We measure it. testo

Differential pressure transmitter in cleanroom-conform panel design

testo 6383

- Measurement of differential pressure; optional: humidity and temperature
- Flat housing allows flush surface integration in the cleanroom wall
- Ethernet, relay and analog outputs allow optimum integration into individual automation systems
- Self-monitoring of the transmitter and early warning function guarantee high system availability
- The P2A software for parameterization, adjustment and analysis saves time and costs in commissioning and maintenance
- Configurable alarm management with adjustable response delay and alarm acknowledgement

The differential pressure transmitter testo 6383 was developed specially for monitoring low differential pressures in the measuring range from 10 Pa to 10 hPa. In cleanroom technology, the maintenance of positive pressure prevents the entry of contaminated air in critical zones. Thanks to an optional internal or external probe from the probe series 6610, the additional recording of humidity and temperature with one instrument is also possible.

The testo 6383 is particularly outstanding thanks to the automatic zero-point adjustment which ensures high accuracy and long-term stability.

The integrated self-monitoring and early warning function also guarantees the operator high system availability.

Technical data

Parameters

Differential pressure

Measuring range	0 to 10 Pa 0 to 50 Pa 0 to 100 Pa 0 to 500 Pa 0 to 10 hPa	-10 to +10 Pa -50 to +50 Pa -100 to +100 Pa -500 to +500 Pa -10 to +10 hPa
Measurement uncertainty*	±0.3% of measurement range final value ±0.3 Pa Temperature gain drift: 0.02% of measuring range per Kelvin deviaton from nominal temperature 22 °C Zero point drift: 0% (thanks to cyclic zero-point adjustment)	
Selectable units	Differential pressure in Pa, hPa, kPa, mbar, bar, mmH_2O, kg/cm^2, PSI, inch HG, inch H_2O	
Sensor	Piezoresistive sensor	
Autom. zero-point adjustment	via magnetic valve Frequency adjustable: 15 sec, 30 sec, 1 min, 5 min, 10 min	

Overload	Measuring range	Overload
	0 to 10 Pa	20000 Pa
	0 to 50 Pa	20000 Pa
	0 to 100 Pa	20000 Pa
	0 to 500 Pa	20000 Pa
	0 to 10 hPa	200 hPa
	-10 to 10 Pa	20000 Pa
	-50 to 50 Pa	20000 Pa
	-100 to 100 Pa	20000 Pa
	-500 to 500 Pa	20000 Pa
	-10 to 10 hPa	200 hPa

Parameters

Humidity/temperature optional

Probe	Integrated probe	testo 6613	testo 6614	testo 6615	testo 6617
Type		Channel	Duct heated	Cable trace humidity	Cable with cover electrode monitoring
Parameters	%RH / °C/°F / $°C_{td}$ / $°F_{td}$ / g/kg / gr/lb / g/m3 / gr/ft^3 / ppmV / °Cwb / °Fwb / kJ/kg / mbar / inch H_2O / °Ctm (H_2O_2)/°Ftm (H_2O_2) / % Vol				

Meas. range

Humidity / trace humidity	0 to 100 %RH			-60 to +30 °C td	0 to 100 %RH
Temperature	-20 to +70 °C -4 to +158 °F	-40 to +180 °C -40 to +356 °F		-40 to +120 °C -40 to +248 °F	-40 to +180 °C -40 to +356 °F

Measurement uncertainty*

Humidity	Integrated probe	testo 6613	testo 6614	testo 6615	testo 6617
	±(1.0 + 0.007 * MV) %RH for 0 to 90 %RH ±(1.4 + 0.007 * MV) %RH for 90 to 100 %RH		±(1.0 + 0.007*MV) %RH for 0 to100 %RH		±(1.2 + 0.007*MV) %RH for 0 to 90 %RH ±(1.6 + 0.007*MV) %RH for 90 to 100 %RH
	for deviations from media temp. ±25 °C:±0.02 %RH/K				
Dewpoint				±1 K at 0 $°C_{td}$ ±2 K at -40 $°C_{td}$ ±4 K at -50 $°C_{td}$	
Temp. at +25°C / +77°F	±0.15 °C / 32.2 °F Pt1000 Class AA			±0.15 °C/ 32.2 °F Pt100 Class	±0.15 °C/ 32.2 °F Pt1000 Class

