APE GLD

Gas Leak Detector and Person in cold-room alarm

Use and maintenance manual

READ AND KEEP

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ELECTRICAL BOARDS FOR REFRIGERATING INSTALLATIONS

Pego

ENGLISH

CONTENTS

CHAPTER 1: INTRODUCTION

1.1 PRODUCT IDENTIFICATION CODE

200APEGLD	External Visual/acoustic alarm control unit complete with buffer battery.

1.2 ACCESSORIES

100APEPUL3	Emergency luminous button "person in cold room alarm".
100APESIR	Internal Visual/acoustic alarm to signal leak of gas.
100APESIRPUL	Emergency luminous button "person in cold room alarm" + Internal Visual/acoustic alarm to signal leak of gas, integrated into a single plastic box.
SENMLD-A3	Gas detector A3 refrigerants
SENMLD-R454C	Gas detector R454C refrigerants
SENSAM-CO2	Gas detector R744 (CO_2) refrigerants
SESAM-GR1	Gas detector GROUP 1 refrigerants

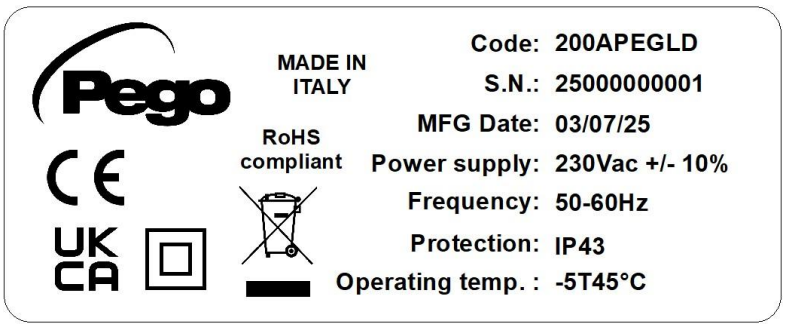
1.3 TECHNICAL CHARACTERISTICS

Mains power supply	230 Vac 50/60 Hz
Max consumption on mains power	10 W
Buffer battery	12 V DC Ni-MH 1300 mAh Complete recharge time: 10 h
Operating autonomy	- With 230 Vac NOT ON (running on charged buffer battery): 8h approx. - With 230 Vac power ON: unlimited
Out-of-room module	IP 43 protection rating Operating temperature: -5 - +45 °C
Acoustic characteristics on board buzzer	Type: piezoelectric Sound power: 90dB at 1m
Visual warning on board light	Flashing red LED, 12 V DC
In-room emergency pushbutton	Lighting: red LED, 12 V DC N.C. contact Keypad with IP65 protection rating Operating temperature: -25 - +70 °C
In-room emergency siren	+24Vdc power supply Sound power: 88 dB at 1m IP 65 protection rating Operating temperature: -30 +50 °C
Gas detector power supply	+24 Vdc Max output current: 250mA Protected by thermal fuse NOTE: only one sensor can be powered by the Unit. Additional sensors must be powered externally with 24Vdc.
RS485/ Modbus connection	Up to 2 serial interfaces available: 1 via Modbus or Telenet 1 supporting up to 4 gas detectors.
Alarm relay	5A AC1 free voltage contact with N.O. and N.C. contact available Voltage break: up to 250 Vac

1.4 IDENTIFICATION DATA

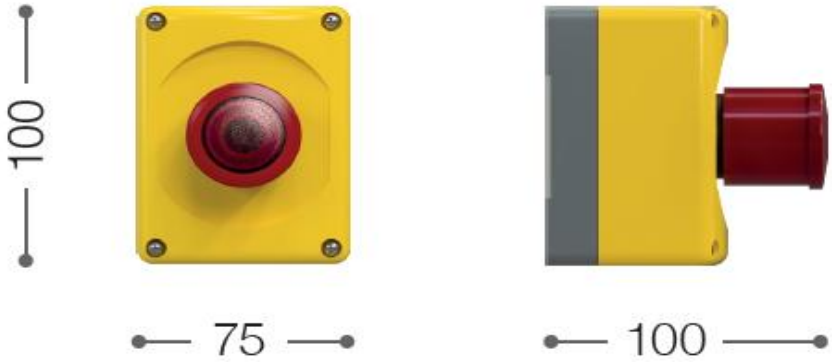
The unit described in this manual has, on its side, an ID plate showing all the relevant identification data:

1. Manufacturer's name
2. Device code
3. Serial number
4. Date of production
5. Supply voltage
6. IP degree of protection
7. Operating temperature



1.5 DIMENSIONS OF 200APEGLD

1.6 DIMENSIONS OF 100APEPUL3



1.7 DIMENSIONS OF 100APESIR

1.8 DIMENSIONS OF 100APESIRPUL

1.9 DESCRIPTION OF SYSTEM

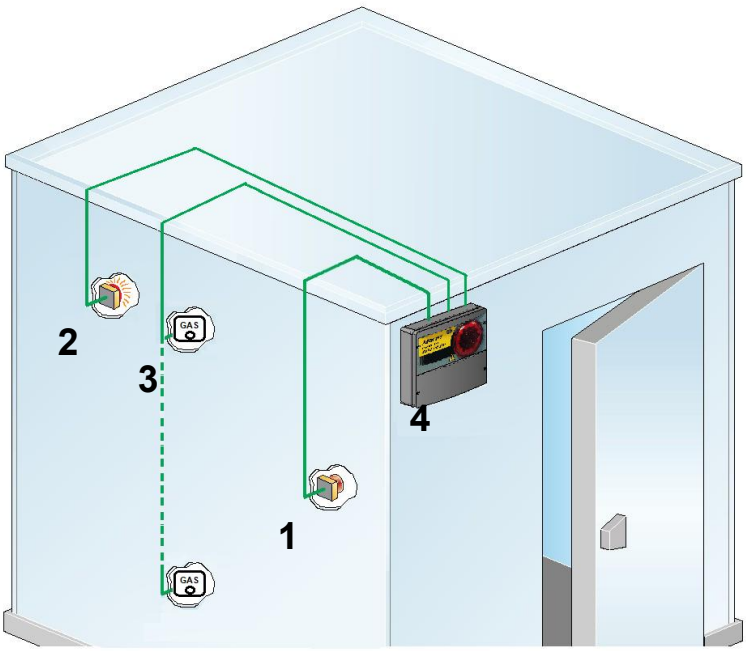
The purpose of this safety system is to allow a person trapped inside the cold room to activate an acoustic/luminous alarm located outside the room and so request help. Additionally, it activates a pre-alarm or alarm if the connected probe detects a gas leak. The system has been designed to function even in the event of a temporary mains power failure: in this event the system is powered by a buffer battery housed in the external unit.

