

**CE V3** Gas transmitter with NBloT communication  
Quick guide



AKO-575400N / NE

AKO-575744N

**Warning**

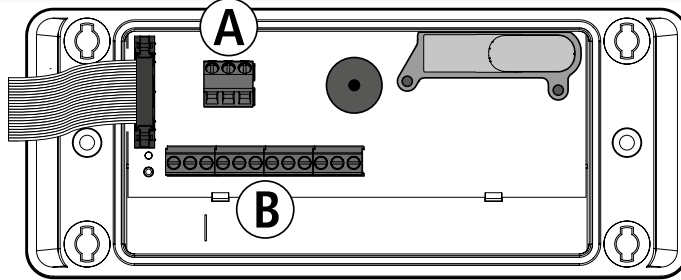
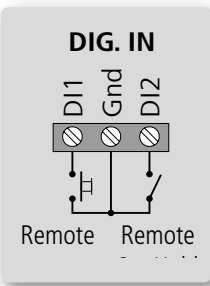


-Transmitters / detectors should be installed in a place protected from vibrations, water and corrosive gases, where the ambient temperature does not exceed the value indicated in the technical data.  
-The transmitters / detectors are not suitable for areas classified as potentially explosive.  
**-Transmitters/detectors supervise a point and not an area. If the gas leak does not reach the sensor, or the level of concentration in that point does not reach the foreseen values according to the type of gas no alarm will be activated. If perimeter supervision is required, several sensors should be installed around that area.**

-Avoid installing the device on metal walls or near devices that may produce radio emissions.  
-This device must be installed in a location where a minimum distance of 20 cm to the human body can be guaranteed, in order to ensure compliance with standards on human exposure to electromagnetic fields.  
-The AKO-575400NE device must NEVER be operating without having installed the external antenna. This device can be fitted with any antenna provided it has a gain of less than 9.2 dBi and there is a minimum distance of more than 20 cm between it and any person or animal. Any type of antenna used with this device must comply with the limits established for the radio interface in Member States and the following documents: Commission Decision 2010/267/EU of 6 May 2010, ECC Decision (09)03 of 30 October 2009 and CEPT Report 30 of 30 October 2009.

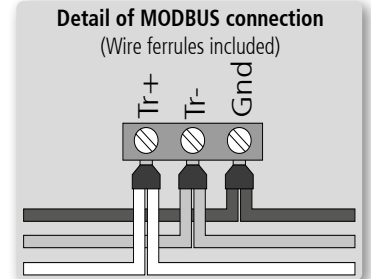
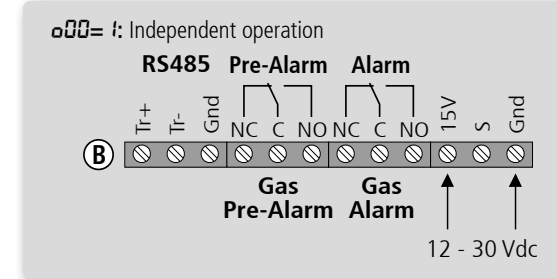
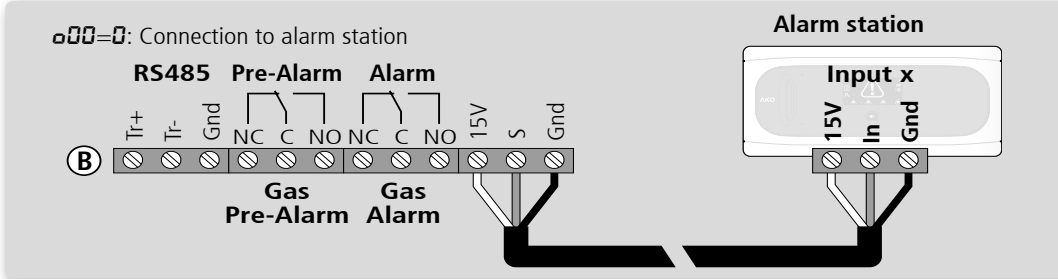
**Working conditions:**

-Avoid handling refrigerant gases near the sensor. If this is unavoidable, use Set Hold or Maintenance mode. Do not paint the sensor or place it near solvents or paints. Exposure to acetone vapours may generate false alarms.  
-The sensor should be installed away from:  
-Smoke outlets located in confined spaces or from engines, generators or motorised machinery (fork-lift trucks, etc.).  
-Particularly damp areas or areas with strong ventilation.  
-The detector should usually be installed in an area where gas may concentrate, near places where gas leaks could start  
-The gases currently used in industrial refrigeration, for which this transmitter has been designed, are heavier than air. They are therefore always concentrated in the lowest part of the refrigerated room or space. Please take this into consideration when choosing the installation site. It is advisable to leave a distance of around 50 cm free.

