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71356431

# FM Control Drawing
# 960009152-D

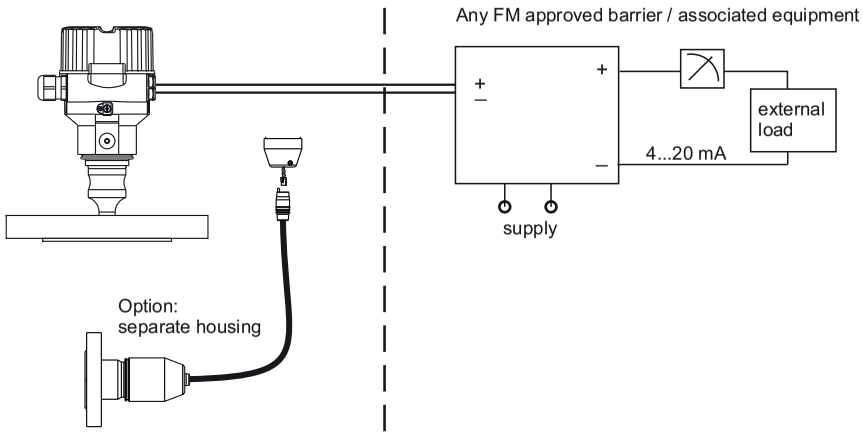
Cerabar M PMC51, PMP51, PMP55
HART

Endress+Hauser
People for Process Automation

## Hazardous location

Class I, Div. 1, 2, Groups A, B, C, D
Class I, Zone 0, IIC
AEx ia IIC T6
Class II, Div. 1, 2, Groups E, F, G
Class III

## Non hazardous location




Entity parameter:

$V_{max}$ = 30 VDC
$I_{max}$ = 300 mA
$P_{max}$ = 1 W
$C_i \leq$ 10 nF
$L_i$ = 0

Areas of application

The compact instruments are suitable for use in areas subject to explosion caused by gases, vapours or mists.

Table: Permissible ambient temperature and temperature code:

| Temperature code | Permissible ambient temperature, electronic compartment |
|---|---|
| T6 | -40...40°C |
| T4 | -40...70°C |

option for $T_{a,min}$: -50°C

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

| Single Seal | Model | Limited to: MWP* | Limited to: Process Temperature** |
|---|---|---|---|
| | PMP51, PMP55 | 400 bar (5800 psi) | -40°C...+100°C |
| | PMC51 | 40 bar (600 psi) | -40°C...+125°C |

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

** Limitations of the process temperature range depending on the used version are specified in the applicable technical information of the manufacturer and must be considered!
PMP55 allows higher process temperatures depending on the used diaphragm seal.
This is allowable provided the above specified process temperatures are guaranteed at the sensor close to the enclosure (location of primary seal) for these types.

**Intrinsically safe installation**

Intrinsically safe (entity), Class I, II, III, Div. 1, Groups A, B, C, D, E, F, G
Hazardous Location Installation

1. Control room equipment may not use or generate over 250 V.
2. Use Factory Mutual Entity-approved intrinsic safety barrier with Voc or Vt ≤ $V_{max}$, Isc or It ≤ $I_{max}$, Ca ≥ Ci + $C_{cable}$, La ≥ Li + $L_{cable}$.
   Barrier must be incapable of delivering more than 1 Watt to a matched load.
   Transmitter entity parameters are as follows: $V_{max}$ = 30 VDC
   $I_{max}$ = 300 mA
   $C_i \leq$ 10 nF
   $L_i$ = 0
   for T-code see table
3. Installation should be in accordance with ANSI/ ISA RP 12.06.01 “Installation of intrinsically safe systems for hazardous (classified) locations“ and the National Electrical Code (ANSI/NFPA 70).
4. Warning: Substitution of Components may impair intrinsic safety.
5. Intrinsic safety barrier manufacturer’s installation drawing must be followed, when installing this equipment: The configuration of the intrinsic safety barrier(s) must be FMRC approved.
6. Use supply wires suitable for 5°C above surrounding ambient.
7. Avoid electrostatic charging of plastic surfaces, plastic process connections or coatings.

**Division 2 and Zone 2 installation**

Nonincendive Class I, Div. 2, Groups A, B, C, D
Hazardous Location Installation (not for separated housing)

8. Installation shall be in accordance with NEC using threaded conduits or other wiring methods in accordance with articles 500 to 510.
   Intrinsic safety barrier not required.
   Max. supply voltage 45 VDC.
   Max. ambient temperature: 70°C.
9. Warning: Explosion Hazard - Do not disconnect equipment unless power has been switched off or the area is known to be non hazardous.
   Warning: Substitution of Components may impair suitability for Class I, Div. 2.
10. Nonincendive field wiring installation:
    The Nonincendive Field Wiring Circuit Concept allowes interconnection of nonincendive field wiring apparatus with associated nonincendive field wiring apparatus or associated apparatus not specifically examined in combination as a system using any of the wiring methods permitted for unclassified locations, when $V_{max}$ ≥ Voc or Vt, Ca ≥ Ci + $C_{cable}$, La ≥ Li + $L_{cable}$.
    Transmitter parameters are as follows: $V_{max}$ = 45 VDC; $C_i \leq$ 10 nF; $L_i$ = 0;
    $I_{max}$ = see note 11
    Max. ambient temperature: 70°C
11. For these current controlled circuit, the parameter $I_{max}$ is not required and need not to be aligned with parameter Isc and It of the associated nonincendive field wiring apparatus or associated apparatus.

**Class II, III installation**

DIP for Class II, III, Div. 1, Groups E, F, G
Hazardous Location Installation
(not for separated housing, not for PMC51 with flushmounted process connections)

12. Installation of transmitter wiring according to NEC using threaded conduits or other wiring methods in accordance with articles 500 to 510.
13. Use a dust tight seal at the conduit entry.

**Functional ratings:**

These ratings do not supersede Hazardous Location values.
$U_{nom} \leq$ 45 VDC
$I_{nom}$ = 4...20 mA (max. 25 mA)

Remark: for service purposes the Endress+Hauser Commubox FXA191 or FXA195 may be connected to the display connection of the electronic insert. Follow the safety advices of the Commubox.