

# Differential pressure transmitters with high accuracy and long-term stability

testo 6351



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Measurement of differential pressure, flow velocity and volume flow

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Automatic zero-point adjustment guarantees high, temperature-independent accuracy and long-term stability

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Display with multi-language operating menu and optical alarm display

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Ethernet, relay and analog outputs allow optimum integration into individual automation systems

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The P2A software for parameterization, adjustment and analysis saves time and costs in commissioning and maintenance

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Configurable alarm management with adjustable response delay and alarm acknowledgement

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The differential pressure transmitter testo 6351 was developed specially for monitoring differential pressure in the measuring range from 50 Pa to 2000 hPa. In cleanroom technology, the maintenance of positive pressure prevents the entry of contaminated air. In addition to this, the flow velocity or the volume flow can be calculated from the measurement of the differential pressure in a Pitot tube.

The testo 6351 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

## Measurement parameters

### Differential pressure

Measuring range	0 to 50 Pa 0 to 100 Pa 0 to 500 Pa 0 to 10 hPa 0 to 50 hPa 0 to 100 hPa 0 to 500 hPa 0 to 1000 hPa 0 to 2000 hPa	-50 to 50 Pa -100 to 100 Pa -500 to 500 Pa -10 to 10 hPa -50 to 50 hPa -100 to 100 hPa -500 to 500 hPa -1000 to 1000 hPa -2000 to 2000 hPa
Measurement uncertainty*	±0.8% of measurement range final value ±0.3 Pa Temperature gain drift: 0.02% of measuring range per Kelvin deviation 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 <sub>2</sub> O, kg/cm <sup>2</sup> , PSI, inch HG, inch H <sub>2</sub> O Calculated variables: Volume flow in m <sup>3</sup> /h, l/min, Nm <sup>3</sup> /h, NI/min Flow velocity in m/s, ft/min	
Sensor	Piezoresistive sensor	
Autom. zero-point adjustment	via magnetic valve Frequency adjustable: 15 sec, 30 sec, 1 min, 5 min, 10 min	
Overload capacity	Measuring range	Overload
	0 to 50 Pa	20000 Pa
	0 to 100 Pa	20000 Pa
	0 to 500 Pa	20000 Pa
	0 to 10 hPa	200 hPa
	0 to 50 hPa	750 hPa
	0 to 100 hPa	750 hPa
	0 to 500 hPa	2500 hPa
	0 to 1000 hPa	2500 hPa
	0 to 2000 hPa	2500 hPa
	-50 to 50 Pa	20000 Pa
	-100 to 100 Pa	20000 Pa
	-500 to 500 Pa	20000 Pa
	-10 to 10 hPa	200 hPa
	-50 to 50 hPa	750 hPa
	-100 to 100 hPa	750 hPa
	-500 to 500 hPa	2500 hPa
	-1000 to 1000 hPa	2500 hPa
	-2000 to 2000 hPa	2500 hPa

### Operating conditions

With / without display	Operating 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

**\*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 trust level of 95%.

**Measurement uncertainty differential pressure** ±0.8% of measuring range final value ±0.3 Pa

## Inputs/outputs

### Analog outputs

Quantity	1
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	
Resolution	12 bit
Max. load	max. 500 Ω
<b>Other outputs</b>	
Ethernet	Optional with Ethernet module
Relay	Optional: 4 relays (free allocation to measurement channel or as collective alarm in operating menu/P2A), up to 250 VAC/3A (NO or NC)
Digital	Mini-DIN for P2A software
<b>Supply</b>	
Voltage supply	20 to 30 VAC/DC, 300 mA current consumption, galvanically separate signal and supply line

## General technical data

### Model

Material	Plastic housing
Dimensions	162 x 122 x 77 mm
Weight	0.7 kg; optional: Ethernet intermediary layer 0.6 kg
Connection nipple	Ø 6 mm --> suitable hoses 4 mm + 4.8 mm

### Display

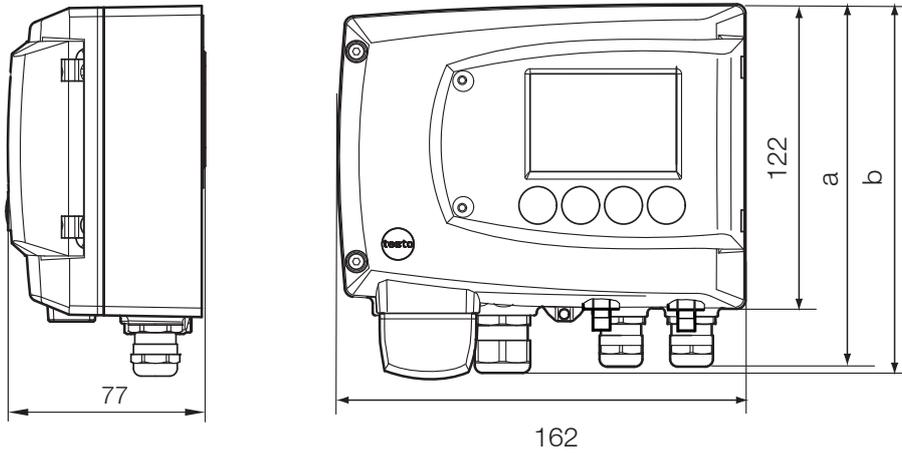
Display	Optional: 3-line LCD with multi-language operating menu	
Resolution	Measuring range	Resolution
	0 to 50 Pa	0.1 Pa
	0 to 100 Pa	0.1 Pa
	0 to 500 Pa	0.1 Pa
	0 to 10 hPa	0.01 hPa
	0 to 50 hPa	0.01 hPa
	0 to 100 hPa	0.1 hPa
	0 to 500 hPa	0.1 hPa
	0 to 1000 hPa	1 hPa
	0 to 2000 hPa	1 hPa
	-50 to 50 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
	-50 to 50 hPa	0.01 hPa
	-100 to 100 hPa	0.1 hPa
	-500 to 500 hPa	0.1 hPa
	-1000 to 1000 hPa	1 hPa
	-2000 to 2000 hPa	1 hPa

