

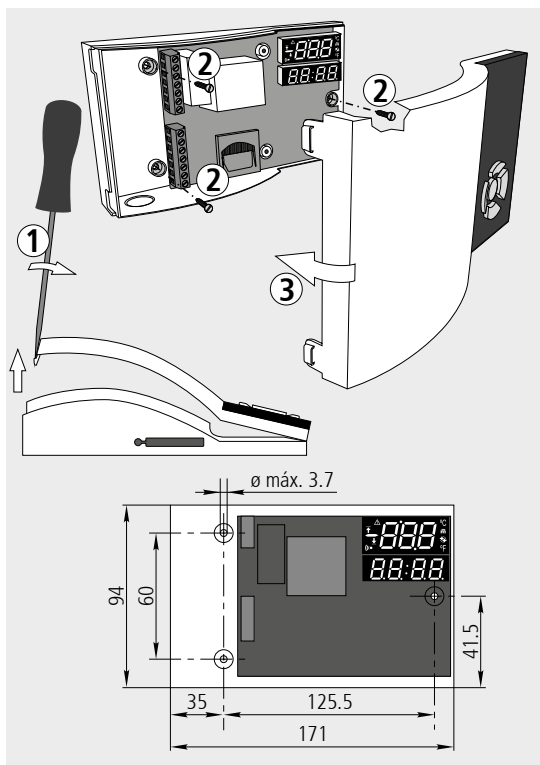


Instructions

## 1- Warnings

- The unit should be installed in a place protected from vibrations, water and corrosive gases, where the ambient temperature does not exceed the value indicated in the technical data.
- For the unit to operate correctly, use only the probes supplied by AKO.
- For the reading to be correct, the probe should be used in a place without heat influences apart from the temperature you want to measure or control.
- The probe and its cable should NEVER be installed in a conduit together with power, control or feeder cables.
- In the event of lengthening the NTC probe, always use shield cable and earth the mesh. In these cases, the maximum deviation will be 0.25 °C from -40 °C to +20 °C (Maximum 1000 m with a minimum section of 0.5 mm<sup>2</sup>). We recommend using **AKO-15586** cable.
- Always disconnect the power supply to do the wiring.
- The power circuit should be equipped with a switch marked as disconnecting device of the equipment of at least 2 A, 230 V, situated near the appliance.
- The power supply cable should be H05VV-F or H05V-K type. The gauge will depend on local regulations, but should in no case be less than 1 mm<sup>2</sup>. The electrical installation should be carried out under pipe.
- Using the logger not observing the manufacturer's instructions may alter the appliance safety requirements. Only probes supplied by AKO should be used for the appliance to operate correctly.

## 2- Installation



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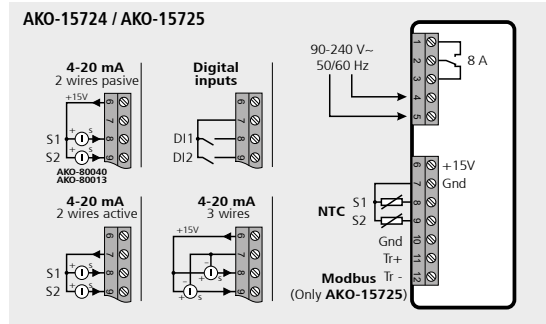
351572402 Rev.04 2021

We reserve the right to supply materials slightly different to those described in our Data Sheets. Updated information in our website.

## 3- Technical specifications

- Power supply..... 90-240 V~ 50/60Hz
- Alarm relay ..... 8 A cos  $\phi$ =1
- NTC range (AKO-14931) ..... -50 °C to 99.9 °C
- Range 4-20 mA..... Configurable from -100 to 900 (1000 levels)
- Resolution ..... 0,1
- Accuracy class (-40 °C to 40 °C):.....  $\pm 1$  °C acc/ EN 12830
- Response time:..... < 20 seconds
- Maximum relative time error:..... < 0.1 %
- Marked according to UNE-EN 12830 ..... S,A,1,-40 °C + 40 °C
- ..... Apt for use in storage (S)
- ..... Climatic environment type (A)
- ..... Accuracy class (1)
- Maximum input power ..... 8.5 VA
- Working ambient temperature ..... 0 °C to 40 °C
- Storage ambient temperature ..... -20 °C to 60 °C
- Degree of protection ..... IP40
- Double insulation between power supply, secondary circuit and relay output.
- Installation category..... II acc/ EN 61010-1
- Pollution degree ..... II acc/ EN 61010-1
- Maintenance of date and time without power supply ..... Up to 2 days
- Internal buzzer ..... 70dB at 30 cm
- SD cards accepted ..... SD/SDHC (FAT / FAT32)

