CE Electronic data loggers CAMREGIS

CAMREGIS is a solution for the capture, storage and logging of temperatures and other physical variables such as humidity and pressure.

They are fitted with connections for RS-485 to PC communication and data control with the programme AKO-5004 or any other compatible programme.

The data stored in the equipment is displayed on the screen or printed out on the printer installed in the equipment itself or in other equipment connected up to it.

They have the following, depending on each model: Printer for printing out data or graphs.

1- Versions and references

MODEL	PRINTER	ALARM RELAYS (250V, cos φ=1)	POWER SUPPLY	INPUTS
AKO-15740	NO	Alarm max. 8 A SPDT Alarm min. 8 A SPDT	100 - 240 V~ 50/60 Hz ± 3 Hz	10
AKO-15742	YES	Alarm max. 8 A SPDT Alarm min. 8 A SPDT	100 - 240 V~ 50/60 Hz ± 3 Hz	10
AKO-15750	NO	Alarm max. 8 A SPDT Alarm min. 8 A SPDT	100 - 240 V~ 50/60 Hz ± 3 Hz	5
AKO-15752	YES	Alarm max. 8 A SPDT Alarm min. 8 A SPDT	100 - 240 V~ 50/60 Hz ± 3 Hz	5

AKO-15740
AKO-15750

AKO-15752
AKO-15752

2- Technical Data

Range according to type of sensor configured:

- NTC (**AKO-149XX**) . . . . . -50.0 °C to 105 °C (-58.0 °F to 221 °F)
- Pt100 (**AKO-1558XXX**, **AKO-1559X**) . . . . . -150 °C to 590 °C (-238 °F to 1094 °F)
  . . . . . Only **AKO-15750**, **AKO-15752**
- Pt1000 . . . . . -150 °C to 550 °C (-238 °F to 1022 °F)
- Thermocouple J (AKO-15601) . . . . . -150 °C to 700 °C (-238 °F to 1292 °F)
- Thermocouple K (AKO-15602). . . . . -150 °C to 1200 °C (-238 °F to 2192 °F)
- 4-20 mA . . . . . -999 to 999

Resolution: . . . . . 0,1 °C from -99.9 to 99.9, rest of range: 1 °C
Thermometric NTC (-40 °C to 40 °C): . . . ± 2 °C under EN 12830 and EN 13485 standards
Thermometric Pt100 accuracy: . . . . . ± 2 °C under EN 12830 and EN 13485 standards
Thermometric Pt1000 accuracy: . . . . . from –100 °C to +100 °C ± 2 °C , rest of range: ± 1%
Thermometric Termocouple J, K accuracy: . . . . . from –150 °C to +150 °C ± 3 °C , rest of range: ± 2%
4-20 mA Input accuracy: . . . . . ±1% (mA)
Denomination with NTC, Pt100 . . . EN 12830, S, A, 2, -40 °C +40 °C; EN 13485, S, A, 2, -40 °C +40 °C
Maximum input power: . . . . . 5 VA
Working ambient temperature: . . . . . 0 °C to 50 °C
Storage ambient temperature: . . . . . -30 °C to 70 °C
Double insulation between the power supply, the secondary circuit and the relay output.
Installation category: . . . . . II under EN 61010-1 standard
Pollution degree: . . . . . II under EN 61010-1 standard
Logger autonomy in the event of a power failure . . . . . 48 hours
Battery . . . . . Li-Polymer
Internal buzzer

3- Installation

The controller should be installed in a place protected from vibrations, water and corrosive gases, and where ambient temperature does not surpass the value specified in the technical data.

In order for the controllers to have IP65 protection, the gasket should be properly installed between the apparatus and the perimeter of the panel cut-out where it is to be fitted.

In order to give a correct reading, the probe should be installed in a place without heat influences other than the temperature that is to be measured or controlled.

