testo 6721 Dew point monitor
P2A software for testo 6721

Instruction manual   en

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Safety and the environment

About this document

> Please read this documentation through carefully and familiarize yourself with the product before putting it to use. Keep this documentation to hand so that you can refer to it when necessary. Hand this documentation on to any subsequent users of the product.

> Pay particular attention to information emphasized by the following symbols:

> **ℹ**· Important.

Avoiding personal injury/damage to equipment

> Never store the product together with solvents and do not use any desiccants.

> Only operate the product properly, for its intended purpose and within the parameters specified in the technical data. Do not use force.

> Only carry out the maintenance and repair work that is described in the documentation. Follow the prescribed steps when doing so. Use only OEM spare parts from Testo.

Protecting the environment

> Send the product back to Testo at the end of its useful life. We will ensure that it is disposed of in an environmentally friendly manner.

PART 1: TESTO 6721

Specifications

Functions and use

The 6721 is a dew point monitor for monitoring trace humidity in the following applications:

· Trace humidity monitoring in compressed air systems, e.g. upstream of pneumatic machines.
· Monitoring (compressed air) low-temperature driers.
· Monitoring (compressed air) membrane driers.

🛈 The product must only be assembled, wired and connected by qualified personnel.
The product must **not** be used in areas at risk of explosion!

Ordering overview

0555 6721 Axx / Fxx / Kxx	
A01	G½" process connection
A02	NPT ½" process connection
F01	Dew point °Ctd / GW 1 / GW 2 / hysteresis
F02	Dew point °Ftd / GW 1 / GW 2 / hysteresis
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

Technical details

Parameters, measuring range

· Dew point temperature (trace humidity):
 -30 - 30 °Ctd/-22 - 86 °Ftd

Accuracy

· Dew point temperature at 25 °C/77 °F process
 temperature:
 ±4 K (-30…-20 °Ctd/-22…-4 °Ftd),
 ±3 K (-20…-10 °Ctd/-4…14 °Ftd),
 ±2 K (-10…0 °Ctd/14…32 °Ftd),
 ±1 K (>0 °Ctd/>32 °Ftd)

Resolution

· 0.1 °Ctd/0.1 °Ftd

Meas. cycle

· 1/s

Other instrument data

· Humidity sensor: Testo humidity sensor (with special
 trace humidity adjustment)

· Temperature sensor: NTC

· Output variable: Dew point (°Ctd or °Ftd) via two
 switching outputs

· Measuring medium: Compressed air (filtered and
 dried, ISO 8573 classes 2-4-2)

· Operating temperature: 0 - 50 °C/32 -122 °F, ideally
 between 10 °C and 35 °C/50 °F

· Pressure range: max. 20 bar (abs)

· Connection: G½" (0555 6721-A01) or NPT½"
 (0555 6721-A02)

· Supply: 24 V AC/V DC (20 - 30 V AC/V DC permissible)

· Power consumption: 50 mA

· Interfaces: mini-DIN interface for
 parameterizing/adjusting/analyzing using testo
 P2A Software

· Switching outputs: 2 x floating, switching voltage
 24 V DC/V AC, switching current 0.5 A, optional wiring
 as NC or NO contact

· Limit values (2x) and switching hysteresis (1x):
 Free choice within the measuring range by means of
 order code, or setting via testo P2A Software

· Sensor protection: Sintered stainless steel filter,
 12 mm diameter

· Housing material: plastic PAA GF30

· Housing dimensions: 167 x 33 x 33 mm

· Protection class: IP65 (with adapter connected or with
 protective tab on closed interface.)

· Ambient temperature: 0 - 50 °C/32 - 122 °F

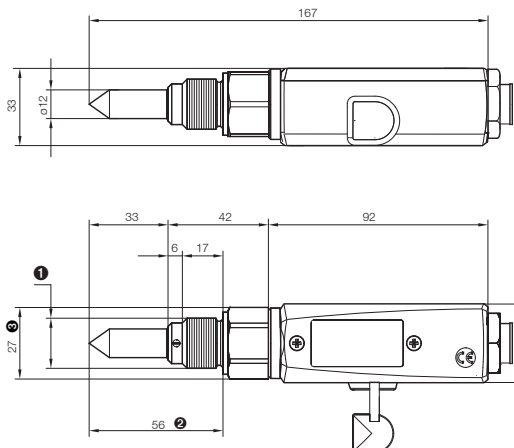· Storage temperature: -40 - 70 °C/-40 - 158 °F

