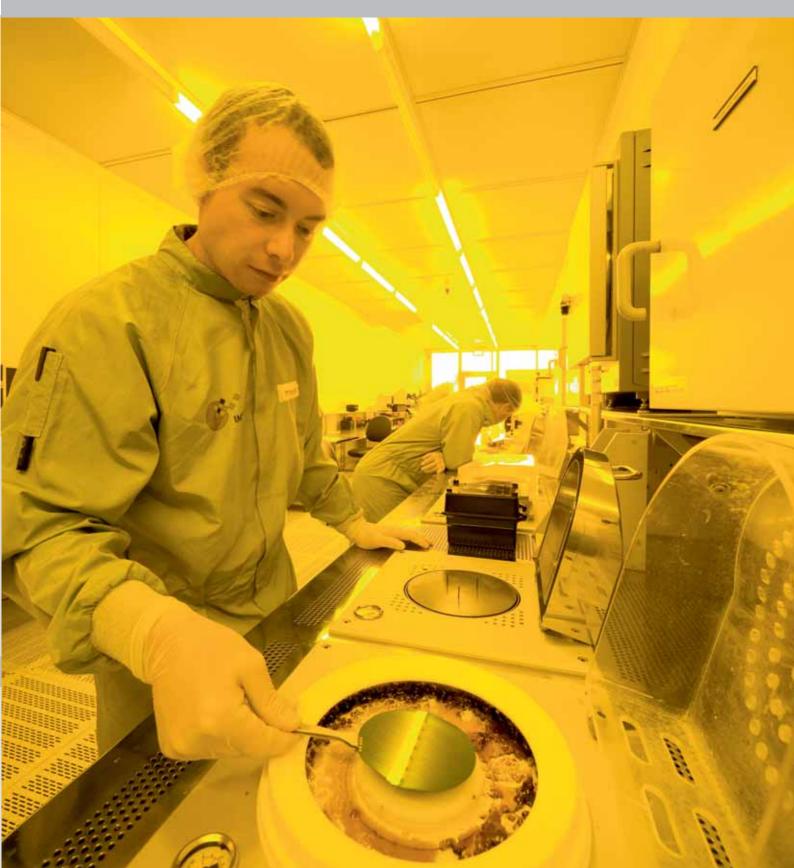




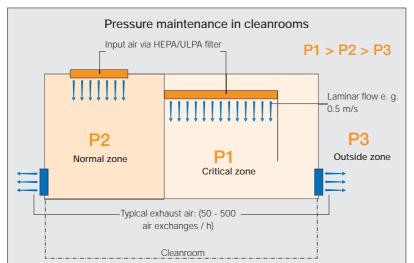
testo 6383 / testo 6381 / testo 6351

Differential Pressure Monitoring in Cleanroom Technology Highest accuracy and long-term stability with the new transmitters from Testo





Differential pressure measurement in cleanroom applications



Whether in cleanrooms, greyrooms, OP theatres or filling systems:

Lowest differential pressures must be maintained between different rooms or zones in order to prevent contaminated air from entering.

For this reason, continuous measurement and regulation of these low differential pressures (according to cleanroom norm ISO 14644: 5 - 20 Pa) is required. Annual proof (against zero potential and against adjacent rooms) of this must be provided according to **ISO 14644**



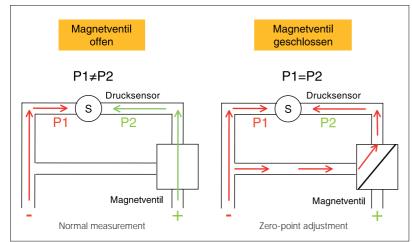
Defined pressure differences between cleanrooms and adjacent rooms ensure quality



響る



In hospitals and research laboratories, the pressure difference (negative pressure) prevents the spread of germs and dust



Functional principle of the automatic zero-point adjustment of the Testo differential pressure transmitter

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

The zero-point stability of differential pressure transmitters plays a particularly crucial role at lowest pressures (10 Pa or 50 Pa measurement range). Whereas conventional differential pressure transmitters require manual readjustment of the zero point, the new transmitter series from Testo is equipped with an automatic

microprocessor-controlled zero-point adjustment. It ensures a low level of temperature-dependency of the pressure sensor, guaranteeing the user high accuracy and long-term stability.

In the automatic zero-point adjustment, a magnetic valve causes both sides of the pressure sensor to be exposed to the same pressure a cyclic intervals. This guarantees highest accuracy in cleanroom processes!

Overview of differential pressure transmitters from Testo

	testo 6383	testo 6381	testo 6351
			555
Parameters	Differential pressure Optional: humidity/temperature	Differential pressure Flow velocity Volume flow Optional: Humidity/temperature	Differential pressure Flow velocity Volume flow
Selectable measuring ranges	10 Pa to 10 hPa	10 Pa to 1000 hPa	50 Pa to 2000 hPa
Housing	Flat stainless steel housing for flush wall installation (panel design)	Metal housing	Plastic housing
Ethernet networking	 Integration of the transmitters int Integration of the transmitters int 	o customers' Ethernet network o measurement data monitoring sys	tems, e. g. testo Saveris™
Area of application:	Differential pressure monitoring between cleanrooms (optional: simultaneous measurement of temperature and humidity) Monitoring positive and negative pressure in cleanrooms, operating theatres and isolation rooms Additional monitoring of humidity and temperature in cleanrooms (optional)	Differential pressure monitoring between cleanrooms (optional: simultaneous measurement of temperature and humidity) Differential pressure monitoring in filling processes and spray- painting systems Monitoring drying processes	Differential pressure monitoring between cleanrooms Differential pressure monitoring in filling processes in the process industry Critical air conditioning technology (VAC systems)
Usual installation site in cleanroom	Critical zone: Surface flush installation in cleanroom wall	Normal zone or outside zone	Normal zone or outside zone

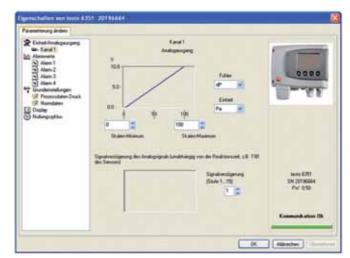
Optimizing processes and saving time in commissioning and maintenance

The Testo transmitters are delivered ready to use. For professional application, the following functions are available via the easy-to-use software:

- Parameterization of unit and scale
- Sensor adjustment and adjustment of the analog outputs (humidity: 1-point, 2-point; pressure: n-point)
- Parameterization and adjustment history of all activities of the P2A software are registered in the PC

An adjustment of the entire signal chain is possible directly at the measurement site thanks to the external interface. This saves time in commissioning and maintenance.

In addition to this, complete parameter files can be stored in the PC. The parameterization of spare transmitters or similar measuring points is thus possible with minimal time expenditure.



Using the P2A software, unit and scale can be easily parameterized, for example



Differential pressure transmitters for installation in critical zones





testo 6383 with integrated humidity probe

testo 6383 for differential pressure measurement

testo 6383 – Overview of features and benefits:

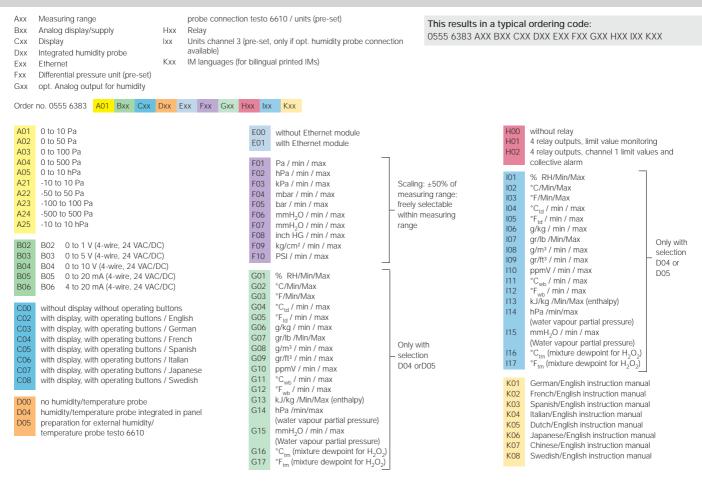
- Measurement of differential pressure, optional:humidity and temperature
- Automatic zero-point adjustment guarantees high, temperatureindependent accuracy and long-term stability
- Low measurement range up to 10 Pa ensures highest precision at lowest pressures
- · Flat housing allows flush surface integration in the cleanroom wall

Configuration options testo 6383:

- Combination of differential pressure, humidity, and temperature measurement in one instrument saves investment costs (exchangeable digital humidity probes see page 10)
- Display with multi-language operating menu and optical alarm display
- Ethernet, relay and analog outputs allow optimum integration into individual automation systems
- Self-monitoring of the transmitters guarantees high system availability
- The P2A software for parameterization, adjustment and analysis saves time and costs in commissioning and maintenance
- Scalable measuring range by ±50 percent of the measuring range final value, and free scalability within the measuring range, allow optimum adaptation to the control requirements

