



YST ELECTRONIC TEMPERATURE SWITCH

Instructions for Use

Contents

1	About these instructions	4
1.1	Target groups	4
1.2	Explanation of symbols	4
1.3	Other documents	4
1.4	Feedback about these instructions	4
2	For your safety	5
2.1	Intended use	5
2.2	Obvious misuse	5
2.3	General safety instructions	5
3	Product Description	6
3.1	Device overview	6
3.2	Properties and features	6
3.3	Operating and display functions	6
3.4	Operating principle	6
3.5	Functions and operating modes	7
3.5.1	Normal operation — run mode	7
3.5.2	Programming mode	7
3.5.3	Legacy Mode	7
3.5.4	Output functions	7
3.5.5	Output functions — switching output	7
3.5.6	Output functions — switching output in Legacy Mode	9
3.5.7	Output functions — analog output	10
3.5.8	Auto detect function	12
3.6.1	Temperature probe	12
3.6.2	Compression fittings and thermowells	12
4	Mounting	13
5	Connection	14
5.1	Wiring diagrams	14
5.2	Wiring diagrams — Temperature probes	14
5.3	Connection instructions for thermocouples	16
5.4	Connection instructions for resistance thermometers	16
6	Commissioning	16
7	Operation	16
7.1	LEDs — operation	17
7.2	Display indications	17
8	Setting and Parameterization	18
8.1	Settable functions and properties	18
8.2	Setting parameter values	18
8.3	Unlocking the device	19
8.4	Locking the device	19
8.5	Protecting the sensor with a password	19
8.6	Standard menu guidance	20
8.6.1	Parameters in the main menu	23
8.6.2	Parameters in the OUT... (outputs) submenu	23
8.6.3	Parameters in the DISP (display) submenu	25

8.6.4	Parameters in the EF submenu (Extended Functions)	26
8.7	Legacy Mode	27
8.7.1	Legacy Mode — parameters in the main menu	31
8.7.2	Legacy Mode — parameters in the EF (extended functions) submenu	32
9	Troubleshooting	33
10	Maintenance	33
11	Repair	33
11.1	Returning devices	33
12	Disposal	33

1 About these instructions

These instructions describe the setup, functions and use of the product and help you to operate the product according to its intended purpose. Read these instructions carefully before using the product. This will prevent the risk of personal injury and damage to property. Keep these instructions safe during the service life of the product. If the product is passed on, pass on these instructions as well.

1.1 Target groups

These instructions are aimed at qualified personal and must be carefully read by anyone mounting, commissioning, operating, maintaining, dismantling or disposing of the device.

1.2 Explanation of symbols

The following symbols are used in these instructions:



DANGER

DANGER indicates a hazardous situation with a high level of risk, which, if not avoided, will result in death or serious injury.



WARNING

WARNING indicates a hazardous situation with a medium level of risk, which, if not avoided, will result in death or serious injury.



CAUTION

CAUTION indicates a hazardous situation with a medium level of risk, which, if not avoided, will result in moderate or minor injury.



NOTICE

CAUTION indicates a situation which, if not avoided, may cause damage to property.



NOTE

NOTE indicates tips, recommendations and important information about special action steps and issues. The notes simplify your work and help you to avoid additional work.



MANDATORY ACTION

This symbol denotes actions that the user must carry out.



RESULT OF ACTION

This symbol denotes the relevant results of an action.

1.3 Other documents

Besides this document, the following material can be found on the Internet at www.turck.com:

- Data sheet
- Declarations of conformity
- Quick Start Guide

1.4 Feedback about these instructions

We make every effort to ensure that these instructions are as informative and as clear as possible. If you have any suggestions for improving the design or if some information is missing in the document, please send your suggestions to marketing@georgin.com.

2 For your safety

The product is designed according to state of the art technology. Residual hazards, however, still exist. Observe the following safety instructions and warnings in order to prevent danger to persons and property. Turck accepts no liability for damage caused by failure to observe these safety instructions.

2.1 Intended use

The compact processing and display units of the YST product series are designed for measuring temperatures in machines and plants. This requires the connection of a temperature probe to the devices. The temperature processing and display units support the connection of resistance thermometers (RTD) and thermocouples (TC).

The device must only be used as described in these instructions. Any other use is not in accordance with the intended use. Georjin accepts no liability for any resulting damage.

2.2 Obvious misuse

- The devices are not safety components and must not be used for personal or property protection.

2.3 General safety instructions

- The device meets the EMC requirements for the industrial areas. When used in residential areas, take measures to prevent radio frequency interference.
- The device must only be fitted, installed, operated, parameterized and maintained by trained and qualified personnel.
- Only use the device in compliance with the applicable national and international regulations, standards and laws.
- Only operate the device within the limits stated in the technical specifications.

3 Product Description

The temperature processing and display units of the YST product series are contained in a metal housing and provided with a G1/2" process connection. The sensor head can also be rotated by 340° after installation. The devices have a metal M12 connector (male) for connecting the sensor cable. Another M12 connector (female) is provided for connecting resistance thermometers (RTD) and thermocouples (TC).

The following output functions are available: 2 switching outputs (PNP/NPN/Auto) or 1 switching output (PNP/NPN/Auto) and 1 analog output (I/U/Auto)

3.1 Device overview

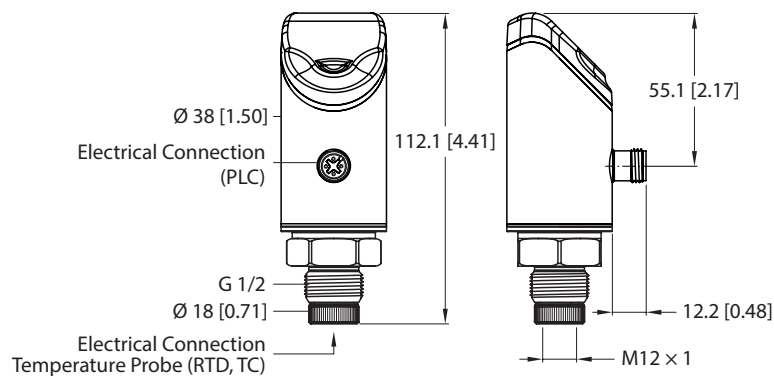


Fig. 2: Dimensions in mm [inch]

3.2 Properties and features

- Processing unit for connecting resistance thermometers (RTD) and thermocouples (TC)
- Automatic probe detection
- 4-digit, 2-color, 12-segment display, rotatable by 180°
- Housing upper section rotatable by 340°

3.3 Operating and display functions

The front of the device is provided with three touchpads [ENTER], [MODE] and [SET], a 4-digit 12-segment multicolor display and status LEDs. This enables the user to set all essential functions and properties directly on the device and read the actual process values and set switching points.

3.4 Operating principle

Standard Pt100 and Pt1000 resistance thermometers (RTD) as well as thermocouples (TC) can be connected to the temperature display and processing unit. The temperature value measured on the attached probe is passed on to the higher-level I/O. The device display shows the temperature value in the unit selected by the user.

