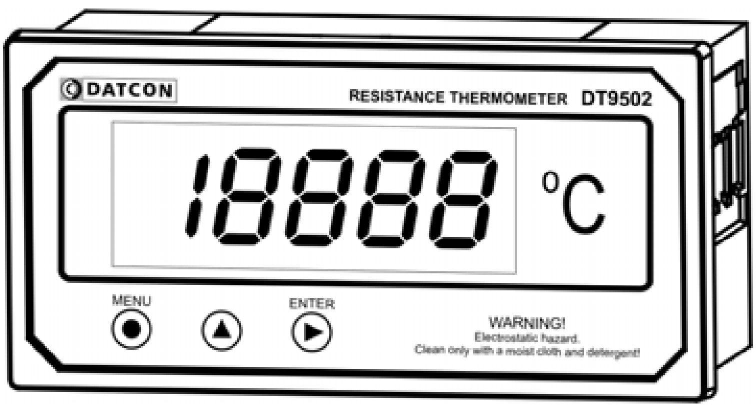
DATCON
INDUSTRIAL MEASUREMENT

DT9502

Intrinsically Safe Temperature Meter / Transmitter

Operating Instructions



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7. Setting-up

8. Fault rectification

9. Dismounting

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1. About this document

1.1. Function

This operating instructions manual has all the information you need for quick set-up and safe operation of DT9502. Please read this manual before you start setup.

1.2. Target group

This operating instructions manual is directed to trained personnel. The contents of this manual should be made available to these personnel and put into practice by them.

1.3. Symbolism used

Information, tip, note
This symbol indicates helpful additional information.

Caution, warning, danger
This symbol informs you of a dangerous situation that could occur. Ignoring this cautionary note can impair the person and/or the instrument.

Ex applications
This symbol indicates special instructions for Ex applications.

•

List
The dot set in front indicates a list with no implied sequence.

→

Action
This arrow indicates a single action.

1

Sequence
Numbers set in front indicate successive steps in a procedure.

2. For your safety

2.1. Authorised personnel

All operations described in this operating instructions manual must be carried out only by trained and authorised specialist personnel. For safety and warranty reasons, any internal work on the instruments must be carried out only by DATCON personnel.

2.2. Appropriate use

The apparatus DT9502 is a loop-powered intrinsically safe temperature meter and transmitter, that can be used in the explosive zones of „1” or „2”, as well as in the safe area. Its input is suitable for the connection of standard Pt 100 measuring probes, which can be connected by four wires and by three wires too. The sensor can be in zone 0 too. The instrument presents the temperature measurement results in digital format with an accuracy of decimals of degrees, in its LCD display. Between two settable temperature values it takes a linear 4-20 mA current signal from the power supply unit (transmitter function). Detailed information on the application range of the DT9502 is available in chapter "Product description".

2.3. Warning about misuse

Inappropriate or incorrect use of the instrument can give rise to application-specific hazards, or demage to system components through incorrect mounting or adjustment.

2.4. General safety instructions

The DT9502 is a high-tech instrument requiring the strict observance of standard regulations and guidelines. The user must take note of the safety instructions in this operating instructions manual, the country-specific installation standard as well as all prevailing safety regulations and accident prevention rules.

2.5. CE conformity

The DT9502 is in conformity with the provisions of the following standards:
MSZ EN IEC 60079-0:2018 (ATEX)
MSZ EN 60079-11:2012 (ATEX)
MSZ EN IEC 61326-1:2021 (EMC)
MSZ EN 55011:2016 (EMC)
MSZ EN 55011:2016/A1:2017 (EMC)
MSZ EN 55011:2016/A2:2021 (EMC)
MSZ EN IEC 63000:2019 (RoHS 2)

2.6. Safety information for Ex areas

Please note the Ex-specific safety information for installation and operation in Ex areas. These safety instructions are part of the operating instructions manual and come with the Ex-approved instruments.

2.7. Environmental instructions

Protection of the environment is one of our most important duties.
Please take note of the instructions written in the following chapters:

- Chapter **3.4. Storage and transport**
- Chapter **9.2. Disposal**

3. Product description

3.1. Delivery configuration

Delivered items

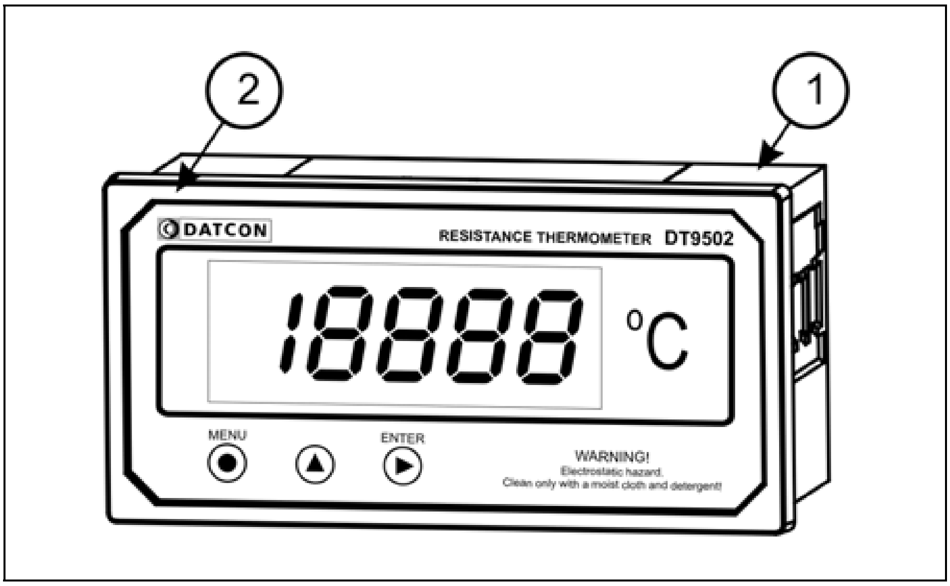
The scope of delivery encompasses:

- DT9502
- 1 pc. of seal (for panel cut-out sealing)
- 2 pcs. of srew clamps
- documentation:

this oparating instructions manual
certification
warranty

Main parts

The instrument is built from the following main parts:



1. instrument case
2. front panel with 3 membrane push buttons

3.2. Principle of operation

Application fields

The apparatus DT9502 is a loop-powered intrinsically safe temperature meter and transmitter instrument, fed by 4–20 mA loop current. It works with a standard Pt100 measuring probe, which is not an accessory of the instrument. The device presents the temperature measurement values in digital format with an accuracy of decimals of degrees, in its LCD display. Between two settable temperatures values it takes a 4 – 20 mA linear current signal from the power supply unit. (Transmitter function). It contains two limit outputs with selectable operating modes, therefore it is suitable for simple control operations too (e.g. temperature regulation).
Due to the function of DT9502 it can be placed in zone 1 or zone 2. The temperature sensor can be in zone 0 too.

The device sold with firmware v2017.11.08. or newer can also be used as a setpoint transmitter. In this mode, it is not necessary to connect a Pt100 measuring sensor to its input, because regardless of the input, any numerical value can be displayed on the display as a temperature value using the front panel push buttons, which controls the current flowing through in a scalable manner in the 4 - 20 mA range.
This setpoint transmitter function can be understood as a digital potentiometer that provides a 4 - 20 mA linear current setting and can be used in Zone 1, Zone 2 hazardous areas or in safe areas.

Operating principles

A current generator (800 μA) is connected to the terminal pair PI+ and PI-.
In the case of four-wire measurements, the instrument measures the voltage appearing in the terminal pair Pt+ and Pt-. This solution ensures that the resistances of the lines and contacts do not influence the measurement.
In the case of three-wire measurements, the line Pt+ is not in use. The voltage between Pt- and PI- is deducted from the voltage between PI+ and Pt-. This way when the resistances of PI- and PI+ lines are identical with each other, the voltage dropping in these lines does not influence the accuracy of the measurement.

Operating principles

A built-in microprocessor is used to calculate the temperature values. The results are presented on a 4-and-half-digit LCD display. The limit outputs work in accordance with the displayed temperature values.

The 4–20 mA current of the transmitter output could be assigned to any temperature range. This way the best possible settings could be achieved for a given application. By press-buttons located on the front panel, the temperature values assigned to the 4 mA transmitter current and to the 20 mA current could be selected separately.

The apparatus has a „sink” type output, requiring external power supply. This current ensures, at the same time, the power supply for the apparatus too, and thus the device connects to the receiving unit by two wires (+I, -I).

Power supply

There should be minimum 12 V voltage on the terminals of the apparatus.

3.3. Settings

DT9502 can be adjusted through the 3 button front panel keypad. All configuration parameters are stored in the instrument EEPROM for unlimited period of time, even when the power supply beeng switched off.

According to the default factory setting, the probe Pt100 is connected in 4-wire mode. For the transmitter -200 ºC is assigned to 4 mA, and +600 ºC is assigned to 20 mA. The number of averaged samples is 8, the display refreshing time is 0.5 sec

After the apparatus has been installed, it is functionable immediately, without any further settings.

Re-scaling the transmitter, or changing other factory default settings (e.g. setting the device to 3-wire operating mode) could be performed simply and easily by using the press-buttons on the front panel. The instrument doesn't need any internal adjustment.

3.4. Storing and transporting

This instrument should be stored and transport in places whose climatic conditions are in accordance with Chapter **10.1. Technical specifications**, as described under the title: Environmental conditions.

The packaging of DT9502 consist of enviroment-friendly, recyclable cardboard is used to protect the instrument against the impacts of normal stresses occurring during transportation. The corrugated cardboard box is made from environment-friendly, recyclable paper. The inner protective material is polyfoam and nylon, which should be disposed of via specialised recycling companies.

4. Mounting

4.1. General instructions

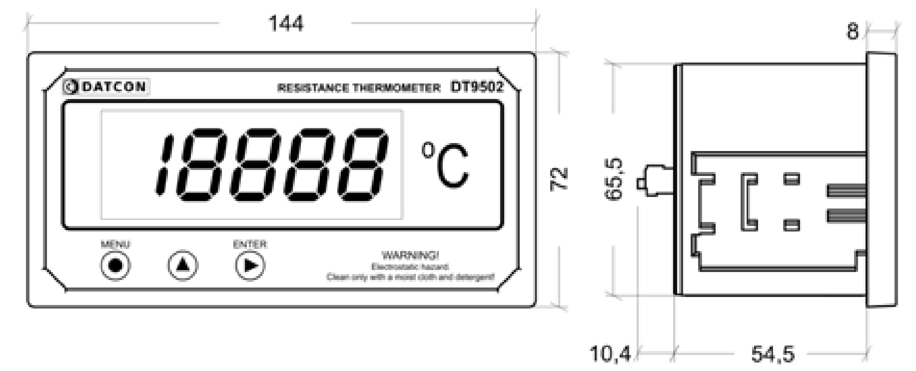
Use the enclosed seal when mounting DT9502 on panel to assure IP 65 protection from the front side.

Electrostatic hazard! Clean only a moist cloth and detergent.

Mounting positions

Select a mounting position you can easily read the display reach for mounting and connecting the instrument and that minimises the hazard of water, dust or dump getting into the instrument.

4.2. Main dimensions of the instrument.



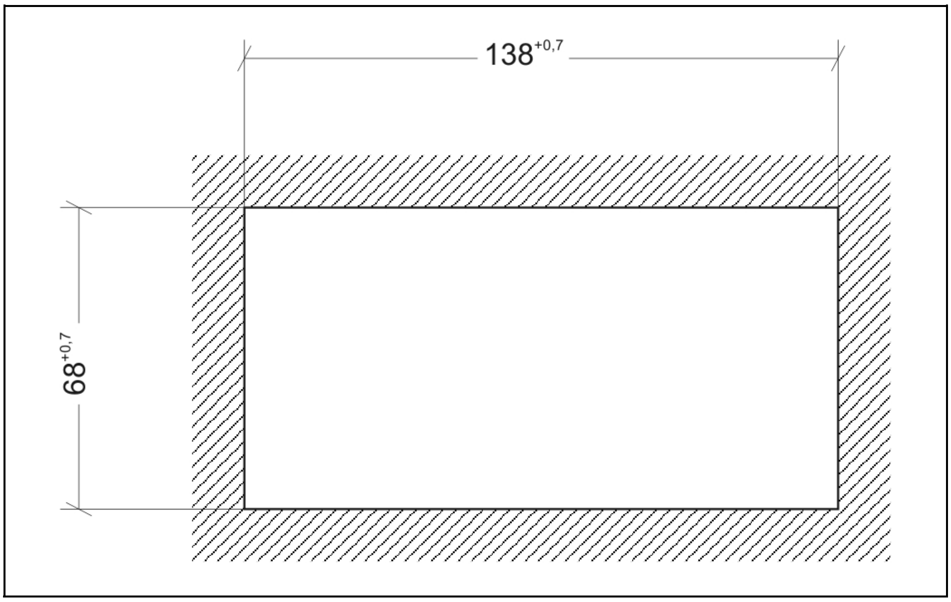
4.3. Mounting procedure

Preparatory steps

1. Cut-out the panel according to the figure shows below.

The cut-out needs spetial tools, it must be carried out by trained specialist personnel.

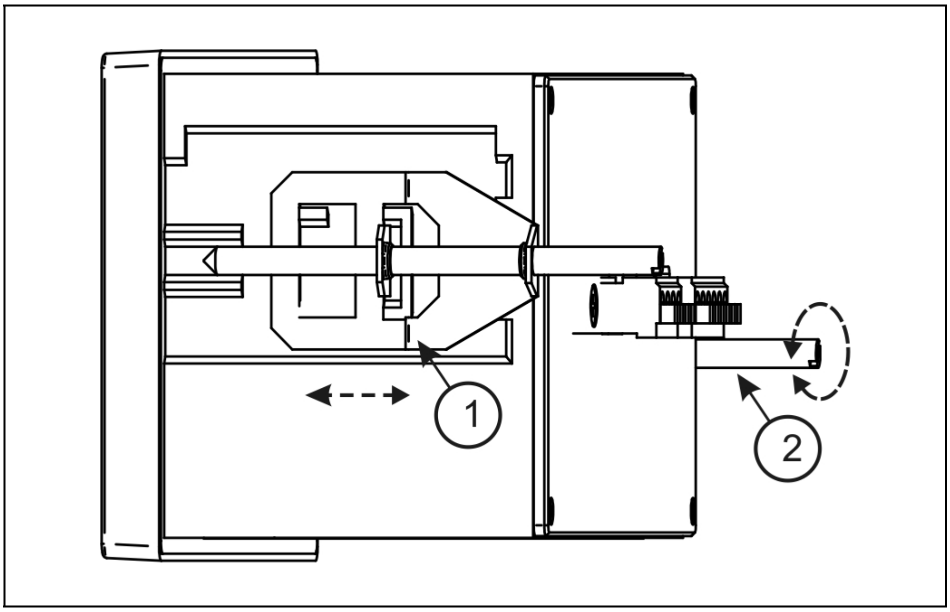
Cut-out dimensions



2. Put on the enclosed seal onto the instrument case from the rear side and fit it to the instrument front panel back side.

3. Put the instrument into the prepared cut-out until it possible and check the fitting of the seal between case and mounting surface.

Mounting by the screw clamps



4. Put on the two enclosed srew clamps onto the sides of the instrument case (Figure step 1).

Fix the instrument by turning the srews in clockwise direction (Figure step 2).

Pay attention not to let pointed, sharp metal parts cause accidents.

5. Connecting

5.1. Connecting into the current loop

In hazardous areas you should take note of the appropriate regulations, conformity and type approval certificates of the DT9502 and other instruments are connecting in the current loop (e.g. power supply, transmitter, etc.).
The connection must be carried out by trained and authorised personnel only!

Select connection cable

A four-wire, twisted pair, shielded cable should be used for connecting the measuring probe Pt100 to the apparatus. It is also possible to use three-wire cables, but the measurement accuracy will deteriorate due to the asymmetry of the resistances of wires, and due to the incertainty of contact resistances.

For connecting the loop-powered, a two-wire, twisted pair, shielded cable must be used.

For connecting the limit-value outputs, two-wire, twisted pair cable with 500 V insulation may be used.

The internal cable diameter is 0,25–1,5 mm, the external cable diameter is 5–10 mm.

When selecting the cable, please observe the rules for Ex installation!

Noise protection

During installation, it must be ensured that no equalizing current flows through the cable shield.

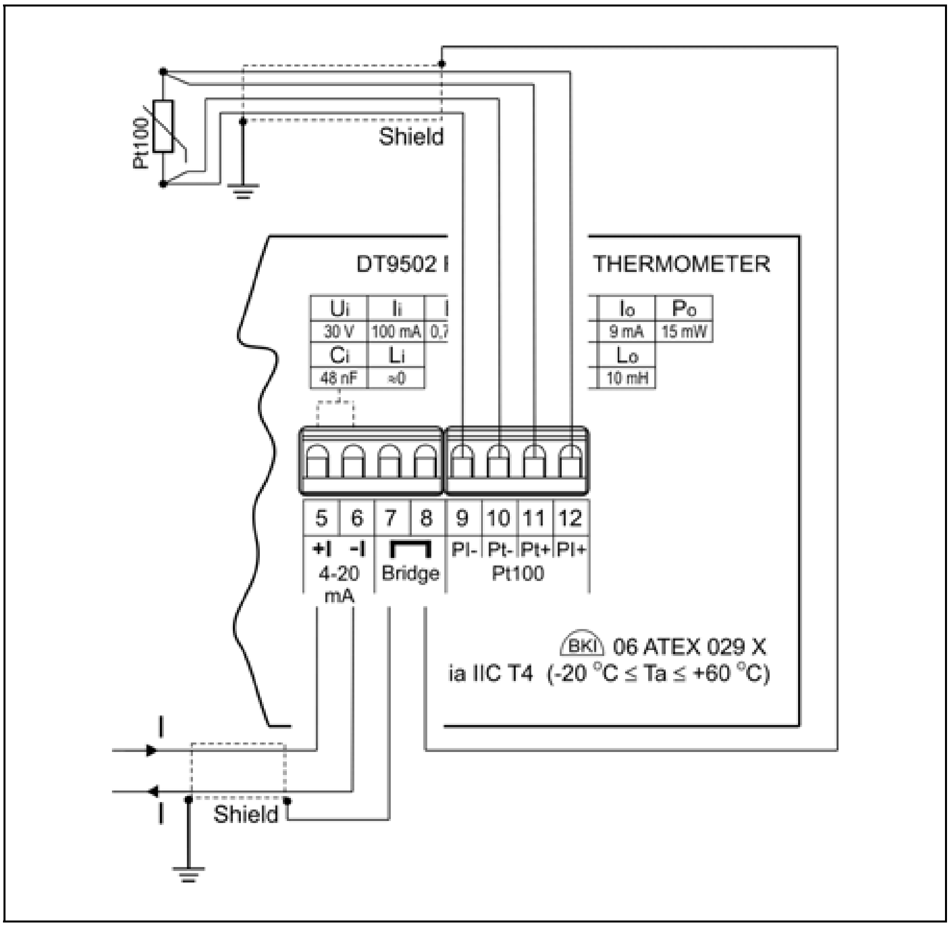
However, in terms of electromagnetic interference protection, the best result is usually achieved by grounding the shield on both sides.

These two contradictory requirements can be met in two ways: either a low-impedance potential equalization cable is used between the two ends of the cable (so that the current flows not through the shield, but through the equalizing conductor), or one side is grounded with a capacitor (e.g. 1 nF, 1500 V ceramic), which does not ground the low-frequency equalizing current, but does ground the high-frequency interference current. The rules for Ex installation must be taken into account when choosing the value of the capacitor.

The DT9502 has very effective EMC protection, so grounding on both sides is usually not necessary in practice, however, if a device emitting particularly high electrical interference is operating nearby (e.g. a frequency converter drive), it may be necessary to apply the above. Another important rule is to route the measurement signal cables separately from the control and power cables.

Connection
4-wire mode
(see also “Application example”)

• The shieldings of the cables connected to Pt100 and to the current loop must be connected with each other.