Areas of application:

- Monitoring positive and negative pressure in cleanrooms, operating theatres and isolation rooms
- Additional monitoring of humidity and temperature in cleanrooms (optional)



testo 6383 - differential pressure, humidity and temperature

Technical data testo 6383

P

arameters							
	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					
	Selectable units	Pa, further pressure units see configuration options p. 4					
	Sensor	Piezoresistive sensor					
	Autom. Zero-point adjustment	via magnetic valve, fr 15 sec, 30 sec, 1 min, 5 min, 10 min					
	Overload capacity	Measuring range 0 to 10 Pa 0 to to 50 Pa 0 to to 100 Pa 0 to to 500 Pa 0 to to 500 Pa -10 to to 10 hPa -50 to to 50 Pa -100 to to 100 Pa -500 to to 500 Pa -10 to to 10 hPa	Overload 20000 Pa 20000 Pa 20000 Pa 20000 Pa 2000 Pa 20000 Pa 20000 Pa 20000 Pa 20000 Pa 20000 Pa 20000 Pa				
	Humidity						
	Measuring range	Version with integrate 0 to 100 %RH; Version with external connected probe (see	probe:dependent on				
	Measurement uncertainty	dependent on connect	ted probe (see p. 10)				
	Selectable units	%RH, further calculated humidity parameters see configuration options p. 4					
	Temperature dependency/ coefficient	± 0.02 %RH (at temperatures deviating from 25 °C)					
	Sensor	Capacitive sensor					
	Temperature						
	Measuring range	dependent on conne 10)	cted probe (see p.				
	Measurement uncertainty	0.15 °C / 32.2 °F					
	Selectable units	°C / °F					
	Sensor	Pt 1000 1/3 Class B; Pt 100 1/3 Class B (v 6615)					

* Measurement inaccuracy according to GUM: ±0,5% of measurement range final value ±0.3 Pa
 GUM (Guide to the Expression of Uncertainty in Measurement):
 ISO guideline for the determination of measurement inaccuracy, in order to make measurement results internationally comparable.

The following inaccuracies are used for the determination:

The following inaccuracies are used f – Hysteresis – Linearity – Reproducibility – Long-term stability – Adjustment site/factory calibration – Test site

Inputs/outp	uts		_		
	Analog outputs				
	Quantity	Standard: 1; for hum (optional): 3	idity/temperature		
	Output type	0/4 to 20 mA (4-wire) 0 to 1/5 to 10 V (4-wi			
	Meas. cycle	1/sec			
	Resolution	12 bit			
	Scaling	Differential pressure: s measuring range final freely scalable within	value;		
	Load	max. 500 Ω			
	Other outputs				
	Ethernet	Optional			
	Relay	Optional: 4 relays (free measurement channe alarm in operating me up to 250 VAC/3A (N	els or as collective enu/P2A software),		
	Digital output	Mini-DIN for P2A soft	ware		
	Supply				
	Voltage supply	20 to 30 VAC/DC, 30 consumption, galvani signal and supply line	cally separate		
General tec	hnical data				
	Housing				
	Material	Stainless steel housin	g		
	Dimensions without humidity/temperature: 246 x 161 x 47 r with humidity/temperature: 396 x 161 x 78 mm				
	Weight Version without humidity:0.9 kg; Version with integrated humidity prol 1.350 kg; version with preparation for external humidity probe: 1.260 kg				
	Display				
	Display	optional: 3-line LCD w operating menu	ith multi-language		
	Resolution pressure	Measuring range 0 to 10 Pa 0 to 50 Pa 0 to 500 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	Resolution 0.1 Pa 0.1 Pa 0.1 Pa 0.1 Pa 0.1 Pa 0.1 Pa 0.1 Pa 0.1 Pa 0.1 Pa 0.1 Pa		
	Resolution humidity	0.1 %RH			
	Temperature resolution	0.01 °C / °F			
	Miscellaneous				
	Protection class	IP 65			
	Standard reference	EU guideline 2004/10	08/EC		
Operating c	conditions				
	Operating temperature (housing) Storage temperature	-5 to 50 °C/23 to 122 -20 to 60 °C/-4 to 14			

Differential pressure transmitters for installation in normal zones



testo 6381 – Overview of features and benefits:

- Measurement of differential pressure, flow velocity, volume flow; optional: humidity and temperature
- Automatic zero-point adjustment guarantees high, temperature-independent accuracy and long-term stability
- Low measurement range up to 10 Pa ensures very high precision at lowest pressures
- The robust metal housing protects from tough ambient conditions
- Combination of differential pressure, humidity, and temperature measurement in one instrument saves investment costs (exchangeable digital humidity probe see page 10)
- · Display with multi-language operating menu and optical alarm display
- Ethernet, relay and analog outputs allow optimum integration into individual automation systems

- Self-monitoring of the transmitters guarantees high system availability
- The P2A software for parameterization, adjustment and analysis saves time and costs in commissioning and maintenance
- Scalable measuring range by ±50 percent of the measuring range final value, and free scalability within the measuring range, allow optimum adaptation to the control requirements

Areas of application:

- Differential pressure monitoring between cleanrooms (optional: simultaneous measurement of ambient temperature and humidity)
- Monitoring drying processes
- Differential pressure monitoring in filling processes and spray-painting systems

Configuration options testo 6381:

