



INSTALLATION MANUAL

Gateway option box

EKLONPG
EKBNPG

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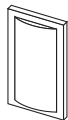






READ THESE INSTRUCTIONS CAREFULLY BEFORE INSTALLATION AND OPERATION.

IMPROPER INSTALLATION OR ATTACHMENT OF EQUIPMENT OR ACCESSORIES COULD RESULT IN ELECTRIC SHOCK, SHORT-CIRCUIT, LEAKS, FIRE OR OTHER DAMAGE TO THE EQUIPMENT. BE SURE ONLY TO USE ACCESSORIES MADE BY DAIKIN WHICH ARE SPECIFICALLY DESIGNED FOR USE WITH THE EQUIPMENT AND HAVE THEM INSTALLED BY A PROFESSIONAL.

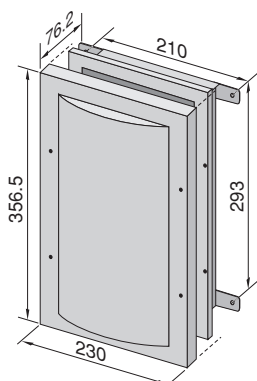
IF UNSURE OF INSTALLATION PROCEDURES OR USE, ALWAYS CONTACT YOUR DAIKIN DEALER FOR ADVICE AND INFORMATION.

ACCESSORIES

For EKLNPG: Lon Gateway option box For EKBNPG: BACnet/IP Gateway option box		1x	Screw nut		3x
			Manual		1x
Ferrite core V1C (only for EKBNPG)		1x	Ferrite core V2C		1x

DIMENSIONS

Unit of measurement: mm



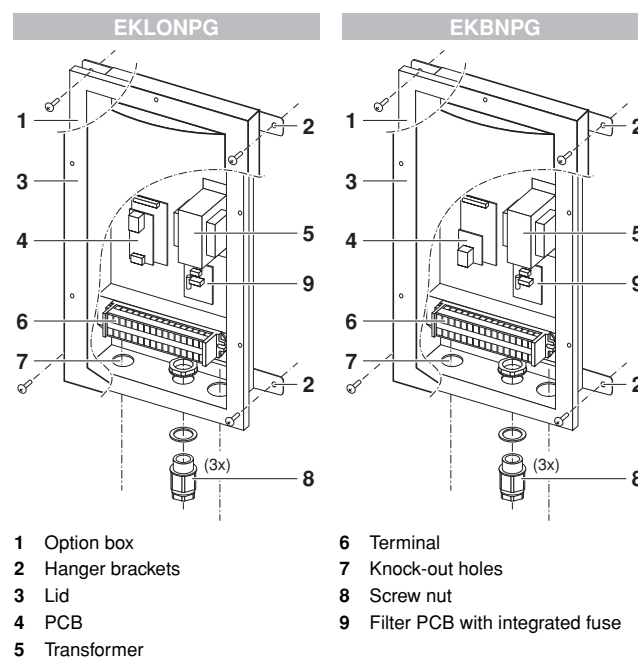
FUNCTION

Up to 8 chiller units equipped with the EKACPG address card can be controlled by the Lon Gateway or BACnet/IP Gateway.

The Lon Gateway and BACnet/IP Gateway enable interfacing between the chiller unit and the Building Management System (BMS).

Units installed in such configuration can be monitored and operated on the BMS through LonWorks® or BACnet/IP communication.

NAME AND FUNCTION OF PARTS



SELECTING THE INSTALLATION SITE

Select an installation site where the following conditions are fulfilled and that meets your customers approval.

- The option box must be installed indoors.
Do not install the option box in rooms:
 - where mineral oil, like cutting oil is present;
 - where the air contains high levels of salt such as air near the ocean;
 - where sulphurous gas is present such as that in areas of hot spring;
 - in vehicles or vessels;
 - where voltage fluctuates a lot such as that in factories;
 - where high concentrations of vapour or spray are present;
 - where machines generating electromagnetic waves are present;
 - where acidic or alkaline vapour is present.
- Do not install the option box in or on the chiller unit.
- Do not install the option box in direct sunlight. Direct sunlight will increase the temperature inside the option box and may reduce its lifetime and influence its operation.
- Choose a flat and strong mounting surface.
- Keep the space in front of the option box free for future maintenance.

MECHANICAL INSTALLATION



The option box must always be installed with electrical connections downward.

- 1 Open the lid of the option box.
- 2 Open the necessary knock-out holes.
- 3 Fix the option box with its hanger brackets to the mounting surface.
Use 4 screws (for holes of Ø5 mm).
- 4 For electrical wiring: refer to paragraph "Electric wiring work" on page 2.
- 5 Install the screw nuts with the ring outside the option box (see drawing in chapter "Name and function of parts" on page 1).
- 6 Close the lid securely with all 5 screws after installation to ensure that the option box is watertight.

ELECTRIC WIRING WORK



A main switch or other means for disconnection, having a contact separation in all poles, must be incorporated in the fixed wiring in accordance with relevant local and national legislation.

