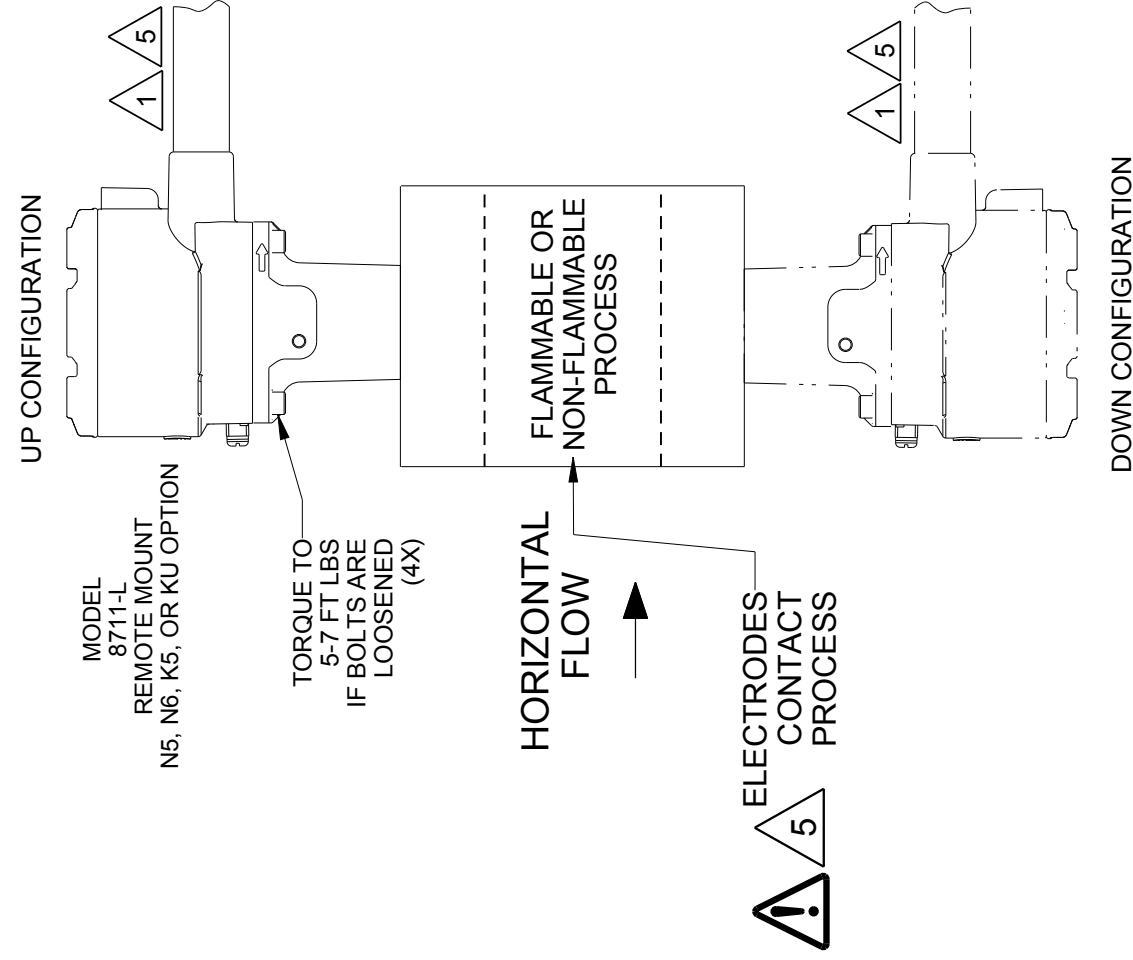


MODEL 8711-L REMOTE CONFIGURATION WITH SAFETY APPROVAL OPTION 'N5', 'N6', 'K5', OR 'KU'

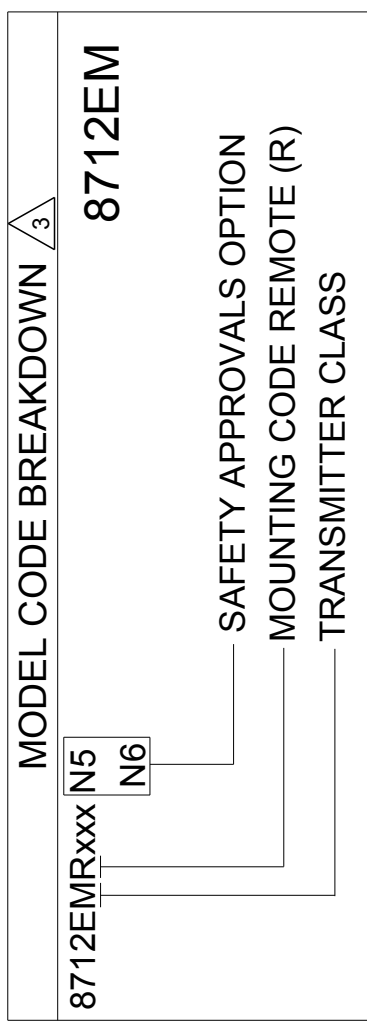


*US - NEC ONLY

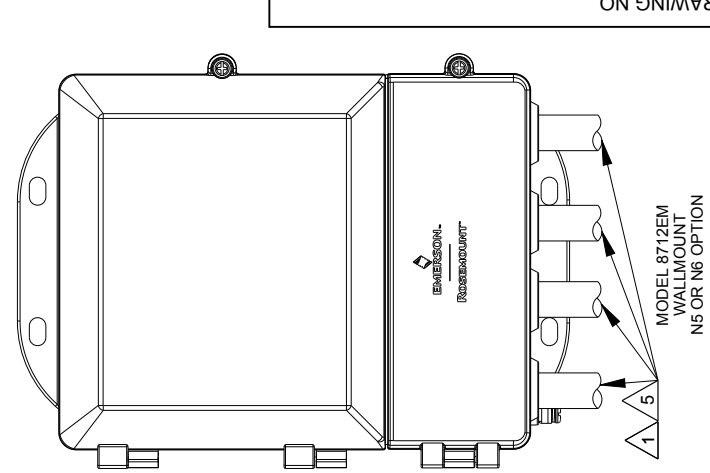
NON-INCENDIVE FOR CLASS I, DIV. 2, GRPS A,B,C,D; T3...T5 WITH CARBON STEEL HOUSING (-29°C ≤ Ta ≤ 60°C) SEE TABLE 4 FOR PROCESS TEMPERATURE LIMITS AND ALLOWED MOUNTING CONFIGURATIONS



MODEL 8712EM REMOTE MOUNT CONFIGURATION WITH SAFETY APPROVAL OPTION 'N5' OR 'N6'



NON-INCENDIVE FOR CLASS I DIVISION 2 GRPS ABCD: T4 AMBIENT TEMPERATURE (-40°C ≤ Ta ≤ 60°C)



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UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES (mm). REMOVE ALL BURRS AND SHARP EDGES.

-DEC TOLERANCES-	
X ± .1	[2.5]
.XX ± .02	[0.5]
.XXX ± .010	[0.25]
FRACTIONS ± 1/32	ANGLES ± 2°

SURFACE FINISH UNLESS OTHERWISE SPECIFIED

125° 3RD ANGLE

SIZE C

SCALE -

REV AG



ROSEMOUNT

INSTALLATION DRAWING

CSA CANADIAN AND USA CLASS DIVISION

DR. N. BOND 2/18/14 DRAWING NO. 08732-2061

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GAS ENVIRONMENT - CLASS I DIVISION 2 SENSOR TEMPERATURE CODE VS. PROCESS TEMPERATURE LIMITS

TABLE 3

8705-M: CLASS I DIVISION 2 MAXIMUM ALLOWABLE PROCESS TEMPERATURE VS. TEMPERATURE CODE AND TRANSMITTER MOUNTING CONFIGURATION			
Line Size	Maximum Allowable Process Temperature (°C)	Temperature Code	Transmitter Mounting Configuration
1/2"	60	T5	Integral/Remote
	120	T4	Integral/Remote
	180	T3	Remote
1"	60	T5	Integral/Remote
	120	T4	Integral/Remote
	180	T3	Remote
1.5"	60	T5	Integral/Remote
	105	T4	Integral/Remote
	170	T3	Remote
2"	60	T5	Integral/Remote
	105	T4	Integral/Remote
	170	T3	Remote
2.5"	60	T5	Integral/Remote
	110	T4	Remote
	170	T3	Remote
3"	60	T5	Integral/Remote
	115	T4	Remote
	175	T3	Remote
4"	60	T5	Integral/Remote
	115	T4	Remote
	175	T3	Remote
5"	60	T5	Integral/Remote
	120	T4	Remote
	175	T3	Remote
6"	60	T5	Integral/Remote
	120	T4	Remote
	180	T3	Remote
8-36"	60	T5	Integral/Remote
	120	T4	Remote
	180	T3	Remote**

**LINE SIZE 8" AND GREATER WITH HORIZONTAL FLOW SHOULD BE MOUNTED WITH REMOTE JUNCTION BOX (RJB) DOWN OR TO THE SIDE

TABLE 4

8711-M/L: CLASS I DIVISION 2 MAXIMUM ALLOWABLE PROCESS TEMPERATURE VS. TEMPERATURE CODE AND TRANSMITTER MOUNTING CONFIGURATION			
Line Size	Maximum Allowable Process Temperature (°C)	Temperature Code	Remote Junction Box Orientation Transmitter Mounting Configuration
1.5"	60	T5	Any Integral/Remote
	100	T4	Any Remote
	160	T3	Down Or To The Side Only Remote
2"	60	T5	Any Integral/Remote
	100	T4	Any Remote
	160	T3	Down Or To The Side Only Remote
3"	60	T5	Any Integral/Remote
	110	T4	Any Remote
	170	T3	Down Or To The Side Only Remote
4"	60	T5	Any Integral/Remote
	115	T4	Any Remote
	175	T3	Down Or To The Side Only Remote
6"	60	T5	Any Integral/Remote
	115	T4	Any Remote
	180	T3	Down Or To The Side Only Remote
8"	60	T5	Any Integral/Remote
	115	T4	Any Remote
	180	T3	Down Or To The Side Only Remote

DRAWING NO. 08732-2061

CONFIDENTIAL AND PROPRIETARY INFORMATION IS CONTAINED HEREIN AND MUST BE HANDLED ACCORDINGLY.	SURFACE FINISH UNLESS OTHERWISE SPECIFIED	125°	3RD ANGLE	SIZE C	SCALE -	REV AG
TITLE ROSEMOUNT						
UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES (mm). REMOVE ALL BURRS AND SHARP EDGES.						
-DEC TOLERANCES- X ± .1 [2.5] .XX ± .02 [0.5] .XXX ± .010 [0.25] FRACTIONS ± 1/32 ANGLES ± 2°						
DO NOT SCALE PRINT CAD MAINTAINED (PROE) PRODUCT CODE			SHEET 7 OF 17		DRAWING NO. 08732-2061	

INSTALLATION DRAWING

ROSEMOUNT

EMERSON

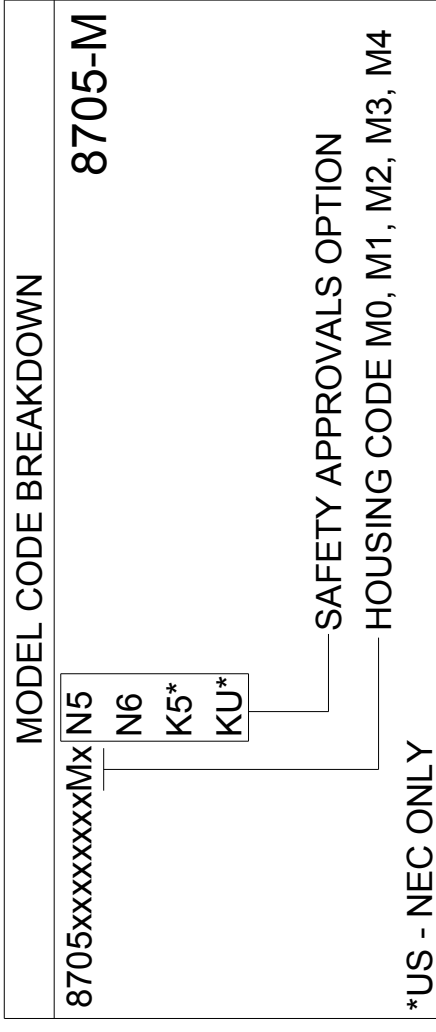
CSA CANADIAN AND USA CLASS DIVISION

DR. N. BOND 2/18/14 DRAWING NO. 08732-2061
 APPD. E. MESSENGER 6/13/14

DUST ENVIRONMENT - CLASS II/III DIVISION 1 SENSORS AND ALLOWED INTEGRAL MOUNT CLASS II/III DIVISION 1 TRANSMITTERS

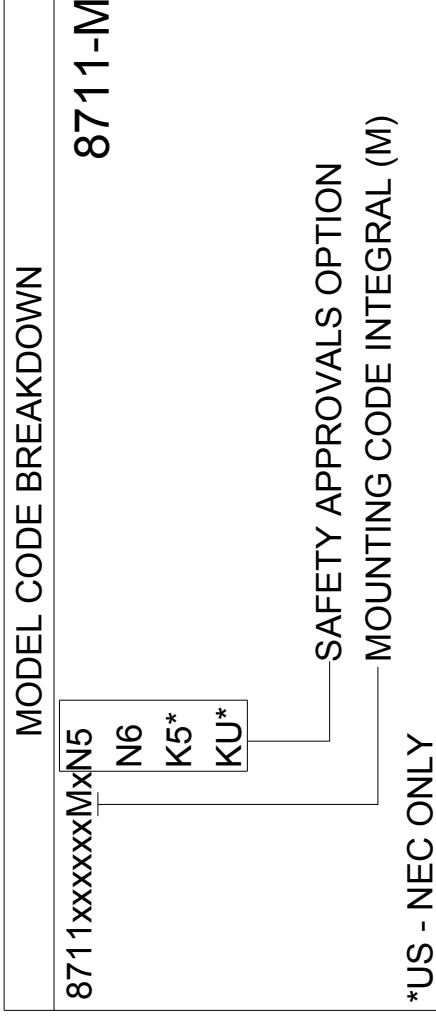
DUST-IGNITION PROOF SENSOR INTEGRAL MOUNT CONFIGURATIONS

MODEL 8705-M INTEGRAL MOUNT CONFIGURATION
WITH SAFETY APPROVALS OPTIONS 'N5', 'N6', 'K5', OR 'KU'



DUST-IGNITION PROOF FOR CLASS II/III DIV1 GRPS: EFG: T2...T5
WITH CARBON STEEL HOUSING (-29°C ≤ Ta ≤ 60°C)
SEE TABLE 5 FOR PROCESS TEMPERATURE LIMITS AND
ALLOWED MOUNTING CONFIGURATIONS

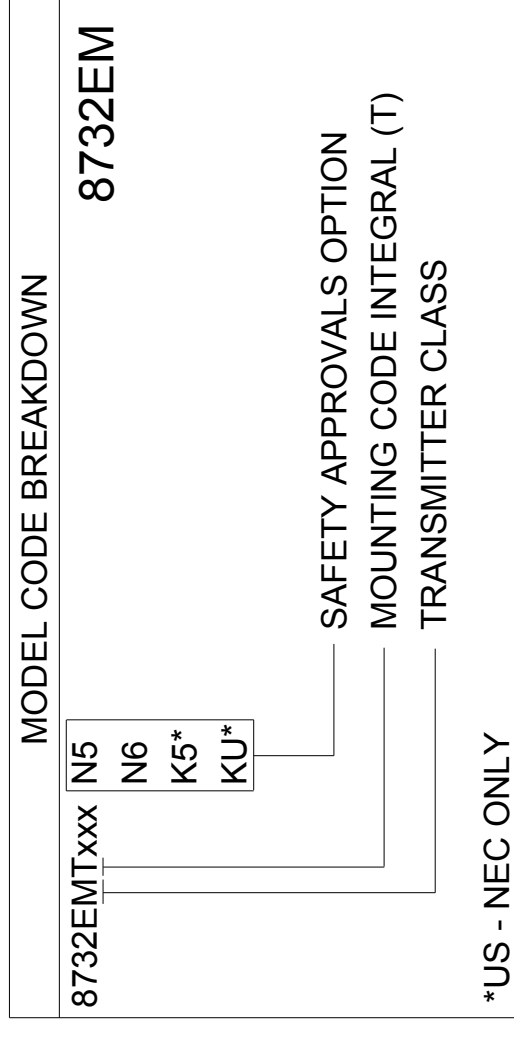
MODEL 8711-M INTEGRAL MOUNT CONFIGURATION
WITH SAFETY APPROVALS OPTIONS 'N5', 'N6', 'K5', OR 'KU'



