

# Approvals Document – IECEx, ATEX, and UKEX Rosemount™ Magnetic Flowmeter Platform 8782 Transmitter and MS Sensor














**Rosemount™ 8782 Slurry Transmitter and MS Slurry Sensor Magnetic Flowmeter**

Order Code	8782 Transmitter Rating	MS Sensor (Flowtube) Rating	Region	Agency	Certification Number
NH	Ordinary Location (non-hazardous)	Ordinary Location (non-hazardous)	USA, Canada, EU, EEU**	CSA and EAC	80102913
ND	ATEX / UKEX Dust with I.S. or Non I.S. outputs	ATEX / UKEX Dust	EU EU UK UK	CSA	Sira 19ATEX1120X Sira 19ATEX3121X CSAE 22UKEX1310X CSAE 22UKEX1315X
NF	IECEX Dust with I.S. or Non I.S. outputs	IECEX Dust	Global	CSA	IECEX SIR 19.0032X
N1	ATEX / UKEX Non-Sparking, Increased Safety (Ex ec), and Dust with I.S. or Non-I.S. outputs	ATEX / UKEX Non-Sparking, Increased Safety (Ex ec) with Intrinsically Safe Electrodes; ATEX / UKEX Dust	EU EU UK UK	CSA	Sira 19ATEX1120X Sira 19ATEX3121X CSAE 22UKEX1310X CSAE 22UKEX1315X
N2	INMETRO Non-Sparking, Increased Safety (Ex ec), and Dust	INMETRO Non-Sparking, Increased Safety (Ex ec) with Intrinsically Safe Electrodes; INMETRO Dust	Brazil	DNV INMETRO	***
N3	NEPSI Non-Sparking and Dust with I.S. or Non I.S. outputs	NEPSI Non-Sparking with Intrinsically Safe Electrodes; NEPSI Dust	China	NEPSI	GYJ20.1112X
N5	North America Approvals, Class I Div 2, Non-Incendive and Dust	North America Class I Div 2 Non-Incendive with Intrinsically Safe Electrodes; Dust	USA, Canada	CSA	80102913
N6	North America Approvals, Class I Zone 2, Class II Zone 22	North America Class I Zone 2 with Intrinsically Safe Electrodes; Class II Zone 22	USA, Canada	CSA	80102913
N7	IECEX Non-Sparking, Increased Safety (Ex ec), and Dust with I.S. or Non I.S. outputs	IECEX Non-Sparking, Increased Safety (Ex ec) with Intrinsically Safe Electrodes; IECEX Dust	Global	CSA	IECEX SIR 19.0032X
N8	EAC Non-Sparking, Increased Safety (Ex ec), and Dust	EAC Non-Sparking, Increased Safety (Ex ec) with Intrinsically Safe Electrodes; EAC Dust	EEU**	TOO T-Стандарт	EAЭC KZ 7500525.01.01.00972
N9	KTL Non-Sparking, Increased Safety (Ex ec), and Dust	KTL Non-Sparking, Increased Safety (Ex ec) with Intrinsically Safe Electrodes; KTL Dust	Korea	KTL	***
K1	N/A	ATEX / UKEX Increased Safety (Ex eb) with Intrinsically Safe Electrodes; ATEX / UKEX Dust	EU UK	CSA	SIRA 19ATEX1120X CSAE 22UKEX1310X
K2	N/A	INMETRO Increased Safety (Ex eb) with Intrinsically Safe Electrodes; INMETRO Dust	Brazil	DNV INMETRO	***
K3	N/A	NEPSI Increased Safety with Intrinsically Safe Electrodes; NEPSI Dust	China	NEPSI	GYJ20.1112X
K5	N/A	North America Class I Div 1 Explosionproof with Intrinsically Safe Electrodes; Dust	USA, Canada	CSA	80102913
K6	N/A	North America Class I Zone 1 with Intrinsically Safe Electrodes; Class II Zone 22	USA, Canada	CSA	80102913
K7	N/A	IECEX Increased Safety (Ex eb) with Intrinsically Safe Electrodes; IECEX Dust	Global	CSA	IECEX SIR 19.0032X
K8	N/A	EAC Increased Safety (Ex eb) with Intrinsically Safe Electrodes; EAC Dust	EEU**	TOO T-Стандарт	EAЭC KZ 7500525.01.01.00972
K9	N/A	KTL Increased Safety (Ex eb) with Intrinsically Safe Electrodes; KTL Dust	Korea	KTL	***
KW NW	N/A Non-Sparking, Increased Safety (Ex ec)	Increased Safety (Ex eb) with Intrinsically Safe Electrodes Non-Sparking, Increased Safety (Ex ec) with Intrinsically Safe Electrodes	India	PESO	P532032/1

\* 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.

\*\* Eurasian Economic Union - EEU \*\*\* Planned submittal or in process with Agency.

### 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.
	UKCA	UK	Compliance with all applicable UK Legislation.
	ATEX and UKEX	European Union and UK	Compliance with Equipment and Protective systems intended for use in Potentially Explosive Atmospheres directive (ATEX) (2014/34/EU) and Equipment and Protective Systems Intended for use in Potentially Explosive Atmospheres Regulations 2016 (S.I. 2016/1107)
	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 Economic Union - EEU	Compliance with all of the applicable technical regulations of the EAC Customs Union
	EAC Hazardous Location	Eurasian Economic Union - EEU	Compliance with Technical regulation, (TR CU 012/2011) – The safety of equipment for use in explosive environments.
	EEU Pattern Approval Certificate	Russia	Indicates compliance of measuring instruments with the approved metrological and technical characteristics.
	DNV INMETRO	Brazil	Compliance with the applicable technical regulations of Brazil.
	NEPSI	China	Compliance with all applicable technical regulations of China.
	KTL	Korea	Compliance with all applicable technical regulations of Korea.

Product designated for Ordinary Location may be marked with CE, C-tick, 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](http://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). The intended use of this product is to measure the flow rate of fluids.

#### CLASS - C225206 - PROCESS CONTROL EQUIPMENT

#### CLASS - C225286 - PROCESS CONTROL EQUIPMENT-Certified to US Standards

#### Name: 8782 Slurry Transmitter

##### Electrical Rating:

90 to 250 Vac, 50/60 Hz, 1.5 A, 120 VA; or

12 to 42 Vdc, 10 A, 120 W; or

12 to 48 Vdc, 10 A, 120 W

Output: 85 Vpeak max, 2.0 A max

Ambient Temperature: -40°C to +50°C

Enclosure Rating: IP66/IP69; Type 4X

Rated Altitude:

- AC Power Model - up to 4000 m above sea level at the rated input voltage of 90-250VAC.
- AC Power Model - up to 5000 m above sea level at a maximum input voltage of 150VAC.
- DC Power Model - up to 5000 m above sea level at rated input voltage.

#### Model: 8782abcdeffgg

a = Revisions Level: A

b = Transmitter Mounting Options: W

c = Power Supply: 1 or 2

d = Transmitter Outputs: A, B, F, P, D or M

e = Conduit Entry: 1 or 2

ff = Safety Approvals Code Option: **NH**

gg = Any Alpha-Numeric characters representing product options up to fifty digits.

#### Name: MS Slurry Sensor

Electrical Rating: 85 Vmax, 2.0 A

Ambient Temperature: -50°C to +60°C (Stainless Steel)  
-29°C to +60°C (Carbon Steel)

Enclosure Rating: IP66/IP68/IP69; Type 4X

Max Process Temperature: 177°C

Rated Altitude: Up to 5000 m

Dual Seal - When the DS option is selected.

#### Model: MSaaabdefghijklm

aaa = Line size: 030 - 360(3-36 inch)

b = Rev level: A

c = Mounting option: R = Remote

d = Conduit Entry: 1=1/2" NPT, 2= M20

e = Lining Material: Any one-digit alpha or numeric character

f = Electrode Material: Any one-digit alpha or numeric character

g = Electrode Type: Any one-digit alpha or numeric character

h = Flange Material: Any one-digit alpha or numeric character

i = Flange Type: Any one-digit alpha or numeric character  
j = Flange Rating: Any one-digit alpha or numeric character  
kk = Coil Housing Configuration: M0, M1, M2, or M4.  
ll = Safety Approval Option: **NH**  
m = Options: Any Alpha-Numeric characters representing non-safety product options up to fifty-two digits in length.  
nn = Dual Seal Option: DS

**Notes:**

1. The 8782 Slurry Transmitter and the MS Slurry Sensor are permanently (conduit) connected, intended for continuous operation in extended environmental conditions as specified. Overvoltage Category II, Pollution Degree 2.
2. The 8785 Calibrator is permanently connected and transportable, intended for short-time operation in normal environmental conditions. Overvoltage Category II, Pollution Degree 2. Not intended for use in wet locations.
3. The 8782 Slurry Transmitter can be remotely connected to the 8707 Sensor which is separately certified under CSA Certificate 80102919.
4. The MS Slurry Sensor can be remotely connected to the 8782, 8732EM and the 8712EM transmitters. The 8732EM and 8712EM transmitters are separately certified under CSA certificate 80102916.

**CLASS - C225206 - PROCESS CONTROL EQUIPMENT****CLASS - C225286 - PROCESS CONTROL EQUIPMENT - Certified to US Standards****CLASS - C225802 - PROCESS CONTROL EQUIPMENT - For Hazardous Locations****CLASS - C225882 - PROCESS CONTROL EQUIPMENT - For Hazardous Locations - Certified to US Standards****Class I, Division 2, Groups A, B, C, D; T4 with non-incendive field wiring****Class II, Division 2, Groups E, F, G; Class III; T5****Class II, Division 1, Groups E, F, G; Class III; T5****Name: 8782 Slurry Transmitter**

Electrical Rating:

90 to 250 Vac, 50/60 Hz, 1.5 A, 120 VA

12 to 42 Vdc, 10 A, 120 W

12 to 48 Vdc, 10 A, 120 W

Output: 85 Vpeak max, 2.0 A max

Ambient Temperature: -40°C to +60°C

Enclosure Rating: IP66/IP69; Type 4X

Rated Altitude:

- o AC Power Model - up to 4000 m above sea level at the rated input voltage of 90-250VAC.
- o AC Power Model - up to 5000 m above sea level at a maximum input voltage of 150VAC.
- o DC Power Model - up to 5000 m above sea level at rated input voltage.

**Model: 8782abcdeffgg**

a = Revisions Level: A

b = Transmitter Mounting Options: W

c = Power Supply: 1 or 2

d = Transmitter Outputs: A, B, F, P, D or M

e = Conduit Entry: 1 or 2

ff = Safety Approvals Code Option: **N5**

gg = Any Alpha-Numeric characters representing product options up to fifty digits.

**Class I, Zone 2, AEx/Ex ec ic [ia Ga] IIC T4 Gc ; Class I, Zone 2, AEx/Ex ic nA [ia Ga] IIC T4 Gc**  
**Zone 22, AEx/Ex ic tc [ia Da] IIIC T80°C Dc**  
**Zone 22, AEx/Ex ic tc IIIC T80°C Dc**

Name: **8782 Slurry Transmitter**

Electrical Rating:

12 to 42 Vdc, 10 A, 120 W or

12 to 48 Vdc, 10 A, 120 W

Output: 85 V max, 2.0 A max

Ambient Temperature: -40°C to +60°C

Enclosure Rating: IP66/IP69; Type 4X

Rated Altitude:

- AC Power Model - up to 4000 m above sea level at the rated input voltage of 90-250VAC.
- AC Power Model - up to 5000 m above sea level at a maximum input voltage of 150VAC.
- DC Power Model - up to 5000 m above sea level at rated input voltage.

Model: **8782abcdeffgg**

a = Revisions Level: A

b = Transmitter Mounting Options: W

c = Power Supply: 2

d = Transmitter Outputs: A, B, F, P, D or M

e = Conduit Entry: 1 or 2

ff = Safety Approvals Code Option: **N6**

gg = Any Alpha-Numeric characters representing product options up to fifty digits.

Notes:

1. The 8782 Slurry Transmitter and the MS Slurry Sensor are permanently (conduit) connected, intended for continuous operation in extended environmental conditions as specified.  
Overvoltage Category II, Pollution Degree 2.
2. The 8782 Slurry Transmitter can be remotely connected to the 8707 Sensor which is separately certified under CSA Certificate 80102919.
3. The MS Slurry Sensor can be remotely connected to the 8782, 8732EM and the 8712EM transmitters. The 8732EM and 8712EM transmitters are separately certified under CSA certificate 80102916.

**Class I, Division 2, Groups A, B, C, D; T6...T3 with Non-incendive field wiring  
Class II, Division 1, Groups E, F, G; Class III; T71°C ...T206°C****Name: MS Slurry Sensor**

Electrical Rating: 85 Vpeak max, 2.0 A max

Ambient Temperature: -50°C to +60°C (Stainless Steel); -29°C to +60°C (Carbon Steel)

Enclosure Rating: IP66/IP68/IP69; Type 4X

Rated Altitude: Up to 5000 m

Max Process Working Pressure: 50 psi to 6170 psi depending on flange option chosen

Max Process Temperature: See conditions of acceptability for maximum process temperatures.

Dual Seal – When DS option selected

**Model: MSaaabbcdefghijklmnn**

aaa = Line size: 030 – 360(3-36 inch)

b = Rev level: A

c = Mounting option: R = Remote

d = Conduit Entry: 1=1/2" NPT, 2= M20

e = Lining Material: Any one-digit alpha or numeric character

f = Electrode Material: Any one-digit alpha or numeric character

g = Electrode Type: Any one-digit alpha or numeric character

h = Flange Material: Any one-digit alpha or numeric character

i = Flange Type: Any one-digit alpha or numeric character

j = Flange Rating: Any one-digit alpha or numeric character

kk = Coil Housing Configuration: M0, M1, M2, or M4.

ll = Safety Approval Option: **N5**

m = Options: Any Alpha-Numeric characters representing non-safety product options up to fifty-two digits in length.

nn = Dual Seal Option: DS

**Class I, Zone 2, AEx/Ex ec ic IIC T6...T3 Gc; Class I, Zone 2, AEx/Ex ic nA IIC T6...T3 Gc  
Zone 22, AEx/Ex tb IIIC T65°C ...T200°C Db****Name: MS Slurry Sensor**

Electrical Rating: 85 Vpeak max, 2.0 A max

Ambient Temperature: -50°C to +60°C (Stainless Steel); -29°C to +60°C (Carbon Steel)

Enclosure Rating: IP66/IP68/IP69; Type 4X

Rated Altitude: Up to 5000 m

Max Process Working Pressure: 50 psi to 6170 psi depending on flange option chosen

Max Process Temperature: See conditions of acceptability for maximum process temperatures.

Dual Seal – When DS option selected

**Model: MSaaabbcdefghijklmnn**

aaa = Line size: 030 – 360(3-36 inch)

b = Rev level: A

c = Mounting option: R = Remote

d = Conduit Entry: 1=1/2" NPT, 2= M20

e = Lining Material: Any one-digit alpha or numeric character

f = Electrode Material: Any one-digit alpha or numeric character

g = Electrode Type: Any one-digit alpha or numeric character

h = Flange Material: Any one-digit alpha or numeric character

i = Flange Type: Any one-digit alpha or numeric character

j = Flange Rating: Any one-digit alpha or numeric character

kk = Coil Housing Configuration: M0, M1, M2, or M4.

ll = Safety Approval Option: **N6**

m = Options: Any Alpha-Numeric characters representing non-safety product options up to fifty-two digits in length.

nn = Dual Seal Option: DS

**Class I, Zone 1, AEx/Ex eb ia IIC T6...T3 Ga/Gb  
Zone 21, AEx/Ex tb IIIC T65°C ...T200°C Db****Name: MS Slurry Sensor**

Electrical Rating: 85 Vpeak max, 2.0 A max

Enclosure Rating: IP66/IP68/IP69; Type 4X

Rated Altitude: Up to 5000 m

Process Working Pressure: 50 psi to 6170 psi depending on flange option chosen

Process Temperature: See conditions of acceptability for maximum process temperatures.

Dual Seal – When DS option selected

**Model: MSaaabbcdefghijklm**

aaa = Line size: 030 – 360(3-36 inch)

b = Rev level: A

c = Mounting option: R = Remote

d = Conduit Entry: 1=1/2" NPT, 2= M20

e = Lining Material: Any one-digit alpha or numeric character

f = Electrode Material: Any one-digit alpha or numeric character

g = Electrode Type: Any one-digit alpha or numeric character

h = Flange Material: Any one-digit alpha or numeric character

i = Flange Type: Any one-digit alpha or numeric character

j = Flange Rating: Any one-digit alpha or numeric character

kk = Coil Housing Configuration: M0, M1, M2, or M4.

ll = Safety Approval Options:

Class Zone: **K6**

m = Options: Any Alpha-Numeric characters representing non-safety product options up to fifty-two digits in length.

nn = Dual Seal Option: DS

**Notes:**

1. The 8782 Slurry Transmitter and the MS Slurry Sensor are permanently (conduit) connected, intended for continuous operation in extended environmental conditions as specified. Overvoltage Category II, Pollution Degree 2.
2. The MS Slurry Sensor/Sensor can be remotely connected to the 8782, 8732EM and the 8712EM transmitters. The 8732EM and 8712EM transmitters are separately certified under CSA certificate 80102916.