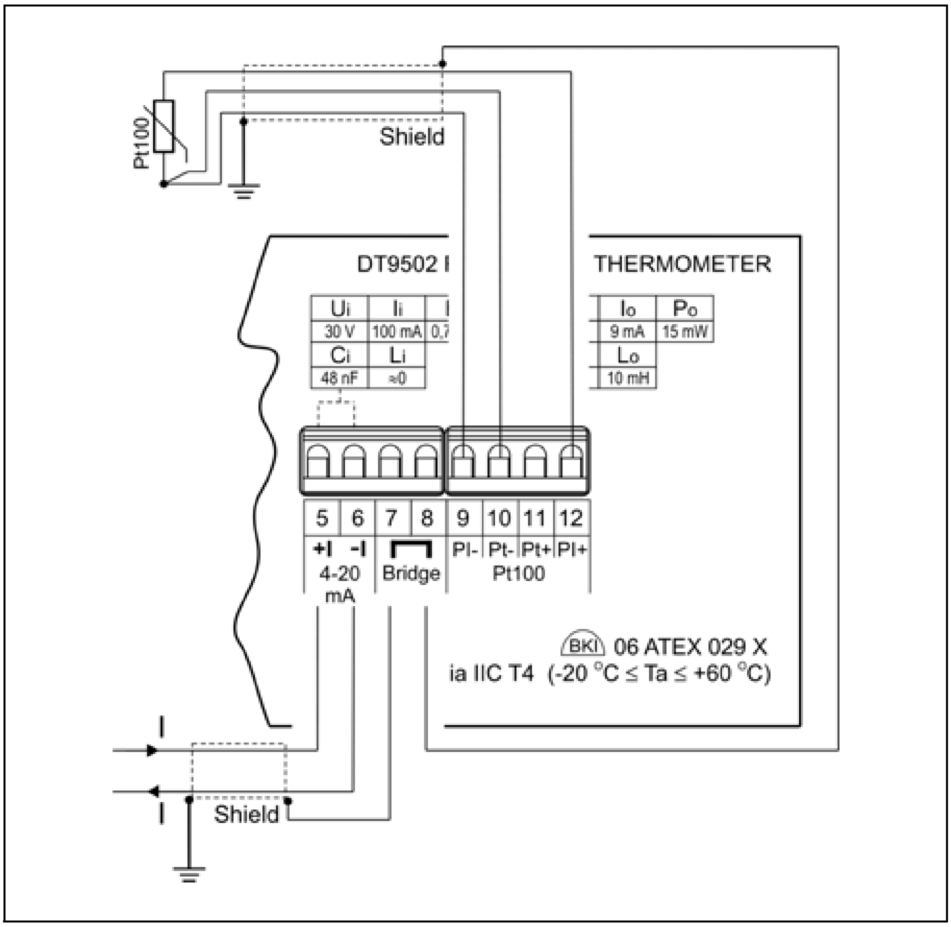


Be careful the polarity of the cables.

The most accurate measurement can be achieved by the 4-wire operating mode, as the cable resistances and their possible asymmetry will not cause measuring errors.
In order to ensure accurate measurement its usage is absolutely recommended.

Connection
3-wire mode
(see also “Application example”)

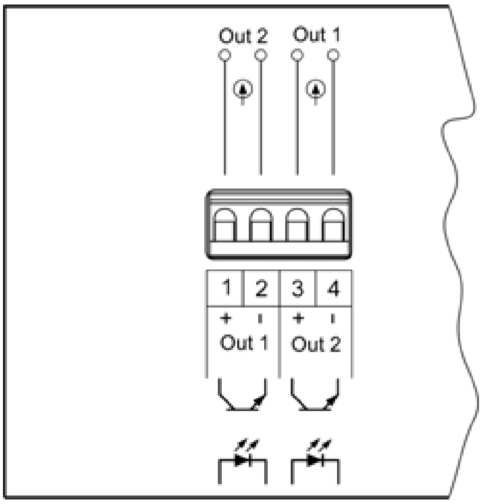
• The shieldings of the cables connected to Pt100 and to the current loop must be connected with each other.



Be careful the polarity of the cables.

The 3-wire operating mode results in less accurate measurement than the 4-wire operating mode, as the different resistances of the cable wires, their asymmetry, and the various temporary resistance values of contacts cause additional measurement errors. The use of this mode is recommended only for those cases that are satisfied by less accuracy.
In all other cases it is practicable to use the 4-wire operating mode (according to the connection depicted in the previous page).

Wiring plan, connecting the limit outputs
(see also “Application example”)



Be careful the polarity of the cables.

Select connection cable

Take note the suitability of the connecting cable.
We recommend the use of screened twisted pair cable.
The wire cross-section should be 0.25-1.5 mm**²**.

Select connection cable for Ex applications

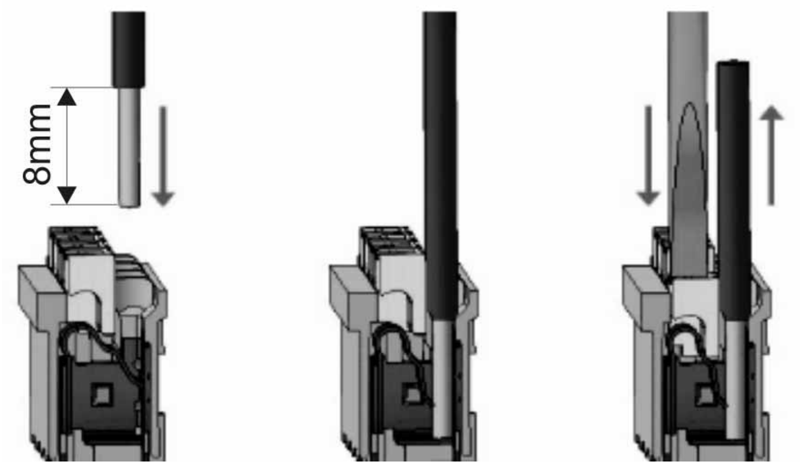
Take note of the corresponding installation regulations for Ex applications. In particular, make sure that no potential equalisation currents flow over the cable screen. In case of grounding on both sides (for suppress the influence of high frequency interference signals) this can be achived by use of a capacitor (e.g. ceramic capacitor 1 nF, 1500 V) or separate potential equalisation. The low frequency potential equalisation currents are thus supressed, but the protective effect against high frequency interference signals remains.

Preparing cables

Prepare the cable for the connection.
Remove approx. 30 mm of cable mantle, strip approx. 8 mm insulation.

Make sure before connection that the power supply is switched off.
The push-in direct connector assemblies used allow a fast connection of the cables.
Their proper usage is shown by the following figure:

Connecting the cables into the terminal assemblies



1. Push the stripped cable-end until it possible into the terminal assembly. In the case of flexible cable-ends, you can facilitate opening the connection part by pushing down the white button.

2. By pushing the wire in, the self-closing connection is being established. Check it by pulling it outwards slightly.

(3. When you disassemble the cable, push down the white button by a screwdriver, and pull the cable-end out.)

There is no need to use great force for pushing the cable in, neither for removal. The button can be pushed down easily. Please do not exercise forces higher than necessary, as it may cause damages to the terminal assembly.

Finishing step

Check if the cables are connected properly (have you connected all the cables; have you connected them to the right place; is the connection stable; do not the cable-ends touch each other).

Checking the connection

After you have completed the connections, put the measurement loop (the measuring transformer) under voltage, if possible.
If the connection is perfect, some numbers or a text appear on the display.

If nothing appears on the display, most probably the apparatus does not get supply power. With a voltage meter instrument check if there is voltage between +I and -I connection points. If the measurement shows that the voltage value is higher than 12 V, then this error-possibility can be excluded.

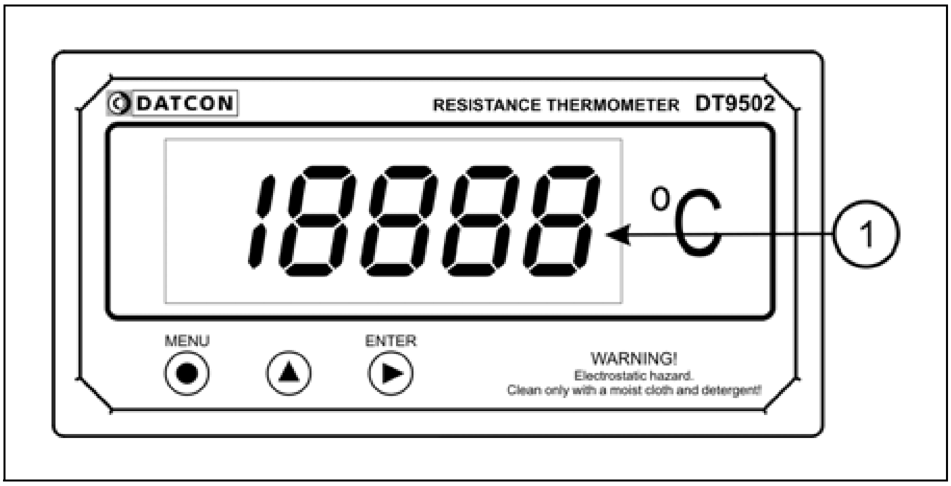
In the next step, you may suspect that the cables are connected to the apparatus with reverse polarity (the two wires of the cable are interchanged), or they are connected not to the specified terminal-assembly points. Check if everything has been done in accordance with chapter 5.1. Connection to the measurement loop.

With this you have completed the connection of DT9502.

6. The display and the operating devices

6.1. The first start-up

The display



The dispay is shown by the arrow (1).

After the apparatus has been installed to its place, the probe Pt100 has been connected in accordance with the specified mode, and the connection to the measurement loop has been established, then the display of the apparatus shows the measured temperature values with an accuracy of the decimal of the degree. Accordingly, if the temperature is 24.2 degrees centigrade, the following is visible on the display: 024.2.

If it is 123.7 °C, then: 123.7.

As the factory default setting of the apparatus is 4 wires for Pt100 connection, the displayed value will be accurate in that case only if actually 4 wires are used for the connection. If a 3-wire physical connection is used, the setting of the apparatus must also be changed to this mode, in order to ensure accurate measurement (Chapter 7.2, menu 04)

In the case of error messages

If something else appears on the display instead of the measured temperature values (a message written by blinking letters), then it is an error message of the apparatus DT9502.
In order to identify the fault, go to the Appendix at the end of this Operating Instructions, and see chapter **10.3 Error messages** or **10.4. Messages of critical errors**.

6.2. Characters and mnemonics appearing on the display

DT9502 has a 7-segment type display. It means that maximum 7 bars are used to form each characters. The numbers can be read easily, some of the letters, marks however, looks unusual:

A = A, b = B, c = C, d = D, E = E, F = F, 9 = G,

h = H, i = I, J = J, H = K, L = L, M = M, n = N,

o = O, P = P, q = Q, r = R, S = S, t = T, U = U,

u = V, W = W, H = X, y = Y, Z = Z

All mnemonics (code words) presented on the display comes from English expressions in abbreviated form. The following part gives a list of the possible mnemonics and their meaning. The left-side column shows the characters appearing on the display. The right-side column gives first the meaning, then the full English word in brackets and, after the hyphen, and explanation may be given.

Login text

dt — **DT** — Datcon instrument

9502 — **9502** — Type of the instrument

in it — **The device is preparing for the measurement.**

Error messages

E:Ado — **A/D overflow** (**E**rror: **AD O**verflow)

E:MSt — **Measurement missing** (**E**rror: **M**ea**S**uremen**T)**

E:UF_ — **Underflow (E**rror: **U**nder**f**low)

E:oF‾ — **Overflow** (**E**rror: **O**ver**f**low)

E:MMM — **Missing Minimum-Maximum** (**E**rror: **M**issing **M**inimum-**M**aximum)

Messages of critical errors

S:Adh	**A/D failure** (**S**ervice: **AD H**ardware)
S:EEh	**EEPROM failure** (**S**ervice: **EE**PROM **H**ardware)
S:EEP	**EEPROM write error** (**S**ervice: **EE**PROM **P**rotected)
S:cAL	**Calibration error** (**S**ervice: **Cal**ibration)
S:dFS	**Default factory settings** (**S**ervice: **D**efault **F**actory **S**ettings)
E:LSE	**The last saving was not successful** (**E**rror: **L**ast **S**ave)

During code writing

codE	**Code?** (**Code**)
bAd.c	**Bad Code** (**Bad C**ode)
USEr	**A User login took place** (**User**)
SUPr	**A Supervisor login took place** (**Sup**ervisor)

During setting up

Lo.L I	**The typed number is lower than allowed** (**Lo**w **Li**mit)
h I.L I	**The typed number is higher than allowed** (**Hi**gh **Li**mit)
- - - -	**Low numeric value not possible to display**
- - - -	**High numeric value not possible to display**
r.tYPE	**Re-type it please.** (**R**e-**typ**e)
A.ESc	**Automatic escaping** (**A**uto **Esc**ape) — after 1 minute
EH It	**Exit from the setting** (**Exit**)
bUSY	**The instrument is making calculations, please wait** (**Busy**)
rEdY	**The requested operation has been completed** ((**Re**a**dy**)
SAuE	**The saving of the settings is being done** (**Save**)
no	**No, I don't want this menu** (**No**)
YES	**Yes, the menu can be started** (**Yes**)
FA IL	**One of the 3 correction points given is incorrect (Fail)**

Minimum-maximum values on the display (▲ button)

min	**Minimum value** (**MIN**imum)
MAX	**Maximum value** (**MAX**imum)
FrmE	**Firmware version** (**F**i**RM**ware**E**)
----	**Low numeric value not possible to display**
----	**High numeric value not possible to display**

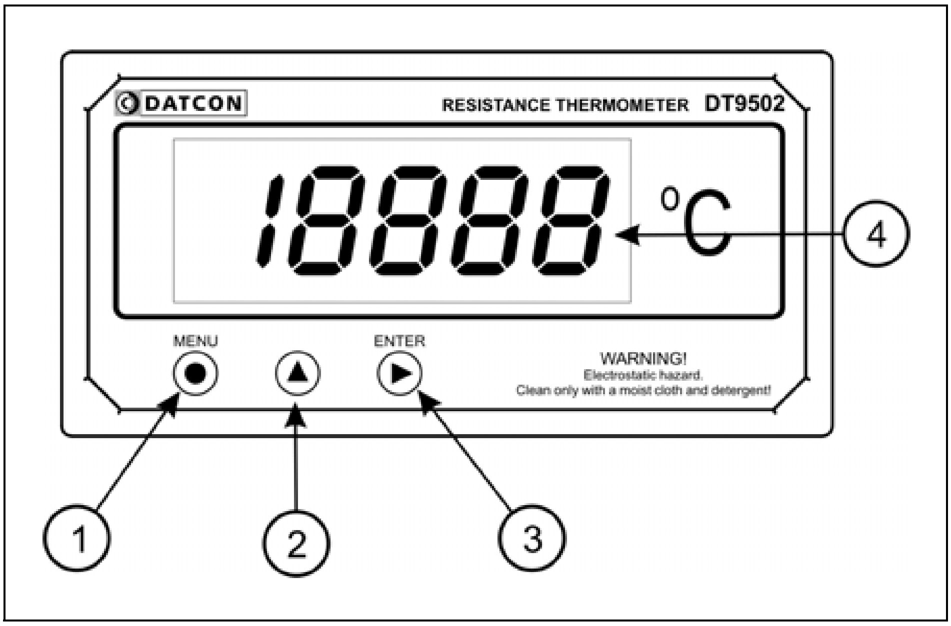
Limit values on the display

--:--	**Both limit outputs are switched off**
L 1:--	**The limit output No.1 is switched on** (**L**imit **1**)
--:L2	**The limit output No.2 is switched on** (**L**imit **2**)
L 1:L2	**Both limit outputs are switched on**

6.3. Manual controls

DT9502 can be adjusted by the membrane push-buttons indicated by **(1)**, **(2)**, and **(3)** in the drawing.

Functions of the push-buttons during measurement



(1) MENU button: Entering the menu
When you push this button, the device will ask for a password (code) in accordance with Chapter **7.1. Typing the code (password) in**, when the right code has been given, it enters into the menu. **During this time the measurement is suspended, and the limit outputs don't change**. If no keys are pressed for a period of one minute, the instrument restarts and the measurement goes on.

(2) ▲ button: displaying minimum value, maximum value, firmware version. The above values and the firmware version remains on the display as long as the button is being pressed. **During this time the measurement is suspended, and the limit outputs don't change**.

Using this function:

1. Press the ▲ button as long as you see this: **min.**
This mnemonic indicates that it will be displayed the minimum value measured after the last clear.
2. Keeping the button pressed down, after 1.5 sec the minimum value will be displayed as long as the button is pressed down.

3. Press the ▲ button second time as long as you see this: MAX.
The mnemonic indicates that it will be displayed the maximum value measured after the last clear.
4. Keeping the button pressed down, after 1.5 sec the maximum value will be displayed as long as the button is pressed down.
5. Press the ▲ button third time as long as you see this: FrME. The mnemonic indicates that it will be displayed the firmware version.
6. Keeping the button pressed down, after 1,5 sec the firmware version will be displayed as long as the button is pressed down.
Format: Y, M, DD, where Y=year, H=month, and NN=day).

Comments:

- Pressing the ▲ button repeatedly, the above process starts from operation „1.”, enable to display the three values sequentially.
- When you release the ▲button more than 5 sec. and you press down the button ▲ again the minimum value will be displayed independently of which value would be the next one. The reason of this operation mode is to get used this sequence: minimum value, maximum value, firmware version.
- To clear minimum and maximum values is possible as written in 14. Menu item, after log in as a supervisor **(Clear Minimum and maximum values).**

3) ENTER button: displaying the status of the limit output and clearing the alarm (alarm acknwledgement).
It's functionality depends on the operating mode of displaying the limits. In default factory setting this function is switched off, therefore pushing the button does not cause any changes. Detailed description is in Chapter **7.3. Display modes of limit output status**.

Other function: in „Alarm Mode” it switches the limit output off.

7. Setting-up

7.1. Typing the code (password) in

The importance of the code

You may enter the menu only after you have typed your code in. The code is made from 3 numeric characters. This solution prevents unauthorised persons from changing the settings of the instrument.

Levels of authorisation

• **User level**: allows the modification of the most necessary parameters only. The rest of the menu is not even shown for users. The user code default factory setting is: **000**.

• **Supervisor level**: allows the modification of all parameters for the authorised person. The supervisor code default factory setting is: **100**.

Typing the code in

1. Press the **MENU** button. The blinking codE mnemonic shows that the device is asking for the code.

2. Three zeros appear: 000. Left side zero is blinking.

• Pressing the ▲ button you can increase the blinking valuer:

1, 2, 3, 4, 5, 6, 7, 8, 9, 0, etc.

• Pressing the ► button to select the next digit.
3. Type in the user or supervisor code with ▲ and ►.
4. Press the **MENU** button. If a correct code has been type in, the mnemonic USEr (login as a user) or the mnemonic SUPr (login as a supervisor) is displayed and stays there for 2.5 seconds; then the first menu item is shown on the display: 01.Ld.
5. If an incorrect code has been typing in, the mnemonic bAd.c (**BAD C**ode) is shown on the display and stays there for 2.5 seconds; then the instrument exits from the menu, and goes on with the measurement.
Start typing the code in again from Point 1.

Automatic exit from the request for the code

If no buttons are pressed, the instrument displays the mnemonic A.ESc (**A**uto **Esc**ape) after 1 minute has passed from the last pressing of a button, and it RESTARTS, i. e. goes back to the measuring mode. This solution is due to security: unauthorised persons, after 1 minute, will not be able to change the settings of the instrument, should it be left alone for some reason.