It conforms to the **UNI EN 378-1: 2016**, applicable to cold rooms at negative temperatures and with a volume greater than 10m^3.

The system consists of the following parts:

1. **Emergency pushbutton to be fitted inside the cold room.**
   Consists of a luminous mushroom-type button with N.C. contact. The pushbutton is permanently lit by LEDs so that it can be located in the dark.
2. **Audible / visual alarm for gas leak to be fitted inside the room.**
   Audible / visual signal for gas leaks to be installed inside the cold room in accordance with EN 378-3.
3. **Gas leak probe to be fitted inside the room (up to 4).**
   Gas leak probe suitable for the refrigerant gas used in the plant. Check probe manual for a correct installation.
   NOTE: only one sensor can be powered by the Unit. Additional sensors must be powered externally with 24Vdc.
4. **Acoustic/visual alarm control unit to be fitted outside the cold room.**
   Features a siren and flashing light and a buffer battery to provide power in the event of a black-out. There is also a clean contact (closed with alarm on) that can be used to activate other devices such as a remote warning dialler or additional sirens.

Connection between the devices, consisting of a lead laid by the installer as per the wiring diagram, is ensured by the system safety logic. Should the lead be cut or disconnected the alarm will be activated immediately.



1.10 WARRANTY TERMS

The **APE GLD** are covered by a 24-months warranty against all manufacturing defects as from the date indicated on the product ID code.

In case of defect the product must be appropriately packaged and sent to our production plant or to any authorized Service Center with the prior request of the Return Authorization Number.

Customers are entitled to have defective products repaired, spare parts and labor included. The costs and the risks of transport are at the total charge of the Customer.
Any warranty action does not extend or renew its expiration.

The Warranty does not cover:

- Damages resulting from tampering, impact or improper installation of the product and its accessories.
- Installation, use or maintenance that does not comply with the instructions provided with the product.
- Repair work carried out by unauthorized personnel.
- Damage due to natural phenomena such as lightning, natural disasters, etc...

In all these cases the costs for repair will be charged to the customer.

The intervention service in warranty can be refused when the equipment is modified or transformed.

Under no circumstances **Pego S.r.l.** will be liable for any loss of data and information, costs of goods or substitute services, damage to property, people or animals, loss of sales or earnings, business interruption, any direct, indirect, incidental, consequential, damaging, punitive, special or consequential damages, in any way whatsoever caused, whether they are contractual, extra contractual or due to negligence or other liability arising from the use of the product or its installation.

Malfunction caused by tampering, bumps, inadequate installation automatically declines the warranty. It is compulsory to observe all the instructions in this manual and the operating conditions of the product.

Pego S.r.l. disclaims any liability for possible inaccuracies contained in this manual if due to errors in printing or transcription.

Pego S.r.l. reserves the right to make changes to its products which it deems necessary or useful without affecting its essential characteristics.

Each new release of the Pego product user manual replaces all the previous ones.

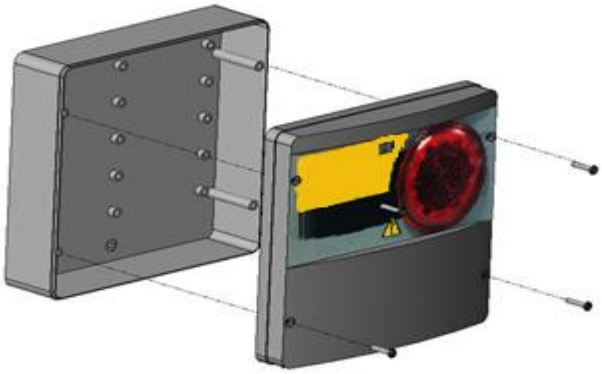
As far as not expressly indicated, is applicable the Law and in particular the art. 1512 C.C. (Italian Civil Code).

For any controversy is elected and recognized by the parties the jurisdiction of the Court of Rovigo.

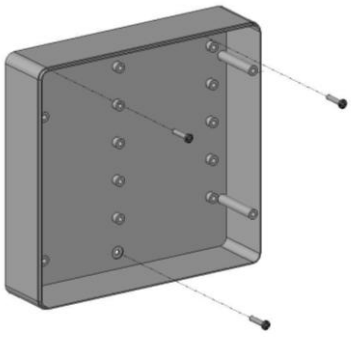
CHAPTER 2: INSTALLATION

2.1 INSTALLING THE EXTERNAL ALARM CONTROL UNIT

1. Unscrew the 4 locking screws on the front.

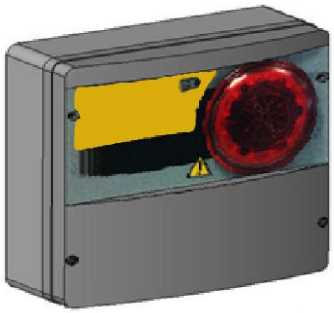


2. Use the three existing holes to fix the box back panel to the wall: use three screws of a length suitable for the thickness of the wall to which the panel will be attached. Fit a rubber washer (supplied) between each screw and the box backing.



Make all the electrical connections as illustrated in the diagram on chapter 2.4. To effect correct electrical connection and maintain the protection rating, use appropriate wire/raceway grips to ensure a good seal. Route the wiring inside the unit in as tidy a fashion as possible: be especially careful to keep power wires away from signal wires. Use clips to hold wires in place.

3. Close the front panel, making sure that all the wires are inside the box and that the box seal sits in its seat properly. Tighten the front panel using the 4 screws, making sure the O-rings on the head of each screw are used.