3.5 Functions and operating modes

The sensors can be operated in normal operation (factory settings) or in Legacy Mode. In normal operation, a single point mode (SPM), two point mode (TPM) or window mode (Win) can be set for the switching outputs. In single point mode, a limit value is set at which the selected switching output changes its switching state. In two point mode, a lower and an upper limit are set at which the selected switching output changes its switching state as the temperature rises or falls. In window mode, a lower and an upper window limit are set. Outside the window, the selected switching output changes its switching state. In Legacy Mode, a window function or a hysteresis function can be defined for the switching outputs. The output range of the analog output is freely scalable to the measuring range. The measured temperature can be displayed in °C, °F or K, or the resistance can be displayed in Ω if a resistance thermometer is connected. The device parameters can be set via the touchpads.

The following temperature probes can be connected to the device:

- Resistance thermometers (RTD)

- Pt100 (2-, 3-, 4-wire)
- Pt1000 (2-, 3-, 4-wire)

- Thermocouples (TC)

- Type K, B, E, J, N, R, S and T

3.5.1 Normal operation — run mode

The device detects the temperature on the probe and shows the required switching or analog behavior according to the factory-set or customer-specific parameters. The display indicates the process temperature present, the selected unit and the status of the switching outputs.

3.5.2 Programming mode

When the sensor is unlocked, the display will go into programming mode after the user presses the [MODE] touchpad. In programming mode, all parameters and their corresponding values can be read out and changed. The values for a parameter are displayed by briefly pressing the [ENTER] touchpad. The [MODE] and [SET] touchpads are used to navigate within programming mode. For more information, refer to the chapter “Setting and parameterization.”

3.5.3 Legacy Mode

Devices prior to production date 2310 without Smart Sensor Profile operate with their own menu guidance, which is divided into a main menu, an extended functions menu and VDMA menus.

In Legacy Mode, devices after production date 2310 with Smart Sensor Profile can be operated using the old menu guidance.

3.5.4 Output functions

The output functions in normal operation (factory setting) include a single point mode (SPM), a two point mode (TPM) or a window mode. In Legacy Mode, a window function or hysteresis function can be selected.

3.5.5 Output functions — switching output

The switching logic can be inverted via the touchpad (parameter LOGI). The following examples apply to the **HIGH** (0 → 1) switching logic.

Single point mode

In single point mode, the switching behavior is defined via a SP1 limit value and a hysteresis. The output changes its switching state at limit value SP1.

The hysteresis can be set via the touchpad (parameter HYST) and must be within the detection range.

If the process value increases, the switching output is inactive as long as the process value is between the start of the detection range and the SP1 limit value. If the process value increases above the SP1 limit value, the switching output becomes active.

If the process value decreases, the switching output is active as long as the process value is between the end of the detection range and the SP1 limit minus the set hysteresis (SP1-Hyst). If the process value decreases below the limit value (SP1-Hyst), the switching output becomes inactive.

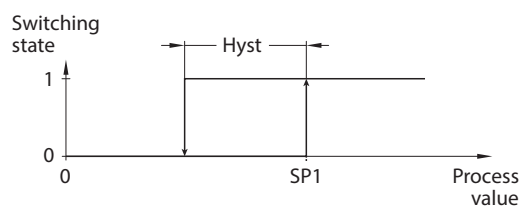


Fig. 3: Single point mode

Two point mode

In two point mode, the switching behavior is defined via a switch-on point SP1 and a switch-off point SP2. This mode can also be used as a freely adjustable hysteresis.

If the process value increases, the switching output is inactive as long as the process value is between the start of the detection range and the switch-on point SP1. If the process value rises above the switch-on point SP1, the switching output becomes active.

If the process value decreases, the switching output is active as long as the process value is between the end of the detection range and the SP2 switch-off point. If the process value decreases below the switch-off point SP2, the switching output becomes inactive.

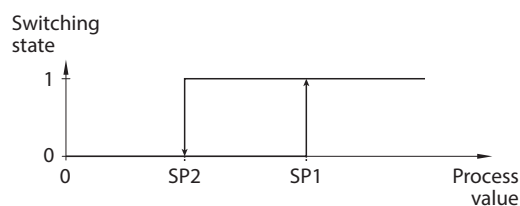


Fig. 4: Two point mode

Window mode

In window mode, an upper and lower window limit are set for the switching output. A hysteresis can be set for the window limits SP1 and SP2. The switching window must be within the detection range.

The hysteresis can be set via the touchpad (parameter HYST) and must be within the detection range.

If the process value increases, the switching output is inactive as long as the process value is between the start of the detection range and the window limit SP2. The switching output remains active until the process value increases above the window limit SP1 plus the hysteresis (SP1+Hyst). If the process value increases above (SP1+Hyst), the switching output becomes inactive again.

If the process value decreases, the switching output is inactive as long as the process value is between the end of the detection range and the window limit SP1. The switching output remains active until the process value decreases below the window limit SP2 minus the hysteresis (SP2-Hyst). If the process value decreases below (SP2-Hyst), the switching output becomes inactive again.

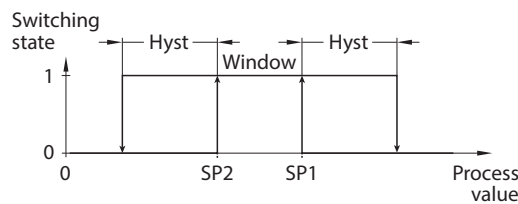


Fig. 5: Window mode

3.5.6 Output functions — switching output in Legacy Mode

A window function and a hysteresis function can be set for the switching outputs.

Window function

The window function is used to set a switching range in which the switching output takes on a defined switching state. The switching range is defined by means of an upper (FH) and lower limit (FL). The minimum distance between the switching points is 0.2 K. The release point is automatically adjusted if the switching point is changed.

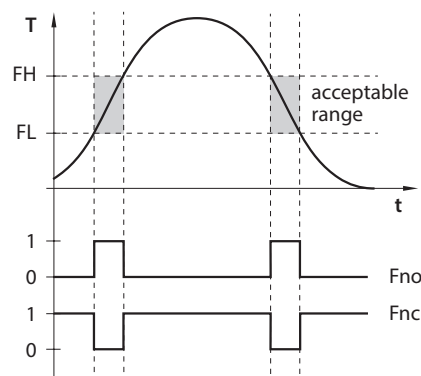


Fig. 6: Behavior of the switching output – Window function

Hysteresis function

The hysteresis function is used to set a stable switching state around a setpoint that is independent of system-related temperature fluctuations. The switching range is defined by means of a switching point (SP) and a release point (rP). The minimum hysteresis is 0.2 K. The release point is automatically adjusted if the switching point is changed.

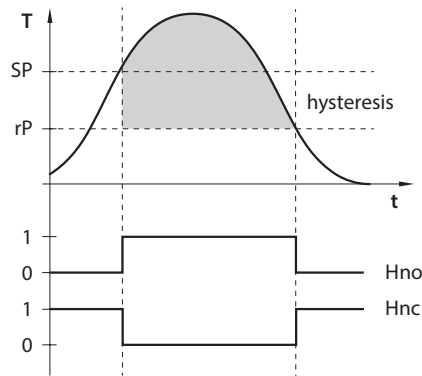


Fig. 7: Behavior of the switching output (hysteresis function)

3.5.7 Output functions — analog output

The analog output of the YST sensors can be set as either a current or voltage output. The measuring range is freely definable.

The minimum distance between the start and end point is 0.2 K.