7.2. The menu

The menu structure

01: Limit-value display
29. page

02: Limit value 1
03: Limit value 2
30. page

04: 4 wire / 3 wire
37. page

05: Temperature 4 mA
38. page

06: Temperature 20 mA
40. page

07: Averaging number
42. page

08: Display refresh time
44. page

09: Tests
46. page

10: User code
48. page

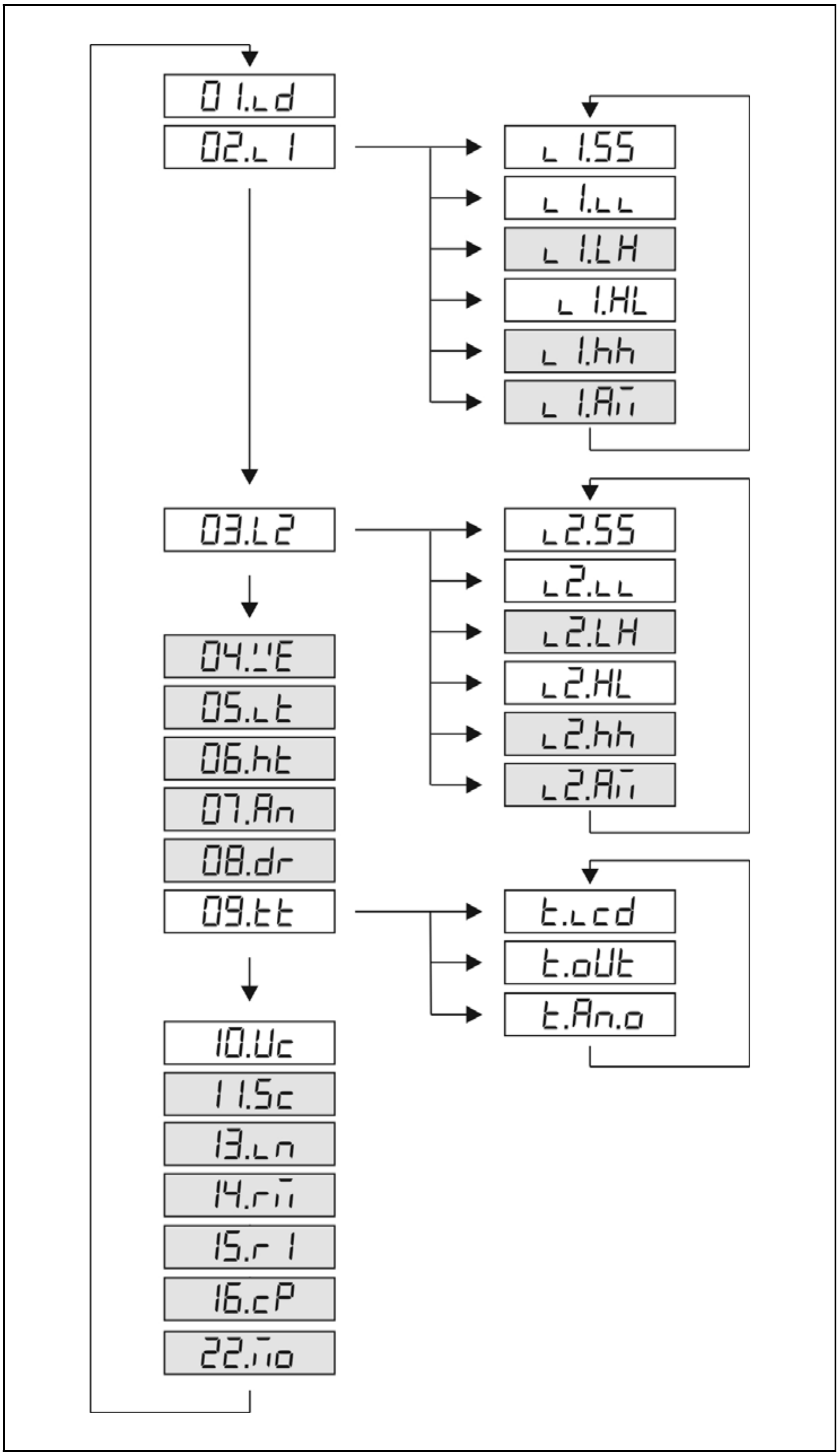
11: Supervisor code
50. page

12: Display mode
52. page

13: Leader zeros
53. page

14: Min. and max. erase
54. page

15: Default
55. page



Comment:
The menu items shown in grey appear only in the case of a supervisor-level login.

7.3. Display modes of limit output status
(01. menu item)

Function

The state of the limit outputs (whether they are switched on or off) can be displayed. Here you can define the conditions, on which displaying should depend.
[Default factory setting: OFF]

Sequence of operations

1. Enter the menu by the user or the supervisor code. Chapter **7.1. Typing the code in** describes how you can type the code in. You see on the display: 01.Ld.

2. Enter the given menu item by pressing the **ENTER** button.

3. You can read the mnemonic oFF on the display. The mnemonic is blinking.
4. Pressing the ▲ button, select the desired display mode.

oFF: **switched off**
The instrument never displays the state of limit outputs [default factory setting]

- d.btn: **Dynamic button** (**D**ynamic **B**u**t**to**n**)
It displays the state of limit outputs as long as the **ENTER** button is kept pressed.

- t.btn: **Timed button** (**T**imed **B**u**t**to**n**)
It displays the state of limit outputs for a period as long as the **ENTER** button is kept pressed + for 2.5 seconds.

- S.btn: **Static button** (**S**tatic **B**u**t**to**n**)
Displaying the state of limit outputs can be switched on/off by pressing the **ENTER** button.

- AU.cE: **Automatic: when changed** (**Au**to: **C**hang**e**)
After a change has taken place in the state of limit outputs (switching off or on) it displays for a period of 2.5 seconds.
If you keep the **ENTER** button pressed down, the measurement results are displayed.

- AU.PL: **Automatic: periodical** (**Au**to: **P**eriodica**l**)
In every 2.5 seconds it displays the states of limit outputs automatically for 2.5 seconds.
If you keep the **ENTER** button pressed down, the measurement results are displayed.

Sequence of operations

- on: **Always on** (**ON**)

It always displays the states of limit outputs.
If you keep the **ENTER** button pressed down, the measurement results are displayed.
(This operating mode is useful when the states of limit outputs is more important than the measured value.)

Exit from the menu item

1. After finishing the settings, press the **MENU** button to exit from the given menu item, and you see: 01.Ld.
(2. If you want to change the settings you have done just now, or if you just want to check what you have typed in, go on with the operation from point 2 of the **Sequence of operations**.)
(3. If you don't want to exit the menu (you want to do further settings), then you may select the desired menu items by pressing the ▲ button.)

Exit from the menu

1. Press the **MENU** button. First the mnemonic SAuE (**Save**), then the mnemonic EH it (**Exit**) are shown on the display. With this the storing of the settings is completed. The instrument has exited the menu and goes on with the measurement.

7.4. Setting up the limit outputs (02. & 03. menu items)

Function

The instrument has two limit outputs. They are identical with each other, and work independently.
Operation: the instrument keeps comparing the displayed physical value with the (adjustable) limit value. It switches the output ON depending whether the displayed value is higher than the limit value. (There are other operating modes too, in which it operates if the displayed value is between or out of the two (adjustable) limit values.)
In Chapter **10.8. Limit outputs** in the Appendix you find a detailed training material on the limit outputs.

Setting the operating mode
Sequence of operations

1. Enter the menu with the supervisor code (see at Chapter **7.1. Typing the code in**. You see on the display: 01.Ld.
2. Keep stepping by pressing the ▲ button as long as you see this menu item: 02.L 1.
3. Enter the menu item by pressing the **ENTER** button.
4. You see the mnemonic L 1.SS on the display.
L1 (**L**imit 1) means: limit output No. 1.
SS (**S**etting**s**) means: settings. Here you can define the operating mode for the limit output. Enter by pressing the **ENTER** button.

- oFF: the output is always in switched off condition. [default factory setting]
- ≥L : (**≥L**) The output gets switched on, when the displayed physical value is higher than or equal with the low limit value (LL).
- <L : (**<L**) The output gets switched on, when the displayed physical value is lower than the low limit value (LL).
- ≥L.≤h: (**≥L** and **≤H**) The output gets switched on, when the displayed physical value is between the low limit value (LL) and the higher limit value (HL).
- <L.>h: (**<L** or **>H**) The output gets switched on, when the displayed physical value isn't between the low limit value (LL) and the high limit value (HL).
- on: the output is always in switched on condition

Setting the operating mode
Sequence of operations

6. After you have selected the desired operating mode for the limit output, press the **MENU** button. This takes you out from the given sub-menu item, and you see this: L 1.SS.

7. If you had selected the oFF or the on mode, there is no need to do any further settings. For finishing the operation, please go on from the point **Exit from the menu item**.

Low limit value
Sequence of operations

8. Keep stepping by pressing the ▲ button as long as you see this sub-menu item: L 1.LL. LL (**L**ow **L**imit) means: the low limit value. Here you can define the numerical value by which the device will compare the measured physical values.
9. Enter by pressing the **ENTER** button.

10. You see this 000.0 on the display and the arrow (⟵) is blinking in the upper left corner. The arrow indicates that the uppermost digit (the „half" digit) is being selected from the 4 and half digits, and now it can be modified by pressing the ▲ button.
11. Pressing the ► button you can select the next digit.
12. Pressing the ▲ button you can increase the value of the blinking digit:

1, 2, 3, 4, 5, 6, 7, 8, 9, 0, etc.
13. When the last digit (right-side) is being selected, and you press the button ►, a blinking colon appears on the left side: : 000.0. The colon indicates that the plus/minus sign is being selected, and it can be modified by pressing the ▲ button.
14. Pressing the ▲ button you can switch on or off the minus sign.

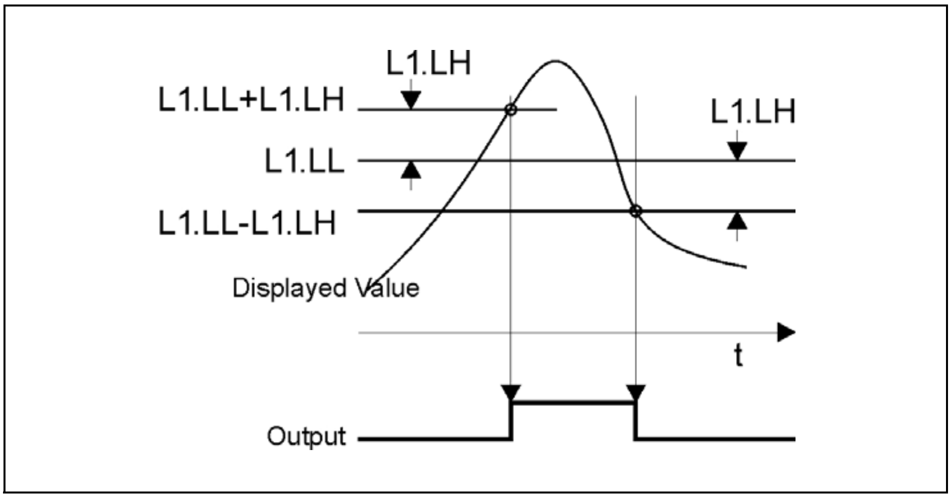
- 123.4 = 123.4 ºC
- - 123.4 = -123.4 ºC

15. After you have defined the value for the limit, press the **MENU** button to exit from the sub-menu item, and you see this: L 1.LL.

Hysteresis of the low limit
Sequence of operations

16. Keep stepping by pressing the ▲ button as long as you see this sub-menu item: L 1.LH. LH (**L**ow **H**ysteresis) means: the hysteresis of the low limit value. Here you can define a numerical value which provides the hysteresis of the low limit value (LL) by having **added to and subtracted from** it. Consequently, the actual hysteresis is twice the value defined here.

View of the used terms



Comment: according to this drawing, the limit output is in the 2L operating mode.

Hysteresis of the low limit
Sequence of operations

17. Enter by pressing the **ENTER** button.
18. You see this
00.0 on the display. This is the value of L1.LH. It can be changed between 000 and 999. The digit at the left side is blinking.
19. Pressing ► button you can select the next digit.
20. Pressing ▲ button you can increase the value of the blinking digit:
1, 2, 3, 4, 5, 6, 7, 8, 9, 0, etc.
21. After you have set the value of the hysteresis, press the **MENU** button to exit from the sub-menu item, and you see this: L 1.LH.

22. If you had selected the 2L or the CL limit-value operating mode, there is no need to do further settings. For finishing the operation, go on with the steps from the part: **Exit from the menu item**.

High limit value
Sequence of operations

Setting the high limit value and It's hysteresis is necessary in that case only, if you had selected the 2L.Sh or the cL.3h operating mode.

23. Pressing the ▲ button keep stepping as long as you see this sub-menu item: L 1.HL. HL (**H**igh **L**imit) means: the high limit value. Here you can define the higher numerical value, to which the instrument compares the measured physical values.
24. Enter by pressing the **ENTER** button.
25. You see this 000.0 on the display, and the arrow (⟵) is blinking in the upper left corner. The arrow indicates that the uppermost digit (the „half" digit) is being selected from the 4 and half digits, and now it can be modified by pressing the ▲ button.
26. Pressing the ► button you can select the next digit.
27. Pressing the ▲ button you can increase the value of the blinking digit:

1, 2, 3, 4, 5, 6, 7, 8, 9, 0, etc.

28. When the last digit (right-side) is being selected, and you press the ► button, a blinking colon appears on the left side: : 000.0. The colon indicates that the plus/minus sign is being selected, and it can be modified by pressing the ▲ button.
29. Pressing the ▲ button you can switch the minus sign on or off.

- 123.4 = 123.4;
- \- 123.4 = -123.4

30. After you have set the value for the limit, press the **MENU** button to exit from the sub-menu item, and you see this: L 1.HL.
31. L1.HL must not be lower than L1.LL. Should the case be this, the instrument call attention you by a blinking mnemonic LO.L 1, and exchanges the wrong value to the lowest permissible value.

Hysteresis of the high limit
Sequence of operations

32. Keep stepping by pressing the ▲ button as long as you see this sub-menu item: L 1.hh. HH (**H**igh **H**ysteresis) means: the hysteresis of the high limit value. Here you can define a numerical value which provides the hysteresis of the high limit value (HL) by having **added to and subtracted from** it. Consequently, the actual hysteresis is twice the value defined here.
33. Enter by pressing the **ENTER** button.
34. You see this .00.0 on the display. This is the value of L1.HH. It can be changed to any values between 00.0 and 99.9. The digit at the left side is blinking.
35. Pressing the ► button you can select the next digit.
36. Pressing the ▲ button you can increase the value of the blinking digit:
1, 2, 3, 4, 5, 6, 7, 8, 9, 0, etc.
37. After you have set the value of the hysteresis, press the **MENU** button to exit from this sub-menu item, and you see this: L 1.hh.

Exit from the menu item

1. After finishing the settings, press the **MENU** button to exit from the given menu item, and you see this: 02.L 1.
(2. If you want to change the setting you have done just now, or if you just want to check what you have typed in, go on with the operation from point 2 of the **Sequence of operations.**)
(3. If you don't want to exit the menu (you want to do further settings), then you may select the desired menu items by pressing the ▲ button.)

Exit from the menu

1. Press the **MENU** button. First the mnemonic SAuE (**Save**), then the mnemonic EH it (**Exit**) are shown on the display. With this the storing of the settings is completed. The instrument has exited the menu and goes on with the measurement.

You find a detailed training material on the limit outputs in the Appendix, in Chapter **10.8 Limit outputs**.

7.5. Limit output alarm mode

Function

In alarm mode, the limit output is switching on when the limit condition exist. But the output stays switched on (independent from the limit condition) until the **ENTER** button is pressed (alarm acknowledge). (see at Chapter **7.4. Setting up the limit output No. 1.**)

Sequence of operations

1. Enter the menu by the supervisor code. Chapter **7.1. Typing the code in** describes how you can type the code in. You see on the display: 01.Ld.
2. Keep stepping by pressing the ▲ button as long as you see this menu item: 02.L 1.
3. Enter the menu item by pressing the **ENTER** button.
4. Keep stepping by pressing the ▲ button as you see this sub-menu item: L 1.AM (**A**larm **M**ode).
5. Enter by pressing the **ENTER** button.
6. You see this oFF on the display (mnemonic is blinking).
7. You can change the alarm mode on by ▲ button.

• oFF = the limit output will switch off automatically when the condition that had caused it to switch on ceases to exist [default factory setting].

• on = switching the limit output off is possible only by pressing the ENTER button. It stays switched on, no matter if the condition that had caused it to switch on ceases to exist.

Exit from the menu item

1. After finishing the settings, press the **MENU** button to exit from the menu item, and you see this: L 1.AM.
2. Press the **MENU** button to exit from the menu item, and you see this: 02.L 1.

(3. If you don’t want to exit the menu, as you want to do further settings, then you may select the desired menu items by pressing the ▲ button.)

Exit from the menu

1. Press the **MENU** button. First the mnemonic SAvE (**Save**), then the mnemonic EXIt (**Exit**) are shown on the display. With this the storing of the settings is completed. The instrument has exited the menu and goes on with the measurement.

7.6. 4-wire / 3-wire operating modes (04 menu item)

Function

In this menu item you should select either 4 wires or 3 wires for connecting the probe Pt100 to the apparatus. (Factory default setting: 4 wires)

Sequence of operations

1. Enter the menu with the supervisor code. Read chapter **7.1. Writing the code in** to see how the code should be written in. On the display you see this: 01.Ld.
2. Keep stepping with the ▲ button as long as you see this menu item: 04.WE.
3. With the **ENTER** button, enter this menu item.
4. The text 4WrE is visible on the display. The digit 4 is blinking.
5. You can use the ▲ button to select the 4-wire or the 3-wire operating mode.

- 4WrE = measuring with 4 wires [default setting]
- 3WrE = measuring with 3 wires (it results in less accurate measurement, therefore it is strongly recommended to use 4 wires for connecting the probe Pt100 to the apparatus and use the 4-wire measuring mode).

Exit from the menu item

1. After you have completed the setting, press the **MENU** button. With this you leave the menu item, and you see this: 04.WE.

(2. If you want to change the setting you have just completed, or if you just want to check what you have written in, go on with the operations from point 3 of the **Sequence of operations**.)

(3. If you do not want to exit the menu as you want to do other settings too, you may use the ▲ button to select the desired menu items.)

Exit from the menu

Press the **MENU** button. First you see the script SAuE (**Save**) and then the script EH it (**Exit**). With this the saving of the settings is ready. The apparatus has left the menu and goes on with the measurement.

7.7. The temperature value belonging to the 4 mA value
(05 menu item)

Function

The apparatus regulates the loop current between 4 and 20 mA in proportion with the measured temperature.
In this menu item any ºC values between -200,0 ºC and 600,0 ºC could be assigned to the 4 mA loop current.
[Factory default setting: -200,0 ºC]
Attention! In addition to selecting the temperature value assigned to 4 mA, also the temperature value to be assigned to 20 mA must be selected (The next menu item).

Sequence of operations

1. Enter the menu with the supervisor code.
Read chapter **7.1. Writing the code in** to see how the code should be written in. On the display you see this:
01.Ld.
2. Keep stepping with the ▲ button as long as you see this menu item: 05.Lt.
3. Enter the menu item by using the **ENTER** button.
4. The number -200.0 is visible on the display. Digit 2 is blinking. The blinking digit indicates which of the digits is selected. The selection can be modified by using the ▲ button.
6. Using the ► button you can go to the next digit.
7. By using the ▲ button, you can increase the value of the blinking digit:
1, 2, 3, 4, 5, 6, 7, 8, 9, 0, etc.
8. If you have selected the last digit (the digit on the right side), and you press the ► button, a blinking colon will appear on the left side: : 200.0. This colon indicates, that the positive or negative sign is being selected, and you can now change it by the ▲ button.
9. With the ▲ button you can switch the negative sign on or off.

- 200.0 = 200,0 ºC
- \- 200.0 = -200,0 ºC

Exit from the menu item

1. After you have completed the setting, press the **MENU** button. With this you leave the menu itemt, and you see this: 05.Lt.

(2. If you want to change the setting you have just completed, or if you just want to check what you have written in, go on with the operations from point 3 of the **Sequence of operations**.)

(3. If you do not want to exit the menu as you want to do other settings too, you may use the ▲ button to select the desired menu items.)

Exit from the menu

Press the **MENU** button. First you see the script SAuE (**Save**) and then the script EH it (**Exit**). With this the saving of the settings is ready. The apparatus has left the menu and goes on with the measurement.

7.8. The temperature value belonging to the 20 mA value (06 menu item)

Function

The apparatus regulates the loop current between 4 and 20 mA in proportion with the measured temperature.
In this menu item any ºC values between -200,0 ºC and 600,0 ºC could be assigned to the 20 mA loop current.
[Factory default setting: 600,0 ºC]
Attention! In addition to selecting the temperature value assigned to 20 mA, also the temperature value to be assigned to 4 mA must be selected (The previous menu point).

Sequence of operations

1. Enter the menu with the supervisor code.
Read chapter **7.1. Writing the code in** to see how the code should be written in. On the display you see this:
01.Ld.
2. Keep stepping with the ▲ button as long as you see this menu item: 06.ht.
3. Enter the menu item by using the **ENTER** button.
4. The number 600.0 is visible on the display. Digit 4 is blinking. The blinking digit indicates which of the digits is selected. The selection can be modified by using the ▲ button.
6. Using the ► button you can go to the next digit.
7. By using the ▲ button, you can increase the value of the blinking digit:
1, 2, 3, 4, 5, 6, 7, 8, 9, 0, etc.
8. If you have selected the last digit (the digit on the right side), and you press the ► button, a blinking colon will appear on the left side: : 123.4. This colon indicates, that the positive or negative sign is being selected, and you can now change it by the ▲ button.
9. With the ▲ button you can switch the negative sign on or off.

- 123.4 = 123.4 ºC
- - 123.4 = -123.4 ºC

Exit from the menu item 1. After finishing the setting, press the **MENU** button to exit from the menu item, and you see this: 06.ht.
(2. If you want to change the setting you have done just now, or if you just want to check what you have typed in, go on with the operation from point 3 of the **Sequence of operations**.)
(3. If you don't want to exit the menu, as you want to do further settings, then you may select the desired menu items by pressing the ▲ button.)

