

testo 6740

Dewpoint transmitter to $-45\text{ }^{\circ}\text{C}_{\text{td}}$



SPECIFICATIONS

testo 6740



The testo 6740 was especially developed for trace humidity measurement in compressed or dry air (e. g. granulate dryers). Thanks to a special adjustment, optimum accuracy in the trace humidity range has been achieved. The result of the development of the testo 6740 is a measuring range of $-45\text{ }^{\circ}\text{C}_{\text{td}}$ to $+30\text{ }^{\circ}\text{C}_{\text{td}}$ and excellent accuracy.

For the display of the relevant trace humidity parameters, a freely scalable analog output is available, optionally with a switch contact plug for MAX monitoring. In addition to this, the testo 6740 stands out thanks to its compact and user-friendly design, such as the rotatability of the housing by 350° for the optimum positioning of the display.



SPECIFICATIONS

testo 6740

- Measurement of dewpoints in the range from $-45\text{ }^{\circ}\text{C}_{\text{td}}$ to $+30\text{ }^{\circ}\text{C}_{\text{td}}$
- Testo polymer humidity sensor with high accuracy and long-term stability
- Convenient operation via the display menu
- Analog output 4 to 20 mA (2-wire) and optional alarm plug with 2 integrated switch outputs
- Compact design with rotatable housing by 350° for optimum positioning of display
- Display with operating menu (optional)
- Trace humidity adjustment without reference measuring instrument possible on site with accessory (2-point adjustment device), replaces expensive adjustment with dewpoint mirror

Areas of application:

- Refrigeration dryers
- Membrane dryers
- Adsorption dryers
- Granulate dryers



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Technical data

Measurement parameters	
Dewpoint/trace humidity	
Units	%RH, $^{\circ}\text{C}$
Calculated parameters	$^{\circ}\text{C}_{td}$, $^{\circ}\text{F}_{td}$, $^{\circ}\text{CtA}$, $^{\circ}\text{FtA}$, ppmv, mg/m^3 , $^{\circ}\text{F}$
Measuring range	$-45\text{ }^{\circ}\text{C}_{td}$ to $+30\text{ }^{\circ}\text{C}_{td}$
Measurement uncertainty	$\pm 1\text{ K}$ at $0\text{ }^{\circ}\text{C}_{td}$ ($+32\text{ }^{\circ}\text{F}_{td}$) $\pm 3\text{ K}$ at $-20\text{ }^{\circ}\text{C}_{td}$ ($-4\text{ }^{\circ}\text{F}_{td}$) $\pm 4\text{ K}$ at $-40\text{ }^{\circ}\text{C}_{td}$ ($-40\text{ }^{\circ}\text{F}_{td}$)
Response time	$t_{90} \leq 60\text{ sec}$ for change from $13.2\text{ }^{\circ}\text{C}_{td}$ to $-32.1\text{ }^{\circ}\text{C}_{td}$ $t_{90} \leq 17\text{ sec}$ for change from $-32.2\text{ }^{\circ}\text{C}_{td}$ to $13\text{ }^{\circ}\text{C}_{td}$
Sensor	Polymer humidity sensor with protocolized trace humidity adjustment at $-40\text{ }^{\circ}\text{C}_{td}$ ($-40\text{ }^{\circ}\text{F}_{td}$)
Normed atmospheric dewpoint	
Measuring range	-70 to $-15\text{ }^{\circ}\text{CtdA}$ (-112 to $-5\text{ }^{\circ}\text{FtdA}$) (at 30 bar rel./ 435 psi) -54 to $+10\text{ }^{\circ}\text{CtdA}$ (-94 to $+50\text{ }^{\circ}\text{FtdA}$) (at 3 bar rel./43.5 psi) -45 to $+30\text{ }^{\circ}\text{CtdA}$ (-76 to $+86\text{ }^{\circ}\text{FtdA}$) (at 0 bar rel./0 psi)
Temperature	
Measuring range	0 to $50\text{ }^{\circ}\text{C}$ (32 to $+122\text{ }^{\circ}\text{F}$)
Measurement uncertainty	$\pm 0.5\text{ K}$ (0 to $50\text{ }^{\circ}\text{C}/32$ to $122\text{ }^{\circ}\text{F}$)
Sensor	NTC