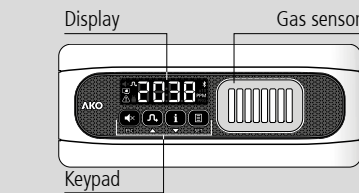


Always disconnect the power supply to do the wiring.  
The wiring between the transmitter and the station must **NEVER** be installed in a conduit together with power, control or power supply cables.

Cables for wiring the relay contact should have an adequate section depending on the unit to be connected.  
Certain international standards maintain that the power supply of the alarm should originate from a different circuit to that used by the refrigeration and ventilation system. **Please ensure that you comply with current local regulations.**  
If connecting to a MODBUS network the double connection strips included must be used (see box)



**Description**



**Fixed:** Gas pre-alarm activated.  
**Flashing:** Gas alarm activated.  
**Fixed:** Set Hold mode activated  
**Flashing:** Maintenance mode activated  
The display shows the type of gas detected.



**Constant:** NBloT module in operation  
**Flashing:** Malfunction in NBloT module

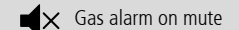


**Constant:** Connected to the NBloT network (Narrow band)  
**Switched off:** NOT connected to the NBloT network or expired license.

PPM

The display shows the current gas concentration in ppm (parts per million).

**x10** The value displayed should be multiplied by 10.



Gas alarm on mute  
**PRG** Unit in programming mode.



If the gas Pre-Alarm or Alarm sounds, pressing once will mute the alarm tone (See parameter **b03**).  
In the programming menu, it exits the parameter without saving changes, returns to previous level or exits programming.



Pressing for 3 seconds activates or deactivates Set Hold mode.  
Pressing for 6 seconds activates or deactivates maintenance mode.  
In the programming menu it allows scrolling around the different levels, or during the setting of a parameter, changing its value.



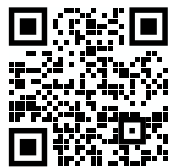
Forces data transfer to the cloud via NBloT connectivity.



Pressing once (< 1 second) will show the type of gas detected, the date and time in sequential order.  
Pressing for 3 seconds displays the Pre-Alarm and Alarm levels that have been configured.  
In the programming menu it allows scrolling around the different levels, or during the setting of a parameter, changing its value.



Pressing for 3 seconds accesses the configuration of alarm and pre-alarm levels.  
Pressing it for 6 seconds accesses the advanced programming menu.  
In the programming menu, it accesses the level shown on the display or, during the setting of a parameter, accepts the new value.



akonet.cloud

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We reserve the right to supply materials that might vary slightly to those described in our Technical Sheets. Updated information is available on our website.

# Operation

## Without alarms

The display shows the current gas concentration in ppm.

Parameter **b02** allows you to fix a value below which the display will always show zero.

The transmitter regularly sends to the cloud (akonet.cloud) the gas concentration data and other operation information at specific intervals based on the akonet.cloud parameter "continual log interval".

Any change in the configuration of the transmitter or its operation (mode changes, errors, etc.) are sent to the cloud instantly.

## Alarms

The transmitter emits an acoustic alarm, the alarm indicator flashes and activates the relays when certain gas concentration levels are exceeded. If the transmitter is connected to a station, the station will emit the acoustic alarm. The relays will be activated in both devices.

There are two alarm levels depending on the concentration of gas detected: Pre-Alarm and Alarm. Both are factory preset but can be modified by means of parameters **AL3** and **AL6**. These values comply with domestic and international regulations. However, please ensure that these values comply with current local regulations. In order to modify these values, parameter AL1 should be configured to 1. Activations and deactivations of pre-alarms and alarms are sent to the cloud instantly.

## Default parameters


To set the device to factory default, switch off the power supply and switch it on again, press the sequence ▲, ▼ and SET within 2 minutes.

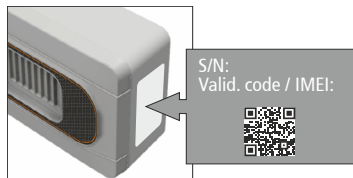
The display shows the message **dFP** (default parameters) with a choice of two options:

- 0:** Parameters are not modified
- 1:** All parameters are reset to their default values.