Exit from the menu 1. Press the **MENU** button. First the mnemonic SAuE (**Save**), then the mnemonic EH it (**Exit**) are shown on the display. With this the storing of the settings is completed. The instrument has exited the menu and goes on with the measurement.

7.9. The number of averaged measurements
(07. menu item)

Function

The instrument performs cca. 15 measurements in each seconds. The displayed measurement result is generated as the average of several measurements.
Here you can define the number of measurements that should be used for calculating the averaged numerical value. By increasing this number the display stability increases, but the signal settling time becomes lower.
[Default factory setting: 8]

Sequence of operations

1. Enter the menu by typing the supervisor code.
The way the code should be type in is described in Chapter **7.1. Typing the code in.** You see on the display: 01.Ld.
2. Keep stepping by pressing the ▲ button as long as you see this menu item: 07.An.
3. Enter the menu item by pressing the **ENTER** button.
4. You see this 8 on the display. The number is blinking.
5. Pressing the ▲ button select the number of measurements to be averaged for the displayed numerical value.

- 8 : The displayed value is the average of the last 8 measurements.
[Default factory setting]
(The display settling time after the stabilisation of the input signal: 0.5 seconds.)
- 16 : The displayed value is the average of the last 16 measurements.
(The display settling time after the stabilisation of the input signal: 1 second.)
- 32 : The displayed value is the average of the last 32 measurements.
(The display settling time after the stabilisation of the input signal: 2 seconds.)

Sequence of operations

- 1 : The displayed value is the same as the last measurement result; the previous measurements do not influence this value.
(The display settling time after the stabilisation of the input signal: 0.1 second.)
- 2 : The displayed value is the average of the last 2 measurements.
(The display settling time after the stabilisation of the input signal: 0.1 second.)
- 4 : The displayed value is the average of the last 4 measurements.
(The display settling time after the stabilisation of the input signal: 0.3 seconds.)

Exit from the menu item

1. After finishing the setting, press the **MENU** button, to exit from the menu item, and you see this: 07.An.
(2. If you want to change the setting you have done just now, or if you just want to check what you have typed in, go on with the operation from point 3 of the **Sequence of operations**.)
(3. If you don't want to exit the menu, as you want to do further settings, then you may select the desired menu items by pressing the ▲ button.)

Exit from the menu

1. Press the **MENU** button. First the mnemonic SAuE (**Save**), then the mnemonic EH it (**Exit**) are shown on the display. With this the storing of the settings is completed. The instrument has exited the menu and goes on with the measurement.

	7.10. Display refresh time (08. menu item)
Function	The instrument performs cca. 15 measurements in each seconds. It's too fast to see the changing of the measurement value. Here you can define the time periods by which the instrument displays the new measurement values. [Default factory setting: 0.5 second]
Sequence of operations	1. Enter the menu by pressing a supervisor code. The way the code should be type in is described in Chapter **7.1. Type the code in.** You see on the display: 01.Ld. 2. Keep stepping by pressing the ▲ button as long as you see this menu item: 08.dr. 3. Enter the menu item by pressing the **ENTER** button. 4. You see this 0.5 S on the display. It's meaning: 0.5 seconds) The 0.5 numerical value is blinking. 5. Pressing the ▲ button select the time periods by which the instrument should display the new measurement values. • 0.5 S = once in each 0.5 seconds [Default factory setting]. • 1.0 S = once in each 1 second. • 1.5 S = once in each 1.5 seconds. • 2.0 S = once in each 2 seconds. • 0.1 S = once in each 0.1 seconds. • 0.3 S = once in each 0.3 seconds.

Exit from the menu item

1. After finishing the setting, press the **MENU** button, to exit the menu item, and you see this: 08.dr.

(2. If you want to change the setting you have done just now, or if you just want to check what you have typed in, go on with the operation from point 3 of the **Sequence of operations**.)

(3. If you don't want to exit the menu, as you want to do further settings, then you may select the desired menu items by pressing the ▲ button.)

Exit from the menu

1. Press the **MENU** button. First the mnemonic SAuE (**Save**), then the mnemonic EH it (**Exit**) are shown on the display. With this the storing of the settings is completed. The instrument has exited the menu and goes on with the measurement.

7.11. Tests (09. menu item)

Function Checking the display and the limit outputs.

Sequence of operations 1. Enter the menu by typing either the user code or the supervisor code.
The way the code should be type in is described in Chapter **7.1. Typing the code in.** You see this: 0 1.Lcd.
2. Keep stepping by pressing ▲ button as long as you see this menu item: 09.tt.
3. Enter the menu item by pressing the **ENTER** button.
4. You see this t.Lcd on the display. (It's meaning: Display test). The mnemonic Lcd is blinking.

5. If you want to test the display, press the **ENTER** button. In this case all the segments on the display get switched on. By pressing the ▲ button several times you can select from several test patterns by which you can decide whether the display is good or not. You may exit from the display test by pressing the **MENU** button. You see this t.Lcd again.
6. If you want to test the limit outputs, press the ▲ button to switch to the t.oUt mnemonic from the t.Lcd mnemonic. (It's meaning: Output test).
7. Press the **ENTER** button.
8. You see this: 1._2._. The blinking sign after 1 indicates the status of the first limit output, the blinking sign after 2 indicates the status of the second limit output. In this present case both of them are switched off. This is why the blinking sign is in the lower position.
9. Pressing the ▲ button, you can switch the outputs on.

- 1._2._ = both are switched OFF.
- 1.¯2._ = 1. ON; 2. OFF.
- 1._2.¯ = 1. OFF; 2. ON.
- 1.¯2.¯ = both are switched ON.

Comment: the status you have selected here remains unchanged as long as you exit the menu, and the instrument starts measuring.
10. You can exit from the display test by pressing the **MENU** button. You see the blinking t.oUt mnemonic.

Current transmitter test
11. If you want to perform a test of the current transmitter, use the ▲ buton to switch from the text t.oUt to the text t.An.o (its meaning is: analogue output test.).
12. Press the **ENTER** button.
13. Now this is visible on the display: mA04. Now the apparatus sets the loop current to 4 mA (irrelevant to the measured temperature value, as this is a test function).
14. By using the ▲ button, you can set any current values between 4 mA and 20 mA, in 1 mA steps.
15. By pressing the ► button again, you may select from among the following operating modes:
- 4 mA
- 12 mA
- 20 mA

Exit from the menu item

1. Press the **MENU** button, to exit from the Tests menu item, and you see this: 09.tt.
(2. If you want to return to the tests, go on from **point 3 of the Sequence of operations**.)
(3. If you don't want to exit the menu because you want to perform further settings, you can select the desired menu items by pressing the ▲ button.)

Exit from the menu

1. Press the **MENU** button. First the mnemonic SAuE (**Save**), then the mnemonic EH it (**Exit**) are shown on the display. With this the storing of the settings is completed. The instrument has exited the menu and goes on with the measurement.

7.12. Changing the user code (10. menu item)

Function

You can define new codes instead of the factory-defined user code. The code is an optional number within the range between 000 and 999.
[Default factory setting: 000]

Sequence of operations

1. Enter the menu by typing either the user code or the supervisor code.
The way the code should be type in is described in Chapter **7.1. Typing the code in.** You see this: 0 1.Ld.
2. Keep stepping by pressing the ▲ button as long as you see this menu item: 10.Uc.
3. Enter the menu item by pressing the **ENTER** button.
4. You see on the display: 000.
The digit on the left side is blinking.
• Pressing the ▲ button you can increase the value of the blinking digit:
1, 2, 3, 4, 5, 6, 7, 8, 9, 0, etc.
• Pressing the ► button you can select the next digit.
3. Pressing the buttons ▲ and ►, type in the new user code.
4. Press the **MENU** button.
5. You have to type the new code in twice. This prevents an error in defining the new code due to typing mistakes.
This is indicated by the mnemonic r.tYP (re-type).
6. Pressing the buttons ▲ and ► type in the new user code again.
7. Press the **MENU** button.
8. When the code you wrote in for the first time is not identical with the code written in for the second time, a blinking mnemonic rbAd.c warns you on the error, and the device exits from the menu item. You see this 10.Uc on the display. (The user code has not changed, the old one is valid.) Restart the operation from Point 3.

Sequence of operations

9. If the codes written in for the first and second time are identical with each other, the device exits from the menu item. You see this IO.Uc on the display.

Do not forget the user code you have specified. If you forget it, defining another one is possible only by using a supervisor code for entering into the menu.

Returning into the menu item Changing the user code

1. As you have already left the menu item **Changing the user code**, you see this: IO.Uc.
(2. If you want to change the setting you have performed just now, or if you just want to check what you have typed in, continue the operation from **Point 3 of the Sequence of operations.**)
(3. If you do not want to exit from the menu, as you want to perform further settings, you may press the ▲ button to select the desired menu items.)

Exit from the menu

1. Press the **MENU** button. First the mnemonic SAuE (**Save**), then the mnemonic EH it (**Exit**) are shown on the display. With this the storing of the settings is completed. The instrument has exited the menu and goes on with the measurement.

7.13. Changing the supervisor code (11. menu item)

Function

You can define new codes instead of the factory-defined supervisor code. The code is an optional number within the range between 000 and 999.
[Default factory setting: 100]

Sequence of operations

1. Enter the menu by typing the supervisor code.
The way the code should be type in is described in Chapter **7.1. Typing the code in.** You see this: 01.Ld.
2. Keep stepping by pressing the ▲ button as long as you see this menu item: 11.Sc.
3. Enter the menu item by pressing the **ENTER** button.
4. You see on the display: 100. The digit on the left side is blinking.
• Pressing the ▲ button you can increase the value of the blinking digit:
1, 2, 3, 4, 5, 6, 7, 8, 9, 0, etc.
• Pressing the ► button you can select the next digit.
3. Pressing the buttons ▲ and ►, type in the new supervisor code.
4. Press the **MENU** button.
5. You have to type the new code in twice. This prevents an error in defining the new code, due to typing mistakes. This is indicated by the mnemonic r.tYP (re-type).
6. Pressing the buttons ▲ and ► type in the new supervisor code again.
7. Press the **MENU** button.
8. When the code you wrote in for the first time is not identical with the code written in for the second time, a blinking mnemonic rbAd.c warns you on the error, and the instrument exits from the menu item. You see this 11.Sc on the display. (The supervisor code has not changed, the old one is valid.) Restart the operation from Point 3.

Sequence of operations

9. If the codes type in for the first and second time are identical with each other, the instrument exits from the menu item. You see this 11.5c on the display.

Do not forget the supervisor code you have specified. If you forget it, defining another one is possible in the service only.

Returning into the menu item Changing the supervisor code

1. As you have already left the menu item **Changing the supervisor code**, you see this: 11.5c.

(2. If you want to change the setting you have performed just now, or if you just want to check what you wrote in, continue the operation from **Point 3 of the Sequence of operations.**)

(3. If you do not want to exit from the menu, as you want to perform further settings, you may press the ▲ button to select the desired menu items.)

Exit from the menu

1. Press the **MENU** button. First the mnemonic SAuE (**Save**), then the mnemonic EH it (**Exit**) are shown on the display. With this the storing of the settings is completed. The instrument has exited the menu and goes on with the measurement.

7.14. Display operating modes (12. menu item)

Function

The instrument has a 4-and-a-half-digit display. It is possible to switch it into a 3-and-a-half-digit display mode. In this case the display behaves like a 3-and-a-half-digit display during measurement. (The mnemonics are displayed in four digits).
[Default factory setting: four-and-a-half-digit operating mode.]

Sequence of operations

1. Enter the menu by typing a supervisor code.
The way the code should be type in is described in Chapter **7.1. Typing the code in.** You see on the display: 01.Ld.
2. Keep stepping by pressing the ▲ button as long as you see this menu item: 12.Ld.
3. Enter the menu item by pressing the **ENTER** button.
4. You see this 1.4 on the display (mnemonic is blinking).
5. You may switch between the two operating modes by pressing ▲ button.

- 1.4 = 4½ digit operating mode [Default factory setting]
- 1.3 = 3½ digit operating mode

In the three-and-a-half-digit operating mode the possible range of numbers to display is reduced to the values being between -200.0 and 200.0.

Exit from the menu item

1. After finishing the setting, press the **MENU** button, to exit from the menu item, and you see this: 12.Ld.
(2. If you want to change the setting you have performed just now, or if you just want to check what you have typed in, continue the operation from **Point 3 of the Sequence of operations.**)
(3. If you do not want to exit from the menu, as you want to perform further settings, you may press the ▲ button to select the desired menu items.)

Exit from the menu

1. Press the **MENU** button. First the mnemonic SAvE (**Save**), then the mnemonic EH it (**Exit**) are shown on the display. With this the storing of the settings is completed. The instrument has exited the menu and goes on with the measurement.

7.15. Disable displaying the leader zeros

(13. menu item)

Function

Leader zero: the zeros that stand before an integer of no value. E.g. the instrument displays the value 5.2 together with the leader zeros:

005.2 (default factory setting), or without the leader zeros: 5.2.

In this menu item you can either disable displaying of the leader zeros, or you can enable this function again.

Sequence of operations

1. Enter the menu by typing a supervisor code (see at Chapter **7.1. Typing the code in**). You see on the display: 01.Ld.
2. Keep stepping by pressing the ▲ button as long as you see this menu item: 13.Ln.
3. Enter the menu item by pressing the **ENTER** button.
4. You see this nULL on the display. The text is blinking.
5. You may switch between the two operating modes by ▲

• nULL = the leader zeros are shown on the display (default factory setting).

• SPcE = the leader zeros are not shown on the display.

Comment: one zero directly before the decimal point is always shown on the display.

Exit from the menu item

1. After you have performed the setting, press the **MENU** button. This takes you out from the menu item, and you see this: 13.Ln.

(2. If you want to change the setting you have done just now, or if you just want to check what you have typed in, go on with the operation from point 3 of the **Sequence of operations**.)

(3. If you do not want to exit from the menu because you want to perform other settings too, you may press the ▲ button to select the desired menu item.)

Exit from the menu

1. Press the **MENU** button. First the mnemonic SAuE (**Save**), then the mnemonic EH it (**Exit**) are shown on the display. With this the storing of the settings is completed. The instrument has exited the menu and goes on with the measurement.

7.16. Clear minimum and maximum values
(14. menu item)

Function

To clear the measured and stored mimimum and maximum values.

Sequence of operations

1. Enter the menu by typing the supervisor code.
The way the code should be type in is described in Chapter **7.1. Typing the code in.** You see this on the display: 01.Ld.
2. Keep stepping by pressing the ▲ button as long as you see this menu item: 14.rm.
3. Enter the menu item by pressing the **ENTER** button.
4. The mnemonic no is shown on the display. The mnemonic is blinking.
Now you still have the possibility to exit. If you want to exit, as you do not want to clear the minimum and maximum values after all, press the **MENU** button. This takes you out from this menu item, and you see this: 14.r 1.
5. If you want to clear the minimum and maximum values, press the ▲ button to change the „NO” to „YES”.
   - no = I do not want to clear
   - YES = I want to clear
6. Press the **MENU** button.
The device displays rEdY (done). The deletion is complete, and the display shows 14.rm

Exit from the menu

1. Press the **MENU** button. First the mnemonic SAuE (**Save**), then the mnemonic EH it (**Exit**) are shown on the display. With this the storing of the settings is completed. The instrument has exited the menu and goes on with the measurement.

7.17. Resetting the default settings (15. menu item)

Function

In this case **all** the settings are deleted, and the default factory setting is restored.
Using this function makes sense in that case, when the settings of the instrument have changed so much, that it is easier to start the setting-up process from the default factory setting.

It is not possible to cancel this operation once the command has been issued.

Sequence of operations

1. Enter the menu by typing the supervisor code.
The way the code should be type in is described in Chapter **7.1. Typing the code in.** You see this on the display: 01.Ld.
2. Keep stepping by pressing the ▲ button as long as you see this menu item: 14.r 1.
3. Enter the menu item by pressing the **ENTER** button.
4. The mnemonic no is shown on the display. The mnemonic is blinking.
Now you still have the possibility to exit. If you want to exit, as you do not want to reset the default settings after all, press the **MENU** button. This takes you out from this menu item, and you see this: 14.r 1.
5. If you want to reset the default settings, press the ▲ button to change the „NO” to „YES”.

- no = I do not want to reset the default settings
- YES = I want to reset the default settings

6. Press the **MENU** button.

The instrument displays the mnemonic bUSY (busy), then the mnemonic rEdY (ready).

After then it restarts: dt , 9502.
According to the factory settings, it measures the loop current with a resolution of three decimals.

7.18. Pt100 correction values (16. menu item)

Function

The temperature-resistance curve of the Pt100 measuring sensor may differ from the standard one in practice. This menu item allows you to assign to three arbitrary temperature values how many hundredths of an Ohm must be added to the actual Pt100 resistance value at the given temperature to obtain the standard resistance value. During measurement, the device adds the values specified here to the measured value of the Pt100 resistance. Of course, this addition is not only performed at the 3 specified temperatures, but also calculates the intermediate and outside values using the interpolation method. In this way, the measurement error due to the inaccuracy of the Pt100 can be completely eliminated.

Attention! Use this menu item only if you have the necessary tools to calibrate the Pt100 measuring sensor — or an authentic and valid calibration protocol for the measuring sensor — and are aware of the related concepts. Entering values that do not correspond to reality will cause the device to be inaccurate.

Practical example

Let us assume that the temperature range to be measured is from +50 °C to +150 °C. Let us also assume that +90 °C is the temperature in which it is particularly important to have the most accurate temperature measurement. If you have a Pt100 calibrator, measure the resistance of the Pt100 sensor at +50 °C, +150 °C and +90 °C.

Write down the measured data one below the other in the following format:
Temperature Nominal R Measured R RN-RM
where the temperature is given in tenths of a degree and the resistances are given in hundredths of an Ohm.

In the example, the measured values should be as follows:

Temperature	Nominal R	Measured R	R_N-R_M
1. **+50.0** °C	119.40	119.08	**0.32**
2. **+90.0** °C	134.71	134.69	**0.02**
3. **+150.0** °C	157.33	157.41	**-0.08**

The pairs of values highlighted in bold must be entered in the menu. You can read the detailed entry process below.

Sequence of operations

1. Enter the menu by typing the supervisor code. The way the code should be type in is described in Chapter **7.1. Typing the code in.** You see this on the display: 01.Ld.
2. Keep stepping by pressing the ▲ button as long as you see this menu item: 16.cP
3. Enter the menu item by pressing the **ENTER** button.
4. The mnemonic cP- 1 is shown on the display. The number 1 is blinking. Meaning: enter the first temperature value and the corresponding resistance value. Enter the menu with the **ENTER** button.
5. The temperature value is displayed. The factory setting is -200.0 °C. The first digit flashes. The flashing digit indicates which of the digits is selected. The value of the selected digit can be changed with the ▲ button.
6. Use the ► button to move to the next digit.
7. Use the ▲ button to increase the value of the flashing digit:
1, 2, 3, 4, 5, 6, 7, 8, 9, 0, etc.
8. When the last (right) digit is selected and you press the ► button, a flashing colon appears on the left: : 200.0. The colon indicates that the sign is selected, which can be changed with the ▲ button.
9. Use the ▲ button to turn the negative sign on or off.

- 200.0 = 200.0 ºC
- - 200.0 = -200.0 ºC

10. Set the first temperature value as described above. In the example above, this is 50.0 °C: 050.0.
11. After entering the temperature value, press the **MENU** button. You can then enter the value (nominal resistance - measured resistance) corresponding to the previously entered temperature value, in hundredths of Ohm. This value is factory set to 0.00 Ohm: 0.00. Change this value to the actually calculated value. In the example above, this is 0.32 Ohm: 0.32.
12. After entering the resistance value, press the **MENU** button. The display shows cP- 1 again.

Sequence of operations

13. To enter the next, second, pair of values, use the ▲ key to move to the next correction point. The display shows cP-2 Enter the menu item with the **ENTER** key.
14. Enter the data for CP-2 as described in points 5–11, similarly to CP-1: temperature: 90.0 °C, resistance: 0.02 Ohm.
15. After entering the resistance value, press the **MENU** key. The display shows cP-2 again.
16. To enter the third pair of values, use the ▲ key to move to the next, third, correction point. The display shows cP-3 Enter the menu item with the **ENTER** key.
17. For points 5–11, In the same way as described in points 1 and 2, enter the CP-3 data: temperature: 150.0 °C, resistance: -0.08 Ohm. (Do not forget to turn on the negative sign.)
18. After entering the resistance value, press the **MENU** button. The display shows cP-3 again.

(19. If you do not want to exit the menu yet because you want to check the values already entered or modify them, press the ▲ button to select from the value pairs: cP- 1, cP-2, cP-3, and enter the value entry as usual with the **ENTER** button.)