## 4- Wiring



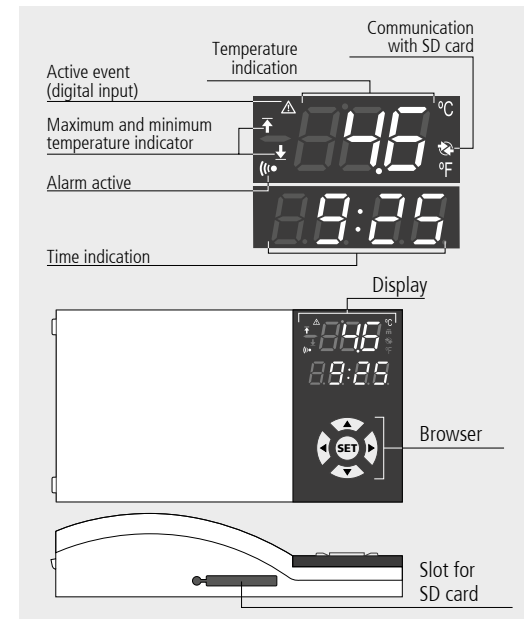
## 5- Operation

### Key function

- ▲ **key:** A short press displays the maximum value reached in the last 24h, and the time when all the active inputs were reached. In the programming menu it allows scrolling around the different levels, or during the setting of a parameter, changing its value.
- ▼ **key:** A short press displays the minimum value reached in the last 24h, and the time when all the active inputs were reached. In the programming menu it allows scrolling around the different levels, or during the setting of a parameter, changing its value.
- ▶ **key:** A short press downloads the data of the ongoing log onto the SD card (if it has been inserted)
- ◀ **key:** A short press downloads ALL the logged data onto the SD card (if it has been inserted). The save without changes, return to previous level or exit programming parameter appears on the programming menu.

**SET key:** A short press downloads the data of the last log onto the SD card (if it has been inserted). Silences the acoustic alarm (according to parameter P50). In programming, confirms the selection and saves the entered value.

- ▲ + ◀ **keys :** Pressing for over 10 seconds accesses the data log display menu. Press ▲ / ▼ to select the log block and press **SET** to access it. Press ▲ / ▼ to select the log to be displayed, after 1 second the value of each input will be displayed, indicating the date and time of the log.
- ▲ + ▶ **keys :** Pressing for over 10 seconds accesses the alarms log display menu. Press ▲ / ▼ to select the input to be displayed and press **SET**. Press ▲ / ▼ to select the event to be displayed (no. 1 is the most recent event), after 1 second the value of each input will be displayed, indicating the date and time of the event.
- ▲ + ▼ **keys:** Pressing them for over 10 seconds accesses the programming menu.



## Message table

MESSAGES	
E01	Probe 1 broken (Open, crossed circuit or probe out of range)
E02	Probe 2 broken (Open, crossed circuit or probe out of range)
---	Input disabled
---	Top log reached
---	Bottom log reached
SCH	Reading information from the internal memory.
EY	Internal memory empty
E11	Error accessing the logger's internal memory
E12	Error in access to the real time clock (RTC)
E13	SD card not detected
E14	Writing error in SD card
E15	Error in the format of the SD card. It must be FAT/FAT32
E16	The SD card is write protected
PAS	Password request

## 5.1- Structure of the logged data

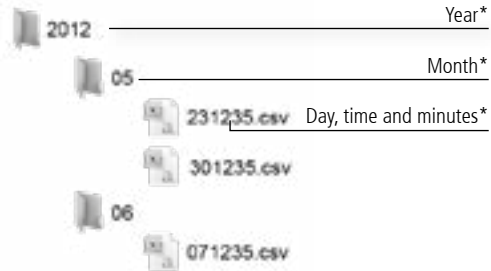
The logged data are stored in the internal memory of the logger organised in log blocks. The period of time stored in each block, and the maximum capacity of the internal memory, depend on the log interval (L1 parameter), as shown in table.