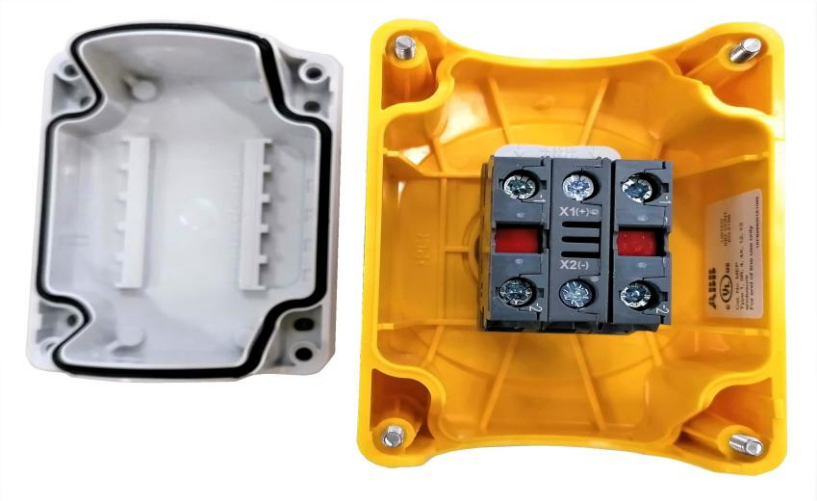


2.2 INSTALLING THE IN-ROOM EMERGENCY PUSHBUTTON

1. The in-room pushbutton must be positioned so that it is always visible and easily reachable.

2. Undo the four closure screws on the front of the pushbutton panel.

3. Using the four internal holes fix the box backing with four screws of a length suitable for the thickness of the wall to which it's to be attached.

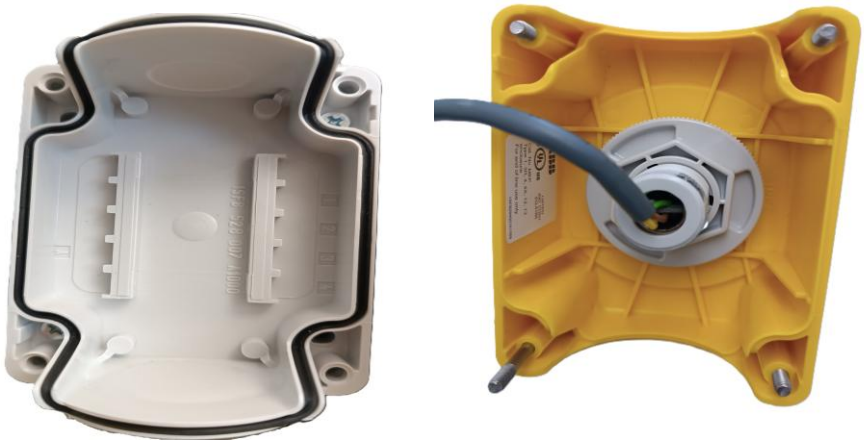


2.3 INSTALLING THE IN-ROOM GAS LEAK SIREN

1. The in-room siren must be positioned so that it is always visible.

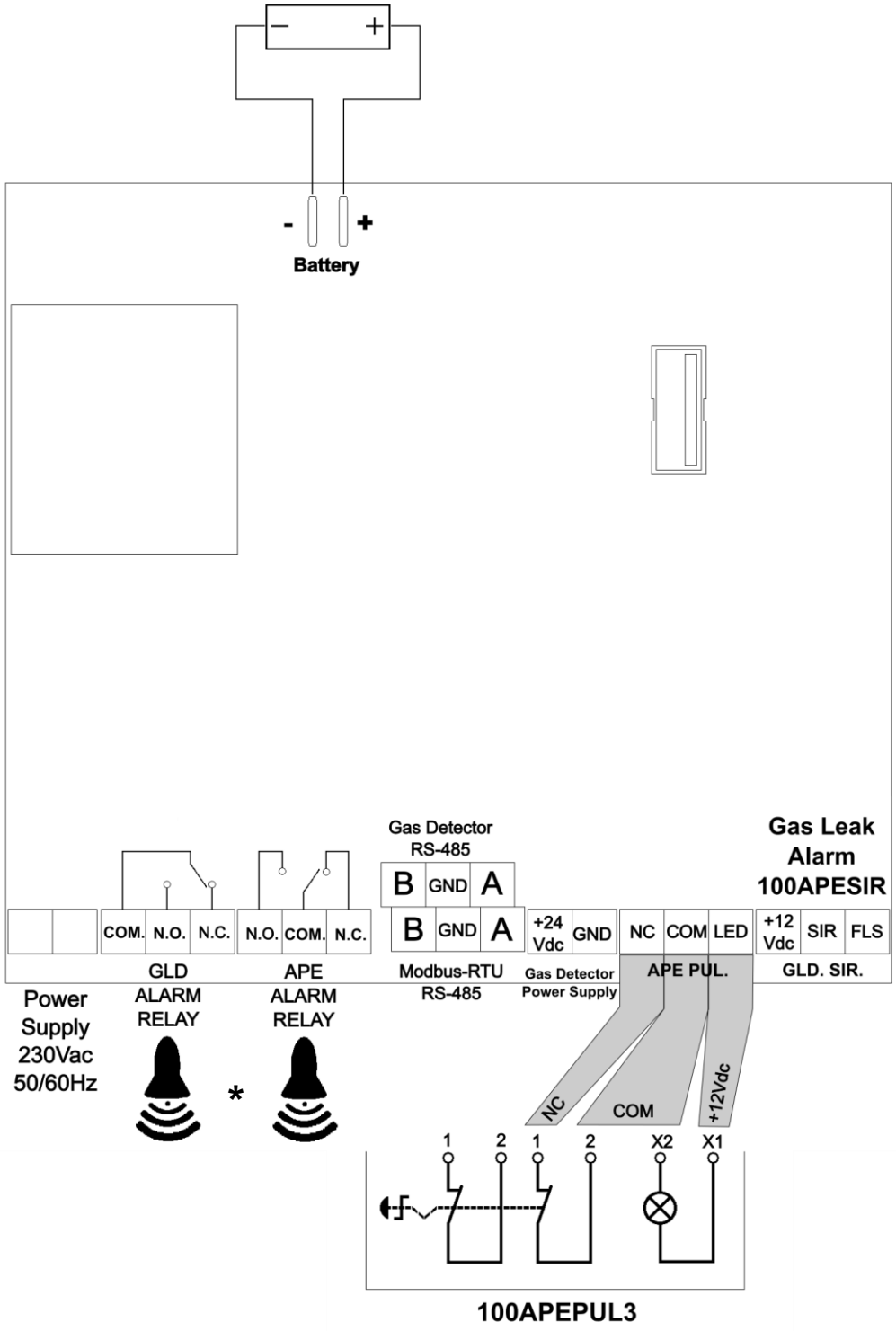
2. Undo the four closure screws on the front of the siren panel.

