

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

## testo 6740



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

%RH

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

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Measurement of dewpoints in the range from  $-45\text{ }^{\circ}\text{C}_{\text{td}}$  to  $+30\text{ }^{\circ}\text{C}_{\text{td}}$

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Testo polymer humidity sensor with high accuracy and long-term stability

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Analog output 4 to 20 mA (2-wire) and optional alarm plug with 2 integrated switch outputs

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Compact design with rotatable housing by  $350^{\circ}$  for optimum positioning of display

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Display with operating menu (optional)

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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.

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  $350^{\circ}$  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, $\text{mg}/\text{m}^3$ , $^{\circ}\text{F}$
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 $-40\text{ }^{\circ}\text{C}_{td}$ ( $-40\text{ }^{\circ}\text{F}_{td}$ )
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)
<b>Temperature</b>	
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

## Inputs and outputs

### Analog outputs

Current/accuracy	$4$ to $20\text{ mA}$ (2-wire) / $\pm 40\text{ }\mu\text{A}$
Measurement rate	$2\text{ s}$
Resolution	$12\text{ bit}$
load	$12\text{ V DC}$ : max. $100\text{ }\Omega$ , $24\text{ V DC}$ : max. $650\text{ }\Omega$ , $30\text{ V DC}$ : $950\text{ }\Omega$
Scaling	Freely scalable via display buttons

### Switch outputs (opt. alarm plug, 0554 3302)

Contacts	$2$ closer contacts, pot.-free, max. $30\text{V}/0.5\text{A}$
Switch thresholds	Standard $6\text{ }^{\circ}\text{C}_{td}/12\text{ }^{\circ}\text{C}_{td}$ , freely programmable with display

### Supply

Voltage supply	$24\text{ V DC}$ ( $12$ to $30\text{ V DC}$ permitted); with alarm plug (0554 3302) $20$ to $28\text{ V DC}$
Current consumption	$21\text{ mA}$ (without alarm plug) $65\text{ mA}$ (with alarm plug)

## General technical data

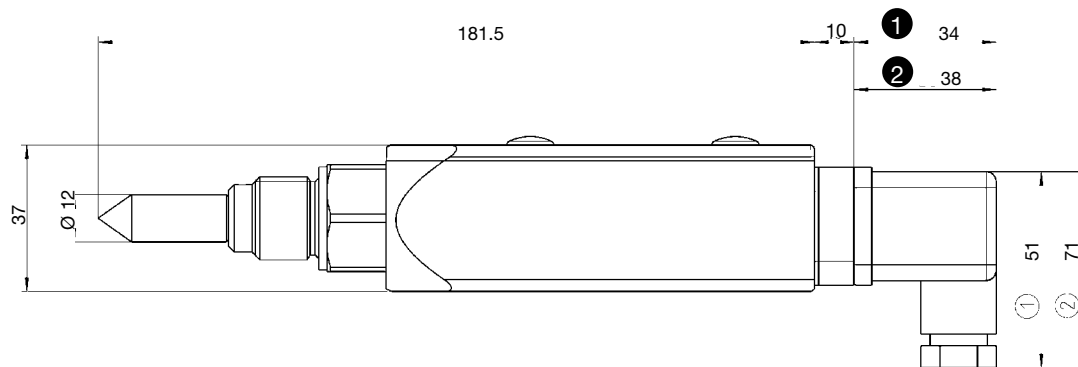
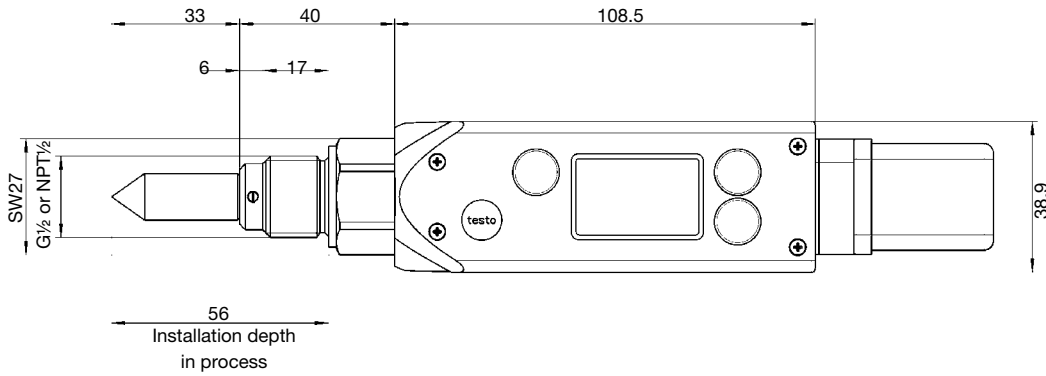
### Design