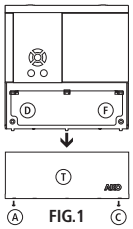


FIG.1

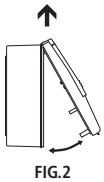


FIG.2

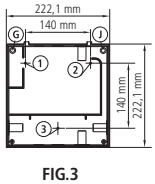


FIG.3

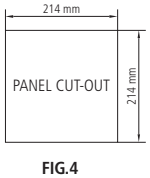


FIG.4

3.1 Wall Mounting

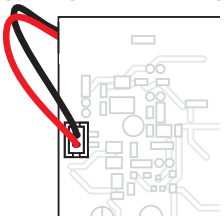
- Remove cover T from the equipment (Fig.1).
- Open the equipment and separate the front part from the housing (Fig.2).
- Drill the necessary gland holes for the cables to pass through, using the pre-cut centres on the sides of the housing as a guide.
- Drill the 3 holes for fastening the housing at the centres indicated as 1,2,3 (Fig.3).
- Drill the 3 holes in the wall, to match the fastening holes previously drilled in the equipment.
- Fasten the glands to the equipment.
- Insert and tighten the 3 screws+plug through the housing, in the 3 holes drilled in the wall.
- Insert the cables into the glands.
- Mount the front part on the housing (Fig.2).
- Insert and tighten screws D, F (Fig.1).
- After connecting the cables as shown in the connection diagram, close cover T, and insert and tighten screws A, C (Fig.1).

3.2 Panel Mounting (maximum panel thickness: 3mm)

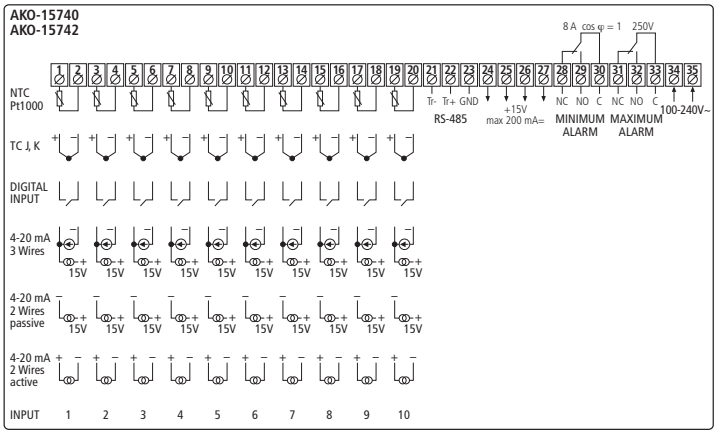
- Remove cover T from the equipment (Fig.1).
- Open the equipment and separate the front part from the housing (Fig.2).
- Replace the joint installed at the front by the the panelling joint, ensuring it is correctly positioned.
- Make an opening in the panel with the indicated dimensions (Fig.4).
- Drill the gland holes necessary for the cables to pass through, using the pre-cut centres on the sides of the housing as a guide.
- Finish drilling holes G, J using a 4 mm bit (Fig.3).
- Fasten the glands to the equipment.
- Insert the cables into the glands.
- Join the front of the housing to the housing, through the panel and tighten the 50 mm screws through holes D, F, G, J (Fig.3).
- After connecting the cables as shown in the connection diagram, close cover T, and insert and tighten screws A, C (Fig.1).

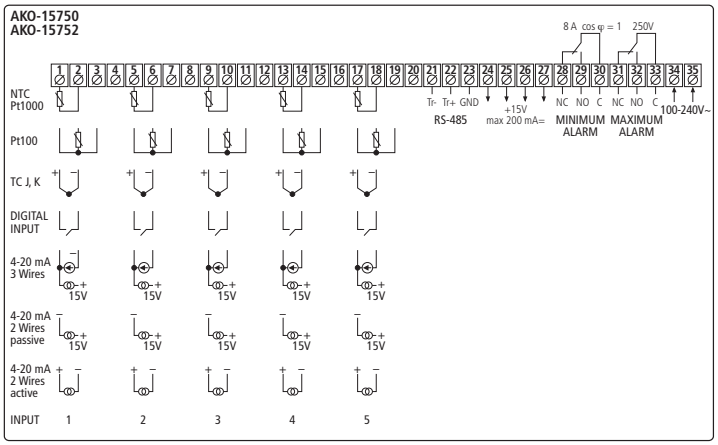
3.3 Connection:

CONNECT THE BATTERIES PRIOR TO STARTING UP THE EQUIPMENT.

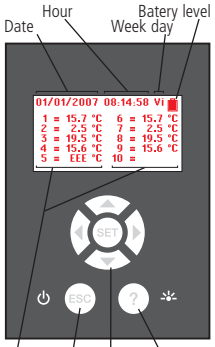


The probe and its lead should **NEVER** be installed in ducting along with power, control or power supply wiring.
Always disconnect the power supply when making the connections.
The power supply circuit should be connected with a minimum 2 A, 230 V, switch located close to the unit. Power supply cables should be H05VV-F 2x0,5 mm² or H05V-K 2x0,5 mm².