3. Using the four internal holes fix the box backing with four screws of a length suitable for the thickness of the wall to which it is to be attached.



2.4 ELECTRICAL CONNECTIONS

Warning: the positive pole of the battery (faston with red wire) is initially disconnected to maintain the charge during storage of the product. Once the connections of the in-room emergency pushbutton have been made, it's then necessary to connect this faston to the connector marked (**+**) on the upper side of the board as also indicated on the wiring diagram.
It's advisable to first connect the control unit to the relative emergency pushbutton and only then connect the battery and the mains power. This will prevent activation of the alarm.
NOTE: The alarm unit supports **up to 4 gas sensors. Only one sensor can be powered by the Unit. Additional sensors must be powered externally with 24Vdc.**



PEGO MLD connections

APEGLD		PEGO MLD wire
Gas detector Power supply	+24 Vdc	RED
	GND	BLACK
Gas detector RS-485	A	GREY&PINK
	GND	BLACK
	B	WHITE
Gas detector Reset Address to 1	(do not connect)	BROWN (read probe manual)

SAMON GLACIÄR MIDI connections

APEGLD		SAMON GLACIÄR MIDI clamp
Gas detector Power supply	+24 Vdc	POWER clamp (J3, 24V ac/dc)
	GND	
Gas detector RS-485	A	J2, clamp A (Tx+)
	GND	J2, clamp G0
	B	J2, clamp B (Tx-)

SIRPUL connections

APEGLD		APE SIRPUL
APE PUL	NC	2
	COM	3
	LED	1
GLD SIR	+12V	6
	SIR	5
	FLS	4

* ALARM RELAY OPERATION

With parameter do = 0 (APE relay as APE alarm, GLD relay as gas alarm) => default

	Relay APE	Relay GLD
230 on, probes ok	N.O.	N.O.
230 on, communication error with the probes	N.O.	N.C.
230 off, with battery	N.O.	N.C.
230 off, no battery (off)	N.C.	N.C.
Gas pre-alarm	N.O.	N.C.
Gas alarm	N.O.	N.C.
APE button on	N.C.	N.O.

With parameter do = 1 (APE relay as gas pre-alarm, GLD relay as gas alarm)

	Relay APE	Relay GLD
230 on, probes ok	N.O.	N.O.
230 on, communication error with the probes	N.C.	N.C.
230 off, with battery	N.C.	N.C.
230 off, no battery (off)	N.C.	N.C.
Gas pre-alarm	N.C.	N.O.
Gas alarm	N.C.	N.C.
APE button on	N.O.	N.O.

CHAPTER 3: OPERATION

3.1 EXTERNAL UNIT

3.2 LED ICONS

❶ **Person in cold room**		**OFF:** Person in cold room alarm not active.
		**RED ON:** Person in cold room alarm active.
❷ **Gas leak pre alarm**		**OFF:** Gas leak pre-alarm not active.
		**YELLOW ON:** Gas leak pre-alarm active **YELLOW BLINKING:** A gas leak pre-alarm occurred and then went away. Press the mute key ❺ to reset it.
❸ **Gas leak alarm**		**OFF:** Gas leak alarm not active.
		**RED ON:** Gas leak alarm active. **RED BLINKING:** A gas leak alarm occurred and then went away. Press the mute key ❺ to reset it.

❹ **Battery status**		**GREEN ON:** Battery charged. **GREEN BLINKING:** Battery charging.
		**YELLOW ON:** No Main Power supply (battery operated). **YELLOW BLINKING:** Low battery (advisable replacement).
		**RED ON:** Broken battery (must be replaced).

3.3 FRONT KEYPAD

❺ **Mute key**		In case of Pre-Alarm or Gas Alarm, a short press silences the alarm tone (both external and internal). If a pre-alarm/alarm ends, a short press resets the blinking icons.
❻ **Bluetooth key**		A short press enables or disables the Bluetooth function.

3.4 OPERATION

PERSON IN COLD ROOM					
Push button	**Person in cold room led**	❼ **External Alarm (outside the room)**		**Internal Alarm (inside the room)**	
		Leds	**Siren**	**Leds**	**Siren**
Not pressed	 **OFF**	 **OFF**	 **OFF**	 **OFF**	 **OFF**
Pressed	 **RED**	 **FLASHING**	 **INTERMITTENT**	 **OFF**	 **OFF**

GAS LEAK DETECTOR					
Event	**Gas leak led**	**External Alarm**		**Internal Alarm**	
		Leds	**Siren**	**Leds**	**Siren**
No detection	**OFF**	**OFF**	**OFF**	**OFF**	**OFF**
Gas Pre-alarm active	**YELLOW**	**FLASHING**	**OFF**	**10 sec BLINK, 20 sec OFF**	**10 sec BLINK, 20 sec OFF (mute by button)**
Gas alarm active	**RED**	**FLASHING**	**INTERMITTENT (mute by button)**	**FLASHING**	**INTERMITTENT (mute by button)**

3.5 MYPEGO APP

The APEGLD controller is equipped with Bluetooth BLE for management or monitoring via remote devices (tablets, smartphones).
Remote management of the device takes place in the following way:

	Distance	**Support**	**Channel**	**Mode**
MyPego app (BLE)	approx. 50m	Smartphone, Tablet	Bluetooth BLE	Control and monitoring

The myPego app is available on Google and Apple stores for free. It allows complete control of the APEGLD tool and is necessary to perform the basic operations to connect the device to the Internet (check IP address, enter Wi-Fi username and password, etc.

