

# Pressure measuring devices

## Type MD



### For the display, monitoring and control of differential pressures

Measuring devices for the display, monitoring and control of differential pressures or volume flow rates, for gaseous, non-aggressive media

Analogue:

- U-tube manometer or inclined tube manometer

Digital:

- Transducer with pressure sensor
- 4-digit LCD
- Infinitely variable setpoint adjustment
- Optical signal when the setpoint is reached
- Volt-free switch output with changeover contact
- 0.1 Pa resolution
- Signal outputs to DIN IEC 60381

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## Description

### Application

- Type MD pressure measuring devices for installation into ventilation and air conditioning systems
- For the display and monitoring of differential pressures in gaseous media, such as air and inert gases.
- To ensure the timely maintenance of filters

### Special characteristics

- Compact construction
- Easy to use
- Variant APC: display of 2 measuring ranges depending on installation orientation
- Variant DPC: measurement to DIN 1946-4 and VDI 3803

Variant DPC can be integrated with the central BMS

### Variants

- UT: U-tube manometer
- APC: Analogue pressure monitor
- DPC: Digital pressure monitor

### Constructions

- Analogue constructions: U-tube manometer and inclined tube manometer with liquid
- Digital construction: with electronic system
- Supply voltage 24 V AC/DC  $\pm 15\%$ , 50/60 Hz
- Transducer output, adjustable, 0 – 10 V DC, 0 – 20 mA or 2 – 10 V DC, 4 – 20 mA

### Useful additions

- Manometer liquid, to be ordered separately
- DIN rail power supply unit, to be ordered separately

### Maintenance

- Maintenance-free as construction and materials are not subject to wear

This specification text describes the general properties of the product. Texts for variants can be generated with our Easy Product Finder design programme.

Type MD pressure measuring devices with different measuring ranges for displaying or monitoring the differential pressure of gaseous media.

U-tube manometer and analogue pressure monitor are measuring devices with display function. The digital pressure monitor is a monitoring and measuring device with a digital display including LEDs; an optical signal is emitted if the differential pressure exceeds the set limit. Volt-free switch output with changeover contact and transducer output, adjustable, 0 – 10 V DC, 0 – 20 mA or 2 – 10 V DC, 4 – 20 mA, for connection to the central BMS.

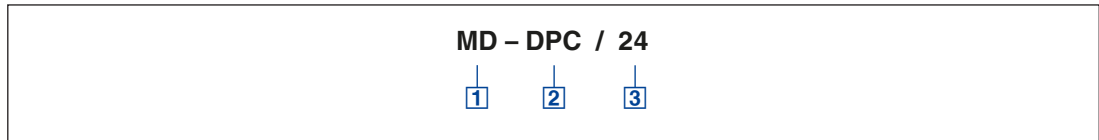
#### Special characteristics

- Compact construction
  - Easy to use
  - Variant APC: display of 2 measuring ranges depending on installation orientation
  - Variant DPC: measurement to DIN 1946-4 and VDI 3803
- Variant DPC can be integrated with the central BMS

#### Constructions

- Analogue constructions: U-tube manometer and inclined tube manometer with liquid
- Digital construction: with electronic system
- Supply voltage 24 V AC/DC  $\pm$  15%, 50/60 Hz
- Transducer output, adjustable, 0 – 10 V DC, 0 – 20 mA or 2 – 10 V DC, 4 – 20 mA

Order code



**1** Type

**MD** Measuring device

**3** Supply voltage

**24** 24 V AC/DC ± 15%, 50/60Hz

**2** Variant

**UT** U-tube manometer

**APC** Analogue pressure monitor

**DPC** Digital pressure monitor

Order example

**MD-DPC/24**

Variant

Digital pressure monitor

Supply voltage

24 V AC/DC ± 15%, 50/60 Hz

### Measuring devices, Variant MD-UT



#### Application

- U-tube manometer, variant UT, used to display differential pressures of gaseous media

#### Variants

- UT: U-tube manometer

#### Constructions

- U-tube manometer, analogue construction

#### Nominal sizes [mm]

- Casing dimensions (B × H): 45 × 180 mm

#### Useful additions

- Manometer liquid, to be ordered separately

#### Special characteristics

- Compact construction
- Easy to use

#### Construction features

Plastic, with adjustable scale

#### Materials and surfaces

- Measuring tube made of acrylic glass
- Liquid for manometer: Water or a liquid with low evaporation rate, to be ordered separately