**Special Conditions of Safe Use for Class/Division: 8782**

1. For use only with model MS Sensors/Flow tubes.
2. The 8782 Slurry Transmitter is not capable of passing the 500 V isolation test on terminals due to integral transient protection. This must be considered upon installation.

**Special Conditions of Safe Use for Class/Division: MS**

1. The MS Slurry Sensor is intended for use only in combination with the 8782, 8732EM, 8712EM Transmitters or a Transmitter with equivalent or less output ratings.
2. Options V1 or V2 are not Type 4X Corrosion Resistant.
3. Options V1 or V2 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.
4. The temperature code, ambient temperature range, and maximum process temperature for the MS Slurry Sensors are as follows:



Hazardous Gas Locations (Group IIC, Groups A, B, C, D)

T-Code	Coil Housing Material	Line Size	Ambient Temperature Range	Maximum Process Temperature
T6	Carbon Steel	All	-29°C to 35°C	45°C
T5	Carbon Steel	3"	-29°C to 60°C	60°C
T4	Carbon Steel	3"	-29°C to 60°C	105°C
T3	Carbon Steel	3"	-29°C to 60°C	177°C
T5	Carbon Steel	4"-36"	-29°C to 60°C	65°C
T4	Carbon Steel	4"-36"	-29°C to 60°C	110°C
T3	Carbon Steel	4"-36"	-29°C to 60°C	177°C
T6	Stainless Steel	All	-50°C to 35°C	45°C
T5	Stainless Steel	3"	-50°C to 60°C	60°C
T4	Stainless Steel	3"	-50°C to 60°C	105°C
T3	Stainless Steel	4"-36"	-50°C to 60°C	177°C
T5	Stainless Steel	4"-36"	-50°C to 60°C	65°C
T4	Stainless Steel	4"-36"	-50°C to 60°C	110°C
T3	Stainless Steel	4"-36"	-50°C to 60°C	177°C

Hazardous Dust Locations (Group IIIC, Groups E, F, G) Division 2

T-Code	Coil Housing Material	Line Size	Ambient Temperature Range	Maximum Process Temperature
T65	Carbon Steel	All	-29°C to 35°C	45°C
T80	Carbon Steel	All	-29°C to 60°C	60°C
T135	Carbon Steel	All	-29°C to 60°C	105°C
T200	Carbon Steel	All	-29°C to 60°C	177°C
T65	Stainless Steel	All	-50°C to 35°C	45°C
T80	Stainless Steel	All	-50°C to 60°C	60°C
T135	Stainless Steel	All	-50°C to 60°C	105°C
T200	Stainless Steel	All	-50°C to 60°C	177°C

Hazardous Dust Locations (Group IIIC, Groups E, F, G) Division 1

T-Code	Coil Housing Material	Line Size	Ambient Temperature Range	Maximum Process Temperature
T71	Carbon Steel	All	-29°C to 35°C	45°C
T86	Carbon Steel	All	-29°C to 60°C	60°C
T141	Carbon Steel	All	-29°C to 60°C	105°C
T206	Carbon Steel	All	-29°C to 60°C	177°C
T71	Stainless Steel	All	-50°C to 35°C	45°C
T86	Stainless Steel	All	-50°C to 60°C	60°C
T141	Stainless Steel	All	-50°C to 60°C	105°C
T206	Stainless Steel	All	-50°C to 60°C	177°C

**Special Conditions for Safe Use (X) for Class Zone: 8782 and MS**

- Under certain extreme circumstances, the non-metallic parts incorporated in the enclosure of this equipment may generate an ignition-capable level of electrostatic charge. Therefore, the equipment shall not be installed in a location where the external conditions are conducive to the build-up of electrostatic charge on such surfaces. In addition, the equipment shall only be cleaned with a damp cloth.
- The 8782 Slurry Transmitter enclosure is manufactured from Aluminum Alloy. In rare cases, ignition sources due to impact and friction sparks could occur. This shall be considered during installation.
- The MS Slurry Sensor is intended for use only in combination with the 8782 Slurry Transmitter or a Transmitter with equivalent or less output ratings.
- The 8782 Slurry Transmitter is not capable of passing the 500 V isolation test on terminals to chassis due to integral transient protection. This must be considered upon installation.

5. Appropriately rated conduit entries must be installed to maintain the enclosure ingress ratings of IP66, IP68 or IP69.
6. The MS Slurry Sensor 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.
7. To maintain the ingress protection level on the M4 electrode housing for the MS Slurry Sensor, 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.
8. When "Special Paint Systems" are applied, instructions for safe use regarding potential electrostatic charging hazard have to be followed
9. 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.
10. The sensor is not allowed to be thermally insulated.
11. The 8785 Calibrator is intended for use only in combination with the 8782 Slurry Transmitter or a Transmitter with equivalent or less output ratings.
12. The temperature code, ambient temperature range, and maximum process temperature for the MS Slurry Sensors are as follows:

#### Hazardous Gas Locations

T-Code	Coil Housing Material	Line Size	Ambient Temperature Range	Maximum Process Temperature
T6	Carbon Steel	All	-29°C to 35°C	45°C
T5	Carbon Steel	3"	-29°C to 60°C	60°C
T4	Carbon Steel	3"	-29°C to 60°C	105°C
T3	Carbon Steel	3"	-29°C to 60°C	177°C
T5	Carbon Steel	4"-36"	-29°C to 60°C	65°C
T4	Carbon Steel	4"-36"	-29°C to 60°C	110°C
T3	Carbon Steel	4"-36"	-29°C to 60°C	177°C
T6	Stainless Steel	All	-50°C to 35°C	45°C
T5	Stainless Steel	3"	-50°C to 60°C	60°C
T4	Stainless Steel	3"	-50°C to 60°C	105°C
T3	Stainless Steel	4"-36"	-50°C to 60°C	177°C
T5	Stainless Steel	4"-36"	-50°C to 60°C	65°C
T4	Stainless Steel	4"-36"	-50°C to 60°C	110°C
T3	Stainless Steel	4"-36"	-50°C to 60°C	177°C

#### Hazardous Dust Locations

T-Code	Coil Housing Material	Line Size	Ambient Temperature Range	Maximum Process Temperature
T65	Carbon Steel	All	-29°C to 35°C	45°C
T80	Carbon Steel	All	-29°C to 60°C	60°C
T135	Carbon Steel	All	-29°C to 60°C	105°C
T200	Carbon Steel	All	-29°C to 60°C	177°C
T65	Stainless Steel	All	-50°C to 35°C	45°C
T80	Stainless Steel	All	-50°C to 60°C	60°C
T135	Stainless Steel	All	-50°C to 60°C	105°C
T200	Stainless Steel	All	-50°C to 60°C	177°C

1. Equipment Markings – See section VI in the tables on the following pages
  - a. EU-Type Examination Certificate (ATEX): SIRA 19ATEX1120X, SIRA 19ATEX3121X
  - b. Certificate of Conformity (IECEX): IECEX SIR 19.0032X
  - c. UK-Type Examination Certificate (UKEX): CSAE 22UKEX1310X, CSAE 22UKEX1315X
2. Required Documentation:
  - a. 08782-0060 Installation Drawing Model 8782, 8732EM, 8712EM, MS, 8705M, 8711-M/L ATEX/IECEX Hazardous (Ex) Locations
3. Referenced Documentation:
  - a. 00825-0100-8782.pdf, Transmitter Quick Installation Guide
  - b. 00825-0100-00MS.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 08782-0060

<b>Rosemount 8782 Flow Transmitter</b>	
<i>Power input</i>	90 - 250VAC, 1.5A, 120VA 12 - 42VDC, 8.5A, 120W 12 - 48VDC, 8.5A, 120W
<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>	2.0A, 85V max
<b>Rosemount MS Flowtube<sup>(1)</sup></b>	
<i>Coil excitation input</i>	2.0A, 85V max
<i>Electrode circuit</i>	5V, 200uA, 1mW

(1) Provided by the transmitter

- e. Special Conditions for Safe Use (X): 8782 Transmitter and MS Sensor/Flowtube
  - i. Under certain extreme circumstances, the non-metallic parts incorporated in the enclosure of this equipment may generate an ignition-capable level of electrostatic charge. Therefore, the equipment shall not be installed in a location where the external conditions are conducive to the build-up of electrostatic charge on such surfaces. In addition, the equipment shall only be cleaned with a damp cloth.
  - ii. The 8782 Transmitter enclosure is manufactured from Aluminum Alloy. In rare cases, ignition sources due to impact and friction sparks could occur. This shall be considered during installation.
  - iii. The MS Flow Tube is intended for use only in combination with the 8782, 8732EM, 8712EM Transmitters or a Transmitter with equivalent or less output ratings.
  - iv. The 8782 transmitter is not capable of passing the 500 V isolation test on terminals to chassis due to integral transient protection. This must be considered upon installation.
  - v. Appropriately rated conduit entries must be installed to maintain the enclosure ingress ratings of IP66, IP68 or IP69.
  - vi. The MS Flow 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.
  - vii. In order to maintain the ingress protection level on the M4 electrode housing for the MS Flow Tube, 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.
  - viii. When “Special Paint Systems” are applied, instructions for safe use regarding potential electrostatic charging hazard must be followed
  - ix. 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.
  - x. The sensor/ flow tube is not allowed to be thermally insulated.
  - xi. The temperature code, ambient temperature range, and maximum process temperature for the MS Flow Tubes are as follows:

Hazardous Gas Locations (Group IIC)

T-Code	Coil Housing Material	Line Size	Ambient Temperature Range	Maximum Process Temperature
T6	Carbon Steel	All	-29°C to 35°C	45°C
T5	Carbon Steel	3"	-29°C to 60°C	60°C
T4	Carbon Steel	3"	-29°C to 60°C	105°C
T3	Carbon Steel	3"	-29°C to 60°C	177°C
T5	Carbon Steel	4"-36"	-29°C to 60°C	65°C
T4	Carbon Steel	4"-36"	-29°C to 60°C	110°C
T3	Carbon Steel	4"-36"	-29°C to 60°C	177°C
T6	Stainless Steel	All	-50°C to 35°C	45°C
T5	Stainless Steel	3"	-50°C to 60°C	60°C
T4	Stainless Steel	3"	-50°C to 60°C	105°C
T3	Stainless Steel	4"-36"	-50°C to 60°C	177°C
T5	Stainless Steel	4"-36"	-50°C to 60°C	65°C
T4	Stainless Steel	4"-36"	-50°C to 60°C	110°C
T3	Stainless Steel	4"-36"	-50°C to 60°C	177°C

Hazardous Dust Locations (Group IIIC)

T-Code	Coil Housing Material	Line Size	Ambient Temperature Range	Maximum Process Temperature
T65	Carbon Steel	All	-29°C to 35°C	45°C
T80	Carbon Steel	All	-29°C to 60°C	60°C
T135	Carbon Steel	All	-29°C to 60°C	105°C
T200	Carbon Steel	All	-29°C to 60°C	177°C
T65	Stainless Steel	All	-50°C to 35°C	45°C
T80	Stainless Steel	All	-50°C to 60°C	60°C
T135	Stainless Steel	All	-50°C to 60°C	105°C
T200	Stainless Steel	All	-50°C to 60°C	177°C

- f. Where necessary, the essential characteristics of tools which may be fitted to the equipment.
  - i. No proprietary tools required.
- g. List of the standards, including the issue date, with which the equipment is declared to comply:
  - i. ATEX - EN IEC 60079-0:2018, EN 60079-7: 2015/A1: 2018, EN 60079-11: 2012, EN 60079-15: 2010, EN 60079-26: 2015, EN 60079-31: 2014
  - ii. IECEX - IEC 60079-0:2017 Ed. 7, IEC 60079-7: 2017: Ed. 5.1, IEC 60079-11: 2011, IEC 60079-15: 2010, IEC 60079-26: 2014, IEC 60079-31: 2013
- h. 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).
- i. Contact address; Emerson -Rosemount, Micro Motion Inc  
12001 Technology Drive  
Eden Prairie  
MN 55344, United States of America

**Nomenclature: Rosemount 8782 Slurry Magnetic Flow Meter Transmitter**

8782    A    W    2    A    2    N1    OPTIONS  
I        II    III    IV    V    VI    VII    VIII

Designation	Description	Value	Explanation
I	Model	8782	Slurry Magnetic Flowmeter Transmitter
II	Revision Level	A	Initial Revision Level
III	Transmitter Mount	W	Remote Wall Mount
IV	Transmitter Power Supply	1 2	AC (90 - 250 Vac, 50 / 60 Hz) DC (12 - 42 Vdc) DC (12 - 48 Vdc)
V	Outputs	A B F M P D	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 Profibus DP Digital Electronics; Scalable Pulse
VI	Conduit entries	1 2	½-14 NPT female CM20, M20 female
VII	Safety Approval Option	N1* ATEX and UKEX N7 IECEX* N9 IECEX* ND ATEX and UKEX NF IECEX *	Ⓜ II 3 (1) G Ex ic nA [ia Ga] IIC T4 Gc Ⓜ II 3 (1) G Ex ec ic [ia Ga] IIC T4 Gc Ⓜ II 3 (1) D Ex ic tc [ia Da] IIIC T80°C Dc Ⓜ II 3 D Ex ic tc IIIC T80°C Dc  Ex ic nA [ia Ga] IIC T4 Gc Ex ec ic [ia Ga] IIC T4 Gc Ex ic tc [ia Da] IIIC T80°C Dc Ex ic tc IIIC T80°C Dc  Ex ic nA [ia Ga] IIC T4 Gc Ex ec ic [ia Ga] IIC T4 Gc Ex ic tc [ia Da] IIIC T80°C Dc Ex ic tc IIIC T80°C Dc  Ⓜ II 3 D Ex ic tc IIIC T80°C Dc Ⓜ II 3 (1) D Ex ic tc [ia Da] IIIC T80°C Dc  Ex ic tc IIIC T80°C Dc Ex ic tc [ia Da] IIIC T80°C Dc  * DC Transmitter Power Supply only
VIII	Other Options	variable	Alpha-numeric characters representing other product options

**Nomenclature: Rosemount MS Slurry Magnetic Flow Meter Sensor**

MS 003 A R 1 I W A C A 1 M0 K1 OPTIONS  
I II III IV V VI VII VIII IX X XI XII XIII XIV

Designation	Description	Value	Explanation
I	Model	MS	Slurry Magnetic Sensor (Flow Tube)
II	Line Size	003 to 360	3" NPS (80 mm) to 36" NPS (900 mm)
III	Revision Level	A	Initial Revision Level
IV	Mounting Option	R	Remote
V	Conduit Entry	1 2	½-14 NPT CM20, M20
VI	Lining Material	Custom	Any one digit alpha or numeric character
VII	Electrode Material	Custom	Any one digit alpha or numeric character
VIII	Electrode Types	Custom	Any one digit alpha or numeric character
IX	Flange Material	Custom	Any one digit alpha or numeric character
X	Flange Type	Custom	Any one digit alpha or numeric character
XI	Flange Rating	Custom	Any one digit alpha or numeric character
XII	Coil Housing Configuration	M0 M1 M2 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 3 G, EPL Ga/Gb or Gc Category 1/2 G or 3 G, EPL Ga/Gb or Gc
XIII	Safety Approvals	K1 ATEX and UKEX	⊕ II 1/2 G Ex eb ia IIC T6...T3 Ga/Gb *
⊕ II 2 D Ex tb IIIC T65°C...T200°C Db			
⊕ II 2 G Ex eb ib IIC T6...T3 Gb **			
⊕ II 2 D Ex tb IIIC T65°C...T200°C Db			
K7 IECEx		Ex eb ia IIC T6...T3 Ga/Gb *	
		Ex tb IIIC T65°C...T200°C Db	
K9 IECEx		Ex eb ib IIC T6...T3 Gb **	
		Ex tb IIIC T65°C...T200°C Db	
N1 ATEX and UKEX		⊕ II 3 G Ex ic nA IIC T6...T3 Gc	
	⊕ II 3 G Ex ec ic IIC T6...T3 Gc		
	⊕ II 2 D Ex tb IIIC T65°C...T200°C Db		
N7 IECEx	Ex ic nA IIC T6...T3 Gc Ex ec ic IIC T6...T3 Gc Ex tb IIIC T 65°C...T200°C Db		
ND ATEX and UKEX	⊕ II 2 D Ex tb IIIC T65°C...T200°C Db		
NF IECEx	Ex tb IIIC T65°C...T200°C Db		
	NOTE:* Electrode Housing M2 and M4 only ** Electrode Housing M0 and M1 only		
XIV	Other Options	Custom	Any Alpha-Numeric characters representing non-safety product options up to fifty-two digits in length



# Declaration of Conformity



We,

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

declare under our sole responsibility that the product,  
**Rosemount™ Magnetic Flowmeter Platform**  
**8782 Transmitter and MS Sensors (Flow Tubes)**

Authorized Representative in Europe:

Emerson S.R.L., company No. J12/88/2006, Emerson 4  
 street, Parcul Industrial  
 Tetarom II, Cluj-Napoca 400638, Romania

Regulatory Compliance Shared Services Department  
 Email: [europaeproductcompliance@emerson.com](mailto:europaeproductcompliance@emerson.com) Phone:  
 +40 374 132 035


For product compliance destination sales  
 questions in Great Britain, contact Authorized  
 Representative:

Emerson Process Management Limited at  
[ukproductcompliance@emerson.com](mailto:ukproductcompliance@emerson.com) or +44 11  
 6282 23 64, Regulatory Compliance Department.