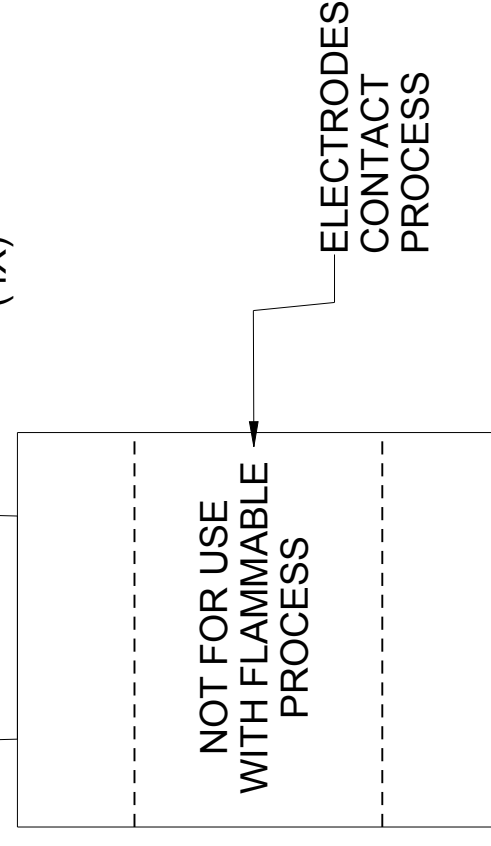
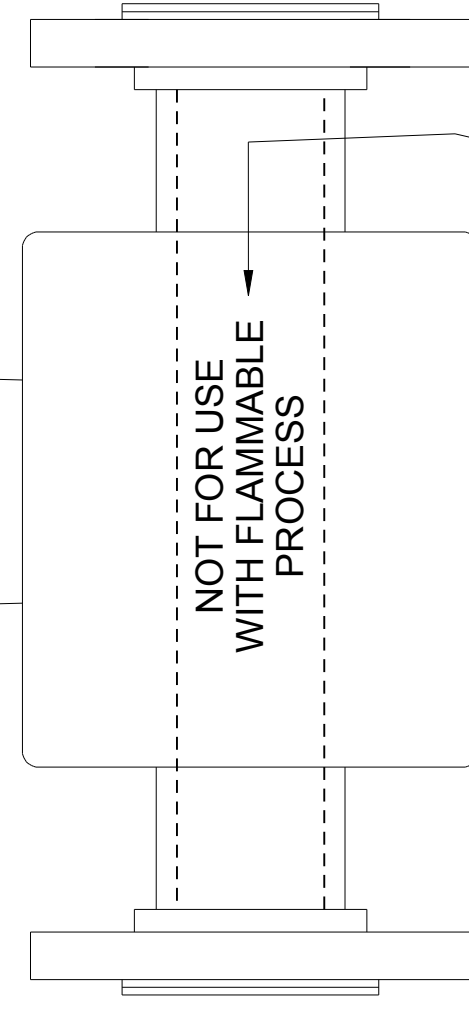
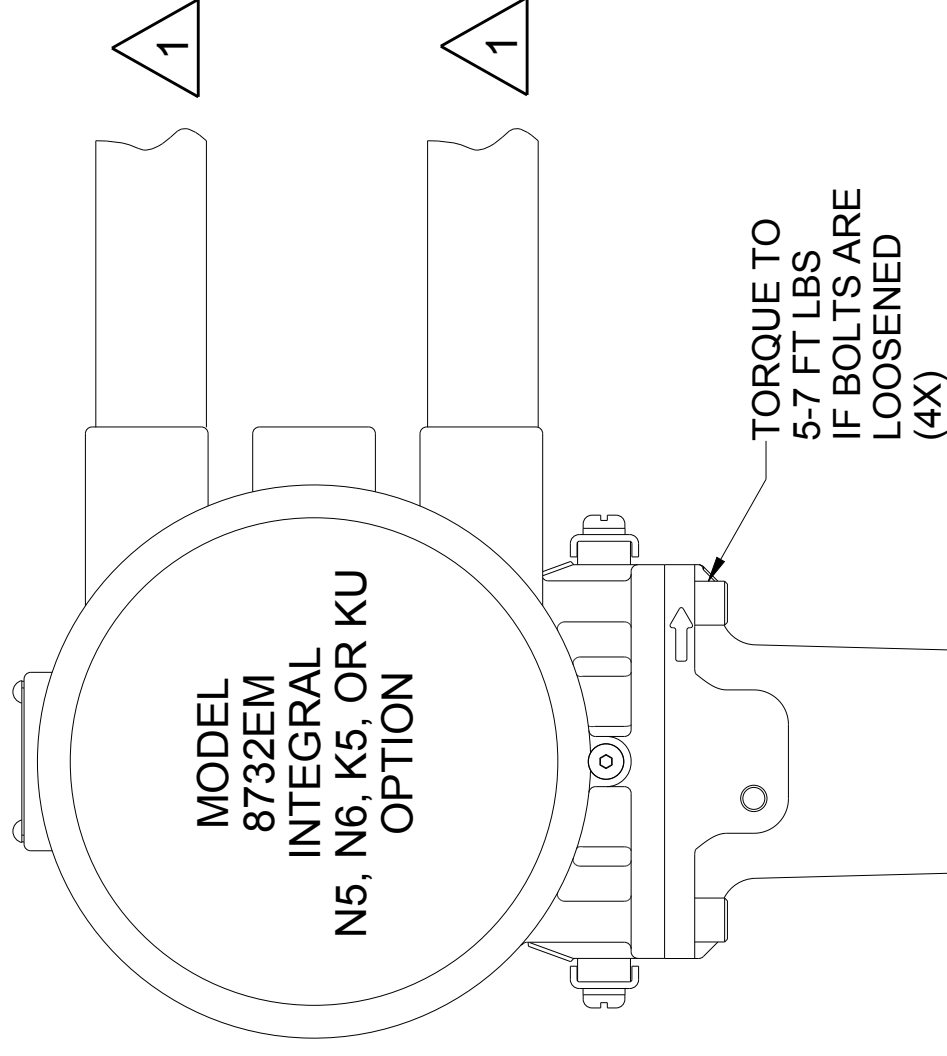
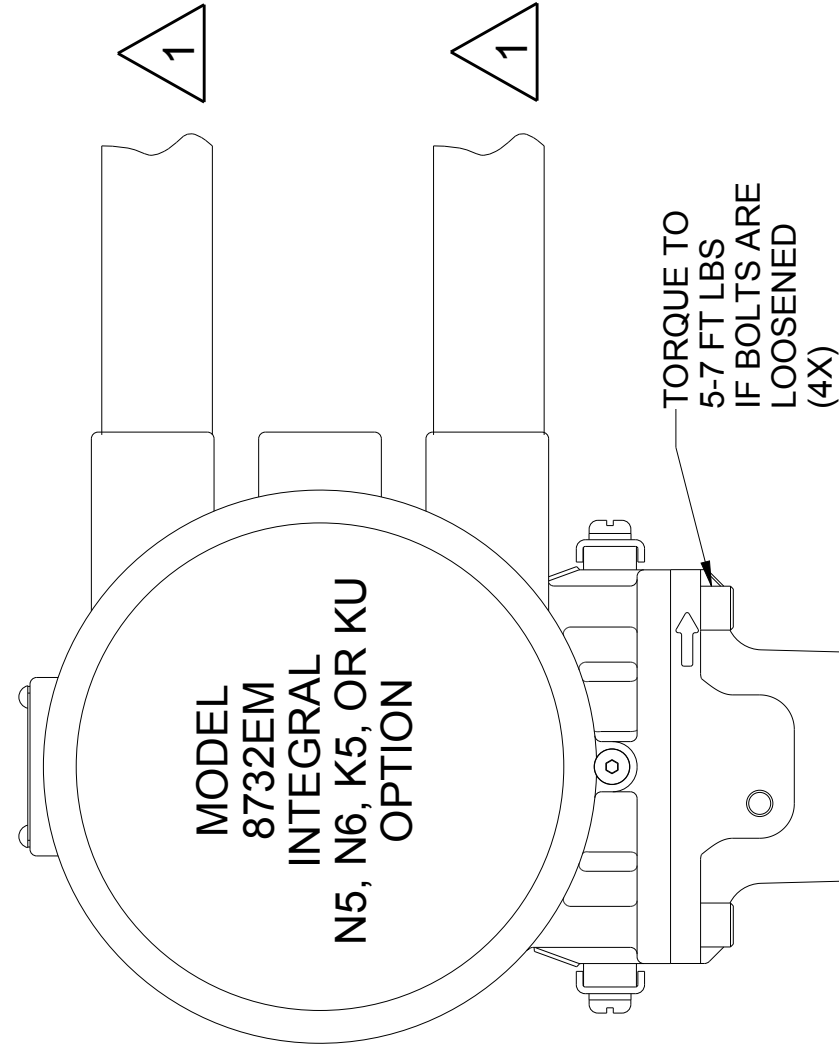
DUST-IGNITION PROOF FOR CLASS II/III DIV 1 GRPS: EFG: T2...T5
WITH CARBON STEEL HOUSING (-29°C ≤ Ta ≤ 60°C)
SEE TABLE 6 FOR PROCESS TEMPERATURE LIMITS AND
ALLOWED MOUNTING CONFIGURATIONS

ALLOWED INTEGRAL MOUNT TRANSMITTER CONFIGURATIONS

MODEL 8732EM INTEGRAL MOUNT CONFIGURATION
WITH SAFETY APPROVALS OPTIONS 'N5', 'N6', 'K5', OR 'KU'



DUST-IGNITION PROOF FOR CLASS II/III DIV 1 GRPS: EFG: T5
SEE TABLE 6 FOR PROCESS TEMPERATURE LIMITS AND
ALLOWED MOUNTING CONFIGURATIONS



MODEL 8711-M INTEGRAL
N5, N6, K5, OR KU OPTION

MODEL 8705-M INTEGRAL
N5, N6, K5, OR KU OPTION

ELECTRODES CONTACT PROCESS

ELECTRODES CONTACT PROCESS

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INFORMATION IS CONTAINED HEREIN
AND MUST BE HANDLED ACCORDINGLY.

UNLESS OTHERWISE SPECIFIED
DIMENSIONS IN INCHES (mm). REMOVE
ALL BURRS AND SHARP EDGES.

-DEC TOLERANCES-	
X ± .1	[2.5]
.XX ± .02	[0.5]
.XXX ± .010	[0.25]
FRACTIONS ± 1/32	ANGLES ± 2°

SURFACE FINISH UNLESS OTHERWISE SPECIFIED

125° 3RD ANGLE

SIZE C

SCALE -

REV AG

EMERSON
ROSEMOUNT

TITLE
INSTALLATION DRAWING

CSA CANADIAN AND USA CLASS DIVISION

DR. N. BOND 2/18/14 DRAWING NO. 08732-2061

DO NOT SCALE PRINT CAD MAINTAINED (PROV) PRODUCT CODE

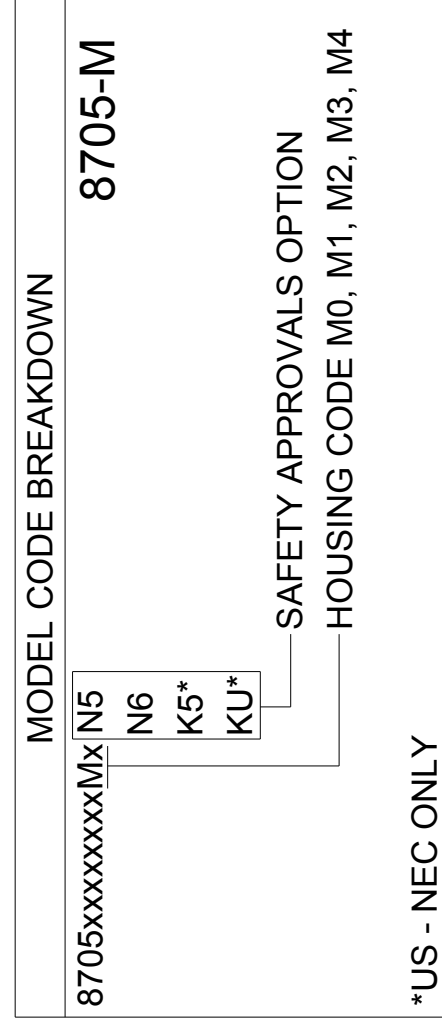
SHEET 8 OF 17

DRAWING NO. 08732-2061

DUST ENVIRONMENT - CLASS II/III DIVISION 1 SENSORS AND ALLOWED REMOTE MOUNT CLASS II/III DIVISION 1 TRANSMITTERS

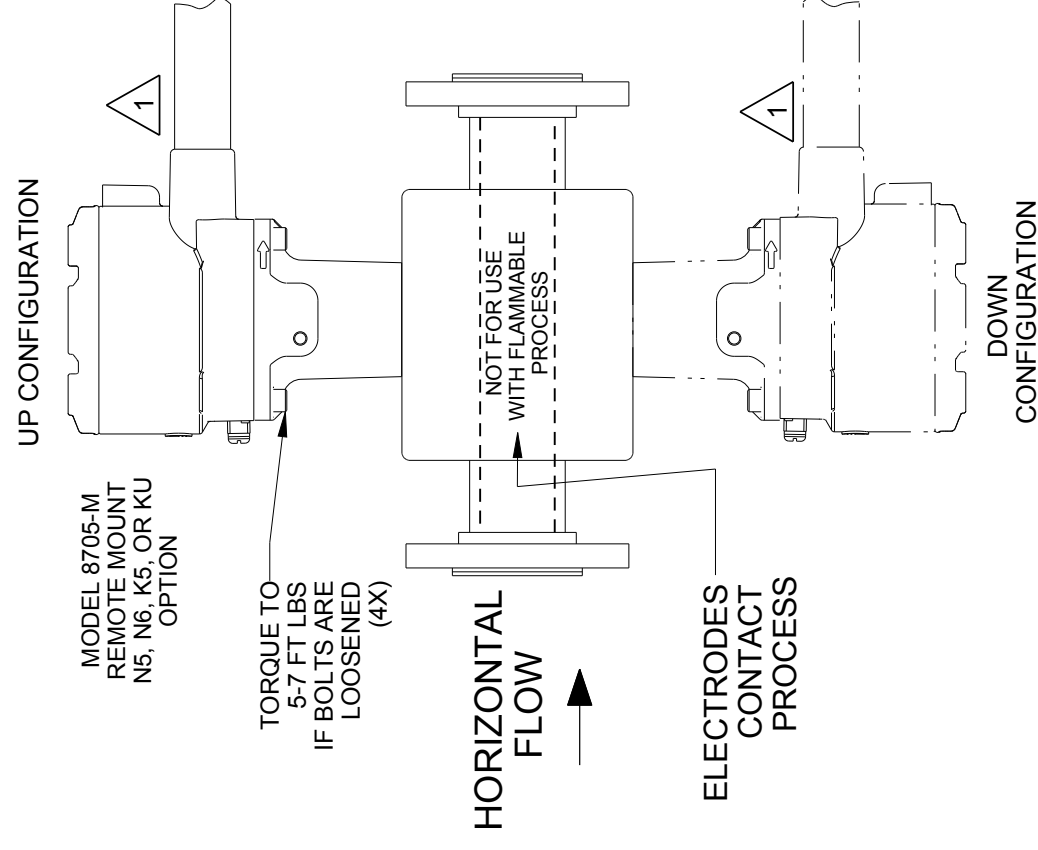
DUST-IGNITION PROOF SENSOR REMOTE MOUNT CONFIGURATIONS

MODEL 8705-M REMOTE CONFIGURATION
WITH SAFETY APPROVALS OPTIONS 'N5', 'N6', 'K5', OR 'KU'



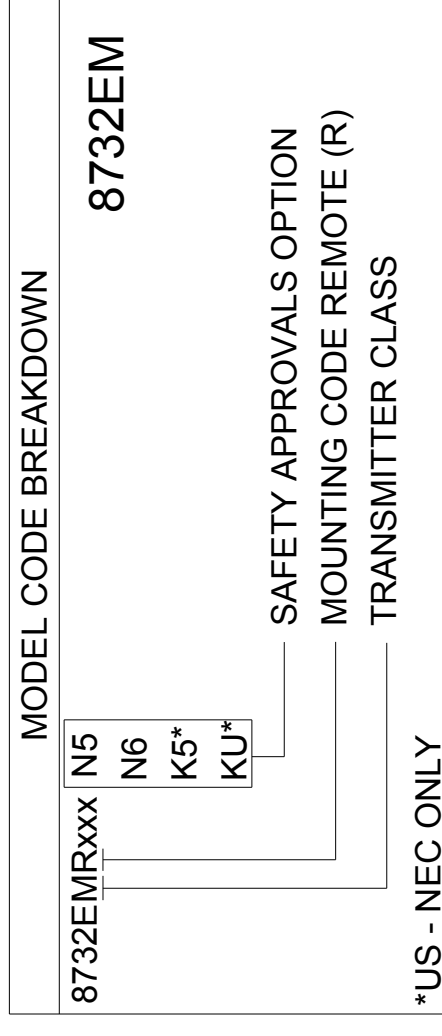
*US - NEC ONLY

DUST-IGNITION PROOF FOR CLASS II/III DIV 1 GRPS: EFG: T2...T5
WITH CARBON STEEL HOUSING (-29°C ≤ Ta ≤ 60°C)
SEE TABLE 5 FOR PROCESS TEMPERATURE LIMITS AND
ALLOWED MOUNTING CONFIGURATIONS



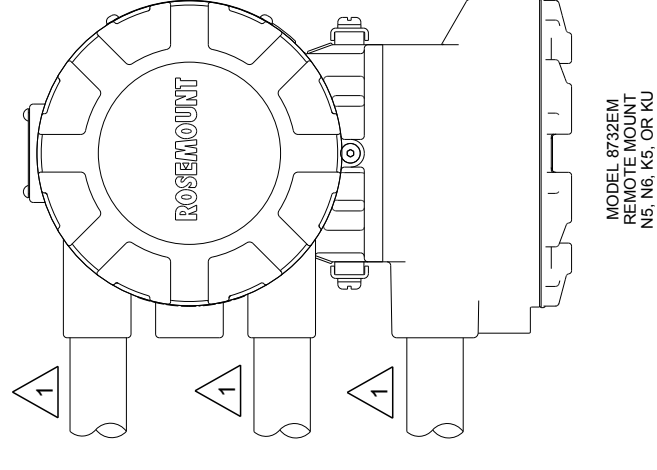
ALLOWED REMOTE MOUNT TRANSMITTER CONFIGURATIONS

MODEL 8732EM REMOTE MOUNT CONFIGURATION
WITH SAFETY APPROVALS OPTIONS 'N5', 'N6', 'K5', OR 'KU'



