

testo · Smart Probes

Instruction manual



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2 Safety and the environment

2.1. About this document

Use

- > Please read this documentation through carefully and familiarize yourself with the product before putting it to use. Pay particular attention to the safety instructions and warning advice in order to prevent injuries and damage to the products.
- > Keep this document to hand so that you can refer to it when necessary.
- > Hand this documentation on to any subsequent users of the product.

Symbols and writing standards

Representation	Explanation
$\overline{\mathbb{A}}$	Warning advice, risk level according to the signal word:
	Warning! Serious physical injury may occur.
	Caution! Slight physical injury or damage to the equipment may occur.
	Implement the specified precautionary measures.
i	Note: Basic or further information.
1 2	Action: more steps, the sequence must be followed.
>	Action: a step or an optional step.
	Result of an action.
Menu	Elements of the instrument, the instrument display or the program interface.
[OK]	Control keys of the instrument or buttons of the program interface.
	Functions/paths within a menu.
" "	Example entries

2.2. **Ensure safety**

- Do not operate the instrument if there are signs of damage at the housing, mains unit or feed lines.
- Do not perform contact measurements on non-insulated, live
- Do not store the product together with solvents. Do not use any desiccants.
- Carry out only the maintenance and repair work on this instrument that is described in the documentation. Follow the prescribed steps exactly. Use only original spare parts from Testo.
- Dangers may also arise from the systems being measured or the measuring environment: Note the safety regulations valid in your area when performing the measurements.

2.2.1. Safety and the testo 510i/605i/915i

- Magnetic field
- May be harmful to those with pacemakers.
- Keep a minimum distance of 10 cm between pacemaker and instrument.

2.2.2. Safety and the testo 605i

- Not for condensing atmospheres. For continuous application in high humidity (> 80 %RH at \leq 30 °C for > 12 h, > 60 %RH at > 30 °C for > 12 h), contact us
- The sensor must not be exposed to volatile chemicals such as solvents (e.g. ketene, ethanol, isopropyl alcohol, toluene) or organic compounds, especially in high concentrations and corresponding gases, over a prolonged period of time.

2.2.3. Safety and the testo 549i/552i

- Risk of injury due to pressurized, hot, cold or toxic refrigerants/media!
- Only to be used by qualified staff.
- > Wear protective goggles and safety gloves.
- Before applying pressure to the measuring instrument: always fix the instrument tightly onto the pressure connection
- Comply with the permissible measuring range (0 to 60 bar). Pay particular attention to this in systems with R744 refrigerant, since these are frequently operated at higher pressures!
- > Use with A2L refrigerants

Testo measuring instruments (as of July 2020) can be used in compliance with the prescribed laws, standards, directives and safety regulations for refrigeration systems and refrigerants as well as regulations of the manufacturers of refrigerants of safety group A2L as per ISO 817.

Regional standardization and interpretation must always be observed.

For example, DIN EN 378-Part 1-4 applies to the scope of the EN standards.

During maintenance work, the employer must ensure that a hazardous explosive atmosphere is prevented (see also TRBS1112, TRBS2152 VDMA 24020-3).

A hazardous and potentially explosive atmosphere must be anticipated during maintenance and repair work on refrigeration systems with flammable refrigerants (e.g. those of category A2L and A3).

Maintenance, repairs, removal of refrigerants and commissioning of systems may only be carried out by qualified personnel.

2.2.4. Safety and the testo 805i

- · Laser radiation! Class 2 laser
- > Do not look into the laser beam!

2.2.5. Safety and the testo 552i

 The testo 552i Smart Probe must not be connected if the pressure is higher than 5 bar. Otherwise, damage may occur.

2.3. Protecting the environment

- > Dispose of faulty rechargeable batteries/spent batteries in accordance with the valid legal specifications.
- At the end of its useful life, send the product to the separate collection for electric and electronic devices (observe local regulations) or return the product to Testo for disposal.

3 Specifications

Testo Smart Probes are different hand-held measuring instruments for various applications that communicate with your mobile terminal devices by means of an app. The respective Smart Probe performs the measurement and is operated by your mobile terminal device. The various Smart Probes allow you to measure the temperature, humidity, flow, and volume flow at the outlet, or perform pressure, differential pressure, and non-contact temperature measurements in the duct.

Product description 4

4.1. **Overview of Smart Probes**



- Measuring unit
- 2 LED
- 3 Key
- 4 Battery compartment (at the back)
- 5 Direction of flow testo 405i / testo 410i (not shown) (An arrow on the top of the housing displays the direction of flow in which the measuring instrument has been calibrated and which achieves the best measurement results. Please note the direction of flow during usage.)

4.2. **LED** status

LED status	Meaning
Flashing red	Low battery status
Flashing yellow	 Smart Probe is switched on. Smart Probe is searching for a BT connection, but is not connected.
Flashing green	Smart Probe is switched on.Bluetooth is connected.

5 First steps

5.1. Switching on/off



5.1.1. Switching on

- 1. Pull the film out of the battery compartment.
- 2. Press the button on your Smart Probe.
- The Smart Probe switches on.

5.1.2. Switching off

- 1. Press and hold the button on your Smart Probe.
- The Smart Probe switches off.

Establishing Bluetooth® connection 5.2.

i You need a tablet or smartphone with the Testo SMART App already installed on it to be able to establish a Bluetooth connection.

> You can get the App for iOS instruments in the App Store or for Android instruments in the Play Store.

Compatibility:

- requires iOS 12.0 or later/Android 6.0 or later
- requires Bluetooth 4.2
 - √ The Testo SMART App is installed on your terminal device and ready for use.
 - 1. Press the button on the Smart Probe.
 - The Smart Probe switches on.