General technical data													
Design													
Material/colour	Plastic, polyacrylamide												
Dimensions	199.5 x 37 x 37 mm (with standard plug) 203.5 x 37 x 37 mm (with plug 0554 3302)												
Weight	Approx. 300 g												
Display													
Display	High intensity 7-segement display												
Resolution	<table border="1"> <tr> <td>$^{\circ}\text{C}$: 0.1</td><td>ppmv: 1 / 10 / 100 (dep. on meas. value)</td></tr> <tr> <td>RH: 0.1</td><td></td></tr> <tr> <td>$^{\circ}\text{C}_{td}$: 0.1</td><td>mg/m^3: 1 / 10 / 100 (dep. on meas. value)</td></tr> <tr> <td>$^{\circ}\text{F}_{td}$: 0.1</td><td></td></tr> <tr> <td>$^{\circ}\text{CtA}$: 0.1</td><td>$^{\circ}\text{F}$: 0.1</td></tr> <tr> <td>$^{\circ}\text{FtA}$: 0.1</td><td></td></tr> </table>	$^{\circ}\text{C}$: 0.1	ppmv: 1 / 10 / 100 (dep. on meas. value)	RH: 0.1		$^{\circ}\text{C}_{td}$: 0.1	mg/m^3 : 1 / 10 / 100 (dep. on meas. value)	$^{\circ}\text{F}_{td}$: 0.1		$^{\circ}\text{CtA}$: 0.1	$^{\circ}\text{F}$: 0.1	$^{\circ}\text{FtA}$: 0.1	
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$^{\circ}\text{CtA}$: 0.1	$^{\circ}\text{F}$: 0.1												
$^{\circ}\text{FtA}$: 0.1													
Rotatability (display positioning)	350° around housings axis												
Installation													
Thread / process connection	G $\frac{1}{2}$ thread (order code 01) or NPT $\frac{1}{2}$ " thread (order code A 02)												
Miscellaneous													
Protection class	IP65 (with plug attached and wire connected)												
EMC	According to guideline 89/336 EEC												

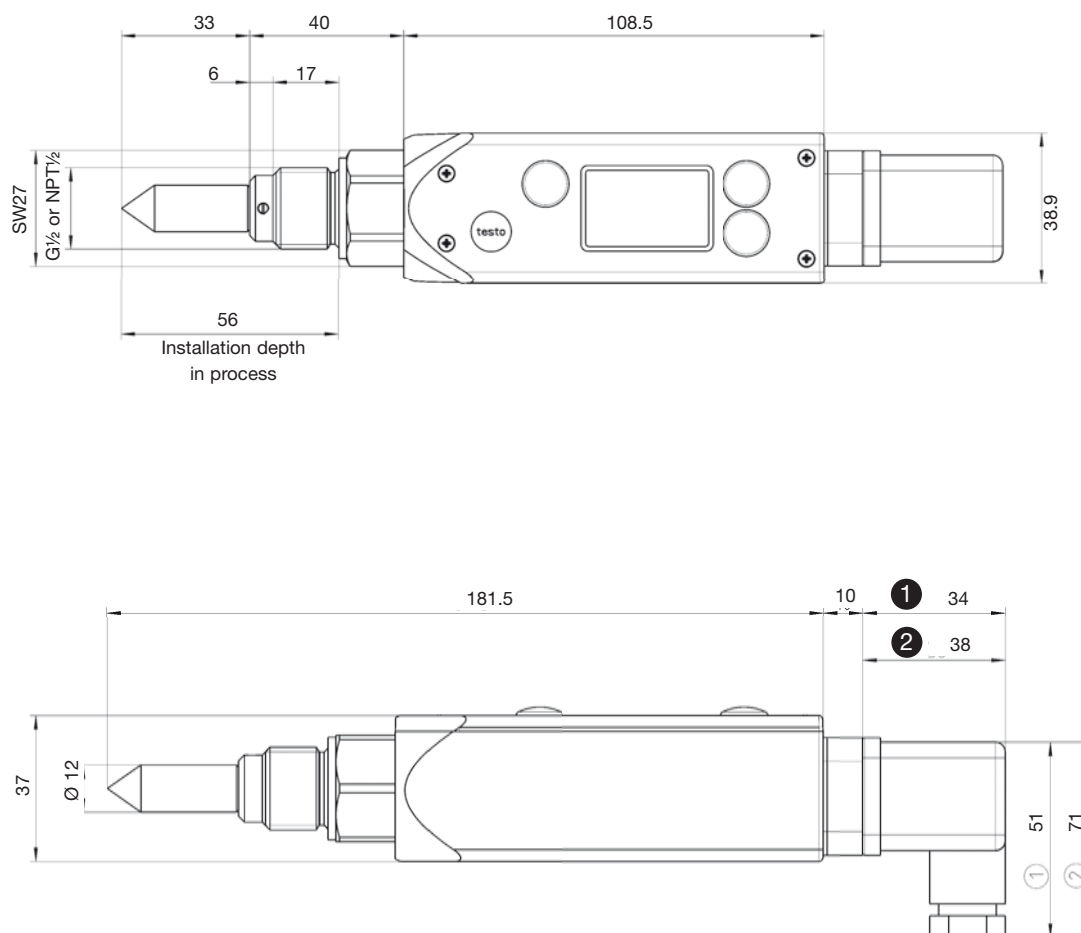
Inputs and outputs	
Analog outputs	
Current/accuracy	4 to 20 mA (2-wire) / $\pm 40\text{ }\mu\text{A}$
Measurement rate	2 s
Resolution	12 bit
load	10 V DC: max. 100 Ω , 30 V DC: 950 Ω
Scaling	Freely scalable via display buttons
Switch outputs (opt. alarm plug, 0554 3302)	
Contacts	2 closer contacts, pot.-free, max. 30V/0.05A
Switch thresholds	Standard $6\text{ }^{\circ}\text{C}_{td}/12\text{ }^{\circ}\text{C}_{td}$, freely progr. with display
Supply	
Voltage supply	24 V AC/V DC (10 to 30 V DC permitted); with alarm plug (0554 3302) 20 to 28 V DC
Current consumption	21 mA (without alarm plug) 65 mA (with alarm plug)