DocCalda Enpart Exprobe correction solitable)Cut EnergyCut Energy	Axx Bxx	Measuring range Analog display/supply	Hxx	connection testo 6610 / units (pre-set) Relay Units channel 3 (pre-set, only if opt. humidity					vpical ordering code:			
ExcElsernetKxM languages (for bilingual printed Ms)Order no. 0555 6.831ADIBaxExc </td <td></td> <td></td> <td>IXX</td> <td>ity i</td> <td>0000 000 I AA</td> <td>.^ D^</td> <td></td> <td></td> <td></td>			IXX			ity i	0000 000 I AA	.^ D^				
PriorDifferential pressure/flow velocity unit (pro-set) Core not. 0555 6.381 ActExc. DaxExc. D			Kvv			od IMc)						
Gix opt Analog output for humidity probe A11 0 to 10 Pa 600 without Ethernet module A22 0 to 50 Pa 600 with Ethernet module A23 10 to 10 Pa 600 without Ethernet module A24 0 to 50 Pa 600 with Ethernet module A25 10 to 10 Pa 700 600 700 A26 10 to 10 Pa 700 700 700 700 A27 10 to 10 Pa 700 700 700 700 700 A27 10 to 10 Pa 7000			NXX	livi iariy	uages (ioi pillinguai printe	eu livis)		Order no. 0555	5 638	1 A01 Bxx Cxx Dxx Exx Ex	x Gxx Hxx Ixx K	xx
AD0 to 10 PaEOOwithout Ethernet moduleAD20 to 50 PaEOOwith Ethernet moduleAD30 to 100 PaEOOwith Ethernet moduleAD40 to 500 PaEOOFOOAD50 to 10 PaEOOFOOAD70 to 50 PaEOOFOOAD80 to 10 PaFOOFOOAD910 to 10 PaFOOFOOAD250 to 50 PaFOOFOOAD30 to 10 PaFOOFOOAD310 to 10 PaFOOFOOAD4500 to 50 PaFOOFOOAD310 to 10 PaFOOFOOAD4500 to 50 PaFOOFOOAD4500 to 50 PaFOOFOOAD310 to 10 PaFOOFOOAD4500 to 50 PaFOOFOOAD4500 to 50 PaFOOFOOAD510 to 10 PaFOOFOOAD4500 to 50 PaFOOFOOAD510 to 10 PaFOOAD510 to 10 PaFOO								01001110.0000	0000			AA
A02 A03 A04 D to 500 PaF01 PaPa / mi / max max F02H01 Pa / mi / max Pa / mi / max F03H01 	GXX	opt. Analog output for humidity probe										
A03 A04 Color 100 PaP				E00	without Ethernet modu	le				5		
Add0 to 500 PaF01Pa / min / maxF01Pa / min / maxF01Pa / min / maxAdd0 to 500 PaF02PA / min / maxF03PA / min / maxF03PA / min / maxAdd0 to 500 PaF03PA / min / maxF04 mba / min / maxF03PA / min / maxF03PA / min / maxAdd0 to 100 PaF03PA / min / maxF04 mba / min / maxF04 mba / min / maxF04 mba / min / maxF05F05F01Pa / min / maxAdd0 to 100 to PaF04F06mmH,O / min / maxF06F01Pa / min / maxF06F11F06Add0 to 100 to PaF08int HG / min / maxF06F01Pa / min / maxF06F11F06F11F06F11F06F11F06F11F06F11F06F11F07F11F1				E01	with Ethernet module							
A05 A07 A07 Color 50 hPaHol Pa / min / max HolPa / min / max Pa / min / max HolPa / min / max Pa / min / max HolOOOOOOOOODPa / min / max max CMIn/MaxOOOOOODPa / min / max max CMIn/MaxOOOOODPa / min / max max TMIn/MaxOOOODOPa / min / max max TMIn/MaxODDODD <th< td=""><td></td><td></td><td></td><td></td><td>1</td><td></td><td></td><td></td><td>H02</td><td></td><td>values and</td><td></td></th<>					1				H02		values and	
Acc0 to 10 hPaF02hPa / min / maxF03kPa / min / maxF04m/maxAcc0 to 100 hPaF04min / maxF04min / maxF04min / maxF04F04min / maxAcc0 to 100 hPaF04min / maxF04min / maxF04min / maxF04<	A04	0 to 500 Pa		F01	Pa / min / max]				collective alarm		
Add0 to 50 hPaF03kPa / mi / maxkD4 / mi / maxadd0 to 500 hPacontrol for maxAdd0 to 500 hPaF04mbar / mi / maxScaling100** RH/MI/MaxControl for maxAdd0 to 500 hPaF05bar / mi / maxScaling100** RH/MI/MaxControl for maxAdd0 to 500 hPaF06mmH ₂ O / mi / maxScaling100** RH/MI/MaxControl for maxAdd- 10 to 10 PaF06gr/m / mi / maxScaling100** RH/MI/MaxControl for maxAdd- 10 to 10 PaF06gr/m / mi / maxScaling10090gr/m / mi / maxonlyAdd- 500 to 500 PaF06gr/m / mi / maxScaling100gr/m / mi / maxonlyAdd- 500 to 500 PaF11Mi / min / maxScaling range00gr/m / mi / maxonlyAdd- 000 to 100 hPaF11Mi / min / max10ppmV / mi / maxG01Add- 000 to 100 hPaF13Mi/h / min / max10ppmV / mi / maxG01Add- 000 to 100 hPaF14Vmin / max10pmV / mi / maxG01Add- 000 to 100 hPaF13Mi/h / min / max10pmV / mi / maxG01Add- 000 to 100 hPaF14Vmin / max10pmV / mi / max10Add- 000 to 100 hPaF14Vmin / max10fmM / max10Add- 000 to 100 hPaG01Ki/Min/Max <t< td=""><td>A05</td><td>0 to 10 hPa</td><td></td><td>-</td><td></td><td></td><td></td><td></td><td></td><td></td><td>_</td><td></td></t<>	A05	0 to 10 hPa		-							_	
Adds0 to 100 hPaF04mbar /min / max max bar /min / max mmH_O /min / max max selctable within003F/Min/Max Co measuring max measuring range004C_G_{m} / min / max max max max measuring range004C_G_{m} / min / max max measuring range001F/Min/Max max measuring range001F/Min/Max measuring max measuring range001F/Min / max measuring range001F/Min / max max measuring range001F/Min / max measuring range001F/Min / max max measuring range001F/Min / max measuring range001F/Min / max measuring range001F/Min / max max measuring range001F/Min / max max measuring range001F/Min / max max measuring range001F/Min / max measuring001F/Min / max measuring0	A07	0 to 50 hPa										
Ad00 to 500 hPaFMM/MAXA100 0 1000 hPaF00mmH,0 / min / maxScaling0.03"FMM/MAXA22-100 to 10 PaF00mmH,0 / min / maxmaxmaxmaxA23-100 to 100 PaF00inch HG / min / maxmaxmaxmaxmaxA24-500 to 500 PaF10F00kg/cmr / min / maxmaxmaxmaxmaxA25-100 to 100 PaF10PSI / min / maxmaxmaxmaxmaxmaxA25-500 to 500 PaF11m/s / min / maxmaxmaxmaxmaxmaxA25-500 to 500 PaF11m/s / min / maxmaxmaxCode (fromCode (fromA25-500 to 100 hPaF11m/s / min / maxmaxmaxCode (fromCode (fromA26-100 to 100 hPaF13m/h / min / maxmaxmmH,0 / min / maxcode (fromA29-500 to 500 hPaF13m/h / min / maxmaxmmH,0 / min / maxcode (fromA20-100 to 100 hPaF14Winn / min / maxMinMMax (enthalpy)H14Ha/ min/maxcode (fromA20-100 to 100 hPaF14Winn / maxmaxfo0Ki/kg /Min/Max (enthalpy)H14A21-100 to 100 hPaF14Winn / maxmaxfo0Ki/kg /Min/Max (enthalpy)H14A22-500 to 50 / 4 kaviez, 24 VAC/DC)G00Ki/Min/Maxfo0fo0Ki/kg /Min/MaxB200 to 10	A08	0 to 100 hPa										
A100.0 1000 hPa100 r_{ex} <td>A09</td> <td>0 to 500 hPa</td> <td></td> <td></td> <td></td> <td>Scoling</td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>	A09	0 to 500 hPa				Scoling						
A22-10 to 10 PaF07mmL 10 of min / max measuringmeasuring measuring100 T_{ef} / min / max measuringonlyA23-100 to 100 PaF08kg/cm ² / min / max kg/cm ² / min / maxF08kg/cm ² / min / max measuringrange: freely007g/kg / min / max g/kg / min / max maxonlyA24-500 to 500 PaF01PSI / min / max ms/ min / maxF01PSI / min / max ms/ min / maxmax measuring range009g/fk ² / min / max maxonlyA25-100 to 100 hPaF11m/h / min / max ms/ min / maxF11m/h / min / max maxF11m/m / max maxG01A29-500 to 500 hPaF13m/h / min / max ms/ min / maxF13m/h / min / max maxG01A29-500 to 500 hPaF13m/h / min / max ms/ min / maxF13m/m/h / min / max maxG01A201000 to 1000 hPaF13m/h / min / maxMin / max maxF13Mi/kin / max maxG01B020 to 10 V (4-wire, 24 VAC/DC)G00without connection possibility for humidity probe testo 6610mml / max maxF16m/m / max maxG01B030 to 20 mA (4-wire, 24 VAC/DC)G01F16m/m / max maxG01G11Min / max maxG01G01with display, with operating buttons / EnglishG04'C_1 / min / max maxmin / max maxG01G11G20G03with display, with operating buttons / SpanishG08 <t< td=""><td>A10</td><td>0 o 1000 hPa</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></t<>	A10	0 o 1000 hPa										
A22-50 to 50 PaF08inch $HG / min / maxmage: freely000gkg / min / maxonlyA23-100 to 100 PaF09kg/cm² / min / maxgkg / min / maxgk$	A21	-10 to 10 Pa										
A23-100 to 100 PaF00kg/cm² / min / maxselectable within measuring range00g/n// min / maxmpossible ymaxA24500 to 500 PaF11m/s / min / maxselectable within measuring range09g/n// min / maxmossible when G-A25-100 to 100 hPaF11m/s / min / maxmaxmaxmeasuring range09g/n// min / maxmossible when G-A28-100 to 100 hPaF14t/min / maxm/h / min / maxmax111'Cg. / min / maxG01A29-500 to 500 hPaF14t/min / min / maxmax111'Cg. / min / maxG01A30-1000 to 1000 hPaF14t/min / min / maxmaxf14t/min / min / maxgelationB030 to 1V (4-wire, 24 VAC/DC)G00without connection possibility for humidity probe testo 6610mm/h / maxf15mm/h / maxB030 to 10 V (4-wire, 24 VAC/DC)G00vithout connection possibility for humidity probe testo 6610f16*Cfin / min / maxB040 to 10 V (4-wire, 24 VAC/DC)G01°C./fin / maxwith connectionG03f16fin / maxC02with display with operating buttons / EnglishG05F14_min / maxwith connectionG03f16fin / maxC03with display, with operating buttons / InglishG06g/kg / min / maxwith connectionG03grames/c min / maxC04with display, with operating buttons / JapaneseG11rCg. min / max		-50 to 50 Pa					0			5 5	and a	
A24-500 to 500 PaF10PSi / mi / max m/s / mi / maxmeasuring range100g/m / mi / max m/s / mi / max m/s / mi / maxWhen G- Code (fromA27-50 to 50 hPaF11m/s / mi / max m/s / mi / max110 $ppm/$ / mi / max m/m / maxCode (fromA28-100 to 100 hPaF13m/h / min / max m/m / max111"C _{ob} / mi / max m/m / maxCode (fromA29-50 to 500 hPaF13m/h / min / max max111"C _{ob} / mi / max m/m / maxCode (fromA29-100 to 1000 hPaF13m/h / min / max max112"F _{wb} / min / max maxCodiA30-1000 to 1000 hPaF15Nm/h / min / max F16N/min / max max113K/kg //mi / max maxCodiB020 to 1 V (4-wire, 24 VAC/DC) B030 to 5 V (4-wire, 24 VAC/DC)G00without connection possibility for humidity probe testo 6610116"C _{cm} / min / max max measuring mageWith a parinization manualB020 to 1 V (4-wire, 24 VAC/DC)G00%ithout connection possibility for humidity probe testo 6610116"C _{cm} / min / max max measuring mageWith a parinization manualB030 to 5 V (4-wire, 24 VAC/DC)G00%ithout connection possibility for humidity probe testo 6610116"C _{cm} / min / max momanualB040 to 10 V (4-wire, 24 VAC/DC)G01%ithout display with operating buttons / German (G06)"G(7) min / max max"G01C02with display with operating buttons / SpanishG08 <td< td=""><td>A23</td><td>-100 to 100 Pa</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>-</td><td></td></td<>	A23	-100 to 100 Pa									-	