To connect the APEGLD tool bluetooth, proceed as follows:

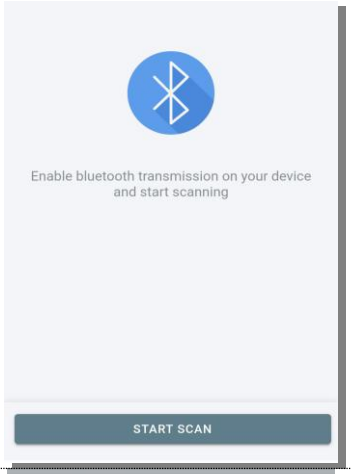
1) Download **the myPego** app from the Google/Apple store and install it on a smartphone/tablet.

2) Activate Bluetooth on the APEGLD tool by pressing the bluetooth key .The flashing icon is activated.

3) Open **myPego** app and access the Bluetooth section.

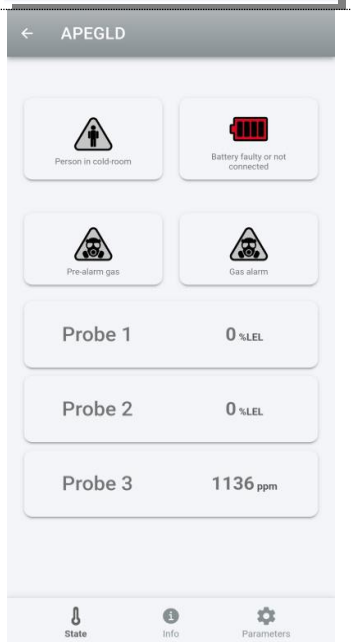
4) Touch the "START SCAN" key to make the connection to APEGLD.

The Bluetooth icon on the instrument turns on steady to signal the connection.

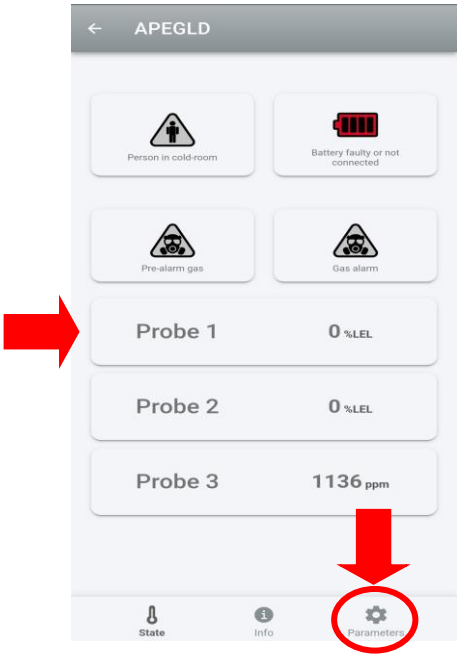


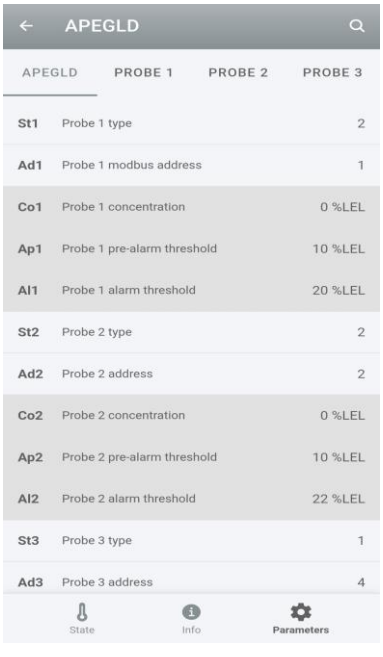
5) The homepage of the application opens, where it's possible to view:

- Person in cold room alarm status.
- Gas leak Pre-alarm and alarm status.
- Battery status.
- Connected probes with gas concentration.



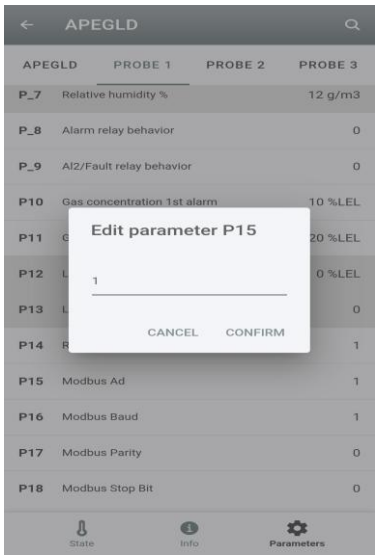
6) To modify APEGLD parameters, press "parameters" icon or select one of the probes sections, (e.g., 'Probe 1'). You will then be redirected to the APEGLD Parameters page.



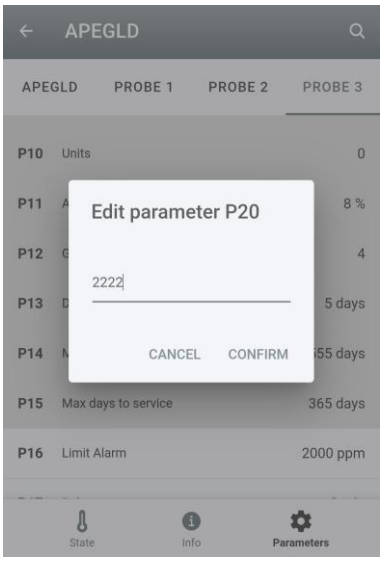


7) To modify Probes parameters: Tap on the probe section, you will be redirected to the probe parameters page:

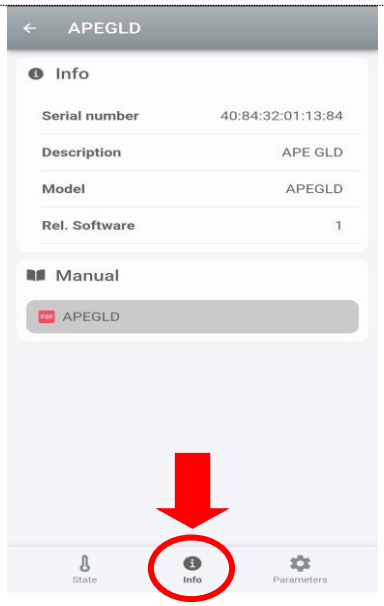
- For **PEGO MLD sensors**, tap on the desired parameter to modify its value, then press Confirm to save the changes.