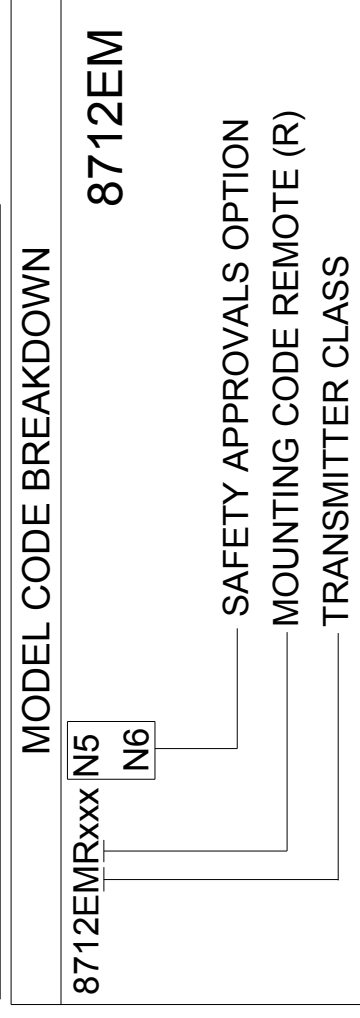
*US - NEC ONLY

DUST-IGNITION PROOF FOR CLASS II/III DIV 1 GRPS: EFG: T5
AMBIENT TEMPERATURE (-40°C ≤ Ta ≤ 60°C)

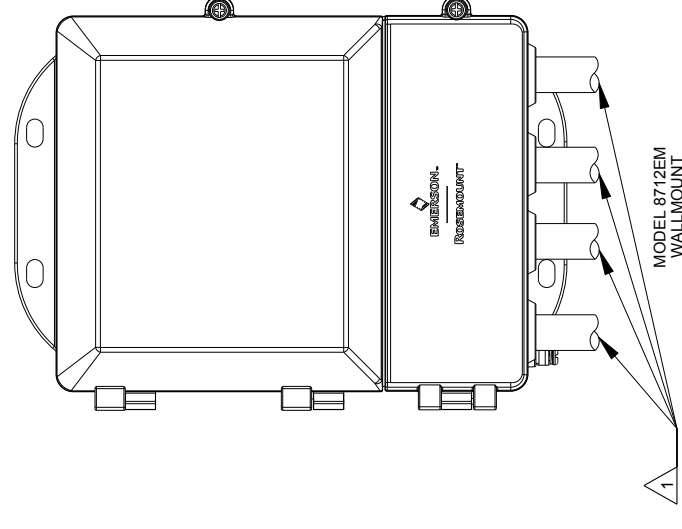


MODEL 8732EM
REMOTE MOUNT
N5, N6, K5, OR KU

MODEL 8712EM REMOTE MOUNT CONFIGURATION
WITH SAFETY APPROVALS OPTIONS 'N5' OR 'N6'

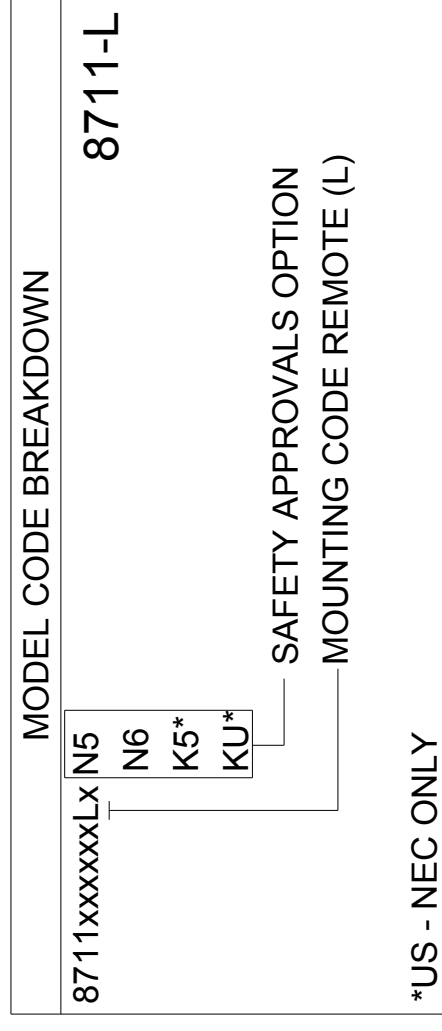


DUST-IGNITION PROOF FOR CLASS II/III DIV 1 GRPS: EFG: T5
AMBIENT TEMPERATURE (-40°C ≤ Ta ≤ 60°C)



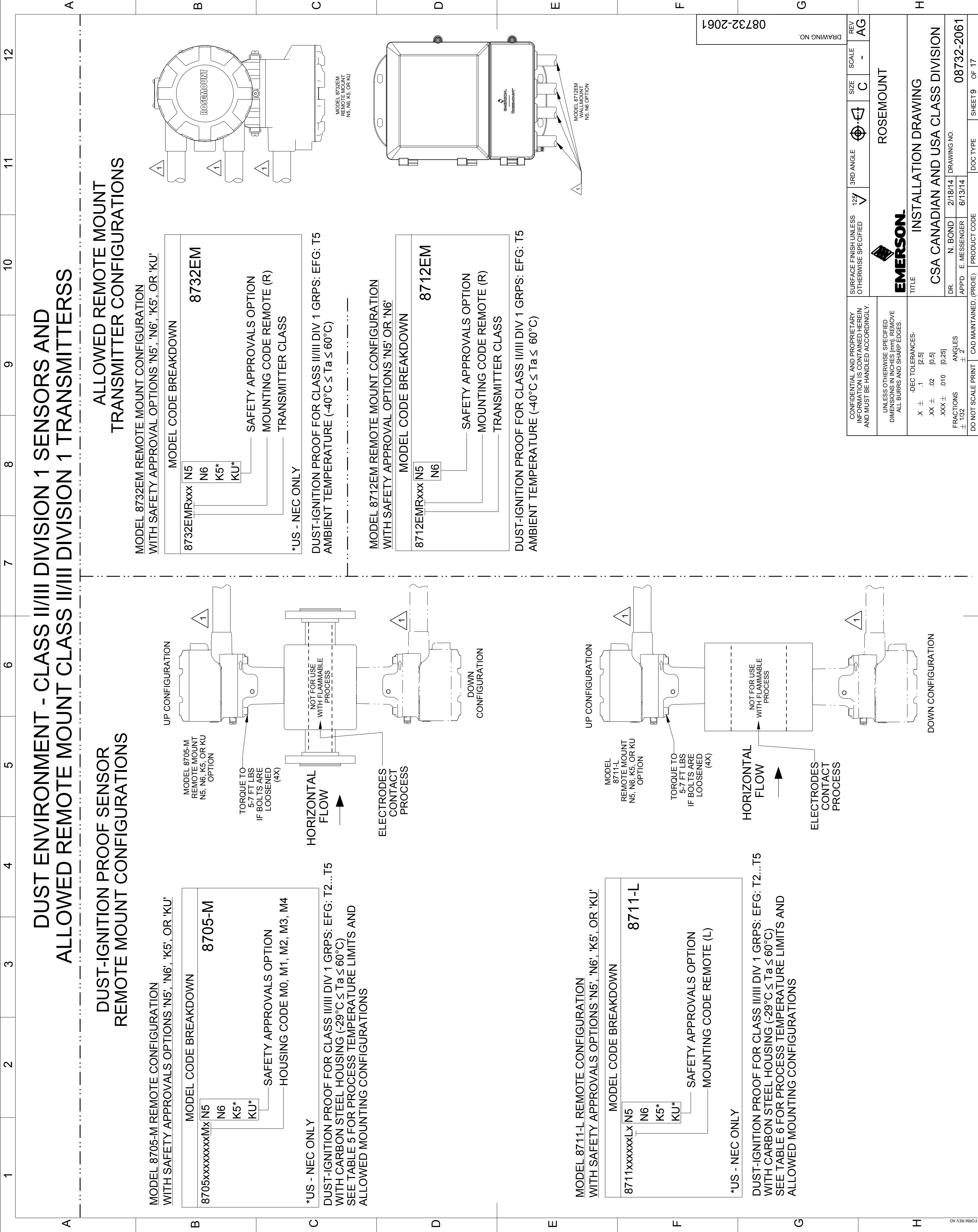
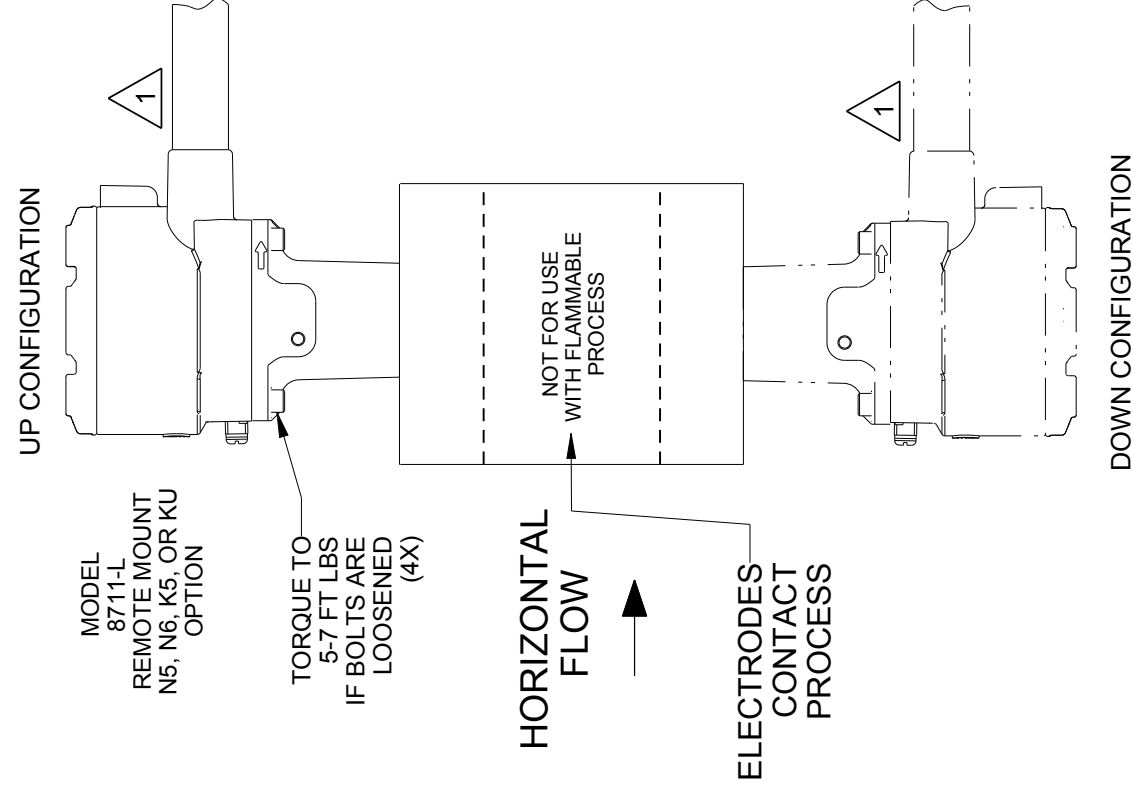
MODEL 8712EM
WALL MOUNT
REMOTE MOUNT
N5, N6 OPTION

MODEL 8711-L REMOTE CONFIGURATION
WITH SAFETY APPROVALS OPTIONS 'N5', 'N6', 'K5', OR 'KU'



*US - NEC ONLY

DUST-IGNITION PROOF FOR CLASS II/III DIV 1 GRPS: EFG: T2...T5
WITH CARBON STEEL HOUSING (-29°C ≤ Ta ≤ 60°C)
SEE TABLE 6 FOR PROCESS TEMPERATURE LIMITS AND
ALLOWED MOUNTING CONFIGURATIONS



CONFIDENTIAL AND PROPRIETARY INFORMATION IS CONTAINED HEREIN AND MUST BE HANDLED ACCORDINGLY.	SURFACE FINISH UNLESS OTHERWISE SPECIFIED	125	3RD ANGLE	SIZE	C	SCALE	-	REV	AG
	DRAWING NO. 08732-2061								
EMERSON									
TITLE ROSEMOUNT									
UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES (mm). REMOVE ALL BURRS AND SHARP EDGES.									
-DEC TOLERANCES-									
X ± .1 [2.5]									
.XX ± .02 [0.5]									
.XXX ± .010 [0.25]									
FRACTIONS ± 1/32 ANGLES ± 2°									
DO NOT SCALE PRINT	CAD MAINTAINED (PROE)	PRODUCT CODE	2/18/14	6/13/14	DR. N. BOND	2/18/14	DRAWING NO. 08732-2061	CSA CANADIAN AND USA CLASS DIVISION	08732-2061
									DOC TYPE SHEET9 OF 17

DUST ENVIRONMENT - CLASS II/III DIVISION 1 - SENSOR TEMPERATURE CODE VS. PROCESS TEMPERATURE LIMITS

TABLE 5

8705-M: DUST IGNITION-PROOF MAXIMUM ALLOWABLE PROCESS TEMPERATURE VS. TEMPERATURE CODE AND TRANSMITTER MOUNTING CONFIGURATION				
Line Size	Maximum Allowable Process Temperature (°C)	Dust Temperature Code	Transmitter Mounting Configuration	
1/2"	60	T5	Integral/Remote	
	90	T4	Integral/Remote	
	120	T3	Integral/Remote	
	180	T2	Remote	
1"	60	T5	Integral/Remote	
	90	T4	Integral/Remote	
	120	T3	Integral/Remote	
	180	T2	Remote	
1.5"	60	T5	Integral/Remote	
	90	T4	Integral/Remote	
	105	T3	Integral/Remote	
	170	T2	Remote	
2"	60	T5	Integral/Remote	
	90	T4	Integral/Remote	
	105	T3	Integral/Remote	
	170	T2	Remote	
2.5"	60	T5	Integral/Remote	
	90	T4	Integral/Remote	
	105	T3	Integral/Remote	
	170	T2	Remote	
3"	60	T5	Integral/Remote	
	90	T4	Remote	
	115	T3	Remote	
	175	T2	Remote	
4"	60	T5	Integral/Remote	
	90	T4	Remote	
	115	T3	Remote	
	175	T2	Remote	
5"	60	T5	Integral/Remote	
	90	T4	Remote	
	115	T3	Remote	
	175	T2	Remote	
6"	60	T5	Integral/Remote	
	90	T4	Remote	
	120	T3	Remote	
	175	T2	Remote	
8-36"	60	T5	Integral/Remote	
	90	T4	Remote	
	120	T3	Remote	
	180	T2	Remote**	

**LINE SIZES 8" AND GREATER WITH HORIZONTAL FLOW SHOULD BE MOUNTED WITH REMOTE JUNCTION BOX (RJB) DOWN OR TO THE SIDE

TABLE 6

8711-M/L: DUST IGNITION-PROOF MAXIMUM ALLOWABLE PROCESS TEMPERATURE VS. TEMPERATURE CODE AND TRANSMITTER MOUNTING CONFIGURATION				
Line Size	Maximum Allowable Process Temperature (°C)	Dust Temperature Code	Remote Junction Box Orientation	Transmitter Mounting Configuration
1.5"	60	T5	Any	Integral/Remote
	80	T4	Any	Remote
	100	T3	Any	Remote
	160	T2	Down Or To The Side Only	Remote
2"	60	T5	Any	Integral/Remote
	80	T4	Any	Remote
	100	T3	Any	Remote
	160	T2	Down Or To The Side Only	Remote
3"	60	T5	Any	Integral/Remote
	80	T4	Any	Remote
	110	T3	Any	Remote
	170	T2	Down Or To The Side Only	Remote
4"	60	T5	Any	Integral/Remote
	80	T6	Any	Remote
	115	T3	Any	Remote
	175	T2	Down Or To The Side Only	Remote
6"	60	T5	Any	Integral/Remote
	80	T4	Any	Remote
	115	T3	Any	Remote
	180	T2	Down Or To The Side Only	Remote
8"	60	T5	Any	Integral/Remote
	80	T4	Any	Remote
	115	T3	Any	Remote
	180	T2	Down Or To The Side Only	Remote

08732-2061

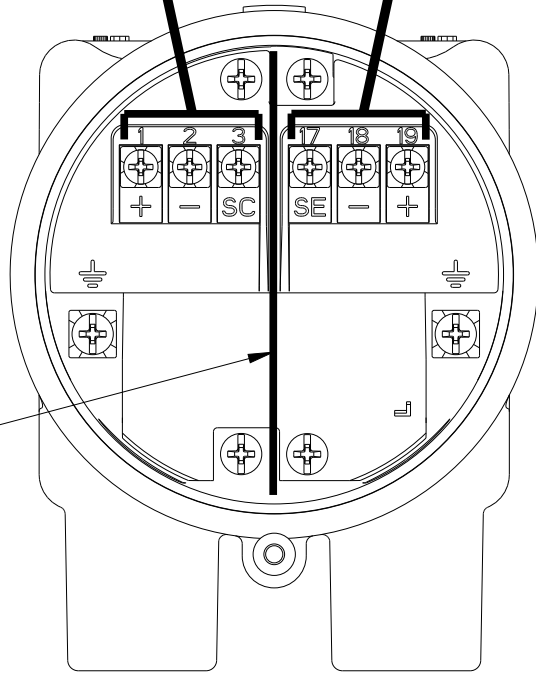
DRAWING NO.