A25-10 to 10 HPaF11m/s / mi / maxm/s / s / mi / maxCode (fromA27-50 to 50 hPaF11ft/mi / maxT/mi / maxCode (fromA28-100 to 100 hPaF11ft/mi / max110ppm/ / mi / maxCode (fromA29-500 to 500 hPaF14//mi / mi / max112 F_{ub} / mi / maxCode (fromA30-1000 to 1000 hPaF14//mi / mi / max112 F_{ub} / mi / maxSelected)B020 to 1 V (4-wire, 24 VAC/DC)G00without connection possibility for humidhy probe testo 6610116 C_{cm} (mix/max (Water vapour partial pressure)B030 to 5 V (4-wire, 24 VAC/DC)G00without connection possibility for humidhy probe testo 6610116 C_{cm} (mix/max (Water vapour partial pressure)B040 to 10 V (4-wire, 24 VAC/DC)G01 C_{cm} (min/maxKi/kg / Min/MaxB050 to 20 mA (4-wire, 24 VAC/DC)G01 C_{cm} (mix/max (G03"F/Min/MaxC00with display with operating buttons / FenchG07 C_{cm} / min / max (Fig / min / max (Fig / min / max (G3Ki/kg / min/MaxC03with display, with operating buttons / FrenchG07gr/kg / min / max (G3Ki/kg / Min/Max (enhalpy)C04with display, with operating buttons / JapaneseG11 C_{cm} / min / max (Mat er vapour partial pressure)Ki/kg / Min/Max (enhalpy)C04with display, with operating buttons / JapaneseG11 C_{cm} / min / max (Mat er vapour partial pressure)Ki/kg / Min/Max (enhal	A24	-500 to 500 Pa										
A22-50 to 50 hPaF12ft/min / maxf10ppm / min / maxGot (non-A28-100 to 100 hPaF13m ³ h / min / max112 $^{\circ}C_{mb}$ / min / maxGot (non-A29-500 to 500 hPaF13m ³ h / min / max112 $^{\circ}C_{mb}$ / min / max112 $^{\circ}C_{mb}$ / min / maxGot (non-A30-1000 to 1000 hPaF15Nn ³ h / min / max113kJ/kg / Min/Max (enhalpy)h14h7a / min / max114Got (non-B020 to 1 V (4-wire, 24 VAC/DC)Got 0 without connection possibility for humidity probe testo 6610115mmH_2,0 / min / maxWithout consection possibility for humidity max116 $^{\circ}C_{m}$ (mixture dewpoint for H ₂ O ₂)B050 to 20 mA (4-wire, 24 VAC/DC)Got 2' C/Min/Max116 $^{\circ}C_{m}$ (mixture dewpoint for H ₂ O ₂)B064 to 20 mA (4-wire, 24 VAC/DC)Got 2' C/Min/MaxGot 3' Frant/Min / maxKot 2C00with display with operating buttonsGot 2' C/Min/MaxGot 3' Frant/Min / maxKot 2C01with display, with operating buttons / EnglishGot 3' frant/ maxKot 2C02with display, with operating buttons / SpanishGot 3' frant/ maxwithC03if Min/MaxGot 3' frant/ min / maxKot 2C04with display, with operating buttons / SpanishGot 3' frant/ min / maxKot 2C05with display, with operating buttons / JapaneseGot 3' frant/ min / maxfrant/ maxC06with display, with operating buttons / JapaneseGot 3' frant/				-		measum	ig range			5		
A28 A29-100 to 100 hPaF13 m ³ /h / min / maxm ³ /h / min / maxH1 C_{wb} / min / maxB01 T r min / maxB01 T r r min / maxB01 T r min / maxB01 T r m min / maxB01 T m												
A29-500 to 500 HPaF14//min / maxIn2F12 F_{w_0} / min / maxA30-1000 to 1000 hPaF14//min / min / maxIn3KJ/Kag / Min/Max (enthalpy)B020 to 1 V (4-wire, 24 VAC/DC)G00without connection possibility for humidity probe test o 6610In5mm/h / maxB030 to 20 mA (4-wire, 24 VAC/DC)G00without connection possibility for humidity probe test o 6610In6"C _m (mixture dewpoint for H ₂ O ₂)B044 to 20 mA (4-wire, 24 VAC/DC)G01% RH/Min/Max"Km/h / maxC00without display, with operating buttonsG02"C_m/ min / maxC01with display, with operating buttons / EnglishG05"F _w / min / maxC02with display, with operating buttons / FrenchG07g/h / min / maxC03with display, with operating buttons / SpanishG08g/m³ / min / maxC04with display, with operating buttons / SpanishG08g/m³ / min / maxC05with display, with operating buttons / SpanishG08g/m³ / min / maxC06with display, with operating buttons / SpanishG08g/m³ / min / maxC07with display, with operating buttons / ItalianG09g/fla / min / maxC08with display, with operating buttons / SpanishG11C C_{wb} / min / maxC09G11C C_{wb} / min / maxG13kJ/kg / Min/Max (enthalpy)C01Cable input M16 (relay: M20)G13kJ/kg / Min/Max (enthalpy)C02Cable entry NPT 1/2"G14<											· · · · · · · · · · · · · · · · · · ·	
A30-1000 to 1000 hPaF15 F16Nm³/h / min / max F16Nm³/h / min / max M / min / maxI13 PA / min/max (water vapour partial pressure)B02 B03 D to 5 V (4-wire, 24 VAC/DC) B04 D to 10 V (4-wire, 24 VAC/DC)G00 Without connection possibility for humidity probe testo 6610I13 F16 $KD/Rg/Min/Max (enhalpy)$ I14B04 B05 D to 20 mA (4-wire, 24 VAC/DC)G00 V (4-wire, 24 VAC/DC)G00 G01 S C/Min/MaxG01 S C/Min/MaxI13 M / min / max (Water vapour partial pressure)C00 Without display, with operating buttons / English C03 with display, with operating buttons / English C03 with display, with operating buttons / French G03 with display, with operating buttons / French G03 with display, with operating buttons / French G03 gr/Min/MaxG03 Fr_Min/Max G03 French/English instruction manual G04 G05 Fr_Min/Max G03 gr/Min/MaxK01 German/English instruction manual K02 French/English instruction manual K03 Spanish/English instruction manual K04 talain/English instruction manual K05 Spanish/English instruction manual C05 with display, with operating buttons / Spanish G08 G08 gr/Min/Max (enthalpy) hi / max (K04 testo 6610With with with with with with with with w											selected)	
F16 N/min / max I14 nP3 /min/max B02 0 to 1 V (4-wire, 24 VAC/DC) 00 without connection possibility for humidity probe testo 6610 I15 mmH_2O / min / max B05 0 to 20 mA (4-wire, 24 VAC/DC) G01 % RH/Min/Max I16 °C _{um} (mixture dewpoint for H_2O_2) B06 4 to 20 mA (4-wire, 24 VAC/DC) G01 % RH/Min/Max II16 °C _{um} (mixture dewpoint for H_2O_2) C00 without display without operating buttons G02 °C/Min/Max G03 °F_m/ min / max C02 with display, with operating buttons / English G05 °F _{ud} / min / max with German/English instruction manual C03 with display, with operating buttons / Fernch G07 gr/ls /min / max with connection possibility K02 French/English instruction manual C04 with display, with operating buttons / Fernch G07 gr/ls /min / max with connection possibility K02 French/English instruction manual C04 with display, with operating buttons / Fernch G07 gr/ls /min / max with connection possibility K04 Italian/English instruction manual C05 with disp	A30	-1000 to 1000 hPa								S (1),		
B02 0 to 1 V (4-wire, 24 VAC/DC) G00 without connection possibility for humidity probe testo 6610 I15 mmH ₂ O / min / max (Water vapour partial pressure) B03 0 to 5 V (4-wire, 24 VAC/DC) G00 without connection possibility for humidity probe testo 6610 I16 "C _m (mixture dewpoint for H ₂ O ₂) B05 0 to 20 mA (4-wire, 24 VAC/DC) G01 % RH/Min/Max I17 "F _{im} (mixture dewpoint for H ₂ O ₂) B06 4 to 20 mA (4-wire, 24 VAC/DC) G02 "C/Min/Max I17 "F _{im} (mixture dewpoint for H ₂ O ₂) C00 without display with operating buttons EG03 "F/Min/Max K01 German/English instruction manual C00 with display, with operating buttons / English G06 g/kg / min / max with K02 French/English instruction manual C03 "f/lim / max G07 g/lb / Min/Max mode g/kg / min / max K03 Spanish/English instruction manual C04 with display, with operating buttons / French G07 g/lb / Min/Max connection K05 Dutch/English instruction manual C05 with display, with operating buttons / Japanese G10 ppmV / min / max K06 Japanese/English instruction manual <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td>114</td> <td></td> <td></td> <td></td>									114			
B03 0 to 5 V (4-wire, 24 VAC/DC) 600 without connection possibility for humidity probe testo 6610 111 Withage value partial pressure) B05 0 to 2 0 mA (4-wire, 24 VAC/DC) G00 % RH/Min/Max 116 "C _{im} (mixture dewpoint for H ₂ O ₂) B06 4 to 20 mA (4-wire, 24 VAC/DC) G01 % RH/Min/Max 117 "F _{im} (mixture dewpoint for H ₂ O ₂) C00 with display without operating buttons G03 "F/Min/Max K01 German/English instruction manual C03 with display, with operating buttons / German G06 g/kg / min / max K03 Spanish/English instruction manual C04 with display, with operating buttons / German G06 g/kg / min / max K03 Spanish/English instruction manual C05 with display, with operating buttons / Spanish G08 g/m³ / min / max K04 Japanese/English instruction manual C06 with display, with operating buttons / Japanese G10 pmV / min / max K05 Japanese/English instruction manual C07 with display, with operating buttons / Japanese G10 pmV / min / max K05 Japanese/English instruction manual C08 with display, with operating buttons /	B02	0 to 1 V (4-wire 24 VAC/DC)			_	J			14.5			
B04 0 to 10 V (4-wire, 24 VAC/DC) For the function of problem pro				600	without connection po	scibility for			115			
B05 B060 to 20 mÅ (4-wire, 24 VAC/DC) B06G01 % RH/Min/MaxIndicating buttors C_{1m} (Initiate dewpoint for H2O2)C00without display without operating buttonsG01 % RH/Min/MaxG03 *C/Min/MaxII7 vF_{m} (mixture dewpoint for H2O2)C00without display without operating buttonsG04 *C _{1d} / min / maxG03 *F/Min/MaxK01German/English instruction manualC02with display, with operating buttons / EnglishG06 vF_{1d} / min / maxK03Spanish/English instruction manualC03with display, with operating buttons / FenchG07gr/lb /Min/MaxK04Italian/English instruction manualC04with display, with operating buttons / JapaneseG09gr/lb /Min/MaxK04Italian/English instruction manualC06with display, with operating buttons / JapaneseG10pmV / min / maxK04Italian/English instruction manualC08with display, with operating buttons / JapaneseG10pmV / min / maxK07Chinese/English instruction manualC08with display, with operating buttons / JapaneseG10pmV / min / maxK07Swedish/English instruction manualC08with display, with operating buttons / SwedishG11 c_{vb} / min / maxK07Swedish/English instruction manualC09G20cable input M16 (relay: M20)G14hPa /min/maxK08Swedish/English instruction manualC09G20Cable entry NPT 1/2*G14hPa /min/maxK08Swedish/English instruction manualC09				600					14.7		,	
B06 4 to 20 mA (4-wire, 24 VAC/DC) G01 °C/Min/Max °C/Min/Max G01 °C/Min/Max G03 °F/Min/Max °C/Min/Max G02 vithout display without operating buttons G04 °C/Min/Max °C/Min/Max G03 °F/Min/Max G03 °F/Min/Max °C/Min/Max °C/Min/Max G03 °F/Min/Max G03 °F/Min/Max °C/Min/Max °C/Min/Max G03 °F/Min/Max G04 °C/Min/Max °C/Min/Max °C/Min/Max G03 vith display, with operating buttons / English G04 °C/Min/Max °C/Min/Max °C/Min/Max C04 with display, with operating buttons / French G06 g/kg / min / max with K03 Spanish/English instruction manual C05 with display, with operating buttons / Spanish G08 g/m³ / min / max possibility K05 Japanese/English instruction manual C06 with display, with operating buttons / Japanese G10 gr/m in / max possibility K07 Chinese/English instruction manual C07 with display, with operating buttons / Japanese G10 C'w/ min / max °C/w / min / max				C01			-					