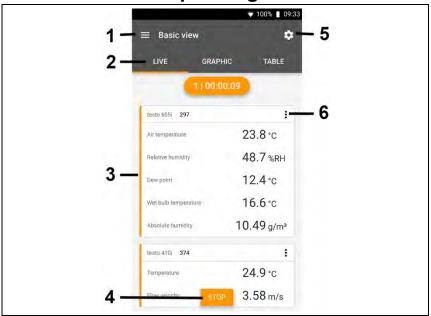
- The LED flashes yellow while connecting via Bluetooth and then flashes green once the connection is established.
- The connection between the Smart Probe and your mobile terminal device is established.

5.3. Transmitting readings

- √ The Smart Probe is switched on and connected to your mobile terminal device via Bluetooth.
- The current readings are automatically displayed in the App.

6 **Using the App**

6.1. Overview of operating controls



- Choice of applications.
- 2 Switch between the views (list, graphic diagram, table)
- Display of connected Smart Probes including readings
- Start/stop
- Measurement configuration (the menu changes depending on the Smart Probe connected and the application selected)
- Smart Probe configuration

6.2. **App options**

6.2.1. Set "Language"

- 1. Tap -> Settings -> Language.
- A selection list is displayed.
- 2. Tap the required language.
- The language has been changed.

6.2.2. **Display Tutorial**

- The Tutorial guides you through the first steps when operating the Testo SMART App.
 - 1. Tap -> Help & Information -> Tutorial
 - The Tutorial is displayed. In Tutorial, swipe to display the next
 - 2. Tap X to close the Tutorial.

6.2.3. **Display App Info**

- In App Info you can find the version number of the installed App. i
 - 1. Tap -> Help & Information -> Instrument information
 - The App's version number is displayed, as well as the ID.

6.3. **Application menus**

6.3.1. Selecting the application menu

- 1. Press
- A selection of menus for various applications is displayed.
- 2. Select the required application.
- The selection disappears and your selected application is displayed.

6.3.2. Setting favourites

- 1. Press
- A selection of applications is displayed.
- 2. Press next to the application that you would like to designate as a favourite.
- The asterisk is displayed in orange *

6.3.3. Displaying information about an application

- A selection of applications is displayed.
- 2. Press (i).
- The information about an application is displayed.

6.4. Smart Probe settings

- 1. Press = -> Sensors.
- Select the Smart Probe to display the details you would like to
- A list with details about the Smart Probe appears in the Information tab.
- 4. You can activate the damping in the Settings tab.



If the readings fluctuate wildly, it is advisable to damp the readings.

- The probe is connected to the SMART App.
- Click on .
- Main menu opens.
- Click on Sensors.
- The Sensors menu opens.
- Click on the required sensor.
- Information is displayed about the model, order number, serial number and firmware version.
- Click on the Settings tab.
- The settings window opens.
- Enable Activate damping using the slider.
- Click on Average of the measured values.
- Window for Average of the measured values opens.
- Enter a value between 2 and 20 seconds.

6.5. testo 115i/915i - Surface increment



Surface probes withdraw heat from the measured surface immediately after the initial contact. This makes the measurement result lower than

the true surface temperature without the probe (or the reverse if the surface is colder than the environment). This effect can be corrected by an increment in % of the reading.

- 1 Click on .
- Main menu opens.
- ▶ The Sensors menu opens.
- 3 Click on the required sensor.
- Information is displayed about the model, order number, serial number and firmware version.
- 4 Click on the Settings tab.
- ▶ The settings window opens.
- 5 Click on Use surface increment.
- 6 Enable Activate surface increment using the slider.

6.6. List, graphic diagram and table view

The available readings can be displayed in different ways in the various views.

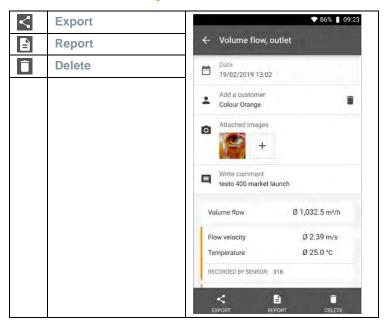
- List view
 - Displays the readings transmitted by the Smart Probe in the form of a list. Readings from all connected Smart Probes are displayed here.
- Graphic diagram view
 The graphical progression of up to form
 - The graphical progression of up to four different readings can be displayed. Tap on a reading above the diagram to select the readings to be displayed.
- Table view
 - In the Table view, all readings are displayed in sequence according to date and time. The different readings from the individual Smart Probes can be selected by pressing \blacktriangleleft \blacktriangleright .

6.7. Settings view

- 1. Press and select Edit View.
- An overview of parameters is displayed.
- 2. Deselect the check mark to hide a Smart Probe reading.
- 3. Press ▼ to select the unit for a reading.
- 4. Press OK to confirm your settings

6.8. Exporting readings

1. Press --> Memory --> Select measurement.



6.8.1. Excel (CSV) Export

- 1. Press ≤.
- A selection of export options appears.
- 2. Press Start export.
- A selection of sending/export options appears.
- 3. Select your required sending/export options.

6.8.2. PDF Export

- 1 Click on Report.
- A selection window is displayed.
- 2 If required, activate the Create PDF with all readings button.
- 3 Click on Create.

restrictions.

- For measurements, please be aware that the option Create PDF with all readings is only possible up to 30 pages, due to the resulting file size and number of pages. In the testo DataControl software, however, PDF reports can be created for all measurements without any
 - A report containing all the information is created.
 - A selection window is displayed. The report can be sent via e-mail or Bluetooth®.
 - Click on e-mail or Bluetooth®.
 - The report will be sent.

Maintaining the product

7.1. **Maintaining Smart Probes**

Cleaning the instrument

- > Do not use any aggressive cleaning agents or solvents!
- Mild household cleaning agents or soap suds may be used.
- If the housing of the instrument is dirty, clean it with a damp cloth.

Keeping connections clean

> Keep connections clean and free of grease and other deposits, clean with a damp cloth as required.

