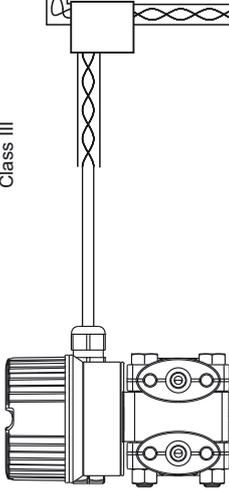


**HAZARDOUS (CLASSIFIED) LOCATION**

Class I, Zone 0, IIC  
 Class I, Division 1, 2, Groups A, B, C, D  
 Class II, Division 1, 2, Groups E, F, G  
 Class III



The devices are FM Certified as Dual Seal per ANSI/ISA 12.27.01 as tabulated below; therefore installation of external secondary seals is not required.

| Dual Seal | Model | Media  | Annunciation in case of primary seal failure |   |
|-----------|-------|--------|--|---|
|           |       |        | Annunciation method                          | Pressure range for effective annunciation |
| PMD55     |       | gas    | audible                                      | min                                       |
|           |       | liquid | audible/visible                              | MWPP*                                     |
|           |       |        |  | 160 bar (2320 psi)                        |
|           |       |        |  | 3.2 bar (46.4 psi)                        |

\* Limitations of the Maximum Working Pressure (MWPP) are marked on the nameplate and must be considered!

Deltabar M is suitable for the connection to a PROFIBUS PA FOUNDATION Fieldbus system according to the Entity- or FISCO-Concept (as described below).

**FISCO-Concept**

The FISCO-Concept allows interconnection of intrinsically safe apparatus to associated apparatus not specifically examined in such combination. The criteria for interconnection is that the voltage (U<sub>i</sub> or V<sub>max</sub>), the current (I<sub>i</sub> or I<sub>max</sub>) and the power (P<sub>i</sub> or P<sub>max</sub>) which intrinsically safe apparatus can receive and remain intrinsically safe, considering faults, must be equal or greater than the voltage (U<sub>o</sub> or V<sub>oc</sub> or V<sub>t</sub>), the current (I<sub>o</sub> or I<sub>sc</sub> or I<sub>t</sub>) and the power (P<sub>o</sub> or P<sub>max</sub>) levels which can be delivered by the associated apparatus, considering faults and applicable factors. In addition, the maximum unprotected capacitance (C) and inductance (L) of each apparatus (other than the termination) connected to the fieldbus must be less than or equal to 5 nF and 10 µH 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 U<sub>o</sub> (or V<sub>oc</sub> or V<sub>t</sub>) of the associated apparatus has to be limited to the range of 14 V to 24 V d.c. 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 to a leakage current of 50 µA for each connected device. Separately powered equipment needs a galvanic isolation to assure that the intrinsically safe fieldbus circuit remains passive.

The cable used to interconnect the devices needs to have the parameters in the following range:

- loop resistance R: 15...150 Ohm/km
- capacitance per unit length C: 80...200 nF/km
- C = C · line/line + 0.5 C · line/screen, if both lines are floating or C = C · line/line + C · line/screen, if the screen is connected to one line
- length of spur cable: 30 m
- length of trunk cable: 1 km
- length of splice: 1 m
- At each end of the trunk cable an approved infallible line termination with the following parameters is suitable:  
 R = 90...100 Ohm, C = 0...2.2 µF

One of the allowed terminations might already be integrated in the associated apparatus.

**NONHAZARDOUS LOCATION**

Any FM Approved Apparatus suitable for Entity-concept or FISCO-concept

Deltabar M with electronic insert for PROFIBUS PA FOUNDATION Fieldbus (Entity-Concept)

|   |                            |       |       |
|---|----------------------------|-------|-------|
| U <sub>i</sub> (V <sub>max</sub> ) = 24 V   | Temperature classification | T6    | T4    |
| I <sub>i</sub> (I <sub>max</sub> ) = 250 mA | Max. ambient temperature   | 40°C  | 70°C  |
| P <sub>i</sub> (P <sub>max</sub> ) = 1.2 W  |                            | 104°F | 158°F |
| C <sub>i</sub> ≤ 5 nF                       |                            |       |       |
| L <sub>i</sub> ≤ 10 µH                      |                            |       |       |
| Leakage current ≤ 50 µA                     |                            |       |       |

Min. ambient temp: -40°C (optional -50°C)

Deltabar M with electronic insert for PROFIBUS PA FOUNDATION Fieldbus (FISCO-Concept)

|   |                            |       |       |
|---|----------------------------|-------|-------|
| U <sub>i</sub> (V <sub>max</sub> ) = 17.5 V | Temperature classification | T6    | T4    |
| I <sub>i</sub> (I <sub>max</sub> ) = 500 mA | Max. ambient temperature   | 40°C  | 70°C  |
| P <sub>i</sub> (P <sub>max</sub> ) = 6.5 W  |                            | 104°F | 158°F |
| C <sub>i</sub> ≤ 5 nF                       |                            |       |       |
| L <sub>i</sub> ≤ 10 µH                      |                            |       |       |
| Leakage current ≤ 50 µA                     |                            |       |       |

Min. ambient temp: -40°C (optional -50°C)

Any FM Approved Termination with R = 90...100 Ω C = 0...2.2 µF

This device is suitable to be installed in accordance with the wiring methods of Division 1, Zone 0 resp. Zone 20 for intrinsic safety (as defined above) and for Division 1/Zone 1 for explosionproof protection.

For installations in accordance with the requirements of explosionproof protection the device is suitable for:  
 Explosionproof for Ci.I Div.1 Gp. ABCD  
 Conduit seal is not required!

Max. supply voltage:  
 32 VDC  
 P ≤ 1.25 W

Ambient temperature range: -40°C...+75°C (optional Ta,min -50°C)  
 Warning: Conductors shall be rated 10°C above ambient.

Warning: Keep cover tight, while circuit is alive.  
 Warning: Changing the type of protection after first installation may impair the explosion protection.

**Intrinsically safe installations**  
 Intrinsically safe for Ci.I/III, Div.1, Gp. ABCDEFG; AEx.Ia IIC T6

1. FM Approved apparatus must be installed in accordance with manufacturer instructions.
2. FM Approved associated apparatus must meet the following requirements:  
 U<sub>o</sub> or V<sub>oc</sub> or V<sub>t</sub> ≤ U<sub>i</sub> (V<sub>max</sub>) and I<sub>o</sub> or I<sub>sc</sub> or I<sub>t</sub> ≤ I<sub>i</sub> (I<sub>max</sub>) and P<sub>o</sub> or P<sub>max</sub> ≤ P<sub>i</sub> (P<sub>max</sub>).
3. The maximum non-hazardous area voltage must not exceed 250 V.
4. The installation must be in accordance with the National Electrical Code NFPA 70 (NEC) and ANSI/ISA - RP-12.06.01 (except chapter 5).
5. Be aware of multiple earthing of screen. The screen must be connected in accordance with National Electrical Code.
6. Caution: Use only supply wires suitable for 5°C above surrounding temperature.
7. Warning: Substitution of components may impair intrinsic safety.
8. The polarity for connecting PA+ (1) and PA- (2) is of no importance due to an internal rectifier.
9. Avoid electrostatic charging of plastic surfaces, plastic process connections or coatings.

XA00568P-B/00/EN/03.17  
 CCS/FM10  
 FM/B 14.10.16

**FM Control Drawing**  
**960014213-B**

Deltabar M PMD55  
 PA, FF  
 (IS + XP)