C00 without display without operating buttons G03 *F/Min/Max K01 German/English instruction manual C02 with display, with operating buttons / English G05 *F/min/Max K01 German/English instruction manual C03 with display, with operating buttons / German G06 g/kg / min / max with K04 Spanish/English instruction manual C04 with display, with operating buttons / French G07 g/kg / min / max with K04 talian/English instruction manual C05 with display, with operating buttons / Spanish G08 g/r/lb //lm /Max possibility K04 talian/English instruction manual C06 with display, with operating buttons / Japanese G10 g/m // min / max possibility K07 LohnesvEnglish instruction manual C07 with display, with operating buttons / Japanese G10 pm // min / max possibility K07 ChinesvEnglish instruction manual C08 with display, with operating buttons / Swedish G11 ** ** fm // max D01 Cable input M16 (relay: M20) G14 hPa /min/max mm // max with // max k//kg // Min // max k									117	$^{\circ}F_{tm}$ (mixture dewpoint for H_2O_2)	
C00 without display without operating buttons G04 °Ct _{id} / min / max K02 French/English instruction manual C02 with display, with operating buttons / English G05 °Ft _{id} / min / max K02 French/English instruction manual C03 with display, with operating buttons / German G06 g/kg / min / max with K04 Italian/English instruction manual C04 with display, with operating buttons / Spanish G08 g/r/m / max with K04 Italian/English instruction manual C05 with display, with operating buttons / Spanish G08 g/r/m / max possibility K03 Spanish/English instruction manual C06 with display, with operating buttons / Japanese G10 ppm / min / max possibility K04 Chinese/English instruction manual C07 with display, with operating buttons / Japanese G10 ppm / min / max possibility K03 Swedish/English instruction manual C08 with display, with operating buttons / Swedish G11 °Cup / min / max for % m/ max for % m/ max C08 with display, with operating buttons / Swedish G11 °Cup / min / max for % m/ min / max												
C02 with display, with operating buttons / English G05 *Fta / min / max K03 Spanish/English instruction manual C03 with display, with operating buttons / German G06 g/kg / min / max with K03 Spanish/English instruction manual C04 with display, with operating buttons / French G07 g/lb /Min/Max with connection K03 Spanish/English instruction manual C05 with display, with operating buttons / Spanish G08 g/m³ / min / max onnection K05 Dutch/English instruction manual C06 with display, with operating buttons / Italian G09 g/ft³ / min / max possibility K06 Japanese/English instruction manual C07 with display, with operating buttons / Japanese G10 pcym / min / max pcsibility K07 Chinese/English instruction manual C08 with display, with operating buttons / Swedish G11 *C_w / min / max bpmV / min / max K08 Swedish/English instruction manual C03 with display, with operating buttons / Swedish G11 *C_w / min / max bpmV / min / max bpmV / min / max D01 Cable input M16 (relay: M20) G13 k//kg	000											
C03 with display, with operating buttons / German G06 g/kg / min / max with K04 Italian/English instruction manual C04 with display, with operating buttons / French G07 g/hb //hin/Max with connection K04 Italian/English instruction manual C05 with display, with operating buttons / Spanish G08 g/m³ / min / max possibility K04 Italian/English instruction manual C06 with display, with operating buttons / Italian G09 g/h² / min / max possibility K04 Italian/English instruction manual C07 with display, with operating buttons / Japanese G10 ppmV / min / max possibility testo 6610 K06 Japanese/English instruction manual C08 with display, with operating buttons / Swedish G10 ppmV / min / max possibility testo 6610 K07 K08 Swedish/English instruction manual C08 with display, with operating buttons / Swedish G10 ppmV / min / max possibility testo 6610 K08 Swedish/English instruction manual C08 with display, with operating buttons / Swedish G14 hPa /min/max (water vapour partial pressure) K04<												
C04 with display, with operating buttons / French G07 gr/b /Min/Max with K05 Dutch/English instruction manual C05 with display, with operating buttons / Spanish G08 g/m³ / min / max connection K05 Dutch/English instruction manual C06 with display, with operating buttons / Italian G09 gr/t³ / min / max possibility K05 Dutch/English instruction manual C07 with display, with operating buttons / Japanese G10 pmV / min / max possibility K07 Chinese/English instruction manual C08 with display, with operating buttons / Swedish G11 °C_w/ min / max possibility K08 Swedish/English instruction manual C08 with display, with operating buttons / Swedish G12 °F_w/b / min / max Swedish/English instruction manual D01 Cable input M16 (relay: M20) G13 kJ/kg /Min/Max (enthalpy) hPa / min/max witaer vapour partial pressure) mmH_2O / min / max D03 Cable contact via M-plug connection for signal and supply G15 mH_2O / min / max witaer vapour partial pressure) witaer vapour partial pressure)												
C00 with display, with operating buttors / Spanish G08 g/m³ / min / max connection K06 Dubtor Highs Hirst uction manual C06 with display, with operating buttors / Italian G09 g/ft³ / min / max possibility K06 Japanese/English instruction manual C07 with display, with operating buttors / Japanese G10 pmV / min / max possibility K06 Linese/English instruction manual C08 with display, with operating buttors / Swedish G11 °C_w/ min / max testo 6610 K08 Swedish/English instruction manual C08 with display, with operating buttors / Swedish G11 °C_w/ min / max Swedish/English instruction manual C08 with display, with operating buttors / Swedish G11 °C_w/ min / max Swedish/English instruction manual D01 Cable input M16 (relay: M20) G13 kJ/kg /Min/Max (enthalpy) hPa /min/max D02 Cable contact via M-plug connection for signal and supply G15 mM_2O / min / max max Water vapour partial pressure) mH_2O / min / max Water vapour partial pressure) Water vapour partial pressure) Vertial pressure)							with					
C06 with display, with operating buttons / Italian G09 gr/ft³ / min / max possibility testo 6610 Vito Daparteser Lights instruction manual C07 with display, with operating buttons / Japanese G10 gr/ft³ / min / max testo 6610 K07 K07 Chinese/English instruction manual C08 with display, with operating buttons / Swedish G11 °C, wb / min / max G12 °F, wb / min / max Swedish/English instruction manual D01 Cable input M16 (relay: M20) G13 kJ/kg /Min/Max (enthalpy) hPa /min/max HPa /min/max Water vapour partial pressure) Water vapour partial pressure) D03 Cable contact via M-plug connection for signal and supply G15 mmH_2O / min / max Water vapour partial pressure) Water vapour partial pressure)							connecti	on				
C07 with display, with operating buttons / Japanese with display, with operating buttons / Japanese with display, with operating buttons / Swedish G10 pmV / min / max testo 6610 K07 Cimicso Linguish instruction manual C08 with display, with operating buttons / Japanese with display, with operating buttons / Swedish G10 pmV / min / max testo 6610 K08 Swedish/English instruction manual D01 Cable input M16 (relay: M20) G14 h2/kg /Min/Max (enthalpy) h4 hPa /min/max water vapour partial pressure) mmH_2O / min / max water vapour partial pressure) mmH_2O / min / max water vapour partial pressure) mmH_2O / min / max water vapour partial pressure) mmH_2O / min / max water vapour partial pressure) mmH_2O / min / max water vapour partial pressure) mmH_2O / min / max water vapour partial pressure) mmH_2O / min / max water vapour partial pressure) mmH_2O / min / max water vapour partial pressure) water vapour partial pressure) mmH_2O / min / max water vapour partial pressure) water vapour partial pressure)<							possibilit	V				
C08 with display, with operating buttons / Swedish G11 °C _{wb} / min / max G12 °F _{wb} / min / max D01 Cable input M16 (relay: M20) G13 kJ/kg /Min/Max (enthalpy) D02 Cable entry NPT 1/2* G14 hPa /min/max D03 Cable contact via M-plug connection for signal and supply G15 mmH_2O / min / max							testo 66	10				
D01 Cable input M16 (relay: M20) G13 kJ/kg /Min/Max (enthalpy) D02 Cable entry NPT 1/2* G14 hPa /min/max D03 Cable contact via M-plug connection for signal and supply G15 mmH_2O / min / max									K08	Swedish/English instruction ma	nual	
D01 Cable input M16 (relay: M20) G13 kJ/kg /Min/Max (enthalpy) D02 Cable entry NPT 1/2" G14 hPa /min/max D03 Cable contact via M-plug connection for signal and supply G15 mm4_2O / min / max Water vapour partial pressure) Contact via M-plug connection for signal and supply G15 mm4_2O / min / max	000	with display, with operating buttons / Swedish										
D01 Cable input M16 (relay: M20) G14 hPa /min/max D02 Cable entry NPT 1/2* (water vapour partial pressure) D03 Cable contact via M-plug connection for signal and supply G14 hPa /min/max G15 mmH ₂ O / min / max (Water vapour partial pressure)	-					(val						
D02 Cable entry NPT 1/2" (water vapour partial pressure) D03 Cable contact via M-plug connection for signal and supply 615 mmH ₂ O / min / max (Water vapour partial pressure)						(C-7/						
and supply and supply Gable contact via M-piug connection for signal mmH ₂ O / min / max (Water vapour partial pressure)						ressure)						
and supply (Water vapour partial pressure)	D03			G15		,						
		and supply		0.0		ressure)						
\Box				G16	°C _{tm} (mixture dewpoint							
$r_{\rm im}$ (instance developing for H ₂ O ₂) G17 \circ $r_{\rm im}$ (mixture developing for H ₂ O ₂)												