Inputs/outputs

Analog outputs

Quantity	Standard: 1; with optional humidity probe: 3
Output type	0/4 to 20 mA (4-wire) (24 VAC/DC) 0 to 1/5 to 10 V (4-wire) (24 VAC/DC)
Scaling	Differential pressure: scalable ±50% of measuring range final value; freely scalable within measuring range
Meas. cycle	1/sec
Resolution	12 bit
Max. load	max. 500 Ω
Other outputs	
Ethernet	Optional
Relay	Optional: 4 relays (free allocation to measurement channels or as collective alarm in operating menu/P2A), up to 250 VAC/3A (NO or NC)
Digital	Mini-DIN for P2A software
Supply	
Voltage supply	20 to 30 VAC/DC, 300 mA current consumption, galvanically separate signal and supply line

General technical data

Model

Material	Front plate stainless steel, housing plastic
Dimensions	without humidity/temperature: 246 x 161 x 47 mm with humidity/temperature: 396 x 161 x 78 mm
Weight	Version without humidity: 0.9 kg; Version with integrated humidity probe:1.35 kg; version with preparation for external humidity probe: 1.26 kg

Display

Display	optional: 3-line LCD with multi-language operating menu	
Resolution		
Differential pressure	Measuring range	Resolution
	0 to 10 Pa	0.1 Pa
	0 to 50 Pa	0.1 Pa
	0 to 100 Pa	0.1 Pa
	0 to 500 Pa	0.1 Pa
	0 to 10 hPa	0.01 hPa
	-10 to 10 Pa	0.1 Pa
	-50 to 50 Pa	0.1 Pa
	-100 to 100 Pa	0.1 Pa
	-500 to 500 Pa	0.1 Pa
	-10 to 10 hPa	0.01 hPa
Humidity	0.1 %RH	
Temperature	0.01 °C / 0.01 °F	

Miscellaneous

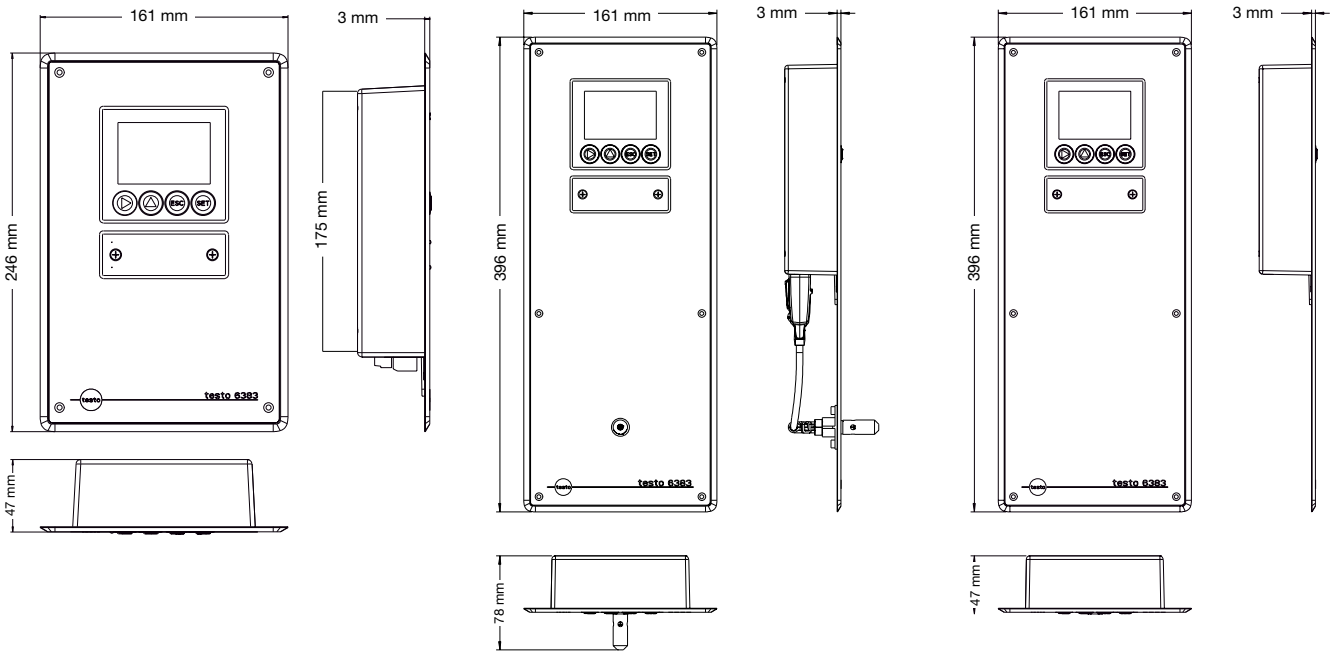
Protection class	IP 65
Connection nipple	Ø 6 mm --> suitable hoses 4 mm + 4.8 mm