Current output

In the defined measuring range, the device supplies an analog current signal between ASP (analog start point) and AEP (analog end point). The following output configurations can be set:

- 4...20 mA (factory setting)
- 0...20 mA
- 20...4 mA
- 20...0 mA

Voltage output

In the defined measuring range, the device supplies an analog voltage signal between ASP (analog start point) and AEP (analog end point). The following output configurations can be set:

- 0...10 V
- 0...5 V
- 1...6 V
- 0.5...4.5 V
- 4.5...0.5 V (Not in Legacy Mode)
- 10...0 V
- 5...0 V
- 6...1 V

Output behavior of the analog outputs

The following figures illustrate the behavior of the analog outputs:

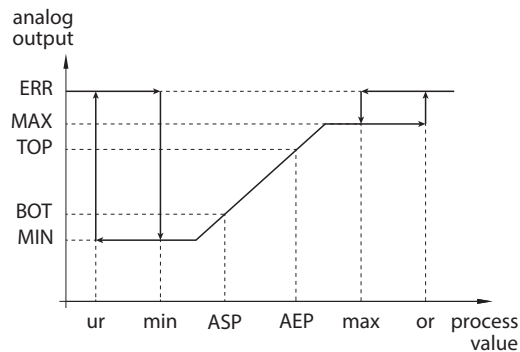


Fig. 8: Rising output characteristic

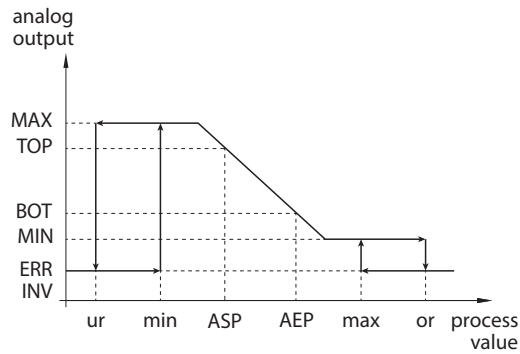


Fig. 9: Falling output characteristic, MIN \neq 0

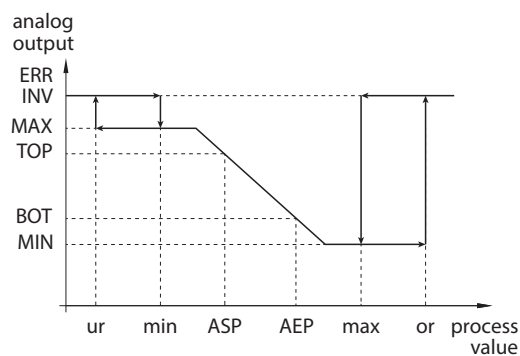


Fig. 10: Falling output characteristic, MIN = 0

Output configuration		BOT	TOP	ERR INV	MIN	MAX	ERR
4...20 mA	20...4 mA	4 mA	20 mA	3.5 mA	3.8 mA	20.5 mA	21.1 mA
0...20 mA	20...0 mA	0 mA	20 mA	21.1 mA	0 mA	20.5 mA	21.1 mA
0...10 V	10...0 V	0 V	10 V	11 V	0 V	10.5 V	11 V

Output configuration		BOT	TOP	ERR INV	MIN	MAX	ERR
0...5 V	5...0 V	0 V	5 V	6 V	0 V	5.5 V	6 V
1...6 V	6...1 V	1 V	6 V	0 V	0.5 V	6.5 V	7 V
0.5...4.5 V	4.5...0.5 V	0.5 V	4.5 V	5.5 V	0 V	5 V	5.5 V

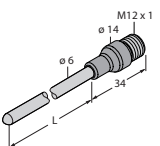
Abbreviation	Description
ERR	Fault value
MAX	Upper value of the analog output
MIN	Lower value of the analog output
ASP	Analog start point
AEP	Analog end point
TOP	Value of the output when the AEP or ASP is reached
BOT	Value of the output when the ASP or AEP is reached
ur	Underrun/underrange
or	Overrun/overrange
max	Maximum process value
min.	Minimum process value

3.5.8 Auto detect function

The device uses the auto detect function to detect whether a resistance thermometer or a thermocouple is connected. The type of thermocouple is determined by the user. When connected to an I/O module, the device detects the pre-defined switching output behavior (PNP/NPN) or the analog output characteristic. The auto detect function is activated by default.

3.6.1 Temperature probe

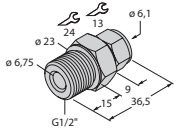
The temperature probes are connected to the temperature processing and display units via M12 connectors. A selection of the available temperature probes is shown. For more versions, please visit <https://www.georgin.com> or contact us.

Dimension drawing	Type	Description
	S1Y-04ABB060150000	Temperature probe for liquid and gaseous media, Pt100, class A; measuring range -50... 400 °C; dimensions Ø 6 × 150 mm
	S1Y-04ABB060250000	Temperature probe for liquid and gaseous media, Pt100, class A; measuring range -50... 400 °C; dimensions Ø 6 × 250 mm

3.6.2 Compression fittings and thermowells

The temperature probe is introduced into the process by means of compression fittings or thermowells. A selection of the available compression fittings and thermowells is shown. For more versions, visit <https://www.georgin.com> and view the selection of temperature sensors and accessories.

Dimension drawing	Type	ID	Description
	CFI12G60		Compression fitting for direct mounting of temperature probes; probe diameter 6 mm; process connection G1/2" male thread



4 Mounting

The temperature processing and display unit features a G1/2" thread (AF30) for mounting with an application-specific mounting bracket.. The display of the unit can be rotated by 180° (see figure and parameter DiSr).

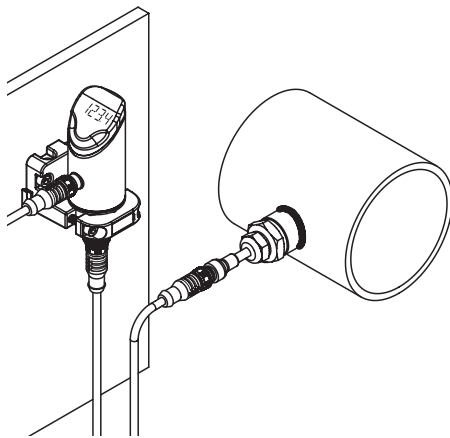


Fig. 11: Installing YST0...

- ▶ Mount the temperature processing and display unit on any part of the plant. Observe the technical specifications for mounting (e.g. ambient temperature).
- ▶ Optional: Rotate the sensor head within the 340° range to align the connection to the I/O level as well as to ensure optimum operability and readability.

5 Connection

Standard 2-, 3- and 4-wire Pt100 and Pt1000 resistance thermometers (RTD) as well as thermocouples (TC) of types K, B, E, J, N, R, S and T can be connected to the temperature processing and display unit.

