INSTALLATION, OPERATING AND MAINTENANCE

LennoxCloud

MULTI SITES & MULTI UNITS SUPERVISION

LennoxCloud-IOM-1810-E

www.lennoxemea.com

LENNOXCLOUD

Installation, operating and maintenance

Ref : LENNOXCLOUD-IOM-1810-E

Safety codes & regulations

THE LENNOXCLOUD SYSTEM MUST BE INSTALLED IN ACCORDANCE WITH LOCAL SAFETY CODES AND REGULATIONS. PLEASE READ CAREFULLY THE MANUFACTURER'S INSTRUCTIONS BEFORE STARTING THE LENNOXCLOUD SYSTEM.

Version concerned

The following manual is only valid for LENNOXCLOUD system using the prepaid mode starting from March 1st 2018.

The LENNOXCLOUD system is compatible with any HVAC LENNOX unit, equipped with CLIMATIC 50, CLIMATIC 60 and eCLIMATIC controller.

WARRANTY

The warranty of the LENNOXCLOUD system is subject to the warranty definitions as agreed upon in the order. It is expected that the design and installation of the LENNOXCLOUD utilises good working practices. The warranty will be legally null and void if:

- ***Modifications have been made to the equipment without prior written permission by LENNOX.***
- ***Settings and protections have been modified without prior written permission by LENNOX.***
- ***The equipment has not been installed and/or connected in accordance with the installation instructions.***
- ***The equipment is being used improperly, incorrectly, negligently or not in accordance with its nature and/or purpose.***

In these circumstances LENNOX is indemnified from any product liability claims from third parties.

Technical features

The LENNOXCLOUD system is a multi-sites & multi-units supervision system. It is managing up to 7 different units. The system is able to record up to 40 variables per units included in more than 500 variables/units readable in live.

Six languages are supported by the LENNOXCLOUD portal

- English
- French
- Italian
- Spanish
- German

Serial port	RS485 max 115 Kbs Screw connector, pitch 5.08
GSM Network	Quad band 850/900/1800/1900 MHz, GPRS class 10
Protocols	Modbus
Number of max units	7
Buzzer	Signals GSM network status
Power supply	24 Vrms -15-10% 50 Hz Max 0.5 Amp. rms (14VA) 12 to 30 Vdc ±5% Max 0.4 Adc at 12 Vdc
Max power consumption	6 W
Fuse	Automatic
Battery	Non-rechargeable lithium, mod.BR2330
Software class and structure	A
Resistance to heat and fire	Cat. D
Immunity against voltage surges	Cat. II
Insulation class	Class III
Operating temperature	-20 to +60°C
Storage temperature	-20 to +70°C
Operating and storage humidity	5 to 85% relative humidity, non-condensing
Environmental pollution	Type II

Dimensions & weight

The following table indicates the dimensions and the weight of the LENNOXCLOUD system:

Device	Height (mm)	Width (mm)	Thickness (mm)	Weight (g)
LENNOXCLOUD SYSTEM	215	182	48	≈1000

Before installing the LENNOXCLOUD

Before installing the LENNOXCLOUD system, make sure the following points are respected:

- The area is covered by a GSM signal
- Relative humidity is lower than the technical specification
- The LENNOXCLOUD system is not fasten on strong vibrating or knocking area
- There is no exposure to aggressive polluting atmospheres (e.g.: Saline mist, smoke…)
- There is no strong magnetic and/or radio frequency interference. (avoid installing the antenna near the unit)
- There is no direct sunlight or elements exposures
- The installation room hasn't rapid temperature fluctuations
- The environment has not explosives or mixes of flammable gases

Fastening

If the LENNOXCLOUD system is fastened on a wall, screw each fixing screw until the bezel corner gets in contact with the panel