#### Maintenance

- Maintenance-free as construction and materials are not subject to wear

### Construction U-tube manometer

Parameter	Value
Measuring range	0 – 1000 Pa
Order code	MD-UT

### Manometer liquid



Variant MD-UT

#### Manometer liquid

Parameter	Value
Liquid mixture	Low evaporation rate (blue)
Frost-proof	Up to – 20 °C
Density	1.0 kg/dm <sup>3</sup>
Order code	MD-F-UT

### Measuring devices, Variant MD-APC



#### Application

- Pressure monitor, variant APC, inclined tube manometer with 2 measuring ranges and used to display the differential pressures of gaseous media

#### Variants

- APC: Analogue pressure monitor

#### Constructions

- Analogue construction: Inclined tube manometer with liquid

#### Nominal sizes [mm]

- Casing dimensions (B × H × T):  
230 × 113 × 38 mm

#### Useful additions

- Manometer liquid, to be ordered separately
- Flexible measuring tube, 9 × 1.5 mm

#### Horizontal installation of the pressure monitor



#### Special characteristics

- Compact construction
- Easy to use
- Variant APC: display of 2 measuring ranges depending on installation orientation

#### Construction features

- Rigid plastic casing
- 2 different measuring ranges (depending on installation orientation)

#### Materials and surfaces

- Measuring tube made of acrylic glass, with liquid (supplied separately)

#### Maintenance

- Top up liquid; liquid to be ordered separately

#### Vertical installation of the pressure monitor



### Construction U-tube manometer

Parameter	Value
Measuring range – horizontal	0 – 500 Pa
Measuring range – vertical	0 – 1600 Pa
Order code	MD-APC

### Manometer liquid



Variant MD-F-APC

#### Manometer liquid

Parameter	Value
Liquid mixture	Low evaporation rate (blue)
Frost-proof	Up to –20 °C
Density	1.0 kg/dm <sup>3</sup>
Order code	MD-F-APC

### Measuring device, Variant MD-DPC-24



#### Application

- Digital pressure monitor, variant DPC, used to display the differential pressures of gaseous media

#### Variants

- DPC: Digital pressure monitor

#### Constructions

- Supply voltage
- DPC/24: 24 V AC/DC  $\pm$  15%, 50/60 Hz

#### Nominal sizes [mm]

- Casing dimensions (B  $\times$  H  $\times$  T):  
91  $\times$  75  $\times$  38 mm

#### Useful additions

- DIN rail power supply unit for 230 V AC

#### Special characteristics

- Compact construction
- Easy to use
- Variant DPC: measurement to DIN 1946-4 and VDI 3803
- Variant DPC can be integrated with the central BMS

#### Construction features

- 4-digit LCD
- Infinitely variable setpoint adjustment
- Optical signal when the setpoint is reached
- Volt-free switch output with changeover contact
- Transducer output, adjustable – 0-10 V DC, 0-20 mA; or 2-10 V DC, 4-20 mA