All field wiring and components must be installed by a licensed electrician and must comply with relevant European and national regulations.

The field wiring must be carried out in accordance with the wiring diagram supplied with the unit and the instructions given below.

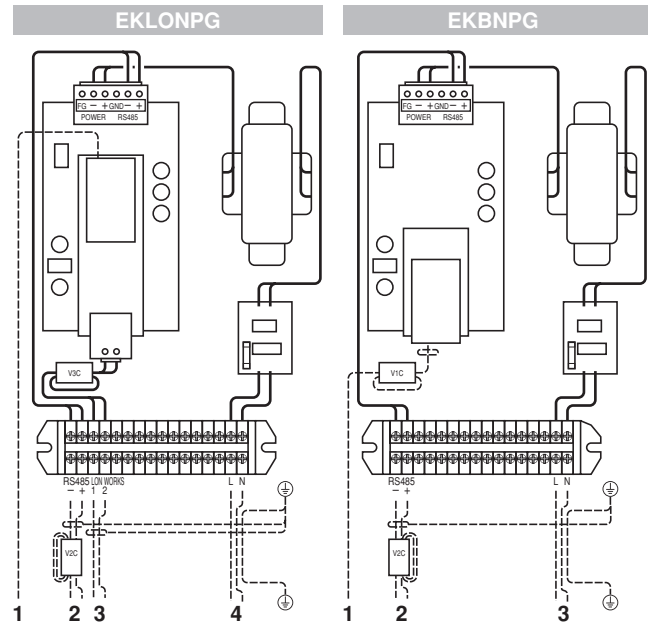
- Use copper wire only.
- A circuit breaker capable of shutting down power supply to the entire system must be installed.

Precautions

Use only specified wires, and tightly connect wires to the terminals. Keep wiring in neat order so that it does not obstruct other equipment. Incomplete connections could result in overheating, and in worse case electric shock or fire.

Connecting the wiring

- Connect the wires to the terminal board according to the wiring diagram and the figure below.



---- Field wiring

--- Shielded field wiring

- | | |
|---|---|
| <ol style="list-style-type: none"> 1 Ethernet 10/100Base-T connection for PC configuration 2 RS485 Modbus connection 3 LonWorks® connection 4 Power supply (Ferrite core V2C: wind cables 1 time) | <ol style="list-style-type: none"> 1 Ethernet 10/100Base-T connection for BACnet/IP communication and for PC configuration (Ferrite core V1C: wind cable 1 time) 2 RS485 Modbus connection 3 Power supply (Ferrite core V2C: wind cables 1 time) |
|---|---|

- Connect cables according to specifications in the table below.

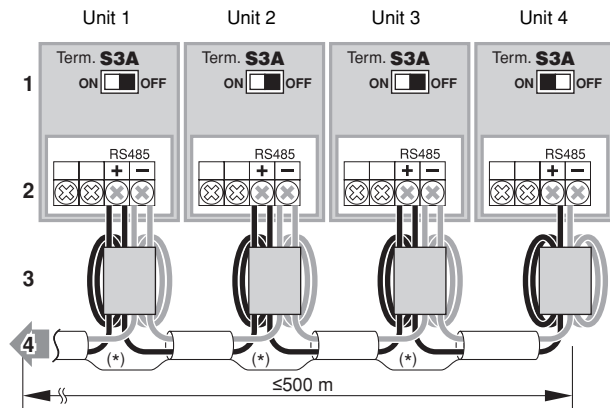
Connection to	
LonWorks® network	LonWorks® network communication wiring, no polarity (shielded, connect shield to earth)
Configuration PC	In case of communication via hub, use an Ethernet 10/100Base-T straight cable (field supply). (only for EKBNPG: shielded)
BACnet/IP communication	In case of direct communication use an Ethernet 10/100Base-T cross cable (field supply). (only for EKBNPG: shielded)
RS485 Modbus connection	Use a 0.75~1.25 mm ² 2-wire cable of maximum 500 m measured from gateway to last unit in line (+/- polarity) (shielded, connect shield to earth).
Power supply	Use a 2-wire + earth cable and perform grounding.

NOTE



Use shielded cables in case of a combination of EKACPG with EKBNPG or EKLONGPG.

- The wiring between the units must be performed as shown on the wiring diagram and as shown in the example below.



- Setting of the S3A DIP switch on the PCB
- Terminal on the address card (connect to + and – of RS485)
- Ferrite core (wind the cables 2 times)
- Up to EKBNPG or EKLONGPG +/- terminals of the RS485 Modbus communication