The logger has a slot for SD cards, that allows transferring the stored data for display on a computer or to be saved as a backup. These data are saved in spread sheet format (.csv), organised in the following way:

Log interval	Period stored by block	Internal memory capacity
1 min	8 hours	> 50 days
5 min	24 hours	> 5 months
15 min	7 days	> 3 years
30 min	14 days	> 6 years
60 min	28 days	> 12 years

### Downloads the data of the last closed log or ongoing log (▶ or SET keys)

Each log block is saved in a file, whose name is the day, hour and minutes of the **first log** it contains.



### Downloads ALL the logged data (◀ key)

Two files are generated whose name is the year, month and day of the download, in two different folders ALL and ALARMS. The first contains the file with all the data logged by the device until then and the second contains the file with the events saved until then (see section 5.2):



**IMPORTANT:** Do not remove the SD card until the indicator turns off. The download may take several minutes depending on the data saved.

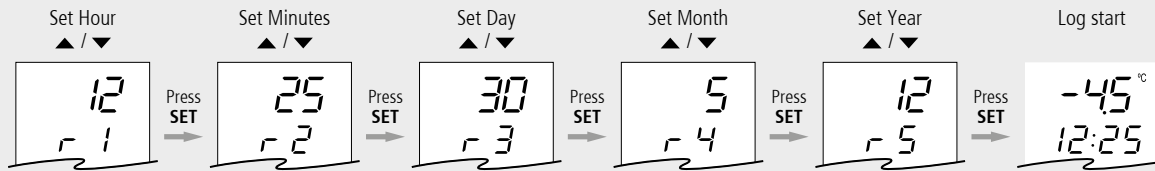
\*Data of the start of the first log contained in the block.  
\*\*File recording date.

## 5.2- Alarm log

This function saves an event whenever an alarm is activated or deactivated. To download the events log data, press the ◀ key, all the data logged up to date are downloaded onto the SD card, including the events log, contained in the "ALARMS" folder.

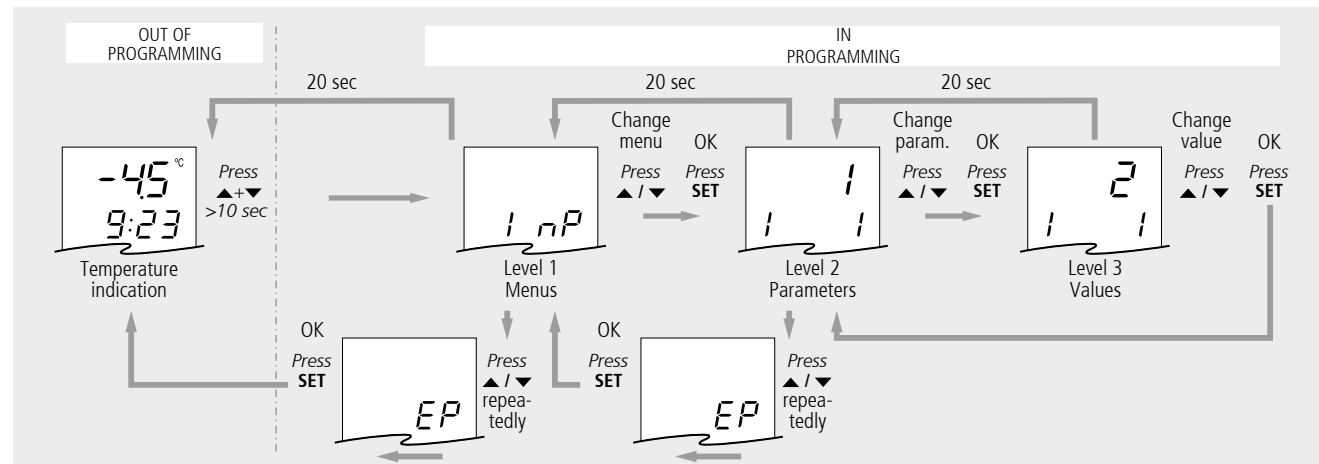
## 5.3- Initial start-up

The date and time will be requested during the first start-up.