Note:
In the example, temperature value 1 was the lowest, temperature value 2 was the highest, and temperature value 3 was the highest. The device does not expect the entry to be in this order. You can enter the temperature and resistance number pairs in any order. The only condition is that you always enter temperature and resistance values that belong to each other. That is, CP-1, CP-2 and CP-3 can even be interchanged. For example, the value of CP-2 can be 150.0 °C and -0.08 Ohm, and the value of CP-3 can be 90.0 °C and 0.02 Ohm. The device still accepts the entry and automatically sorts the number pairs in ascending order by temperature value when exiting the menu.

Exit from the menu

1. After completing the setting, press the **MENU** button.
This will exit the menu and you will see: 16.cP.

Note:
The device does not allow two correction points to have the same temperature value. This is logical, as this can only happen if the setting is entered incorrectly. In this case, instead of exiting, a flashing FA iL (fail = fails) error message will be displayed for 2 seconds, and then the text cP- 1 will be displayed. Action: check the entered values and correct the incorrect value.

(2. If you want to modify the setting you have just made or just check what you have entered, continue from point 3 of the **Sequence of Operations**.)

(3. If you do not want to exit the menu because you want to make further settings, use the ▲ button to select from the menu items.)

Exit from the menu

Press the **MENU** button. The text SAuE (Save) and then EH iE (Exit) will appear. This completes the saving of the settings. The device has exited the menu and continues the measurement.

7.19. Mode selection (22. menu item)

Function

In addition to temperature measurement with the Pt100 measuring sensor, the device can also function as a setpoint transmitter. In this mode, you can use the push buttons to set the numerical value displayed on the display, which controls the output current and can be set to any value within the 4-20 mA range. In this case, the state of the Pt100 measuring sensor is indifferent. If you use the device as a setpoint transmitter instead of temperature measurement, you do not even need to connect the Pt100 measuring sensor, you simply leave the receiving terminals free.

Sequence of operations

1. Enter the menu with the engineer password.
You will find the password entry method in chapter **7.1.**

Password entry. The display shows: 01.Ld.
2. Use the ▲ button to scroll until you see this menu item:

22.mo (Mode).
3. Use the **ENTER** button to enter the menu item.

6. The display shows the text norm The text flashes.
7. You can use the ▲ button to select between the following two operating modes:

- norm (**Norm**al): temperature measurement using the connected Pt100 measuring sensor. [Factory setting]

- tE.Si (**Te**mperature **Si**mulator) mode: the displayed numerical value can be set to a value between the temperature value corresponding to 4 mA (set in menu item 5) and the temperature value corresponding to 20 mA (set in menu item 6) using the front panel push buttons.

Useful tips:
If you set the two end values in menu items 5 and 6 to be 000.0 and 100.0, you will get the percentage setting mode. If the two end values are 004.0 and 020.0, you will get the mA setting mode.

Exit from the menu

1. After completing the setting, press the **MENU** button.

This will exit the menu and you will see: 22.mo.
 (3. If you do not want to exit the menu because you want to make further settings, use the ▲ button to select from the menu items.)

Exit from the menu

Press the **MENU** button. The text SAuE (Save) and then EH it (Exit) will appear. This completes the saving of the settings. The device has exited the menu and continues the measurement if normal mode is selected, while in temperature simulator mode the display shows 000.0, which can be changed using the front panel buttons, as described below.

7.19.2. Using the setpoint transmitter mode

Changing the setpoint using the pushbuttons

After selecting the temperature simulator mode and exiting the menu, the display shows 000.0.

Changing the setpoint is very simple:
Press the middle button (hereinafter referred to as -) to decrease the setpoint, and the right button (hereinafter referred to as +) to increase it.

Using the buttons:
By pressing the – or + button, a left-pointing arrow appears in the left corner of the display. This indicates that the setpoint can be changed using the –, + buttons. If no button is pressed for 2.5 seconds, the arrow will automatically disappear.

By pressing the + button, the setpoint increases by one, by pressing the – button, the setpoint decreases by one.

By holding down the + or – button, the button will automatically repeat, the setpoint changes at a rate of ten values per second.

Decimal digit setting:
When in setpoint setting (arrow is visible in the left corner of the display), press and hold the left button. Then you can change the decimal digits with the - and + buttons.

Entering the menu in setpoint mode

To prevent accidental menu entry, a short press of the left button will not cause the menu to be entered.
To enter the menu, press and hold the left button. After two seconds, a “+” sign will appear on the left side of the display, indicating that the menu is to be entered. At this point, release the button and the device will enter the menu as usual.
While in the menu, the device’s current output will continue to operate and provide the set setpoint.

7.19.3. Scaling the setpoint transmitter output current

Setpoint scaling between 4-20 mA

The output 4-20 mA range can be assigned to a narrower range of the setpoint in the same way as the temperature in normal mode. To do this, read the description of menu items 5 and 6.

For example, if you want the display to be shown in mA, enter the value 004.0 for 4 mA in menu item 5 and the value 020.0 for 20 mA.

Then the range 004.0 and 020.0 that can be set on the display will result in an output current of 4-20 mA, i.e. the displayed value corresponds to the output mA value.

Perhaps the most appropriate solution is to assign the value 000.0 to 4 mA and the value 100.0 to 20 mA, because in this case you can set the setpoint with a percentage display.

8. Fault rectification

8.1. Fault finding

The instrument has a sophisticated self-test function. It is able to detect and display the majority of the errors.

All the error messages are described in detail in chapters **10.3** and **10.4** of the Appendix.
In the case of an error that causes total inability of the instrument to function, nothing appears on the display.

8.2. Repairing

In accordance with Point **2.1.**: **For safety and warranty reasons, any internal work on the instrument must be carried out by DATCON personnel.**
In the case of errors, it is recommended to notice of the displayed error message, as well as of the phenomenon seen.
These information please communicate to the Datcon service personnel.

9. Dismounting

9.1. Dismounting procedure

The steps described in Chapter **4. Mounting** should be performed in reverse sequence. Upon dismounting the instrument, observing all the safety rules is mandatory, like upon mounting.
Only qualified and authorised professionals may perform the dismounting operations.

9.2. Disposal

According with the concerning EU directive, the Manufacturer undertakes the disposal of the instrument that are manufactured by it and intended to be destroyed. Please deliver it in contamination-free condition to the site of the Manufacturer or to a specialised recycling company.

10. Appendix

10.1. Technical specifications

Intrinsic safety data

Certification:	BKI15ATEX0028 X BKI15ATEX0028 X/1 BKI15ATEX0028 X/2
Marking:	Ex II 1G Ex ia IIC T4 Ga -20°C≤Ta≤60°C

<table>
<tr><th colspan="9">Ex safety data</th></tr>
<tr><td rowspan="2">Supply and signal circuit</td><td>U_i</td><td colspan="2">I_i</td><td colspan="2">P_i</td><td>Ci</td><td colspan="2">Li</td></tr>
<tr><td>30 V</td><td colspan="2">100 mA</td><td colspan="2">0,75 W</td><td>48 nF</td><td colspan="2">≈0</td></tr>
<tr><td rowspan="2">Pt100 Temperature sensor</td><td>Uo</td><td colspan="2">Io</td><td colspan="2">Po</td><td>Co</td><td colspan="2">Lo</td></tr>
<tr><td>6,6 V</td><td colspan="2">9 mA</td><td colspan="2">15 mW</td><td>2 µF</td><td colspan="2">10 mH</td></tr>
<tr><td rowspan="2">Limit outputs</td><td>Ui</td><td>Ii</td><td>Pi</td><td>Ci</td><td>Li</td><td>Uo</td><td>Io</td><td>Po</td></tr>
<tr><td>10 V</td><td>16 mA</td><td>40 mW</td><td>≈0</td><td>≈0</td><td>6,6 V</td><td>0,2 mA</td><td>0,2 mW</td></tr>
</table>

Input parameters

Input signal:	the resistance of thePt100, α = 0,00385
Connecting to the sensor:	3 / 4 wires
Wire resistance:	≤50 Ω 400ºC-ig, ≤10 Ω 600 ºC-ig
Display range:	-200 ºC – +600 ºC
Measuring current:	800 µA
Sampling rate:	15 measurements / second
Number of averaged samples:	1; 2; 4; **8**; 16, 32 (adjustable)
Measurement error:	<0,3 ºC (-200 ºC – +400 ºC) <0,4 ºC (+400 ºC – +600 ºC) referring to the nominal resistance value

Display / manual controls

Display unit:	LCD, 4 ½ digit, 7 segments decimal point and negative sign
Character height:	20,5 mm
Displayable temperature range:	-200,0 ºC – +600,0 ºC
Resolution:	0,1 ºC
Display refresh time:	0,1; 0,3; **0,5**; 1,0; 2,0 sec (adjustable)
Manual controls:	3 membrane push-buttons on the front cover

Power supply	
Loop feeding:	12 V – 30 V; protection against reverse polarity
Current range (transmitter function):	4 – 20 mA
The serial resistance of the feeding:	max. (Ut[V] - 12 V) / 0,021 A

Output parameters	
Transmitter output	
Output signal:	4–20 mA
Overdriving:	min: ~ 3,9 mA; max.:~ 21 mA
Accuracy:	0,02% (Ta = 23ºC ± 2/ ºC a kijelzett értékre vonatkoztatva:

Limit outputs	
Output type:	optically isolated passive switching transistor
Current in OFF condition:	I < 0.1mA (at 9 V)
Voltage in ON condition:	U < 1 V (at 10 mA)
Load rating:	10 V, 16 mA max. (Ex safety data)
Refreshing time:	same as the display’s one
Hysteresis:	0 - ±99.9

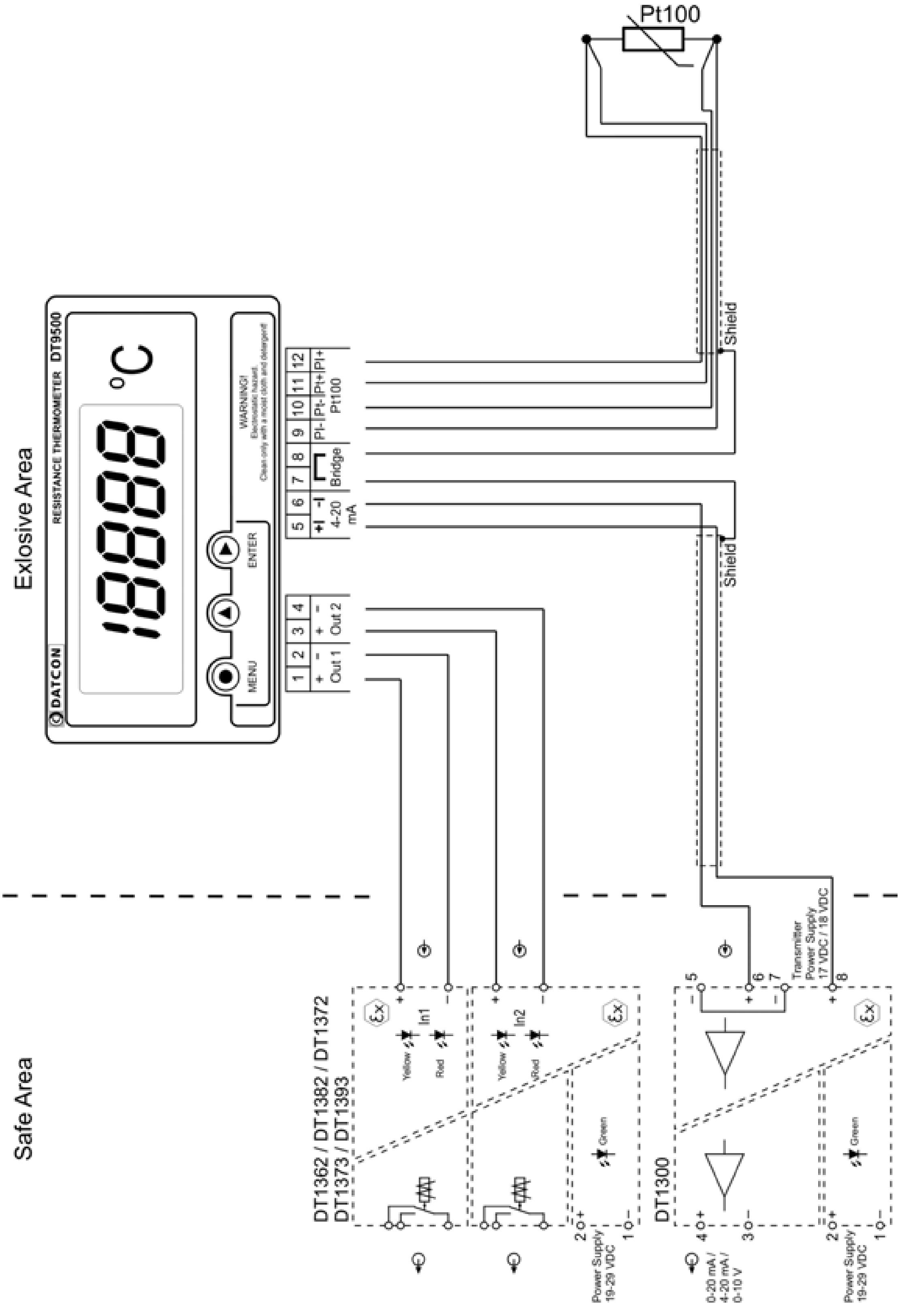
Environmental conditions:	**Environmental conditions:**
Operating temperature range:	-20 °C ≤ Ta ≤ +60 °C
Storing temperature range:	-25 °C ≤ Ta ≤ +70 °C
Relativ humidity:	90% max., non-condensing
Place of installation:	Zone „1”, Zone „2”, safe area

Electromagnetic compatibility (EMC)	
In accordance with MSZ EN IEC 61326-1:2021	
Immunity:	-A- criterion
Noise emission:	-A- class

General data:	
Housing:	DIN standard ABS case
Dimensions:	144 x 72 x 75 mm (width x height x depth)
Weight:	~0.4 kg
Protection from front cover:	IP 65
Protection from back side:	IP 30
Mounting position:	optional
Connection cable:	0.25-1.5 mm² cross-section
Electrical connection:	push-in direct connection

The manufacturer reserves the right to change specifications.

10.2. Application example



10.3. Error messages

The instrument has a sophisticated self-testing function; it is capable of detecting the majority of the errors. All mnemonics (code words) presented on the display comes from English expressions in abbreviated form.

E:Ado

A/D overflow (**E**rror: **A/D O**verflow)
The loop current is too high, it cannot be measured.
The Pt100 (or wiring) is faulty.

E:MSt

Error measurement (**E**rror: **M**ea**S**uremen**T**)
Measuring not possible.
The Pt100 is faulty (short-circuit or breaking).

E:UF_

Underflow (**E**rror: **U**nder**f**low)
Temperature is lower than -200 ºC.

E:oF‾

Overflow (**E**rror: **O**ver**f**low)
Over**f**low (**E**rror: **O**ver**f**low)
Temperature is higher than 600 ºC.

E:MMM

Missing minimum - maximum value (**E**rror: **M**issing **M**inimum-**M**aximum)
The minimum value and the maximum value that has been continually stored since the latest deletion has got deleted due to an operating fault.
Remedy: there is nothing to do.

10.4. Messages of critical errors

Such errors are caused normally by structural injuries or damages. Repair is done by the service of Datcon. In case of error it is recommended to notice of the displayed error message, as well as of the phenomenon seen and communicate to the Datcon service personnel.

S:Adh

A/D fault (**S**ervice: **A/D H**ardware)
Either the A/D converter or It's communication bus is faulty.
Repairing: by the service

S:EEh

EEPROM fault (**S**ervice: **EE**PROM **H**ardware)
The memory storing the operation parameters, or it's communication bus is faulty, therefore access to the stored parameters is not possible.
Repairing: by the service

S:EEP

EEPROM writing error (**S**ervice: **EE**PROM **P**rotected)
The memory storing the operation parameters is faulty, therefore changing the stored parameters in not possible.
Repairing: by the service

S:cAL

Calibration error (**S**ervice: **Cal**ibration)
The instrument must be re-calibrated in the factory.
Repairing: by service

S:dFS

Default Factory Settings (**S**ervice: **D**efault **F**actory **S**ettings)
The instrument needs to be re-calibrated, and the operating parameters have also got damaged.
Repairing: by service

E:LSE

The last saving was not successful (**E**rror: **L**ast **S**ave)
Saving of the parameters modified last time was unsuccessful. The error was caused most probably by an interruption of the current loop. The status prior to the modification was preserved.
Repairing: Enter the menu, check the parameters. Change the incorrect values to the desired values, then exit the menu in the regular way. Pay attention to ensure that the loop current should not get interrupted during the operation.

10.5. Description of the menu items

You find a description of the menu items in the following part. A description on the handling of the menu is in Chapter **7. Settings**.

01.Ld

Display modes of limit output status (**L**imit **D**isplaying)
[Default Factory Setting: OFF]

- oFF Switched off (**OFF**)
It never displays the limit output status.
- d.btn Dynamic button (**D**ynamic **B**u**tt**o**n**)
As long as the **ENTER** is being pressed down.
- t.btn Timed button (**T**imed **B**u**tt**o**n**)
As long as the **ENTER** is being pressed down + for 2.5 seconds.
- S.btn Static button (**S**tatic **B**u**tt**o**n**)
The display can be switched ON/OFF by **ENTER.**
- AU.cE Automatically: when changes (**Au**to: **C**hang**e**)
For a period of 2.5 sec, after a change has taken place in the output. Disabling: by **ENTER**
- AU.PL Automatically: periodical (**Au**to: **P**eriodica**l**)
Periodical: ON/OFF in each 2.5 seconds. Disabling: by **ENTER**.
- on Always ON (**ON**)
Disabling: by **ENTER**.

02.L 1

Limit output configuration sub-menu No.1.(**L**imit **1**)
Detailed description in the chapters **7.3.**, **7.4.**, **7.5.**

03.L2

Limit output configuration sub-menu No.2. (**L**imit **2**)
It is the same as for limit output No.1., but everything pertains to limit output No.2. Detailed description in the chapters **7.3.**, **7.4.**, **7.5.**

04.WE
Access is possible
by supervisor code only

4 wiring / 3 wiring measuring metod (Wir**E)**
Must set to conformable with effective swathe metod Pt 100. [Default factory setting: 4 wiring.]

05.Lt
Access is possible
by supervisor code only

The temperature value belonging to 4 mA
Any value may be assigned to it within the temperature interval displayable on the display [Default factory setting: -200,0 °C]

06.ht
Access is possible
by supervisor code only

The temperature value belonging to 20 mA
Any value may be assigned to it within the temperature interval displayable on the display [Default factory setting: 600,0 °C]

07.An
Access is possible
by supervisor code only

Averaging number (**A**veraging **N**umber)
The displayed measurement result is generated as the average of several measurements. The number of measurements can be defined here.
By increasing this number the display stability increases too, but the signal settling time becomes lower.
[Default factory setting: 8]

08.dr
Access is possible
by supervisor code only

Display refresh time (**D**isplay **R**efresh)
The instrument performs cca. 15-16 measurements in each seconds. It’s too fast to see the changing of the measurement value.
Here you can define the time periods by which the instrument displays the new measurement values.
[Default factory setting: 0.5 sec]

09.tt

The submenu that contains the test programs (Test**)**

- **t.LCd** Display test (**T**est: **LCD**)
Checking if the display works well.
- **t.oUt**, **t.An.o** Output test (**T**est: **Out**put, **T**est: **AN**alog **O**utput.)
Putting the status of the limit outputs on the display and changing them, irrelevant to their operating mode.
Checking the current output.

10.Uc

Changing the User Code (**U**ser **C**ode)
The new User Code must be typed in twice, in order to avoid any typing errors. The mnemonic **r.tYP** (**R**e-**Typ**e) warns you to type the code for the second time, after you have typed it once. If the two codes are not identical with each other, the mnemonic **bAd.C** (**Bad C**ode) appears on the display, and the instrument exits the menu item.

Make sure not to forget the User Code, otherwise a new one can be defined only if you enter the menu by a Supervisor Code [Default factory setting: 000]

11.Sc
Access is possible by supervisor code only

Changing the Supervisor Code (**S**upervisor **C**ode)
The new Supervisor Code must be typed in twice, in order to avoid any typing errors. The mnemonic r.tYP (**Re-Typ**e) warns you to type the code for the second time, after you have typed it once. If the two codes are not identical with each other, the mnemonic bAd.C (**Bad C**ode) appears on the display, and the instrument exits the menu item.
Make sure not to forget the Supervisor Code, otherwise a new one can be defined in the service only. [Default factory setting: 100]

12.Ld
Access is possible by supervisor code only

Display mode (**LCD**)

- 1.4: four-and-a-half-digit mode (-19999 - 19999).
- 1.3: three-and-a-half-digit mode (-1999 - 1999).

