Operating Instructions

for

Universal display

Model: DAG-T4T00WSR

1. Contents

Manufactured and sold by:

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2. Note

Please read these operating instructions before unpacking and putting the unit into operation. Follow the instructions precisely as described herein.
The instruction manuals on our website www.kobold.com are always for currently manufactured version of our products. Due to technical changes, the instruction manuals available online may not always correspond to the product version you have purchased. If you need an instruction manual that corresponds to the purchased product version, you can request it from us free of charge by email (info.de@kobold.com) in PDF format, specifying the relevant invoice number and serial number. If you wish, the operating instructions can also be sent to you by post in paper form against an applicable postage fee.

Operating instructions, data sheet, approvals and further information via the QR code on the device or via www.kobold.com

The devices are only to be used, maintained and serviced by persons familiar with these operating instructions and in accordance with local regulations applying to Health & Safety and prevention of accidents.

When used in machines, the measuring unit should be used only when the machines fulfil the EC machinery directive.

3. Instrument Inspection

Instruments are inspected before shipping and sent out in perfect condition.
Should damage to a device be visible, we recommend a thorough inspection of the delivery packaging. In case of damage, please inform your parcel service / forwarding agent immediately, since they are responsible for damages during transit.

Scope of delivery:
The standard delivery includes:

- Universal display model: DAG-T4T00WSR

4. Regulation Use

Any use of the universal display, model: DAG-T4T00WSR, which exceeds the manufacturer's specification, may invalidate its warranty. Therefore, any resulting damage is not the responsibility of the manufacturer. The user assumes all risk for such usage.

5. Operating Principle

The universal panel meter DAG-T4T00WSR is a quite versatile process indicator with totalizing function. With a wide list of input types - thermocouples, thermo-resistance, voltage and current the DAG-T4T00WSR is capable of measuring the majority of the variables and sensors encountered in industrial processes.
Among others it contains two alarms (six functions), sensor offset, configuration of parameters protected by password, USB communication, indication in degrees Celsius (°C) or Fahrenheit (°F).

5.1 Signal input

Type	CODE	Measurement range
Thermocouple J	Tχ φ	Range: -110 °C to +950 ºC (-166 °F to +1742 ºF)
Thermocouple K	Tχ κ	Range: -150 °C to +1370 ºC (-238 °F to +2498 ºF)
Thermocouple T	Tχ τ	Range: -160 °C to +400 ºC (-256 °F to 752 ºF)
Thermocouple N	Tχ ν	Range: -270 °C to +1300 ºC (-454 °F to 2372 ºF)
Thermocouple R	Tχ ρ	Range: -50 °C to +1760 ºC (-58 °F to 3200 ºF)
Thermocouple S	Tχ σ	Range: -50 °C to +1760 ºC (-58 °F to 3200 ºF)
Thermocouple B	Tχ β	Range: 400 °C to +1800 ºC (752 °F to 3272 ºF)
Thermocouple E	Tχ ε	Range: -90 °C to +730 ºC (-130 °F to 1346 ºF)
RTD (Pt100)	Πτ	Range: -200 °C to +850 ºC (-328 °F to 1562 ºF)
0 to 20 mA	Λ.0.20	Linear analogue signal Indication programmable from -1999 to 30000.
4 to 20 mA	Λ.4.20	
0 to 50 mV	Λ.0.50	
0 to 5 VDC	Λ.0.5	
0 to 10 VDC	Λ.0.10	

Table 01: Input types

5.2 Offset-Function

Allows fine adjustments to the PV (Process value) indication, correcting measurement errors that appear, for example, after the replacement of the temperature sensor.

