

Dewpoint transmitter to $-60\text{ }^{\circ}\text{C}_{\text{td}}$

testo 6740



%RH

$^{\circ}\text{C}$

Measurement of dewpoints in the range from $-60\text{ }^{\circ}\text{C}_{\text{td}}$ 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)

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 $-60\text{ }^{\circ}\text{C}_{\text{td}}$ 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.

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	$-60\text{ }^{\circ}\text{C}_{td}$ to $+30\text{ }^{\circ}\text{C}_{td}$, $-80\text{ }^{\circ}\text{C}_{tdA}$ to $+15\text{ }^{\circ}\text{C}_{tdA}$
Measurement uncertainty	$\pm 2\text{ }^{\circ}\text{C}_{td}$
Response time	$t_{90} \leq 60$ sec for change from $13.2\text{ }^{\circ}\text{C}_{td}$ to $-32.1\text{ }^{\circ}\text{C}_{td}$ $t_{90} \leq 17$ 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 $-15\text{ }^{\circ}\text{C}_{tdA}$ (-112 to $-5\text{ }^{\circ}\text{F}_{tdA}$) (at 30 bar rel./ 435 psi) -54 to $+10\text{ }^{\circ}\text{C}_{tdA}$ (-94 to $+50\text{ }^{\circ}\text{F}_{tdA}$) (at 3 bar rel./43.5 psi) -60 to $+30\text{ }^{\circ}\text{C}_{tdA}$ (-76 to $+86\text{ }^{\circ}\text{F}_{tdA}$) (at 0 bar rel./0 psi)
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Temperature

Measuring range	0 to $50\text{ }^{\circ}\text{C}$ (32 to $+122\text{ }^{\circ}\text{F}$)
Measurement uncertainty	$\pm 0.5\text{ }^{\circ}\text{C}$ (0 to $50\text{ }^{\circ}\text{C}$ /32 to $122\text{ }^{\circ}\text{F}$)
Sensor	NTC

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)

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	$^{\circ}\text{C}$: 0.1 RH: 0.1 $^{\circ}\text{C}_{td}$: 0.1 $^{\circ}\text{F}_{td}$: 0.1 $^{\circ}\text{CtA}$: 0.1 $^{\circ}\text{FtA}$: 0.1	ppmv: 1 / 10 / 100 (dep. on meas. value) 1 / 10 / 100 (dep. on meas. value) 0.1

Rotatability (display positioning)	350° around housing axis
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Installation

Thread / process connection	$G\frac{1}{2}$ thread (order code 01) or NPT $\frac{1}{2}$ " thread (order code A 02)
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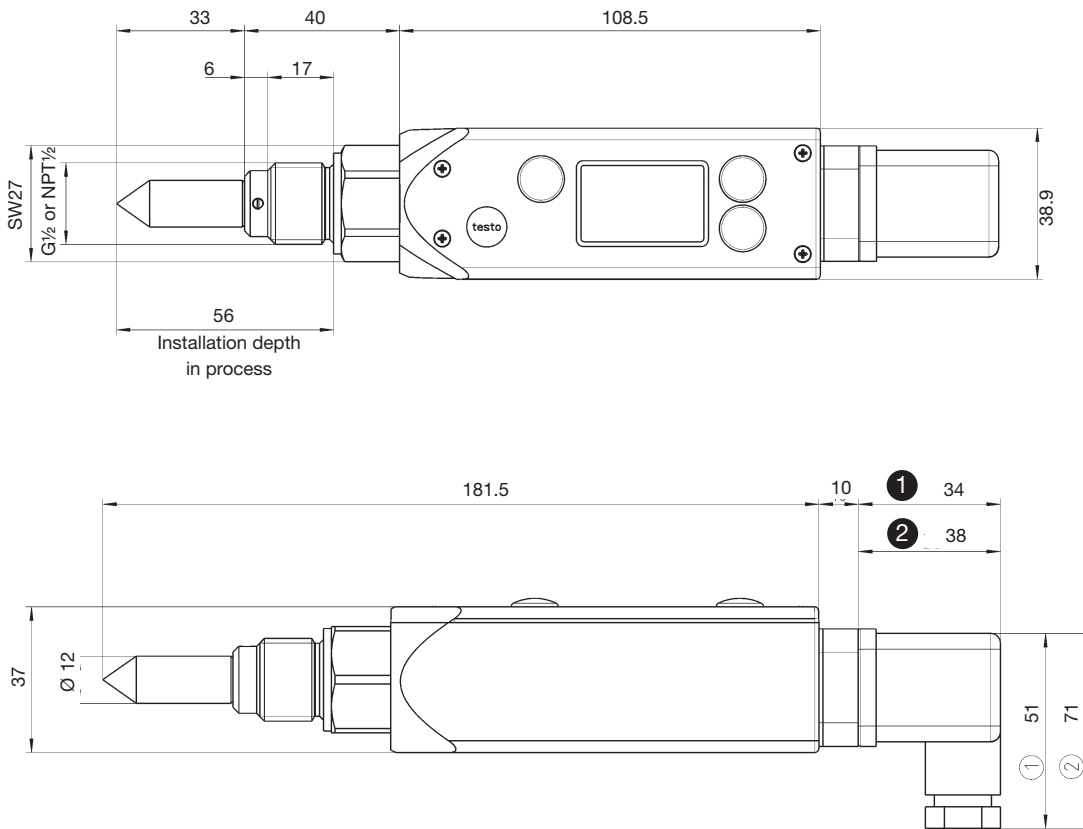
Miscellaneous

Protection class	IP65 (with plug attached and wire connected)
EMC	According to guideline 89/336 EEC