[Default factory setting: four-and-a-half-digit]

13.Ln
Access is possible by supervisor code only

Disable displaying leader zeros (**L**eader **N**ull)

- nULL: the leader zeros are displayed
- SPCE (**Sp**a**ce**): the leader zeros are not displayed, only one standing before the integer [Default factory setting: leader zeros are displayed]

14.rM
Access is possible by supervisor code only

Erase of min. / max. value (**R**eset **M**in. & max.)
YES choosing erases min. and max. values

15.r 1
Access is possible by supervisor code only

Restoring the default settings (**R**eset **1**)
When you select YES, all the parameters will be reset to the default factory setting, and the instrument restarts.

It is not possible to withdraw this command subsequently!

16.cP
Access is possible by supervisor code only

Specifying Pt100 resistance correction values
(**C**orrection **P**oints)
For 3 arbitrary temperature values, it is possible to specify how many hundredths of an Ohm the deviation from the standard value is at a given temperature. This way, the measurement error resulting from the inaccuracy of the Pt100 can be completely eliminated.

22.Mo
Access is possible by supervisor code only

Normal mode / Setpoint mode
(**Mo**de)
Choose between the two modes.

10.6. Messages and error messages during setting up

The following mnemonics may displayed when the settings are being performed.

LO.L i	**The value you have defined is lower than permissible** (**Lo**w **Li**mit) The instrument has replaced the value you have defined to the permitted lowest value.
h i.L i	**The value you have defined is higher than permissible** (**Hi**gh **Li**mit) The instrument has replaced the value you have defined to the permitted highest value.
EH it	**Exit from the menu, returning to the normal operating mode** (**Exit**)
SAuE	**Saving the changed parameters is being done** (**Save**)
_ _ _ _ (4 lines at the **bottom** of the display)	**Low numerical value, not possible to display** This mnemonic is displayed in that case when you have switched the display mode from four-and-a-half-digit to three-and-a-half-digit, and the numerical value of a previously defined parameter does not „fit" to the display format.
‾ ‾ ‾ ‾ (4 lines at the **top** of the display)	**High numerical value, not possible to display** This mnemonic is displayed in that case when you have switched the display mode from four-and-a-half-digit to three-and-a-half-digit, and the numerical value of a previously defined parameter does not „fit" to the display format.
bUSY	**The instrument is performing internal operations** (**Busy**)
rEdY	**The requested task has been successfully completed** (**Re**a**dy**)
in it	**The device is preparing for the measurement.**
no	**I do not want this menu item** (**No**)
YES	**Yes, the menu item may be started (Yes)**
FA iL	**One of the 3 correction points given is incorrect.**

10.7. Setting up the apparatus (practical exercise)

Task

There is a measurement loop, in which the 4 mA current should be assigned to 100 °C, and 20 mA should be assigned to 200 °C.

Let's have the following settings for DT9502:

- The temperature value belonging to the 4 mA current: 100.0 °C.
- The physical value belonging to the 20 mA current: 200.0 °C.
- The leader nulls with no value are not written on the display.

Entering the menu

Use the supervisor code to enter the menu.
Read chapter **7.1. Writing the code in** to see how the code should be written in. On the dipslay you see this:

01.Ld

Setting the temperature value that belongs to 4 mA

1. Keep stepping with the ▲ button as long as you see this menu item: 05.Lt.
2. Enter this menu item by using the **ENTER** button.
3. By the ▲ button you may increase the value of the blinking digit.
4. By the ► button you may step to the next digit.
5. Set the value: 100.0.
6. Press the **MENU** button. With this you leave the menu item, and you see this: 05.Lt.

Setting the temperature value that belongs to 20 mA

1. Keep stepping with the ▲ button as long as you see this menu item: 06.Lt.
2. Enter this menu item by using the **ENTER** button.
3. By the ▲ button you may increase the value of the blinking digit.
4. By the ► button you may step to the next digit.
5. Set the value: 200.0.
6. Press the **MENU** button. With this you leave the menu item, and you see this: 06.Lt.

Disabling the leader nulls

1. Keep stepping with the ▲ button as long as you see this menu item: 13.Ln.
2. Enter this menu item by using the **ENTER** button.
3. The text nULL is visible on the display. The text is blinking.
4. Use the ▲ button to switch to the text: SPcE.
5. Press the **MENU** button. With this you leave the menu item, and you see this: 13.Ln.

Exit the menu

Press the **MENU** button. First the mnemonic SAuE (**Save**), then the mnemonic EH it (**Exit**) is displayed. With this the storing of the settings is completed. The instrument has exited the menu and goes on with the measurement.

10.8. The limit outputs (training material)

Outputs

The DT9502 has two optically isolated limit outputs that work independently from each other. The two outputs are equivalent. The following information and examples relate to output No.1. All these, however, are applicable for output No.2 too, without modification.

Limit values assigned to the output

The limit output has two possible conditions: switched OFF or switched ON.

To one output two limit values can be defined. The lower one is called: L 1.LL.

L 1 means a parameter to be assigned to the limit output No.1 (**L**imit 1).

LL (**L**ow **L**imit) means that this is the lower one among the two limit values.

The high limit value is designated as L 1.hL, where hL (**H**igh **L**imit) means that this is the higher one among the two limit values.

As the names indicate, the value of the high limit must not be lower than the value of the low limit. Therefore if you increase the value of the L 1.LL parameter, and it happens to be higher than the value of L 1.hL, then L 1.hL takes automatically the value of L 1.LL.

The operating mode of the output defines the way in which the measured input signal should control the limit output, depending on the above-described two definiable limit values. (All this will be clear through the description and example provided in the following pages).

Limit output sub-menu

In the menu, the second menu-item (02.L 1) contains all the parameters that relate to the limit output No.1.
When you enter the menu, you get into a sub-menu.
The menu structure is presented by the figure **7.2. Menu structure**.
The items within the sub-menus are not numbered.

Instead, L 1 is used showing that all the menu items that constitute the sub-menu in question belong to the limit output No.1. This prevents you from mixing it up with the main menu.

Sub-menu items

You will find a detailed description of the limit-value sub-menu items in the following text.

L 1.SS

Operating mode (**S**etting**s**)
It defines the conditions under which the limit output should switch ON depending on the value of the measured and displayed physical signal. [Default factory setting: OFF]
Detailed description: on the following page

L 1.LL

Low limit value (**L**ow **L**imit)
It is one of the numerical values, to which the instrument compares the measured signal continuously. [Default factory setting: 0]

L 1.Lh

Lo limit value hysteresis (**H**ysteresis for **L**L)
This is the half of the hysteresis value that belongs to the low limit value. [Default factory setting: 0]

L 1.hL

High limit value (**H**igh **L**imit)
It is the other numerical value, to which the instrument compares the measured signal continuously. It's value must not be lower that the value of L 1.LL. [Default factory setting: 0]

L 1.hh

High limit value hysteresis (**H**ysteresis for **H**L)
This is the half of the hysteresis value that belongs to the high limit value. [Default factory setting: 0]

L 1.AM

Alarm mode (**A**larm **M**ode)
[Default factory setting: OFF]
Detailed description in the chapter: **Alarm Mode**.

Detailed description of the operating mode (L 1.55)

The operating modes define the conditions under which the limit output should switch ON depending on the value of the measured and displayed physical signal.

oFF

Switched OFF
The output is always switched OFF. [default factory setting]

≥L

≥ low limit
It switches ON if the measured value is ≥ low limit.

<L

< low limit
It switches ON if the measured value is < low limit.

≥L.≤h

Interval between the low and the high limits
It switches ON when (measured value ≥ low limit) AND (measured value ≤ high limit).

<L.>h

A range outside the low and high limits
It switches ON when (measured value < low limit) OR (measured value > high limit).

on

Always switched ON
Independently from the measured value, the output is always ON.

The essentials about the hysteresis

To each limit values can be assigned different hysteresis values.

To L 1.LL belongs: L 1.Lh,

To L 1.hL belongs: L 1.hh.

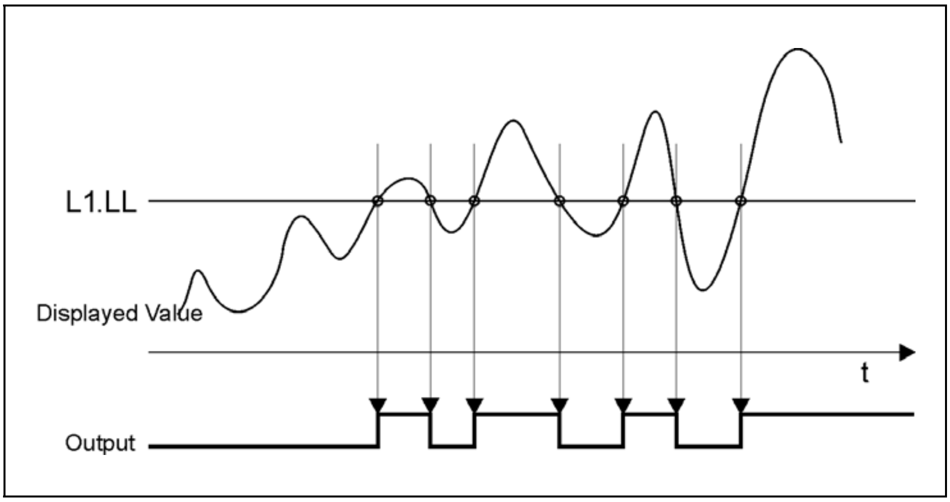
The essentials about the hysteresis:
It makes it possible that the output should switch off not at the same numerical value at which it had switched on. What is the benefit of that? You may avoid the undesired consequence, when the output switches on and off several times near the limit values, due to a drift of the input signal, or due to it’s ripple.

This is demonstrated by an example in the following pictures:

Example: Hysteresis = 0

Comment: the precondition for the following examples is that the output is in ≥L mode, that is, it switches ON when the measured value ≥ L1.LL (low limit).
The input signal has an increasing characteristic, but rippled. L1.LL value = 100.0 ºC.

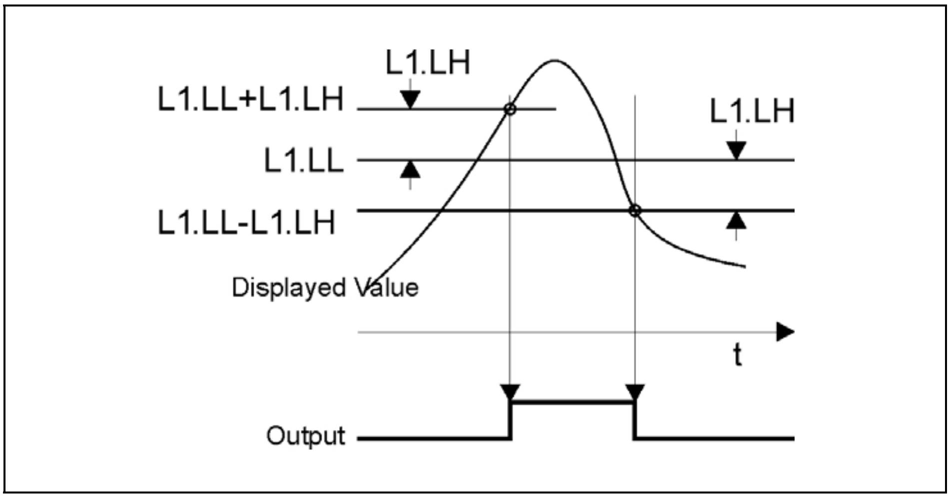
The value of the relevant hysteresis (L1.LH) = 0 ºC.



A hysteresis with a value of zero means that the limit detection has no hysteresis. The output switches ON when the value on the display reaches or is in excess of 100.0 ºC, and switches OFF when it goes lower than 100.0 ºC again.

Figure: Hysteresis > 0

The following figure shows the essentials of hysteresis, when it’s value is higher than zero

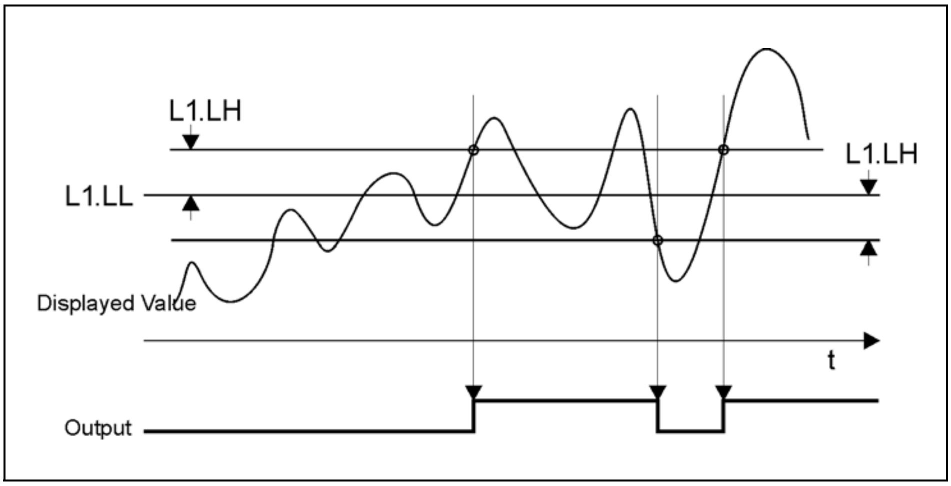


Example:
Hysteresis > 0

If you want the output to switch ON only once in the case of the signal presented by the previous example, then set the value of the hysteresis L1.Lh higher than 0.
In practice the hysteresis value could be depend from two aspects:

- amplitude of the ripple or the measure of the drift on the input signal
- or when the user needs two different values to switch ON and switch OFF not in relation the ripple or the drift. (This is demonstrated by the example at the end of this chapter.)

In this example the value of the hysteresis
(L1.Lh)= 1.0 ºC
How does it affect the switching of the output?



When the displayed value increases, the output does not switch ON at 100.0 ºC, only at the value 100.0+1.0=101.0 ºC.
After it has switched ON, and the signal begin to decrease, it does not switch OFF as long as the value reaches the value of 99.0 ºC (100.0-1.0).

It can be seen, that the difference between the switching ON and OFF, that is the actual hysteresis, is 0equal with twice the L1.Lh parameter, that is 2.0 ºC.
It is also demonstrated that the hysteresis value of 1.0 ºC, that is used in the example, has actually improved the situation: the former number of switches, 4, has reduced to 2. If we had selected a value twice as much, the result would have been only one switching on.

Detailed description of the limit value operating modes

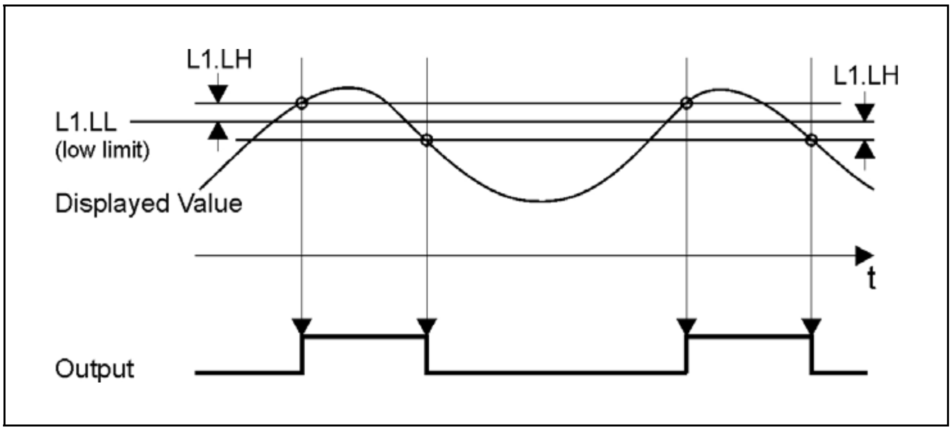
oFF

• **oFF: Switched OFF** [this is the default factory setting]

Independent of the measured temperature, the limit output is always switched OFF.

≥L

• **≥L : It switches ON, when: measured temperature ≥ low limit**



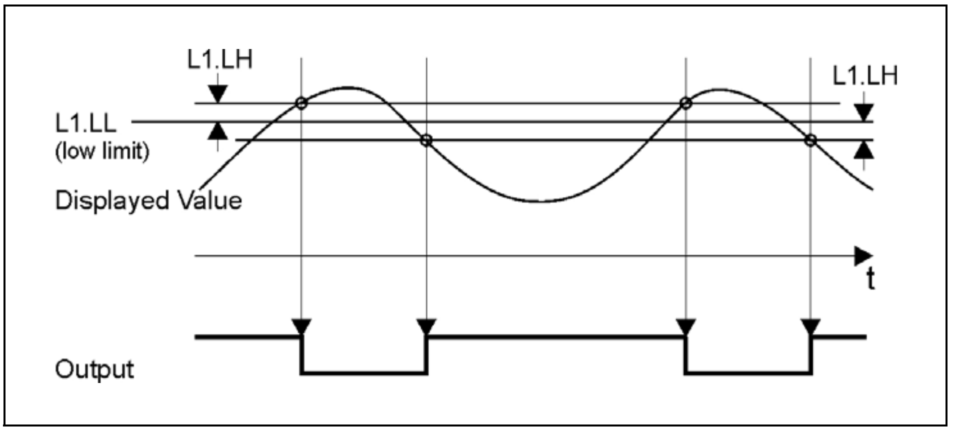
The output switches ON, if the displayed temperature ≥ numerical value defined as the L1.LL.

In this operating mode the value of the L1.hL parameter is indifferent: it does not influence the operation of the output.

Example for the application:
Switching a cooling system ON above a given temperature value.

CL

• **CL: It switches ON, when the measured temperature < low limit**



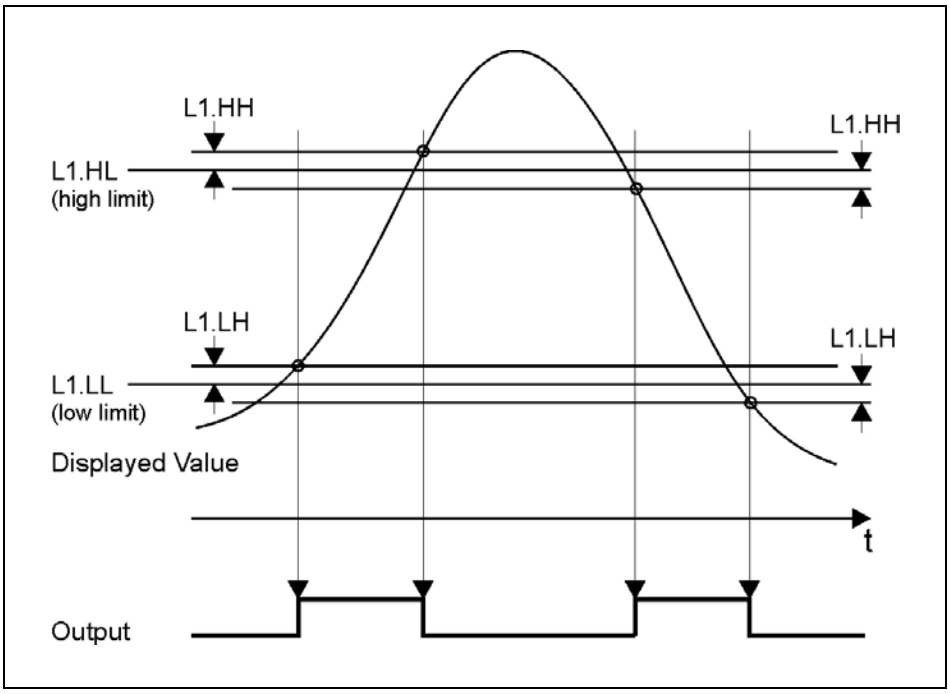
The output switches ON, if the displayed temperature value is lower than the numerical value defined as the L1.LL parameter.

In this operating mode the value of the L1.HL parameter is indifferent: it does not influence the operation of the output.

Example for the application:
Switching ON a heating system below a given temperature value.