4- Front panel functions



4.1 Date and hour

View date and hour in format: YY//MM//DD HH:MM:SS Day of the Week
Configurable in menu: (Data Logger).

4.2 Battery level

Equipment battery level displayed.
Battery disconnected. Battery charging. Battery charged.

4.3 Inputs Value

Displays the immediate value of the input and its units.

4.4 Browser

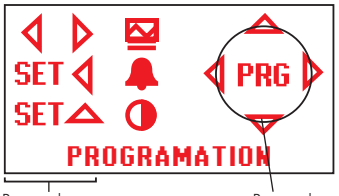
UP key
- When pressed, it turns off the alarm buzzer.
- In programming, it moves the selection upwards.
- In programming, it increases the value being programmed.

LEFT key
- When pressed, it turns off the alarm buzzer.
- When pressed it changes the graph display mode.
- In programming, it moves the selection to the left.

DOWN key
- When pressed, it turns off the alarm buzzer.
- In programming, it moves the selection downwards.
- In programming, it reduces the displayed value.

RIGHT key
- When pressed, it turns off the alarm buzzer.
- When pressed it changes the graph display mode.
- In programming it moves the selection to the right.

SET key
- When pressed it turns off the alarm buzzer.
- When pressed appears the key function help screen.
- When pressed for at least 5 seconds, the parameters folder screen is displayed.
- In programming, it accepts the programmed new value.



ESC key
- When pressed, it turns off the alarm buzzer.
- In programming, it permits leaving a parameter without accepting the changes, return to the previous menu and exit programming.

? key
-When pressed, it turns off the alarm buzzer.
-In programming, it displays the help information for the selected parameter or function.

key (Paper forward) (For equipment that includes a printer).
- Open the printer lid. Press the key to allow the paper to enter the printer while the paper is being reloaded.

key (Print) (For equipment that includes a printer).
- Open the printer lid. Press the key to print out the logged data or the graph.

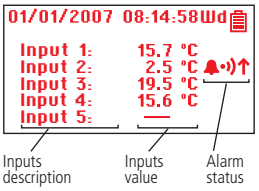
Paper entry lever (For equipment that includes a printer).
- Open the printer lid. Pull the lever and insert the paper, in the manner shown on the label on the printer lid

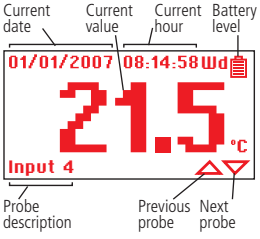
5- Screen information

5.1 Inputs information screen

Press the key to access the inputs information screen.

Alarm Status:
Displays the status of the detected alarms.
symbol lights up: Alarm relay enabled.
symbol lights up: Alarm buzzer enabled.
symbol lights up: Alarm buzzer silent.
symbol lights up: Maximum alarm enabled.





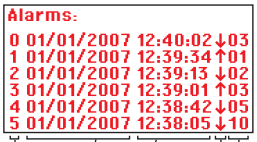
5.2 Screen displaying each individual sensor

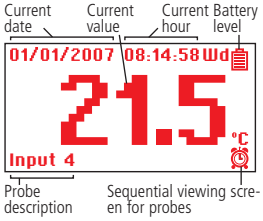
Press the key twice to access the screen that displays each individual sensor.
- For equipment that includes a printer. Press the key to print out the graph of the last log closed with all the active inputs.

Press to display the next probe.
Press to display the previous probe.

5.3 Sequential viewing screen for sensors

Press the key three times to access the screen that displays each secuential sensor.
- For equipment that includes a printer. Press the key to print out the graph of the last log closed with all the active inputs.





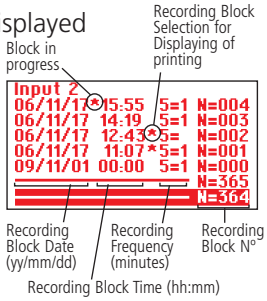
5.4 Alarm log screen

Press keys SET+ to acces the alarm log screen.

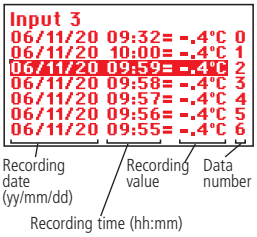
5.5 Screen for selecting the log to be displayed

The data logger stores the data from probes in 366 blocks of 96 data recorders in each block.
- Display the inputs information screen.
- Select the internal probe or connected equipment through the navigator.
- Press the keys + to access the record you wish to see.
- Select the desired block using the browser keys. The block is selected by *.
- Press the key to add the previous block to be displayed or printed to the selection.
- Press the key to eliminate the block that is not required to be displayed or printed from the selection.