testo 6381 - differential pressure, humidity and flow velocity

Technical data testo 6381

P

eters	
Differential pressure	
Measuring range	0 to 10 Pa -10 to 10 Pa 0 to 50 Pa -50 to 50 Pa 0 to 100 Pa -100 to 100 Pa 0 to 500 Pa -500 to 500 Pa 0 to 10 hPa -10 to 10 hPa 0 to 500 Pa -500 to 500 Pa 0 to 50 hPa -50 to 50 hPa 0 to 50 hPa -50 to 50 hPa 0 to 100 hPa -100 to 100 hPa 0 to 500 hPa -500 to 500 hPa 0 to 500 hPa -500 to 500 hPa 0 to 1000 hPa -1000 to 1000 hPa
Measurement uncertainty*	* 0.5% of measurement range final value ±0.3 Pa
Selectable units	Pa, further pressure and flow velocity units see configuration options p. 6
Sensor	Piezoresistive sensor
Autom. Zero-point adjustment	via magnetic valve, frequency settable: 15 sec, 30 sec, 1 min, 5 min, 10 min
Overload capacity	Measuring rangeOverload0 to 10 Pa20000 Pa0 to 50 Pa20000 Pa0 to 100 Pa20000 Pa0 to 500 Pa20000 Pa0 to 500 Pa20000 Pa0 to 500 Pa2000 Pa0 to 500 hPa2000 hPa0 to 500 hPa750 hPa0 to 500 hPa2500 hPa0 to 100 hPa2500 hPa0 to 1000 hPa20000 Pa-10 to 10 Pa20000 Pa-50 to 50 Pa20000 Pa-500 to 500 Pa20000 Pa-100 to 100 hPa20000 Pa-500 to 500 hPa750 hPa-500 to 500 hPa750 hPa-500 to 500 hPa750 hPa-500 to 500 hPa2500 hPa-100 to 100 hPa2500 hPa-500 to 500 hPa2500 hPa-100 to 100 hPa2500 hPa-100 to 100 hPa2500 hPa-100 to 100 hPa2500 hPa-100 to 1000 hPa2500 hPa
Humidity	
Measuring range	dependent on connected probe (see p. 10
Measurement uncertainty	
Selectable units	%RH, further calculated humidity parameters see configuration options p. 6
Temperature dependency/coefficient	± 0.02 %RH (at temperatures deviating from 25 °C)
Sensor	Capacitive sensor
Temperature	
Measuring range	dependent on connected probe (see p. 10)
Measurement uncertainty	0.15 °C / 32.2 °F
Selectable units	°C / °F
Sensor	Pt 1000 1/3 Class B; Pt 100 1/3 Class B (testo 6615)

Gene

* Measurement inaccuracy according to GUM: ±0.8% of measurement range final value ±0.3 Pa GUM (Guide to the Expression of Uncertainty in Measurement): ISO guideline for the determination of measurement inaccuracy, in order to make measurement results internationally comparable. The following inaccuracies are used for the determination:

The following inaccuracies are used for the determination:

Hysteresis / Linearity / Reproduceability / Long-term stability / Adjustment site/factory calibration / Test site