2L.Sh

• **2L.Sh: It switches ON, when (measured temperature value ≥ low limit) AND (measured value ≤ high limit)**

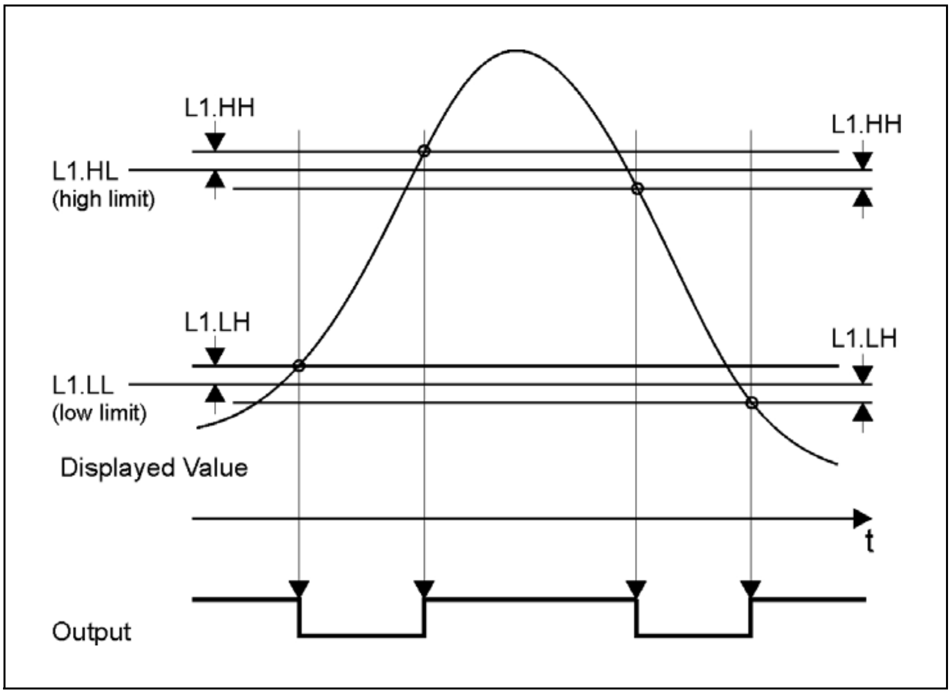


The output switches ON, when the displayed temperature value ≥ numerical value defined as the L 1.LL parameter AND, besides, it is ≤ numerical value defined as the L 1.hL.

Example for the application:
It indicates that the measured temperature is between the desired limits.

cL.oh

- **cL.oh: It switches ON, when (measured temperature < low limit) OR (measured temperature > high limit)**



The output switches ON, when the displayed temperature is lower than the numerical value defined as the L 1.LL parameter OR higher than numerical value defined as the L 1.hL.

Example for the application:
It indicates that the measured temperature out of the desired limits.

Displaying the limit values

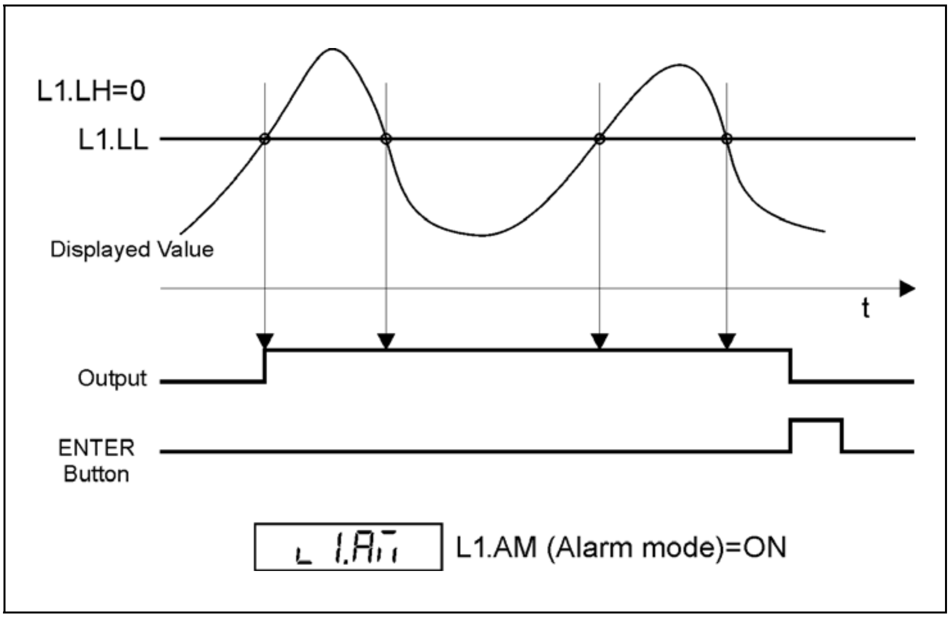
(Switching the displaying on: from the **04.LD** menu item.)

- Both outputs are OFF: --:--
- Output 1 is ON, output 2 is OFF: L 1:--
- Output 1 is OFF, output 2 is ON: --:L2
- Both outputs are ON: L 1:L2

If the Alarm Mode is ON, and the given output is in alarm status, the above displays appear blinking. The blinking stops only when the acknowledgement is done manually (Upon pressing the **ENTER** button.)

Alarm mode

The limit output may work in Alarm mode too. This mode is switched ON by the L 1.AM parameter. According to the default factory setting it is switched off (oFF). When the Alarm mode is ON (on), the limit output switches on when it has to switch on according to the measured and displayed physical value, but it will not switch off even if the value changes so that it should cause it to switch off. The output can be switched off by pressing the **ENTER** button only (acknowledgement).



Of course, if the condition that causes the output to switch on persists, the limit output will switch on again when the **ENTER** button is released.
(Similary to working of fire-alarm gear generates fire alarm. Not suffice to definitive liquidation receipt signal alarming, but must liquidate fire, generative cause.

After switching on the instrument

After switching on the instrument the limit outputs are disabled as long as it performs at least three measurements necessary for a complete averaging. This takes a few seconds maximum. In this way can be avoid false signalling due to transients that may appear in the measuring loop.

Example for the practical usage of the limit outputs

Task:

The limit output No.1 should control a heater, that switches ON when the temperature goes lower than 70 ºC, and switches OFF when it goes higher than 90 ºC.

The limit output No.2 should control a buzzer. The buzzer should be signalling continuously as long as a manual acknowledgement takes place, in those cases when the temperature goes, at any time, lower than 50 ºC, or when it goes higher than 95 ºC

The settings of the limit outputs are as follows:

L1.SS operating mode= CL (Switches ON, when the temperature is lower than the low limit)

L1.LL Low limit = 80.0 ºC

L1.Lh Hysteresis of the low limit = 10.0 ºC

L1.hL High limit = 80.0 ºC (it's value is indifferent)

L1.hh Hysteresis of the high limit = 0.0 ºC (it's value is indifferent)

L1.Am Alarm mode = oFF

L2.SS Operating mode= CL.oh (Switches ON, when the temperature does not fall between the limits.)

L2.LL Low limit = 50.0 ºC

L2.Lh Hysteresis of the low limit = 0.0 ºC

L2.hL High limit = 95.0 ºC

L2.hh Hysteresis of the high limit = 0.0 ºC

L2.Am Alarm mode = on

10.9. ATEX Certification

BKI Robbanásbiztos Berendezések Vizsgáló Állomása Ex

(1) *EK-Típus Vizsgálati Tanúsítvány*
EC-Type Examination Certificate

(2) A potenciálisan robbanásveszélyes környezetben történő alkalmazásra szánt berendezések, védelmi rendszerek 94/9/EK Direktíva /

Equipment or Protective Systems Intended for use in Potentially explosive atmospheres Directive 94/9/EC.

(3) EK-Típus Vizsgálati Tanúsítvány száma / EC-Type Examination Certificate Number: **BKI15ATEX0028 X**

(4) A berendezés, vagy védelmi rendszer / Equipment or protective system:

Gyújtószikramentes hőmérséklet mérő/távadó /
Intrinsically safe temperature meter/transmitter

Típusa / Type:

DT9500, DT9502

(5) Megrendelő / Applicant:

DATCON Ipari Elektronikai Kft. / DATCON Industrial Electronics Ltd.

(6) Cím / Address:

H-1148 Budapest, Fogarasi út 5., 27. épület / Building 27
Hungary

(7) A berendezés, vagy védelmi rendszer és annak változatai a jelen tanúsítvány vonatkozó pontjában vannak feltüntetve. /
This equipment or protective system and any acceptable variation thereto is specified in the schedule to this certificate and the documents therein referred to.

(8) A ExVÁ Robbanásbiztos Berendezések Vizsgáló Állomása Kft., 1418 sz. kijelölt testület, az 1994. március 23-i 94/9/EK Tanácsi Direktíva 9. cikkelye szerint tanúsítja, hogy a berendezések, vagy védelmi rendszerek megfelelnek az Alapvető Egészségügyi és Biztonsági Követelményeknek a Direktíva II. számú Mellékletében a potenciálisan robbanásveszélyes térben alkalmazásra szánt berendezések és védelmi rendszerek tervezése és gyártása szerint. /
ExVÁ Testing Station for Explosion Proof Equipment Company Limited, notified body number 1418 in accordance with Article 9 of the Council Directive 94/9/EC of 23 March 1994, certifies that this equipment or protective system has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of equipment and protective systems intended for use in potentially explosive atmospheres given in Annex II to the Directive.

A vizsgálat eredményeit az alábbi nyilvántartási számú bizalmas vizsgálati dokumentáció tartalmazza: / The examination and test results are recorded in confidential report number: **R-011-15/5**

Ez a tanúsítvány csak a maga egészében és változatlan formában használható fel, mellékleteivel együtt. /
This certificate may only be reproduced in its entirety and without any changes, schedule included.

Lapszám / Page: 1/5

BKI15ATEX0028 X
EK-Típus Vizsgálati Tanúsítvány/
EC-Type Examination Certificate

(9) Az alapvető egészségügyi és biztonsági követelményeknek való megfelelést a következők biztosítják: / Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

MSZ EN 60079-0:2013, MSZ EN 60079-0:2013 / A11:2014, MSZ EN 60079-11:2012

(10) A tanúsítvány száma után álló „X" jel azt mutatja, hogy a berendezés, vagy védelmi rendszer speciális feltételek megtartása mellett felel meg a jelen tanúsítvány vonatkozó pontjában feltüntetett biztonságos alkalmazás feltételeinek. /
If the sign „X" is placed after the certificate number, it indicates that the equipment or protective system is subject to special conditions for safe use specified in the schedule to this certificate.

(11) Jelen EK-TÍPUS VIZSGÁLATI TANÚSÍTVÁNY csak a megjelölt berendezés vagy védelmi rendszer tervezésére és kivitelezésére vonatkozik. Ha ez alkalmazható, a jelen Direktíva további követelményei érvényesek a berendezés vagy védelmi rendszer gyártására és szállítására. /
This EC-TYPE EXAMINATION CERTIFICATE relates only to the design and construction of the specified equipment or protective system. If applicable, further requirements of this Directive apply to the manufacture and supply of this equipment or protective system.

(12) A berendezés, vagy védelmi rendszer jele a következő /
The marking of the equipment or protective system shall include the following:

Ex II 1 G Ex ia IIC T4 Ga **(-20°C < T_{amb} < +60°C)**

ExVÁ Robbanásbiztos Berendezések Vizsgáló Állomása Kft.

ExVÁ Robbanásbiztos Berendezések Vizsgáló Állomása Kft.
ExVÁ Testing Station for Explosion Proof Equipment Ltd.
Hungary, 1037 Budapest, Mikoviny u. 2-4.
tel/fax: 36 1 250 1720
e-mail: bkiex@bki.hu

Müllner János
Ügyvezető igazgató / Managing director

Budapest, 2015. november / November 27.

BKI15ATEX0028 X
EK-Típus Vizsgálati Tanúsítvány/
EC-Type Examination Certificate

(13) Melléklet / Schedule

(14) EK-TÍPUSVIZSGÁLATI TANÚSÍTVÁNY szám / EC-TYPE EXAMINATION CERTIFICATE N° BKI15ATEX0028X

(15) Berendezés vagy védelmi rendszer leírása / Description of Equipment or protective system

15.1 Leírás / Description

A gyújtószikramentes hőmérséklet mérő/távadó szabványos Pt100 hőmérsékletérzékelővel működik, a mért hőmérsékletet számjegyes alakban jeleníti meg. Két határérték kimenete van. Az előlapi nyomógombokkal állítható a skálázás és a határértékek. A készülék 1-es zónába telepíthető. A csatlakozó Pt100 hőmérséklet-érzékelő a 0-s zónában is lehet (tápellátás Ⓔx II (1) G [Ex ia Ga] IIC leválasztó tápegységgel).
A két típus elektromosan azonos, csak a tokozás és a csatlakozás különbözik.
A DT9500 rugós csatlakozói az elektronikát hordozó nyomtatott huzalozású lapon vannak elhelyezve;
a DT9502 dugaszolható csatlakozói hátoldalra szerelt segéd nyomtatott huzalozású lapra vannak szerelve./
The intrinsically safe temperature meter/transmitter operates with temperature sensor type Pt 100. The measured temperature is in the form of numbers is indicated. It has two limit outputs. Scale and limit can be set by the pushbuttons on the front panel. This device is installable in zone 1. The connected Pt100 temperature sensor may be used in zone 0 (powered by Ⓔx II (1) G [Ex ia Ga] IIC isolator/power supply).
The two type are electrically identical, only their enclosures and terminals are different.
The DT9500 has PCB mounted screwless terminal blocks;
the DT9502 has pluggable terminal blocks mounted on the back-side auxiliary PCB.

15.2 Műszaki adatok / Technical parameters

Táp- és jeláramkör / Supply and signal circuit (5, 6)

Csatlakozás tanúsított gyújtószikramentes Ⓔx II (1) G [Ex ia Ga] IIC védelmi jelű áramkörhöz.
A maximális adatok a következők: /
Connection to certified intrinsically safe circuit with protection mark Ⓔx II (1) G [Ex ia Ga] IIC.
The maximal parameters of circuit are following:

U_i: 30 V
I_i: 100 mA
P_i: 0,75 W
C_i: 48 nF
L_i: elhanyagolható / negligible

Mérőérzékelő bemenet / Measuring sensor inputs (9, 10, 11, 12)

U_o: 6,6 V
I_o: 9 mA
P_o: 15 mW
C_o: 2 µF
L_o: 10 mH

Határérték kimenetek / Limit outputs (1, 2); (3, 4)

Passzív áramkörök / Passive circuits

Csatlakozás tanúsított gyújtószikramentes Ⓔx II (1) G [Ex ia Ga] IIC védelmi jelű áramkörhöz.
A maximális adatok a következők: /
Connection to certified intrinsically safe circuit with protection mark Ⓔx II (1) G [Ex ia Ga] IIC.
The maximal parameters of circuit are following:

U_i: 10 V
I_i: 16 mA
P_i: 40 mW
C_i, L_i: elhanyagolható / negligible

Lapszám / Page: 3/5

BKI15ATEX0028 X
EK-Típus Vizsgálati Tanúsítvány/
EC-Type Examination Certificate

Az optocsatoló hibája esetén a kimeneten megjelenő gyújtószikramentes paraméterek a következők /
In case of the error of the optocoupler, the intrinsically safe parameters on the output are following:

U_o: 6,6 V
I_o: 0,2 mA
P_o: 0,2 mW

15.3 Védettség / Ingress protection:
– DT9500: IP65
– DT9502: elölről / front side (from the front): IP65
hátulról / back side (from behind): IP40

15.4 Érintésvédelem / Electric shock protection: III. érintésvédelmi osztály MSZ 171/1-84 szerint, amely megfelel a MSZ HD 60364-4-41 szerinti SELV rendszernek / III e. s. p. class according to MSZ 171/1-84, conform to MSZ HD 60364-4-41 SELV system

(16) Vizsgálati dokumentáció / Report N°

16.1 Előzmények / Antecedents

- BKI 06 ATEX 029 X	EK-Típus Vizsgálati Tanúsítvány / EC-Type Examination Certificate	2006.06.21.
- R-019-06	Vizsgálati jegyzőkönyv / Test report	2006.06.20.

16.2 Vizsgálati-tanúsítási dokumentációk / Testing-certification documents

- R-011-15 / 5		ATEX Értékelő Jelentés / ATEX Assessment Report	2015.11.26.
- DT950x-58, DT950x-58 Eng		CE Megfelelőségi nyilatkozat / CE Declaration of Conformity	2015.06.26.
- DT950x-59 „A" melléklet		CE jegyzőkönyv I. – EMC /	2015.06.26.
DT950x-59 Eng. encl. A		CE Protocol I. – EMC	2015.06.26.
- DT950x-59 „B" melléklet		CE jegyzőkönyv II. – Biztonsági előírások /	2015.06.26.
DT950x-59 Eng. encl. B		CE Protocol II. – Safety requirements	2015.06.26.
- DT950x-57	rev. 2	Robbanásbiztossági leírás /	2015.07.10.
DT950x-57 Eng	rev. 2	Description of explosion safety	2015.07.10.
- DT950x-23		Összefoglaló blokkvázlat (melléklet a robb. bizt. leíráshoz) /	
		Comprehensive blockscheme (encl. to the Ex-description)	
- DT950x-53	rev. 2	Bemérési utasítás / Test instructions	2007.10.26.
- DT950x-53 1. melléklet	rev. 2	Bemérési utasítás melléklet /	2006.05.17.
DT950x-53 Appendix 1	rev. 2	Appendix to test instructions	2015.05.17.
- DT9500-53 2. melléklet	rev. 2	Darabvizsgálati jegyzőkönyv /	2015.07.17.
DT9500-53 Appendix 2	rev. 2	Unit test report	2015.07.17.
- DT9502-53 2. melléklet	rev. 2	Darabvizsgálati jegyzőkönyv /	2015.07.17.
DT9502-53 Appendix 2	rev. 2	Unit test report	2015.07.17.
- DT9500-62	rev. 2	Kezelési útmutató / Operating instructions	2015.07.01.
- DT9502-62	rev. 2	Kezelési útmutató / Operating instructions	2015.07.01.
- DT9500-1-25	rev. 1	Szerelt jelfeldolgozó nyomtatott áramkör szerelési rajz /	2006.05.30.
		Signal processing printed circuit board working drawing	2006.04.06.
- DT9500-10	rev. 1	Hőmérsékletmérő / távadó tartalomjegyzék /	2013.11.28.
		Temperature meter / transmitter contents	2015.07.17.
- DT9500-11	rev. 11	Hőmérsékletmérő / távadó mechanikai alkatrészjegyzék /	2013.11.15.
		Temperature meter / transmitter mechanical parts list	2015.07.15.
- DT9500-12	rev. 4	Hőmérsékletmérő / távadó összeállítási rajz /	2013.11.15.
		Temperature meter / transmitter assembly drawing	2015.07.24.
- DT9500-21	rev. 3	Jelfeldolgozó nyomtatott áramkör mechanikai alkatrészjegyzék /	2014.06.05.
		Signal processing printed circuit board mechanical parts list	2015.07.15.
- DT9500-23 [A,B]	rev. 1.12	Jelfeldolgozó áramkör kapcsolási rajz /	2015.05.12.
		Signal processing circuit schematic diagram	2015.05.12.
- DT9500-24	rev. 1	Nyomtatott áramköri rajz / Printed circuit board drawing	2015.07.15.

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EK-Típus Vizsgálati Tanúsítvány/
EC-Type Examination Certificate

- DT9500-25	rev. 0	Jelfeldolgozó nyomtatott áramkör szerelési rajz / Signal processing printed circuit board working drawing	2006.03.21. 2006.03.21.
DT9500-26	rev. 1	Villamos alkatrészjegyzék / Electrical parts list	2015.05.12.
- DT9500-27	rev. 1	Jelfeldolgozó nyomtatott áramkör opcionális alkatrészjegyzék / Signal processing printed circuit board optional parts list	2013.11.28. 2015.07.15.
- DT9502-10	rev. 1	Hőmérsékletmérő / távadó tartalomjegyzék / Temperature meter / transmitter contents	2006.06.19. 2015.07.17.
- DT9502-11	rev. 8	Hőmérsékletmérő / távadó mechanikai alkatrészjegyzék / Temperature meter / transmitter mechanical parts list	2013.07.30. 2015.07.16.
- DT9502-12	rev. 3	Hőmérsékletmérő / távadó összeállítási rajz / Temperature meter / transmitter assembly drawing	2013.07.30. 2015.07.30.
- DT9502-13	rev. 1	Hőmérsékletmérő / távadó kábelezési rajz / Temperature meter / transmitter wiring drawing	2006.11.02. 2015.07.15.
- DT9502-21 SK	rev. 0	SK csatlakozó nyomtatott áramkör mechanikai alkatrészjegyzék / SK connector printed circuit board mechanical parts list	2006.06.20. 2015.07.15.
- DT9502-23 SK	rev. 0	SK nyomtatott áramkör kapcsolási rajz / SK printed circuit board schematic diagram	2009.05.25. 2009.05.25.
- DT9502-24 SK	rev. 0	Nyomtatott áramköri rajz / Printed circuit board drawing	2015.07.15.
- DT9502-25 SK	rev. 0	SK szerelt csatlakozó nyomtatott áramkör szerelési rajz / SK fitted connector printed circuit board working drawing	2006.05.12. 2006.05.12.
- DT9502-26 SK	rev. 0	Villamos alkatrészjegyzék / Electrical parts list	2013.04.11.
- DT9500-AT (AT0083)	rev. 1.1	Adattábla / Data plate	2015.07.27. 2015.09.17.
- DT9502-AT (M0065/E)	rev. 1.1	Adattábla / Data plate	2015.09.17.
- DT950x-57 R	rev. 1	Szabványváltozási jelentés (Összehasonlító kockázat értékelés) /	2015.07.01.
DT950x-57 R Eng	rev. 1	Report of standard change of device (Comparative risk assessment)	2015.07.01.