· Weight: 240 g

Directives, standards and tests

· EC Directive: 2004/108/EEC

Warranty

· Duration: 2 years

· Warranty conditions: see website
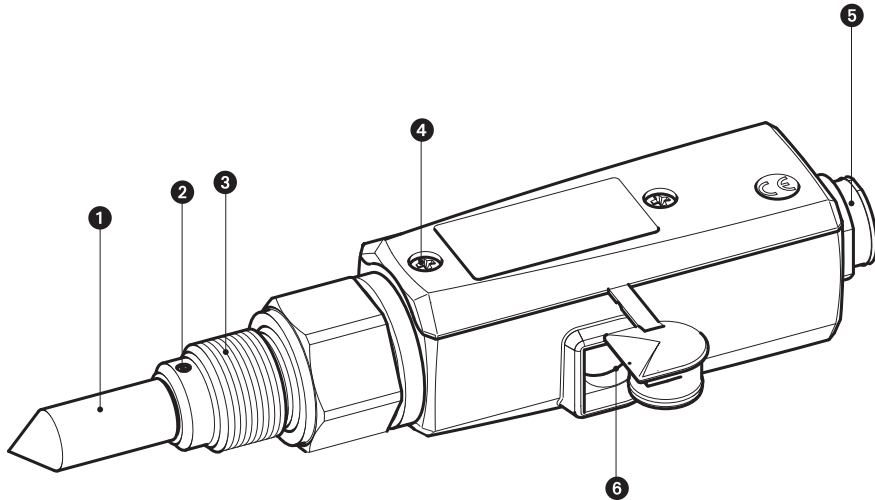 www.testo.com/warranty

Dimensions:

❶ 0555 6721-A01: G½
 0555 6721-A02: NPT½"

❷ Installation depth in process

❸ Wrench size

Product description

At a glance

❶ Sensor protection: Sintered stainless steel cap.

❷ Fixing the sensor assembly: Threaded pin.

❸ Screwed socket: G ½ (0555 6721-A01) or NPT ½" (0555 6721-A02).

❹ Fixing the housing cover: 2 countersunk screws.

❺ Connector socket for switching contact connector.

❻ Connector socket for external interface (mini-DIN Testo), plug.

Factory settings

Characteristic	0555 6721-F01	0555 6721-F02
Unit	°Ctd	°Ftd
Limit value for switching output 1	5	45
Limit value for switching output 2	10	55
Hysteresis	1	2

Commissioning

Assembling the instrument

➤ Assembling the instrument at the process connection:

✓ If assembling without a measurement chamber: The sections of pipe where the instrument is assembled are depressurized.

1 To ensure leaktightness: Wrap the thread of the screwed socket using sealing tape (e. g. PTFE) or insert a copper sealing ring (internal diameter of 21 mm).

2 Assemble the instrument according to the application in hand:

Applications/assembly options

A Process temperatures < 15 °C or > 35 °C (max. 200 °C):
Assembly with measurement chamber and cooling coil.

B Process temperatures of 15 - 35 °C, quick assembly/dismantling of instrument is required, sufficient incident flow through sensor (1l/min) not present:
Assembly with measurement chamber.
If media are contaminated: connect preliminary filter (0554 3311) upstream

C Process temperatures of 15 - 35 °C, installation of sensor directly in the process is possible, quick assembly/dismantling of instrument is not required, sufficient incident flow through sensor (1l/min) present, compressed air is not contaminated:
Assembly without measurement chamber and without cooling coil
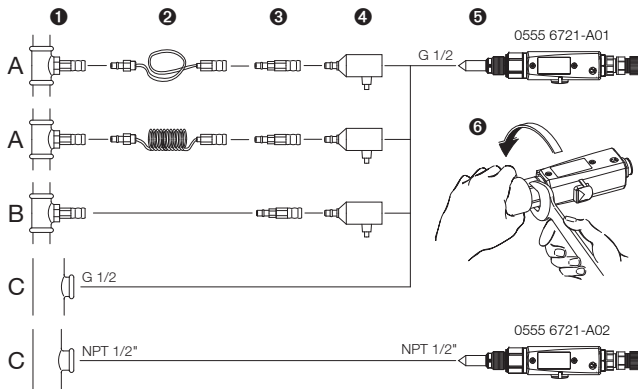
❶ Process connection, quick-release compressed-air fastener NW 7.2 or G 1/2" or NPT 1/2" thread

❷ PTFE tube (0669 2824/4) or cooling coil (0554 3304).

❸ Preliminary filter 0554 3331

    ℹ When using the preliminary filter, it must be ensured that there is sufficient flow (1 l/min) in the measurement chamber by cleaning the filter regularly.