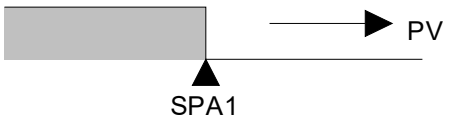
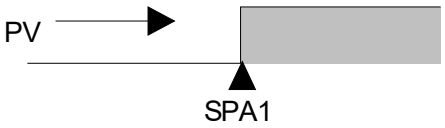
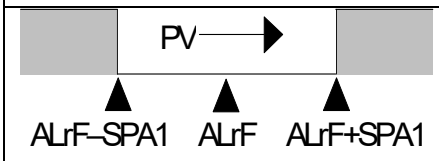
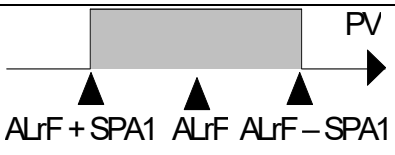
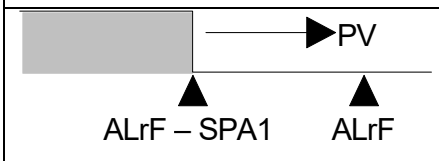
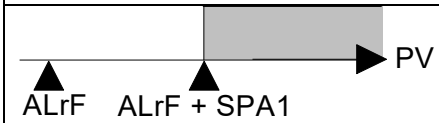
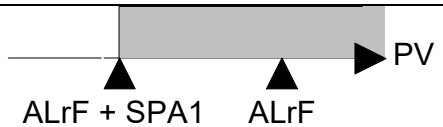
5.3 Alarms

The KOBOLD- digital universal panel meter DAG-T4T00WSR has two alarm outputs:

ALARM1 - Relay SPST - Available on terminals 5 and 6.

ALARM2 - Relay SPST- Available on terminals 3 and 4.

The alarms can assume the functions described on **Table 02**:

<table>
<tr><td>oϕϕ</td><td colspan="2">Alarm off.</td></tr>
<tr><td>Λo</td><td>Alarm of the Absolute Minimum Value. It triggers when the value of the PV is below the value defined by the alarm Setpoint (SPA1 or SPA2).</td><td> 
</td></tr>
<tr><td>HI</td><td>Alarm of the Absolute Maximum Value. It triggers when the value of the PV is above the value defined by the alarm Setpoint.</td><td> 
</td></tr>
<tr><td rowspan="3">δIϕ</td><td colspan="2">Alarm of the Differential Value. In this function the parameters “SPA1” and “SPA2” represent errors (difference) between the PV and one reference value (AlrF).</td></tr>
<tr><td> 
</td><td> 
</td></tr>
<tr><td>SPA1 positive</td><td>SPA1 negative</td></tr>
<tr><td rowspan="3">δIϕΛ</td><td colspan="2">Alarm of the Minimum Differential Value. It triggers when the value of the PV is below the point defined by:
ALrF-SPA1 (using alarm 1 as an example).</td></tr>
<tr><td> 
</td><td> 
</td></tr>
<tr><td>SPA1 positive</td><td>SPA1 negative</td></tr>
<tr><td rowspan="3">δIϕH</td><td colspan="2">Alarm of the Maximum Differential Value. It triggers when the value of the PV is above the point defined by:
ALrF+SPA1 (using alarm 1 as an example).</td></tr>
<tr><td> 
</td><td> 
</td></tr>
</table>

	SPA1 positive	SPA1 negative
τ.Λο	Alarm of the Absolute Minimum Value. It triggers when the value of the totalizer (TOT) is **below** the value defined by the alarm *Setpoint.*	
τ.Hι	Alarm of the Absolute Maximum Value. It triggers when the value of the totalizer (TOT) is **above** the value defined by the alarm *Setpoint.*	
τ.οΦΛ	Alarm at overflow of totalizer.	
IEρρ	Alarms of Sensor Break (Sensor *Break Alarm*). It is activated when the Input presents problems such as interrupted sensor, bad connection, etc.	

Table 02: Alarm functions

Note: The figures are also valid for Alarm 2 (SPA2).