Operating conditions

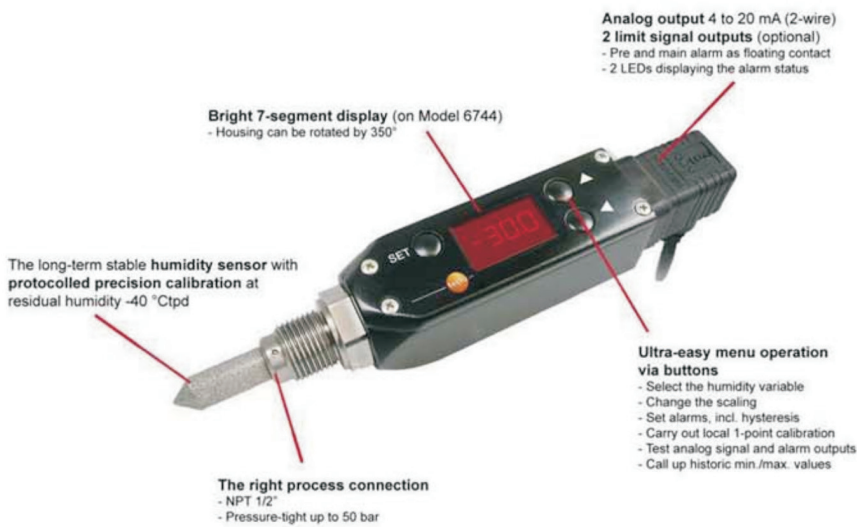
Operating temperature (housing)	-20 to $+70\text{ }^{\circ}\text{C}$ ($+4$ to $+158\text{ }^{\circ}\text{F}$)
Storage temperature	-40 to $+80\text{ }^{\circ}\text{C}$ (-40 to $+176\text{ }^{\circ}\text{F}$)
Process pressure	max. 50 bar (725 psi)

Technical drawings

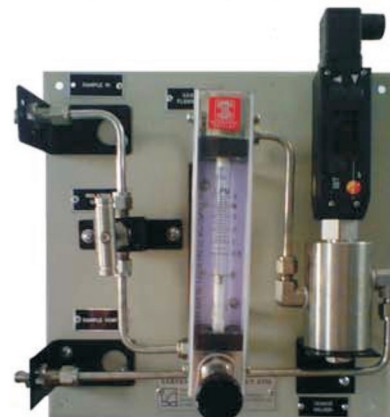


① Standard connection plug (4 to 20 mA – 2-wire)

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



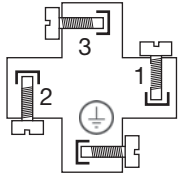
Optional Sampling Panel



Connection plan / Ordering example

Connection plan

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

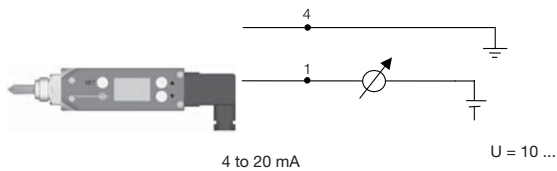


Pin plug terminals

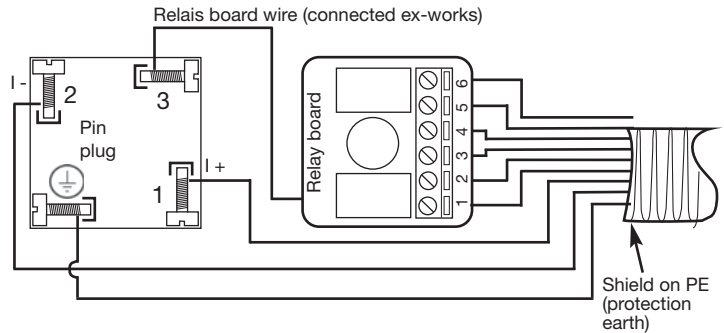
1: + (4 to 20 mA), Supply 12 to 30 VDC
2: - (4 to 20 mA)
3: Not used
4: Measurement earth (cable shield)

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: (A) I + (4 to 20 mA)	} Current signal and supply 20 to 28 V DC
2: (B) I - (4 to 20 mA)	
3: (connected with relay board ex-works)	
⏏: Connect shield	

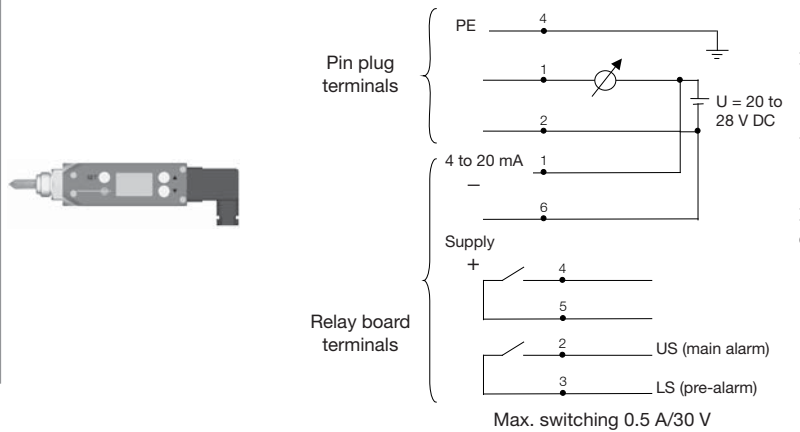
Relay board terminals

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

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



Order data testo 6740

Part no.

Basic instrument (incl. plug for analog signal output)	
testo 6741, G $\frac{1}{2}$ thread, without display	0555 6741
testo 6742, NPT $\frac{1}{2}$ thread, without display	0555 6742
testo 6743, G $\frac{1}{2}$ thread, with display	0555 6743
testo 6744, NPT $\frac{1}{2}$ " thread, with display	0555 6744

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