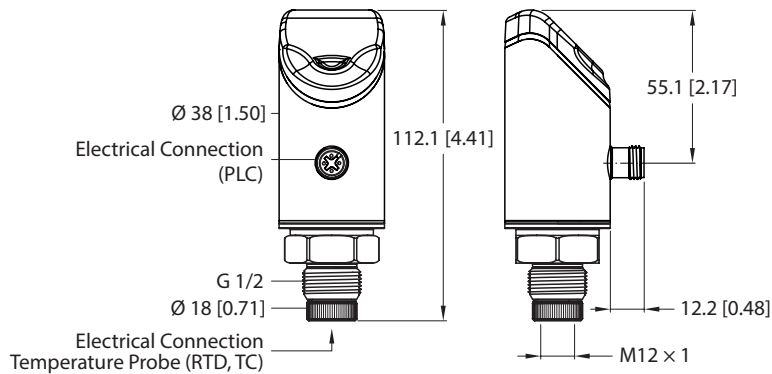


Fig. 12: Electrical connections for controller and temperature probe

- ▶ Connect the temperature probe to the temperature processing and display unit in accordance with the relevant specifications (see "Electrical connection for temperature probes (RTD, TC)"). Observe here the technical specifications and the installation instructions of the temperature probe.
- ▶ Connect the device to the controller or an I/O module as shown in the wiring diagram (see "Electrical connection (PLC)").

5.1 Wiring diagrams

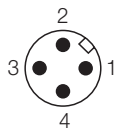


Fig. 13: Pin assignment

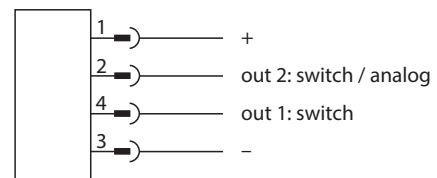


Fig. 14: Wiring diagram

5.2 Wiring diagrams — Temperature probes

Resistance thermometer (RTD) — 2-wire

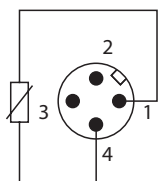


Fig. 17: RTD, 2-wire

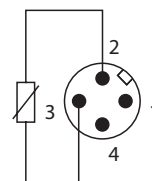


Fig. 18: RTD, 2-wire

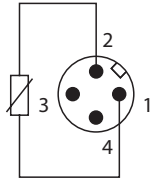


Fig. 19: RTD, 2-wire

Resistance thermometer (RTD) — 3-wire

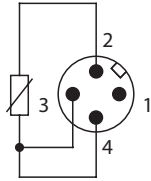


Fig. 20: RTD, 3-wire

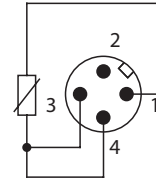


Fig. 21: RTD, 3-wire

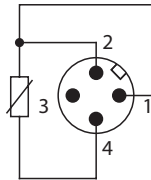


Fig. 22: RTD, 3-wire

Resistance thermometer (RTD) — 4-wire

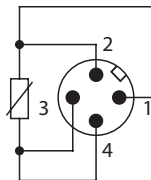


Fig. 23: RTD, 4-wire

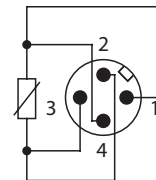


Fig. 24: RTD, 4-wire

Thermocouples (TC)

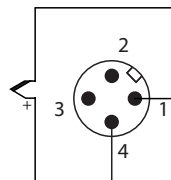


Fig. 25: Thermocouple between Pin 1 and Pin 4

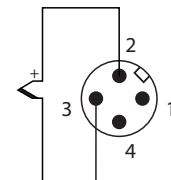


Fig. 26: Thermocouple between Pin 2 and Pin 3

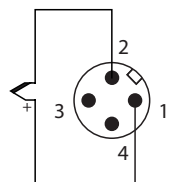


Fig. 27: Thermocouple between Pin 1 and Pin 2

5.3 Connection instructions for thermocouples

- ▶ Observe the following instructions when connecting thermocouples:
 - Use thermocouples and cables in accordance with IEC 60584.
 - Georgin recommends the use of compensated connectors and connection cables. If thermocouples are connected with incorrect balancing lines or copper lines, the device may output an implausible reading.
 - Use shielded cables for connection and connect the shield to one side.
 - Automatic detection (factory setting) is designed for thermocouples with a 4-pin M12 connector. When using thermocouples with a 4-pin M12 connection and corresponding extension or balancing cable, Georgin recommends using automatic detection of the probe configuration. The thermocouple type must also be selected.
 - A Pt1000 resistor is used as an internal reference point. It is not possible to use an external reference point.

5.4 Connection instructions for resistance thermometers

- ▶ Observe the following instructions when connecting resistance thermometers:
 - Keep the cable length as short as possible for a 2-wire circuit.
 - Do not change the circuit types by adding additional bridges to the connector.

6 Commissioning

The device is operational automatically once the power supply is switched on.

The device uses the auto detect function to detect whether a resistance thermometer or a thermocouple is connected. The type of thermocouple is determined by the user. When connected to an I/O module, the device detects the pre-defined switching output behavior (PNP/NPN) or the analog output characteristic. The auto detect function is activated by default.

7 Operation



WARNING

The enclosure can heat to over 75 °C (167 °F).

Risk of burns from hot enclosure surfaces!

- ▶ Prevent the enclosure from coming into contact with flammable substances.
- ▶ Prevent the enclosure from being touched unintentionally.

7.1 LEDs — operation

LED	Display	Meaning
PWR	green	Device is operational
FLT	red	Error
°C	green	Temperature in °C
°F	green	Temperature in °F
K	green	Temperature in K
Ω	green	Resistance in Ω (resistance thermometers only)
LOC	yellow	Device locked
	Yellow flashing	"Lock/unlock" process active
	off	Device unlocked
I and II (switching point LEDs)	yellow	switching output <ul style="list-style-type: none"> ■ NO: Switching point exceeded/within window (active output) ■ NC: Switching point undershot/outside window (active output)
	off	switching output <ul style="list-style-type: none"> ■ NO: Switching point undershot/outside window (inactive output) ■ NC: Switching point exceeded/within window (inactive output)

7.2 Display indications

Display	Meaning
----	Sensor failure
HW	Internal hardware error
PArF	Faulty factory parameters
SC 1	Short circuit at output 1
SC 2	Short circuit at output 2
SC12	Short circuit at both outputs
WB 2	Wire break at current output 2
Prob	Probe not present, incorrectly connected or faulty
VOLT	Operating voltage outside the permissible range
LOAD	Burden at the analog output outside of the permissible range
Oor+	Value outside of the measuring range, temperature > 5 % of full scale above the measuring range
Oor-	Value outside of the measuring range, temperature > 5 % of full scale below the measuring range
Oor	No measurement data available
PArA	Incorrect user parameterization
TEMP	Device temperature outside the permissible range
Err	Unspecified error

8 Setting and Parameterization

The device can be assigned parameters via touchpads

8.1 Settable functions and properties

The three front touchpads [ENTER], [MODE] and [SET] enable the user to set all the essential functions and properties directly on the device via the menu guidance.

Setting options — via touchpads

The following functions and properties can be set and used :

- Locking/unlocking the device
- Switching behavior in Smart Sensor Profile:
 - Window mode
 - Single point mode
 - Two point mode
- Switching behavior in Legacy Mode:
 - Window function
 - Hysteresis function
- Analog range
- Probe configuration
- Thermocouple type
- OUT1 output configuration for SIO mode: PNP/NPN, auto detection on/off
- OUT2 output configuration for SIO mode: PNP/NPN, auto detection on/off
- Advanced settings: Reset to factory settings.
- Advanced settings: Minimum and maximum value memory
- Advanced settings: Offset adjustment
- Advanced settings: Display color and behavior
- Advanced settings: Reset to presets.
- Advanced settings: Set password.