❹ Measurement chamber (0554 3303).

❺ testo 6721 dew point monitor.

❻ Assembling the measurement chamber on the dew point monitor.

   ℹ Only apply force at the hexagon (AF 27)!

Wiring the instrument

ℹ The testo 6721 is supplied with the right connector to which a cable can be soldered by the customer. Alternatively, the 5 m accessories cable with the pre-fabricated connector (0554 6720) can be used.

➤ Fabrication of connection cable by the customer:

Testo recommends an 8-wire line with a tightly plaited shield, wire cross-section of 0.25 - 0.5 mm².
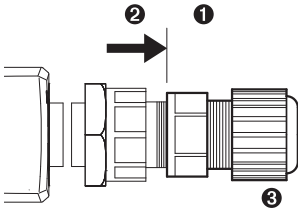
1 Remove top part of connector ❶ from bottom part of connector ❷ (screw cap).

2 Open line fixture on top part of connector (screw cap/union nut ❸) and feed through lines of connecting cable.
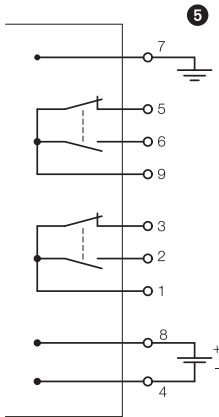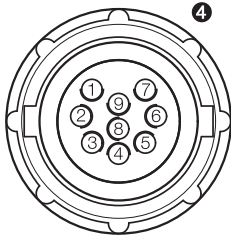
3 Solder ends of lines to the pins in the bottom part of the connector ❹:

Two separate switching points can be created using the two switching contacts which can each be configured as either a NC contact (1-3, 9-5) or NO contact (1-2, 9-6) ❺.

Assignment of the pins
1 Root/pin for switching contact 1
2 NO contact for switching contact 1
3 NC contact for switching contact 1
4 Supply -
5 NC contact for switching contact 2
6 NO contact for switching contact 2
7 Functional earth
8 Supply +
9 Root/pin for switching contact 2

4 Fasten top part of connector to bottom part of connector (screw cap) and close line fixture (screw cap/union nut).

➤ **Feeding wiring through with accessories cable 0554 6720:**

❯ Shorten length of line (5 m) if necessary.

❯ Connect the ends of the line according to the colour assignment:

Two separate switching points can be created using the two switching contacts which can each be configured as either a NC contact (grey-pink, brown-green) or NO contact (grey-yellow, brown-white).

Colour	Assignment
grey	root/pin for switching contact 1
yellow	NO contact for switching contact 1
pink	NC contact for switching contact 1
red	supply +
green	NC contact for switching contact 2
white	NO contact for switching contact 2
black	Functional earth
blue	supply -
brown	root/pin for switching contact 2

Connecting the instrument

➢ Connecting the switching contact connector to the instrument:

> ❯ Fasten switching contact connector to the port of the instrument (connector with rotary protection).

Parameterizing/adjusting/analyzing the instrument

The instrument is parameterized, adjusted and analyzed using the P2A Software, see "Part 2: testo P2A Software".

Maintaining the product

➢ Cleaning the housing:

> ❯ Clean the housing with a damp cloth (soap suds) if it is dirty. Do not use aggressive cleaning agents or solvents!

➢ Cleaning the sensor protection cap, measurement chamber, cooling coil and preliminary filter:

If used in process conditions involving oil or dust, the sintered stainless steel filter and, if used, the measurement chamber, preliminary filter and cooling coil must be cleaned regularly.

> ❯ Remove the measurement chamber and cooling coil/unscrew sensor protection cap/unscrew preliminary filter and blow out with compressed air or place in an ultrasonic bath.

➢ Cleaning the sensor:

🛈 During cleaning, avoid touching the sensor at all costs.

🛈 Do not clean the sensor mechanically, as this can damage the cover electrode.

> ❯ Screw off filter cover.

> ❯ Carefully rinse the mirrored surface with isopropyl alcohol and/or distilled water.

> ❯ Allow the sensor to dry completely.

Tips and assistance

Questions and answers

Question	Possible causes/solutions
Faulty switch signal	- Test limit values and hysteresis using P2A Software - View adjustment history using P2A Software: Faulty adjustment?