Note: Only consecutive blocks with the same recorder frequency can be selected.
- Press the SET key to accept the blocks selection.



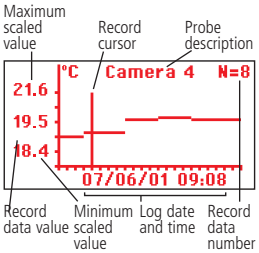
Select to view the 96 data recorder



- Press the key or to select the record number you wish to see.
- Press the key or to change the probe you wish to see or print.

For equipment with a printer.
- Use the navigator to select the option you wish to print.
- Press SET to print the desired option.

Select to view the 96 data recorder graph



- Move the cursor using the keys or of the navigator to display the value and date of the record data.
- Press the key or to change the number of the probe you wish to see.

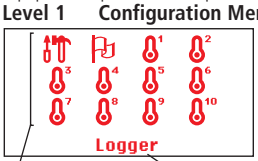
For equipment with a printer.
- Press the key to access the print menu.

Note: The register frequency is configured through the parameters menu , specifically, the **Recorder Frequency** parameter.

6- Adjustment and configuration

It should only be programmed or modified by personnel who are fully conversant with the equipment operation and possibilities.

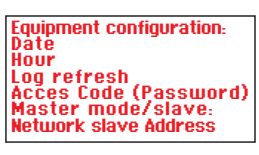
Level 1 Configuration Menu

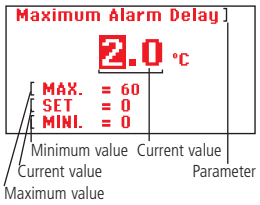


- Press the SET key for at least 5 seconds for the menus to be displayed.
- Press the browser keys to select the configuration menu.
- Press the SET key to access the parameters in the selected menu.

If **PASSWORD** appears, enter the Password programmed in the **PASSWORD** parameter in the equipment menu to access the parameter configuration.
- Press the browser keys to enter the programmed (Password).
- Press SET to accept the password. The menus that can now be modified will be displayed.

Level 2 Parameters
- In the desired menu of level 1 (Configure Menu), press SET key. Level 2 PARAMETERS programming is accessed. The first parameter of the selected menu is displayed on the screen.
- Press the browser keys to select the parameter.





Level 3 Values

- To display the current value of any parameter, select the required one and press **SET** key simultaneously. Once it is displayed, press the browser keys to change the value.
- Press **SET** key to accept the new. The programming returns to LEVEL 2 PARAMETERS.

REMARK: If no key is pressed for 25 seconds in either of the previous steps, the data logger will automatically return to the CURRENT TEMPERATURE display status without modifying any of the parameters values.

7- Description of parameters and messages

Values in the **Def.** column are factory-set.

AKO-15740, AKO-15742 (10 inputs data logger) AKO-15750, AKO-15752 (5 inputs data logger)							
Level 1 Configuration menus							
Level 2 Equipment configuration							
	Level 3 Description	**Values**	**Min.**	**Def.**	**Max.**		
	Date (Year Month Day)					•	•
	Hour (Hour Minute Second)					•	•
	Registry interval (min.)		1	15	60	•	•
	Access password		0	0	9999	•	•
	Master / Slave Mode		M	S	S	•	•
	Channel 1 to 6 address (Master Mode) Only for displaying or printing records from an external logger with a slave configuration		1	-	247	•	•
	Slave address		1	1	247	•	•
Level 2 Language							
	Level 3 Description	**Values**	**Min.**	**Def.**	**Max.**		
	English					•	•
Level 2 Inputs configuration 1 to 10							
	Level 3 Description	**Values**	**Min.**	**Def.**	**Max.**		
	Type (Disabled) (NTC) (Pt100) Only AKO-15750, AKO-15752 (Pt1000) (Thermocouple J) (Thermocouple K) (4-20 mA) (Digital) (External Sensor)			NTC		•	•
	Value for 4 mA If Input = 4-20 mA		-999	0	999	•	•
	Value for 20 mA If Input = 4-20 mA		-999	0	999	•	•
	Polarity of digital Input (Normally open) (Normally closed) If Input = Digital			N.O.		•	•
	External sensor address This enables the address of each external sensor configured as a slave and connected to the network to be assigned. See communications diagram If Input = External Sensor		1	1	247	•	•
	Display unit					•	•
	Description Permits a brief description of the facility to be inserted or a name to be given to the equipment.					•	•
	Enable maximum alarm (Disabled) (Activated)			Dis		•	•
	Enable minimum alarm (Disabled) (Activated)			Dis		•	•
	Maximum alarm Range according to type of sensor configured		-999	-	2200	•	•
	Maximum alarm delay from the moment at which they should operate	(min.)	0	0	60	•	•
	Minimum alarm Range according to type of sensor configured		-999	-	2200	•	•
	Minimum alarm delay from the moment at which they should operate	(min.)	0	0	60	•	•