Material/colour	Plastic, polyacrylamide	
Dimensions	$199.5 \times 37 \times 37\text{ mm}$ (with standard plug) $203.5 \times 37 \times 37\text{ mm}$ (with plug 0554 3302)	
Weight	Approx. $300\text{ g}$	
<b>Display</b>		
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) $\text{mg}/\text{m}^3$ : $1 / 10 / 100$ (dep. on meas. value) $^{\circ}\text{F}$ : $0.1$
Rotatability (display positioning)	$350^{\circ}$ around housing axis	
<b>Installation</b>		
Thread / process connection	$G\frac{1}{2}$ thread or NPT $\frac{1}{2}$ " thread	
<b>Miscellaneous</b>		
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. $50\text{ bar}$ ( $725\text{ psi}$ )

# Technical drawings

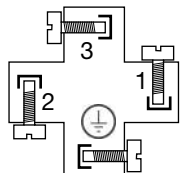


- ① Standard connection plug (4 to 20 mA – 2-wire)
- ② Switch contact plug: cable connection plug for supply/ analog output (4 to 20 mA – 2-wire)

# Connection plan / Ordering example

## Connection plan

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

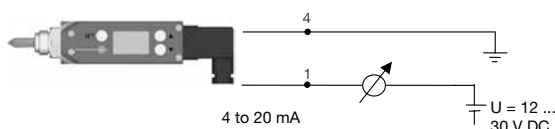


### Pin plug terminals

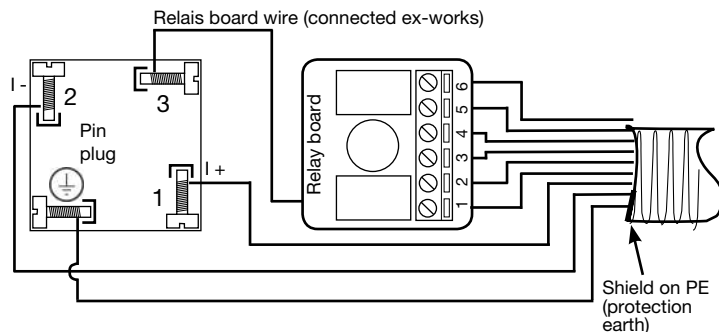
- 1: + (4 to 20 mA), Supply 12 to 30 VDC
- 2: - (4 to 20 mA)
- 3: Not used
- 4: Measurement earth (cable shield)

### 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)
- 2: **(B)** I - (4 to 20 mA)
- 3: (connected with relay board ex-works)
- ⊥: Connect shield

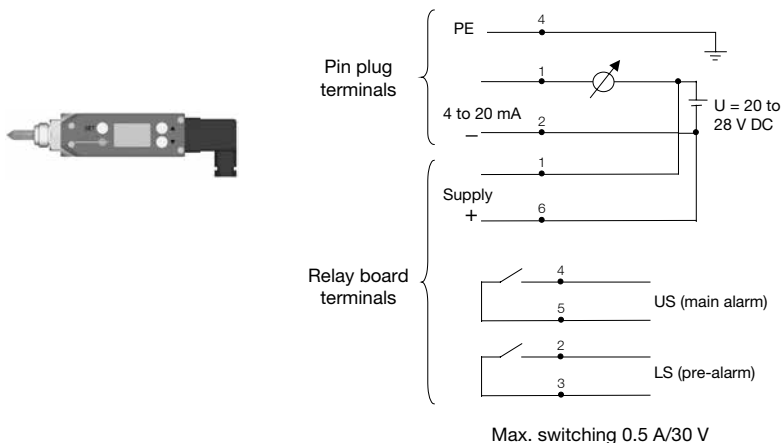
### Relay board terminals

- 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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Subject to change without notice.