## 5.4- Programming menu (parameters)

To access the parameter programming menu, press the ▲ + ▼ keys at the same time. Refer to the list of available parameters in section 5 of this manual. After 20 seconds without touching any key, the unit returns to the previous level. If it is in level 3 the changes will not be saved.



## 6- Parameter and message table

The **Def.** column indicates the factory default parameters. Unless otherwise indicated, the temperature values are expressed in °C (equivalent temperature in °F).

Level 1	Menu and description		
InP	Level 2 Input configuration		
	Level 3	Description	Min. Def. Max.
i1	Type of input 1:	0: Disabled 1: NTC 2: 4-20 mA 3: Digital input (NO) 4: Digital input (NC)	0 1 4
i2	Value 4 mA input 1		-100 0 i3
i3	Value 20 mA input 1		i2 100 900
i4	Calibration input 1		-20 0 20
i11	Type of input 2:	0: Disabled 1: NTC 2: 4-20 mA 3: Digital input (NO) 4: Digital input (NC)	0 0 4
i12	Value 4 mA input 2		-100 0 i13
i13	Value 20 mA input 2		i12 100 900
i14	Calibration input 2		-20 0 20
EP	Exit to Level 1		
AL	Level 2 Alarm configuration		
	Level 3	Description	Min. Def. Max.
A0	Alarm input 1:	0: Disabled; 1: Enabled	0 0 1
A1	MAX alarm value input 1		A2 99.9 999*
A2	MIN alarm value input 1		-999* -50 A1
A3	Delay alarm input 1		0 0 120
A4	Alarm output input 1:	0: No output 1: Only acoustic 2: Only relay 3: Acoustic + relay	0 0 3
A10	Alarm input 2:	0: Disabled; 1: Enabled	0 0 1
A11	MAX alarm value input 2		A12 0 999*
A12	MIN alarm value input 2		-999* 0 A11
A13	Delay alarm input 2		0 0 120
A14	Alarm output input 2:	0: No output 1: Only acoustic 2: Only relay 3: Acoustic + relay	0 0 3
EP	Exit to Level 1		
CnF	Level 2 General configuration		
	Level 3	Description	Min. Def. Max.
P2	Access code function:	0: Inactive; 1: Parameter access block	0 0 1
P3	Default parameters:	0: No; 1: Yes	0 0 1
P5	MODBUS address for units with communication		1 1 255
P7	Temperature display mode:	0: Integers in °C 1: One decimal point in °C 2: Integers in °F 3: One decimal point in °F	0 1 3
P8	Input to be displayed:	0: Carrusel Input 1 - Input 2; 1: Input 1; 2: Input 2	0 1 2
P50	Mute alarm with SET key:	0: Disabled 1: Only sound 2: Only relay 3: Sound and relay	0 1 3
EP	Exit to Level 1		
dLG	Level 2 Logger configuration		
	Level 3	Description	Min. Def. Max.
L1	Log interval:	0: 1 minute 1: 5 minutes 2: 15 minutes 3: 30 minutes 4: 60 minutes	0 2 4
L2	Delete record and event log:	0: No; 1: Yes	0 0 1
L3	Day of the start of the log:	0: Monday 1: Tuesday 2: Wednesday 3: Thursday 4: Friday 5: Saturday 6: Sunday	0 0 6
L4	Decimal separator in .csv files:	0: , 1: .	0 0 1
EP	Exit to Level 1		
rtC	Level 2 Date and time		
	Level 3	Description	Min. Def. Max.
r1	Hour		0 0 23
r2	Minute		0 0 59
r3	Day		1 1 31
r4	Month		1 1 12
r5	Year		12 12 99
r6	Automatic hour change:	0: No; 1: Yes	0 1 1
EP	Exit to Level 1		
tid	Level 2 Access control and Information		
	Level 3	Description	Min. Def. Max.
L5	Password		0 - 99
PU	Programme version		- - -
Pr	Programme revision		- - -
EP	Exit to Level 1		

\*The limits may vary depending on the type of input selected