MESSAGES	
Password	Password request to enter programming parameters.
Printer has no paper	The printer has no thermal paper. Load paper.
Loading paper	Printer paper loading lever is open. Load the paper and close the lever.
Ext. equipment does not respond	Failure in communication with external sensor or external RS485 logger.
Communications conflict	RS485 communication error.
No data available	No data logged. Wait for equipment to log data.

8- Communications diagrams

Master Mode

Configuration in master mode permits:

AKO-15742
AKO-15752

MASTER:
Configure:
Master / Slave Mode = Master

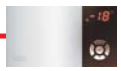
Configure:
Input type = External Sensor
External sensor address = ex. 3

Configure:
Channel address 1 to 6 = ex. 4

- Information to be captured from the AKO equipment connected to the network which acts as an EXTERNAL SENSOR. Configure the type of input for the equipment acting as an external sensor **"Input type = External Sensor"**. Configure the **"External sensor address"** in the equipment that acts as an external sensor.
- View or print out data logged, alarms register or HACCP events from external systems from the AKO-CAM range. Configure the parameter **"Master/ Slave Mode = Master"**. Assign the parameter "Channel 1 to 6 address" to the address of the external logger. Configure the parameter **"Master / Slave Mode = Slave"** of the external logger. Configure the parameter **"Slave address"** to the address of the external logger.
- To make a connection to the PC using an AKO-5004 equipment management programme, the parameter **"Master / Slave Mode"** must be configured in slave mode.

AKO-14917

CMOS



AKO-14602
EXTERNAL SENSOR
ex. Address 3

AKO-15613
AKO-15633
AKO-156131
AKO-156331
AKO-156332

CAMCtrl

Configure: Communication Address= es. 5

AKO-15740
AKO-15742
AKO-15750
AKO-15752

SLAVE:
Configure:
Master / Slave Mode = Slave.
Slave address = ex. 4

EXTERNAL LOGGER

COMMUNICATION WITH THE PC IS NOT POSSIBLE IN MASTER MODE

AKO-80039

USB

PC

9- Maintenance

Clean the controller surface with a soft cloth, soap and water. Do not use abrasive detergents, petrol, alcohol or solvents.

Equipment including rechargeable electrical batteries:

This unit includes batteries which must be replaced when the device's autonomy time is below the indicated in the specifications. At the end of the unit's service life. the batteries should be disposed of at a selective refuse collection site or returned to the manufacturer.

Changing printer paper (only in AKO-15742, AKO-15752)

When a paper roll finishes, replace it with a new one of Ref. **AKO-15703**. When installing the new roll, remember this is thermal paper and can only print on one of the two faces, it is therefore necessary to respect the position shown in the logger cover.

Periodic verification

When EN12830 standard has to be complied, maintenance must include the periodic verifications stipulated in the EN13486 standard.

10- Warnings

The use of the unit without observing the manufacturer's instructions may alter its safety qualification.

To ensure correct operation of the apparatus, only type probes supplied by AKO should be used.

Between –40 °C and +20 °C, when the NTC probe is extended up to 1.000 m with minimum 0,5 mmÇ cable, deviation will be less than 0.25 °C (Probe extension cable ref. **AKO-15586**).

The paper for the graphics is thermal type, therefore, it is wished to keep the graphics for a long time, photocopies should be made. The length of the graphic printed for an input is less than the length of a DIN A4 page.

With a frequency or register interval of 15 minutes, the registers mantain the information in memory for more than one year, wich allows EN 12830 to be met and print or visualise the graphics whenever they are needed.

If frequencies of less than 15 minutes are configured, to be able to meet EN 12830, the graphics must be printed before the memory runs out and be stored for one year.

AKO we make it easy
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