Ensuring measuring accuracy

- Customer Service would be glad to further assist you if you
- Keep within the permissible measuring range!
- Calibrate instrument regularly (recommendation: once a

7.2. Smart Probes App

The Testo SMART App is kept updated via the Play Store for Android devices and the App Store for iOS devices. Please update the App as soon as a new update is available. We therefore recommend that you do not disable automatic notifications when new updates are available.

Tips and assistance 8

8.1. **Questions and answers**

Question	Answer
LED flashes red	Batteries are almost spent.
	Change batteries.
The instrument	Remaining battery capacity insufficient
switches itself off	> Change the batteries.
lights up instead of	Outside the permissible measuring range.
the measurement	> Keep within the permissible measuring range.
parameter display	or
	Sensor is defective
	> Contact your Service department.
The App cannot be	No correct search terms were entered.
found in the store	> Enter an unambiguous search term, e.g.: "testo Smart Probes" or use the link on the website.
	or
	Your mobile terminal device does not meet the technical requirements (iOS 12.0 or later, Android 6.0 or later / Bluetooth 4.2 (Low Energy))
	> Please check the technical data for your mobile terminal device

Accessories and spare parts 8.2.

Designation	Item number
testo Smart Case (Refrigeration) for storing and transporting 2 \times testo 115i and 2 \times testo 549i, dimensions 250 \times 180 \times 70 mm	0516 0240
testo Smart Case (Heating) for storing and transporting testo 115i, testo 410i, testo 510i, testo 549i and testo 805i, dimensions 250 x 180 x 70 mm	0516 0270
testo Smart Case (VAC) for storing and transporting testo 405i, testo 410i, testo 510i, testo 605i testo 805i and testo 905i, dimensions 270 × 190 × 60 mm	0516 0250
testo Smart Case (temperature) for the storage and transportation of testo 915i and plug-in probes, dimensions 250 x 180 x 70 mm	0516 0032

Technical data 9

9.1. Bluetooth module

i The use of the wireless module is subject to the regulations and stipulations of the respective country of use, and the module may only be used in each case in countries for which a country certification has been granted.

The user and every owner undertake to adhere to these regulations and prerequisites for use, and acknowledge that the re-sale, export, import, etc. in particular in, to or from countries without wireless permits, is their responsibility.

9.2. General technical data

All accuracy specifications apply at a nominal temperature of 22 °C.

9.2.1. testo 905i

Feature	Values
Measuring range	-50 to 150 °C / -58 to 302 °F
Accuracy ± 1 digit	± 1 °C / ± 1.8 °F
Resolution	0.1 °C / 0.1 °F
Measurement rate	1/sec
Available units of measurement	°C, °F
Storage temperature	-20 °C to 60 °C / -4 to 140 °F
Operating temperature	-20 °C to +50 °C / -4 to 122 °F
Battery type	3 micro batteries AAA
Battery life	150 h
Dimensions	222 mm × 30 mm × 24 mm Probe shaft length 100 mm Probe shaft diameter 4 mm
Directives, standards and tests	EU guideline: 2014/30/EU RED: 2014/53/EU RoHS: 2011/65/EU + (EU) 2015/863

9.2.2. testo 410i

Feature	Values
Measuring range	0.4 to 30 m/s / 80 to 5,900 fpm -20 to 60 °C / -4 to 140 °F
Accuracy ± 1 digit	± (0.2 m/s + 2% of m.v.) (0.4 to 20 m/s) ± (40 fpm + 2% of m.v.) (80 to 4,000 fpm) ± 0.5 °C / ±0.9 °F
Resolution	0.1 °C / 0.1 °F 0.1 m/s / 1 fpm
Measurement rate	1/sec
Available units of measurement	°C, °F, m/s, fpm, m³/h, cfm, l/s
Storage temperature	-20 °C to 60 °C / -4 to 140 °F
Operating temperature	-20 °C to +50 °C / -4 to 122 °F
Battery type	3 micro batteries AAA
Battery life	130 h
Dimensions	154 mm × 43 mm × 21 mm 30 mm vane diameter
Directives, standards and tests	EU guideline: 2014/30/EU RED: 2014/53/EU RoHS: 2011/65/EU + (EU) 2015/863

9.2.3. testo 405i

Feature	Values
Measuring range ¹	0 to 30 m/s / 0 to 5,900 fpm -20 to 60 °C / -4 to 140 °F
Accuracy ± 1 digit	± (0.1 m/s + 5% of m.v.) (0 to +2 m/s) ± (0.3 m/s + 5% of m.v.) (2 to +15 m/s) ± (20 fpm + 5% of m.v.) (0 to +394 fpm) ± (59 fpm + 5% of m.v.) (394 to +3.000 fpm) ± 0.5 °C / ±0.9 °F

¹ Please switch on the Smart Probe in the following ambient conditions: > 10 °C, air velocity 0 m/s = protective cap closed to enable the sensor to heat up.

9 Technical data

Feature	Values
Resolution	0.01 m/s / 1 fpm
	0.1 °C / 0.1 °F
Measurement rate	1/sec
Available units of measurement	°C, °F, m/s, fpm, m³/h, cfm, l/s
Storage temperature	-20 °C to 60 °C / -4 to 140 °F
Operating temperature	-20 °C to +50 °C / -4 to 122 °F
Battery type	3 micro batteries AAA
Battery life	15 hrs
Dimensions	200 mm × 30 mm × 41 mm
	Extendible telescope 400 mm
	Probe shaft diameter 12 mm
	Probe tip diameter 9 mm
Directives, standards	EU guideline: 2014/30/EU
and tests	RED: 2014/53/EU
	RoHS: 2011/65/EU + (EU) 2015/863