## Signing up to akonet.cloud


In order for the transmitter to be able to send operating data to akonet.cloud, it must be registered. To do this, go to <https://akonet.cloud> (requires registration), click on "Add new device" and continue with one of these two methods:

- A.** Enter the serial number (S/N) and validation code / IMEI that appear on the tag and press "Search".
- B.** Capture the QR code that appears on the tag using the  option (requires having a camera on your PC, tablet or mobile phone).



These data are found on the tag on the right hand side of the transmitter. More information can be found in the akonet.cloud user guide at: <https://enhelpakonet.ako.com/>

To access akonet.cloud, enter this address in your browser (the use of Google Chrome is recommended): <https://akonet.cloud>.

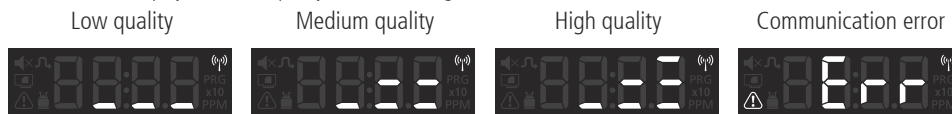
 Before activating the device, make sure that there is enough reception at the installation location. **Activated devices may not be returned.**


## Forcing transmission

When the steps of the configuration wizard and the registration process are completed in akonet.cloud, you must force a first transmission to verify the level of reception:

Press and hold the **ESC** and **SET** keys for 3 seconds.

After a moment, the display shows the quality of the NBloT signal received:



 **The transmitter does not start transmitting data to akonet.cloud until the first transmission is forced.**

## Simplified declaration of conformity

AKO Electromecánica S.A.L. hereby declares that the radioelectric device types AKO-575xxxx (Gas transmitter with NBloT communication) conform to the provisions set forth by Directive 2014/53/EU.

The full text of the EU conformity declaration is available at the following internet address:

<http://help.ako.com/manuales/declaracion-ue-de-conformidad>

# Parameters

The unit operating parameters are organised in different groups or families according to their function. The **Def.** column indicates the default parameters set in the factory. In order to access the programming menu, hold the **SET** key for 6 seconds, or until "**Pr-E**" appears on the display. To modify the Pre-Alarm and Alarm levels, press **SET** for 3 seconds or until "**RL 3**" appears on the display (Only if AL1=1).


▲ This allows you to scroll through the different levels, or when setting a parameter, to change its value.

**SET** This accesses the level shown on the display or, when setting a parameter, it accepts the new value.

**ESC** This exits the parameter without saving changes, returns to previous level, or exits programming.

Level 1	Level 2	ALARM CONFIGURATION								
		Description	Values	Def.	Def.	Max.				
RL	RL 1	Alarm levels: 0: According to regulation 1: Set by user			0	1	1			
	RL 2	Pre-Alarma 0: Deshabilitada; 1: Habilitada			0	1	1			
	RL 3	Pre-Alarm Level (1)	575744N Other models	PPM	b02 / AL4+1	4000 500	AL6			
	RL 4	Pre-Alarm Differential			PPM	10	100	200		
	RL 5	Pre-Alarm Delay (0: Disabled)			min.	0	0	15		
	RL 6	Alarm Level (1)	575744N Other models	PPM	AL3	8000 1000	10000 2000			
	RL 7	Alarm Differential			PPM	10	100	200		
	RL 8	Alarm Delay (0: Disabled)			min.	0	0	15		
EP	Exit to level 1									
BASIC CONFIGURATION										
		Description	Values	Def.	Def.	Max.				
Gc	Gc 1	Type of gas to be measured (Reading only)					-	-	-	
	Gc 2	Gas to be measured with the Universal sensor (Only if Gc1=brd1) ALL; 125; 134A; 404A; 407A; 407F; 410A; 448A; 449A; 513A; 452A; 32; 23; 455A (2)							ALL	
	b0 1	Display 0: Measurement in PPM 1: Type of gas to be measured					0	0	1	
	b0 2	Minimum value to be shown on the display (Lower values are shown as 0) Does not affect the values shown by communication (AKONet or CAMM module)					PPM	0	0	250
	b0 3	Function of the mute key (Applicable to Alarm and Pre-Alarm) 0: Disabled 1: Deactivate acoustic alarm 2: Deactivate relay 3: Deactivate both					0	1	3	
	b0 4	Acoustic alarm 0: Disabled 1: Enabled					0	1	1	
	b 1 0	Access code (password) function 0: Disabled; 1: Block access to parameters 2: Block keypad					0	0	2	
	b 1 1	Access code (password)					0	0	99	
	b2 0	MODBUS address					1	(3)	247	
	b2 1	MODBUS speed 0: 9600 bps 1: 19200 bps 2: 38400 bps 3: 57600 bps					0	0	3	
b2 2	STOP bits for MODBUS communication 1: 1 STOP bit, 2: 2 STOP bits					1	1	2		
b2 3	MODBUS communication parity 0: No parity, 1: Odd, 2: Even					0	0	2		
EP	Exit to level 1									