If we could not answer your question, please contact your dealer or Testo Customer Service. Contact details can be found on the guarantee card or on the Internet at: www.testo.com

Accessories and spare parts

Designation	Article no.
Parameterizing, adjusting and analyzing software (P2A Software incl. adapter cable for USB to mini-DIN)	0554 6020
Measurement chamber for optimum incident flow through humidity sensor, max. 15 bar, for G½" thread	0554 3303
Cooling coil for process temperatures above 35 °C (up to 200 °C)	0554 3304
Preliminary filter to protect measurement chamber and sensors against contamination	0554 3311
Sintered stainless steel filter	0554 0647
Connector with 5 m cable	0554 6720
Alarm box for testo 6721 dew point monitor, without cable 0555 6720	0554 6722
PTFE tube with compressed air connections, 2 m, max. 9 bar	0699 2824/4
Mains unit (bench unit), 90 - 264 V AC/24 V DC (350mA)	0554 1748
Mains unit (top-hat rail mounting), 90 - 264 V AC/24 V DC (2.5A)	0554 1749

For a complete list of all accessories and spare parts, please refer to the product catalogues and brochures or look up our website at: www.testo.com

PART 2: TESTO P2A SOFTWARE

Specifications

Functions and use

The testo P2A Software (0554 6020) is parameterizing, adjusting and analyzing software for Testo transmitters. It is not supplied with the testo 6721.

System requirements

Operating system

· Windows 2000 SP4
· Windows XP

Computer

· Pentium processor of at least 400 MHz or equivalent
· 128 MB RAM
· Graphics resolution of at least 1,024 x 768
· Unused hard drive capacity of at least 15 MB
· CD-ROM drive
· USB interface or corresponding adapter

First steps

Installing the software/driver

The CD supplied with the testo 6721 contains an update of the P2A Software including all the latest instrument drivers. Install this update once you have installed the P2A Software (0554 6020).

🛈 Administrator rights under Windows® 2000 and XP are required for the installation of the testo P2A Software program.

➢ **Installing the P2A Software:**

1 Insert the "P2A Software" CD (0554 6020).
If the installation program does not start automatically:
> Start **Setup.exe** file from the CD-directory (access via **My Computer** or **Windows Explorer**).

2 Follow the instructions of the installation program.

➢ **Installing the USB drivers:**

The USB driver CD is supplied with the P2A Software

🛈 Before installing the USB drivers, please read the separate documentation enclosed with the USB driver CD.
The installation of the USB driver is the prerequisite for the faultless use of the P2A software.

➢ **P2A Software update:**

1 Insert the product CD (supplied with the testo 6721).

If the installation program does not start automatically:
> Start **Setup.exe** file from the CD-directory (access via **My Computer** or **Windows Explorer**).

2 Follow the instructions of the installation program.
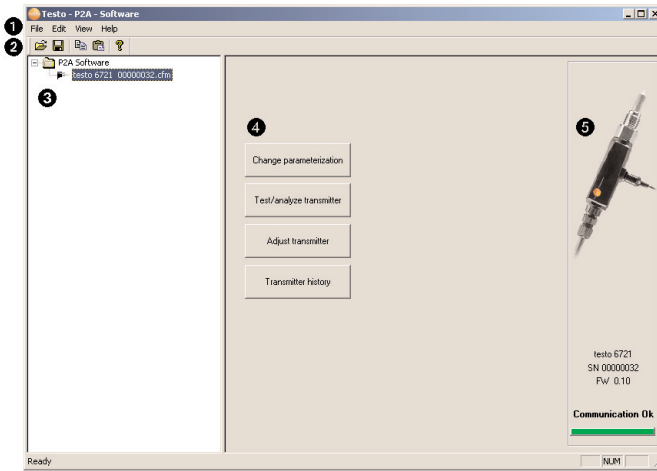
Starting the software

➢ **Starting the program:**

> Select: **Start** > **Programs** > **Testo** > **P2A Software**.

Product description

User interface

❶ Menu bar.

❷ Toolbar.

❸ File list: List of all instrument/parameter files.

File symbols

· : Instrument file, connection to the unit has not been established.

· : Instrument file, connection to the unit has been established.

· : Parameter file.

File identifications

· Instrument files: "[Type] [serial number].cfm"; file identifications cannot be changed.
Instrument files contain all the data relating to a particular instrument. These are the parameter data and represent the parameterization and adjustment history of the instrument.

· Parameter files: "[Type] [serial number] [date] [time].cfp"; file identifications can be changed.
Parameter files only contain parameter data. These can be copied to another instrument or parameter file for the same type of instrument so that several instruments have the same parameter settings.

❹ List of functions.

❺ File information:

Information displayed

· Instrument files: Type, serial number, firmware version and connection status of the instrument.

· Parameter file: Type, serial number and firmware version of instrument with which the parameter file was created.

· Connection status (instrument files only): "red" connection is active, "green" connection is inactive.