- For **SAMON GLACIAR MIDI sensors,** the write registers are write-protected; to unlock the protection, set parameter **P20=2222**. Authorization to write variables will be granted for 15 minutes. Then you will be able to modify sensor parameters.



8) Click the “info” icon for more APEGLD information and to download the manual.



3.6 START-UP PROCEDURE

APEGLD comes configured to read a **PEGO MLD** probe on Address 1 by default. You can connect up to three additional probes, which can be either **PEGO MLD** or **SAMON GLACIÄR MIDI**.
Probes configuration must be done **one probe at a time**, following these steps:

1) Open the APEGLD Unit: Unscrew the 4 screws of the APEGLD box.

2) Connect the cables of probe 1: Follow the wiring layout (**see Chapter 2.4**) according to the probe type:

If the probe is PEGO MLD:

1. Connect all wires, including the brown wire (see Chapter 2.4).
2. Power the APEGLD device.
3. Connect to APEGLD via bluetooth following the instructions above (see Chapter 3.5).
4. Keep the default parameters for the pre-configured **Pego MLD sensor**.
5. Set P15 =1.

If the probe is SAMON GLACIÄR MIDI:

1. Connect the wires according to the specific layout shown in Chapter 2.4.
2. To configure the probe, download the dedicated **SAMON GLACIÄR MIDI** app and follow the instructions in the **SAMON GLACIÄR MIDI** manual (see Chapter 4.7 of the Samon manual).

3) To connect additional probes:

1. Disconnect the cables of the first probe.
2. Connect the next probe following the wiring layout, excluding the power wires **which should be powered externally with 24Vdc.**
3. Repeat the steps for any additional probes (up to a maximum of 4 total).
4. Once all probes are configured, connect them all simultaneously.

NOTE: Do not wire the brown wire for PEGO MLD probes (read probe manual for more information).

5. Access to MyPego app and assign the correct Modbus addresses to each probe: first probe will take Ad1=1, second Ad2=2, third Ad3=3 and fourth Ad4=4.

3.7 MODBUS-RTU PROGRAMMING

The APEGLD controller can be easily programmed via the Modbus-RTU protocol. It can be configured as a modbus slave on the main RS485 port, while it can read up to 4 different sensors on the RS485 port dedicated to gas detectors.

The default modbus configuration on the main RS485 port is (fixed):

Serial bus:	***RS485***
Baud rate:	***9600***
APEGLD Address:	***1***
Data lenght:	***8 bit***
Parity:	***none***

The default modbus configuration on the Gas-detector RS485 port is:

Serial bus:	***RS485***
Baud rate:	***19200***
Data lenght:	***8 bit***
Parity:	***none***

(It can be modified using parameters Bdi and Pri)

Modbus Read function: **0x03**
Modbus Write function: **0x06**

LIST OF MODBUS REGISTERS OF APEGLD

Each register has a 16 bit dimension. It has been formed some blocks of variables (each with a different MSByte address) based on the type of these variables. In the followings paragraphs are described in detail all the available blocks and, for each block, the implemented variables.
At the beginning of each table, it has been indicated in the first row if its data could be only read (READ-ONLY) or written and read (READ/WRITE).

TABLE COLUMNS DESCRIPTION:

- **Register:**
  It indicates the register address that has to be used in the structure of Modbus command for reading or writing the data into device. It is expressed on two Bytes: (MSByte) and (LSByte).
- **Description:**
  Description of the register and possible corresponding programming variable of the device.
- **Meaning and Bytes range:**
  Dimension (MSByte and LSByte), allowed range and notes about register.
- **U.M.:**
  Unit of measure of datum contained in the register.

- **Conv.:**
  Values contained in the registers that represent signed variables require a conversion and they are marked from **X** sign in the following column.
  Conversion procedure:
  - If the value contained in the register is included between 0 and 32767, it represents a positive or null number (the result is the value itself).
  - If the value contained in the register is included between 32768 and 65535, it represents a negative number (the result is the register value - 65536).

- **Molt:**
  It indicates the multiplication factor that has to be mapped to register's datum and that coupled to columns U.m and Conv permits the right interpretation of the value to convert.

READ-WRITE						
Reg.	***Description***	***Bytes meaning and range***		***U.M.***	***Conv***	***Molt***
256	**St1** Type of probe connected to channel 1	MSByte LSByte	0 = No probe connected 1 = SAMON GLACIÄR MIDI 2 = PEGO MLD	num		1
257	**Ad1** Address of probe connected to channel 1	MSByte LSByte	Range 1...247	num		1
258	**Ap1** Channel 1 probe pre-alarm threshold	MSByte LSByte	Range 0...0xFFFF This parameter updates automatically based on the value set in the gas sensor.	num		1
259	**Al1** Channel 1 probe alarm threshold	MSByte LSByte	Range 0...0xFFFF This parameter updates automatically based on the value set in the gas sensor.	num		1
260	**St2** Type of probe connected to channel 2	MSByte LSByte	0 = No probe connected 1 = SAMON GLACIÄR MIDI 2 = PEGO MLD	num		1
261	**Ad2** Address of probe connected to channel 2	MSByte LSByte	Range 1...247	num		1
262	**Ap2** Channel 2 probe pre-alarm threshold	MSByte LSByte	Range 0...0xFFFF This parameter updates automatically based on the value set in the gas sensor.	num		1
263	**Al2** Channel 2 probe alarm threshold	MSByte LSByte	Range 0...0xFFFF This parameter updates automatically based on the value set in the gas sensor.	num		1
264	**St3** Type of probe connected to channel 3	MSByte LSByte	0 = No probe connected 1 = SAMON GLACIÄR MIDI 2 = PEGO MLD	num		1
265	**Ad3** Address of probe connected to channel 3	MSByte LSByte	Range 1...247	num		1
266	**Ap3** Channel 3 probe pre-alarm threshold	MSByte LSByte	Range 0...0xFFFF This parameter updates automatically based on the value set in the gas sensor.	num		1