CONFIDENTIAL AND PROPRIETARY INFORMATION IS CONTAINED HEREIN AND MUST BE HANDLED ACCORDINGLY.	SURFACE FINISH UNLESS OTHERWISE SPECIFIED	125°	3RD ANGLE	SCALE	REV
UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES (mm). REMOVE ALL BURRS AND SHARP EDGES.	X ± .1 [2.5]	.XX ± .02 [0.5]	.XXX ± .010 [0.25]	FRACTIONS ± 1/32	ANGLES ± 2°
EMERSON TITLE INSTALLATION DRAWING ROSEMOUNT					
CSA CANADIAN AND USA CLASS DIVISION					
DR. N. BOND 2/18/14	APPD. E. MESSENGER 6/13/14	DRAWING NO.	08732-2061		
DO NOT SCALE PRINT			CAD MAINTAINED (PROJ)	PRODUCT CODE	SHEET 10 OF 17

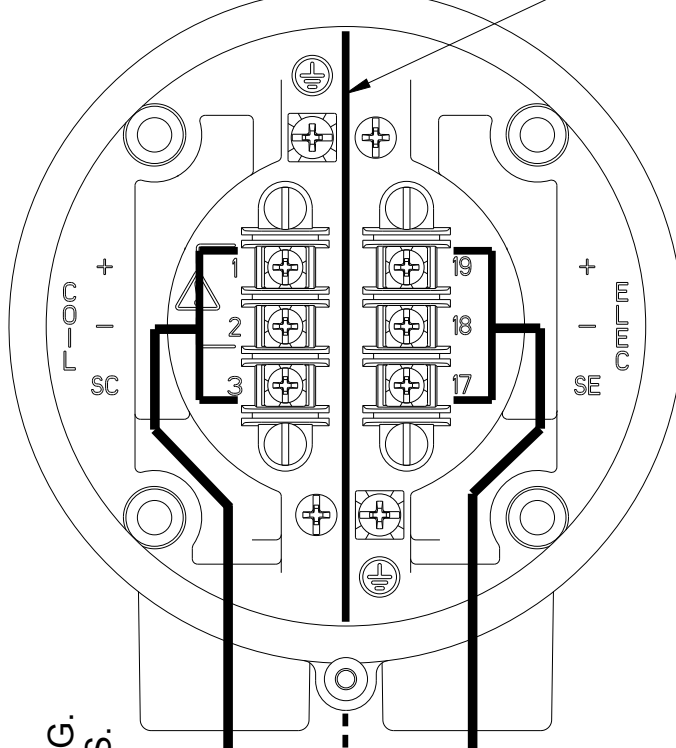
GAS ENVIRONMENT-COIL AND ELECTRODE CIRCUIT WIRING

MODEL 8732EM WITH INTRINSICALLY SAFE ELECTRODE CIRCUIT FOR USE WITH 8705-M OR 8711-L WITH SAFETY APPROVAL OPTIONS N5, N6, K5, OR KU

COMPONENT CABLES ONLY. SEE TABLE BELOW FOR COMPATIBLE WIRING. SEE INSTALLATION WIRING DRAWING 08732-1504 FOR CABLING DETAILS. (FOR PROCESS TEMPERATURE LIMITS SEE TABLES 1-4)



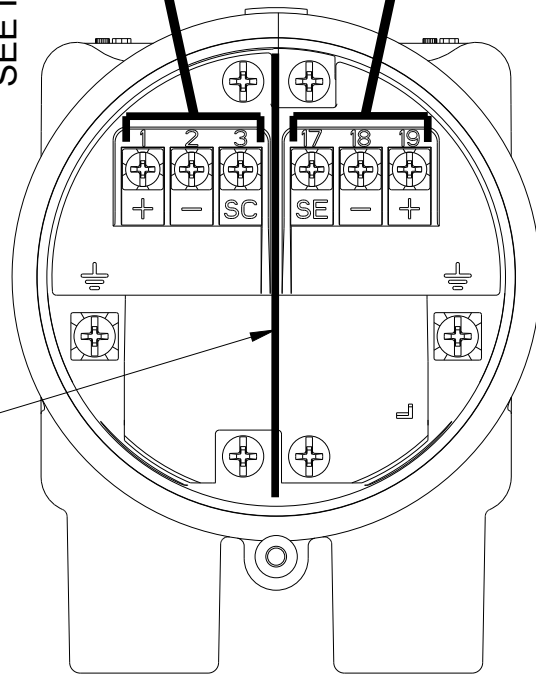
8705-M OR 8711-L FLOWTUBE REMOTE JUNCTION BOX



8732EM TRANSMITTER REMOTE JUNCTION BOX

MODEL 8712EM WITH INTRINSICALLY SAFE ELECTRODE CIRCUIT FOR USE WITH 8705-M OR 8711-L WITH SAFETY APPROVAL OPTIONS N5, N6, K5, OR KU

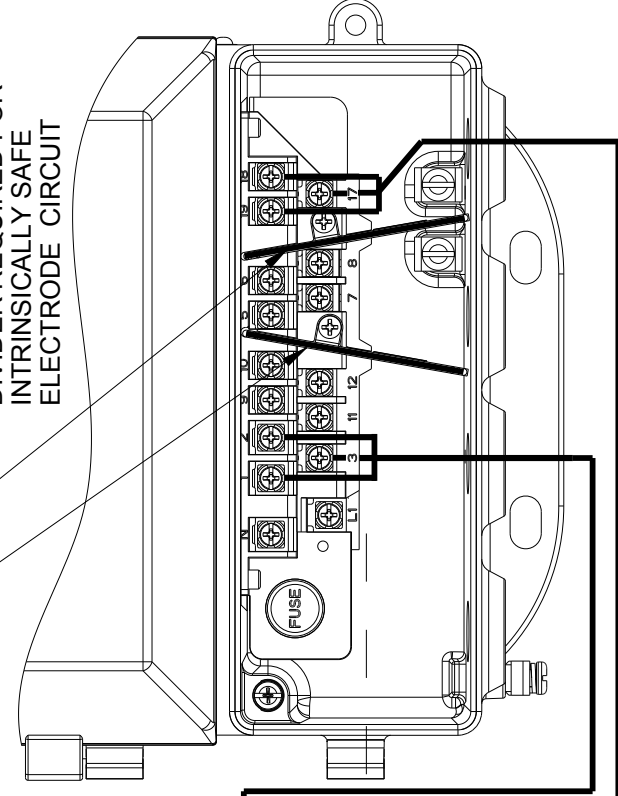
COMPONENT CABLES ONLY. SEE TABLE BELOW FOR COMPATIBLE WIRING. SEE INSTALLATION WIRING DRAWING 08712-1504 FOR CABLING DETAILS. (FOR PROCESS TEMPERATURE LIMITS SEE TABLES 1-4)



8705-M OR 8711-L FLOWTUBE REMOTE JUNCTION BOX

DIVIDER ONLY REQUIRED IF OUTPUT IS INSTALLED AS INTRINSICALLY SAFE

DIVIDER REQUIRED FOR INTRINSICALLY SAFE ELECTRODE CIRCUIT



8712EM TRANSMITTER (LOWER COVER AND SAFETY COVER ARE NOT SHOWN)

SYSTEM APPROVAL FOR INTRINSICALLY SAFE ELECTRODE INSTALLATION

THE MODEL 8732EM, 8712EM, AND MODEL 8705-M OR MODEL 8711-L MAGNETIC FLOWMETER REFERENCING CONTROL DRAWING 08732-2061 MAY USE UP TO 500 FEET (150 METERS) OF ROSEMOUNT SUPPLIED ELECTRODE CABLING FOR INTERCONNECTION OF THE DEVICES. THE CORRECT CABLING IS SUPPLIED AS PART OF THE FOLLOWING ROSEMOUNT CABLING KITS:

ROSEMOUNT PART NO.	UNIT OF MEASURE	TEMPERATURE RANGE	SEE NOTE
08732-0065-0003	FEET	-20° C TO 75° C	11
08732-0065-0004	METERS	-20° C TO 75° C	
08732-0065-1003	FEET	-50° C TO 125° C	
08732-0065-1004	METERS	-50° C TO 125° C	

COIL AND INTRINSICALLY SAFE ELECTRODE COMPONENT CABLES:

INDIVIDUAL OR REPLACEMENT INTRINSICALLY SAFE ELECTRODE COMPONENT CABLES:

ROSEMOUNT PART NO.	UNIT OF MEASURE	TEMPERATURE RANGE	SEE NOTE
08732-0061-0003	FEET	-20° C TO 75° C	11
08732-0061-0004	METERS	-20° C TO 75° C	
08732-0061-1003	FEET	-50° C TO 125° C	
08732-0061-1004	METERS	-50° C TO 125° C	

TERMINALS 19, 18, AND 17 CONTAIN TWO CHANNELS OF AN INTRINSICALLY SAFE CIRCUIT WITH A COMMON RETURN. ENTITY PARAMETERS SHOWN BELOW ARE THE SUMMATION OF BOTH CHANNELS.

TRANSMITTER ENTITY PARAMETERS
MODEL 8732EM AND 8712EM
INTRINSICALLY SAFE ELECTRODE CIRCUIT
REMOTE JUNCTION BOX TERMINALS 19, 18, 17

$U_o = 28.56V$
 $I_o = 5.77mA$
 $P_o = 165mW$
 $C_o = 61.7nF$
 $L_o = 1.0H$

THE ENTITY CONCEPT ALLOWS INTERCONNECTION OF ASSOCIATED APPARATUS AND INTRINSICALLY SAFE APPARATUS WHEN THE FOLLOWING IS TRUE:

$U_o \leq U_i$, $I_o \leq I_i$, $P_o \leq P_i$, $C_o \geq C_i + C_{cable}$, $L_o \geq L_i + L_{cable}$
THE ALLOWED CAPACITANCE, C_o IS SHARED BETWEEN THE CIRCUITS OF TERMINALS 19, 18, AND 17. CABLE CAPACITANCE MUST BE ASSESSED AS TWICE THE MEASURED VALUE PER LENGTH OF CABLE.

EXAMPLE 1: THE HIGHEST MEASURED CAPACITANCE OF A 3 CONDUCTOR, SHIELDED CABLE IS 58pF/ft WHEN MEASURED CONDUCTOR TO CONDUCTOR TIED TO SHIELD.

$C_{cable} = 2 \times 58pF/ft \times \text{FEET OF CABLE}$
 $C_i + C_{cable} < C_o$
CABLE LENGTH MUST BE UNDER 515 FEET

ENTITY CONCEPT FOR INTRINSICALLY SAFE ELECTRODE INSTALLATION

TERMINALS 19, 18, AND 17 CONTAIN TWO CHANNELS OF AN INTRINSICALLY SAFE CIRCUIT WITH A COMMON RETURN. ENTITY PARAMETERS SHOWN BELOW ARE THE SUMMATION OF BOTH CHANNELS.

FLOW TUBE ENTITY PARAMETERS
MODEL 8705-M, 8711-L
INTRINSICALLY SAFE ELECTRODE CIRCUIT
REMOTE JUNCTION BOX TERMINALS 19, 18, 17

$U_i = 30V$
 $I_i = 50mA$
 $P_i = 1.0W$
 $C_i = 1.9nF$
 $L_i = 630\mu H$

THE ENTITY CONCEPT ALLOWS INTERCONNECTION OF ASSOCIATED APPARATUS AND INTRINSICALLY SAFE APPARATUS WHEN THE FOLLOWING IS TRUE:

$U_o \leq U_i$, $I_o \leq I_i$, $P_o \leq P_i$, $C_o \geq C_i + C_{cable}$, $L_o \geq L_i + L_{cable}$
THE ALLOWED CAPACITANCE, C_o IS SHARED BETWEEN THE CIRCUITS OF TERMINALS 19, 18, AND 17. CABLE CAPACITANCE MUST BE ASSESSED AS TWICE THE MEASURED VALUE PER LENGTH OF CABLE.

CONFIDENTIAL AND PROPRIETARY INFORMATION IS CONTAINED HEREIN AND MUST BE HANDLED ACCORDINGLY.

UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES (mm). REMOVE ALL BURRS AND SHARP EDGES.

-DEC TOLERANCES-	ANGLES
$X \pm .1$ (2.5)	$\pm 2^\circ$
$.XX \pm .02$ (0.5)	
$.XXX \pm .010$ (0.25)	
FRACTIONS $\pm 1/32$	

SURFACE FINISH UNLESS OTHERWISE SPECIFIED

SIZE

3RD ANGLE

SCALE

REV

AG

ROSEMOUNT

INSTALLATION DRAWING

CSA CANADIAN AND USA CLASS DIVISION

DR. N. BOND 2/18/14 DRAWING NO. 08732-2061
APPD. E. MESSENGER 6/13/14

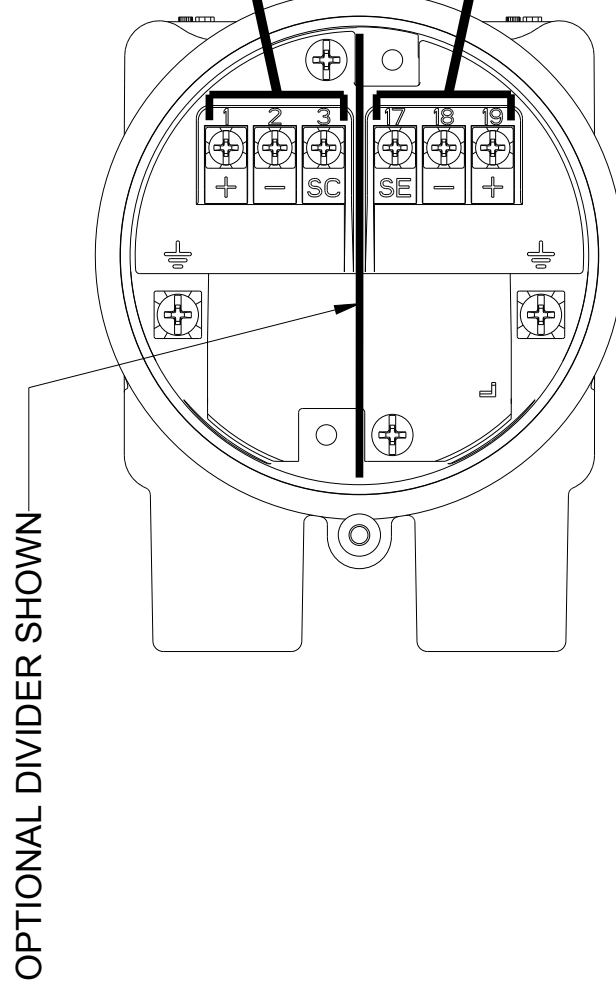
DO NOT SCALE PRINT | CAD MAINTAINED. (PROE) | PRODUCT CODE | SHEET 11 OF 17

DRAWING NO. 08732-2061

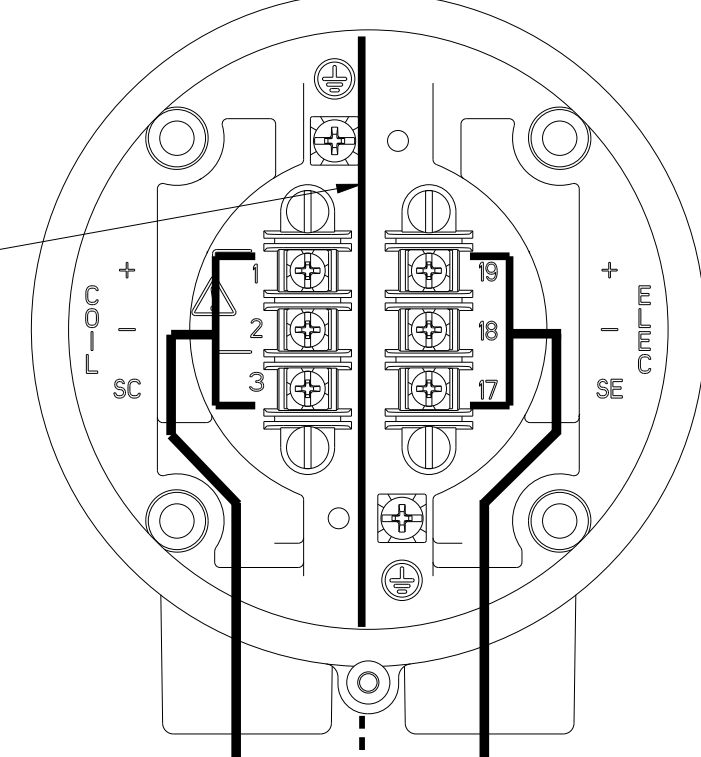
DUST ENVIRONMENT- COIL AND ELECTRODE CIRCUIT WIRING

MODEL 8732EM WITH NON-INTRINSICALLY SAFE ELECTRODE CIRCUIT FOR USE WITH MODEL 8705-M OR 8711-L WITH SAFETY APPROVAL OPTIOND 'N5', 'N6', 'K5', OR 'KU'

COMPONENT OR COMBINATION COIL/ELECTRODE CABLE ALLOWED.
SEE INSTALLATION WIRING DRAWING 08732-1504 FOR NON-INTRINSICALLY SAFE CABLING
(FOR PROCESS TEMPERATURE LIMITS SEE TABLES 5 AND 6)



8705-M OR 8711-L FLOWTUBE
REMOTE JUNCTION BOX



8732EM TRANSMITTER
REMOTE JUNCTION BOX

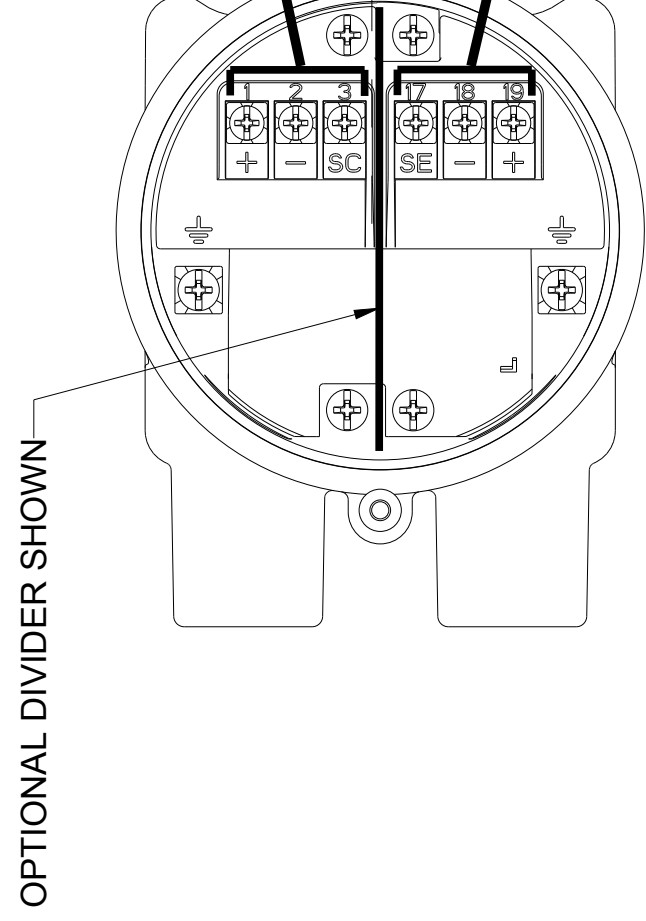
NON-INTRINSICALLY SAFE COIL CIRCUIT
INSTALL USING CLASS II/III WIRING
METHODS APPROPRIATE TO THE AREA DEVICE
IS INSTALLED IN

FOR USE WITH NON-FLAMMABLE PROCESS ONLY.
INSTALL ELECTRODE CIRCUIT AS NON-INTRINSICALLY SAFE
USING CLASS II/III WIRING METHODS APPROPRIATE
TO THE AREA DEVICE IS INSTALLED IN.