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

und An als				
eral tecr	nnical data			
	Housing			
	Material	Metal housing		
	Dimensions	162 x 122 x 77 mm		
	Weight	1,960 kg; optional: Ethernet intermediary layer 0.610 kg		
	Display			
	Display	optional: 3-line LCD with multi-language operating menu		
	Resolution pressure	Measuring range 0 to 10 Pa 0 to 50 Pa 0 to 100 Pa 0 to 500 Pa 0 to 500 Pa 0 to 500 hPa 0 to 500 hPa 0 to 500 hPa 0 to 100 hPa 0 to 100 hPa 0 to 100 hPa 0 to 100 hPa -10 to 10 Pa -50 to 50 Pa -100 to 100 Pa -50 to 500 Pa -10 to 10 hPa -50 to 50 hPa -10 to 10 hPa -50 to 50 hPa -10 to 100 hPa -50 to 50 hPa -10 to 100 hPa -50 to 50 hPa -10 to 100 hPa -50 to 50 hPa -100 to 100 hPa -500 to 500 hPa -100 to 100 hPa -500 to 500 hPa -100 to 100 hPa -500 to 500 hPa -1000 to 1000 hPa -500 to 500 hPa -1000 to 1000 hPa -500 to 500 hPa -1000 to 1000 hPa	Resolution 0.1 Pa 0.1 Pa 0.1 Pa 0.1 Pa 0.01 hPa 0.01 hPa 0.1 hPa 0.1 hPa 0.1 Pa 0.1 Pa 0.1 Pa 0.1 Pa 0.1 Pa 0.1 Pa 0.1 Pa 0.1 Pa 0.1 hPa 0.1 hPa 0.1 hPa 0.1 hPa 0.1 hPa 0.1 hPa 1 hPa	
	Resolution humidity	0.1 %RH		
	Temperature resolution	0.01 °C / °F		
	Miscellaneous			
	Protection class	IP 65		
	Standard reference	EU guideline 2004/10	8/EC	
rating co	onditions			
	Operating temperature (housing) -5 to 50 °C/23 to 122 °F			
	Storage temperature	-20 to 60 °C/-4 to 14	0 °F	





testo 6351 - Overview of features and benefits:

- Measurement of differential pressure, flow velocity and volume flow
- Automatic zero-point adjustment guarantees high, temperature-independent accuracy and long-term stability
- Plastic housing
- Display with multi-language operating menu and optical alarm display
- Ethernet, relay and analog outputs allow optimum integration into individual automation systems
- Self-monitoring of the transmitters guarantees high system availability
- The P2A software for parameterization, adjustment and analysis saves time and costs in commissioning and maintenance
- Scalable measuring range by ±50 percent

of the measuring range final value, and free scalability within the measuring range, allow optimum adaptation to the control requirements

Areas of application:

- · Differential pressure monitoring between cleanrooms
- Differential pressure monitoring in filling processes
- Monitoring differential pressure, volume flow and flow velocities in critical air conditioning technology (VAC systems)

Configuration options testo 6351:

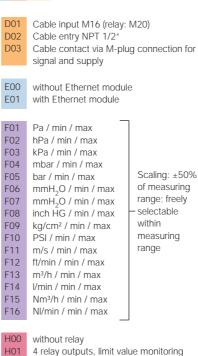
Drx / filalog display/supply Trxx (fold)	This results in a typical order D555 6351 AXX BXX CXX DXX
--	--

H02

Order no. 0555 6351 A01 Bxx Cxx Dxx Exx Fxx Hxx Ixx Jxx Kxx

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 50Pa
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
B02	0 to 1 V (4-wire, 24 VAC/DC)
B03	0 to 5 V (4-wire, 24 VAC/DC)
B04	0 to 10V (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)
C00	without display without operating
C00	with display, with operating butto
002	with display, with operating butto

operating buttons iting buttons / English with display, with operating buttons / German C04 with display, with operating buttons / French C05 with display, with operating buttons / Spanish with display, with operating buttons / Italian C06 with display, with operating buttons / Japanese C08 with display, with operating buttons / Swedish



4 relay outputs, channel 1 limit values and collective alarm

ering code: X EXX FXX HXX IXX KXX

K01	German/English instruction manual
K02	French/English instruction manual
K03	Spanish/English instruction manual
K04	Italian/English instruction manual
K05	Dutch/English instruction manual
K06	Japanese/English instruction manual
K07	Chinese/English instruction manual
K08	Swedish/English instruction manual

8

testo 6351 - Differential pressure and flow velocity

Technical data testo 6351

Ρ

arameters				
	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 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 measuren ±0.3 Pa	nent range final value	
	Selectable units	Pa, further pressure and flow velocity units see configuration options p. 8		
	Sensor	Piezoresistive sensor		
	Autom. Zero-point adjustment	via magnetic valve, frequency settable: 15 sec, 30 sec, 1 min, 5 min, 10 min		
	Overload capacity	Measuring range 0 to 50 Pa 0 to 100 Pa 0 to 500 Pa 0 to 500 hPa 0 to 2000 hPa -50 to 50 Pa -100 to 100 Pa -50 to 500 Pa -100 to 100 hPa -50 to 500 hPa -100 to 100 hPa -50 to 500 hPa -100 to 100 hPa -500 to 500 hPa -100 to 1000 hPa -500 to 500 hPa -1000 to 1000 hPa -2000 to 2000 hPa		

* Measurement inaccuracy according to GUM: ±0.8% of measurement range final value ±0.3 Pa

value ±0.3 Pa
GUM (Guide to the Expression of Uncertainty in Measurement):
ISO guideline for the determination of measurement inaccuracy, in order to make measurement results internationally comparable.
The following inaccuracies are used for the determination:

Hysteresis
Linearity

- Reproducibility

Long-term stability
 Adjustment site/factory calibration
 Test site

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

eneral tech	nnical data							
	Housing							
	Material	Plastic housing						
	Dimensions	162 x 122 x 77 mm						
	Weight	0.7 kg; optional: Ethernet intermediary layer: 0.6 kg						
	Display							
	Display	Optional: 3-line LCD operating menu	with multi-language					
	Resolution pressure	Measuring range 0 to 50 Pa 0 to 100 Pa 0 to 500 Pa 0 to 500 Pa 0 to 500 hPa 0 to 500 hPa 0 to 100 hPa 0 to 1000 hPa 0 to 2000 hPa -500 to 500 Pa -100 to 100 Pa -500 to 500 hPa -100 to 100 hPa -500 to 500 hPa -1000 to 1000 hPa -500 to 500 hPa -1000 to 1000 hPa -2000 to 2000 hPa	Resolution 0.1 Pa 0.1 Pa 0.01 hPa 0.01 hPa 0.1 hPa 0.1 hPa 1 hPa 1 hPa 0.1 Pa 0.1 Pa 0.1 Pa 0.1 Pa 0.1 Pa 0.1 Pa 0.1 hPa 0.01 hPa 0.01 hPa 0.1 hPa 1 hPa 1 hPa 1 hPa					
	Miscellaneous							
	Protection class	IP 65						
	Standard reference	EU guideline 2004/108/EC						
perating co	onditions							
	Operating temperature (housing)	g) -5 to 50 °C/23 to 122 °F						
	Storage temperature	-20 to 60 °C/-4 to 140 °F						

Ор



External probes for testo 6383 and testo 6381 - probe series testo 6610

		testo 6611*	testo 6612	testo 6613	testo 6614	testo 6615	testo 6617		
			NA						
Parameters									
Humidity									
Measuring range			0 to 10	0 %RH		see trace humidity	0 to 100 %RH		
Measurement un	certainty** (25 °C)	±1,0 %RH (0) to 90%); ±1.4 %RF	H (90 to 100%) ±1.0 %RH (0 to 100%)		see trace humidity	±1.2 %RH (0 to 90%); ±1.6 %RH (90 to 100%)		
	accuracy (for deviations perature of ±25 °C)			0.02 9	%RH/K				
Selectable units			%rF; %RH; °C _{tp} hPa; incl	d/°F _{tpd} ; g/m³ / gr/ft³; n H ₂ O ₂ ; ppm vol %;	g/kg / gr/lb; kj/kg; %vol; °C _{tm} (H ₂ O ₂)/ '	BTU/lb; °C _{tw} /°F _{tw} ; °F _{tm} (H ₂ O ₂)	U/lb; °C _{tw} /°F _{tw} ; _m (H ₂ O ₂)		
Reproduceability				better tha	n 0.2 %RH				
Temperature									
Selectable units				°C	/ °F				
Temperature		-20 to +70 °C, -4 to +158 °F	-30 to +150 °C, -22 to +302 °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 inac	curacy ** (at 25 °C / 77°F)		±0.15 °C / 32.2 °F (Pt 1000 1/3 Class E	3)	±0.15 °C / 32.2 °F Pt100 1/3 class B	±0.15 °C / 32.2 °F Pt1000 1/3 Class B		
Trace humidity									
Measuring range						-60 to +30 °C _{td} / -76 to +86 °F _{td}			
Measurement un	certainty					±1 K at 0° C _{td} ±2K at -40° C _{td} ±4K at -50° C _{td}			
General technical data									
Probe									
Туре		Wall	Channel	Cable	Heated cable	Trace humidity cable (self- adjustment)	Cable with covering electrode monitoring		
Probe shaft		'		Stainle	ss steel	radjastmenty	Thorntoning		
Cable				Sheath	ed, FEP				
Connector				ABS	plastic				
Probe shaft diam	ieter			12	mm				
Probe shaft lengt	ih	200 mm	200/300/500/ 800 mm	120/200/300/500/ 800 mm		200/500 mm			
Cable length			Customized for duct version			1/2/5/10 m			
Operating conditions									
Area of use		Indoor climate probe wall installation	Process humidity probe, duct installation	Process humidity probe, flexible installation with cable	Humidity probe for high humiidity applications/for danger of condensation	Humidity probe for trace humidity/pressure dewpoint (with self- adjustment)			
Process pressure	9	1 bar positive pr	ressure (probe tip)	tip) 1 to 10 bar (probe tip) 1 to 16 bar (probe 1 bar (probe end) 1 to 16 bar (probe end)		1 to 16 bar (probe tip) 1 bar (probe end)	1 bar positive pressure (probe tip) 1 bar (probe end)		

* Technical data also apply to the integrated humidity probe of the testo 6383. Probe testo 6611 cannot be connected to thetesto 6383.