5.4 Blocking initial of the alarm

The initial blocking option inhibits the alarm from being recognized if an alarm condition is present in the process when the indicator is first energized. The alarm will be enabled only after the occurrence of no alarm condition.
The initial blocking is useful, for example, when one of the alarms is set up as a minimum value alarm, which may cause the activation of the alarm soon upon the process start-up; an occurrence that maybe undesirable in many cases.
The initial blocking feature is not valid for the functions **t.lo**, **t.Hi**, **t.ofl** and **ierr**.

5.5 Auto range function (AVTO.R)

The indication limits can be set by using operator's knowledge about the process. By knowing the relation between the current process variable value and the desired indication in two points the indication limits can be easily set.
The known PV values are set through **P1.Set** and **P2.Set** parameters which are presented when the Auto Range function is enabled: **avto.r**= **yes**.
If the function Auto Range is used the parameters **inLL** and **inHL** are automatically defined.
This function is only available for analog linear input signals.

5.6 Totalizing function

This function allows continuous integration of instant PV values.
This continuous integration is stored in a non volatile internal memory and can also be presented at the indicator display by choosing TOTAL screen which is identified by the symbol TOT. This symbol is always presented when the TOTAL is being presented.
The TOTAL value is presented with up to 9 digits (999999999) but when this value is bigger than 99999 it is splitted in two separate screens indicating the most and least significant parts and identified with the symbols TOT HIGH and TOT LOW on the display.
The TOTAL value can be erased through the keyboard or can be reset every time the indicator is powered up.

5.7 Totalizing/Integration time base (t.base)

The instant PV value integration is executed at a fixed time interval which is defined by a configuration parameter.
The Time Base options are “second”, “minute”, “hour” and “day”.

5.8 Totalizing/Integration scale factor (t.ScF)

Before being added to the total, the instant PV value is multiplied by the Scale Factor.

5.9 Batch totalizing function

This function allows the operator to execute the totalization only when a pre-configured function key is pressed.
This function allows the user to add or subtract the instant PV value to/from the total accumulated value.

5.10 F1 and F2 function keys

The F1- and F2-Keys can execute several different functions which should be set by the user when configurating the indicator.

νο	Key not used to any special function.
β.αδδ	Executes Batch Function - Addition
β.σϖβ	Executes Batch Function - Subtraction
ρστ.το	Reset Total value
δ–ηι	Present maximum read value
δ–Λο	Present minimum read value
ρ.Λοηι	Reset minimum and maximum values

Two different functions can be assigned to F1 and F2 keys. The function to be executed, Primary or Secondary, is determined by the amount of time the function key is being pressed. If the function key is pressed for less than 1 second the Primary function is executed.
If the key is pressed for more than 3 seconds then the Secondary function is executed.
The combination of the keys F1 and F2 pressed simultaneously can also execute a Special Function. All Special Functions are available to the operator as follows:
F1_1: F1 Key, Primary Function.
F1_2: F1 Key, Secondary Function.
F2_1: F2 Key, Primary Function.
F2_2: F2 Key, Secondary Function.
F12_1: F1+F2 Keys, Primary Function.
F12_2: F1+F2 Keys, Secondary Function.

5.11 Totalizing function and alarms

The totalization alarm functions τ.Λο and τ.Hι allow the user to notify when a total value is reached.

The alarm defined as Totalization Minimum Value Alarm τ.Λο) is set when the totalization value goes below the configured setpoint.

The alarm defined as Totalization Maximum Value Alarm (τ.Hι) is set when the totalization value goes above the configured setpoint.
As the totalization value can indicate up to 99999 99999 (or -9999 99999) the set point values behave the same way. If the adjusted SP goes above 99999 (or below -9999) the second SP part is displayed allowing the operator to see values up to 99999 99999 (or -9999 99999).
The flags HIGH and LOW identify if the part being displayed is the SP most significant part (HIGH) or the least significant part (LOW).
The totalization alarm (SP) is defined through the values SPA1 and SPA2. This two parameters behave different from other parameters. The Back key allows the operator to change the SP decimal digit to be set.