9.2.4. testo 549i

Feature	Values
Measuring range	0 to 60 bar (rel) / 0 to 870 psi (rel)
Overpressure	65 bar
Accuracy ± 1 digit	0.5% of full scale value
Resolution	0.01 bar / 0.1 psi
Measurement rate	2/sec
Available units of measurement	bar, psi, MPa, kPa
Connection	1x 7/16" UNF / 1/4" SAE connection
Overload rel.	65 bar
Storage temperature	-20 °C to 60 °C / -4 to 140 °F
Operating temperature	-20 °C to +50 °C / -4 to 122 °F
Battery type	3 micro batteries AAA
Battery life	130 hrs
Measurable media	CFC, HFC, HCFC, N, H20, CO2

Feature	Values
Dimensions	152 mm x 35 mm x 35 mm
Directives, standards and tests	EU guideline: 2014/30/EU RED: 2014/53/EU RoHS: 2011/65/EU + (EU) 2015/863

9.2.5. testo 805i

Feature	Values
Measuring range	-30 °C to 250 °C / -22 to 482 °F
Accuracy ± 1 digit	± 1.5 °C or ± 1.5% of m.v. (0 to 250 °C) ± 2.0 °C (-20.0 to -0.1 °C) ± 2.5 °C (-30.0 to -20.1 °C)
	± 2.7 °F or ± 1.5% of m.v. (32 to 482 °F) ± 3.6 °F (-4 to 32 °F) ± 4.5 °F (-22 to -4 °F)
Resolution	0.1 °C / 0.1 °F
Measurement rate	2/sec
Available units of measurement	°C, °F
Connection	7/16" – UNF
Storage temperature	-20 °C to 60 °C / -4 to 140 °F
Operating temperature	-10 °C to +50 °C / 14 to 122 °F
Battery type	3 micro batteries AAA
Battery life	30 hrs
Optics	10:1
Laser marking	Diffraction lens as laser marking (laser circle)
Dimensions	140 mm × 36 mm × 25 mm
Emission level	Adjustable from 0.1 to 1.0
Directives, standards and tests	EU guideline: 2014/30/EU RED: 2014/53/EU RoHS: 2011/65/EU + (EU) 2015/863

9.2.6. testo 605i

Feature	Values	
Measuring range	-20 to 60 °C, -4 to 140 °F, 0 to 100% RH	
Accuracy ± 1 digit	±0.8 °C (-20 0 °C) / ±1.44 °F (-4 32 °F) ±0.5 °C (0 +60 °C) / ±0.9 °F (32 140 °F)	
	± 3.0 %RH (10%RH35%RH)	
	± 2.0 %RH (35%RH65%RH)	
	± 3.0 %RH (65%RH90%RH)	
	± 5.0 %RH (<10%RH or >90%RH)	
	@ 25°C ±1°C	
	Hysteresis: ± 1.0 %RH	
	Long term stability/year :± 1.0 %RH/year	
Resolution	0.1 °F / 0.1 °C	
	0.1% RH	
Measurement rate 1/sec		
Available units of measurement	°C, °F, %RH, °Ctd, °Ftd, wetbulb °C, wetbulb °F	
Storage temperature	-20 °C to 60 °C / -4 to 140 °F	
Operating temperature	-20 °C to +50 °C / -4 to 122 °F	
Battery type	3 micro batteries AAA	
Battery life	150 h	
Dimensions	218 mm × 30 mm × 27 mm	
	Probe shaft length 90 mm	
Directives, standards	EU guideline: 2014/30/EU	
and tests	RED: 2014/53/EU	
	RoHS: 2011/65/EU + (EU) 2015/863	

9.2.7. testo 510i

Feature	Values
Measuring range	-150 150 hPa / 60 in wc
Accuracy ± 1 digit	± 0.05 hPa (0 to 1.00 hPa) / ± 0.02 in wc (0 to 0.4 in wc) ± 0.2 hPa + 1.5% of m.v. (1.01 to 150 hPa) ± 0.08 in wc + 1.5% of m.v. (0.41 to 60 in wc)
Overpressure	500 mbar

Feature	Values
Resolution	0.01 hPa / 0.01 inch wc
Measurement rate	2/sec
Available units of measurement	mbar, hPa, Pa, mmHg, inHg, in WC, psi, mmWC In conjunction with Pitot tube (optional): m/s, fpm, m³/h, cfm, l/s
Storage temperature	-20 °C to 60 °C / -4 to 140 °F
Operating temperature	-20 °C to +50 °C / -4 to 122 °F
Battery type	3 micro batteries AAA
Battery life	150 hrs
Dimensions	148 × 36 × 23 mm
Directives, standards and tests	EU guideline: 2014/30/EU RED: 2014/53/EU RoHS: 2011/65/EU + (EU) 2015/863

9.2.8. testo 115i

Feature	Values
Measuring range	-40 to 150 °C / -58 to 302 °F
Accuracy ± 1 digit	± 1.3 °C (-20 to 85 °C) ± 2.34 °F (-4 to 185 °F)
Resolution	0.1 °C / 0.1 °F
Measurement rate	1/sec
Available units of measurement	°C, °F
Storage temperature	-20 °C to 60 °C / -4 to 140 °F
Operating temperature	-20 °C to +50 °C / -4 to 122 °F
Battery type	3 micro batteries AAA
Battery life	150 h
Dimensions	183 mm × 90 mm × 30 mm max. 35 mm pipe diameter
Directives, standards and tests	EU guideline: 2014/30/EU RED: 2014/53/EU RoHS: 2011/65/EU + (EU) 2015/863