TERMINAL	LABEL
NON-INTRINSICALLY SAFE ELECTRODE CIRCUIT	
19	ELECTRODE +
18	ELECTRODE -
17	ELECTRODE REFERENCE (SE)
NON-INTRINSICALLY SAFE COIL CIRCUIT	
1	COIL +
2	COIL -
3	COIL SHIELD (SC)

MODEL 8712EM WITH NON-INTRINSICALLY SAFE ELECTRODE CIRCUIT FOR USE WITH MODEL 8705-M OR 8711-L WITH SAFETY APPROVAL OPTIONS 'N5', 'N6', 'K5', OR 'KU'

COMPONENT OR COMBINATION COIL/ELECTRODE CABLE ALLOWED.
SEE INSTALLATION WIRING DRAWING 08712-1504 FOR NON-INTRINSICALLY SAFE CABLING
(FOR PROCESS TEMPERATURE LIMITS SEE TABLES 5 AND 6)



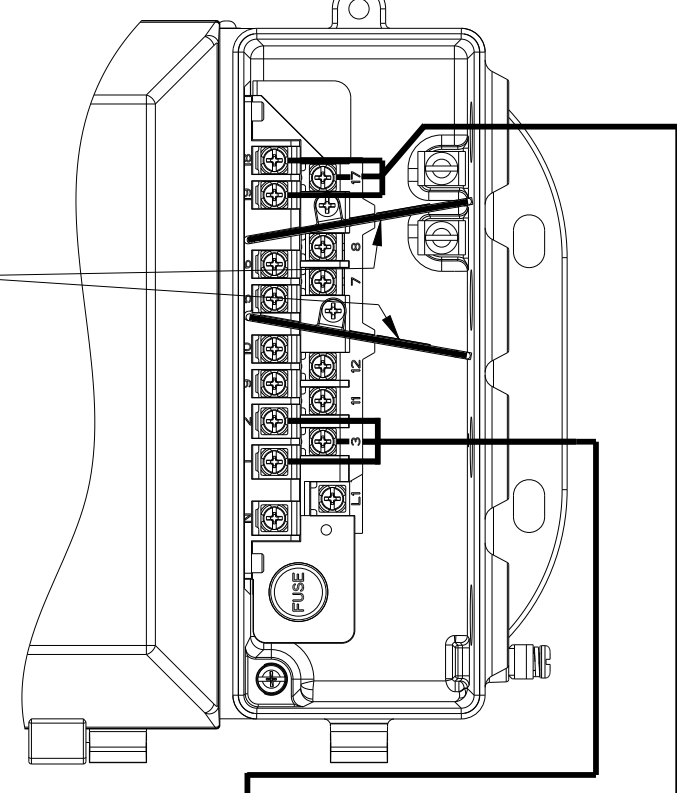
8705-M OR 8711-L FLOWTUBE
REMOTE JUNCTION BOX

NON-INTRINSICALLY SAFE COIL CIRCUIT
INSTALL USING CLASS II/III WIRING
METHODS APPROPRIATE TO THE AREA DEVICE
IS INSTALLED IN

FOR USE WITH NON-FLAMMABLE PROCESS ONLY.
INSTALL ELECTRODE CIRCUIT AS NON-INTRINSICALLY SAFE
USING CLASS II/III WIRING METHODS APPROPRIATE
TO THE AREA DEVICE IS INSTALLED IN.

TERMINAL	LABEL
NON-INTRINSICALLY SAFE ELECTRODE CIRCUIT	
19	ELECTRODE +
18	ELECTRODE -
17	ELECTRODE REFERENCE (SE)
NON-INTRINSICALLY SAFE COIL CIRCUIT	
1	COIL +
2	COIL -
3	COIL SHIELD (SC)

OPTIONAL
DIVIDERS SHOWN



8712EM TRANSMITTER
(LOWER COVER AND SAFETY COVER ARE NOT SHOWN)

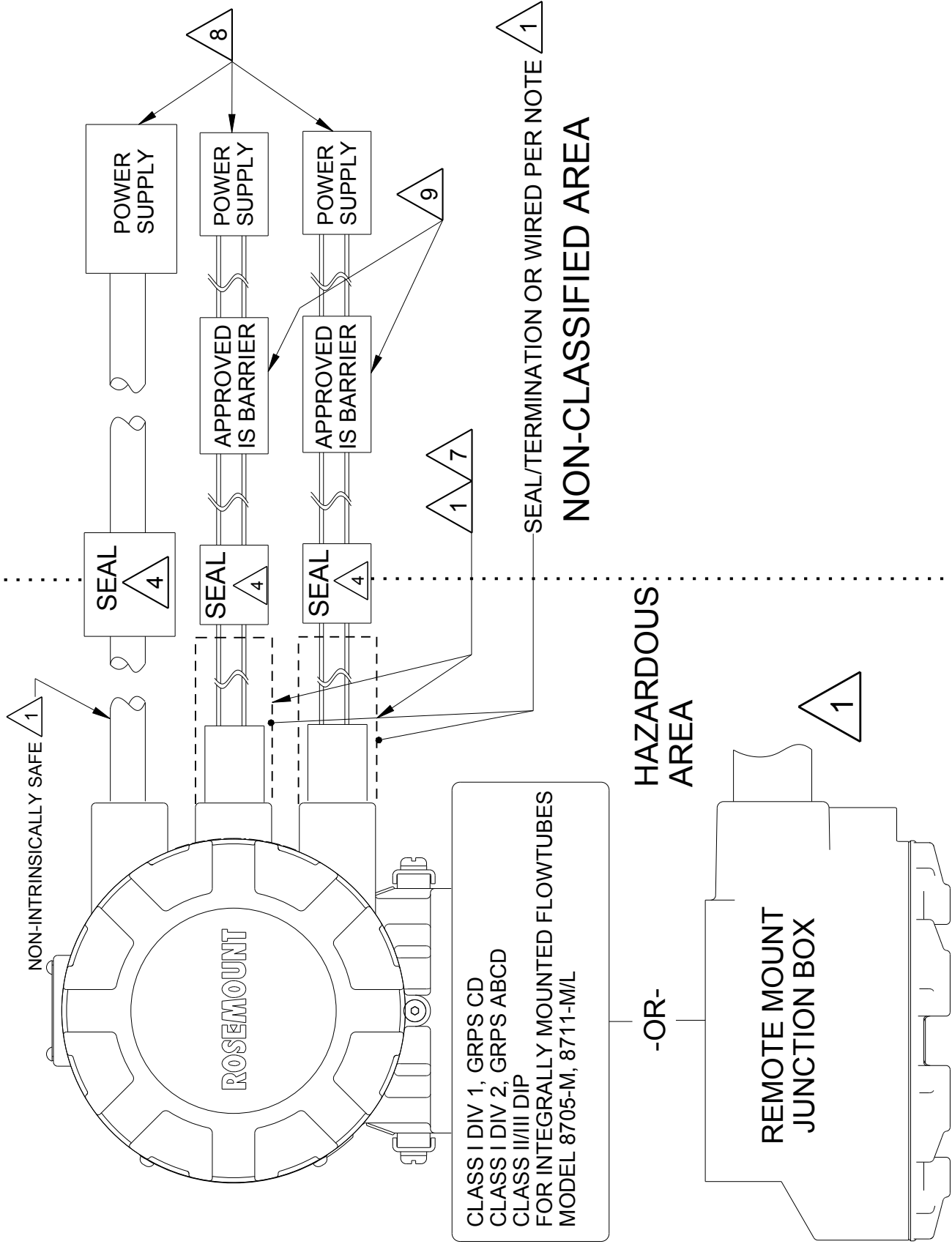
08732-2061
DRAWING NO.

CONFIDENTIAL AND PROPRIETARY INFORMATION IS CONTAINED HEREIN AND MUST BE HANDLED ACCORDINGLY.	SURFACE FINISH UNLESS OTHERWISE SPECIFIED	125	3RD ANGLE	SIZE	C	SCALE	-	REV	AG	
UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES (mm). REMOVE ALL BURRS AND SHARP EDGES.	EMERSON									
-DEC TOLERANCES-	ROSEMOUNT									
X ± .1 [2.5]	TITLE									
.XX ± .02 [0.5]	INSTALLATION DRAWING									
.XXX ± .010 [0.25]	CSA CANADIAN AND USA CLASS DIVISION									
FRACTIONS ± 1/32	ANGLES ± 2'									
DO NOT SCALE PRINT	CAD MAINTAINED (PROE)	PRODUCT CODE	DOC TYPE	SHEET 12		OF 17				
DR.	N. BOND	2/18/14	DRAWING NO.	08732-2061						
APPD.	E. MESSENGER	6/13/14								

GAS ENVIRONMENT - OUTPUT WIRING

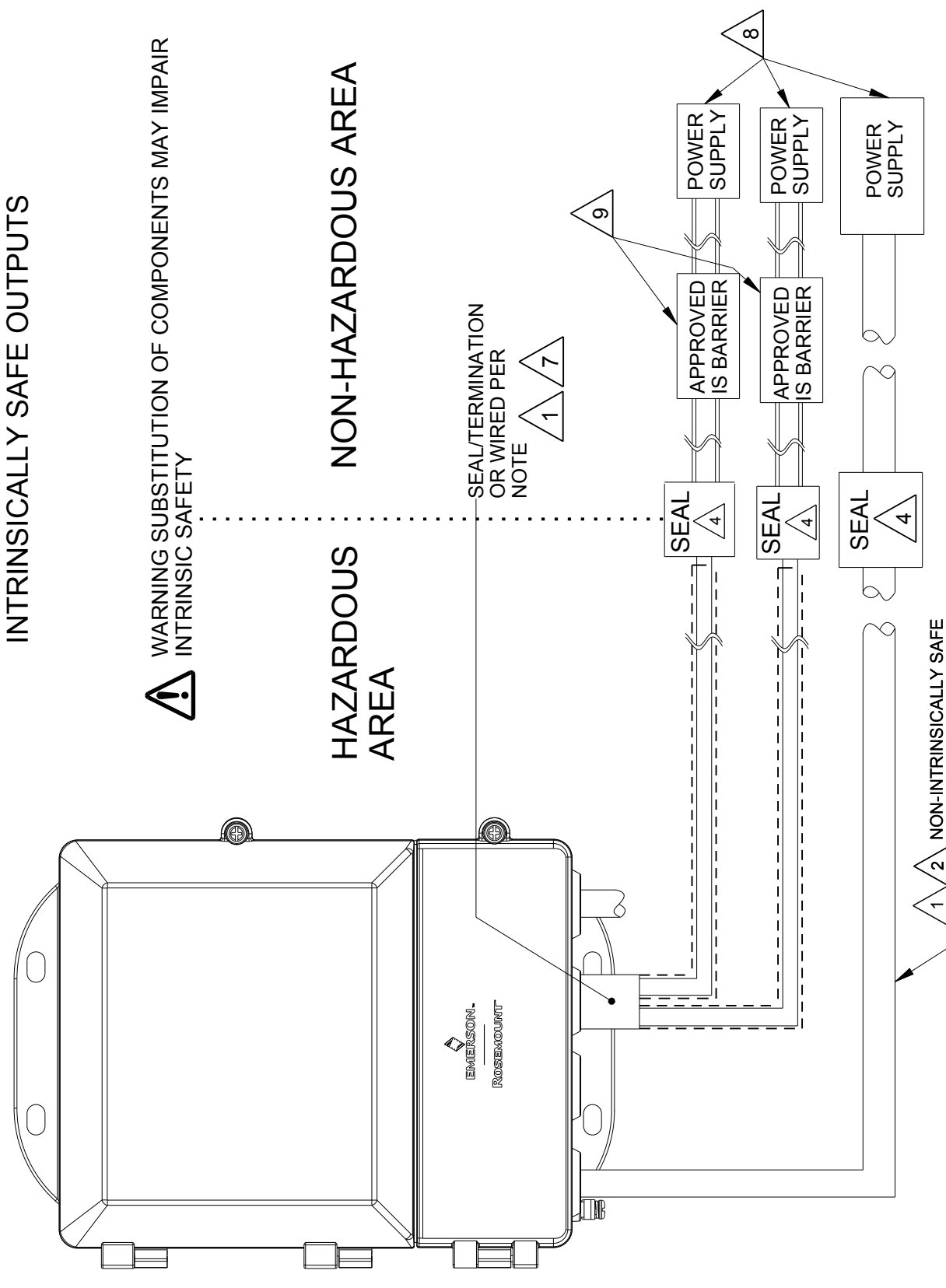
**HAZARDOUS (CLASSIFIED) LOCATION CONFIGURATION
INTRINSICALLY SAFE OUTPUTS**

WARNING: SUBSTITUTION OF COMPONENTS MAY IMPAIR INTRINSIC SAFETY



**HAZARDOUS LOCATION CONFIGURATION
INTRINSICALLY SAFE OUTPUTS**

**WARNING: SUBSTITUTION OF COMPONENTS MAY IMPAIR
INTRINSIC SAFETY**



8732EMxxxX N5
B N6
F K5*
M KU*P

SAFETY APPROVALS

- A NON-INTRINSICALLY SAFE 4-20 mA
- B INTRINSICALLY SAFE 4-20mA AND PULSE OUTPUT
- F INTRINSICALLY SAFE FOUNDATION FIELDBUS AND PULSE OUTPUT
- M NON-INTRINSICALLY SAFE MODBUS AND PULSE OUTPUT
- P INTRINSICALLY SAFE PROFIBUS AND PULSE OUTPUT

TRANSMITTER CLASS

*US - NEC ONLY

8712EMxxxX N5
B N6
F M
P

SAFETY APPROVALS

- A NON-INTRINSICALLY SAFE 4-20 mA
- B INTRINSICALLY SAFE 4-20mA AND PULSE OUTPUT
- F INTRINSICALLY SAFE FOUNDATION FIELDBUS AND PULSE OUTPUT
- M NON-INTRINSICALLY SAFE MODBUS AND PULSE OUTPUT
- P INTRINSICALLY SAFE PROFIBUS AND PULSE OUTPUT

TRANSMITTER CLASS

WHEN CONNECTED IN ACCORDANCE WITH THIS DOCUMENT, THE ROSEMOUNT MODEL 8712EM OR 8732EM WITH INTEGRAL MOUNT FLOWTUBE OR REMOTE-MOUNT JUNCTION BOX IS CSA APPROVED AS:

8732EM SAFETY APPROVAL OPTIONS CODE	RATINGS
K5 & KU [US-NEC ONLY]	EXPLOSION-PROOF FOR USE IN CLASS I, DIVISION 1, GROUPS CD: T6
K5 & KU WITH OUTPUT CODE 'B' OR 'F' OR 'P' [US-NEC ONLY]	EXPLOSION-PROOF FOR USE IN CLASS I, DIVISION 1, GROUPS CD: T6 WITH INTRINSICALLY SAFE CONNECTIONS FOR CLASS I, II, III, DIVISION 1, GROUPS ABCDEFG HAZARDOUS LOCATIONS
N5 & N6	NON-INCENDIVE FOR USE IN CLASS 1, DIVISION 2, GROUPS ABCD: T4
N5 & N6 WITH OUTPUT CODE 'B' OR 'F' OR 'P'	NON-INCENDIVE FOR USE IN CLASS 1, DIVISION 2, GROUPS ABCD: T4 WITH INTRINSICALLY SAFE CONNECTIONS FOR CLASS I, II, III, DIVISION 1, GROUPS ABCDEFG HAZARDOUS LOCATIONS
N5, N6, K5*, OR KU* *US - NEC ONLY	DUST-IGNITION PROOF FOR CLASS II/III DIV1 GRPS: EFG: T5
N5, N6, K5*, OR KU* WITH OUTPUT CODE 'B' OR 'F' OR 'P' [US - NEC ONLY]	DUST-IGNITION PROOF FOR CLASS II/III DIV1 GRPS: EFG: T5 WITH INTRINSICALLY SAFE OUTPUTS

CONFIDENTIAL AND PROPRIETARY INFORMATION IS CONTAINED HEREIN AND MUST BE HANDLED ACCORDINGLY.

UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES (mm). REMOVE ALL BURRS AND SHARP EDGES.