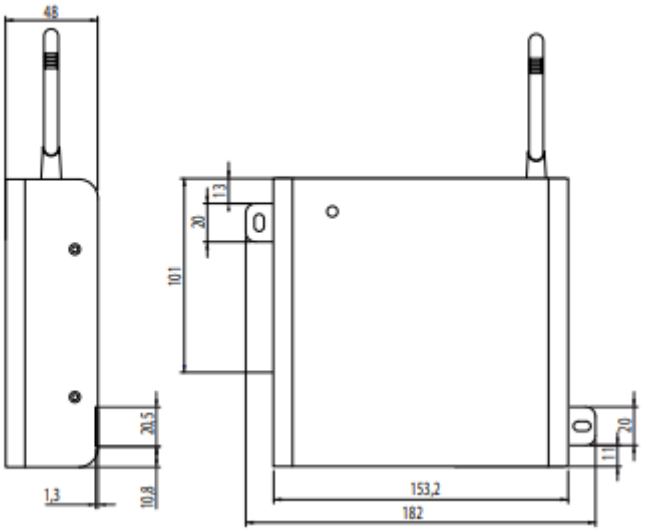

Fig. 1

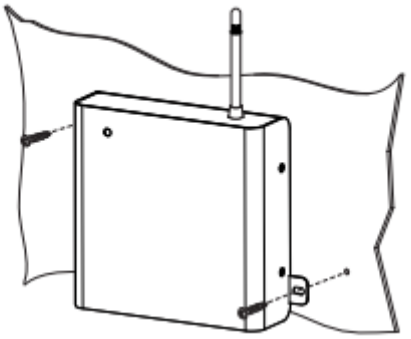

Fig.2

Wirings

For the electrical connection, maintain the polarity shown in the figure 3 and on the connector included in the box. Locate the antenna outside of metal devices. Do not open the product when powered .If the same transformer is used for the LENNOXCLOUD system and the CLIMATIC controller, do not reverse the G and G0 connections on the power terminals to avoid damaging both devices

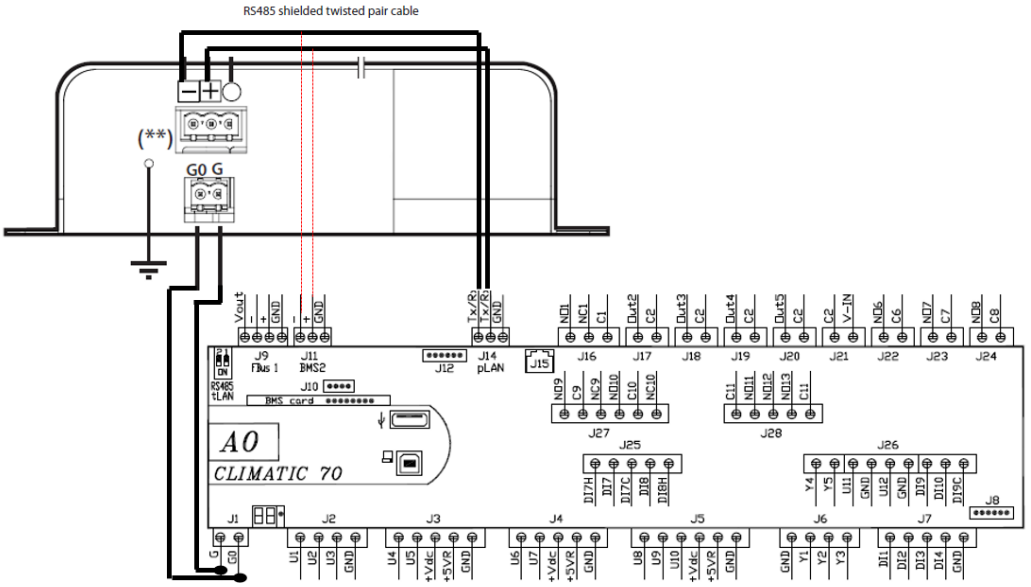

Fig. 3

Do not connect the 120Ω terminal resistors into the fisrt and the last devices of the RS485 network. The maximum number of device which can be connected to the LENNOXCLOUD system is 1à and the maximum cable lenght of it is 500 meters