5.12 Overflow alarm

This alarm function is set when the totalized value surpasses 9999999999, which is the maximum indication value.

5.13 Minimum and maximum

The indicator is continuously storing the extreme input indication measurements, or the minimum and maximum values. These values can be displayed at any time by the operator by pressing the keys F1 and F2. Notice that the function Keys should be set to δ_ηι and δ_Λο.
To reset the maximum and minimum values and start another monitoring cycle, just execute the function ρ.Λοηι, which can be assigned to the keys F1 and F2. When the indicator is powered off this information is not stored.

5.1424 VDC auxiliary voltage source

The standard version of the DAG-T4T00WSR provides an auxiliary power supply (24 VDC) for exciting field transmitters (terminal 13 on the rear panel).

6. Mechanical Connection

The indicator is meant for panel mounting. The sequence of steps is:

- Prepare a cut out of 93.0 by 45.5 mm on the panel
- Remove the mounting clamp from the indicator
- Insert the indicator into the cut out from the front side of the panel
- Place the clamp on the indicator again, pressing until firm grip to the panel

7. Electrical Connection

The terminals configurations are shown in Figure 01.

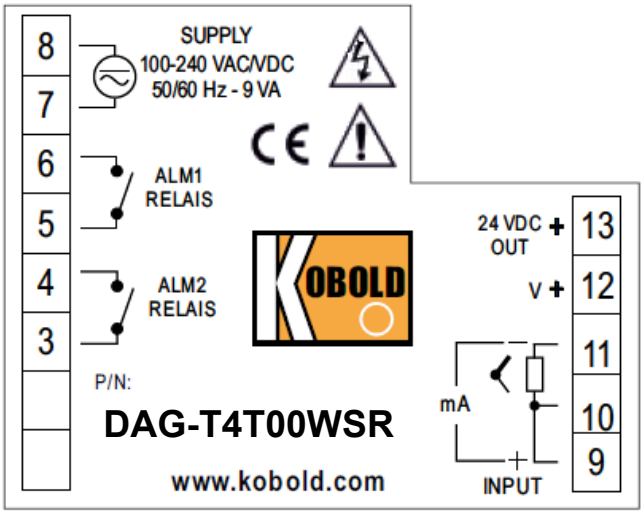


Figure 01: Input connections and power supply

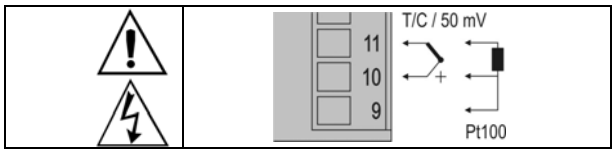


Figure 02: Thermocouple, Pt100 and 50 mV signal connection

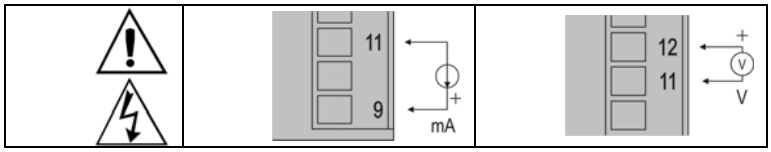


Figure 03: Current (mA) and Voltage (V) signal connection

This indicator offers an auxiliary 24 VDC +/-15% at 50 mA power supply which is typically applied to power up two wire 4 to 20 mA field transmitters. The **Figure 04** presents the wiring for this application.