-DEC TOLERANCES-
X ± .1 [2.5]
.XX ± .02 [0.5]
.XXX ± .010 [0.25]
FRACTIONS ± 1/32 ANGLES ± 2°

SURFACE FINISH UNLESS OTHERWISE SPECIFIED

125° 3RD ANGLE

SIZE C

SCALE -

REV AG

EMERSON

ROSEMOUNT

TITLE
INSTALLATION DRAWING
CSA CANADIAN AND USA CLASS DIVISION

DR. N. BOND 2/18/14 DRAWING NO. 08732-2061
APPD. E. MESSENGER 6/13/14

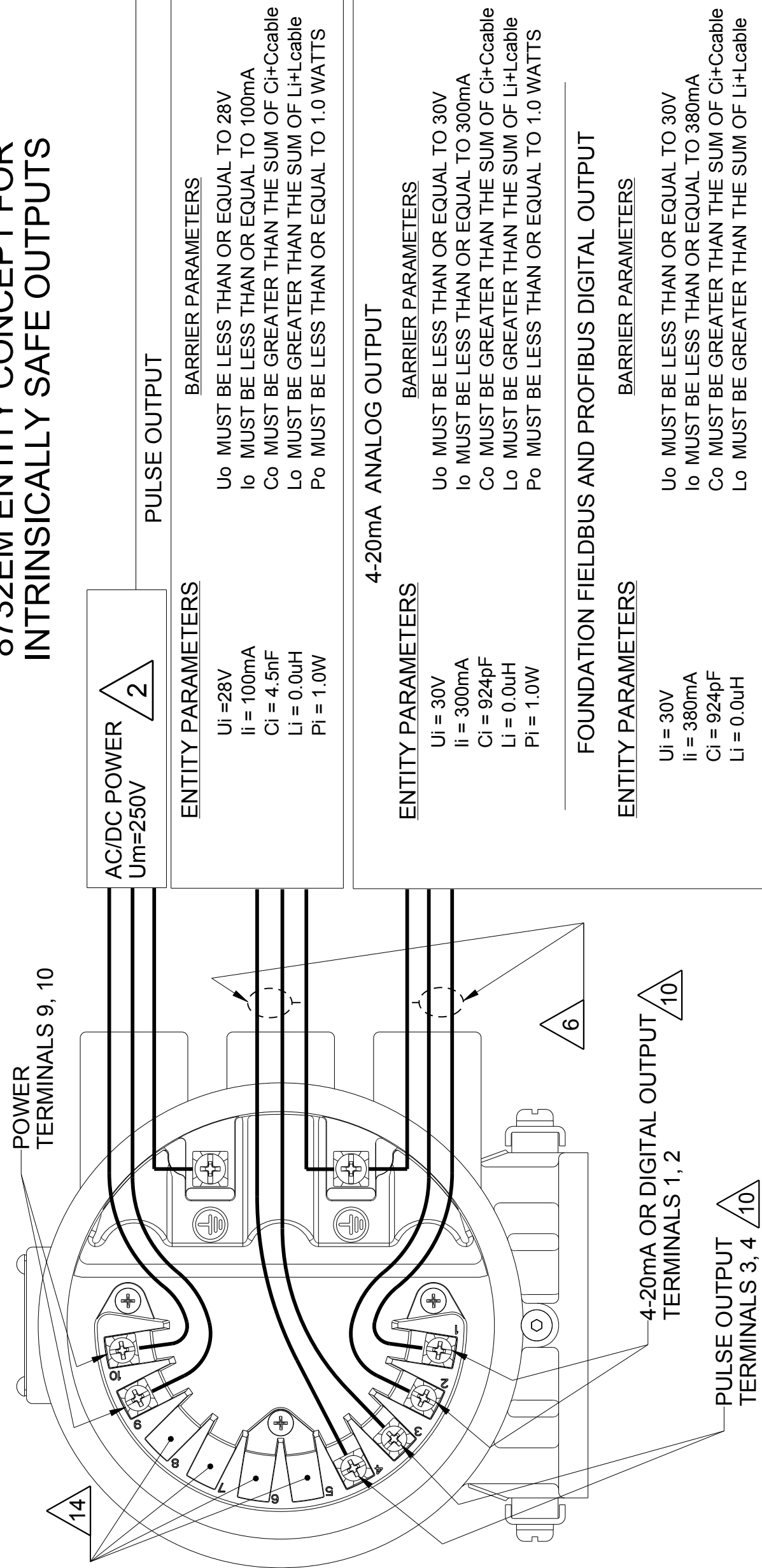
DO NOT SCALE PRINT CAD MAINTAINED (PROJ) PRODUCT CODE

SHEET 13 OF 17

DRAWING NO. 08732-2061

GAS ENVIRONMENT - INTRINSICALLY SAFE ENTITY CONCEPTS

8732EM ENTITY CONCEPT FOR INTRINSICALLY SAFE OUTPUTS



DEFINITIONS:

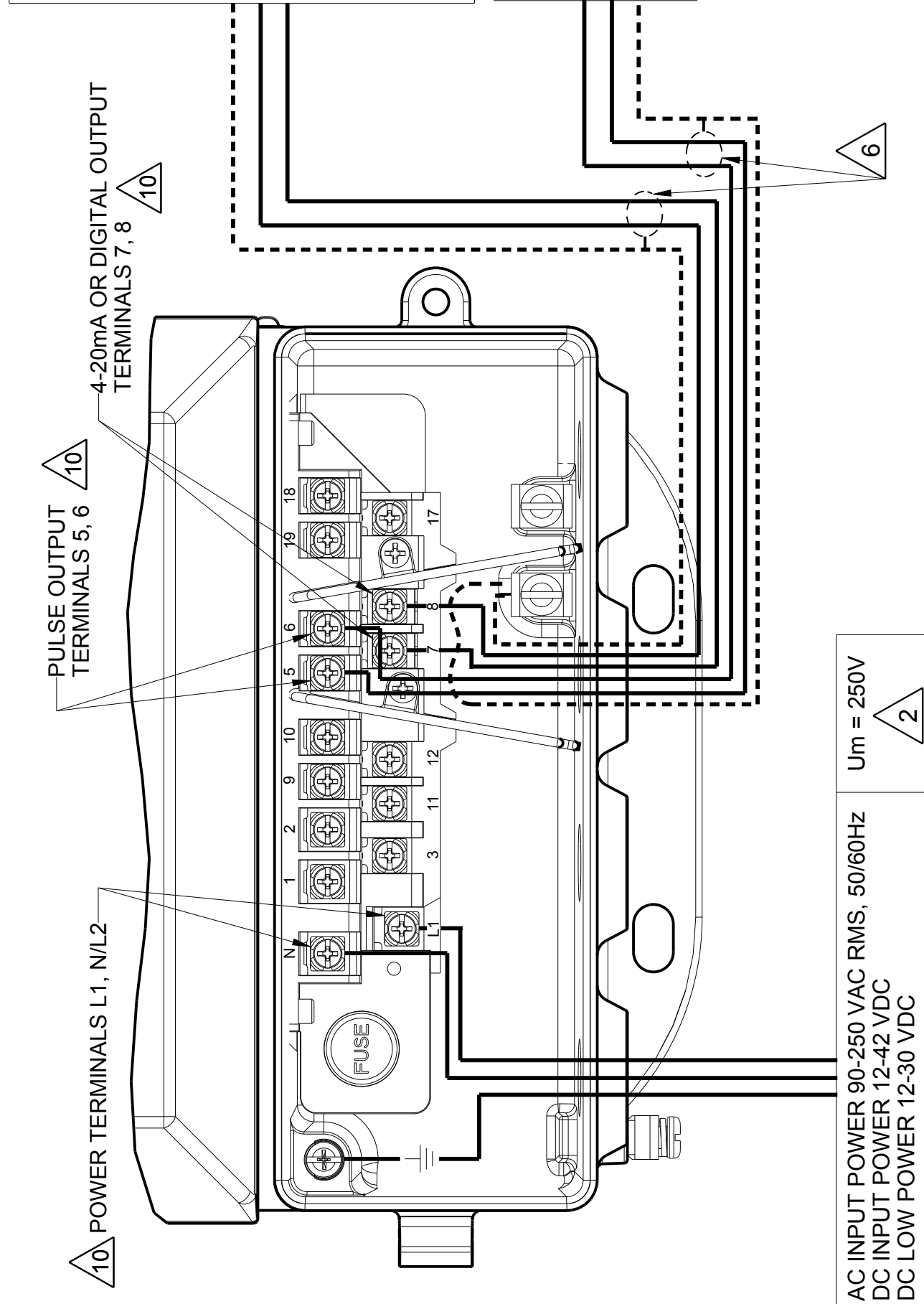
- U_i = MAXIMUM INPUT VOLTAGE
- I_i = MAXIMUM INPUT CURRENT
- C_i = MAXIMUM INTERNAL CAPACITANCE
- L_i = MAXIMUM INTERNAL INDUCTANCE
- P_i = MAXIMUM INPUT POWER
- U_o = OPEN CIRCUIT VOLTAGE OF THE BARRIER
- I_o = SHORT CIRCUIT CURRENT OF THE BARRIER
- C_o = MAXIMUM ALLOWED CAPACITANCE
- L_o = MAXIMUM ALLOWED INDUCTANCE
- P_o = MAXIMUM OUTPUT POWER

THE ENTITY CONCEPT ALLOWS INTERCONNECTION OF ASSOCIATED APPARATUS AND INTRINSICALLY SAFE APPARATUS WHEN THE FOLLOWING IS TRUE:
 $U_o \leq U_i$, $I_o \leq I_i$, $P_o \leq P_i$, $C_o \geq C_i + C_{cable}$, $L_o \geq L_i + L_{cable}$

ASSOCIATED APPARATUS MUST BE CSA APPROVED, AND FOLLOW MANUFACTURER'S INSTALLATION DRAWINGS. TO MAINTAIN THE INTRINSICALLY SAFE OUTPUT THE MODEL 8732EM MUST BE CONNECTED TO AN CSA APPROVED BARRIER THAT SATISFIES THE FOLLOWING CONDITIONS.

APPROVED WITH INTRINSICALLY SAFE CONNECTIONS FOR CLASS I, DIVISION 1, GROUPS ABCD; CLASS II AND III, DIVISION 1, GROUPS EFG.

8712EM ENTITY CONCEPT FOR INTRINSICALLY SAFE OUTPUTS



4-20mA ANALOG OUTPUT

ENTITY PARAMETERS

- U_i = 30V
- I_i = 300mA
- C_i = 924pF
- L_i = 0.0uH
- P_i = 1.0W

FOUNDATION FIELDBUS AND PROFIBUS DIGITAL OUTPUT

ENTITY PARAMETERS

- U_i = 30V
- I_i = 380mA
- C_i = 924pF
- L_i = 0.0uH

PULSE OUTPUT

ENTITY PARAMETERS

- U_i = 28V
- I_i = 100mA
- C_i = 4.5nF
- L_i = 0.0uH
- P_i = 1.0W

BARRIER PARAMETERS

- U_o MUST BE LESS THAN OR EQUAL TO 30V
- I_o MUST BE LESS THAN OR EQUAL TO 300mA
- C_o MUST BE GREATER THAN THE SUM OF C_i+C_{cable}
- L_o MUST BE GREATER THAN THE SUM OF L_i+L_{cable}
- P_o MUST BE LESS THAN OR EQUAL TO 1.0 WATTS

BARRIER PARAMETERS

- U_o MUST BE LESS THAN OR EQUAL TO 30V
- I_o MUST BE LESS THAN OR EQUAL TO 380mA
- C_o MUST BE GREATER THAN THE SUM OF C_i+C_{cable}
- L_o MUST BE GREATER THAN THE SUM OF L_i+L_{cable}

BARRIER PARAMETERS

- U_o MUST BE LESS THAN OR EQUAL TO 28V
- I_o MUST BE LESS THAN OR EQUAL TO 100mA
- C_o MUST BE GREATER THAN THE SUM OF C_i+C_{cable}
- L_o MUST BE GREATER THAN THE SUM OF L_i+L_{cable}
- P_o MUST BE LESS THAN OR EQUAL TO 1.0 WATTS

AC INPUT POWER 90-250 VAC RMS, 50/60HZ
 DC INPUT POWER 12-42 VDC
 DC LOW POWER 12-30 VDC

Um = 250V

CONFIDENTIAL AND PROPRIETARY INFORMATION IS CONTAINED HEREIN AND MUST BE HANDLED ACCORDINGLY.	SURFACE FINISH UNLESS OTHERWISE SPECIFIED	125	3RD ANGLE	SIZE	SCALE	REV
		✓	⊕	C	-	AG
EMERSON						
TITLE ROSEMOUNT						
INSTALLATION DRAWING						
CSA CANADIAN AND USA CLASS DIVISION						
DR.	N. BOND	2/18/14	DRAWING NO.	08732-2061		
APPD.	E. MESSENGER	6/13/14	DOC TYPE	SHEET 14 OF 17		
DO NOT SCALE PRINT	CAD MAINTAINED (PROE)	PRODUCT CODE	08732-2061			

UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES (mm). REMOVE ALL BURRS AND SHARP EDGES.

-DEC TOLERANCES-
X ± .1 [2.5]
.XX ± .02 [0.5]
.XXX ± .010 [0.25]
FRACTIONS ANGLES
± 1/32 ± 2°

DRAWING NO. 08732-2061

GAS ENVIRONMENT - FISCO CONCEPT

FISCO CONCEPT

THE FISCO CONCEPT ALLOWS INTERCONNECTION OF INTRINSICALLY SAFE APPARATUS TO ASSOCIATED APPARATUS NOT SPECIALLY EXAMINED IN SUCH COMBINATION. THE CRITERIA FOR INTERCONNECTION IS THAT THE VOLTAGE (V_{max}), THE CURRENT (I_{max}), AND THE POWER (P_{max}) WHICH AN INTRINSICALLY SAFE APPARATUS CAN RECEIVE AND REMAIN INTRINSICALLY SAFE CONSIDERING FAULTS, MUST BE EQUAL OR GREATER THAN VOLTAGE (V_{oc}), AND CURRENT (I_{sc}) WHICH CAN BE DELIVERED BY THE ASSOCIATED APPARATUS, CONSIDERING FAULTS AND APPLICABLE FACTORS. IN ADDITION, THE MAXIMUM UNPROTECTED CAPACITANCE (C_i) AND THE INDUCTANCE (L_i) OF EACH APPARATUS (OTHER THAN THE TERMINATION) CONNECTED TO THE FIELDBUS MUST BE LESS THAN OR EQUAL TO 5 nF AND 10 μ H RESPECTIVELY.

IN EACH SEGMENT ONLY ONE ACTIVE DEVICE, NORMALLY THE ASSOCIATED APPARATUS, IS ALLOWED TO PROVIDE THE NECESSARY ENERGY FOR THE FIELDBUS SYSTEM. THE VOLTAGE (V_{oc}) OF THE ASSOCIATED APPARATUS IS LIMITED TO A RANGE OF 14 TO 17.5 VDC. ALL OTHER EQUIPMENT CONNECTED TO THE BUS CABLE HAS TO BE PASSIVE, MEANING THAT THEY ARE NOT ALLOWED TO PROVIDE ENERGY TO THE SYSTEM, EXCEPT A LEAKAGE CURRENT OF 50 μ A FOR EACH CONNECTED DEVICE. SEPARATELY POWERED EQUIPMENT NEEDS GALVANIC ISOLATION TO ASSURE THAT THE INTRINSICALLY SAFE FIELDBUS CIRCUIT REMAINS PASSIVE.