9.2.9. testo 915i

9.2.9. testo 9151		
Feature	Values	
Measuring range: handle (0560 1915)	-60 to +1000 °C -76 to +1832 °F	
Measuring range with TC probe 0602 1093	-50 to +400 °C -58 to +752 °F	
Measuring range with TC probe 0602 2093	-50 to +350 °C -58 to +662 °F	
Measuring range with TC probe 0602 3093	-50 to +400 °C -58 to +752 °F	
Measuring range with TC probe 0602 4093	-50 to +400 °C -58 to +752 °F	
Accuracy ± 1 digit: handle (0560 1915)	±(0.5 °C + 0.3% of m.v.) ±(0.9 °F + 0.3% of m.v.)	
Accuracy ± 1 digit: handle with TC probe 0602 1093	±1.0 °C (-50 °C to 100 °C) ±1% of m.v. (remaining meas. range) ±1.8 °F (-58 °C to 212 °F) ±1% of m.v. (remaining meas. range)	
Accuracy ± 1 digit: handle with TC probe 0602 2093	±(1.0 + 1% of m.v.) °C ±(1.8 + 1% of m.v.) °F	
Accuracy ± 1 digit: handle with TC probe 0602 3093	±1.0 °C (-50 °C to 100 °C) ±1% of m.v. (remaining meas. range) ±1.8 °F (-58 °C to 212 °F) ±1% of m.v. (remaining meas. range)	
Accuracy ± 1 digit: handle with TC probe 0602 4093	±1.0 °C (-30 °C to +80 °C) ±(0.7 + 1% of m.v.)(-50 to -30 °C) ±(0.2 + 1% of m.v.) (+80 °C to 400 °C) ±1.8 °F (-22 °F to +186 °F) ±(1.3 + 1% of m.v.)(-58 °F to -22 °F) ±(0.4 + 1% of m.v.)(+186 °F to +752 °F)	
Resolution	0.1 °C / 0.1 °F	
Available units of measurement	°C, °F	
Storage temperature	-20 °C to 60 °C / -4 to 140 °F	
Operating temperature	-20 °C to + 50 °C / -4 to 122 °F	

Feature	Values
Battery type	3 AAA batteries
Battery life	150 h
Dimensions of handle	129 x 31 x 31 mm
Directives, standards and tests	EU Directive: 2014/30/EU RED: 2014/53/EU RoHS: 2011/65/EU + (EU) 2015/863

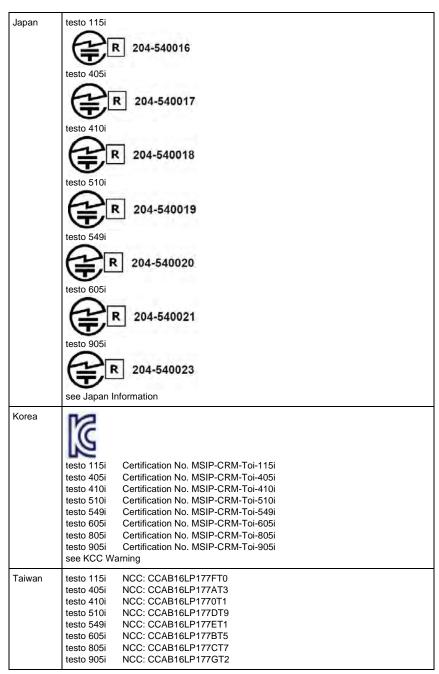
9.2.10. testo 552i

Feature	Values	
Measuring range	0 to 26.66 mbar	
	0 to 20000 microns	
Accuracy ± 1 digit	±10 microns + 10% of m.v. (100 to 1000 microns)	
Resolution	1 micron (0 to 1000 microns) /	
	10 microns (1000 to 2000 microns) /	
	100 microns (2000 to 5000 microns)	
Measurement rate	1/sec	
Available units of measurement	bar, psi, MPa, kPa	
Storage temperature	-20 °C to 50 °C / -4 to 122 °F	
Operating temperature	-10 °C to + 50 °C / -14 to 122 °F	
	PA66 +30 % GF TPE, P	
Protection class	IP 54	
Battery type	3 AAA batteries	
Battery life	39 h	
Connection	7/16" UNF	
Dimensions	155 x 35 x 35 mm	
	6.10 x 1.38 x 1.38 inch	
Directives, standards	EU Directive: 2014/30/EU	
and tests	RED: 2014/53/EU	
	RoHS: 2011/65/EU + (EU) 2015/863	

Module Lierda L Series BLE Module

Product	testo 115i, testo 405i, testo 410i, testo 510i, testo 549i, testo 605i, testo 805i, testo 905i	
MatNo.	0560 1115, 0560 1405, 0560 1410, 0560 1510, 0560 1549, 0560 1605, 0560 1805, 0560 1905	
Country	Comments	
Australia	E 1561	
Brazil	April Aracour de Resemble (april Aracour de Resemble (april April Aracour de Resemble (april Aracour d	
Canada	Product IC ID: testo 115i	
China	CMII ID: testo 115i	

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	testo 549i CMIIT ID: 2015DP6560 testo 605i CMIIT ID: 2015DP6561 testo 805i CMIIT ID: 2015DP6562 testo 905i CMIIT ID: 2015DP6563
Europa + EFTA	The EU Declaration of Conformity can be found on the testo homepage under the product specific downloads. EU countries: Belgium (BE), Bulgaria (BG), Denmark (DK), Germany (DE), Estonia (EE), Finland (FI), France (FR), Greece (GR), Ireland (IE), Italy (IT), Latvia (LV), Lithuania (LT), Luxembourg (LU), Malta (MT), Netherlands (NL), Austria (AT), Poland (PL), Portugal (PT), Romania (RO), Sweden (SE), Slovakia (SK), Slovenia (SI), Spain (ES), Czech Republic (CZ), Hungary (HU), United Kingdom (GB), Republic of Cyprus (CY). EFTA countries: Iceland, Liechtenstein, Norway, Switzerland
Hongkong	Authorized



Turkey	Authorized	
USA	Product FCC ID: testo 115i	
Russia	Authorized	
Philippines	Authorized	
South Africa	testo 115i TA-2016/1207 testo 405i TA-2016/1201 testo 410i TA-2016/1200 testo 510i TA-2016/1199 testo 549i TA-2016/1198 testo 605i TA-2016/1204 testo 805i TA-2016/1206 testo 905i TA-2016/1205	
Bluetooth SIG List	Bluetooth®	Range 15 m (free field) (varies with the used mobile device)
	Bluetooth® type	LSD Science & Technology Co., Ltd L Series BLE Module (08 Mai 2013) based on TI CC254X chip
	Qualified Design ID	B016552
	Bluetooth® radio class	Class 3
	Bluetooth® company ID	10274

IC Warnings

This instrument complies with Part 15C of the FCC Rules and Industry Canada RSS-210 (revision 8). Commissioning is subject to the following two conditions:

- (1) This instrument must not cause any harmful interference and
- (2) this instrument must be able to cope with interference, even if this has undesirable effects on operation.