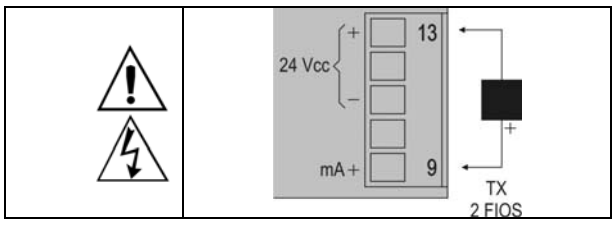


Figure 04: Auxiliary 24 VDC usage example

7.1 Recommendations for the installation

- To minimize the pick-up of electrical noise, the low voltage DC connections and the sensor input wiring should be routed away from high-current power conductors. If this is impractical, use shielded cables. In general, keep cable lengths to a minimum.
- The input signal conductors shall be positioned throughout the factory separate from the output and the power supply conductors, in grounded conduits if possible.
- The power supply of the electronic instruments shall come from a proper source for the instrumentation network.
- It is recommended to use RC FILTERS (0,1uF in series with 100 ohms) to suppress the noise generated by contactors coils, solenoids, etc.

8. Operation

The indicator front panel, together with its elements, can be seen on:

Figure 02: Identification of the front panel parts.

Display: Shows the process variable (**PV)**, the configuration parameter prompts and their respective values/conditions.
Indicators A1 and A2: signalize the occurrence of an alarm condition.
Key P: Used to walk through the parameters in the menu cycles.
▲ **Increment key and** ▼ **Decrement key**: Used to change parameter values.
Key ◀: Go back to the previous displayed parameter. This key changes its behavior starting to set the decimal digit to set.

9. Commissioning

When the controller is powered up, its firmware version is displayed for 3 seconds, after which the **DAG-T4T00WSR** starts normal operation, when the value of **PV** is displayed and the outputs are enabled.
Before the indicator is ready to be used in a given process, it requires some basic configuration, consisting of assigning values to the parameters according to the desired behavior. The user shall understand the importance of each parameter and determine a valid condition or a valid value for each one of them.

The configuration parameters are grouped in levels according to their affinity. The 5 parameter levels are:

1 – Operation

2 – Alarms

3 – Input

4 – Totalizer

5 – Calibration

The **"P"** key provides the access to the levels and to the parameters of these levels.
Keeping the **P** key pressed, at every 2 seconds, the indicator jumps from one level to another, presenting the first parameter of each level:

Measurement PV>>$\phi\varpi\alpha 1$**>>**$\tau\psi\pi E$**>>**$\tau o\tau$**>>**$\pi\alpha\sigma\sigma$**>>PV** …

To enter a particular level, simply release the **P** key when the first parameter in that level is displayed.
To walk through the parameters in a level, press the P key with short strokes. To go back to the previous parameters, use the ◧ Key.
The display alternates the presentation of the parameter prompt and its value. The parameter value is displayed with a light blinking to differentiate it from the parameter prompt.

Depending on the level of parameter protection adopted, the parameter $\Pi A\Sigma\Sigma$ precedes the first parameter in the level where the protection is active. See section Protection configuration.

10. Description of the parameters

10.1 Operation cycle

Πυ	**Indication Display of PV**: The value of the measured variable (PV) is shown on the main display (red).
τΟτ	**Totalizing value**: When this value is bigger than 99.999 it is splitted in two separate screens indicating the most and least significant parts and identified with the symbols TOT HIGH and TOT LOW on the display
Σπ.α1 Σπ.α2 *SetPoint Alarm*	**Alarm SP:** Value that defines the alarm activation point. For the alarms set up with the functions of the type **Differential** or **Band**, these parameters define the maximum differences accepted between **PV** and a reference value defined in the parameter ΑΛρΦ. For the alarm function ιΕρρ, this parameter is not used. Parameters show in this level only when enabled in the parameters σπ1.Ε and σπ2.Ε.

10.2 Alarm cycle

Φωα1 Φωα2	Alarm Functions. It defines the functions of the alarms among the options in **Table 02** (page 5).
αλ.ρφ *Alarm Reference*	Reference value used by the alarms with differential function, minimum differential or maximum differential.
δπ.α1 δπ.α2 *Alarm Referenz*	Totalization alarm SP decimal point.
Σπ.α1 Σπ.α2 *SetPoint Alarm*	Alarm SP: Value that defines the point of activation of the alarm outputs. For the alarms programmed with the functions of the type **Band** and **Differential**, these parameters represent the deviations. For the ιΕρρ and τοφλ alarm functions, this parameter has no meaning.