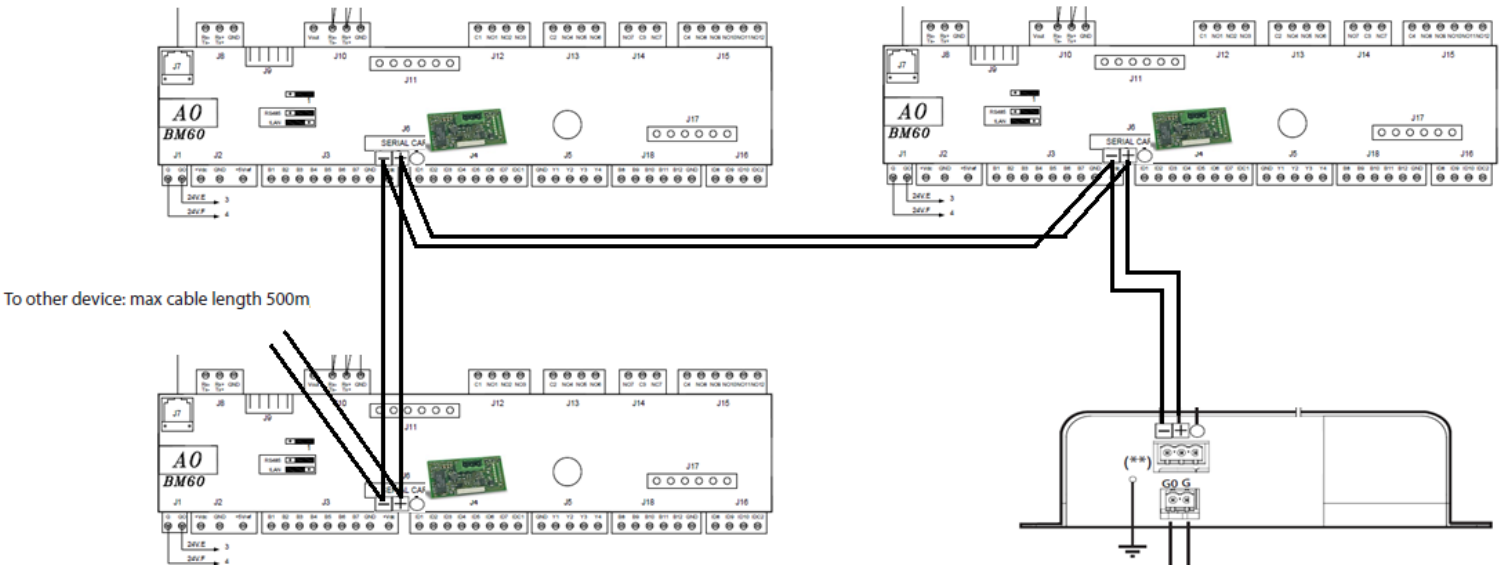

Fig. 4

Warnings:

Use cable suitable for the corresponding terminal. When wiring is finished, slightly tug the cables to check they are sufficiently tight.

In case the 24V supply is comming from externally source:

Power supply voltage other than those specified may seriously damage the system.

Use safety transformer or power supply with separate windings that ensures equivalent insulation as established by IEC 6155862-6 and IEC 61558-2-7.

Use a power disconnect device as fault protection.

Configuration of the LENNOXCLOUD system

The configuration has to be done by a LENNOX technician. The configuration procedure can be found in the LENNOXCLOUD service manual

Using of the LENNOXCLOUD system

All the LENNOXCLOUD web portal descriptions are accessible in the LENNOXCLOUD user manual

Recordable variables

The following table shows the variables recorded by the LENNOXCLOUD system (if the dedicated option is present in the unit. E.g.: CO2 value, Sub cooling …).

