

Differential pressure Deltabar FMD78

Differential pressure transmitter with two diaphragm seals for differential pressure and level



F L E X

Benefits:

- Large variety of different process connections and membrane materials
- New TempC Membrane for diaphragm seals: Minimum temperature effects and short recovery times
- Highest safety due to gas tight feedthrough with capabilities up to SIL2/3, certified to IEC 61508
- Easy menu-guided commissioning via local display, 4 to 20 mA with HART, PROFIBUS PA, FOUNDATION Fieldbus
- HistoROM data management concept for fast and easy commissioning, maintenance and diagnostics
- Cost savings with modular concept for easy replacement of sensor, display or electronics
- Seamless and independent system integration (HART/PA/FF)

More information and current pricing:

www.us.endress.com/FMD78

Specs at a glance

- **Accuracy** 0,075% + influence of diaphragm seal
- **Process temperature** -40°C...400°C (-40°F...752°F)
- **Pressure measuring range** 100mbar...40bar (1.5psi ... 600 psi)
- **Process pressure / max. overpressure limit** 160bar (2400 psi)
- **Main wetted parts** Alloy C276 316L Monel Tantalum

Field of application: The Deltabar FMD78 differential pressure transmitter with metal sensor uses two capillary diaphragm seals. Typically used in process and hygiene applications for continuous measurement of pressure differences in liquids, vapors, gases and dusts. The integrated HistoROM data module makes the management of

process and device parameters easy. Designed according to IEC 61508 for use in SIL3 safety applications.

Features and specifications

Pressure

Measuring principle

Differential pressure

Characteristic

Digital transmitter with metallic measuring diaphragms diaphragm seals and capillaries

Modular transmitter

Long-term stability

Secondary process barrier

enhanced safety via self diagnostic functions.

Supply voltage

4...20 mA HART

10,5...45V DC (Non Ex):

Ex ia: 10,5...30V DC

PROFIBUS PA:

9...32 V DC (Non Ex)

FOUNDATION Fieldbus:

9...32 V DC (Non Ex)

Reference Accuracy

0,075% + influence of diaphragm seal

Long term stability

0.08 % of URL/ year

0.14 % of URL/ 5 years

0.27 % of URL/ 10 years

Process temperature

-70°C...400°C

(-94°F...752°F)

Pressure**Ambient temperature**

-50°C...85°C
(-58°F...185°F)

Measuring cell

100 mbar...40 bar
(40 inH₂O...600 psi)

Smallest calibratable span

5 mbar (0.075 psi)

Vacuum resistance

50 mbar (0.73 psi)

Max. Turn down

100:1

Max. overpressure limit

160 bar
(2400 psi)

Process connection

Diaphragm seal (Pancake, threads)
Flanges (DIN, ASME)
Hygienic connections
Tri-Clamp ISO2852

Process connection hygienic

Tri-Clamp
DIN11851
NEUMO
Varivent
SMS
DRD
Universal adapter

Pressure**Material process membrane**

316L, AlloyC,
Tantal,
Gold-Rhodium
PTFE

Material gasket

None, diaphragm seal welded

Fill fluid

Silicone oil,
Inert oil,
Vegetable oil
Low- temperature oil
High- temperature oil

Material housing

316L, Die-cast aluminum

Communication

4...20 mA HART
PROFIBUS PA
FOUNDATION Fieldbus

Certificates / Approvals

ATEX, FM, CSA, CSA C/US, IEC Ex, INMETRO, NEPSI, EAC, UK Ex

Safety approvals

SIL

Design approvals

NACE MR0175
EN10204-3.1

Hygienic approvals

3A, FDA

Marine approvals

GL/ ABS

Pressure

Specialities

Diagnostic functions
TempC Membrane

Successor

PMD78B

Continuous / Liquids

Measuring principle

Differential pressure

Characteristic / Application

Digital transmitter with metallic measuring diaphragms diaphragm seals and capillaries
Modular transmitter
Long term stability
Enhanced safety via self diagnostic functions
Secondary process barrier

Specialities

TempC membrane

Supply / Communication

4...20 mA HART:
10,5...45V DC
Ex ia: 10,5...30V DC
PROFIBUS PA /
FOUNDATION Fieldbus:
9...32V DC

Accuracy

0,075% + influence of diaphragm seal

Long term stability

0,05% of URL/year

Continuous / Liquids

Ambient temperature

-50°C...85°C
(-58°F...185°F)

Process temperature

-40°C...400°C
(-40°F...752°F)

Process pressure / max. overpressure limit

160bar (2400 psi)

Pressure measuring range

100mbar...40bar
(1.5psi ... 600 psi)

Main wetted parts

Alloy C276
316L
Monel
Tantalum

Process connection

Diaphragm seal (Pancakes, threads)
Flanges (DIN, ASME)
Tri-Clamp ISO2852
Hygienic connections

Process connection hygienic

Tri-Clamp
DIN11851
NEUMO
Varivent
SMS
DRD
Universal adapter

Max. measurement distance

400m (1312ft) H2O

Continuous / Liquids

Communication

4...20 mA HART
PROFIBUS PA
FOUNDATION Fieldbus

Certificates / Approvals

ATEX, FM, CSA, CSA C/US, IEC Ex, INMETRO, NEPSI, EAC

Safety approvals

SIL

Design approvals

EN10204-3.1
NACE MR0175, MR0103

Hygienic approvals

3A, EHEDG

Marine approval

GL/ ABS

Options

HistoROM/M-Dat
4-line digital display
SS- or Aluminiumhousing
Separate housing

Successor

PMD78B

Application limits

Measuring cell:
Metal welded

More information www.us.endress.com/FMD78