Using the product

➢ **Establishing a connection with the device:**

Several instruments can be connected to the PC and administered via the P2A software, but only one connection can ever be active at any one time. Non-wired instruments can also be connected to the P2A Software for parameterization/adjustment. The supply to the instruments is then effected via the USB interface.

1 Connect the USB/mini-DIN adapter to the external interface (mini-DIN) of the instrument.

2 Connect the USB connector of the adapter to the PC.

   - The instrument file for the instrument connected appears in the instrument file/parameter file list.

➢ **Selecting the instrument/parameter file, activating a connection with the device:**

❯ Click on the requisite instrument/parameter file.

   - The selected file is highlighted in colour.

   - For instrument files only: if a connection with the instrument has been established, this is automatically activated.

➢ **Changing an instrument/parameter file:**

✓ The required instrument/parameter file is selected.

1 Click on **Change parameterization** button.

2 Enter parameters in the corresponding fields.

3 Click on **Apply** to confirm entries.

4 To leave the parameterization screen, click on **OK**.

➢ **Saving the parameters in a parameter file:**

The parameter data for the selected instrument/parameter file can be saved.

❏ Only parameter data stored in the standard file can be loaded into an instrument!

✓ The required instrument/parameter file is selected.

1 In the menu bar, click on **File** > **Save as**.

2 Select the storage location and enter the file name.

3 Click on **Save** to confirm entries.

> **Opening a parameter file:**

All parameter files stored in the standard directory path are automatically displayed in the file list when the software is started. Parameter files stored in other directories can also be opened.

🛈 Only parameter data stored in the standard file can be loaded into an instrument!

1 In the menu bar, click on **File** > **Open**.

2 Select the storage location and click on the requisite parameter file.

3 Click on **Open** to confirm entries.

> **Copying the parameter data:**

The parameter data for an instrument/parameter file can be transferred to another instrument/parameter file for the same type of instrument. History data for instrument files are not transferred.

1 Select file from which the parameter data are to be copied.

2 In the menu bar, click on **Edit** > **Copy**.

3 Select the file which is to be modified.

4 In the menu bar, click on **Edit** > **Paste**.

> **Analyzing/testing the instrument:**

✓ The required instrument file is selected.

1 Click on **Test/analyze transmitter** button.

2 Perform tasks:

Options
- · Carry out factory reset: Reset the parameter unit, scaling limits and adjustment to the factory settings (values device-specific, see type label).
- · Transmitter tests: Manually switch switching outputs to test functionality.
- · Min./max. values: Change to display of minimum/maximum values.

3 Click on **Apply** to confirm entries.

4 To leave the analyzing/test screen, click on **OK**.

> **Carrying out a 1-point adjustment:**

A 1-point adjustment (offset) can be performed. A dew point mirror is recommended as a reference measuring instrument for pressure dew point temperatures < 0 °Ctd.

1 Click on **Adjust transmitter** button.

2 Expose the reference measuring instrument and the instrument to be adjusted to the same constant conditions and wait for equalization period to lapse.

3 Enter reference value and perform adjustment by clicking on **Carry out 1-point adjustment**.

› To reset an offset value, click on **Set Offset to zero**.

4 Click on **Apply** to confirm entries.

➢ **Viewing a transmitter history:**

The current history data as stored in the instrument file are always displayed. A distinction is made between parameterization and adjustment histories.

ℹ Dates and times refer to the PC time when the P2A Software was being used.
History data are only stored in the instrument file (PC), not in the testo 6721.

1 Click on **Transmitter history** button.

2 To move between the views, click on **Parameterization history** or **Adjustment history**.

› To print the history data, click on **Print**.

➢ **Deleting parameters from an instrument/parameter file:**

The parameter data for the selected instrument/parameter file can be deleted.

✓ The required instrument/parameter file is selected.

1 Right-click on the instrument/parameter file.

2 Select **Delete**.

3 Click on **Yes** to confirm.

➢ **Creating a new folder:**

✓ The folder to which the new folder is to be added is selected.

1 In the menu bar, click on **File** > **Add Folder**.

2 Give the new folder a name.

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Tips and assistance

Questions and answers

Question	Possible causes/solutions
Connection to instrument cannot be established.	· Check connecting cable and plug contacts. · USB driver not/incorrectly installed: Re-install.
Adjustment is to be reversed.	· Carry out factory reset: Click on Test/analyze transmitter > click on Carry out factory reset.

If we could not answer your question, please contact your dealer or Testo Customer Service. Contact details can be found on the guarantee card or on the Internet at: www.testo.com

www.testo.com