Emerson Process Management Limited, company  
 No 00671801, Meridian East, Leicester LE19 1UX,  
 United Kingdom

to which this declaration relates, is in conformity with:

- 1) the relevant statutory requirements of Great Britain, including the latest amendments.
- 2) the provisions of the European Union Directives, including the latest amendments.

 13 October 2022 Mark Fleigle Vice President, Engineering Eden Prairie, MN USA  
 (signature and date of issue) (name) (function) (place of issue)

**ATEX Notified Body for EU Type Examination Certificate:**

CSA Group Netherlands B.V. [Notified Body Number 2813]  
 Utrechtseweg 310,  
 6812 AR, Arnhem,  
 Country: The Netherlands

**ATEX Notified Body for Quality Assurance:**

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

**PED Notified Body**

DNV Business Assurance Italia S.r.l.  
 [Notified Body Number: 0496]  
 Via Energy Park, 14, N-20871  
 Vimercate (MB), Italy

**UK Conformity Assessment Body for UK Type Examination Certificate: [Approved Body Number 0518]**

CSA Group Testing UK Ltd  
 Unit 6, Hawarden Industrial Park  
 Hawarden, Deeside, CH5 3US  
 Country: United Kingdom

**UK Conformity Assessment Body for Quality Assurance:**

DNV Business Assurance Ltd [Approved Body Number 8501]  
 4<sup>th</sup> Floor, Vivo Building, 30 Stamford Street, SE1 9LQ  
 Country: United Kingdom

**PED Notified Body**

DNV Business Assurance Italia S.r.l.  
 [Notified Body Number: 0496]  
 Via Energy Park, 14, N-20871  
 Vimercate (MB), Italy





# Declaration of Conformity



## EMC Directive (2014/30/EU)

Harmonized Standards:  
EN 61326-1:2013

## Low Voltage Directive (2014/35/EU)

All Models:  
Harmonized Standards:  
EN 61010-1:2010/A1:2019/AC:2019-04

## RoHS Directive (2011/65/EU): Amended 2015/863

### All models

Harmonized Standards:  
EN IEC 63000: 2018

## PED Directive (2014/68/EU)

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

Model MS Magnetic Flowmeter Sensor with option 'PD', in line sizes 3.0-inch (DN80) to 36-inch (DN900).

DNV QS Certificate of Assessment  
Certificate No. 10000497900-PA-ACCREDIA-USA  
Module H Conformity Assessment - ASME B31.3: 2020

## ATEX Directive (2014/34/EU)

### Sira 19ATEX1120X – EU TYPE CERTIFICATE Equipment Marking Summary

#### 8782 Transmitter:

II 3 (1) G	Ex ec ic [ia Ga] IIC T4 Gc
II 3 (1) G	Ex ic nA [ia Ga] IIC T4 Gc
II 3 (1) D	Ex ic tc [ia Da] IIIC T80°C Dc

#### MS Sensors

II 1/2 G	Ex eb ia IIC T6...T3 Ga/Gb
II 2 G	Ex eb ib IIC T6...T3 Gb
II 2 D	Ex tb IIIC T65°C...T200°C Db

### Sira 19ATEX3121X – TYPE CERTIFICATE Equipment Marking Summary

#### 8782 Transmitter:

II 3 D	Ex ic tc IIIC T80°C Dc
--------	------------------------

#### MS Sensors

II 3 G	Ex ec ic IIC T6...T3 Gc
II 2 G	Ex ic nA IIC T6...T3 Gc

#### Harmonized Standards:

EN IEC 60079-0:2018	
EN 60079-7: 2015/A1: 2018	EN 60079-11: 2012
EN 60079-15: 2010	EN 60079-26: 2015
EN 60079-31: 2014	

## Electromagnetic Compatibility Regulations 2016 (S.I. 2016/1091)

Designated Standards:  
EN 61326-1:2013

## Electrical Equipment (Safety) Regulations 2016 (S.I. 2016/1101)

All Models:  
Designated Standards:  
EN 61010-1:2010/A1:2019/AC:2019-04

## The Restriction of the Use of Certain Hazardous Substances in Electrical and Electronic Equipment Regulations 2012 Statutory Instrument, SI No. 3032

### All models

Designated Standards:  
EN IEC 63000: 2018

## Pressure Equipment (Safety) Regulations 2016 (S.I. 2016/1105)

UK Compliance based on EU PED certification.

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

Model MS Magnetic Flowmeter Sensor with option 'PD', in line sizes 3.0-inch (DN80) to 36-inch (DN900).

DNV QS Certificate of Assessment  
Certificate No. 10000497900-PA-ACCREDIA-USA  
Module H Conformity Assessment - ASME B31.3: 2020

## Equipment and Protective Systems Intended for use in Potentially Explosive Atmospheres Regulations 2016 (S.I. 2016/1107)

### CSAE 22UKEX1310X – UK TYPE CERTIFICATE Equipment Marking Summary

#### 8782 Transmitter:

II 3 (1) G	Ex ec ic [ia Ga] IIC T4 Gc
II 3 (1) G	Ex ic nA [ia Ga] IIC T4 Gc
II 3 (1) D	Ex ic tc [ia Da] IIIC T80°C Dc

#### MS Sensors

II 1/2 G	Ex eb ia IIC T6...T3 Ga/Gb
II 2 G	Ex eb ib IIC T6...T3 Gb
II 2 D	Ex tb IIIC T65°C...T200°C Db

### CSAE 22UKEX1315X – TYPE CERTIFICATE Equipment Marking Summary

#### 8782 Transmitter:

II 3 D	Ex ic tc IIIC T80°C Dc
--------	------------------------

#### MS Sensors

II 3 G	Ex ec ic IIC T6...T3 Gc
II 2 G	Ex ic nA IIC T6...T3 Gc

#### Designated Standards:

EN IEC 60079-0:2018	
EN 60079-7: 2015/A1: 2018	EN 60079-11: 2012
EN 60079-15: 2010	EN 60079-26: 2015
EN 60079-31: 2014	

TABLE OF CONTENTS	
PAGE	TITLE
2	GAS ENVIRONMENT - EPL Ga/Gb SENSOR WITH ALLOWED REMOTE MOUNT EPL Gb OR EPL Gc TRANSMITTERS
3	GAS ENVIRONMENT - EPL Ga/Gb SENSOR TEMPERATURE CODE VS. PROCESS TEMPERATURE
4	GAS ENVIRONMENT - EPL Gc SENSOR WITH ALLOWED REMOTE MOUNT EPL Gb OR EPL Gc TRANSMITTERS
5	GAS ENVIRONMENT - EPL Gc SENSOR TEMPERATURE CODE VS. PROCESS TEMPERATURE
6	DUST ENVIRONMENT - EPL Db SENSOR WITH ALLOWED REMOTE MOUNT EPL Db OR EPL Dc TRANSMITTERS
7	DUST ENVIRONMENT - EPL Db SENSOR TEMPERATURE CODE VS. PROCESS TEMPERATURE
8	GAS ENVIRONMENT - COIL AND ELECTRODE CIRCUIT WIRING
9	DUST ENVIRONMENT - COIL AND ELECTRODE CIRCUIT WIRING
10	GAS ENVIRONMENT - OUTPUT WIRING
11	GAS ENVIRONMENT - INTRINSICALLY SAFE ENTITY CONCEPTS
12	GAS ENVIRONMENT - FISCO INTRINSICALLY SAFE ENTITY CONCEPTS

- ⚠ WARNING: EXPLOSION HAZARD - PRODUCT INSTALLATION SHALL COMPLY WITH INFORMATION AS STATED IN THIS DOCUMENT.**
1. WIRING METHOD SUITABLE FOR APPROPRIATE ZONE AND PROTECTION TYPE.
  2. TRANSMITTER MUST NOT BE CONNECTED TO EQUIPMENT GENERATING MORE THAN 250V.
  3. COMPONENTS REQUIRED TO HAVE HAZARDOUS (Ex) LOCATION APPROVAL MUST BE APPROVED FOR THE GAS GROUP APPROPRIATE TO AREA CLASSIFICATION.
  4. SEAL APPROVED FOR USE IN APPROPRIATE ZONE AND GAS GROUP.
  5. THE ELECTRODE CIRCUIT AND WIRING MUST BE INSTALLED AS INTRINSICALLY SAFE WHEN THE SENSOR/FLOWTUBE IS INSTALLED IN A HAZARDOUS (Ex) AREA WITH FLAMMABLE PROCESS FLUIDS. SEE GAS ENVIRONMENT PAGES.
  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.
  7. INSTALLATION SHOULD BE IN ACCORDANCE WITH LOCAL AND NATIONAL ELECTRICAL CODE, EN 60079-14 OR IEC 60079-14 "ELECTRICAL INSTALLATIONS DESIGN, SELECTION, AND ERECTION".
  8. CONTROL EQUIPMENT CONNECTED TO BARRIER MUST NOT USE OR GENERATE MORE THAN 250V.
  9. ASSOCIATED APPARATUS MANUFACTURER'S INSTALLATION DRAWING MUST BE FOLLOWED WHEN INSTALLING THIS EQUIPMENT.
  10. THE TRANSMITTER IS NOT CAPABLE OF PASSING THE 500V ISOLATION TEST ON TERMINALS 1-10 DUE TO INTEGRAL TRANSIENT PROTECTION. THIS MUST BE TAKEN INTO ACCOUNT UPON INSTALLATION.
  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.
  12. FOR ALL INSTALLATIONS MAXIMUM TERMINAL TIGHTENING TORQUE IS 10.6 IN LBS.
  13. SAFETY APPROVALS OPTIONS N1, N7, N9, K1, K7, AND K9 HAVE EPL Dc OR Db DUST RATINGS AND MAY BE INSTALLED IN HAZARDOUS DUST (Ex) ENVIRONMENT AS DESCRIBED IN THIS DOCUMENT.
  14. DI/DO TERMINALS ARE NOT POPULATED. THE DI/DO OPTION (AX) IS NOT AVAILABLE WITH INTRINSICALLY SAFE OUTPUTS.
  15. TRANSMITTER OUTPUTS ARE CONSIDERED INTRINSICALLY SAFE WHEN INSTALLED IN ACCORDANCE TO INTRINSICALLY SAFE CONCEPTS AND INSTALLATION REQUIREMENTS WITHIN THIS DOCUMENT.
  16. CONDUIT ENTRIES MARKED "M20" ARE M20 X 1.5 THREAD FORM.

**NOTES:**

REVISION TABLE			
REVISION	ECO NO.	APP'D	DATE
AA	1109115	SAW	9/12/19
DESCRIPTION			
INITIAL RELEASE			

DRAWING NO. 08782-0060

CONFIDENTIAL AND PROPRIETARY INFORMATION IS CONTAINED HEREIN AND MUST BE HANDLED ACCORDINGLY.	SURFACE FINISH UNLESS OTHERWISE SPECIFIED	125	3RD ANGLE	SIZE	SCALE	REV
UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES (mm). REMOVE ALL BURRS AND SHARP EDGES.				C	-	AA
X ± .1 [2.5]						
.XX ± .02 [0.5]						
.XXX ± .010 [0.25]						
FRACTIONS ± 1/32						
ANGLES ± 2'						

**EMERSON**  
ROSEMOUNT

**TITLE**  
**INSTALLATION DRAWING**  
**ATEX/IECEx HAZARDOUS (Ex) LOCATIONS**

DR. N. BOND	2/5/19
APP'D M. MAYER	2/26/19

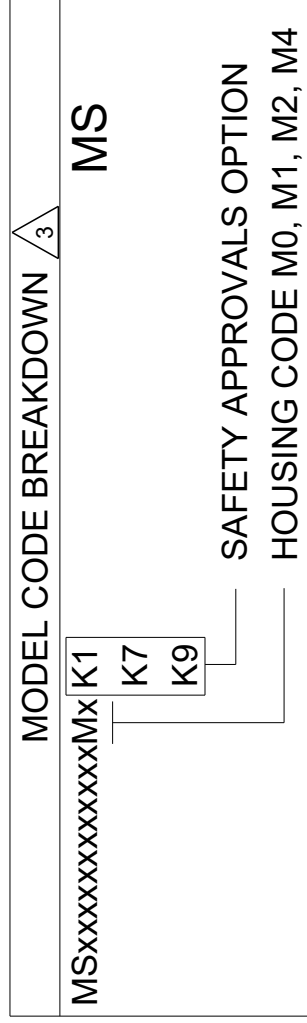
DRAWING NO. 08782-0060

DO NOT SCALE PRINT	CAD MAINTAINED
PRODUCT CODE	SHEET 1 OF 12

# GAS ENVIRONMENT - EPL Ga/Gb SENSOR WITH ALLOWED REMOTE MOUNT EPL Gb OR EPL Gc TRANSMITTERS

## Ex eb SENSOR REMOTE MOUNT CONFIGURATIONS

MODEL MS REMOTE CONFIGURATION WITH SAFETY APPROVALS OPTION 'K1', 'K7', 'K9'

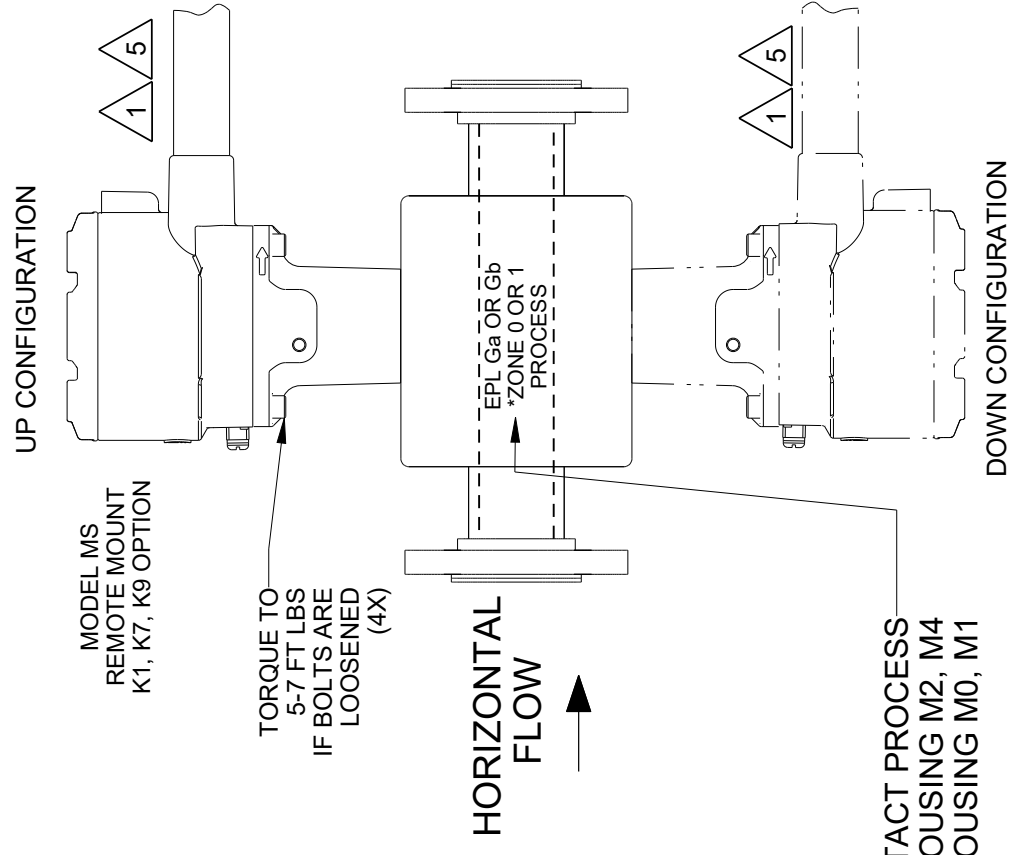


SAFETY APPROVALS OPTION HOUSING CODE M0, M1, M2, M4

Ex eb ia IIC T6...T3 Ga/Gb (WITH HOUSING CODE M2, M4)  
 Ex eb ib IIC T6...T3 Gb (WITH HOUSING CODE M0, M1)  
 EPL Gb, FOR USE IN HAZARDOUS (EX) AREA - ZONE 1 OR 2 WITH CARBON STEEL HOUSING: (-29°C ≤ Ta ≤ 60°C)  
 WITH STAINLESS STEEL HOUSING: (-50°C ≤ Ta ≤ 60°C)  
 SEE TABLE 1 FOR PROCESS TEMPERATURE LIMITS AND ALLOWED MOUNTING CONFIGURATIONS  
 DUAL SEAL PER ANSI/ISA 12.27.01 WITH DUAL SEAL OPTION 'DS'  
 INCREASED SAFETY WITH INTRINSICALLY SAFE ELECTRODES