READ-WRITE						
Reg.	***Description***	***Bytes meaning and range***		***U.M.***	***Conv***	***Molt***
267	**Al3** Channel 3 probe alarm threshold	MSByte LSByte	Range 0...0xFFFF This parameter updates automatically based on the value set in the gas sensor.	num		1
268	**St4** Type of probe connected to channel 4	MSByte LSByte	0 = No probe connected 1 = SAMON GLACIÄR MIDI 2 = PEGO MLD	num		1
269	**Ad4** Address of probe connected to channel 4	MSByte LSByte	Range 1...247	num		1
270	**Ap4** Channel 4 probe pre-alarm threshold	MSByte LSByte	Range 0...0xFFFF This parameter updates automatically based on the value set in the gas sensor.	num		1
271	**Al4** Channel 4 probe alarm threshold	MSByte LSByte	Range 0...0xFFFF This parameter updates automatically based on the value set in the gas sensor.	num		1
272	**Apd** Gas leak Pre-alarm delay	MSByte LSByte	Range 0...240 min Step 1 minute	min		1
273	**Ald** Gas leak Alarm delay	MSByte LSByte	Range 0...240 min Step 1 minute	min		1
274	**BEE** Enabling the external siren	MSByte LSByte	0 = External siren disabled 1 = External siren enabled	num		1
275	**do** Alarm Relay Configuration	MSByte LSByte	0 = APE relay is APE alarm, GLD relay is gas alarm. 1 = APE relay is gas pre-alarm, GLD relay is gas alarm.	num		1
276	**Bdi** Baudrate RS485 gas detectors	MSByte LSByte	0 = 300 Baud 1 = 600 Baud 2 = 1200 Baud 3 = 2400 Baud 4 = 4800 Baud 5 = 9600 Baud 6 = 14400 Baud 7 = 19200 Baud 8 = 38400 Baud	num		1
277	**Pri** Parity RS485 gas detectors	MSByte LSByte	0 = none 1 = even 2 = odd	num		1
278	**DEF** Reset default parameters	MSByte LSByte	Send value “291” to reset default parameters	num		1

READ-ONLY						
Reg.	***Description***	***Bytes meaning and range***		***U.M.***	***Conv***	***Molt***
512	**Co1** Channel 1 Concentration read	MSByte LSByte	Range 0...0xFFFF Expressed in ppm or %LEL, depends on the sensor	num		1
513	**Co2** Channel 2 Concentration read	MSByte LSByte	Range 0...0xFFFF Expressed in ppm or %LEL, depends on the sensor	num		1
514	**Co3** Channel 3 Concentration read	MSByte LSByte	Range 0...0xFFFF Expressed in ppm or %LEL, depends on the sensor	num		1

READ-ONLY						
Reg.	***Description***	***Bytes meaning and range***		***U.M.***	***Conv***	***Molt***
515	**Co4** Channel 4 Concentration read	MSByte LSByte	Range 0...0xFFFF Expressed in ppm or %LEL, depends on the sensor	num		1
516	**Probe status** Status of connected probes	MSByte LSByte	bit 7 Probe Channel 4 Configured bit 6 Probe Channel 4 Connected bit 5 Probe Channel 3 Configured bit 4 Probe Channel 3 Connected bit 3 Probe Channel 2 Configured bit 2 Probe Channel 2 Connected bit 1 Probe Channel 1 Configured bit 0 Probe Channel 1 Connected	num		1
517	**Battery status** Status of internal battery	MSByte LSByte	0 = Battery broken 1 = Battery charging 2 = Battey charged In battery mode, it's the battery %.	num		1
518	**Alarm status 1**	MSByte LSByte	bit 15 Low battery alarm bit 14 Power supply alarm bit 13 Probe 4 connection alarm bit 12 Probe 3 connection alarm bit 11 Probe 2 connection alarm bit 10 Probe 1 connection alarm bit 9 Concentration 4 alarm bit 8 Concentration 3 alarm bit 7 Concentration 2 alarm bit 6 Concentration 1 alarm bit 5 General concentration alarm bit 4 Man in cold room alarm bit 3 Eeprom 3 alarm bit 2 Eeprom 2 alarm bit 1 Eeprom 1 alarm bit 0 Not used	num		1
519	**Alarm status 2**	MSByte LSByte	bit 4 Pre-alarm 4 concentration bit 3 Pre-alarm 3 concentration bit 2 Pre-alarm 2 concentration bit 1 Pre-alarm 1 concentration bit 0 Gen. concentration prealarm	num		1
520	**Release firmware**	MSByte LSByte	Range 0...255	num		1

LIST OF MODBUS REGISTERS of CONNECTED PROBES

It's possible to read/write the parameters of the probes connected via modbus directly through the APEGLD. For each channel a list of available addresses is reserved:

- 1000 to 1099: addresses reserved for probe 1
- 2000 to 2099: addresses reserved for probe 2
- 3000 to 3099: addresses reserved for probe 3
- 4000 to 4099: addresses reserved for probe 4

For example, for the SAMON GLACIÄR MIDI probe connected to channel 2 it's possible to read the concentration by reading register 2000 of APEGLD (base address 2000 + offset 0 for concentration register, see table below).