Operating conditions

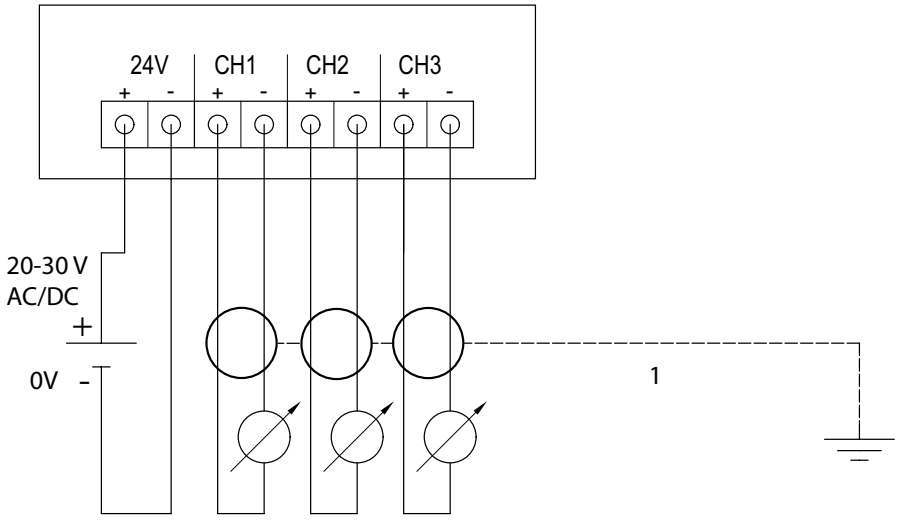
With / without display	Operation temperature	-5 to +50 °C / +23 to +122 °F
	Storage temperature	-20 to +60 °C / -4 to +140 °F
	Process temperature	-20 to +65 °C / -4 to +149 °F

Technical drawings / Connection plan

Technical drawings



Connection plan



The determination of measurement uncertainty takes place according to GUM (Guide to the Expression of Uncertainty in Measurement):
For the determination of measurement uncertainty, the accuracy of the measuring instrument (hysteresis, linearity, reproduceability), the uncertainty contribution of the test site as well as the uncertainty of the adjustment site (works calibration are taken into account. For this purpose, the value of k=2 of the extension factor, which is usual in measurement technology is used as a basis, which corresponds to a

Options / Ordering example

The following options can be specified for the testo 6383:

AXX Measuring range
BXX Analog display/supply
CXX Display / menu language
DXX Integrated humidity probe
EXX Ethernet
FXX Differential pressure unit (pre-set)
GXX opt. Analog output for humidity probe connection (probe series testo 6610) units (pre-set)
HXX Relay
IXX Units channel 3 (pre-set, only if opt. humidity probe connection available)