Σπ1.E σπ2.E *SP enable*	It allows the parameters ΣΠ.α1 and ΣΠ.α2 to be displayed also in the indicator operation cycle. ΨΕΣ: Shows the parameters ΣΠ.α1/ΣΠ.α2 in the operation cycle. NO: DOES NOT show the parameters ΣΠ.α1/ΣΠ.α2 in the operation cycle.
βΛα1 βΛα2 *Blocking Alarm*	Alarms Initial Blocking (see section 4.5). ΨΕΣ: Enables the initial blocking NO: Inhibits the initial blocking
ξΗψα1 ξΗψα2 *Hysteresis of Alarms*	Alarm Hysteresis. It defines the difference between the value of PV at which the alarm is triggered and the value at which it is turned off.
φΛση Flash	It allows signalization of an alarm condition occurrence by flashing the indication of PV on the indication display. ΨΕΣ:Enables alarm signalization by flashing **PV**. NO: Disables the flashing **PV**.

10.3 Input Signal level parameters

τψπE *Type*	Input Type. Selection of the input type, used by the indicator. Refer to **Table 01** on page 4.
ϕΛτρ *Filter*	Digital Input Filter – Used to improve the stability of the measured signal (PV). Adjustable between 0 and 20. At 0 (zero) it means filter turned off and 20 means maximum filter. The higher the filter value, the slower is the response of the measured value.
δπ.πO *Decimal Point*	It determines the position of the decimal point on the display.
ϖνι τ *Unit*	It defines the temperature unit to be used: °X indication in Celsius. °Φ indication in Fahrenheit.
0ϕϕσ *Offset*	Parameter that allows the user to make fine adjustments to the indicated PV value.
Aϖτο.ρ *Auto Range*	Enables the scaling of the **PV** by applying the input signal.
Π1.σEτ	PV value to the first process known point when *Auto Range* function is enabled (Aϖτο.ρ = ψEσ).
Π2.σEτ	PV value to the second process known point when *Auto Range* function is enabled (Aϖτο.ρ = ψEσ).
ινΛΛ *Input Low Limit*	It defines the lower value of the indication range when the input types of 0-20 mA, 4-20 mA, 0-50 mV, 0-5 V and 0-10 V are used (Aϖτο.ρ = νο).
ινΗΛ *input High Limit*	It defines the upper value of the indication range when the input types of 0-20 mA, 4-20 mA, 0-50 mV, 0-5 V and 0-10 V are used (Aϖτο.ρ = νο).
Φ1_1 Φ1_2 Φ2_1 Φ2_2 Φ12_1 Φ12_2	Defines the function to be executed by F1 and F2 keys: νο No associated function β.αδδ Executes Batch Function - Addition β.σϖβ Executes Batch Function - Subtraction ρστ.το Reset Total value δ–ηι Present maximum read value δ–Λο Present minimum read value ρ.λοΗι Reset minimum and maximum values

10.4 Totalizing cycle

τοτ	Defines the indicator operation mode. οv Totalizing function enabled οφφ Totalizing function disabled βΑτχη Batch operation
τ.δπΠΟ	Totalizer Decimal Point Position Defines the decimal point position when presenting the total value.
τ.βασΕ Totalizer time base	Defines the time totalizing function time base. ΣΕχ seconds Μιν minutes Ηοωρ hours δαψ days
τ.ΣχΦ TotalizerScale Factor	Totalizer Scale Factor. Can be set from 0,001 to 65,0.
Λο.χωτ *LowCut*	Totalizer low cut value. Defines the lowest PV instant value limit considered for totalization and does not integrate any value below.
ΠΥ.ρστ *Power Up Reset*	Power up Reset Defines if the total value is restored or reset on indicator power up ΨΕΣ Reset Totalizer νο No reset of the Totalizer

10.5 Calibration cycle

All types of input are calibrated in the factory. In case a recalibration is required; it shall be carried out by a specialized professional. In case this cycle is accidentally accessed, do not perform alteration in its parameters. The factory calibration can be restored in the parameter rstr.