The correspondence between the probe address list and the address list in the APEGLD is indicated in the following tables, according to the probe type:

SAMON GLACIÄR MIDI probe

APEGLD address (base address + x)	SAMON GLACIÄR MIDI address	Meaning
0	101	Concentration
1	102	Status
2	103	Range
3	105	Days Online
4	106	Modbus Address
5	107	SWVer
6	108	Machine Code
7	113	HWVer
8	114	Sensor Type
9	115	Units
10	116	Analog Output Value
11	117	GasGroup
12	118	Days Since Service
13	119	Max Days Online
14	120	Max Days ToService
15	200	Limit Alarm
16	201	Delay
17	203	Limit Warning
18	204	Analog Output Type
19	205	PassCode
20	206	GasType
21	655	Span Concentration
22	300	PreAlarmFlag
23	302	Fault
24	303	W1LED
25	304	W2LED
26	305	W3LED
27	307	Pre Warning Flag
28	308	Warning Flag
29	309	Alarm Flag
30	310	BTStatus
31	311	Sensor Expired
32	312	Device Unlocked
33	401	ServiceDue
34	402	Acknowledge
35	403	Relay Fail Safe
36	404	RelayWF
37	405	Acknowledge Warning
38	406	Acknowledge Alarm
39	407	Zero Calibration
40	408	Span Calibration
41	409	Factory Reset

PEGO MLD probe

APEGLD address (base address + x)	PEGO MLD address	Meaning
0	1	Status register
1	2	Concentration LEL%: LELx100
2	3	Gas ID
3	4	Temperature °C: Temperature X 100
4	5	Pressure kPa: pressure X 100
5	6	Relative humidity % RH
6	7	Absolute humidity g/m3
7	100	Gas concentration 1st alarm LEL%
8	200	Gas concentration 2nd alarm LEL%
9	210	% LEL Value Latest alarm
10	214	Latest malfunction code
11	300	2nd alarm & alarms memory reset via Modbus (Reset Value 1)
12	1000	MLD Modbus ID address
13	1001	Baudrate value (0=9600 bit/s; 1=19200 bit/s)
14	1002	Parity (0= NO PARITY; 2 = 1 bit ODD; 3= 2 bit EVEN)
15	1003	Stop bits (0=1 bit; 1=2 bits)

For more details regarding the probe parameters (and their modification), refer to the corresponding manuals.

APPENDICES

A.1 EU DECLARATION OF CONFORMITY

LA PRESENTE DICHIARAZIONE DI CONFORMITA' È RILASCIATA SOTTO LA RESPONSABILITA' ESCLUSIVA DEL FABBRICANTE:
THIS DECLARATION OF CONFORMITY IS ISSUED UNDER THE EXCLUSIVE RESPONSIBILITY OF THE MANUFACTURER:

PEGO S.r.l. Via Piacentina 6/b, 45030 Occhiobello (RO) – Italy –
Società soggetta all'attività di direzione e coordinamento di Castel S.r.l.

DENOMINAZIONE DEL PRODOTTO IN OGGETTO / *DENOMINATION OF THE PRODUCT IN OBJECT*

CODICE / *CODE* **200APEGLD**

IL PRODOTTO DI CUI SOPRA È CONFORME ALLA PERTINENTE NORMATIVA DI ARMONIZZAZIONE DELL'UNIONE EUROPEA:
THE PRODUCT IS IN CONFORMITY WITH THE RELEVANT EUROPEAN HARMONIZATION LEGISLATION:

Direttiva Bassa Tensione (LVD):	**2014/35/UE**
Low voltage directive (LVD):	***2014/35/EU***
Direttiva EMC:	**2014/30/UE**
Electromagnetic compatibility (EMC):	***2014/30/EU***
Direttiva RED:	**2014/53/UE**
RED directive:	***2014/53/EU***

LA CONFORMITA' PRESCRITTA DALLA DIRETTIVA È GARANTITA DALL'ADEMPIMENTO A TUTTI GLI EFFETTI DELLE SEGUENTI NORME:
THE CONFORMITY REQUIRED BY THE DIRECTIVE IS GUARANTEED BY THE FULFILLMENT TO THE FOLLOWING STANDARDS:

Norme armonizzate: **EN 60335-1:2012, EN 378-1:2016, EN 61000-6–1:2007, EN 61000-6–3:2007**
European standards: ***EN 60335-1:2012, EN 378-1:2016, EN 61000-6–1:2007, EN 61000-6–3:2007***

Firmato per nome e per conto di:
Signed for and on behalf of:

Pego S.r.l.
Martino Villa
Presidente

Luogo e Data del rilascio:
Place and Date of Release:

Occhiobello (RO), 01/07/2025

INSTRUCTIONS FOR CORRECT DISPOSAL

Introduction:

This product is an Electrical and Electronic Equipment. When its disposal becomes necessary, it's classified as **Waste Electrical** and **Electronic Equipment** (**WEEE**).
This waste contains components that can be harmful to the environment and human health if not disposed of correctly. It's therefore essential to follow local and international regulations to ensure that its disposal occurs in a safe and responsible manner.

Responsible Disposal:

1. **Do not dispose of the product in municipal waste.**
   These devices may contain hazardous materials, such as heavy metals and chemicals, which could contaminate soil and water resources if not treated properly. Their disposal must occur through specific channels.

2. **Locate a WEEE collection center.**
   In many countries there are collection points dedicated to WEEE, such as recycling centers and ecological islands. These centers are equipped to safely treat and recycle electronic components. It's important to rely on these centers to ensure that the product is treated correctly.

3. **Check local disposal regulations.**
   Regulations for the treatment of WEEE may vary from country to country. It's essential to find out about local provisions regarding the recovery and recycling of Waste Electrical and Electronic Equipment. In many countries, there are specific regulations that require mandatory recycling or treatment of such waste in authorized facilities.

4. **Do not attempt to dismantle the electrical panel without proper preparation.**
   Although it may seem convenient to remove components for recovery, unauthorized dismantling operations may expose you to the risk of injury or improper handling of hazardous materials. Always rely on certified professionals to handle these operations.

5. **Electronic component and battery.**
   Some electrical panels with electronics may contain batteries or other components that require separate treatment. Batteries must be disposed of in accordance with specific directives for waste containing heavy metals and hazardous chemicals.

6. **Recycling and reuse.**
   The materials contained in electrical panels, such as metals, plastics and circuits, can be recycled and reused in new products. Correct disposal ensures that these resources are recovered, reducing their environmental impact and promoting the circular economy.

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PEGO s.r.l. reserves the right to make changes to this user manual at any time.