Cet appareil satisfait à la partie 15C des directives FCC et au standard Industrie Canada RSS-210 (révision 8). Sa mise en service est soumise aux deux conditions suivantes :

- (1) cet appareil ne doit causer aucune interférence dangereuse et
- (2) cet appareil doit supporter toute interférence, y compris des interférences qui provoquerait des opérations indésirables.

FCC Warnings

Information from the FCC (Federal Communications Commission)

For your own safety

Shielded cables should be used for a composite interface. This is to ensure continued protection against radio frequency interference.

FCC warning statement

This equipment has been tested and found to comply with the limits for a Class C digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Caution

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. Shielded interface cable must be used in order to comply with the emission limits.

Warning

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions:

- (1) this device may not cause harmful interference, and
- (2) this device must accept any interference received,

including interference that may cause undesired operation.

KCC Warning

해당 무선 설비는 운용 중 전파혼신 가능성이 있음

Japan Information

当該機器には電波法に基づく、技術基準適合証明等を受けた特定無線設備を装着している。

Module Lierda LSD4BT-S37

Product	testo 115i, testo 549i, testo 605i
MatNo.	0560 2115, 0560 2549, 0560 2605
Date	29.03.2021

ightharpoonup The use of the wireless module is subject to the regulations and stipulations of the respective country of use, and the module may only be used in countries for which a country certification has been granted. The user and every owner has the obligation to adhere to these regulations and prerequisites for use, and acknowledges that the re-sale, export, import etc. in particular in countries without wireless permits, is his responsibility.

without wireless permits, is his responsibility.		
Country	Comments	
Australia		E 1561
Brazil	testo 605i: ANAT Agioresi Macional dei Toleconsur 04851-19-04701	EL nergeons
	testo 549i: Agricia Nacional de Biliconnul 04852-19-04701	
	testo 115i Agencia Nacional de Toleccon 04853-19-0470	
	Este equipamento não tem direito à prote não pode causar interferência em sistema	
Canada	Product IC ID: testo 115i: IC: 6127B-05602115 testo 549i: IC: 6127B-05602549 testo 605i: IC: 6127B-05602605 see IC Warnings	

China	testo 115i: CMIIT ID: 2020DJ5843	
	testo 549i: CMIIT ID: 2020DJ5838 testo 605i: CMIIT ID: 2020DJ5782	
	16310 0031. GWITT 1D. 2020D33702	
	The EU Declaration of Conformity can be found on the testo homepage under the product specific downloads.	
Europa + EFTA	EU countries: Belgium (BE), Bulgaria (BG), Denmark (DK), Germany (DE), Estonia (EE), Finland (FI), France (FR), Greece (GR), Ireland (IE), Italy (IT), Latvia (LV), Lithuania (LT), Luxembourg (LU), Malta (MT), Netherlands (NL), Austria (AT), Poland (PL), Portugal (PT), Romania (RO), Sweden (SE), Slovakia (SK), Slovenia (SI), Spain (ES), Czech Republic (CZ), Hungary (HU), United Kingdom (GB), Republic of Cyprus (CY).	
	EFTA countries: Iceland, Liechtenstein, Norway, Switzerland	
	WEEE Reg. no.: DE 75334352	
India	Authorized	
Malaysia	Type Approval Code: testo 115i: RGJP/21A/0321/S(21-1021) testo 549i: RGJP/19A/0321/S(21-1022) testo 605i: RGNH/02A/0321/S(21-1024)	
South Africa	testo 115i: TA-2019/546 testo 549i: TA-2019/548 testo 605i: TA-2019/547	
Turkey	Authorized	
UAE	testo 605i: ER78468/20	
USA	testo 115i: WAF-05602115 testo 549i: WAF-05602549 testo 605i: WAF-05602605 see FCC Warnings	

Bluetooth*	Feature	Values
Information	Bluetooth® range	Open air: typical 100 m
	radio type	Bluetooth® Low Energy (BLE) 4.2
	Bluetooth® radio class	1
	Bluetooth® company	LSD Science & Technology Co., Ltd Lierda LSD4BT_S37
	RF Band	BT LE: 2402 – 2480MHz
	power output [E.I.R.P]	BT LE: 16.94dBm
Bluetooth® SIG List	Feature	Values
	Declaration ID	D043363
	member company	Testo SE & Co. KGaA

IC Warnings

RSS-Gen & RSS-247 statement:

This device complies with Industry Canada licence-exempt RSS standard(s). Operation is subject to the following two conditions:

- (1) this device may not cause interference, and
- (2) this device must accept any interference, including interference that may cause undesired operation of the

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence. L'exploitation est autorisée aux deux conditions suivantes :

- (1) l'appareil ne doit pas produire de brouillage, et
- (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Caution: Radio Frequency Radiation Exposure

This equipment complies with IC radiation exposure limits set forth for an uncontrolled environment and meets the IC radio frequency (RF) Exposure Guidelines. This equipment should be installed and operated keeping the radiator at least 20 cm or more away from person's body in normal use position to ensure compliance with RF exposure requirement.

