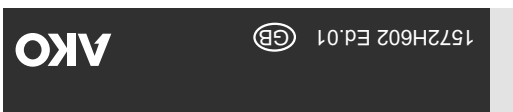




Instructions


<http://www.ako.com/w4pu/page/qr?qr=AKODOC0002>

For further information, refer to the application note available in our website

www.ako.com

AKO

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AKO ELECTROMECÁNICA, S.A.L.

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

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 used 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 mm²). 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 mm². 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.

3- Technical specifications

AKO-15726

Power supply 90-240V~ 50/60Hz
 Maximum input power 8,5VA
 Alarm relay 8 A cos φ=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)
 Installation category II acc/ EN 61010-1
 Pollution degree II acc/ EN 61010-1
 Input range:

S1/S2 NTC -50 °C to 99,9 °C (-58 °F to 210 °F)
 4-20 mA -100 to 900 (1000 levels)

AKO-14940 Temperature: 0 °C to 50 °C (32 °F to 122 °F)
 Humidity: 5 % HR to 95 % HR (Without condensation)

Resolution 0,1
 Response time < 20 seconds
 Maximum relative time error < 0.1 %
 Working ambient temperature 0 °C to 40 °C
 Storage ambient temperature -20 °C to 60 °C
 Degree of protection IP40
 Aislamiento doble entre alimentación, circuito secundario y salida relé.

S1/S2

Thermometric precision: NTC ±1 °C (-40 °C to +40 °C)
 4-20 mA ±1 % (mA)

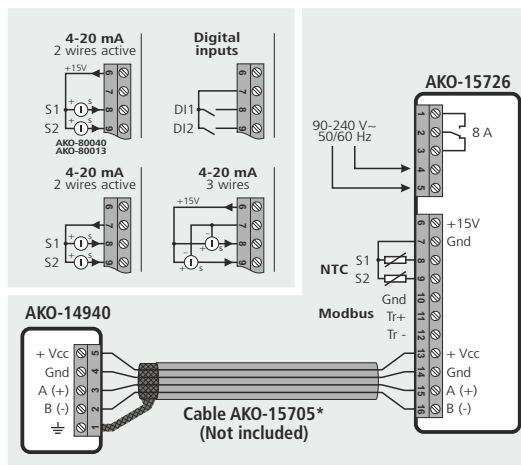
Marked according to UNE-EN 12830 S,A,1,-40 °C +40 °C
 Apt for use in storage (S)
 Climatic environment type (A)
 Accuracy class (1)

AKO-14940

Thermometric precision:

Temperature: ±1 °C (0 °C to 50 °C)
 Humidity: ±10 % Measured value (5 % to 95 % HR)
 Working ambient temperature 0 °C to 50 °C
 Storage ambient temperature -20 °C to 60 °C
 Degree of protection IP40

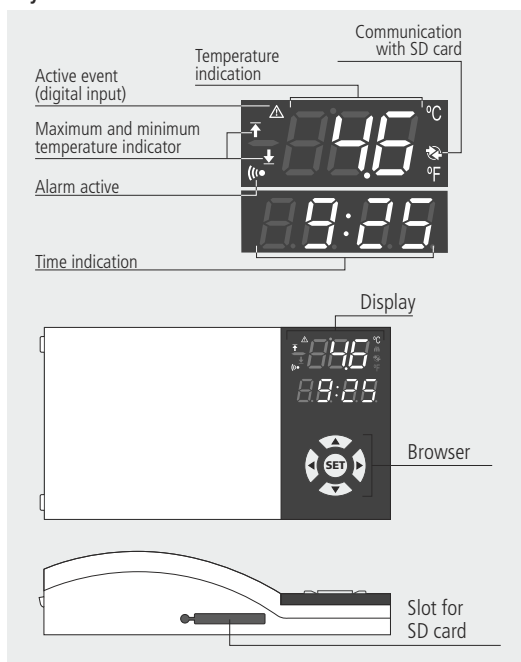
6- Wiring



*Recommended cable 5 m.