8.2 Setting parameter values

Georgin standard menu

- ▶ Unlock the device when [MODE] or [SET] is touched, a red running light appears and the LOC LED is lit.
- ▶ Touch [MODE] or [SET] until the required parameter is displayed.
- ▶ Touch [ENTER] to select a parameter.
- ▶ Changing the displayed value: Touch [SET] for 3 s until the display is no longer flashing. Or: Touch [MODE] to return to the parameter selection.
- ▶ Increase or decrease the value gradually via [MODE] or [SET]. Certain values can be continuously changed by holding down [MODE] or [SET].
- ▶ Touch [ENTER] to save the modified value. The saved value flashes twice.

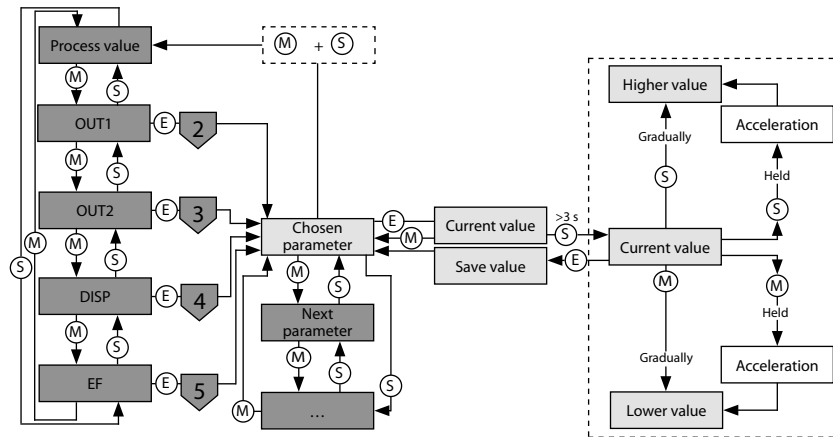


Fig. 28: Setting parameter values

8.3 Unlocking the device

- ▶ Touch [ENTER] for 3 s until all green bars are flashing on the display.
- ▶ Swipe [MODE], [ENTER], [SET] in succession: Two red flashing bars appear when each touchpad is touched. Once the two red bars have turned green, move onto the next touchpad without removing your finger from the touchscreen.
- ▶ Release the touchpads when six green bars are flashing on the display.
- ⇒ LOC LED goes off.
- ⇒ uLoc appears in the display and then disappears.

8.4 Locking the device

- ▶ Touch [MODE] and [SET] simultaneously for 3 s.
- ⇒ When the LOC LED flashes, Loc will appear on the display and then go out.
- ⇒ LOC LED is yellow.

The sensor is automatically locked if the touchpads of the device are not actuated for 1 min.

8.5 Protecting the sensor with a password

- ▶ Select PASS in the EF menu.
- ▶ Change values via [SET].
- ▶ Use [MODE] to navigate between the four digits of the password.
- ▶ Use [ENTER] to store the new password.

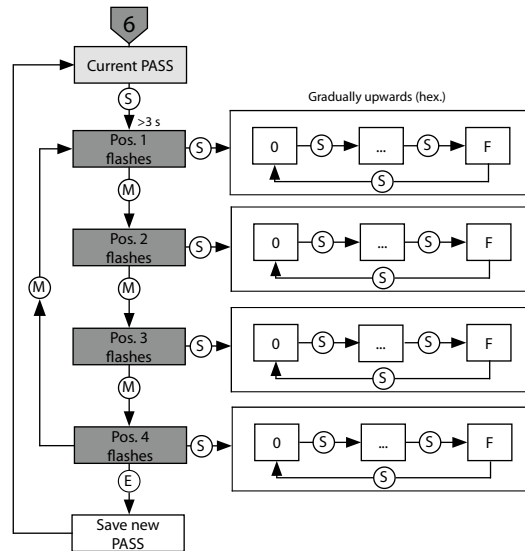


Fig. 29: Password setting

8.6 Setting via touchpads — standard menu guidance

Use the [MODE] or [SET] touchpads to navigate through the main menu, as well as the OUT1 and OUT2 submenus, the EF extended functions menu and the DISP display menu. Press [ENTER] to select the respective submenu. Touching [MODE] and [SET] at the same time will cancel the parameter assignment. The device returns to the standard display.

In the EF menu, you can select Legacy Mode with its own menu guidance.

Standard menu guidance — main menu

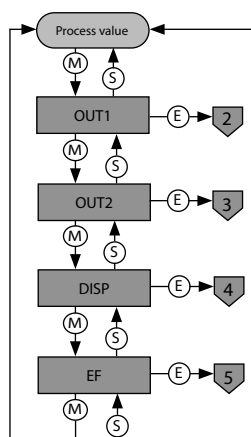


Fig. 30: Main menu

Outputs submenu (OUT...)

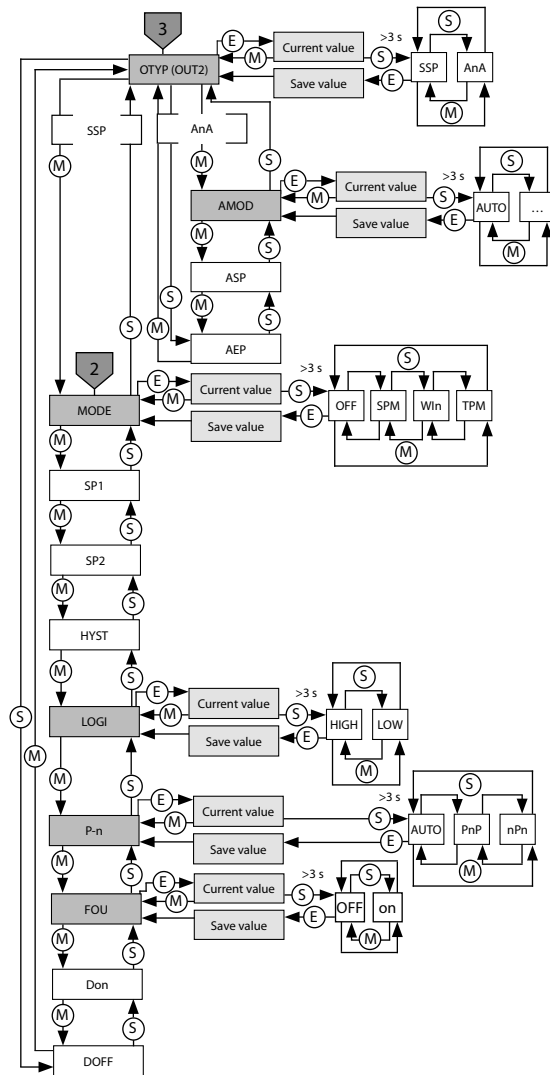


Fig. 31: Outputs submenu (OUT...)