Co-Location:

This transmitter must not be co-located or operated in conjunction with any other antenna or transmitter.

Attention : exposition au rayonnement de radiofréquences

Cet équipement est conforme aux limites d'exposition aux radiofréquences IC fixées pour un environnement non contrôlé et aux Lignes directrices relatives à l'exposition aux radiofréquences (RF). Cet équipement doit être installé et utilisé en gardant le radiateur à une distance d'au moins 20 cm du corps humain en position normale d'utlisation pour garantir la conformité a d'exposition aux RF.

Co-location

Ce transmetteur ne peut pas être installé en colocation ou être utilisé avec une autre antenne ou transmetteur, quel qu'en soit le type.

FCC Warnings

Information from the FCC (Federal Communications Commission)

For your own safety

Shielded cables should be used for a composite interface. This is to ensure continued protection against radio frequency interference.

FCC warning statement

This equipment has been tested and found to comply with the limits for a Class C digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. Shielded interface cable must be used in order to comply with the emission limits.

This device complies with Part 15 of the FCC Rules.

Operation is subject to the following two conditions:

- (1) this device may not cause harmful interference, and
- (2) this device must accept any interference received,

including interference that may cause undesired operation.

Caution: Radio Frequency Radiation Exposure

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment and meets the FCC radio frequency (RF) Exposure Guidelines. Exposure Guidelines. This equipment should be installed and operated keeping the radiator at least 20 cm or more away from person's body in normal use position to ensure compliance with RF exposure requirement.

Co-Location:

This transmitter must not be co-located or operated in conjunction with any other antenna or transmitter.

MatNo.	0560 2115 55
型号	0560 2549 55
至り	0560 2605 55

Country	Comments	Comments	
Japan	Contains Lierda S37 BLE R 201-200983 see Japan Information	•	
South Korea	testo 549i: R-R-TTT-testo	testo 115i: R-R-TTT-testo115i testo 549i: R-R-TTT-testo549i testo 605i: R-R-TTT-testo605i	
Bluetooth® Information	Feature 特征与参数 Bluetooth® range / 范围 power output 输出功率	Values 数值 up to100m (328 feet) (free field /无障碍场地) 9.37dBm	

KCC Warning

해당 무선 설비는 운용 중 전파혼신 가능성이 있음.

Japan Information

当該機器には電波法に基づく、技術基準適合証明等を受けた特定無線設 備を装着している。

Product	testo 552i
产品名称	
MatNo. 型号	0564 1552
Date 日期	22.02.2021

ightharpoonup The use of the wireless module is subject to the regulations and stipulations of the respective country of use, and the module may only be used in countries for which a country certification has been granted. The user and every owner has the obligation to adhere to these regulations and prerequisites for use, and acknowledges that the re-sale, export, import etc. in particular in countries without wireless permits, is his responsibility.

Country	Comment	
Australia	€ 1561	
Canada	IC ID: 6127B-05641552	
	See IC Warnings	
Europa + EFTA	CE	
	The EU Declaration of Conformity can be found on the testo homepage under the product specific downloads.	
	EU countries: Belgium (BE), Bulgaria (BG), Denmark (DK), Germany (DE), Estonia (EE), Finland (FI), France (FR), Greece (GR), Ireland (IE), Italy (IT), Latvia (LV), Lithuania (LT), Luxembourg (LU), Malta (MT), Netherlands (NL), Austria (AT), Poland (PL), Portugal (PT), Romania (RO), Sweden (SE), Slovakia (SK), Slovenia (SI), Spain (ES), Czech Republic (CZ), Hungary (HU), United Kingdom (GB), Republic of Cyprus (CY).	
	EFTA countries: Iceland, Liechtenstein, Norway, Switzerland	
	WEEE Reg. no.: DE 75334352	
Hongkong	Authorized	
South Africa	TA-2020/8013	
South Korea	R-R-te2-05641552	
	See KCC Warning	
Turkey	Authorized	

USA	FC FCC ID: WAF-0564 See FCC Warnings	1552
Bluetooth®	Feature	Values
Information	特征与参数	数值
	Bluetooth® range / 范围	up to150m (490 feet) (free field /无障碍场地)
	radio type 型号	Bluetooth® Low Energy (BLE) 4.2
	company 制造商	LSD Science & Technology Co., Ltd Lierda LSD4BT_S37
	RF Band 射频频段	2402 – 2480MHz
	power output 输出功率	15.22dBm
Bluetooth®	Feature	Values
SIG Listing	特征与参数	数值
	Declaration ID	D043363
	member company	Testo SE & Co. KGaA

IC Warnings

CAN ICES-003(B)/NMB-003(B):

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe [B] est conforme à la norme NMB-003 du Canada.

RSS-Gen & RSS-247 statement:

This device complies with Industry Canada licence-exempt RSS standard(s).

Operation is subject to the following two conditions:

- (1) this device may not cause interference, and
- (2) this device must accept any interference, including interference that may cause undesired operation of the device

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts de licence.

L'exploitation est autorisée aux deux conditions suivantes :

- (1) l'appareil ne doit pas produire de brouillage, et
- (2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

Caution: Radio Frequency Radiation Exposure

This equipment complies with IC radiation exposure limits set forth for an uncontrolled environment and meets the IC radio frequency (RF) Exposure Guidelines. This equipment should be installed and operated keeping the radiator at least 20 cm or more away from person's body in normal use position to ensure compliance with RF exposure requirement.

Co-Location:

This transmitter must not be co-located or operated in conjunction with any other antenna or

Attention : exposition au rayonnement de radiofréquences

Cet équipement est conforme aux limites d'exposition aux radiofréquences IC fixées pour un environnement non contrôlé et aux Lignes directrices relatives à l'exposition aux radiofréquences (RF). Cet équipement doit être installé et utilisé en gardant le radiateur à une distance d'au moins 20 cm du corps humain en position normale d'utlisation pour garantir la conformité a d'exposition aux RF.