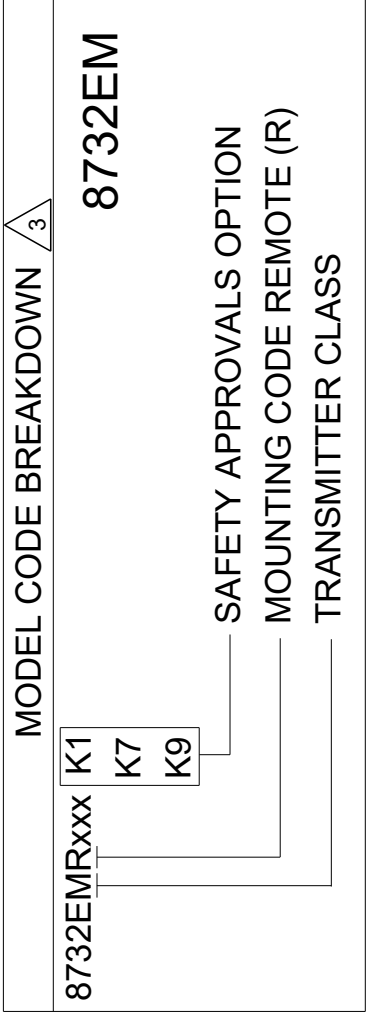


ELECTRODES CONTACT PROCESS  
 Ex ia Ga WITH HOUSING M2, M4  
 Ex ib Gb WITH HOUSING M0, M1



## ALLOWED REMOTE MOUNT TRANSMITTER CONFIGURATIONS

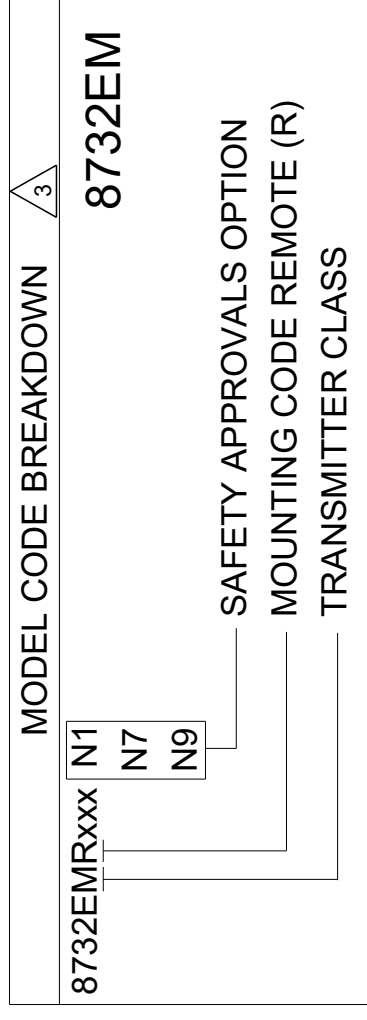
MODEL 8732EM REMOTE MOUNT CONFIGURATION WITH SAFETY APPROVAL OPTION 'K1', 'K7' OR 'K9'



SAFETY APPROVALS OPTION MOUNTING CODE REMOTE (R) TRANSMITTER CLASS

Ex db eb [ia] IIC T6...T3 Gb  
 EPL Gb, FOR USE IN ZONE 1 OR 2 TEMPERATURE CLASS EPL Gb: T6 (-50°C ≤ Ta ≤ 60°C)  
 FLAMEPROOF ELECTRONICS HOUSING, INCREASED SAFETY TERMINAL BLOCK WITH INTRINSICALLY SAFE ELECTRODE OUTPUT, INCREASED SAFETY REMOTE JUNCTION BOX

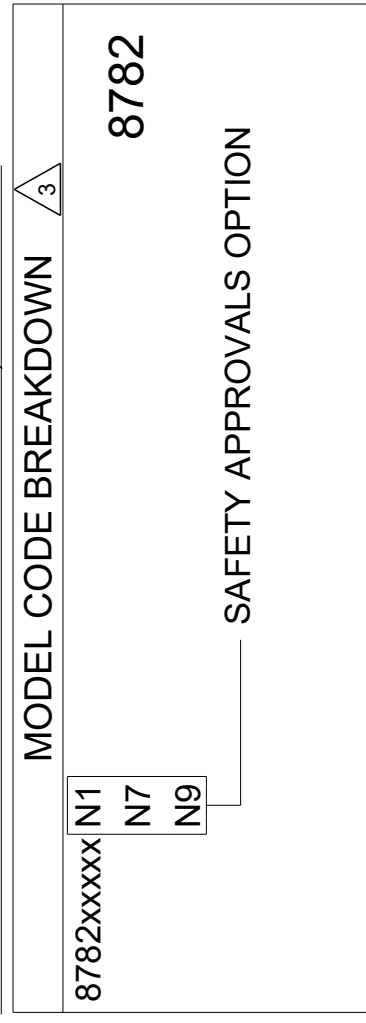
MODEL 8732EM REMOTE MOUNT CONFIGURATION WITH SAFETY APPROVAL OPTION 'N1', 'N7' OR 'N9'



SAFETY APPROVALS OPTION MOUNTING CODE REMOTE (R) TRANSMITTER CLASS

Ex nA [ia Ga] IIC T4...T3 Gc - DC POWER ONLY, IN PROTECTION TYPE 'n'  
 Ex ec [ia Ga] IIC T4...T3 Gc - DC POWER ONLY, IN PROTECTION TYPE 'e'  
 EPL Gc, FOR USE IN ZONE 2 TEMPERATURE CLASS: EPL Gc: T4 (-50°C ≤ Ta ≤ 60°C)  
 WITH INTRINSICALLY SAFE ELECTRODE OUTPUT.

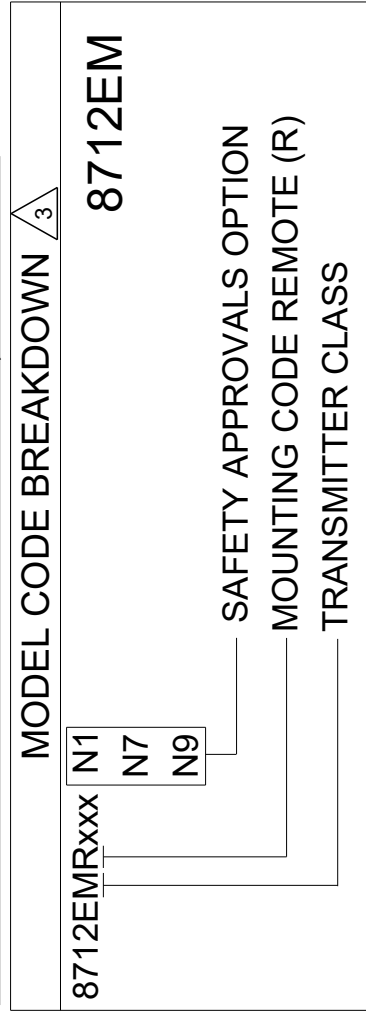
MODEL 8782 REMOTE MOUNT CONFIGURATION WITH SAFETY APPROVAL OPTION 'N1', 'N7' OR 'N9'



SAFETY APPROVALS OPTION

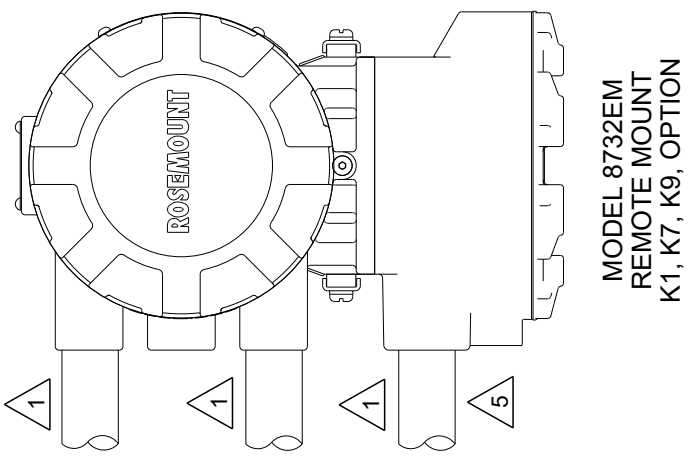
Ex ic nA [ia Ga] IIC T4 Gc - DC POWER ONLY, IN PROTECTION TYPE 'n'  
 Ex ec ic [ia Ga] IIC T4 Gc - DC POWER ONLY, IN PROTECTION TYPE 'e'  
 EPL Gc, FOR USE IN ZONE 2 TEMPERATURE CLASS: EPL Gc: T4 (-40°C ≤ Ta ≤ 60°C)  
 WITH INTRINSICALLY SAFE ELECTRODE OUTPUT

MODEL 8712EM REMOTE MOUNT CONFIGURATION WITH SAFETY APPROVAL OPTION 'N1', 'N7' OR 'N9'

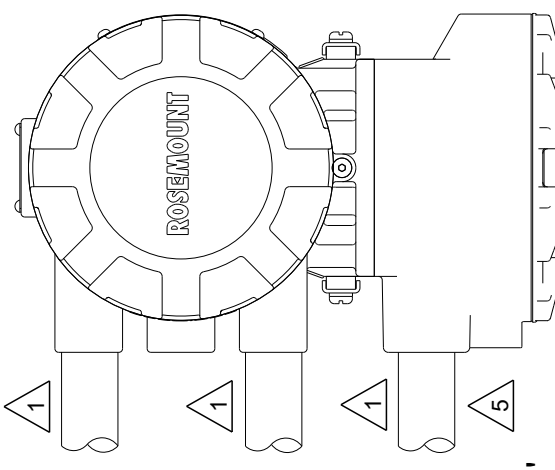


SAFETY APPROVALS OPTION MOUNTING CODE REMOTE (R) TRANSMITTER CLASS

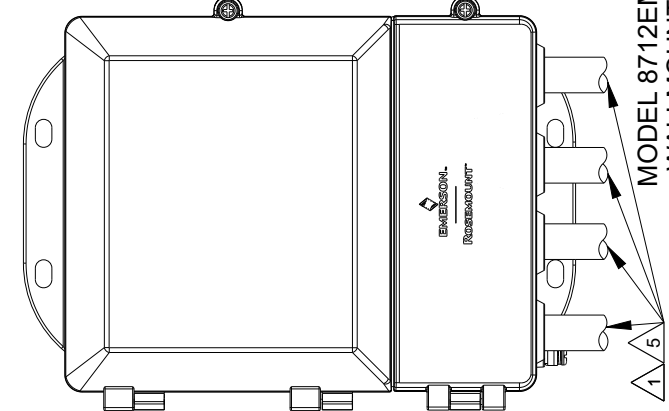
Ex nA ic [ia Ga] IIC T4 Gc - DC POWER ONLY, IN PROTECTION TYPE 'n'  
 Ex ec ic [ia Ga] IIC T4 Gc - DC POWER, IN PROTECTION TYPE 'e'  
 EPL Gc, FOR USE IN ZONE 2 TEMPERATURE CLASS: EPL Gc: T4 (-40°C ≤ Ta ≤ 60°C)  
 WITH INTRINSICALLY SAFE ELECTRODE OUTPUT



MODEL 8732EM  
 REMOTE MOUNT  
 K1, K7, K9, OPTION



MODEL 8732EM  
 REMOTE MOUNT  
 N1, N7, N9, OPTION



MODEL 8712EM  
 WALL MOUNT  
 N1, N7, N9, OPTION

08782-0060  
 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	AA
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 ± .132
ANGLES ± .2°		DO NOT SCALE PRINT		CAD MAINTAINED, (PROJ)		PRODUCT CODE		SHEET 2 OF 12	
<b>ROSEMOUNT</b> <b>INSTALLATION DRAWING</b> <b>ATEX/IEC EX HAZARDOUS (EX) LOCATIONS</b>									
DR.	N. BOND	2/5/19	DRAWING NO.	08782-0060					
APPD.	M. MAYER	2/26/19	DOC TYPE	SHEET 2 OF 12					

# GAS ENVIRONMENT - EPL Ga/Gb SENSOR TEMPERATURE CODE VS. PROCESS TEMPERATURE

**TABLE 1 - MS: Ex eb - PROTECTION TYPE 'INCREASED SAFETY'  
SAFETY APPROVAL OPTIONS 'K1', 'K7' AND 'K9'**

T-CODE	COIL HOUSING MATERIAL	LINE SIZE	AMBIENT TEMPERATURE RANGE	MAXIMUM PROCESS TEMPERATURE
T6	CARBON STEEL	ALL	-29°C TO 35°C	45°C
T5	CARBON STEEL	3"	-29°C TO 60°C	60°C
T4	CARBON STEEL	3"	-29°C TO 60°C	105°C
T3	CARBON STEEL	3"	-29°C TO 60°C	177°C
T5	CARBON STEEL	4"-36"	-29°C TO 60°C	65°C
T4	CARBON STEEL	4"-36"	-29°C TO 60°C	110°C
T3	CARBON STEEL	4"-36"	-29°C TO 60°C	177°C
T6	STAINLESS STEEL	ALL	-50° TO 35°C	45°C
T5	STAINLESS STEEL	3"	-50° TO 60°C	60°C
T4	STAINLESS STEEL	3"	-50° TO 60°C	105°
T3	STAINLESS STEEL	4"-36"	-50° TO 60°C	177°C
T5	STAINLESS STEEL	4"-36"	-50° TO 60°C	65°C
T4	STAINLESS STEEL	4"-36"	-50° TO 60°C	110°C
T3	STAINLESS STEEL	4"-36"	-50° TO 60°C	177°C

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°

**EMERSON**  
ROSEMOUNT

**TITLE**  
INSTALLATION DRAWING  
ATEX/IECEx HAZARDOUS (EX) LOCATIONS

DR. N. BOND 2/5/19 DRAWING NO. 08782-0060  
APPD. M. MAYER 2/26/19

DO NOT SCALE PRINT | CAD MAINTAINED (PROJ) | PRODUCT CODE | SHEET 3 OF 12

DRAWING NO. 08782-0060

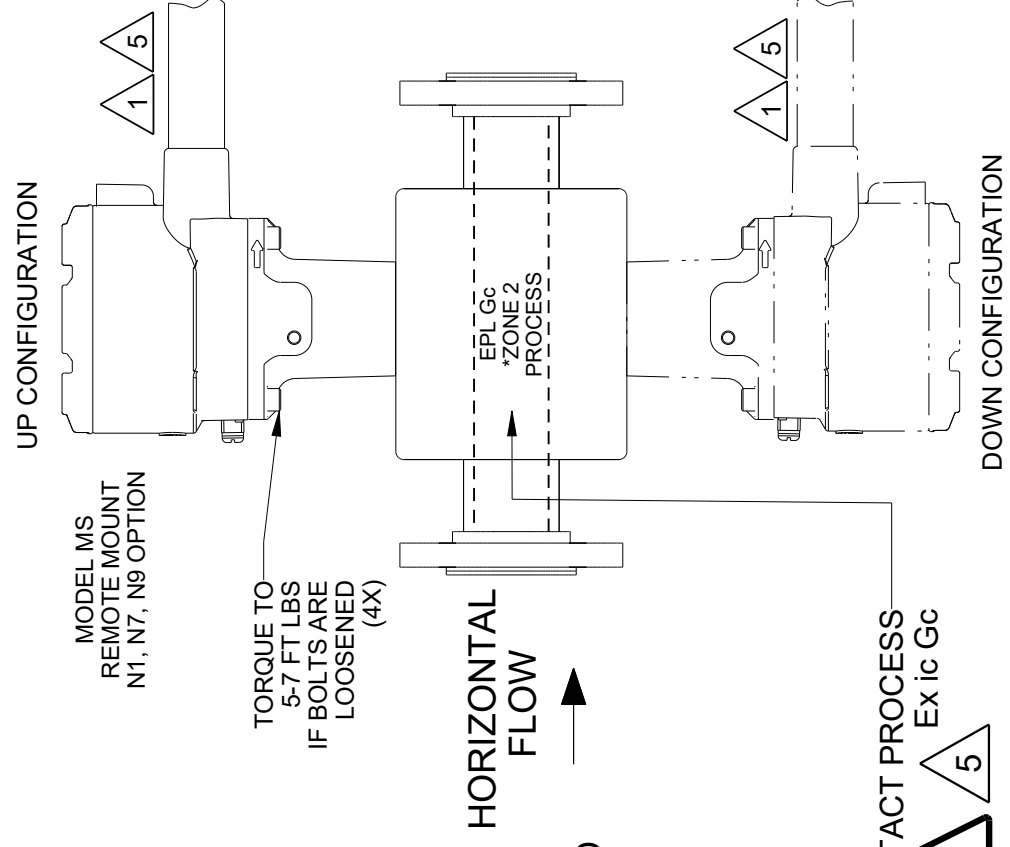
# GAS ENVIRONMENT - EPL Gc SENSOR WITH ALLOWED REMOTE MOUNT EPL Gb OR EPL Gc TRANSMITTERS