Display submenu (DISP)

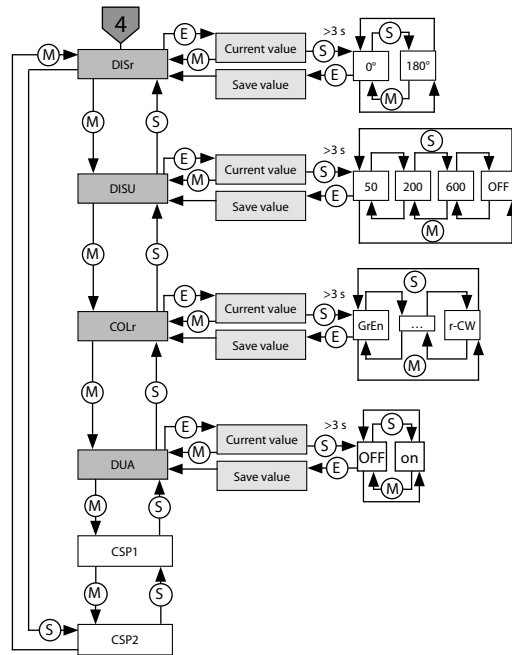


Fig. 32: Display submenu (DISP)

Extended functions submenu (EF)

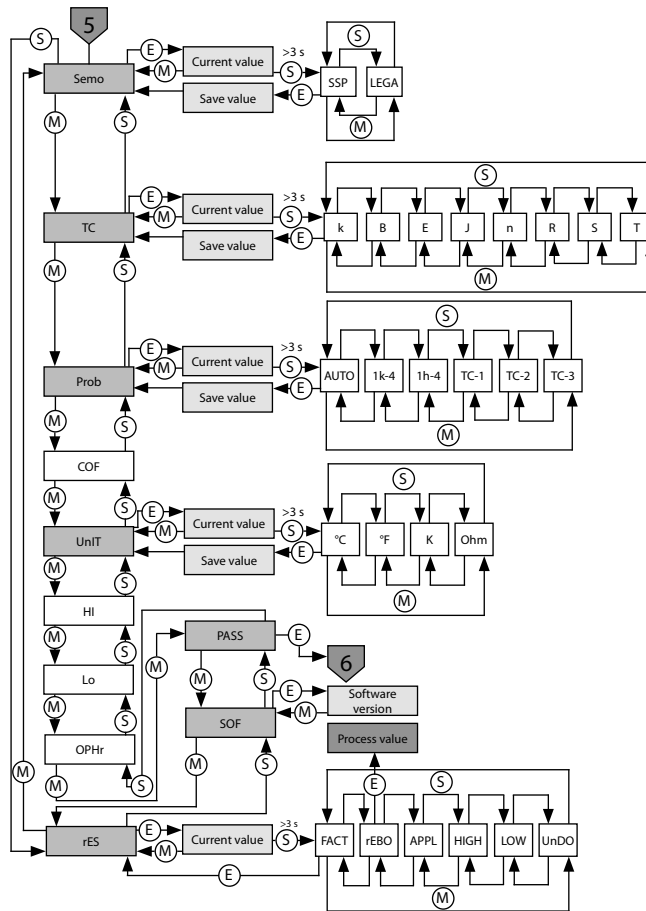


Fig. 33: Extended functions submenu (EF)

8.6.1 Parameters in the main menu Default values are shown in **bold**.

	Explanation	Function
OUT1	Output 1 submenu	Switching output 1 setting options
OUT2	Output 2 submenu	Switching output 2 setting options or analog output
DISP	Display submenu	Refer to the "Parameters in the DISP submenu" table for additional setting options
EF	Extended Functions submenu	For additional setting options see the "Parameters in the EF submenu" table

8.6.2 Parameters in the OUT... (outputs) submenu

	Explanation	Options	Function
OTYP	Output Type (OUT2)	SSP AnA	Switching output Smart Sensor Profile Analog output

	Explanation	Options	Function
MODE		OFF SPM WIn TPM	Single Point Mode Window Mode Two Point Mode
SP1	Switching point 1		SPM: Limit value at which the switching output changes its switching state TPM: Upper limit value at which the switching output changes its switching state as the measured value rises WIn: Upper window limit at which the switching output changes its switching state Default: 800 (80.0 °C)
SP2	Switching point 2		SPM: not available TPM: lower limit value at which the switching output changes its switching state as the measured value falls WIn: lower window limit at which the switching output changes its switching state Default: 700 (70.0 °C)
HYST	Hysteresis		The min. hysteresis is 0.1 K. The maximum hysteresis comprises the complete value range of the sensor. For thermocouples, the maximum hysteresis comprises the value range of the connected temperature probe. Default: 0.1 K
LOGI	Invert switching logic	HIGH LOW	0 → 1 1 → 0
P-n	Behavior of the switching output	AUTO PnP nPn	Auto detection (NPN/PNP) N switching P switching
Don	Switch-on delay		0...60 s in increments of 0.1 s (0 = delay time not active) Default: 0.0 s
DOFF	Switch-off delay		0...60 s in increments of 0.1 s (0 = delay time not active) Default: 0.0 s
FOU	Behavior in the event of a fault (e.g. wire break or short circuit)	On OFF	Switching output: The output is activated in the event of a fault. Analog output: Fault value of the set function at output 2 (OUT2) Switching output: The output is deactivated in the event of a fault. Analog output: Fault value of the set function at output 2 (OUT2)

	Explanation	Options	Function
AMOD	Analog output (only available for OUT2)	AUTO	Automatic detection (4...20 mA/0...10 V)
		4-20	4...20 mA
		0-20	0...20 mA
		20-4	20...4 mA
		20-0	20...0 mA
		0-10	0...10 V
		0-5	0...5 V
		1-6	1...6 V
		10-0	10...0 V
		5-0	5...0 V
		6-1	6...1 V
		0545	0.5...4.5 V
		4505	4.5...0.5 V
ASP	Start point of the analog signal		Measured value at which the analog output signal has its start point Default: -49.8 °C
AEP	End point of the analog signal		Measured value at which the analog output signal has its end point Default: 50.0 °C

9.6.3 Parameters in the DISP (display) submenu

	Explanation	Options	Function
DISr	Display orientation	0°	Display rotated by 0°
		180°	Display rotated by 180°
DISU	Display update	50	50-ms update time
		200	200-ms update time
		600	600-ms update time
		OFF	Display update deactivated
COLr	Display color	GrEn	Always green
		rED	Always red
		G1oU	Green if OUT1 is switched, otherwise red
		r1oU	Red if OUT1 is switched, otherwise green
		G2ou	Green if OUT2 is switched, otherwise red
		r2ou	Red if OUT2 is switched, otherwise green
		G-CW	Green if the process value is between the virtual switching points CSP1 and CSP2
		r-CW	Red if the process value is between the virtual switching points CSP1 and CSP2

	Explanation	Options	Function
DUA	Display	OFF	Display of process value
		On	Alternating display of process value and unit
CSP1	Virtual upper switching point		Virtual upper switching point at which the display changes color (if display color G-CW or r-CW is selected) Default: 80.0
CSP2	Virtual lower switching point		Virtual lower switching point at which the display changes color (if display color G-CW or r-CW is selected) Default: 70.0