πασσ	*Password.* Entering the Access password. This parameter is presented before the protected cycles. See item Protection of Configuration.
(Χαλιβ	*Calibration.* Enables the possibility for calibration of the indicator. When the calibration is not enabled, the related parameters are hidden.
ινΛΧ(	*Input Low Calibration.* Indication of the low scale calibration signal applied to the input.
ινΗΧ(	*Input High Calibration.* Indication of the full scale calibration signal applied to the input.

ρστρ	*Restore.* It restores the factory input calibration and the indicator factory parameters, disregarding any modifications carried out by the user.
(Χφ	*Cold Junction.* Temperature of the indicator cold junction.
Πασ..Χ(	*Password Change*. It allows the definition of a new access password, always different from zero.
Προτ	*Protection*. Sets up the Level of Protection. See **Table 03**.
ΦρΕθ	*Frequency.* Frequency of the local electrical network.
ΣνΗ	Serial number 4 most significant digits.
ΣνΛ	Serial number 4 least significant digits.

10.6 Password protection

The **DAG-T4T00WSR** indicator provides means for protecting the parameters configurations, not allowing modifications to the parameters values, avoiding tampering or improper manipulation. The parameter **Protection** (Προτ) in the Calibration level determines the protection strategy, limiting the access to particular levels, as shown in the table below.

ProtectionLevel	ProtectedLevels
1	Only the Calibration level is protected.
2	Totalization and Calibration levels are protected.
3	Input, Totalization and Calibration levels are protected.
4	Alarms, Input, Totalization and Calibration levels are protected.

Table 03: Levels of Protection of the configuration

ACCESS PASSWORD

The protected levels, when accessed, request the user to provide the **Access Password** for granting permission to change the configuration of the parameters on these levels.

The prompt ΠΑΣΣ precedes the parameters on the protected levels. If no password is entered, the parameters of the protected levels can only be visualized.

The Access Password is defined by the user in the parameter *Password Change* (Πασ..X), present in the Calibration Level. **The factory default for the password code is 1111**.

PROTECTION OF THE ACCESS PASSWORD

The protection system built into the controller blocks for 10 minutes the access to protected parameters after 5 consecutive false attempts of entering the correct password.

MASTER PASSWORD

The Master Password is intended for allowing the user to define a new password in the event of it being forgotten. The Master Password doesn't grant access to all parameters, only to the *Password Change* parameter (Πασ..X). After defining the new password, the protected parameters may be accessed (and modified) using this new password.

The master password is made up by the last three digits of the serial number of the controller **added** to the number 9000.

As an example, for the equipment with serial number 07154321, the master password is 9 3 2 1.

The indicator serial number can be obtained by pressing ◧ for 5 seconds.

11. Error messages, default and calibration

11.1 Error messages

Connection errors and inadequate programming are the most common errors found during the controller operation. A final revision may avoid loss of time and damages.
The controller displays some messages to help the user identify problems.

MESSAGE	DESCRIPTION OF THE PROBLEM
————	Open input. No sensor or signal.
Eρρ1 Eρρ6	Connection and/or configuration errors. Check the wiring and the configuration.

Other error messages may indicate hardware problems requiring maintenance service.

11.2 Calibration and factor setting

All inputs are factory calibrated and recalibration should only be done by qualified personnel. If you are not familiar with these procedures do not attempt to calibrate this instrument.
The calibration steps are:

a) Configure the input type to be calibrated.

b) Configure the lower and upper indication limits for the maximum span of the selected input type.

c) Connect to the input terminals a signal corresponding to a known indication value a little above the lower display limit.

d) Access the parameter ιvΛX. With the keys ▲ and ▼ adjust the display reading to match the applied signal. Then press the P key to store.

e) Inject a signal that corresponds to a value a little lower than the upper limit of indication.

f) Access the parameter ιvHX. With the keys ▲ and ▼ adjust the display reading to match the applied signal. Then press the P key to store.