## Ex ec / Ex nA SENSOR REMOTE MOUNT CONFIGURATIONS

MODEL MS REMOTE CONFIGURATION WITH SAFETY APPROVALS OPTION 'N1', 'N7', 'N9'

MSxxxxxxxxxxxxx	MODEL CODE BREAKDOWN <span style="border: 1px solid black; padding: 2px;">3</span>
N1	MS
N7	SAFETY APPROVALS OPTION
N9	

Ex ic nA IIC T6...T3 Gc  
Ex ec ic IIC T6...T3 Gc  
EPL Gc, FOR USE IN HAZARDOUS (Ex) AREA - ZONE 2 WITH CARBON STEEL HOUSING: (-29°C ≤ Ta ≤ 60°C) WITH STAINLESS STEEL HOUSING: (-50°C ≤ Ta ≤ 60°C) SEE TABLE 3 FOR PROCESS TEMPERATURE LIMITS AND ALLOWED MOUNTING CONFIGURATIONS  
DUAL SEAL PER ANSI/ISA 12.27.01 WITH DUAL SEAL OPTION 'DS' TYPE 'n' PROTECTION WITH INTRINSICALLY SAFE ELECTRODES



MODEL 8782 REMOTE MOUNT CONFIGURATION WITH SAFETY APPROVALS OPTION 'N1', 'N7' OR 'N9'

8782xxxxx	MODEL CODE BREAKDOWN <span style="border: 1px solid black; padding: 2px;">3</span>
N1	8782
N7	SAFETY APPROVALS OPTION
N9	

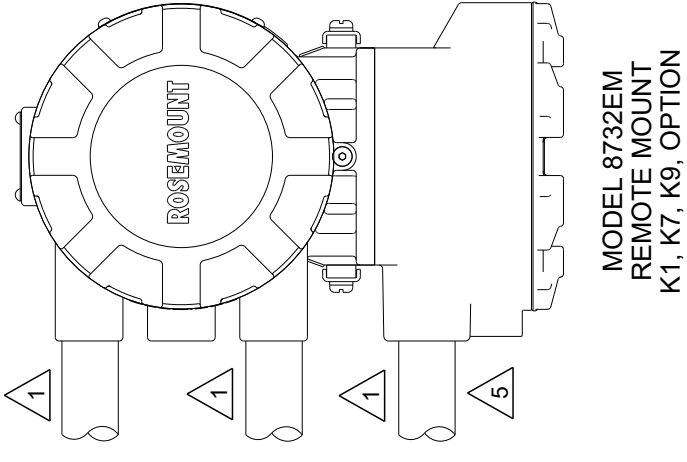
Ex ic nA [ja Ga] IIC T4 Gc - DC POWER ONLY, IN PROTECTION TYPE 'n'  
Ex ec ic [ja Ga] IIC T4 Gc - DC POWER ONLY, IN PROTECTION TYPE 'e'  
EPL Gc, FOR USE IN ZONE 2  
TEMPERATURE CLASS: EPL Gc: T4 (-40°C ≤ Ta ≤ 60°C) WITH INTRINSICALLY SAFE ELECTRODE OUTPUT

## ALLOWED REMOTE MOUNT TRANSMITTER CONFIGURATIONS

MODEL 8732EM REMOTE MOUNT CONFIGURATION WITH SAFETY APPROVALS OPTION 'K1', 'K7' OR 'K9'

8732EMRxxx	MODEL CODE BREAKDOWN <span style="border: 1px solid black; padding: 2px;">3</span>
K1	8732EM
K7	SAFETY APPROVALS OPTION
K9	MOUNTING CODE REMOTE (R) TRANSMITTER CLASS

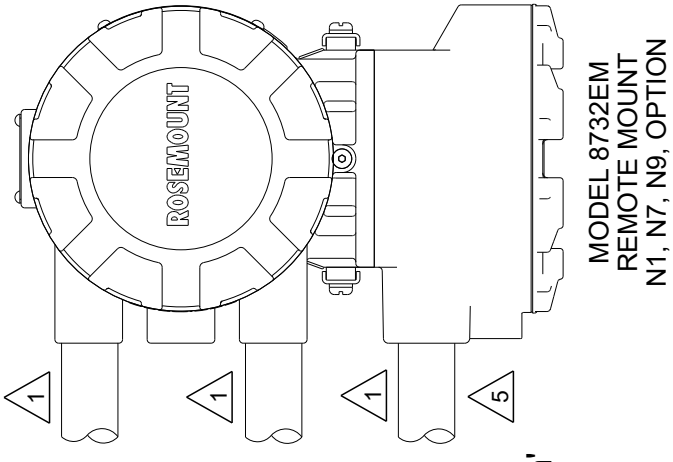
Ex db eb [ja] IIC T6...T3 Gb  
EPL Gb, FOR USE IN ZONE 1 OR 2  
TEMPERATURE CLASS EPL Gb: T6 (-50°C ≤ Ta ≤ 60°C)  
FLAMEPROOF ELECTRONICS HOUSING, INCREASED SAFETY TERMINAL BLOCK WITH INTRINSICALLY SAFE ELECTRODE CIRCUIT, INCREASED SAFETY REMOTE JUNCTION BOX.



MODEL 8732EM REMOTE MOUNT CONFIGURATION WITH SAFETY APPROVALS OPTION 'N1', 'N7' OR 'N9'

8732EMRxxx	MODEL CODE BREAKDOWN <span style="border: 1px solid black; padding: 2px;">3</span>
N1	8732EM
N7	SAFETY APPROVALS OPTION
N9	MOUNTING CODE REMOTE (R) TRANSMITTER CLASS

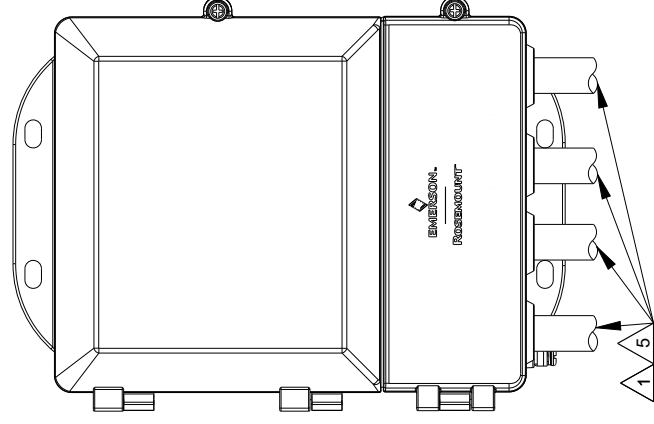
Ex nA [ja Ga] IIC T4 ... T3 Gc - DC POWER ONLY, IN PROTECTION TYPE 'n'  
Ex ec [ja Ga] IIC T4...T3 Gc - DC POWER ONLY, IN PROTECTION TYPE 'e'  
EPL Gc, FOR USE IN ZONE 2  
TEMPERATURE CLASS: EPL Gc: T4 (-50°C ≤ Ta ≤ 60°C) WITH INTRINSICALLY SAFE ELECTRODE CIRCUIT.



MODEL 8712EM REMOTE MOUNT CONFIGURATION WITH SAFETY APPROVALS OPTION 'N1', 'N7' OR 'N9'

8712EMRxxx	MODEL CODE BREAKDOWN <span style="border: 1px solid black; padding: 2px;">3</span>
N1	8712EM
N7	SAFETY APPROVALS OPTION
N9	MOUNTING CODE REMOTE (R) TRANSMITTER CLASS

Ex nA ic [ja Ga] IIC T4 Gc - DC POWER ONLY, IN PROTECTION TYPE 'n'  
Ex ec ic [ja Ga] IIC T4 Gc - DC POWER, IN PROTECTION TYPE 'e'  
EPL Gc, FOR USE IN ZONE 2  
TEMPERATURE CLASS: EPL Gc: T4 (-40°C ≤ Ta ≤ 60°C) WITH INTRINSICALLY SAFE ELECTRODE CIRCUIT.



DRAWING NO.  
08782-0060

CONFIDENTIAL AND PROPRIETARY INFORMATION IS CONTAINED HEREIN AND MUST BE HANDLED ACCORDINGLY.	SURFACE FINISH UNLESS OTHERWISE SPECIFIED	125	3RD ANGLE	SCALE	C	REV	AA
<b>ROSEMOUNT</b> <b>INSTALLATION DRAWING</b> <b>ATEX/IECEx HAZARDOUS (EX) LOCATIONS</b>							
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'						
DO NOT SCALE PRINT	CAD MAINTAINED, (PROJ)	PRODUCT CODE	DOC TYPE	SHEET 4	OF 12		

# GAS ENVIRONMENT - EPL Gc SENSOR TEMPERATURE CODE VS. PROCESS TEMPERATURE

**TABLE 3 - MS: Ex ec or Ex nA - PROTECTION TYPE 'e' OR TYPE 'n'  
SAFETY APPROVAL OPTIONS 'N1', 'N7', 'N9'**

T-CODE	COIL HOUSING MATERIAL	LINE SIZE	AMBIENT TEMPERATURE RANGE	MAXIMUM PROCESS TEMPERATURE
T6	CARBON STEEL	ALL	-29°C TO 35°C	45°C
T5	CARBON STEEL	3"	-29°C TO 60°C	60°C
T4	CARBON STEEL	3"	-29°C TO 60°C	105°C
T3	CARBON STEEL	3"	-29°C TO 60°C	177°C
T5	CARBON STEEL	4"-36"	-29°C TO 60°C	65°C
T4	CARBON STEEL	4"-36"	-29°C TO 60°C	110°C
T3	CARBON STEEL	4"-36"	-29°C TO 60°C	177°C
T6	STAINLESS STEEL	ALL	-50° TO 35°C	45°C
T5	STAINLESS STEEL	3"	-50° TO 60°C	60°C
T4	STAINLESS STEEL	3"	-50° TO 60°C	105°
T3	STAINLESS STEEL	4"-36"	-50° TO 60°C	177°C
T5	STAINLESS STEEL	4"-36"	-50° TO 60°C	65°C
T4	STAINLESS STEEL	4"-36"	-50° TO 60°C	110°C
T3	STAINLESS STEEL	4"-36"	-50° TO 60°C	177°C

CONFIDENTIAL AND PROPRIETARY INFORMATION IS CONTAINED HEREIN AND MUST BE HANDLED ACCORDINGLY.	SURFACE FINISH UNLESS OTHERWISE SPECIFIED $\nabla$ 125	3RD ANGLE	SIZE C	SCALE -	REV AA
ROSEMOUNT					
TITLE <b>INSTALLATION DRAWING</b>					
ATEX/IECEx HAZARDOUS (EX) LOCATIONS					
DR.	N. BOND	2/5/19	DRAWING NO. 08782-0060		
APPD	M. MAYER	2/26/19	DOC TYPE SHEET 5 OF 12		
DO NOT SCALE PRINT   CAD MAINTAINED (PROJ)   PRODUCT CODE					

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

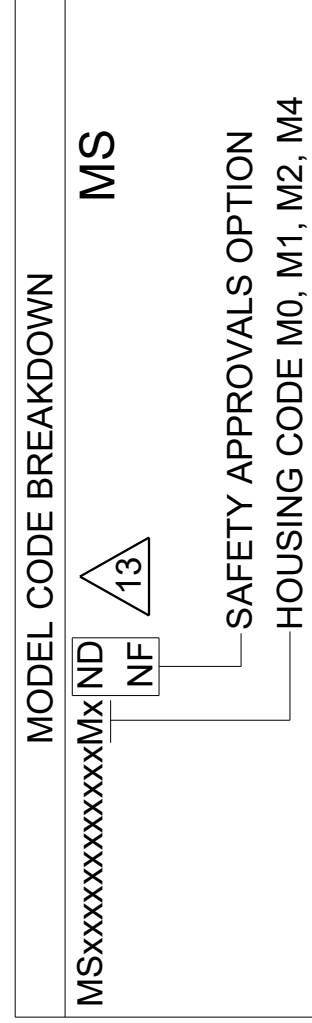
-DEC TOLERANCES-  
 X ± .1 [2.5]  
 .XX ± .02 [0.5]  
 .XXX ± .010 [0.25]  
 FRACTIONS ± 1/32 ANGLES ± 2°

DRAWING NO. 08782-0060

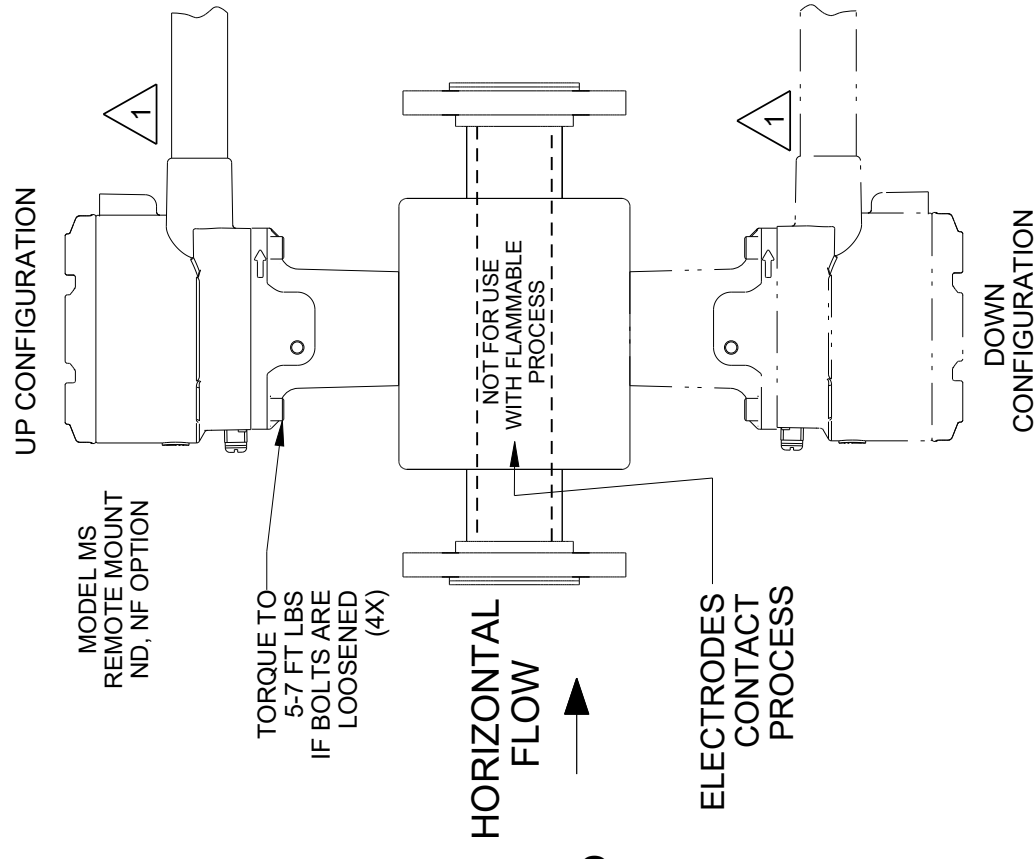
# DUST ENVIRONMENT - EPL Db SENSOR WITH ALLOWED REMOTE MOUNT EPL Db OR Dc TRANSMITTERS

## Ex tb SENSOR REMOTE MOUNT CONFIGURATIONS

MODEL MS REMOTE CONFIGURATION  
WITH SAFETY APPROVALS OPTION 'ND', 'NF'

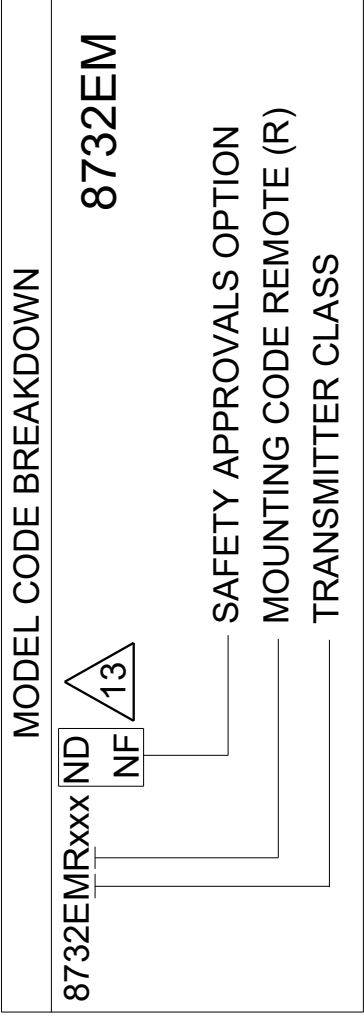


Ex tb IIIC T65°C...T200°C  
EPL Db, FOR USE IN ZONE 21  
REMOTE TRANSMITTER MAXIMUM SURFACE  
WITH CARBON STEEL HOUSING (-29°C ≤ Ta ≤ 60°C)  
WITH STAINLESS STEEL HOUSING (-50°C ≤ Ta ≤ 60°C)  
SEE TABLE 5 FOR PROCESS TEMPERATURE LIMITS AND ALLOWED  
MOUNTING CONFIGURATIONS