9.6.4 Parameters in the EF submenu (Extended Functions)

	Explanation	Options	Function
Semo	Set mode	SSP	Smart Sensor Profile
		LEGA	Legacy Mode
TC	Thermocouple type	K	-200 °C...+1300 °C
		b	+250 °C...+1820 °C
		E	-200 °C...+1000 °C
		J	-210 °C...+1200 °C
		n	-200 °C...+1300 °C
		R	-50 °C...+1500 °C
		S	-50 °C...+1500 °C
		T	-200 °C...+400 °C
Prob	Probe configuration	AUTO	Automatic detection of the temperature probe
		1k-4	Pt1000 sensor, 4-wire version (connected to Pin1 Pin2 and Pin3 Pin4)
		1h-4	Pt100 sensor, 4-wire version (connected to Pin1 Pin2 and Pin3 Pin4)
		TC-1	Thermocouple between Pin 1 and Pin 4
		TC-2	Thermocouple between Pin 2 and Pin 3
COF	Offset adjustment	TC-3	Reserved
			Severe temperature changes in the environment of the sensor can cause the shifting of the zero point. As a result, the measured value zero is not displayed at 0 °C . This drift can be corrected with the offset value. Setting range: -55...+55 °C in increments of 0.1 K. Default: 0.0 °C
UnIT	Display unit	°C	°C
		°F	°F
		K	K
		OHM	Ohm
HI	Maximum value memory		The highest process temperature is stored and displayed.
Lo	Minimum value memory		The lowest process temperature is stored and displayed.
OPHr	Operating hours counter		Display of operating hours in years (y), days (d) and hours (h)
PASS	Password protection		Define password and activate password protection
		0000	No password
SOF	Software version		Display the firmware version

	Explanation	Options	Function
rES	Reset	FACT	Reset the parameters to factory settings
		rEBO	Restart the device (warm start)
		APPL	Reset application-specific data
		HIGH	Reset the maximum value memory: The highest process temperature is deleted.
		LOW	Reset the minimum value memory: The lowest process temperature is deleted.
		UnDO	Reset the parameters to the previous settings (last device start)

9.7 Legacy Mode

Use the [MODE] or [SET] touchpads to navigate through the main menu, the EF extended functions menu or the VDMA menus. Press [ENTER] to select the respective submenu. Touching [MODE] and [SET] at the same time will cancel the parameter assignment. The device returns to the standard display.

In the EF menu, you can select the VDMA menu with its own menu guidance.

Legacy Mode — main menu

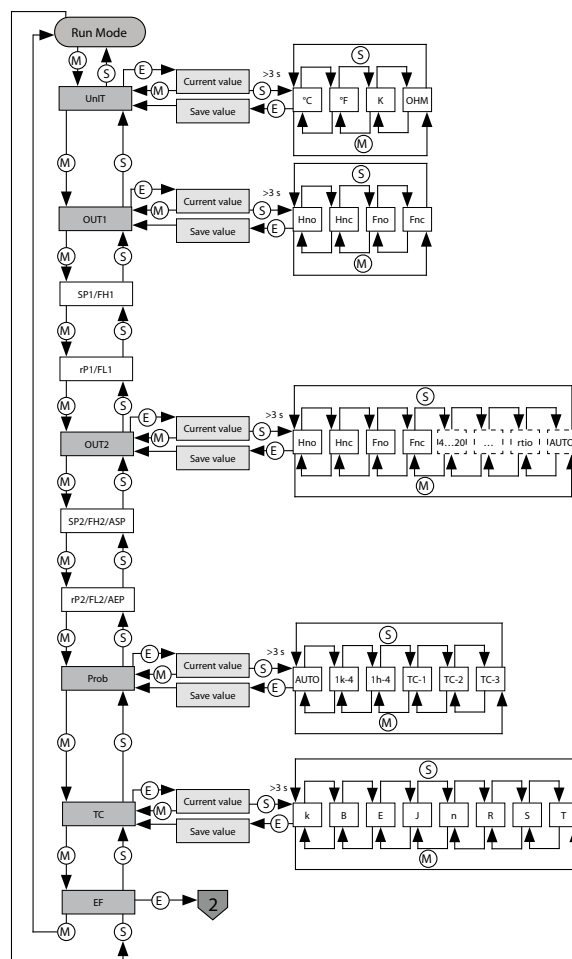


Fig. 34: Main menu in Legacy Mode

Legacy Mode — extended functions (EF) submenu

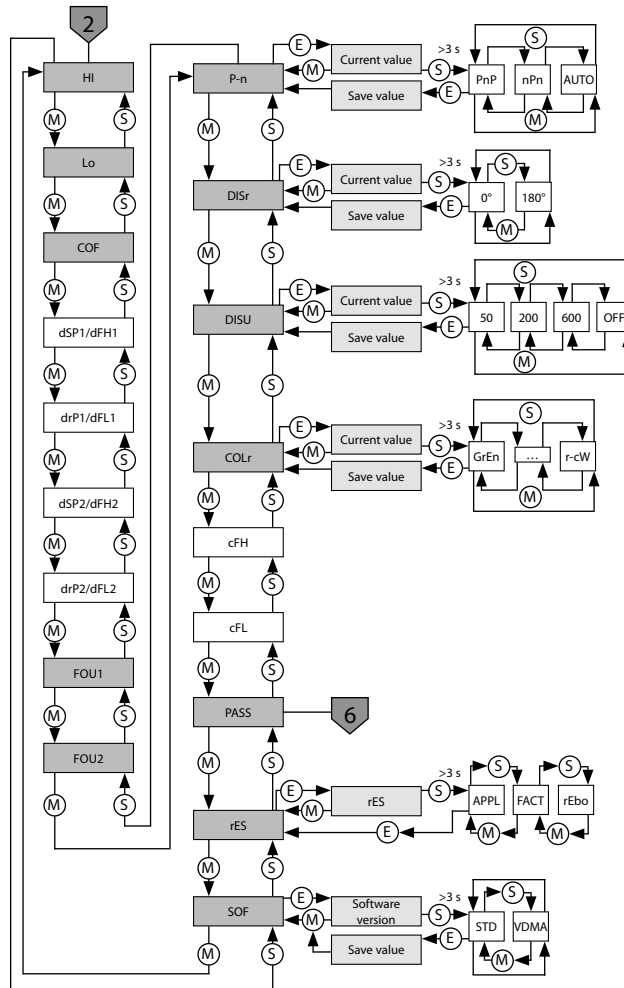


Fig. 35: Extended functions (EF) submenu in Legacy Mode

VDMA menu — main menu

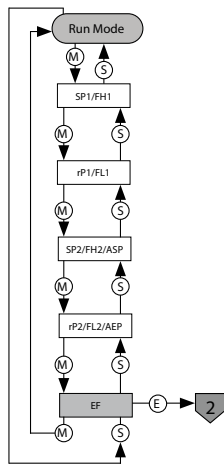


Fig. 36: Main menu in the VDMA menu guidance

VDMA menu — extended functions (EF)