AXX Measuring range

A01 0 to 10 Pa
A02 0 to 50 Pa
A03 0 to 100 Pa
A04 0 to 500 Pa
A05 0 to 10 hPa
A21 -10 to 10 Pa
A22 -50 to 50 Pa
A23 -100 to 100 Pa
A24 -500 to 500 Pa
A25 -10 to 10 hPa

BXX Analog display / supply

B02 0 to 1 V (4-wire, 24 VAC/DC)
B03 0 to 5 V (4-wire, 24 VAC/DC)
B04 0 to 10 V (4-wire, 24 VAC/DC)
B05 0 to 20 mA (4-wire, 24 VAC/DC)
B06 4 to 20 mA (4-wire, 24 VAC/DC)

CXX Display / menu language

C00 without display
C02 with display/English
C03 with display/German
C04 with display/French
C05 with display/Spanish
C06 with display/Italian
C07 with display/Japanese
C08 with display/Swedish

DXX Integrated humidity probe

D00 no humidity/temperature probe
D04 humidity probe integrated in panel
D05 preparation for external humidity/ temperature probe testo 6610

EXX Ethernet

E00 without Ethernet module
E01 with Ethernet module

FXX Differential pressure unit (pre-set)*

F01 Pa / min / max
F02 hPa / min / max
F03 kPa / min / max
F04 mbar / min / max
F05 bar / min / max
F06 mmH_2O / min / max
F07 inch H_2O / min / max
F08 inch HG / min / max
F09 kg/cm² / min / max
F10 PSI / min / max
*Scaling: 50% of measuring range final value; freely selectable within measuring range

GXX opt. Analog output for humidity probe connection (probe series testo 6610) units (pre-set)**

G01 %RH / min / max
G02 °C/Min/Max
G03 °F/Min/Max
G04 °Ctd / min / max
G05 °Ftd / min / max
G06 g/kg / min / max
G07 gr/lb /Min/Max
G08 g/m³ / min / max
G09 gr/ft³ / min / max
G10 ppmV / min / max
G11 °Cwb / min / max
G12 °Fwb / min / max
G13 kJ/kg / min / max (enthalpy)
G14 mbar / min / max (water vapour partial pressure)
G15 inch H_2O / min/ max (water vapour partial pressure)
G16 °Ctm (mixture dewpoint for H_2O_2)
G17 °Ftm (mixture dewpoint for H_2O_2)
G18 % Vol

**only possible when D04 or D05 selected

HXX Relay

H00 without relay
H01 4 relay outputs, limit value monitoring
H02 4 relay outputs, channel 1 limit values and collective alarm

IXX Units channel 3 (pre-set, only if opt. humidity probe connection available)***

I01 % RH/Min/Max
I02 °C/Min/Max
I03 °F/Min/Max
I04 °Ctd / min / max
I05 °Ftd / min / max
I06 g/kg / min / max
I07 gr/lb /Min/Max
I08 g/m³ / min / max
I09 gr/ft³ / min / max
I10 ppmV / min / max
I11 °Cwb / min / max
I12 °Fwb / min / max
I13 kJ/kg / min / max (enthalpy)
I14 mbar / min / max (water vapour partial pressure)
I15 inch H_2O / min/ max (water vapour partial pressure)
I16 °Ctm (mixture dewpoint for H_2O_2)
I17 °Ftm (mixture dewpoint for H_2O_2)
I18 % Vol
***only possible when D04 or D05 selected

Ordering example

Order code for transmitter testo 6383 with the following options:
- Measuring range -10 to 10 Pa
- Analog output 4 to 20 mA (4-wire,, 24 VAC/DC)
- with German display
- preparation for external humidity/ temperature probe testo 6610
- with Ethernet module
- Differential pressure unit kg/cm² / min / max
- opt. Analog output for °Ctd / min / max
- without relay
- Unit channel 3 g/m³ / min / max

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