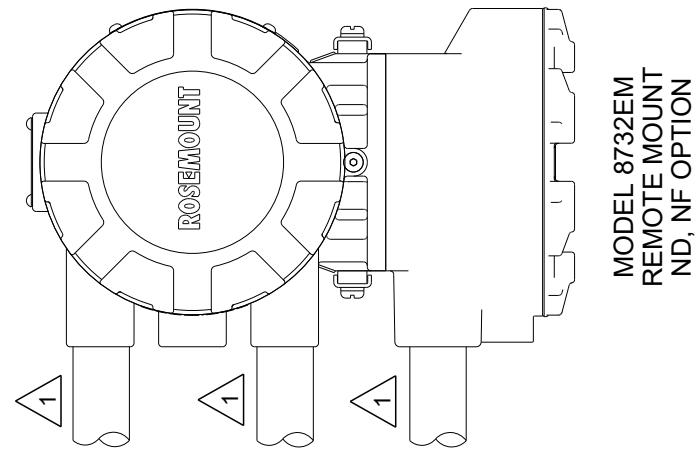


## ALLOWED REMOTE MOUNT TRANSMITTER CONFIGURATIONS

MODEL 8732EM REMOTE MOUNT CONFIGURATION  
WITH SAFETY APPROVALS OPTION 'ND', 'NF'

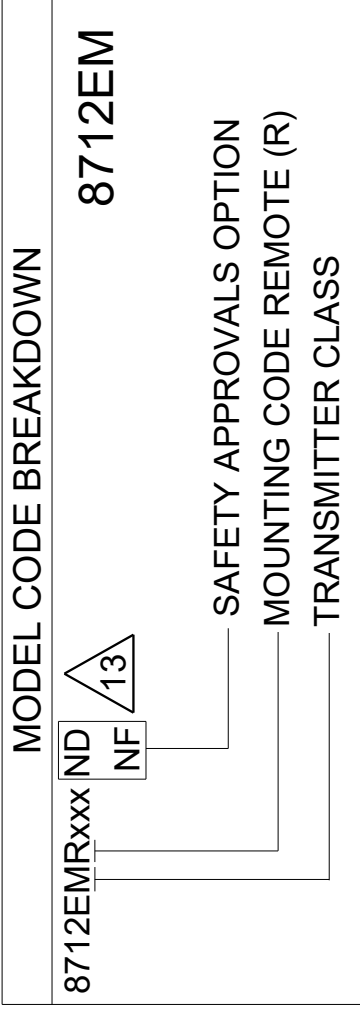


Ex tb IIIC T 80°C...T 200°C Db  
EPL Db, FOR USE IN ZONE 21  
REMOTE MOUNT TRANSMITTER MAXIMUM SURFACE  
TEMPERATURE T80°C (-50°C ≤ Ta ≤ 60°C)

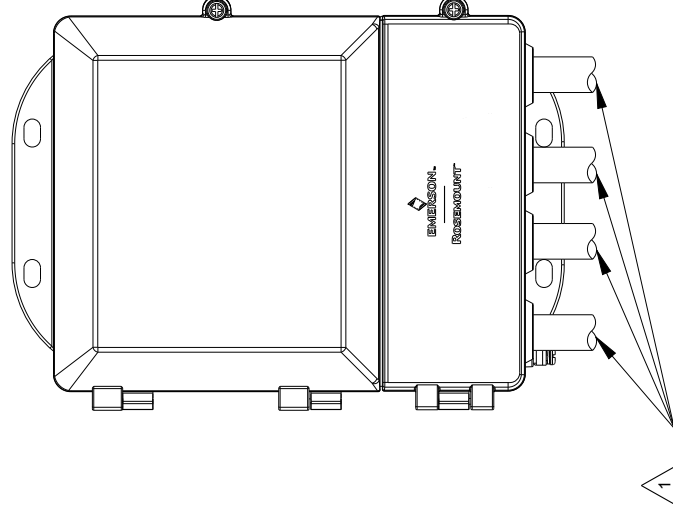


MODEL 8732EM  
REMOTE MOUNT  
ND, NF OPTION

MODEL 8712EM REMOTE MOUNT CONFIGURATION  
WITH SAFETY APPROVALS OPTION 'ND', 'NF'

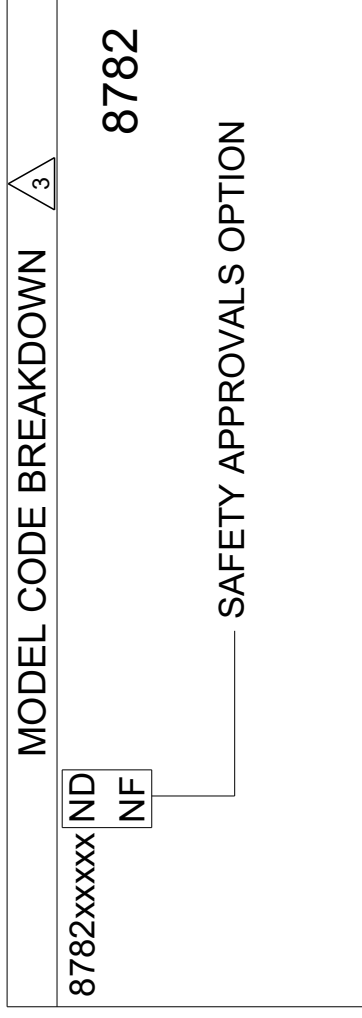


Ex tb IIIC T80°C Db  
EPL Db, FOR USE IN ZONE 21  
REMOTE MOUNT TRANSMITTER MAXIMUM SURFACE  
TEMPERATURE T80°C (-40°C ≤ Ta ≤ 60°C)

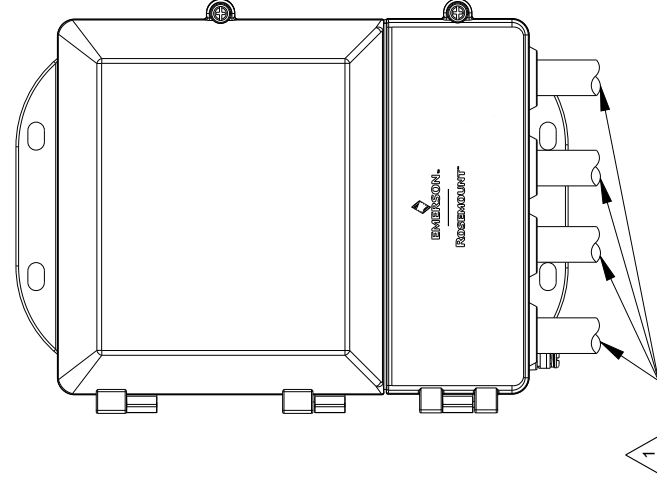


MODEL 8712EM  
WALL MOUNT  
ND, NF OPTION

MODEL 8782 REMOTE MOUNT CONFIGURATION  
WITH SAFETY APPROVALS OPTION 'ND' OR 'NF'



Ex tc IIc T80°C Dc  
EPL Dc, FOR USE IN ZONE 22  
REMOTE TRANSMITTER MAXIMUM SURFACE  
TEMPERATURE T80°C (-40°C ≤ Ta ≤ 60°C)



MODEL 8782  
WALL MOUNT  
ND, NF OPTION

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 AA

**EMERSON**

ROSEMOUNT

TITLE  
**INSTALLATION DRAWING**  
ATEX/IECEx HAZARDOUS (EX) LOCATIONS

DR. N. BOND 2/5/19 DRAWING NO. 08782-0060  
APPD. M. MAYER 2/26/19

DO NOT SCALE PRINT | CAD MAINTAINED (PROJ) | PRODUCT CODE | SHEET 6 OF 12

DRAWING NO. 08782-0060

# DUST ENVIRONMENT - EPL Db SENSOR TEMPERATURE CODE VS. PROCESS TEMPERATURE

TABLE 5 - MS: Ex tc PROTECTION BY ENCLOSURE 't'  
SAFETY APPROVAL OPTIONS 'ND' AND 'NF'

T-CODE	COIL HOUSING MATERIAL	LINE SIZE	AMBIENT TEMPERATURE RANGE	MAXIMUM PROCESS TEMPERATURE
T65	CARBON STEEL	ALL	-29°C TO 35°C	45°C
T80	CARBON STEEL	ALL	-29°C TO 60°C	60°C
T135	CARBON STEEL	ALL	-29°C TO 60°C	105°C
T200	CARBON STEEL	ALL	-29°C TO 60°C	177°C
T65	STAINLESS STEEL	ALL	-50°C TO 35°C	45°C
T80	STAINLESS STEEL	ALL	-50°C TO 60°C	60°C
T135	STAINLESS STEEL	ALL	-50°C TO 60°C	105°C
T200	STAINLESS STEEL	ALL	-50°C TO 60°C	177°C

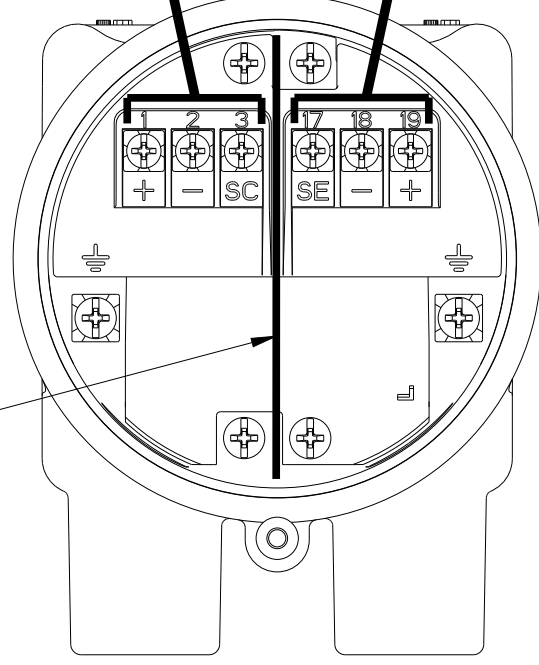
CONFIDENTIAL AND PROPRIETARY INFORMATION IS CONTAINED HEREIN AND MUST BE HANDLED ACCORDINGLY.	SURFACE FINISH UNLESS OTHERWISE SPECIFIED	125°	3RD ANGLE		SIZE C	SCALE -	REV AA
	DRAWING NO. 08782-0060						
<b>EMERSON</b> ROSEMOUNT							
TITLE INSTALLATION DRAWING							
ATEX/IECEx HAZARDOUS (EX) LOCATIONS							
DR.	N. BOND	2/5/19	DRAWING NO.		08782-0060		
APPD.	M. MAYER	2/26/19	PRODUCT CODE		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 ENVIRONMENT - COIL AND ELECTRODE CIRCUIT WIRING

## MODEL 8732EM WITH INTRINSICALLY SAFE ELECTRODE CIRCUIT FOR USE WITH MS SENSOR WITH SAFETY APPROVAL OPTIONS N1, N7, N9, K1, K7, AND K9

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)



NON-INTRINSICALLY SAFE COIL CIRCUIT WIRING OPTIONS:  
INSTALL AS Ex eb - "TYPE 'e' INCREASED SAFETY" OR  
INSTALL AS Ex na - "TYPE 'n' NON-SPARKING" OR  
INSTALL AS Ex ec - "TYPE 'e' INCREASED SAFETY"

5 INTRINSICALLY SAFE ELECTRODE CIRCUIT  
SEGREGATE FROM NON-INTRINSICALLY SAFE WIRING

MS FLOWTUBE  
REMOTE JUNCTION BOX

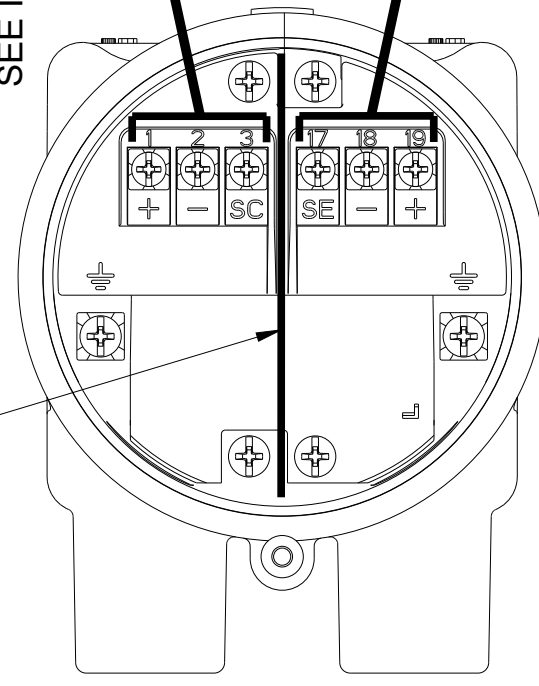
TERMINAL	LABEL
REMOTE MOUNT FLOWTUBE AND TRANSMITTER TERMINAL LAYOUT	
INTRINSICALLY SAFE ELECTRODE CIRCUIT	
19	ELECTRODE +
18	ELECTRODE -
17	ELECTRODE REFERENCE (SE)
NON-INTRINSICALLY SAFE COIL CIRCUIT	
1	COIL +
2	COIL -
3	COIL SHIELD (SC)

DIVIDER REQUIRED FOR  
INTRINSIC SAFETY (Ex i)

8732EM TRANSMITTER  
REMOTE JUNCTION BOX

## MODEL 8782 OR 8712EM WITH INTRINSICALLY SAFE ELECTRODE CIRCUIT FOR USE WITH MS SENSOR WITH SAFETY APPROVAL OPTIONS N1, N7, N9, K1, K7, AND K9

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)



NON-INTRINSICALLY SAFE COIL CIRCUIT WIRING OPTIONS:  
INSTALL AS Ex na - "TYPE 'n' NON-SPARKING" OR  
INSTALL AS Ex ec - "TYPE 'e' INCREASED SAFETY"

5 INTRINSICALLY SAFE ELECTRODE CIRCUIT  
SEGREGATE FROM NON-INTRINSICALLY SAFE WIRING

MS FLOWTUBE  
REMOTE JUNCTION BOX

TERMINAL	LABEL
REMOTE MOUNT FLOWTUBE AND TRANSMITTER LAYOUT	
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)

DIVIDER ONLY REQUIRED IF OUTPUT  
IS INSTALLED AS INTRINSICALLY SAFE  
OUTPUT (Ex i)

DIVIDER REQUIRED FOR  
INTRINSICALLY SAFE  
ELECTRODE CIRCUIT (Ex i)

8782 OR 8712EM TRANSMITTER  
(LOWER COVER AND SAFETY COVER ARE NOT SHOWN)

### SYSTEM APPROVAL FOR INTRINSICALLY SAFE ELECTRODE INSTALLATION

THE MODEL 8782 OR 8732EM AND MODEL MS MAGNETIC FLOWMETER REFERENCING CONTROL DRAWING 08782-0060 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 8782, 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



FLOW TUBE ENTITY PARAMETERS  
MODEL MS SENSOR  
INTRINSICALLY SAFE ELECTRODE CIRCUIT  
REMOTE JUNCTION BOX TERMINALS 19, 18, 17

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

DRAWING NO. 08782-0060

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 ± .1 (2.5)	± 2°
.XX ± .02 (0.5)	
.XXX ± .010 (0.25)	
FRACTIONS ± 1/32	

SURFACE FINISH UNLESS OTHERWISE SPECIFIED

EMERSON

TITLE	ROSEMOUNT
INSTALLATION DRAWING	
ATEX/IEC/EX HAZARDOUS (EX) LOCATIONS	
DR. N. BOND	2/5/19
APPD. M. MAYER	2/26/19
DOC TYPE	SHEET8 OF 12

SCALE C

REV AA

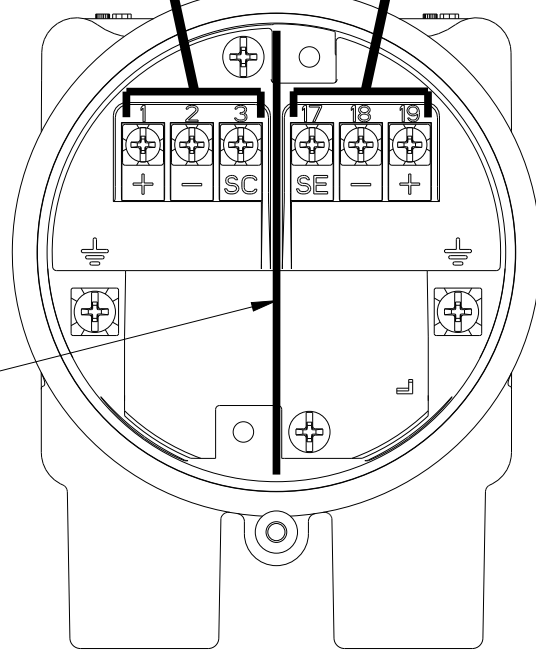
# DUST ENVIRONMENT - COIL AND ELECTRODE CIRCUIT WIRING

MODEL 8732EM WITH NON-INTRINSICALLY SAFE ELECTRODE CIRCUIT FOR USE WITH MODEL MS SENSOR WITH SAFETY APPROVAL OPTIONS

ND, NF <sup>13</sup>

COMPONENT OR COMBINATION COIL/ELECTRODE CABLE ALLOWED.  
SEE INSTALLATION WIRING DRAWING 08782-1504 FOR NON-INTRINSICALLY SAFE CABLING  
(FOR PROCESS TEMPERATURE LIMITS SEE TABLES 5 AND 6)

OPTIONAL DIVIDER SHOWN



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

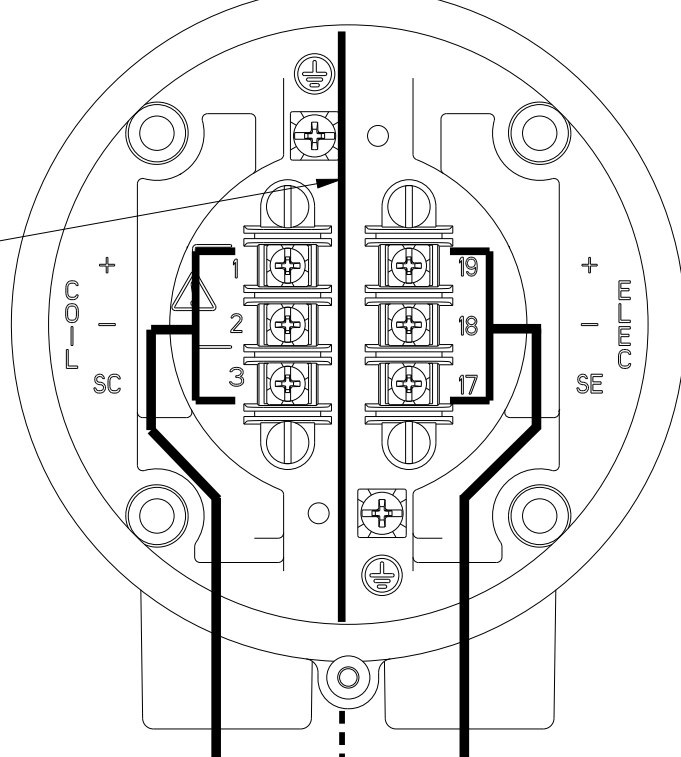
FOR USE WITH NON-FLAMMABLE PROCESS ONLY.  
INSTALL ELECTRODE CIRCUIT AS NON-INTRINSICALLY SAFE  
USING WIRING METHODS APPROPRIATE TO THE  
AREA DEVICE IS INSTALLED IN.