Note: When checking the controller calibration with a Pt100 simulator, pay attention to the simulator minimum excitation current requirement, which may not be compatible with the 0.170 mA excitation current provided by the controller.

12. Technical Information

Operating instructions, data sheet, approvals and further information via the QR code on the device or via www.kobold.com

13. Order Codes

Operating instructions, data sheet, approvals and further information via the QR code on the device or via www.kobold.com

14. Dimensions

Operating instructions, data sheet, approvals and further information via the QR code on the device or via www.kobold.com

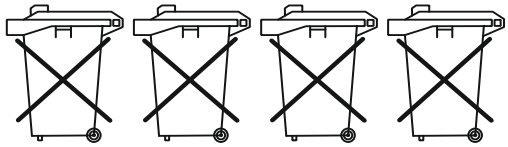
15. Disposal

Note!

- Avoid environmental damage caused by media-contaminated parts
- Dispose of the device and packaging in an environmentally friendly manner
- Comply with applicable national and international disposal regulations and environmental regulations.

Batteries

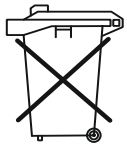
Batteries containing pollutants are marked with a sign consisting of a crossed-out garbage can and the chemical symbol (Cd, Hg, Li or Pb) of the heavy metal that is decisive for the classification as containing pollutants:



Cd[1] Hg[2] Pb[3] Li[4]

1. „Cd" stands for cadmium
2. „Hg" stands for mercury
3. „Pb" stands for lead
4. „Li" stands for lithium

Electrical and electronic equipment



16. EU Declaration of Conformance

We, KOBOLD Messring GmbH, Nordring 22-24, 65719 Hofheim, Germany, declare under our sole responsibility that the product

Universal Panel Meter Model: DAG-T4T00WSR

to which this declaration relates is in conformity with the following EU directives stated below

2014/35/EU Low Voltage Directive
2014/30/EU EMC Directive
2011/65/EU RoHS

Also, the following standards are fulfilled

CISPR11/EN 55011 Industrial, scientific and medical equipment - Radio-frequency disturbance characteristics - Limits and methods of measurement
EN 61326-1:2013 Electrical equipment for measurement, control and laboratory use - EMC requirements - Part 1: General requirements
EN 61000-4-2 Electromagnetic compatibility (EMC) - Part 4-2: Testing and measurement techniques - Electrostatic discharge immunity test
EN 61000-4-3 Electromagnetic compatibility (EMC) - Part 4-3: Testing and measurement techniques - Radiated, radio-frequency, electromagnetic field immunity test
EN 61000-4-4 Electromagnetic compatibility (EMC) - Part 4-4:Testing and measurement techniques - Electrical fast transient/burst immunity test
EN 61000-4-5 Electromagnetic compatibility (EMC) - Part 4-5: Testing and measurement techniques - Surge immunity test
EN 61000-4-6 Electromagnetic compatibility (EMC) - Part 4-6: Testing and measurement techniques - Immunity to conducted disturbances, induced by radio-frequency fields
EN 61000-4-8 Electromagnetic compatibility (EMC) - Part 4-8: Testing and measurement techniques - Power frequency magnetic field immunity test
EN 61000-4-11 Electromagnetic compatibility (EMC) - Part 4-11: Testing and measurement techniques - Voltage dips, short interruptions and voltage variations immunity tests
EN 61010-1:2010 Safety requirements for electrical equipment for measurement, control and laboratory use - Part 1: General requirements

Hofheim, 21 May 2024

H. Volz, General Manager
J. Burke, Compliance Manager