Level 1	Level 2	INPUT AND OUTPUT CONFIGURATION			
		Description	Def.	Def.	Max.
IO	IO 0	Reset to zero of the sensor (Calibration only) 0: Disabled 1: Reset to zero activated	0	-	1
	IO 1	Setting the sensor (Calibration only) 0: Disabled 1: Setting activated	0	-	1
	IO 1 1	Polarity of digital input 1 (Remote Mute) 0: Activates on opening contact; 1: Activates on closing contact	0	0	1
	IO 1 2	Polarity of digital input 2 (Remote Set Hold) 0: Activates on opening contact; 1: Activates on closing contact	0	0	1
	IO 0 0	Type of output 4/20 mA (Reading only) 0: Calibrated for alarm station; 1: Linear	0	0	1
	EP	Exit to level 1			
INFORMATION (Reading only)					
		Description	Def.	Def.	Max.
PU	PU	Programme version	-	-	-
	Pr	Programme revision	-	-	-
	bU	Bootloader version	-	-	-
	br	Bootloader revision	-	-	-
	PRr	Parameter map revision	-	-	-
	PCR	CRC value of the programme	-	-	-
	bCr	CRC value of the bootloader	-	-	-
	EP	Exit to level 1			

MESSAGES	
PRL	Gas pre-alarm activated. Flashing together with the gas concentration.
RL	Gas alarm activated. Flashing together with the gas concentration.
Scn	Initialisation process of the gas sensor. This may last for up to 3 minutes.
ES	Error or malfunction of the sensor. The Pre-Alarm relay is activated, the transmitter emits 3 alert tones every 2 minutes and the  icon flashes. Deactivate the power supply and activate it again. If after a few seconds the error persists, please contact your technical support centre.
ESH	The sensor has reached its maximum working temperature.
ESL	The sensor has reached its minimum working temperature.

- (1) In order to modify these levels, parameter **RL 1** should be configured to 1.
- (2) **R-450A, R-442A, R-454A, R-454C, R-1234YF, R-1234ZE** are detected using **Gc 2=RL 1**.
- (3) The MODBUS address will be shown on the transmitter label by default.

## Technical specifications

Power supply.....	12 - 30 Vdc
Consumption Typical .....	75 mA
Maximum.....	125 mA
Pre-Alarm/Alarm relay .....	SPDT 30 Vdc, 2 A, cos φ = 1
Working ambient temperature AKO-575744N.....	-40 °C to 50 °C
Other models.....	-30 °C to 50 °C
Storage ambient temperature AKO-575744N.....	-40 °C to 60 °C
Other models.....	-30 °C to 60 °C
Range of maximum moisture permitted .....	0 - 95 % HR (without condensation)
Protection degree AKO-575400NE.....	IP65
Other models.....	IP68
Type of sensor .....	NDIR (Non-Dispersive Infrared Technology)
Display range AKO-575744N .....	0 - 10000 x1 ppm
Other models.....	0 - 2000 x1 ppm
Estimated working life.....	7 years

Dimensions .....	202 mm (W) x 82 (H) x 55.5 mm (D)
Maximum transmission power .....	23.5 dBm conducted
Antenna AKO-575400NE .....	External
Other models .....	Internal
Bands .....	NBLoT (Narrow band) LTE Cat NB1   B2, B3, B4, B8, B12, B13, B20
<b>Band</b>	<b>Frequency Rx</b> <b>Frequency Tx</b>
2.....	1930 MHz ~ 1990 MHz ..... 1850 MHz ~ 1910 MHz
3.....	1805 MHz ~ 1880 MHz ..... 1710 MHz ~ 1785 MHz
4.....	2110 MHz ~ 2155 MHz ..... 1710 MHz ~ 1755 MHz
8.....	925 MHz ~ 960 MHz ..... 880 MHz ~ 915 MHz
12.....	729 MHz ~ 746 MHz ..... 699 MHz ~ 716 MHz
13.....	746 MHz ~ 756 MHz ..... 777 MHz ~ 787 MHz
20.....	791 MHz ~ 821 MHz ..... 832 MHz ~ 862 MHz