MS FLOWTUBE  
REMOTE JUNCTION BOX

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)

8732EM TRANSMITTER  
REMOTE JUNCTION BOX

OPTIONAL DIVIDER SHOWN

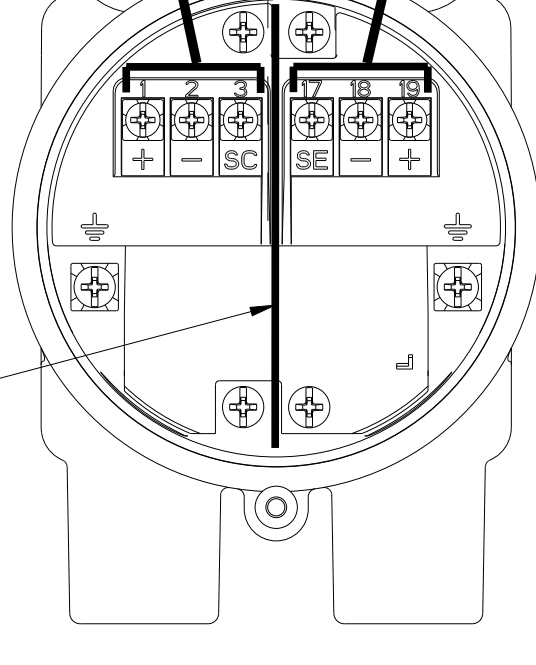


MODEL 8782 OR 8712EM WITH NON-INTRINSICALLY SAFE ELECTRODE CIRCUIT FOR USE WITH MODEL MS SENSOR WITH SAFETY APPROVAL OPTIONS

ND, NF <sup>13</sup>

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)

OPTIONAL DIVIDER SHOWN



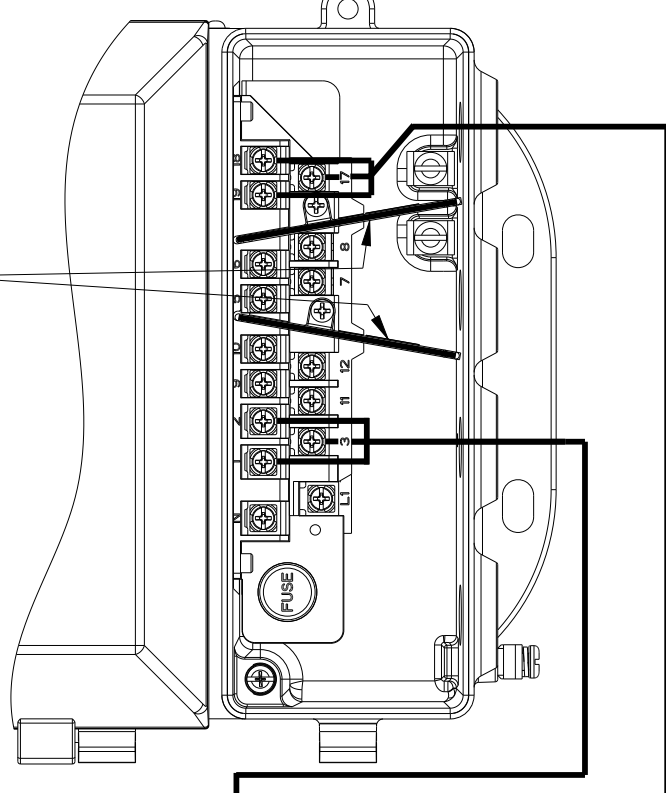
NON-INTRINSICALLY SAFE COIL CIRCUIT  
INSTALL USING WIRING METHODS  
APPROPRIATE TO THE AREA DEVICE  
IS INSTALLED IN

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

MS FLOWTUBE  
REMOTE JUNCTION BOX

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



8782 OR 8712EM TRANSMITTER  
(LOWER COVER AND SAFETY COVER ARE NOT SHOWN)

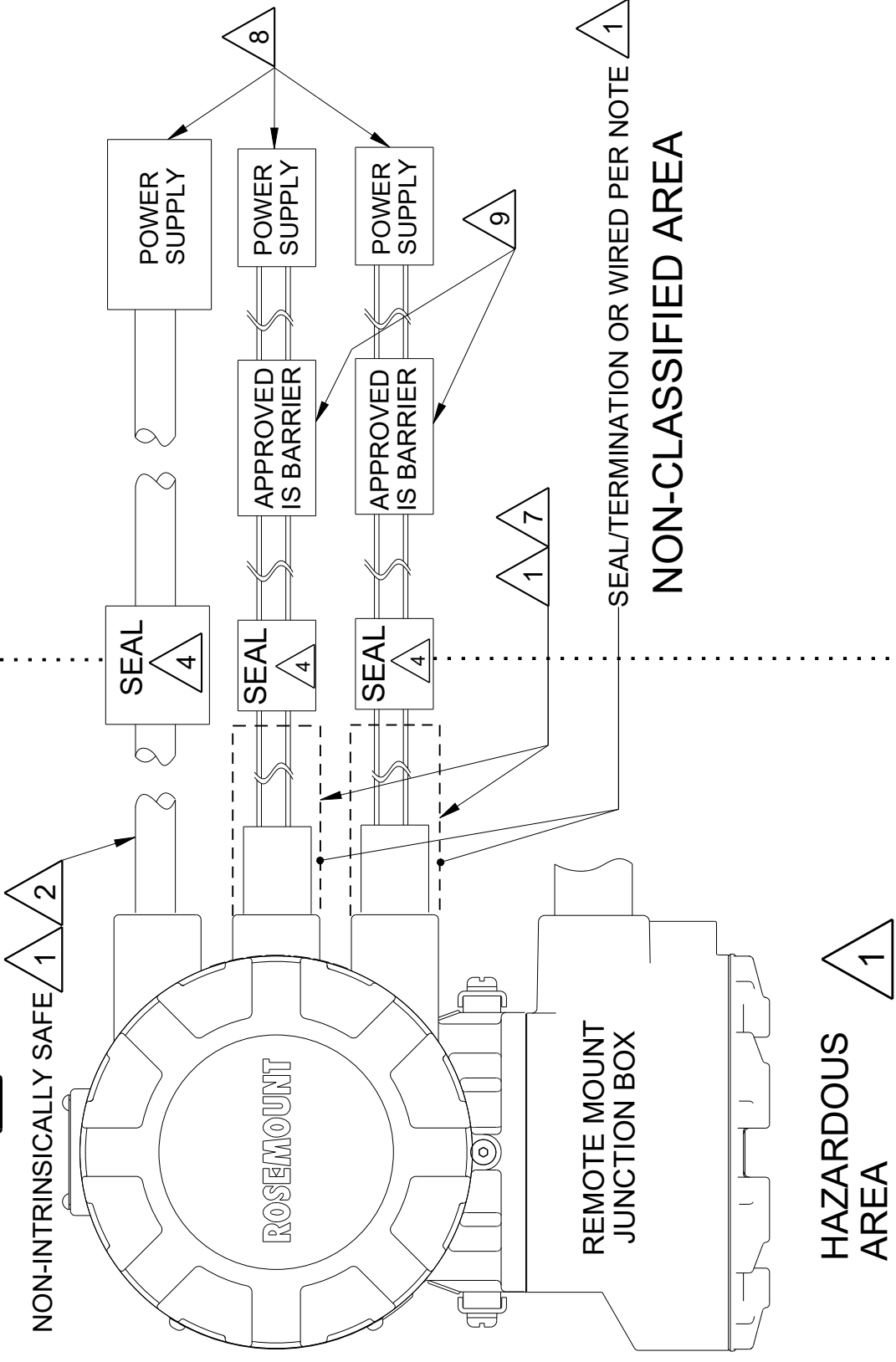
08782-0060  
DRAWING NO.

CONFIDENTIAL AND PROPRIETARY INFORMATION IS CONTAINED HEREIN AND MUST BE HANDLED ACCORDINGLY.	SURFACE FINISH UNLESS OTHERWISE SPECIFIED	125	3RD ANGLE	SIZE	C	SCALE	-	REV	AA
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)	ATEX/IECEx HAZARDOUS (EX) LOCATIONS								
FRACTIONS ± 1/32	ANGLES ± 2'								
DR. N. BOND	2/5/19	DRAWING NO.	08782-0060						
APPD. M. MAYER	2/26/19	PRODUCT CODE	DO NOT SCALE PRINT   CAD MAINTAINED. (PROE)   SHEET9 OF 12						

# GAS ENVIRONMENT - OUTPUT WIRING

HAZARDOUS (CLASSIFIED) LOCATION CONFIGURATION  
INTRINSICALLY SAFE OUTPUTS

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

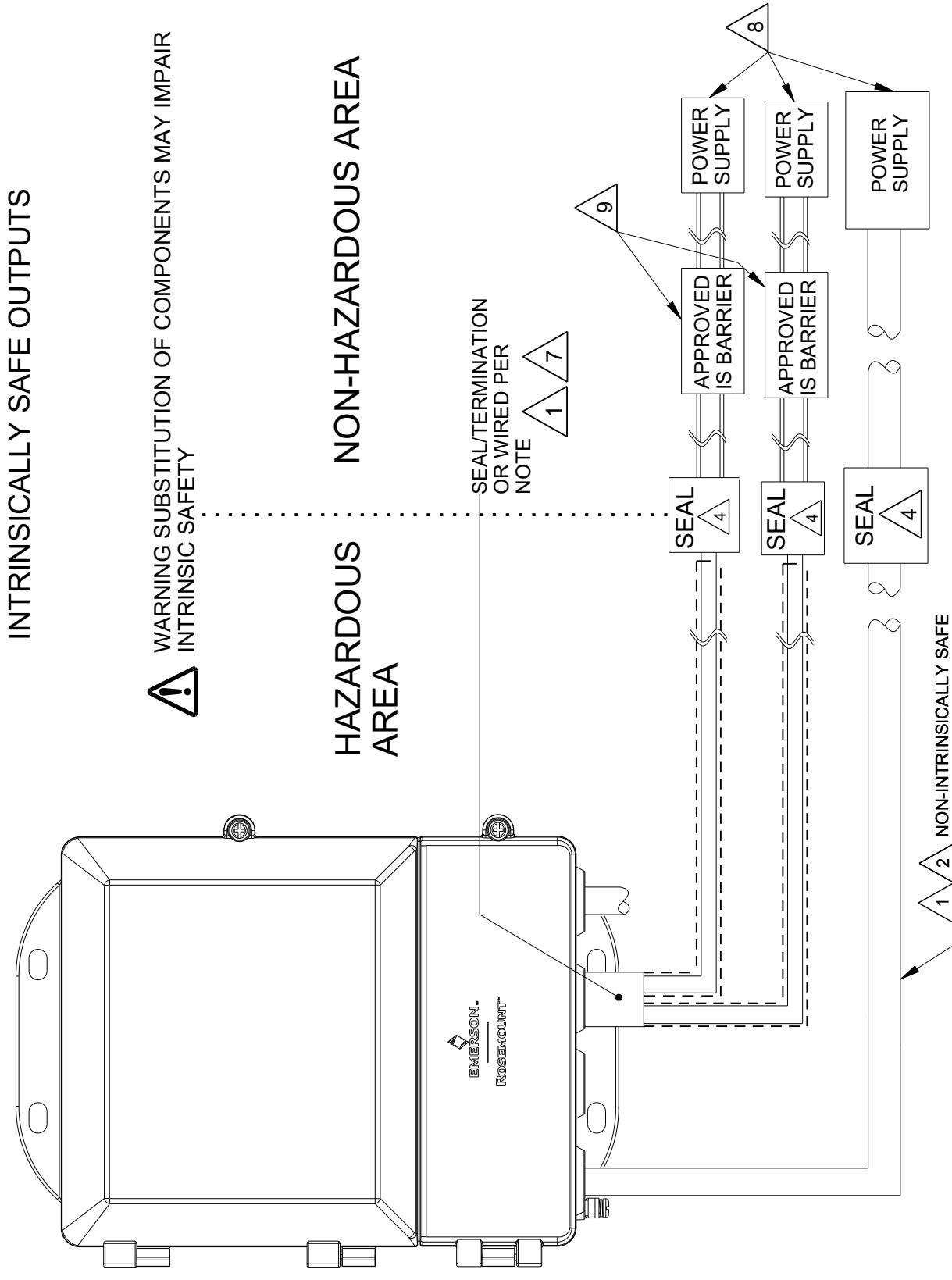


HAZARDOUS LOCATION CONFIGURATION  
INTRINSICALLY SAFE OUTPUTS

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

HAZARDOUS AREA      NON-HAZARDOUS AREA

SEAL/TERMINATION  
OR WIRED PER  
NOTE 1 (7)



8732EM MODEL CODE BREAKDOWN

8732EM xx A x | K1  
B K7  
F K9  
M N1  
P N7  
N9  
ND  
NF

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

8712EM MODEL CODE BREAKDOWN

8712EM xx A x | N1  
B N7  
F N9  
M ND  
P NF

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

8782 MODEL CODE BREAKDOWN

8782xxx A x | N1  
B N7  
F N9  
M ND  
P NF

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

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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 AA