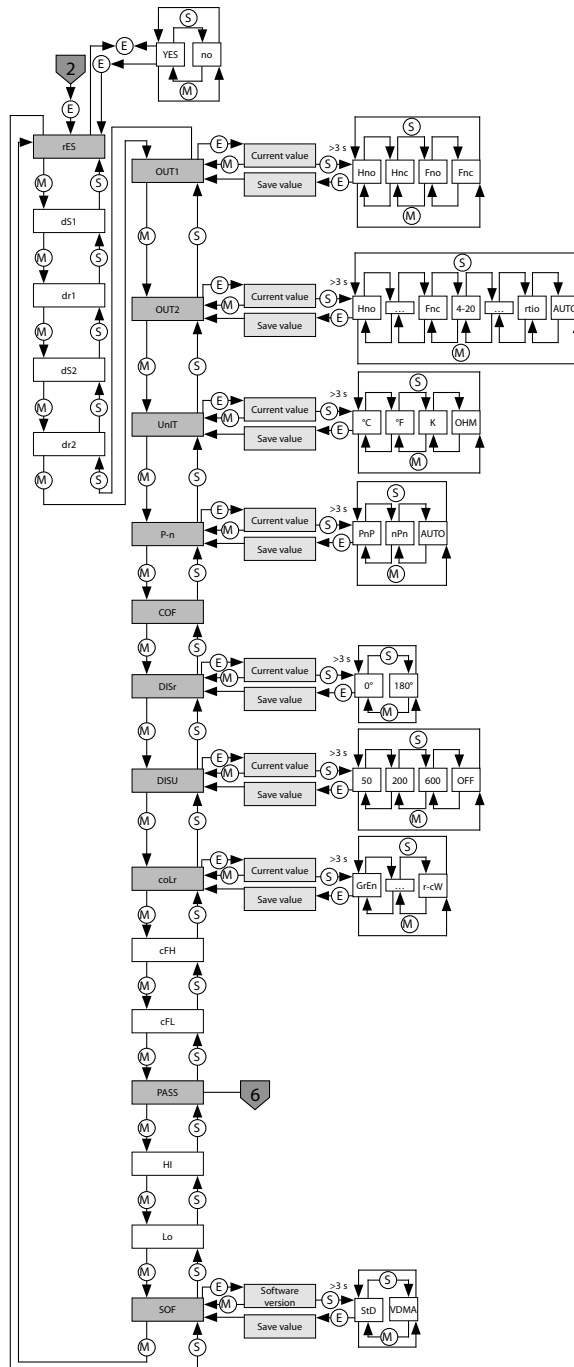


Fig. 37: Extended functions (EF) submenu in the VDMA menu guidance

8.7.1 Legacy Mode — parameters in the main menu

	Explanation	Options	Function
UnIT	Display unit	°C	°C
		°F	°F
		K	K
		OHM	Ohm
OUT1	Function of output 1	Hno	Hysteresis function (NO = NO contact)
		Hnc	Hysteresis function (NC = NC contact)
		Fno	Window function (NO = NO contact)
		Fnc	Window function (NC = NC contact)
SP1	Switching point 1 for hysteresis function OUT1: Hno/Hnc		Upper limit value at which output 1 changes its switching state as the temperature rises Default: 80.0 °C
rP1	Release point 1 for hysteresis function OUT1: Hno/Hnc		Lower limit value at which output 1 changes its switching state as the temperature falls Default: 70.0 °C
FH1	Upper switching point for window function OUT1: Fno/Fnc		Upper switching point at which output 1 changes its switching state Default: 80.0 °C
FL1	Lower switching point for window function OUT1: Fno/Fnc		Lower switching point at which output 1 changes its switching state Default: 70.0 °C
OUT2	Function of output 2	Hno	Hysteresis function (NO = NO contact)
		Hnc	Hysteresis function (NC = NC contact)
		Fno	Window function (NO = NO contact)
		Fnc	Window function (NC = NC contact)
	Analog output	AUTO	Automatic detection (4...20 mA/0...10 V)
		4-20	4...20 mA
		0-20	0...20 mA
		20-4	20...4 mA
		20-0	20...0 mA
		0-10	0...10 V
		0-5	0...5 V
		1-6	1...6 V
		10-0	10...0 V
		5-0	5...0 V
6-1	6...1 V		
rtio	0.5...4.5 V		
SP2	Switching point 2 OUT2: Hno/Hnc		Upper limit value at which output 2 changes its switching state as the temperature rises Default: 80.0 °C
rP2	Release point 2 OUT2: Hno/Hnc		Lower limit value at which output 2 changes its switching state as the temperature falls Default: 70.0 °C
FH2	Upper switching point for window function OUT2: Fno/Fnc		Upper switching point at which output 2 changes its switching state Default: 80.0 °C

	Explanation	Options	Function
FL2	Lower switching point for window function OUT2: Fno/Fnc		Lower switching point at which output 2 changes its switching state Default: 70.0 °C
ASP	Start point of the analog signal OUT2: Auto/analog values/rtio		Temperature value at which the analog output signal has its start point Default: -49.8 °C
AEP	End point of the analog signal OUT2: Auto/analog values/rtio		Temperature value at which the analog output signal has its end point Default: 50.0 °C
Prob	Probe configuration	AUTO 1k-4 1h-4 tc-1 tc-2 tc-3	Automatic detection of the temperature probe Pt1000 sensor, 4-wire version (connected to Pin 1 Pin 2 and Pin 3 Pin 4) Pt100 sensor, 4-wire version (connected to Pin 1 Pin 2 and Pin 3 Pin 4) Thermocouple between Pin 1 and Pin 4 Thermocouple between Pin 2 and Pin 3 Reserved
TC	Thermocouple type	k B E J n R S T	-200...+1300 °C 250...1820 °C -200...+1000 °C -210...+1200 °C -200...+1300 °C -50...+1500 °C -50...+1500 °C -200...+400 °C
EF	Submenu for additional setting options		See table "Legacy Mode: Parameters in the EF (extended functions) submenu"

8.7.2 Legacy Mode — parameters in the EF (extended functions) submenu

	Explanation	Options	Function
HI	Maximum value memory		The highest process temperature is stored and can be displayed or deleted (press and hold [SET]).
Lo	Minimum value memory		The lowest process temperature is stored and can be displayed or deleted (press and hold [SET]).
CoF	Offset adjustment		Severe temperature changes in the environment of the sensor can cause the shifting of the zero point. As a result, the measured value zero is not displayed at 0 °C . This drift can be corrected with the offset value. Setting range: -55...+55 °C in increments of 0.1 K. Default: 0.0 °C
dSP1	Switching delay of SP1		0...60 s in increments of 0.1 s (0 = delay time not active) Default: 0.0 s

9 Troubleshooting

If the device does not function as expected, first check whether ambient interference is present. If there is no ambient interference present, check the connections of the device for faults.

If there are no faults, there is a device malfunction. In this case, decommission the device and replace it with a new device of the same type.

If the device does not work as expected, proceed as follows:

- ▶ Exclude environmental disturbances.
- ▶ Check the connections of the device for errors.
- ▶ Check device for parameterization errors.

If the malfunction persists, the device is faulty. In this case, decommission the device and replace it with a new device of the same type.

10 Maintenance

The device is maintenance-free. Clean with a damp cloth if required.

11 Repair

The device is not intended for repair by the user. The device must be decommissioned if it is faulty. Observe our return acceptance conditions when returning the device to Georgin.

11.1 Returning devices

If a device has to be returned, bear in mind that only devices with a decontamination declaration will be accepted. This is available for download at <https://georgin.com/en/formulaire-contacter-le-sav/> and must be completely filled in, and affixed securely and weather-proof to the outside of the packaging.

12 Disposal



The devices must be disposed of properly and do not belong in the domestic waste.



Designed, developed and manufactured in France
Over 85 years of industrial expertise

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