** Determination of humidity measurement inaccuracy according to GUM GUM (Guide to the Expression of Uncertainty in Measurement): ISO guideline for the determination of measurement inaccuracy, in order to make measurement results internationally comparable. The following inaccuracies are used for the determination:

- Hysteresis
- Linearity

Lineality
Reproducibility
Long-term stability
Adjustment site/factory calibration
Test site

Configuration options testo 6610

0555 6610 Lxx Mxx Nxx Pxx

L11	Probe 6611 (wall version)
L12	Probe 6612 (duct version up to 150 °C)

- L13 Probe 6613 (cable version up to 180 °C)
- L14 Probe 6614 (heated cable version)
- L15 Probe 6614 (heated cable version)
- L17 Probe 6617 (self-monitored cable version)

M01	Sintered stainless steel filter
M02	Metal wire protection cap
M03	Sintered Teflon filter
M04	Open metal protection cap
M06	Teflon filter with drip hole
M07	Teflon filter with drip hole and condensation protector
M08	Filter for H ₂ O ₂ atmospheres*

Ordering example testo 6613 probes Cable probe, -40 to +180 °C Sintered stainless steel filter Cable length 2 m Probe length 300 mm

 \rightarrow 0555 6610 $\,$ L13 / M01 / N02 / P30 $\,$

- specially for high humidity (testo 6614 only)

		L11	L12	L13	L14	L15	L17
N00	without cable	Х	-	-	-	-	-
N01	Probe length 1 m	-	-	Х	Х	Х	Х
N02	Probe length 1 m	-	-	Х	Х	Х	Х
N05	Probe length 5 m	-	-	Х	Х	Х	Х
N10	Probe length 10 m	-	-	Х	Х	Х	Х
N23	Probe length, specially for duct versions	-	Х	-	-	-	-

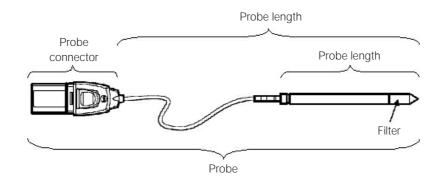
		L11	L12	L13	L14	L15	L17
P12	Probe length 300 mm	-	-	Х	-	-	_
P20	Probe length 200 mm	Х	Х	Х	Х	Х	Х
P30	Probe length 300 mm	-	Х	Х	-	-	_
P50	Probe length 500 mm	-	Х	Х	Х	Х	Х
P80	Probe length 800 mm	-	X	Х	-	_	_

Ordering procedure:

Thanks to the digital probe interface, the transmitter and the probe can be ordered separately from each other, see ordering example above.

*On H₂O₂ processes:

Testo offers a transmitter which can also be used in hydrogen peroxide (H_2O_2) processes - e. g. in sterilization. The sensor is protected with the help of a special probe (Code M08). In addition, the so-called "mixture dewpoint" C_{tm}/F_{tm} is issued.



Accessories for all transmitters

Ordering data for accessories	Order no.
Mains unit (desktop instrument) 110 to 240 VAC / 24 VDC (350 mA)	0554 1748
Mains unit (top-hat rail mounting) 90 to 264 VAC / 24 VDC (2.5 A)	0554 1749
Process display testo 54-2 AC, two relay outputs (to 250 VAC / 300 VDC, 3A), mains supply 90 to 260 VAC	5400 7553
Process display testo 54-7 AC, two relay outputs (to 250 VAC / 300 VDC, 3A), mains supply 90 to 260 VAC, with RS485 output for online monitoring and with totalizer display	5400 7555
Ethernet module for installation by the customer (for testo 6351 and testo 6381 only)	0554 6656
Ethernet plug (for testo 6351 and testo 6381 only)	0554 6653
P2A software (parameterization, adjustment, analysis) incl. USB adapter	5546020
Silicon hose ID 4 transparent	0086 0001, by the metre
Tygon hose ID 4.8 transparent	0086 0031, by the metre
Humidity adjustment set 11.3 / 75.3 %RH (for testo 6381 and testo 6383 only)	0554 0660
② Adjustment and extension cable, 10 m (for testo 6381and testo 6383 only)	0554 6610
Pitot tube, length 350 mm, stainless steel (for testo 6351 and testo 6381 only)	0635 2145
Pitot tube, length 1000 mm, stainless steel (for testo 6351 and testo 6381 only)	0635 2345

Ethernet intermediary layer testo 6381/6351 for installation by customer



The Ethernet module is an intermediary layer ("sandwich" design), which can be optionally integrated into the transmitters testo 6681/6351 ex-works. It can also be subsequently easily and quickly retrofitted on site. Two LEDs provide the responsible system operator with information on the status of the voltage supply and the LAN connection. By using an industrial Ethernet plug, IP65 housing protection can be guaranteed, enabling the transmitter to withstand the sometimes rough and demanding conditions in industrial processes.

Adjustment and extension cable for external humidity probes



The cable can be used to carry out an adjustment of a humidity probe from the probe series testo 6610 - either on site or in a laboratory. The cable also serves as an extension between the transmitter and the respective probe.

Advantages of the adjustment

and extension cable:

- Flexible installation and maintenance of the humidity probe
- Extension of the normal humdity probe cable by 10 m
- Cable has protection class IP65

Testo – Your partner for calibration, validation and qualification

Calibration and validation/qualification services

Calibration:

Calibration service in laboratories and on site in numerous countries. Contact your local Testo subsidiary, testo industrial services or Testo's sales partner in your country.

Validation / qualification

The Testo subsidiary testo industrial services (TIS) offers you customized validation and qualification for pharmaceutical projects:

- DQ, IQ, OQ, PQ (qualification)
- Mapping/distribution measurements (for optimum probe site determination)
- Customized risk analysis incorporating GAMP5
- Documentation optionally in Testo or customer format



More information: www.testo-industrial-services.de

testo Saveris[™] – Simple, secure and efficient measurement data monitoring

Integrate the new transmitters into testo Saveris™

The measurement data monitoring system measures pressure, temperature and in industrial processes, exact humidity values in the environment and in processes.



find out more at: www.testo.com/saveris

temperatures, humidity values and pressure relationships play a crucial role.

In a multitude of applications, testo Saveris helps to collect, safely store and present these data wirelessly (analog coupler) or via Ethernet. A selection of alarms that can be used flexibly supports the responsible parties to keep the values in the required range.

Typical applications:

Monitoring ambient storage and production

conditions

- Monitoring humidity values,
- e.g. in air-conditioned cabinets
- Monitoring temperatures,
- e. g. during heat treatment or in airconditioned cabinets



Testo: At your service!

Please ask for our more information:

Monitoring Instruments for Food Production, Transport and Storage
Measurement Engineering for Restaurants, Catering and
Supermarkets

Ν

Measurement Engineering for Air Conditioning and Ventilation

Measurement Engineering for Heating and Installation Measurement Solutions for Emissions, Service and Thermal Processes

Measurement Solutions for Refrigeration Technology

Stationary Measurement Solutions for Air Conditioning, Drying, Cleanrooms and Compressed Air

Measurement Solutions for Production, Quality Control and Maintenance

Measurement Solutions for Climate Applications in Industry Reference Measurement Technology for Industry

Measuring Instruments for Temperature
Measuring Instruments for Humidity
Measuring Instruments for Velocity
Measuring Instruments for Pressure and Refrigeration
Multi-Function Measuring Instruments
Measuring Instruments for Flue Gas and Emissions
Measuring Instruments for RPM, Analysis, Current/Voltage
Measuring Instruments For Indoor Air Quality, Light And Sound
Stationary Measurement Technology Humidity / Differential Pressure / Temperature / Process Displays
Stationary Measurement Technology Compressed Air Humidity / Compressed Air Consumption