DRAWING NO. 08782-0060

ROSEMOUNT



**INSTALLATION DRAWING**  
ATEX/IECEx HAZARDOUS (EX) LOCATIONS

DR. N. BOND 2/5/19 DRAWING NO. 08782-0060  
APPD. M. MAYER 2/26/19

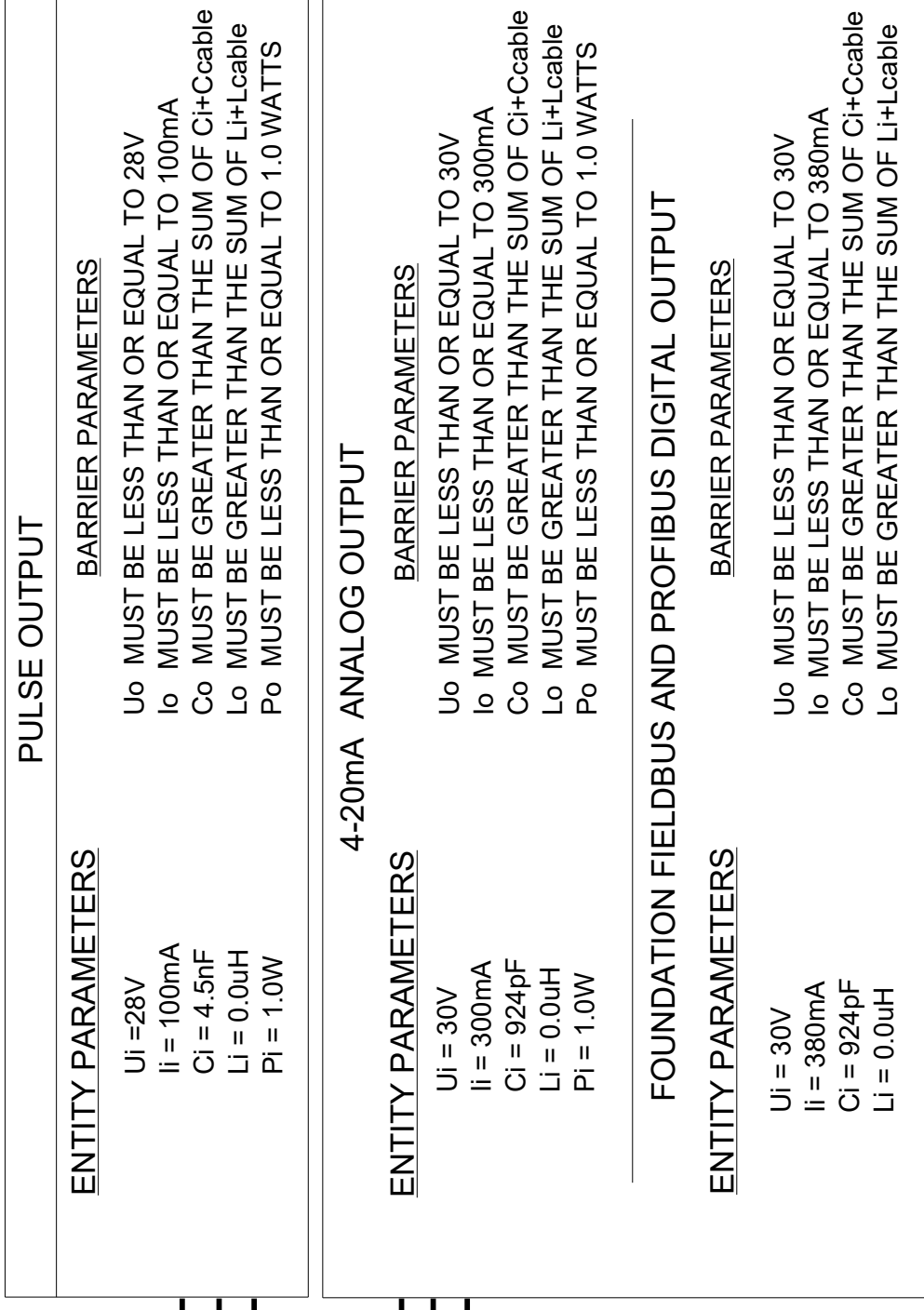
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SHEET 10 OF 12

# GAS ENVIRONMENT - INTRINSICALLY SAFE ENTITY CONCEPTS

## 8732EM ENTITY CONCEPT FOR INTRINSICALLY SAFE OUTPUTS

AC INPUT POWER 90-250 VAC RMS, 50/60Hz  $U_m = 250V$   
 DC INPUT POWER 12-42 VDC  
 DC LOW POWER 12-30 VDC



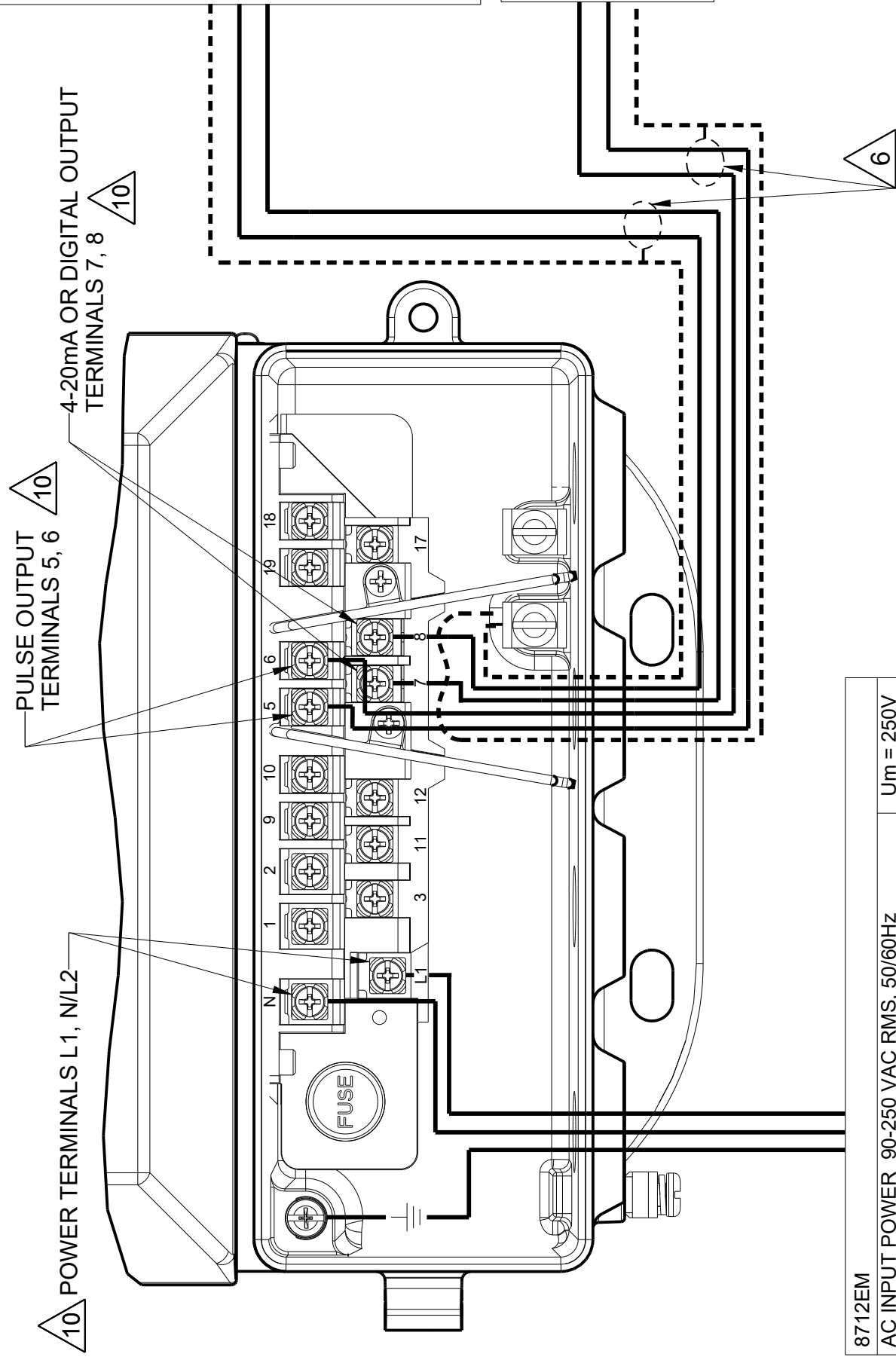
**DEFINITIONS:**

- $U_i$  = 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:

$$U_o \leq U_i, I_o \leq I_i, P_o \leq P_i, C_o \geq C_i + C_{cable}, L_o \geq L_i + L_{cable}$$

## 8782 AND 8712EM ENTITY CONCEPT FOR INTRINSICALLY SAFE OUTPUTS



**8712EM**  
 AC INPUT POWER 90-250 VAC RMS, 50/60Hz  $U_m = 250V$   
 DC INPUT POWER 12-42 VDC  
 DC LOW POWER 12-30 VDC

**8782**  
 AC INPUT POWER 90-250 VAC RMS, 50/60Hz  $U_m = 250V$   
 DC INPUT POWER 12-42 VDC

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 AA

ROSEMOUNT

**EMERSON**

TITLE **INSTALLATION DRAWING**

ATEX/IEC EX HAZARDOUS (EX) LOCATIONS

DR. N. BOND 2/5/19 DRAWING NO. 08782-0060  
 APPD. M. MAYER 2/26/19

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

SHEET 11 OF 12

08782-0060 DRAWING NO.

# 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 FIELD BUS MUST BE LESS THAN OR EQUAL TO 5 nF AND 10 uH RESPECTIVELY.

IN EACH SEGMENT ONLY ONE ACTIVE DEVICE, NORMALLY THE ASSOCIATED APPARATUS, IS ALLOWED TO PROVIDE THE NECESSARY ENERGY FOR THE FIELD BUS 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 uA FOR EACH CONNECTED DEVICE. SEPARATELY POWERED EQUIPMENT NEEDS GALVANIC ISOLATION TO ASSURE THAT THE INTRINSICALLY SAFE FIELD BUS 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:

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

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.

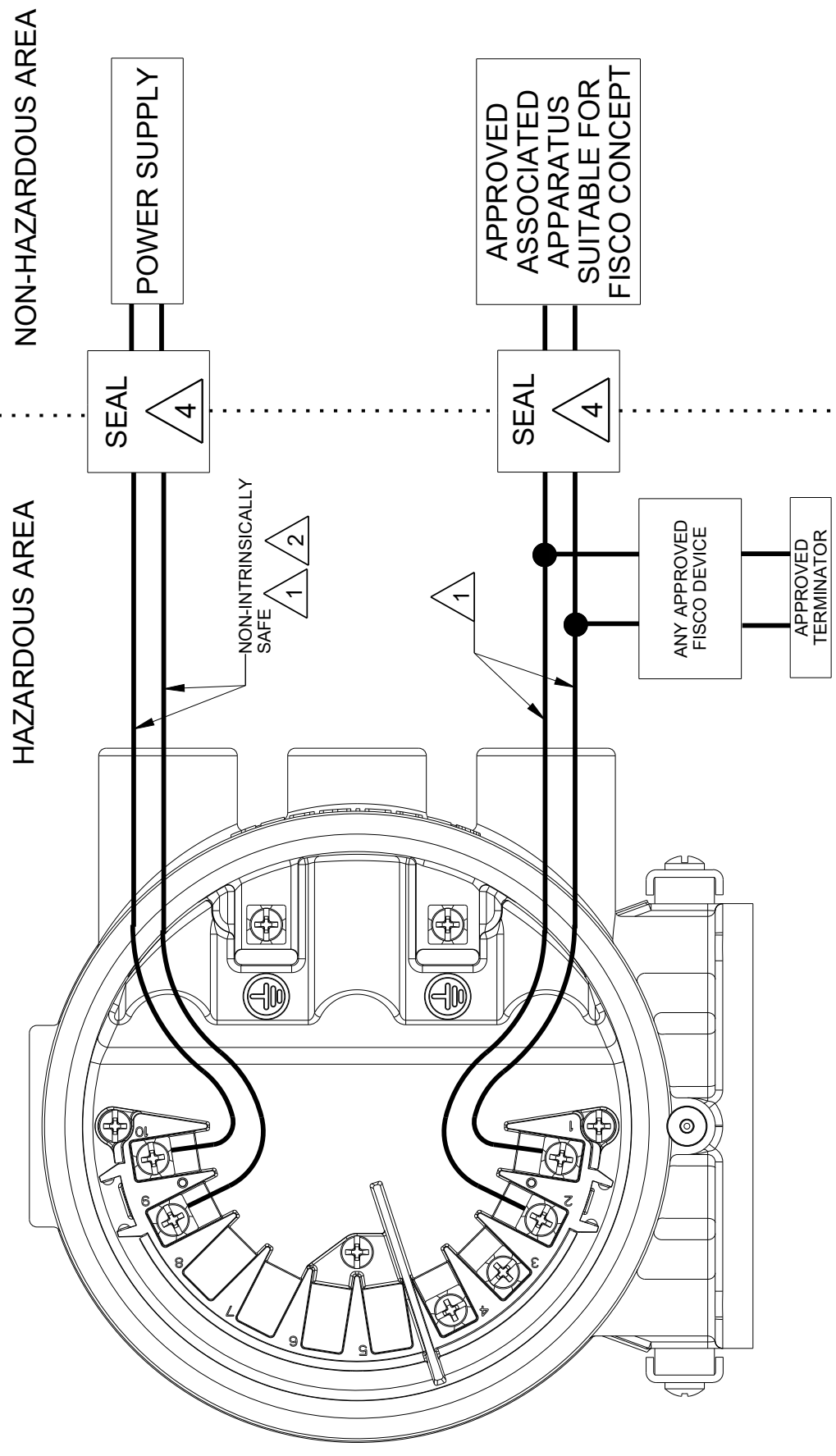
## ENTITY PARAMETER

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

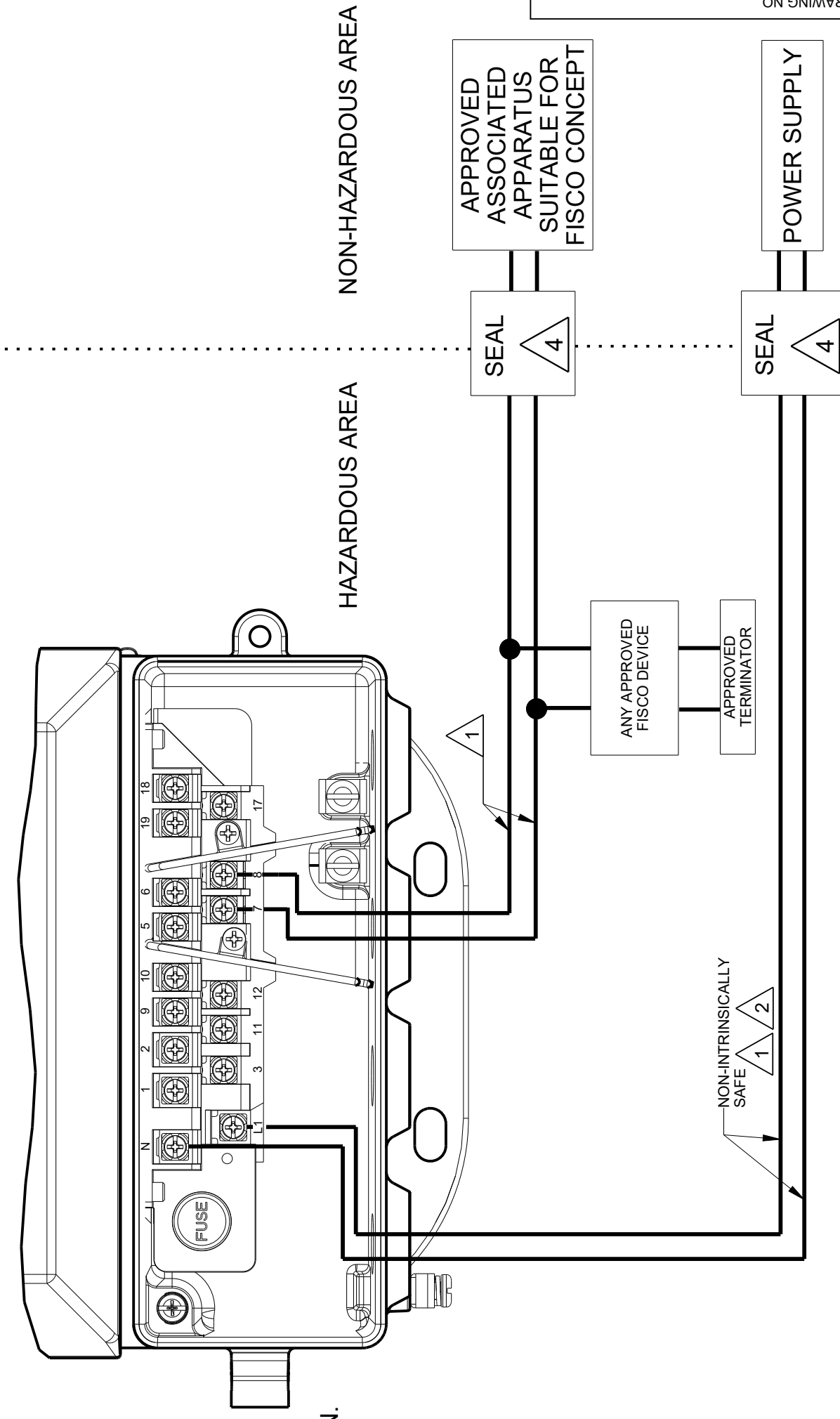
## BARRIER PARAMETERS

$U_o$  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  $L_i + L_{cable}$

**8732EM**



**8712EM & 8782**



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	DRAWING NO. 08782-0060								
<b>EMERSON</b>									
ROSEMOUNT									
TITLE <b>INSTALLATION DRAWING</b>									
ATEX/IECEx HAZARDOUS (EX) LOCATIONS									
DR.	N. BOND	2/5/19	DRAWING NO.	08782-0060					
APPD.	M. MAYER	2/26/19	PRODUCT CODE	DO NOT SCALE PRINT   CAD MAINTAINED (PROJ)   SHEET 12 OF 12					
-DEC TOLERANCES- X ± .1 [2.5] .XX ± .02 [0.5] .XXX ± .010 [0.25] FRACTIONS ± 1/32 ANGLES ± 2°									
UNLESS OTHERWISE SPECIFIED DIMENSIONS IN INCHES (mm). REMOVE ALL BURRS AND SHARP EDGES.									



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