Operating conditions	
Operating temperature (housing)	-20 to $+70\text{ }^{\circ}\text{C}$ ($+4$ to $+158\text{ }^{\circ}\text{F}$)
Storage temperature	-40 to $+80\text{ }^{\circ}\text{C}$ (-40 to $+176\text{ }^{\circ}\text{F}$)
Process pressure	max. 50 bar (725 psi)

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Technical drawings



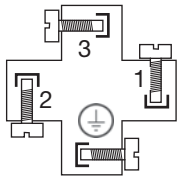
- 1 Standard connection plug (4 to 20 mA – 2-wire)
- 2 Switch contact plug: cable connection plug for supply/analog output (4 to 20 mA – 2-wire)

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Connection plan

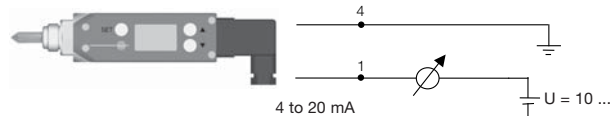
With standard plug (included in delivery 0555 674x):



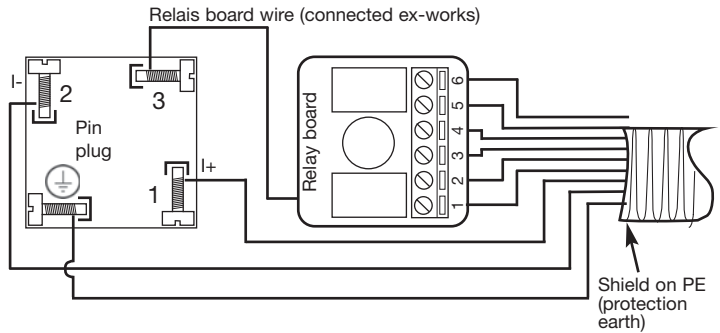
Pin plug terminals	
1:	+ (4 to 20 mA), Supply 12 to 30 VDC
2:	- (4 to 20 mA)
3:	Not used
4:	Measurement earth (cable shield)

Standard plug

This version provides a 4 to 20 mA analog output in 2-wire technology.



With switch contact plug (0554 3302)



Pin plug terminals	
1:	I + (4 to 20 mA) ^(A)
2:	I - (4 to 20 mA) ^(B)
3:	(connected with relay board ex-works)
4:	Connect shield

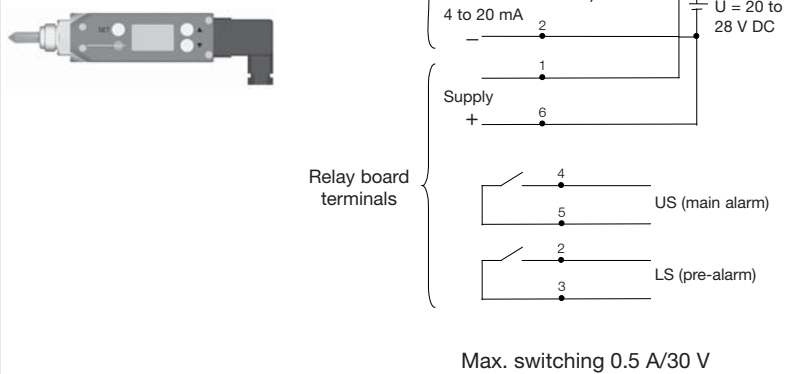
Current signal and supply 20 to 28 V DC

Relay board terminals	
1:	20 to 28 V DC ^(A)
2:	LS +
3:	LS -
4:	US +
5:	US -
6:	0 V DC ^(B)

The supply connections must be galvanically connected, i. e. make connection (A)-(A) or (B)-(B) !

Switch contact plug (0554 3302)

4 to 20 mA, 2-wire as well as 2 potential-free switch contacts + 2 LED



Max. switching 0.5 A/30 V

Order data testo 6740

	Order no.
Basic instrument (incl. plug for analog signal output)	
testo 6741, G½ thread, without display	0555 6741
testo 6742, NPT½ thread, without display	0555 6742
testo 6743, G½ thread, with display	0555 6743
testo 6744, NPT½" thread, with display	0555 6744