Co-location

Ce transmetteur ne peut pas être installé en colocation ou être utilisé avec une autre antenne ou transmetteur, quel qu'en soit le type.

FCC Warnings

Information from the FCC (Federal Communications Commission)

For your own safety

Shielded cables should be used for a composite interface. This is to ensure continued protection against radio frequency interference.

FCC warning statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- · Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is
- Consult the dealer or an experienced radio/TV technician for help.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. Shielded interface cable must be used in order to comply with the emission limits.

Warning

This device complies with Part 15 of the FCC Rules.

Operation is subject to the following two conditions:

- (1) this device may not cause harmful interference, and
- (2) this device must accept any interference received.

including interference that may cause undesired operation.

Caution: Radio Frequency Radiation Exposure

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment and meets the FCC radio frequency (RF) Exposure Guidelines. This equipment should be installed and operated keeping the radiator at least 20 cm or more away from person's body in normal use position to ensure compliance with RF exposure requirement.

Co-Location:

This transmitter must not be co-located or operated in conjunction with any other antenna or

KCC Warning

해당 무선 설비는 운용 중 전파혼신 가능성이 있음。

Product	testo 915i
产品名称	
MatNo. 型号	0560 1915
Date 日期	21.01.2021

ightharpoonup The use of the wireless module is subject to the regulations and stipulations of the respective country of use, and the module may only be used in countries for which a country certification has been granted. The user and every owner has the obligation to adhere to these regulations and prerequisites for use, and acknowledges that the re-sale, export, import etc. in particular in countries without wireless permits, is his responsibility.

Country	Comments	
Australia	E 1561	
Canada	IC ID: 6127B-05601915 See ISED Warnings	
Europa + EFTA	The EU Declaration of Conformity can be found on the testo homepage under the product specific downloads.	
	EU countries: Belgium (BE), Bulgaria (BG), Denmark (DK), Germany (DE), Estonia (EE), Finland (FI), France (FR), Greece (GR), Ireland (IE), Italy (IT), Latvia (LV), Lithuania (LT), Luxembourg (LU), Malta (MT), Netherlands (NL), Austria (AT), Poland (PL), Portugal (PT), Romania (RO), Sweden (SE), Slovakia (SK), Slovenia (SI), Spain (ES), Czech Republic (CZ), Hungary (HU), United Kingdom (GB), Republic of Cyprus (CY).	
	EFTA countries: Iceland, Liechtenstein, Norway, Switzerland WEEE Reg. no.: DE 75334352	
Hongkong	Authorized	
Hongkong South Korea	R-R-te2-05601915 See KCC Warning	
Turkey	Authorized	

USA	FCC ID: WAF-05601915 See FCC Warnings	
Bluetooth®	Feature	Values
Information	特征与参数	数值
	Bluetooth® range / 范围	up to150m (490 feet) (free field /无障碍场地)
	radio type 型号	Bluetooth® Low Energy (BLE) 4.2
	company 制造商	LSD Science & Technology Co., Ltd Lierda LSD4BT_S37
	RF Band 射频频段	2402 – 2480MHz
	power output 输出功率	13.70dBm
Bluetooth®	Feature	Values
SIG Listing	特征与参数	数值
	Declaration ID	D043363
	member company	Testo SE & Co. KGaA

EU SAR Information

The SAR limit of Europe is 2.0 W/kg. The highest SAR value reported for 0560 1915 under testing standard for use in hand is 0.275W/kg.

This device and its antenna(s) must not be co-located or operating in conjunction with any other antenna or transmitter.

ISED Warnings

CAN ICES-003(B)/NMB-003(B):

This Class B digital apparatus complies with Canadian ICES-003.

Cet appareil numérique de la classe [B] est conforme à la norme NMB-003 du Canada.

RSS-Gen & RSS-247 statement:

This device complies with Industry Canada licence-exempt RSS standard(s).

Operation is subject to the following two conditions:

- (1) this device may not cause interference, and
- (2) this device must accept any interference, including interference that may cause undesired operation of the device.

Le présent appareil est conforme aux CNR d'Industrie Canada applicables aux appareils radio exempts

L'exploitation est autorisée aux deux conditions suivantes :

(1) l'appareil ne doit pas produire de brouillage, et

(2) l'utilisateur de l'appareil doit accepter tout brouillage radioélectrique subi, même si le brouillage est susceptible d'en compromettre le fonctionnement.

ISED SAR warning:

The highest SAR value reported under this standard during product certification for use in the hand is 0.450W/kg.

Co-Location:

This transmitter must not be co-located or operated in conjunction with any other antenna or transmitter.

Avertissement DAS d'ISED:

La valeur DAS la plus élevée rapportée durant la prise en main pour utilisation selon la norme standard de certification de produit est de 0,450 W / kg.

Ce transmetteur ne peut pas être installé en colocation ou être utilisé avec une autre antenne ou transmetteur, quel qu'en soit le type.

FCC Warnings

Information from the FCC (Federal Communications Commission)

For your own safety

Shielded cables should be used for a composite interface. This is to ensure continued protection against radio frequency interference.

FCC warning statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- · Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is
- Consult the dealer or an experienced radio/TV technician for help.

Changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment. Shielded interface cable must be used in order to comply with the emission limits.

Warning

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received. including interference that may cause undesired operation.

FCC SAR warning:

The SAR limit of USA (FCC) is 1.6 W/kg averaged over one gram of tissue. The highest SAR value reported under this standard during product certification of 0560 1915 (FCC ID:WAF-05601915) for use when properly worn in the hand is 0.450 W/kg.

Co-Location:

This transmitter must not be co-located or operated in conjunction with any other antenna or transmitter.

KCC Warning

해당 무선 설비는 운용 중 전파혼신 가능성이 있음