LENNOX VARIABLES	
Roomtop and Rooftop applications	Chiller and heat pump applications
Outdoor temperature	Outdoor temperature
Ambient temperature	Water temperature set point - Heating mode
Supply temperature	Water temperature set point - Cooling mode
Room temperature setpoint- Heating mode	Condenser: Inlet water temperature
Room temperature setpoint- Cooling mode	Condenser: Outlet water temperature
Outdoor humidity	Evaporator Inlet water temperature
Room humidity	Evaporator Inlet water tempearture
Dehumidification set point	Condensing temperature - Circuit 1
Air flow rate	Condensing temperature - Circuit 2
Air pressure transducer value	Evaporating temperature - Circuit 1
Fresh air damper opening percentage	Evaporating temperature - Circuit 2
CO2 value	Sub cooling - Circuit 1
Evaporating temperature - Circuit 1	Sub cooling - Circuit 2
Condensing temperature - Circuit 1	Superheat - Circuit 1
Output: Compressor 1 - Circuit 1	Superheat - Circuit 2
Output: Compressor 2 - Circuit 1	Electronic expansion valve (EEV) opening percentage - Circuit 1
Suction temperature - Circuit 1	Electronic expansion valve (EEV) opening percentage - Circuit 2
Superheat - Circuit 1	Suction temperature - Circuit 1
Electronic expansion valve (EEV) opening percentage - Circuit 1	Suction temperature - Circuit 2
Evaporating temperature - Circuit 2	Output: Compressor 1 - Circuit 1
Condensing temperature - Circuit 2	Output: Compressor 2 - Circuit 1
Output: Compressor 1 - Circuit 2	Output: Compressor 1 - Circuit 2
Output: Compressor 2 - Circuit 2	Output: Compressor 2 - Circuit 2
Suction temperature - Circuit 2	Water inlet temperature
Superheat - Circuit 2	Water Outlet temperature
Electronic expansion valve (EEV) opening percentage - Circuit 2	Meter: Real energy (Kwh)
Meter: Real energy (Kwh)	

LENNOX reserves the right to modify this variable list without warning and without obligation to modify equipment already sold.

Change the LENNOXCLOUD battery

To change the LENNOXCLOUD battery, please follow the procedure.
Note that using a wrong battery may be the cause of explosion.

To access the battery for replacement or disposal, power down the LENNOXCLOUD system and remove the front cover (remove the 4 screws on right and left sides).
Use model BR2330 lithium batteries (non-rechargeable).

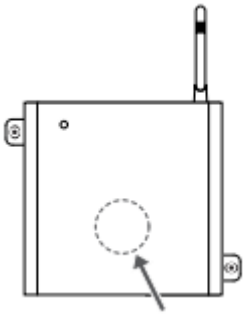

Fig. 5

Troubleshooting

In case the LENNOXCLOUD system is triggered in Lifetest alarm, follow the troubleshooting procedure.

1) Check power on: the green LED must light if the powered has been done correctly. If the LED is off with the system powered, please contact a LENNOX technician

2) Check the portal connection – Perform a power reboot of the LENNOXCLOUD system before checking the LED and BIP status:
    1) LED On and no BIP ➔ System error, please contact a LENNOX technician
    2) LED On and continue BIP ➔ System error, please contact a LENNOX technician
    3) LED On and quick buzzer (5 bips/sec) ➔ GSM signal is not good enough. Disconnect the LENNOXCLOUD system and change its position to get a better coverage. The signal can be tested with a mobile phone (check the 2G / 3G network). The remote antenna can increase the GSM signal. In all case the antenna should not be installed inside metal device
    4) LED On and slow buzzer (1 bip/sec) ➔ Leave the LENNOXCLOUD system connected to at least 30 minutes. If the communication is not back contact a LENNOX technician
    5) LED On and single bip ➔ The LENNOXCLOUD system is working well.

Alarms

The following table shows the default alarms recorded by the LENNOXCLOUD system. For all alarm description, use the dedicated controller manual (CLIMATIC manual)

LENNOX ALARMS	
Gamme Roof Top	Gamme refroidisseur d'eau glacée ou pompe à chaleur
Unit defaults	Unit defaults
Filter alarm	-

LENNOX reserves the right to modify this alarm list without warning and without obligation to modify equipment already sold.

Two more alarms can be displayed on the LENNOXCLOUD web portal:

- Lifetest: This alarms indicates that the LENNOXCLOUD system is not communicating anymore through the GSM connection. This can be due to a bad GSM coverage or a box disconnected or a broken system. In case this alarm appears, follow the troubleshooting procedure (§ 2).

- OFFLINE: This alarms means that the LENNOXCLOUD system is not communicating with the unit controller. This can be due to a bad wirings or a wrong unit parameters or a wrong LENNOXCLOUD system configuration or a broken system. Before contact a LENNOX technician, check if the unit is well configured and the wirings are correct.

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Due to LENNOX EMEA ongoing commitment to quality, the specifications, ratings and dimensions are subject to change without notice and without incurring liability.
Improper installation, adjustment, alteration, service or maintenance can cause property damage or personal injury.
Installation and service must be performed by a qualified installer and servicing agency.

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