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.

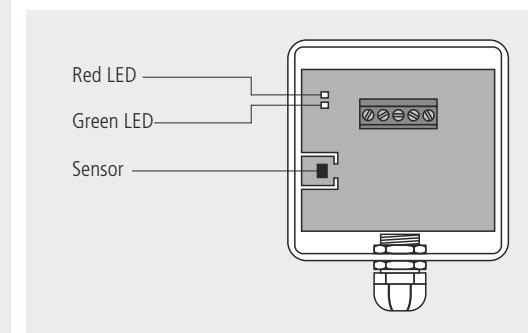
Press ▲ / ▼ to select the log block and press **SET** to access it. Press ▲ / ▼ to select the log to be displayed, after 1 second the value of each input will be displayed, indicating the date and time of the log.

▲ + ▷ 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.

AKO-14940



Red LED

Flashing: Correct operation of the sensor.

Fixed: Operating error of the sensor or communication error with the logger.

Green LED

Flashing: Correct communication with the datalogger.

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	Level 2	Input configuration					
		Values	Values	Min.	Def.	Max.	
InP	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 1		-20	0	20	
	i21	Input probe AKO-14940 (temperature) 0: Disabled; 1: Enabled		0	1	1	
	i24	Calibration probe to AKO-14940 (temperature)		-20	0	20	
	i31	Input probe AKO-14940 (humidity) 0: Disabled; 1: Enabled		0	1	1	
	i34	Calibration probe to AKO-14940 (humidity)		-20	0	20	
	EP	Output to level 1					
	Alarm configuration						
AL	A0	Alarm input 1: 0: Disabled; 1: Enabled		0	0	1	
	A1	MAX alarm value input 1		A2	99.9	900 *	
	A2	MIN alarm value input 1		-100*	-50	A1	
	A3	Delay alarm input 1	(Min.)	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	99.9	900 *	
	A12	MIN alarm value input 2		-100*	-50	A11	
	A13	Delay alarm input 2	(Min.)	0	0	120	
	A14	Alarm output input 2: 0: No output 1: Only acoustic 2: Only relay 3: Acoustic + relay		0	0	3	
	A20	Alarm probe AKO-14940 (Temperature): 0: Disabled; 1: Enabled					
	A21	MAX alarm value probe AKO-14940 (Temperature)	(°C / °F)	A22	50	50	
	A22	MIN alarm value probe AKO-14940 (Temperature)	(°C / °F)	0	0	A21	

Level 1	Level 2	Alarm configuration					
		Values	Values	Min.	Def.	Max.	
	A23	Alarm delay AKO-14940 (Temperature):	(Min.)	0	0	120	
	A24	Output alarm probe AKO-14940 (Temperature): 0: No output 1: Only acoustic 2: Only relay 3: Acoustic + relay		0	0	3	
	A30	Alarm probe AKO-14940 (Humidity): 0: Disabled; 1: Enabled		0	0	1	
	A31	MAX alarm value probe AKO-14940 (Humidity)	(% HR)	A32	95	95	
	A32	MIN alarm value probe AKO-14940 (Humidity)	(% HR)	5	5	A31	
	A33	Alarm delay AKO-14940 (Humidity)	(Min.)	0	0	120	
	A34	Output alarm probe AKO-14940 (Humidity): 0: No output 1: Only acoustic 2: Only relay 3: Acoustic + relay		0	0	3	
	EP	Output to level 1					
General configuration							
CnF	Values		Values	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 3: Probe AKO-14940 (temperature); 4: Probe AKO-14940 (humidity)		0	0	4	
	P50	Mute alarm with SET key: 0: Disabled 1: Only sound 2: Only relay 3: Sound and relay		0	1	3	
	EP	Output to level 1					
Logger configuration							
dLG	Values		Values	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	Output to level 1						