THE CABLE USED TO INTERCONNECT DEVICES NEEDS TO HAVE THE PARAMETERS IN THE FOLLOWING RANGE:

Loop Resistance R_c :	15.....150 Ohm/km
Inductance per unit length L_c :	0.4.....1 mH/km
Capacitance per unit length C_c :	45.....200 nF
Length of trunk cable:	less than or equal to 1000m
Length of spur cable:	less than or equal to 60m

AT EACH END OF THE TRUNK CABLE AN APPROVED INFALLIBLE LINE TERMINATION WITH THE FOLLOWING PARAMETERS IS SUITABLE.

$$R = 90 \dots 102 \text{ Ohm} \quad C = 0 \dots 2.2 \text{ } \mu\text{f}$$

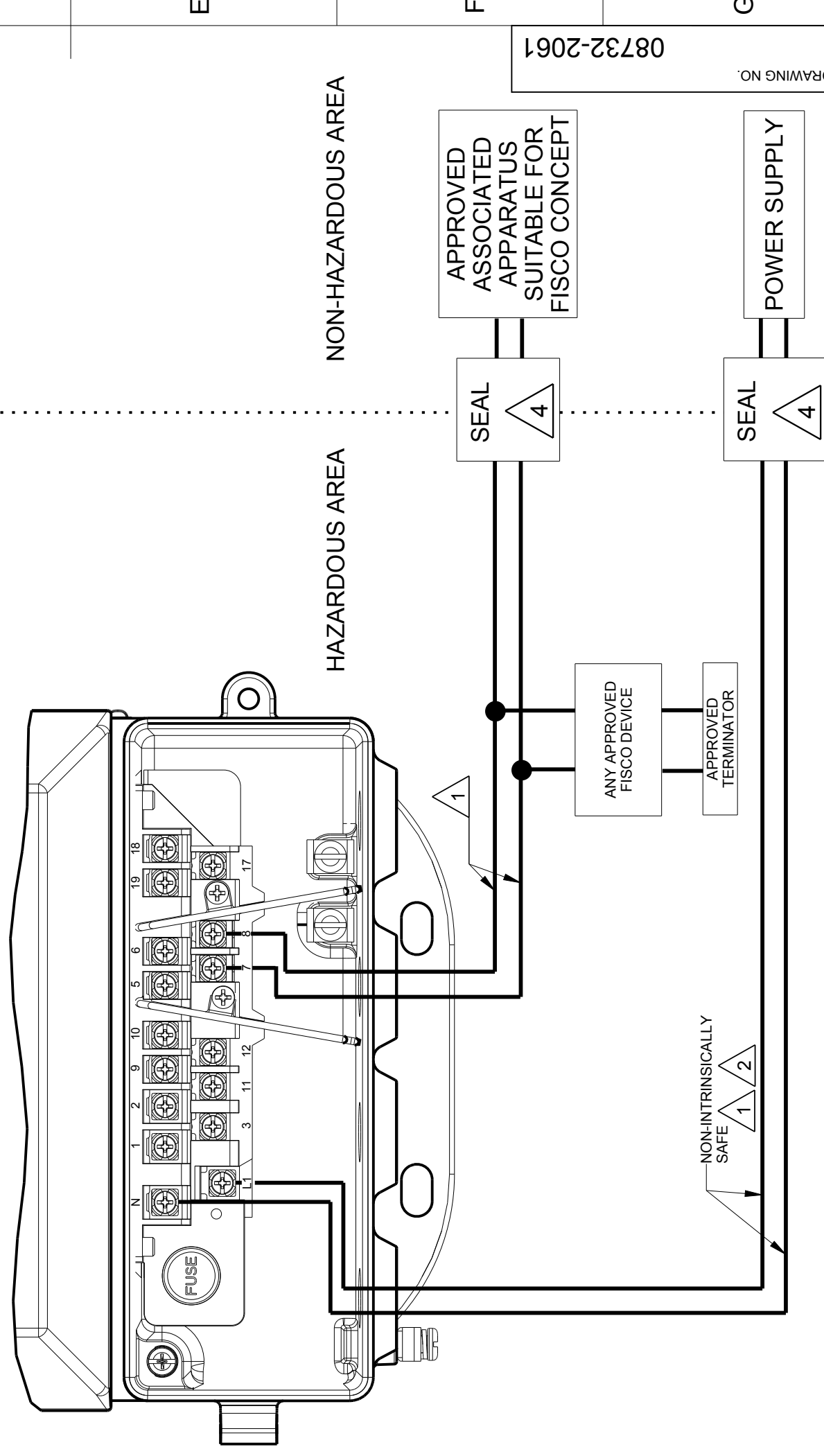
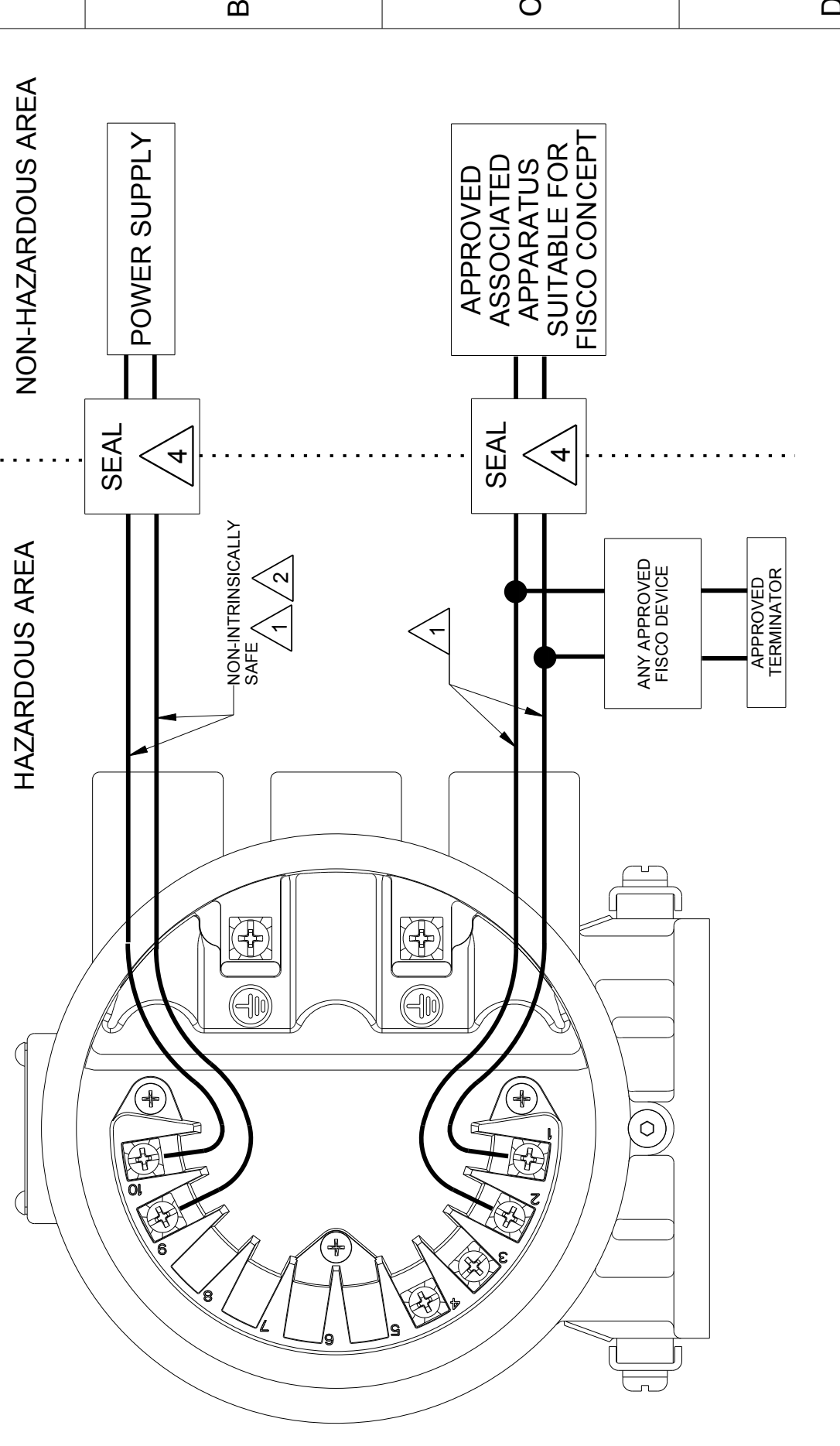
ONE OF THE ALLOWED TERMINATIONS MIGHT ALREADY BE INTEGRATED IN THE ASSOCIATED APPARATUS. THE NUMBER OF PASSIVE APPARATUS CONNECTED TO THE BUS SEGMENT IS NOT LIMITED TO I.S. REASONS. IF THE ABOVE RULES ARE RESPECTED, UP TO A TOTAL LENGTH OF 1000 m (SUM OF TRUNK AND ALL SPUR CABLES) OF CABLE IS PERMITTED. THE INDUCTANCE AND THE CAPACITANCE OF THE CABLE WILL NOT IMPAIR THE INTRINSIC SAFETY OF THE INSTALLATION.

ENTITY PARAMETER

$U_i = 30V$
 $I_i = 380 \text{ mA}$
 $C_i = 924 \text{ pF}$
 $L_i = 0.0 \text{ } \mu\text{H}$
 $P_i = 5.32 \text{ W}$

BARRIER PARAMETERS

U_o MUST BE LESS THAN OR EQUAL TO 30V
 I_o MUST BE LESS THAN OR EQUAL TO 380 mA
 C_o MUST BE GREATER THAN THE SUM OF $C_i + C_{cable}$
 L_o MUST BE GREATER THAN THE SUM OF $L_i + L_{cable}$



CONFIDENTIAL AND PROPRIETARY INFORMATION IS CONTAINED HEREIN AND MUST BE HANDLED ACCORDINGLY.	SURFACE FINISH UNLESS OTHERWISE SPECIFIED	125	3RD ANGLE	SIZE	C	SCALE	-	REV	AG
	DRAWING NO. 08732-2061								
EMERSON									
ROSEMOUNT									
TITLE INSTALLATION DRAWING									
UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES (mm). REMOVE ALL BURRS AND SHARP EDGES.									
-DEC TOLERANCES-									
X	±	.1	[2.5]						
XX	±	.02	[0.5]						
XXX	±	.010	[0.25]						
FRACTIONS	±	1/32	ANGLES	±	2'				
DO NOT SCALE PRINT CAD MAINTAINED (PROE) PRODUCT CODE									
FORM REV A0									

DR. N. BOND		2/18/14		DRAWING NO.		08732-2061	
APPE. MESSENGER		6/13/14		DOC TYPE		SHEET 15 OF 17	

GAS AND DUST ENVIRONMENT - FM TO CSA COMPATIBILITY

REPLACEMENT OF FM MARKED 8732EM TRANSMITTERS WITH EQUIVALENT CSA MODEL CODE

ORIGINAL MODEL		CSA REPLACEMENT EQUIVALENCY	
APPROVAL CODE	OUTPUT CODE	FM RATING	CSA-US RATING
N5	A	DUST-IGNITION PROOF FOR Class II, III, Div 1, GROUPS E,F, G; T5 NONINCENDIVE FOR CLASS I, DIVISION 2, GROUPS A,B,C,D: T4 INTRINSICALLY SAFE FOR CLASS I, II, III DIVISION 1 GROUPS A,B,C,D,E,F,G. (ELECTRODE CIRCUIT)	DUST-IGNITION PROOF FOR Class II, III, Div 1, GROUPS E,F, G; T5 NONINCENDIVE FOR CLASS I, DIVISION 2, GROUPS A,B,C,D: T4 INTRINSICALLY SAFE FOR CLASS I, II, III DIVISION 1 GROUPS A,B,C,D,E,F,G. (ELECTRODE CIRCUIT)
K5	A	EXPLOSION PROOF FOR CLASS I, DIV 1, GROUPS C, D: T6 DUST-IGNITION PROOF FOR Class II, III, Div 1, GROUPS E,F, G; T5 NONINCENDIVE FOR CLASS I, DIVISION 2, GROUPS A,B,C,D: T4 INTRINSICALLY SAFE FOR CLASS I, II, III DIVISION 1 GROUPS A,B,C,D,E,F,G. (ELECTRODE CIRCUIT)	EXPLOSION PROOF FOR CLASS I, DIV 1, GROUPS C, D: T6 DUST-IGNITION PROOF FOR Class II, III, Div 1, GROUPS E,F, G; T5 NONINCENDIVE FOR CLASS I, DIVISION 2, GROUPS A,B,C,D: T4 INTRINSICALLY SAFE FOR CLASS I, II, III DIVISION 1 GROUPS A,B,C,D,E,F,G. (ELECTRODE CIRCUIT)
N5	B	DUST-IGNITION PROOF FOR Class II, III, Div 1, GROUPS E,F, G; T5 NONINCENDIVE FOR CLASS I, DIVISION 2, GROUPS A,B,C,D: T4 INTRINSICALLY SAFE FOR CLASS I, II, III DIVISION 1 GROUPS A,B,C,D,E,F,G. (ELECTRODE CIRCUIT AND 4-20mA/PULSE OUTPUT)	DUST-IGNITION PROOF FOR Class II, III, Div 1, GROUPS E,F, G; T5 NONINCENDIVE FOR CLASS I, DIVISION 2, GROUPS A,B,C,D: T4 INTRINSICALLY SAFE FOR CLASS I, II, III DIVISION 1 GROUPS A,B,C,D,E,F,G. (ELECTRODE CIRCUIT AND 4-20mA/PULSE OUTPUT)
K5	B	EXPLOSION PROOF FOR CLASS I, DIV 1, GROUPS C, D: T6 DUST-IGNITION PROOF FOR Class II, III, Div 1, GROUPS E,F, G; T5 NONINCENDIVE FOR CLASS I, DIVISION 2, GROUPS A,B,C,D: T4 INTRINSICALLY SAFE FOR CLASS I, II, III DIVISION 1 GROUPS A,B,C,D,E,F,G. (ELECTRODE CIRCUIT AND 4-20mA/PULSE OUTPUT)	EXPLOSION PROOF FOR CLASS I, DIV 1, GROUPS C, D: T6 DUST-IGNITION PROOF FOR Class II, III, Div 1, GROUPS E,F, G; T5 NONINCENDIVE FOR CLASS I, DIVISION 2, GROUPS A,B,C,D: T4 INTRINSICALLY SAFE FOR CLASS I, II, III DIVISION 1 GROUPS A,B,C,D,E,F,G. (ELECTRODE CIRCUIT AND 4-20mA/PULSE OUTPUT)
Blank		Ordinary Locations - FM	Ordinary Locations - CSA

REPLACEMENT OF FM MARKED 8705M AND 8711M/L FLOW TUBES WITH EQUIVALENT CSA MODEL CODE

ORIGINAL MODEL		CSA REPLACEMENT EQUIVALENCY	
APPROVAL CODE	OUTPUT CODE	FM RATING	CSA-US RATING
N5		DUST-IGNITION PROOF FOR Class II, III, Div 1, GROUPS E,F, G; T2... T5 NONINCENDIVE FOR CLASS I, DIVISION 2, GROUPS A,B,C,D: T3...T5 INTRINSICALLY SAFE FOR CLASS I, II, III DIVISION 1 GROUPS A,B,C,D,E,F,G. (ELECTRODE CIRCUIT)	DUST-IGNITION PROOF FOR Class II, III, Div 1, GROUPS E,F, G; T2... T5 NONINCENDIVE FOR CLASS I, DIVISION 2, GROUPS A,B,C,D: T3...T5 INTRINSICALLY SAFE FOR CLASS I, II, III DIVISION 1 GROUPS A,B,C,D,E,F,G. (ELECTRODE CIRCUIT)
K5		EXPLOSION PROOF FOR CLASS I, DIV 1, GROUPS C, D: T3...T6 DUST-IGNITION PROOF FOR Class II, III, Div 1, GROUPS E,F, G; T2... T5 NONINCENDIVE FOR CLASS I, DIVISION 2, GROUPS A,B,C,D: T3...T5 INTRINSICALLY SAFE FOR CLASS I, II, III DIVISION 1 GROUPS A,B,C,D,E,F,G. (ELECTRODE CIRCUIT)	EXPLOSION PROOF FOR CLASS I, DIV 1, GROUPS C, D: T3...T6 DUST-IGNITION PROOF FOR Class II, III, Div 1, GROUPS E,F, G; T2... T5 NONINCENDIVE FOR CLASS I, DIVISION 2, GROUPS A,B,C,D: T3...T5 INTRINSICALLY SAFE FOR CLASS I, II, III DIVISION 1 GROUPS A,B,C,D,E,F,G. (ELECTRODE CIRCUIT)
Blank		Ordinary Locations - FM	Ordinary Locations - CSA

DRAWING NO. 08732-2061

CONFIDENTIAL AND PROPRIETARY INFORMATION IS CONTAINED HEREIN AND MUST BE HANDLED ACCORDINGLY.	SURFACE FINISH UNLESS OTHERWISE SPECIFIED	125°	3RD ANGLE	SIZE C	SCALE -	REV AG
ROSEMOUNT						
TITLE INSTALLATION DRAWING						
CSA CANADIAN AND USA CLASS DIVISION						
DR. N. BOND	2/18/14	DRAWING NO.		08732-2061		
APPE. MESSENGER	6/13/14	PRODUCT CODE		SHEET 16 OF 17		
DO NOT SCALE PRINT CAD MAINTAINED. (PROJ)						

UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES (mm). REMOVE ALL BURRS AND SHARP EDGES.

-DEC TOLERANCES-
 X ± .1 [2.5]
 .XX ± .02 [0.5]
 .XXX ± .010 [0.25]
 FRACTIONS ± 1/32 ANGLES ± 2°

GAS AND DUST ENVIRONMENT- US-NEC-ONLY - 8705-Wx AND 8711-R/U SENSORS WITH 8732EM AND 8712EM TRANSMITTERS

MODEL 8705-W INTEGRAL OR REMOTE MOUNT CONFIGURATION WITH SAFETY APPROVAL OPTION 'E5' OR 'N5'



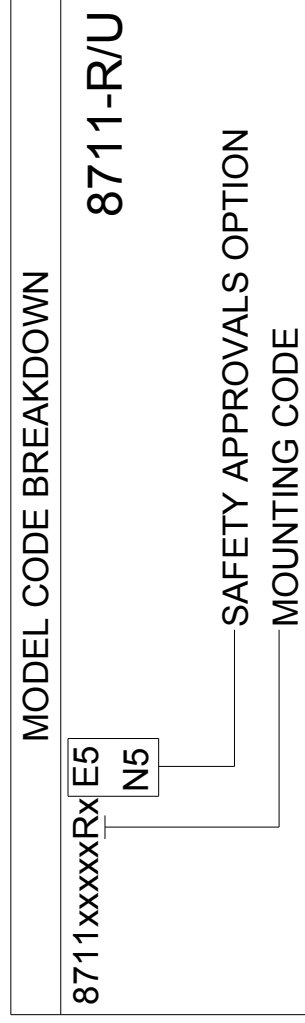
MODEL 8705 WITH 'E5' [US-NEC ONLY] EXPLOSION PROOF FOR CLASS I, DIVISION 1, GROUPS C,D; T6 NON-INCENDIVE FOR CLASS I, DIVISION 2, GROUPS A,B,C,D; T4 DUST IGNITION PROOF FOR CLASS II/III, DIVISION 1, GROUPS E,F,G; T6 AMBIENT TEMP. LIMITS: $-50^{\circ}\text{C} \leq \text{Ta} \leq 60^{\circ}\text{C}$.

ENCLOSURE TYPE 4X

MODEL 8705 WITH 'N5' [US-NEC ONLY] NON-INCENDIVE FOR CLASS I, DIVISION 2, GROUPS A,B,C,D; T4 DUST IGNITION PROOF FOR CLASS II/III, DIVISION 1, GROUPS E,F,G; T6 AMBIENT TEMP. LIMITS: $-50^{\circ}\text{C} \leq \text{Ta} \leq 60^{\circ}\text{C}$.