### Miscellaneous

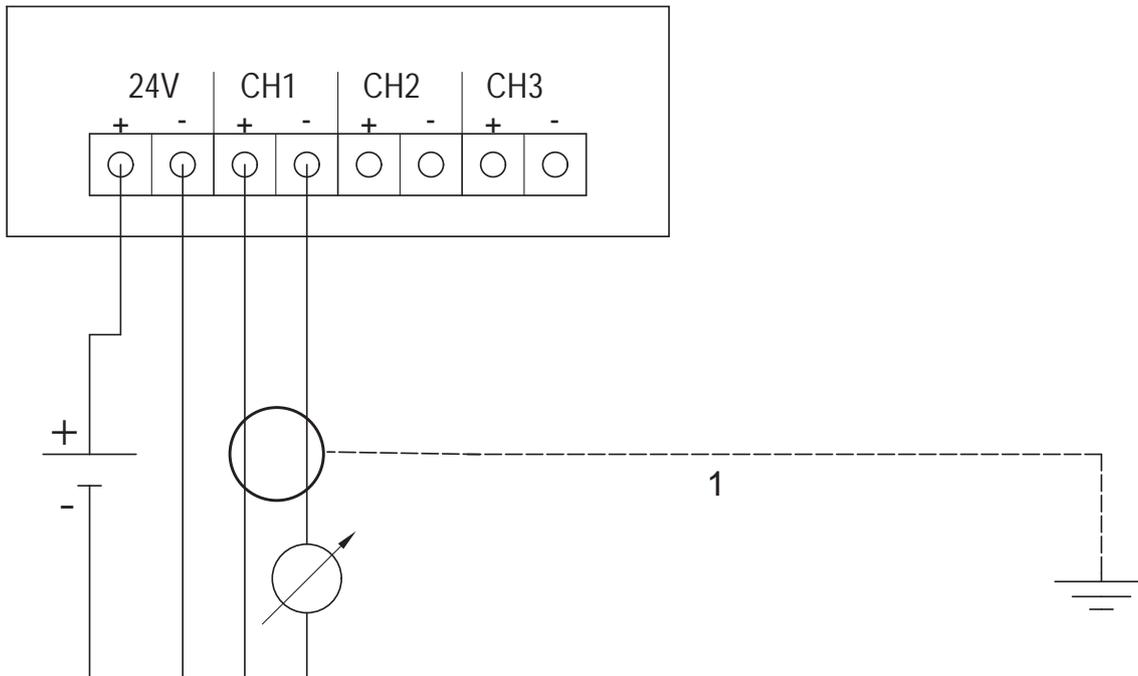
Protection class	IP 65
EMC	EU guideline 2004/108/EC

# Technical drawings / Connection plan

## Technical drawings



## Connection plan



# Options / Ordering example

The following options can be specified for the testo 6351:

AXX Measuring range  
BXX Analog display/supply  
CXX Display / menu language  
DXX Cable input  
EXX Ethernet  
FXX Differential pressure/flow velocity unit (pre-set)  
HXX Relay

## AXX Measuring range

A02 0 to 50 Pa  
A03 0 to 100 Pa  
A04 0 to 500 Pa  
A05 0 to 10 hPa  
A07 0 to 50 hPa  
A08 0 to 100 hPa  
A09 0 to 500 hPa  
A10 0 to 1000 hPa  
A11 0 to 2000 hPa  
A22 -50 to 50 Pa  
A23 -100 to 100 Pa  
A24 -500 to 500 Pa  
A25 -10 to 10 hPa  
A27 -50 to 50 hPa  
A28 -100 to 100 hPa  
A29 -500 to 500 hPa  
A30 -1000 to 1000 hPa  
A31 -2000 to 2000 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 Cable input

D01 Cable input M16 (relay: M20)  
D02 Cable entry NPT 1/2"  
D03 Cable contact via M-plug connection for signal and supply

## EXX Ethernet

E00 without Ethernet module  
E01 with Ethernet module

## FXX Differential pressure/flow velocity 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<sub>2</sub>O / min / max  
F07 mmH<sub>2</sub>O / min / max  
F08 inch HG / min / max  
F09 kg/cm<sup>2</sup> / min / max  
F10 PSI / min / max  
F11 m/s / min / max  
F12 ft/min / min / max  
F13 m<sup>3</sup>/h / min / max  
F14 l/min / min / max  
F15 Nm<sup>3</sup>/h / min / max  
F16 NI/min / min / max

Scaling: 50% of measuring range final value; freely selectable within measuring range

## HXX Relay

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

## Ordering example

Order code for transmitter testo 6351 with the following options:

- Measuring range 0 to 100 Pa
- Analog output / supply 0 to 5 V (4-wire, 24 VAC/DC)
- with display/English
- Cable entry NPT 1/2"
- with Ethernet module
- Differential pressure mbar / min / max
- 4 relay outputs, limit value monitoring
- Instruction manual language

0555 6351 A03 B03 C02 D02 E01 F04 H01