Level 1	Level 2	Date and time					
		Values	Values	Min.	Def.	Max.	
rtC	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	Output to level 1					
rtC	Access control and Information						
	L5	Values	Values	Min.	Def.	Max.	
		PU	Password		0	-	99
		PU	Programme version		-	-	-
		Pr	Programme revision		-	-	-
	EP	Output to level 1					
		Output to level 1					

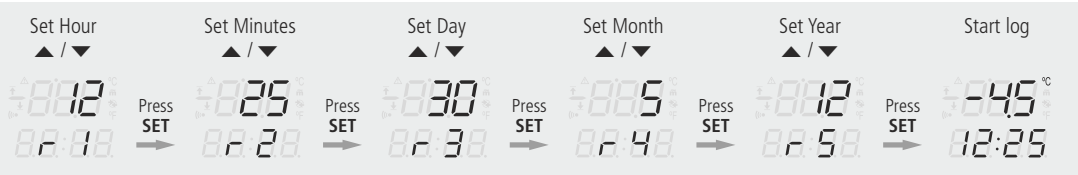
* The limits may vary depending on the type of input selected

Message table

E01	Probe 1 broken (Open, crossed circuit or probe out of range)	E09	Internal memory empty
E02	Probe 2 broken (Open, crossed circuit or probe out of range)	E11	Error accessing the logger's internal memory
E03	Ambient probe (Temperature) damaged (Communication error or probe out of range)	E12	Error in access to the real time clock (RTC)
E04	Ambient probe (Humidity) damaged (Communication error or probe out of range)	E13	SD card not detected
888	Input disabled	E14	Writing error in SD card
888	Top log reached	E15	Error in the format of the SD card. It must be FAT/FAT32
888	Bottom log reached	E16	The SD card is write protected
SEH	Reading information from the internal memory.	P85	Password request

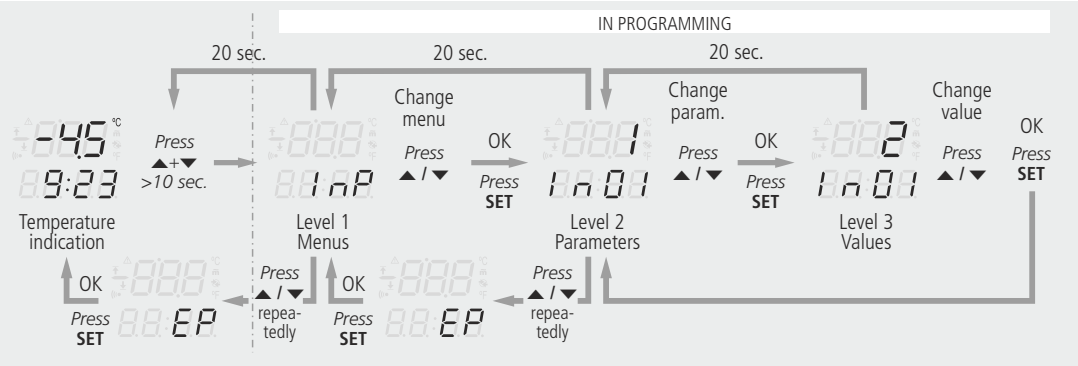
7- Initial start-up

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



7.1- 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.



8- Alarm log

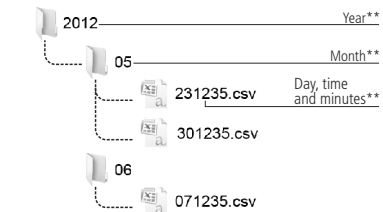
This function saves an event whenever an alarm is activated or deactivated. To download the events log data, press the **◀** key, all the data logged up to date are downloaded onto the SD card, including the events log, contained in the "ALARMS" folder.

9- 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:

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

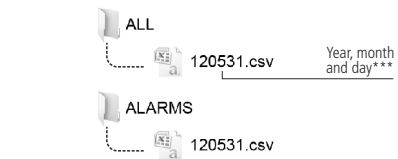
Each log block is saved in a file, whose name is the day, hour and minutes of the **first log** it contains.



IMPORTANT: Do not remove the SD card until the indicator turns off.

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 8):



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