16.3 Kiegészítő dokumentációk / Additional documents

Alkatrész adatlapok (CD) / Data sheets of components (CD)

(17) Biztonságos üzemeltetés feltételei / Special conditions for safe use:

A tokozat sztatikus feltöltődésre hajlamos. Tisztítás csak nedves törlőruhával és tisztítószerrel megengedett./
The enclosure is susceptible to static charges. Cleaning only with moist cloth and detergent is allowed.

**(18) Alapvető egészségügyi és biztonsági követelmények /
Essential Health and Safety Requirements**

Az alkalmazott szabványok és a gyártmány használati utasítása szerint. /
Covered by the standards fulfilment and the respect of the instructions for use.

ExVÁ Robbanásbiztos Berendezések Vizsgáló Állomása Kft.

Müllner János
Ügyvezető igazgató /
Managing director

Molnár Edit
Tanúsító Szervezet Vezető /
Head of Certification Body

Lapszám / Page: 5/5

A NAH által NAH-6-0027/2017/K számon akkreditált terméktanúsító szervezet. /
Product certification organisation accredited by NAH under No. NAH-6-0027/2017/K

Robbanásbiztos Berendezések BKI Vizsgáló Állomása Ex

(1)

Kiegészítő EU-Típus Vizsgálati Tanúsítvány
Supplementary EU-Type Examination Certificate

(2) A potenciálisan robbanásveszélyes környezetben történő alkalmazásra szánt berendezések, védelmi rendszerek 2014/34/EU Direktíva /

Equipment or Protective Systems Intended for use in Potentially Explosive Atmospheres Directive 2014/34/EU

(3) Kiegészítő EU-Típus Vizsgálati Tanúsítvány száma / Supplementary EU-Type Examination Certificate Number: **BKI15ATEX0028X/1**

(4) A gyártmány / Product:

Gyújtószikramentes hőmérséklet mérő/távadó /
Intrinsically safe temperature meter/transmitter

Típusa / Type:

DT9500, DT9502

(5) Gyártó / Manufacturer:

DATCON Ipari Elektronikai Kft. / DATCON Industrial Electronics Ltd.

(6) Cím / Address:

H-1148 Budapest, Fogarasi út 5., 27. épület / Building 27

(7) E kiegészítő tanúsítvány kiegészíti a BKI15ATEX0028X számú EK-Típus Vizsgálati Tanúsítványt, az abban meghatározott gyártmányok tervezésére és gyártására vonatkozóan az eredeti tanústvány mellékletében lévő specifikáció szerint, de kiegészítve ezen tanúsítvány mellékletében lévő specifikáció változtatásokkal és a hivatkozott dokumentációval. /
This supplementary certificate extends EC-Type Examination Certificate No. BKI15ATEX0028X to apply to products designed and constructed in accordance with the specification set out in the Schedule of the said certificate but having any variations specified in the Schedule attached to this certificate and the documents therein referred to.

(8) A ExVÁ Robbanásbiztos Berendezések Vizsgáló Állomása Kft., 1418 sz. kijelölt testület, a 2014. február 26-i Európai Parlament és Tanács 2014/34/EU Direktívájának 17. cikkelye szerint tanúsítja, hogy a jelen kiegészítő tanúsítvány által módosított gyártmány, megfelel az Alapvető Egészségügyi és Biztonsági Követelményeknek a Direktíva II. számú Mellékletében a potenciálisan robbanásveszélyes térben alkalmazásra szánt gyártmányok tervezése és gyártása szerint. /
ExVÁ Testing Station for Explosion Proof Equipment Company Limited, notified body number 1418 in accordance with Article 17 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that the product, as modified by this supplemantary certificate, has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Annex II to the Directive.

Lapszám / Page:1/3

BKI15ATEX0028X/1
Kiegészítő EU-Típus Vizsgálati Tanúsítvány /
Supplementary EU-Type Examination Certificate

A vizsgálat eredményeit az alábbi nyilvántartási számú bizalmas vizsgálati dokumentáció tartalmazza: /
The examination and test results are recorded in confidential report No.: **R - 027 – 17/ 9**

(9) A 2014/34/EU diretíva 41 cikkelye szerint, a 2014/34/EU (2016. április 20.) alkalmazása előtt a 94/9/EK szerint kiadott EK-Típus Vizsgálati Tanúsítványok meghivatkozhatóak, mintha a 2014/34/EU direktíva szerint lettek volna kiadva. Kiegészítő tanúsítványok és új kiadások az ilyen EK-Típus Vizsgálati Tanúsítványokhoz folytatódhatnak a 2016. április 20. előtt kiadott eredeti tanúsítvány számmal. /
In accordance with Article 41 of Directive 2014/34/EU, EC-Type Examination Certificates referring to 94/9/EC that were in existence prior to the data of application of 2014/34/EU (20 April 2016) may be referenced as if they were issued in accordance with Directive 2014/34/EU. Supplementary Certificates to such EC-Type Examination Certificates, and new issues of such certificates, may continue to bear the original certificate number issued prior to 20 April 2016.

(10) Az alapvető egészségügyi és biztonsági követelményeknek való megfelelést a következők biztosítják: /
Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN 60079-0:2012	**(=MSZ EN 60079-0:2013)**
EN 60079-0:2012/A11: 2013	**(=MSZ EN 60079-0:2013/A11: 2014)**
EN 60079-11:2012	**(=MSZ EN 60079-11:2012)**

kivéve a 18. pontban felsorolt követelményekre vonatkozóan.
except in respect of those requirements listed at item 18 of the Schedule.

(11) A tanúsítvány száma után álló „X" jel azt mutatja, hogy a gyártmány speciális feltételek megtartása mellett felel meg a jelen tanúsítvány vonatkozó pontjában feltüntetett biztonságos alkalmazás feltételeinek. /
If the sign „X" is placed after the certificate number, it indicates that the product is subject to Specific Conditions of Use specified in the schedule to this certificate.

(12) Jelen EU-TÍPUS VIZSGÁLATI TANÚSÍTVÁNY csak a megjelölt gyártmány tervezésére és kivitelezésére vonatkozik. A jelen Direktíva további követelményei vonatkoznak a gyártmány gyártási folyamatára és szállítására. Ezek nem tartozak e tanúsítvány alá. /
This EU-TYPE EXAMINATION CERTIFICATE relates only to the design and construction of the specified product. Further requirements of this Directive apply to the manufacturing process and supply of this product. These are not covered by this certificate.

(13) A gyártmány jele a következő /
The marking of the product shall include the following:

II 1 G Ex ia IIC T4 Ga **$T_{körny}$ / T_{amb} = -20°C … +60°C**

Budapest, 2017. november 22.

ExVÁ Robbanásbiztos Berendezések Vizsgáló Állomása Kft.

ExVÁ Robbanásbiztos Berendezések Vizsgáló Állomása Kft.
ExVÁ Testing Station for Explosion Proof Equipment Ltd.
Hungary, 1037 Budapest, Mikoviny u. 2-4.
Tel.: 36 1 250 1720
E-mail: bkiex@bki.hu

Molnár Edit
Tanúsító Szervezet Vezető /
Head of Certification Body

Ez a tanúsítvány csak a maga egészében és változatlan formában használható fel, mellékleteivel együtt. /
This certificate may only be reproduced in its entirety and without any change, schedule included.

Lapszám / Page: 2/3

BKI15ATEX0028X/1
Kiegészítő EU-Típus Vizsgálati Tanúsítvány /
Supplementary EU-Type Examination Certificate

14 Melléklet / Schedule

15 Tanúsítvány szám / Certificate number BKI15ATEX0028X/1

16 Gyártmány változásának leírása / Description of the variation to the Product

Az alábbi változások kerülnek bevezetésre a BKI15ATEX0028X számú EK-Típusvizsgálati tanúsítvány 1. számú kiegészítésében:

- a készülék gyártói dokumentációjának aktualizálása a 2014/34/EU irányelvnek ill. a legutolsó szabványkiadásoknak megfelelően. Lásd a tanúsítvány kiegészítés 20. pontját.

A módosítások nem befolyásolják készülék robbanásbiztossági szempontú védettségét és tulajdonságait. Minden egyéb tekintetben (konstrukció, leírás, típusmegjelölés, műszaki adatok) a gyártmány változatlan a BKI15ATEX0028X számú EK-Típusvizsgálati tanúsítvány szerint. /
The following changes are introduced in in this amendment of the EC-Type Examination Certificate nr. BKI15ATEX0028X:

- updating the manufacturer's documentation of the device according to the Directive 2014/34/EU and the latest editions of the referring technical standards. See chapter 20 of this certificate amendment.

The modifications do not have influence on the safety values and properties of the device.
In all other aspects the product is unchanged according to the EC-Type Examination Certificate nr. BKI15ATEX0028X (construction, description, type designation, technical parameters).

17 Vizsgálati dokumentáció / Report N°

R-027-17 / 9	ATEX Értékelő jelentés / ATEX Assessment Report	2017.11.21

18 Biztonságos üzemeltetés feltételei / Special Conditions of Use

Nincsenek továbbiak a felsoroltakon kívül / None additional to those listed previously.

19 Alapvető egészségügyi és biztonsági követelmények / Essential Health and Safety Requirements

A módosítás nem érinti az alapvető egészségügyi és biztonsági követelményeket.
Compliance with the Essential Health and Safety Requirements is not affected by this variation./

20 Rajzok és dokumentációk / Drawings and Documents

Szám /Number	Lap / Sheet	Kiadás / Issue	Dátum / Date	Leírás / Description
DT950x-58 / DT950x-58 Eng	1		2017.11.07	EU Megfelelőségi nyilatkozat / EU Declaration of Conformity
AT0083	1	2	2017.11.13	DT9500 Adattábla / DT9500 Data plate
M0065/E	1	2	2017.11.13	DT9502 Adattábla / DT9502 Data plate

ExVÁ Robbanásbiztos Berendezések Vizsgáló Állomása Kft.

Molnár Edit
Tanúsító Szervezet Vezető /
Head of Certification Body

Lapszám / Page: 3/3

EXVA
Vizsgáló és Tanúsító Kft

A NAH által NAH-6-0027 X/2017/K számon akkreditált terméktanúsító szervezet. /
Product certification organisation accredited by NAH under No. NAH-6-0027 X/2017/K

(1)

Kiegészítő EU-Típus Vizsgálati Tanúsítvány
Supplementary EU-Type Examination Certificate

(2) A potenciálisan robbanásveszélyes környezetben történő alkalmazásra szánt berendezések, védelmi rendszerek 2014/34/EU Direktíva /

Equipment or Protective Systems Intended for use in Potentially Explosive Atmospheres Directive 2014/34/EU

(3) Kiegészítő EU-Típus Vizsgálati Tanúsítvány száma / Supplementary EU-Type Examination Certificate Number: **BKI15ATEX0028 X/2**

(4) A gyártmány / Product:

Gyújtószikramentes hőmérséklet mérő/távadó /
Intrinsically safe temperature meter/transmitter

Típusa / Type:

DT9500, DT9502

(5) Gyártó / Manufacturer:

DATCON Ipari Elektronikai Kft. / DATCON Industrial Electronics Ltd.

(6) Cím / Address:

H-1148 Budapest, Fogarasi út 5., 27. épület / Building 27
Hungary

(7) E kiegészítő tanúsítvány kiegészíti a BKI15ATEX0028 X számú EU-Típus Vizsgálati Tanúsítványt, az abban meghatározott gyártmányok tervezésére és gyártására vonatkozóan az eredeti tanúsítvány mellékletében lévő specifikáció szerint, de kiegészítve ezen tanúsítvány mellékletében lévő specifikáció változtatásokkal és a hivatkozott dokumentációval. /
This supplementary certificate extends EC-Type Examination Certificate No. BKI15ATEX0028 X to apply to products designed and constructed in accordance with the specification set out in the Schedule of the said certificate but having any variations specified in the Schedule attached to this certificate and the documents therein referred to.

(8) A ExVA Vizsgáló és Tanúsító Kft., 1418 sz. kijelölt testület, a 2014. február 26-i Európai Parlament és Tanács 2014/34/EU Direktívájának 17. cikkelye szerint tanúsítja, hogy a jelen kiegészítő tanúsítvány által módosított gyártmány, megfelel az Alapvető Egészségügyi és Biztonsági Követelményeknek a Direktíva II. számú Mellékletében a potenciálisan robbanásveszélyes térben alkalmazásra szánt gyártmányok tervezése és gyártása szerint. /
ExVA Testing and Certification Limited Liability Company, notified body number 1418 in accordance with Article 17 of Directive 2014/34/EU of the European Parliament and of the Council, dated 26 February 2014, certifies that the product, as modified by this supplemantary certificate, has been found to comply with the Essential Health and Safety Requirements relating to the design and construction of products intended for use in potentially explosive atmospheres given in Annex II to the Directive.

A vizsgálat eredményeit az alábbi nyilvántartási számú bizalmas vizsgálati dokumentáció tartalmazza: / The examination and test results are recorded in confidential report No.: **VA-0165-21-A-07**

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BKI15ATEX0028 X/2
Kiegészítő EU-Típus Vizsgálati Tanúsítvány /
Supplementary EU-Type Examination Certificate

(9) A 2014/34/EU direktíva 41 cikkelye szerint, a 2014/34/EU (2016. április 20.) alkalmazása előtt a 94/9/EK szerint kiadott EK-Típus Vizsgálati Tanúsítványok meghivatkozhatóak, mintha a 2014/34/EU direktíva szerint lettek volna kiadva. Kiegészítő tanúsítványok és új kiadások az ilyen EK-Típus Vizsgálati Tanúsítványokhoz folytatódhatnak a 2016. április 20. előtt kiadott eredeti tanúsítvány számmal. /
In accordance with Article 41 of Directive 2014/34/EU, EC-Type Examination Certificates referring to 94/9/EC that were in existence prior to the data of application of 2014/34/EU (20 April 2016) may be referenced as if they were issued in accordance with Directive 2014/34/EU. Supplementary Certificates to such EC-Type Examination Certificates, and new issues of such certificates, may continue to bear the original certificate number issued prior to 20 April 2016.

(10) Az alapvető egészségügyi és biztonsági követelményeknek való megfelelést a következők biztosítják: /
Compliance with the Essential Health and Safety Requirements has been assured by compliance with:

EN IEC 60079-0:2018	**(=MSZ EN IEC 60079-0:2018)**
EN 60079-11:2012	**(=MSZ EN 60079-11:2012)**

kivéve a 19. pontban felsorolt követelményekre vonatkozóan.
except in respect of those requirements listed at item 19 of the Schedule.

(11) A tanúsítvány száma után álló „X" jel azt mutatja, hogy a gyártmány speciális feltételek megtartása mellett felel meg a jelen tanúsítvány vonatkozó pontjában feltüntetett biztonságos alkalmazás feltételeinek. /
If the sign „X" is placed after the certificate number, it indicates that the product is subject to Specific Conditions of Use specified in the schedule to this certificate.

(12) Jelen EU-TÍPUS VIZSGÁLATI TANÚSÍTVÁNY csak a megjelölt gyártmány tervezésére és kivitelezésére vonatkozik. A jelen Direktíva további követelményei vonatkoznak a gyártmány gyártási folyamatára és szállítására. Ezek nem tartozak e tanúsítvány alá. /
This EU-TYPE EXAMINATION CERTIFICATE relates only to the design and construction of the specified product. Further requirements of this Directive apply to the manufacturing process and supply of this product. These are not covered by this certificate.

(13) A gyártmány jele a következő /
The marking of the product shall include the following:

Ⓔx II 1 G Ex ia IIC T4 Ga **$T_{körny}$ / T_{amb} = -20°C ... +60°C**

ExVA Vizsgáló és Tanúsító Kft.
1037 Budapest, Mikoviny S. u. 2-4
10925306-2-41

ExVA Vizsgáló és Tanúsító Kft.
ExVA Testing and Certification Ltd,
Hungary, 1037 Budapest, Mikoviny u. 2-4,
Tel.: +36 1 408 2213
E-mail: office@exva.hu

Nagy Botond
Tanúsító Szervezet Vezető /
Head of Certification Body

Budapest, 2021. december / December 13.

Ez a tanúsítvány csak a maga egészében és változatlan formában használható fel, mellékleteivel együtt. /
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BKI15ATEX0028 X/2
Kiegészítő EU-Típus Vizsgálati Tanúsítvány /
Supplementary EU-Type Examination Certificate

14 Melléklet / Schedule

15 Tanúsítvány szám / Certificate number BKI15ATEX0028 X/2

16 Gyártmány változásának leírása / Description of the variation to the Product

Az alábbi változások kerülnek bevezetésre a jelen BKI15ATEX0028 X/2 számú kiegészítő EU-Típus Vizsgálati Tanúsítványban:

- Az alapvető egészségügyi és biztonsági követelményeknek való megfelelést biztosító szabványok legutolsó szabványkiadások szerinti aktualizálása

A változások a berendezés robbanásbiztossági jellemzőit nem befolyásolják, a berendezés egyéb jellemzői változatlanok. /

The following changes are introduced in this supplementary EU-Type Examination Certificate nr. BKI15ATEX0028 X/2 :

- Updating the referring standards according to their latest editions which assure the compliance with the Essential Health and Safety Requirements

The changes do not affect the explosion safety of the equipment, the other features of the equipment are unchanged.

17 Vizsgálati dokumentáció / Report N°

VA-0165-21-A-07 ATEX Értékelő Jelentés / ATEX Assessment Report 2021.12.07.

18 Biztonságos üzemeltetés feltételei / Special Conditions of Use

Az eredeti tanúsítványban foglaltak szerint. /
As stated in the original certificate.

19 Alapvető egészségügyi és biztonsági követelmények / Essential Health and Safety Requirements

A módosítás nem érinti az alapvető egészségügyi és biztonsági követelményeket. /
Compliance with the Essential Health and Safety Requirements is not affected by this variation.

Záradék / Clause	Tárgy / Subject
Nem vonatkozik / Not applicable	Nem vonatkozik / Not applicable

BKI15ATEX0028 X/2
Kiegészítő EU-Típus Vizsgálati Tanúsítvány /
Supplementary EU-Type Examination Certificate

20 Rajzok és dokumentációk / Drawings and Documents

GYÁRTÓI DOKUMENTÁCIÓK / MANUFACTURER'S DOCUMENTS						
No.	**Fájl név / File name**	**Szám / Number**	**Lap / Sheet**	**Verzió / Issue**	**Dátum / Date**	**Leírás / Description**
1.	DT950x-57.doc	DT950x-57	6	3	2021.10.15.	Robbanásbiztonsági leírás / Description of Explosion Safety
2.	DT950x-57 angol.doc	DT950x-57_Eng	6	3	2021.10.15.	Robbanásbiztonsági leírás (angol) / Description of Explosion Safety (English)
3.	DT950x-57 R.doc	DT950x-57 R	3	2	2021.10.15.	Szabványváltozási jelentés / Report of Standard Change of Device
4.	DT950x-57 R angol.doc	DT950x-57 R Eng	3	2	2021.10.15.	Szabványváltozási jelentés (angol) / Report of Standard Change of Device (English)
5.	DT950x-58.doc	DT950x-58	1	-	2021.10.15.	EU Megfelelősségi Nyilatkozat / EU Declaration of Conformity
6.	DT950x-58 Eng.doc	DT950x-58 Eng	1	-	2021.10.15.	EU Megfelelősségi Nyilatkozat (angol) / EU Declaration of Conformity (English)
7.	DT9500-62.doc	DT9500	92	2	2021.10.15.	Felhasználói leírás DT9500 / User Manual DT9500
8.	DT9500-62 angol.doc	DT9500	92	2	2021.10.15.	Felhasználói leírás (angol) DT9500 / User Manual DT9500 (English)
9.	DT9502-62.doc	DT9502	88	2	2021.10.15.	Felhasználói leírás DT9502 / DT9502 User Manual
10.	DT9502-62 angol.doc	DT9502	88	2	2021.10.15.	Felhasználói leírás DT9502 (angol) / DT9502 User Manual (English)

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