#### Materials and surfaces

- Casing made of ABS plastic

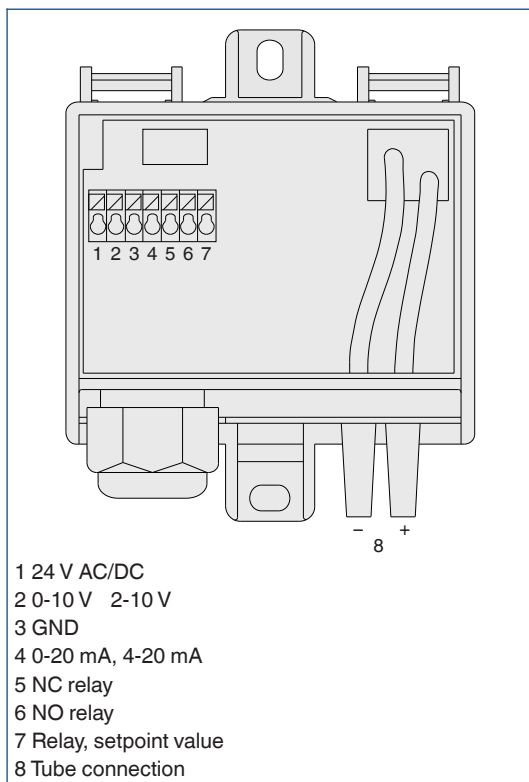
#### Maintenance

- Maintenance-free as construction and materials are not subject to wear

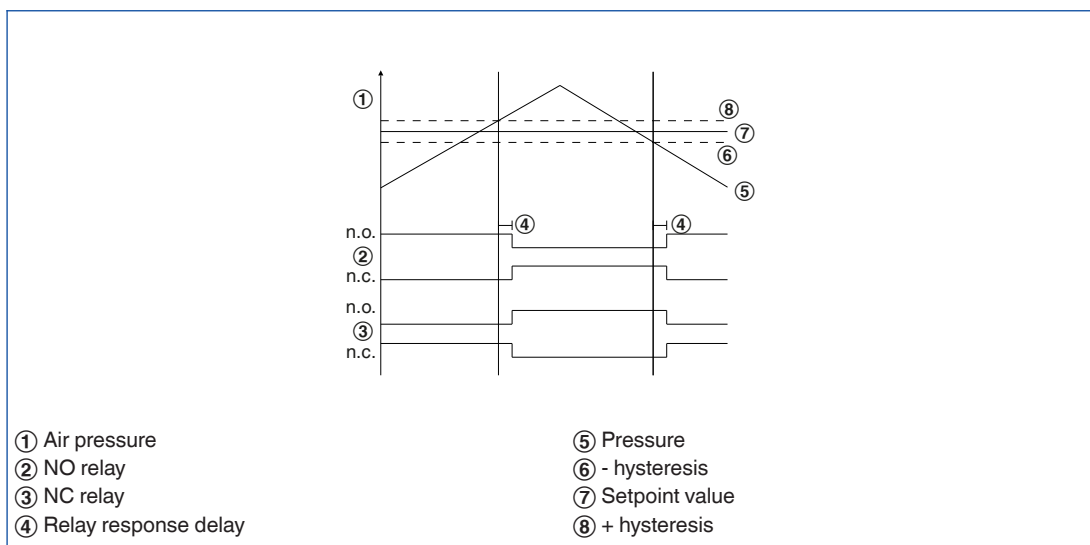
### Construction Digital pressure monitor

Parameter	Value
Measuring range	0 – 2500 Pa
Measuring tolerance	1.5% $\times$ measured value + 0.3% $\times$ measuring range + 2.5 Pa
Overload protection	Up to 20000 Pa
Medium	Air and inert gases
Supply voltage	24 V AC/DC $\pm$ 15 %, 50/60 Hz
Protection level	IP 54
Relay output	SPDT relay, 30 V AC/DC, 1 A
Operating temperature	-20 °C to +40 °C; at least 0 °C for the display
Display	4-digit digital display
Operation	3 push buttons inside the casing
Casing	2-part casing, ABS plastic
Tube connection	6.2 mm
Casing dimensions (B $\times$ H $\times$ T)	91 $\times$ 75 $\times$ 38 mm
Order code for 24 V supply voltage	MD-DPC/24
Power consumption	0.5 W, or 1.0 W with active relay
Weight	110 g
Order code for MD-DPC/24	A00000059652
Order code for DIN rail 230 V power supply unit	A00000059656
Order code for MD-DPC/24 with 230 V power supply unit	A00000059657

DPC, connecting cable core identification



Time and pressure diagram





## Measuring device, DIN rail power supply unit



### Application

- DIN rail power supply unit for using MD-DPC/24V with 230 V AC

### Constructions

- Input voltage
- 85 – 264 V AC

### Nominal sizes [mm]

- Casing dimensions (B × H × T):  
22.5 x 90 x 100 mm

### Special characteristics

- Can be mounted onto a DIN mounting rail
- Enclosed construction
- Universal input
- Overload protection (automatic switch-off), auto recovery
- Protected against short circuit, overload, over-voltage
- 'Power on' LED
- Low power consumption when idle
- DC OK signal

### Construction features

- Single-phase primary SMPS
- For installation on a DIN mounting rail
- Plastic casing
- Input voltage 85 – 264 V AC
- Output voltage 24 V DC
- Output current 0.42 A
- Low power consumption when idle: <0.75 W

### Materials and surfaces

- Plastic casing

### Maintenance

- Maintenance-free as construction and materials are not subject to wear

## Standard construction

Parameter	Value
Type	DIN rail power supply unit
Connection	Screw terminals
Number of inputs	1
Input voltage	90-264 V AC
Number of outputs	1
Output voltage	24 V DC +/-2%
Output current	0.42 A
Output	10 W
Casing	ABS plastic
Casing dimensions (B × H × T)	22.5 x 90 x 100 mm
Weight	195 g
Order code	DIN rail power supply unit for MD
Order code for DIN rail 230 V power supply unit	A00000059656