ENCLOSURE TYPE 4X

MODEL 8711-R/U INTEGRAL OR REMOTE MOUNT CONFIGURATION WITH SAFETY APPROVAL OPTION 'E5' OR 'N5'

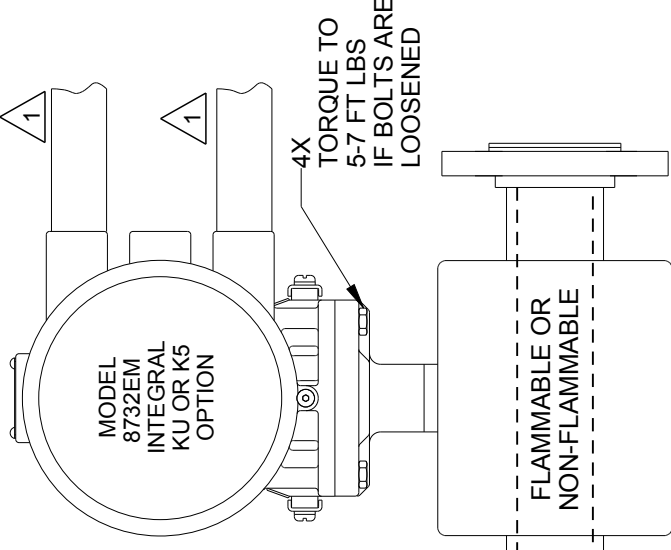


MODEL 8711 WITH 'E5' [US-NEC ONLY] EXPLOSION PROOF FOR CLASS I, DIVISION 1, GROUPS C,D; T6 NON-INCENDIVE FOR CLASS I, DIVISION 2, GROUPS A,B,C,D; T4 DUST IGNITION PROOF FOR CLASS II/III, DIVISION 1, GROUPS E,F,G; T6 AMBIENT TEMP. LIMITS: $-50^{\circ}\text{C} \leq \text{Ta} \leq 60^{\circ}\text{C}$.

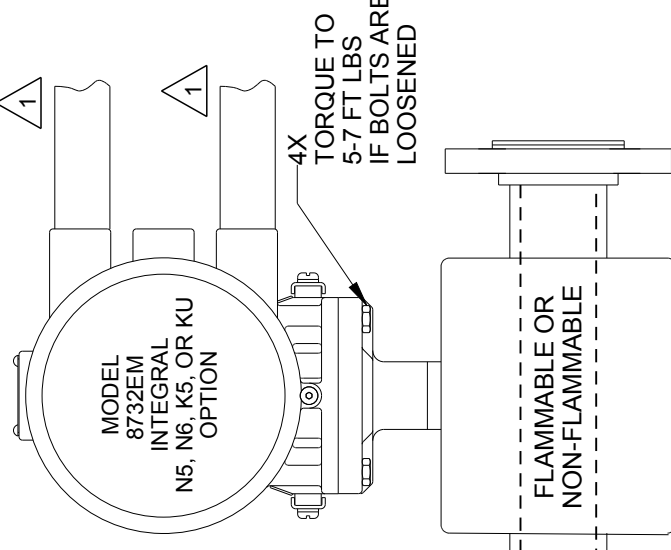
ENCLOSURE TYPE 4X

MODEL 8711 WITH 'N5' [US-NEC ONLY] NON-INCENDIVE FOR CLASS I, DIVISION 2, GROUPS A,B,C,D; T4 DUST IGNITION PROOF FOR CLASS II/III, DIVISION 1, GROUPS E,F,G; T6 AMBIENT TEMP. LIMITS: $-50^{\circ}\text{C} \leq \text{Ta} \leq 60^{\circ}\text{C}$.

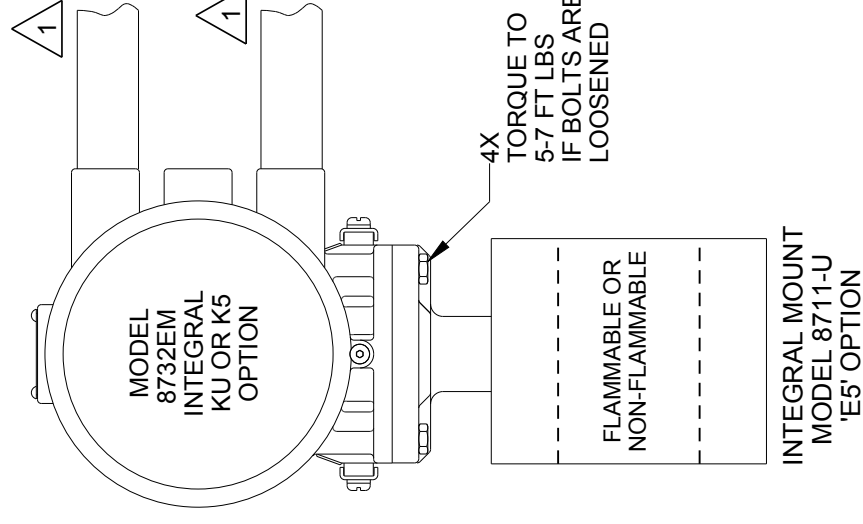
ENCLOSURE TYPE 4X



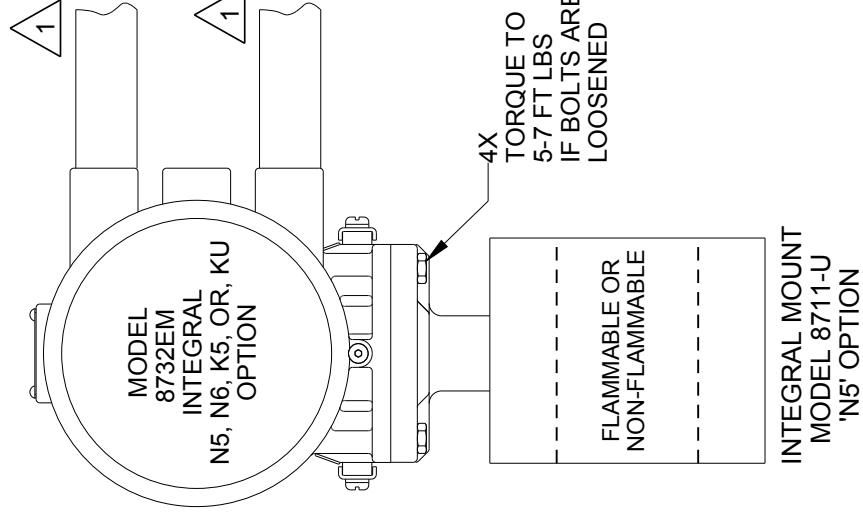
INTEGRAL MOUNT
MODEL 8705-W
'E5' OPTION



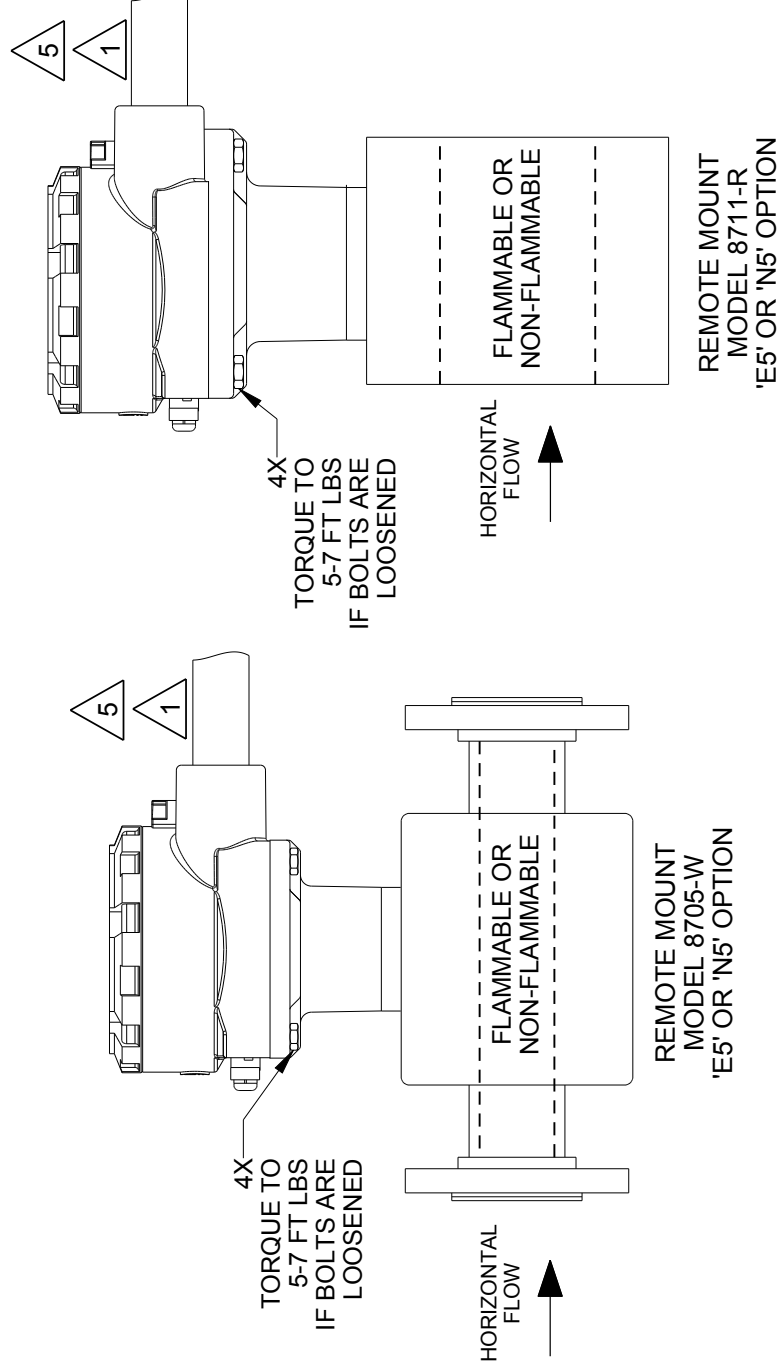
INTEGRAL MOUNT
MODEL 8705-W
'N5' OPTION



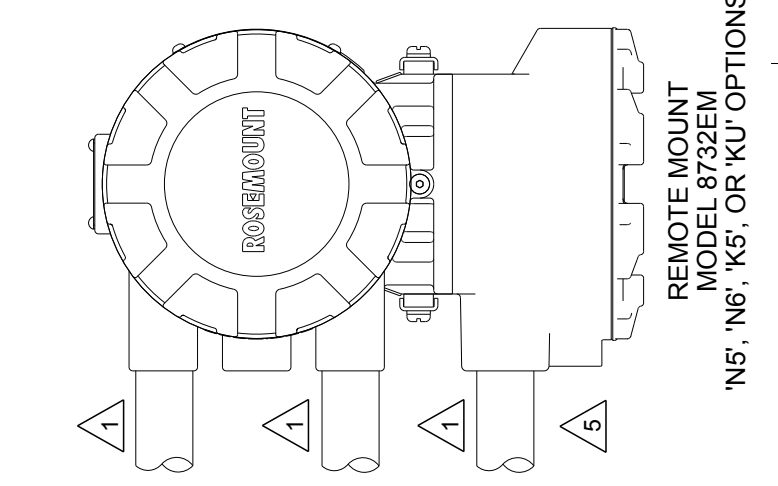
INTEGRAL MOUNT
MODEL 8711-U
'E5' OPTION



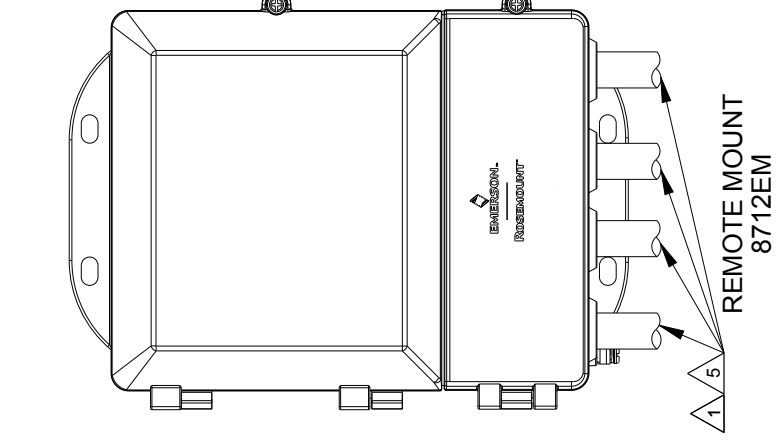
INTEGRAL MOUNT
MODEL 8711-U
'N5' OPTION



REMOTE MOUNT
MODEL 8705-W
'E5' OR 'N5' OPTION

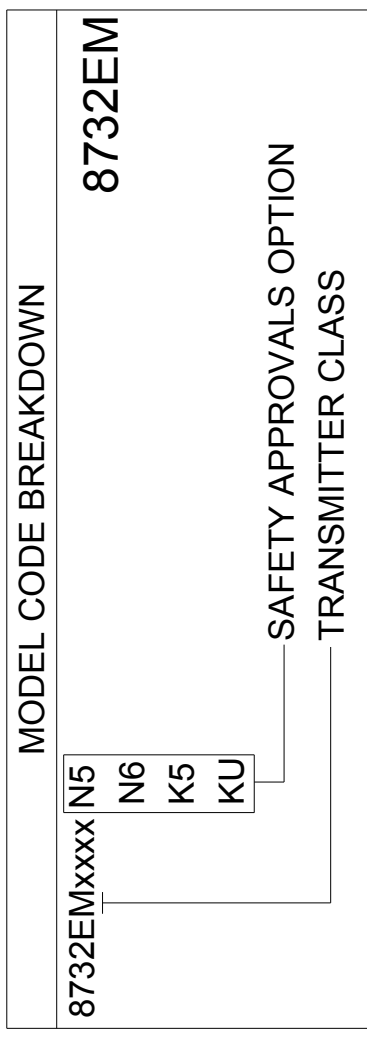


REMOTE MOUNT
MODEL 8732EM
'N5', 'N6', 'K5', OR 'KU' OPTIONS



REMOTE MOUNT
8712EM
'N5' OR 'N6' OPTION

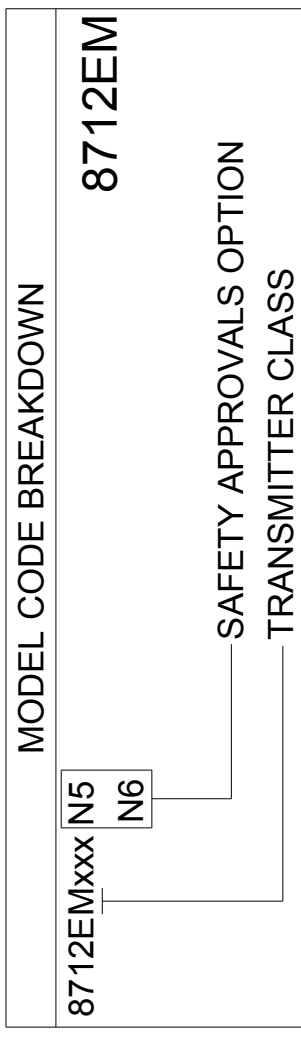
MODEL 8732EM INTEGRAL OR REMOTE MOUNT CONFIGURATION WITH SAFETY APPROVAL OPTION 'N5', 'N6', 'K5', OR 'KU'



MODEL 8732EM WITH 'K5' OR 'KU' [US-NEC ONLY] EXPLOSION-PROOF FOR CLASS I DIVISION 1 GRPS CD; T6 NON-INCENDIVE FOR CLASS I DIVISION 2 GRPS ABCD; T4 DUST-IGNITION PROOF FOR CLASS II/III DIVISION 1 GRPS; EFG; T5 AMBIENT TEMPERATURE ($-40^{\circ}\text{C} \leq \text{Ta} \leq 60^{\circ}\text{C}$)

MODEL 8732EM WITH 'N5' OR 'N6' [US-NEC ONLY] NON-INCENDIVE FOR CLASS I DIVISION 2 GRPS ABCD; T4 DUST-IGNITION PROOF FOR CLASS II/III DIVISION 1 GRPS; EFG; T5 AMBIENT TEMPERATURE ($-40^{\circ}\text{C} \leq \text{Ta} \leq 60^{\circ}\text{C}$)

MODEL 8712EM REMOTE MOUNT CONFIGURATION WITH SAFETY APPROVAL OPTION 'N5' OR 'N6'



MODEL 8712EM WITH 'N5' OR 'N6' [US-NEC ONLY] NON-INCENDIVE FOR CLASS I DIVISION 2 GRPS ABCD; T4 DUST-IGNITION PROOF FOR CLASS II/III DIVISION 1 GRPS; EFG; T5 AMBIENT TEMPERATURE ($-40^{\circ}\text{C} \leq \text{Ta} \leq 60^{\circ}\text{C}$)

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UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES (mm). REMOVE ALL BURRS AND SHARP EDGES.

-DEC TOLERANCES-
X ± .1 (2.5)
.XX ± .02 (0.5)
.XXX ± .010 (0.25)
FRACTIONS ± 1/32 ANGLES ± 2'

SURFACE FINISH UNLESS OTHERWISE SPECIFIED

125

3RD ANGLE

SIZE C

SCALE -

REV AG

EMERSON

ROSEMOUNT

INSTALLATION DRAWING

CSA CANADIAN AND USA CLASS DIVISION

DR. N. BOND 2/18/14 DRAWING NO. 08732-2061

APPE. MESSENGER 6/13/14

DO NOT SCALE PRINT CAD MAINTAINED (PROE) PRODUCT CODE SHEET 17 OF 17

08732-2061

DRAWING NO.



00825-MA00-0002, Rev. AB
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