■ = DIP switch setting

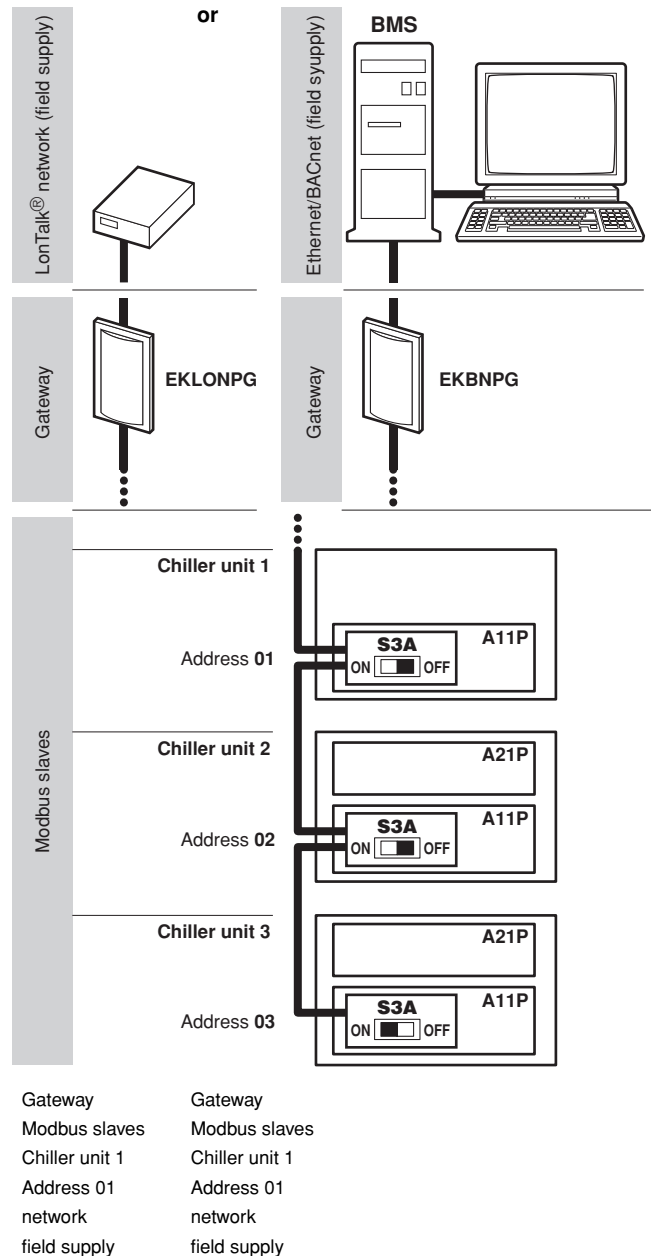
(*) Connect the shielding of the wires to each other

- Make the RS485 +/- connection for Modbus communication using a shielded 0.75~1.25 mm² 2-wire cable (maximum of 500 m from EKLONGPG or EKBNPG to connection on last unit in line).

Main specifications

Power supply	1N~ 230 V AC (50 Hz)
Relative humidity	5~90%, non-condensing
Operating temperature range	-10~43°C
Storage temperature	-20~70°C
Power consumption	10 W maximum
Weight	2.1 kg
Maximum fuse amps	6 A

Examples of communication connections



In these examples, the S3A DIP switch on the address card of chiller units 1 and 2 must be set to OFF. Because chiller unit 3 is the last unit in line, the S3A DIP switch on the address card must be set to ON.


Connecting the field supplied wiring

Pull the wires inside the option box through the screw nuts and close the nuts firmly in order to ensure a good pull relieve and water protection.

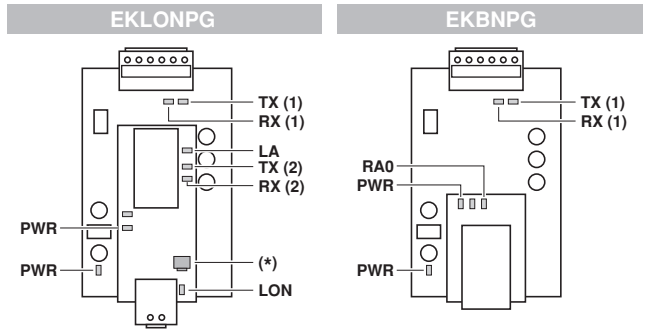
An additional pull-relief is required, strap the cables with a tie wrap (field supply).



What to do before operation

- 
- Before initiating operation, contact your Daikin dealer to get the service manual that corresponds to your system.
 - For the chiller unit and the EKACPG address card refer to the dedicated manual.

Operation and display signals




LED	Colour	
PWR (2x)	green	Lights up when power is connected
RX (1)	green	Flashes when receiving data via RS485 Modbus
TX (1)	green	Flashes when transmitting data via RS485 Modbus
only for Lon Gateway (EKLONPG)		
LA	green	Flashes when the PCB is in normal operation
LON	red	Lights up when the Lon service pin ^(*) is pushed
RX (2)	green	Flashes when receiving data via LonTalk [®] network
TX (2)	green	Flashes when transmitting data via LonTalk [®] network
only for BACnet/IP Gateway (EKBNPG)		
RA0	red	Flashes when the PCB is in normal operation


(*) Lon service pin: The network integrator will need to push the Lon service pin during commissioning the LonTalk[®] network.

TROUBLESHOOTING

Consult the design guide of your system and contact your Daikin dealer.

- 
- The system must be repaired by a qualified service person.

MAINTENANCE

- 
- Only a qualified service person is allowed to perform maintenance.
 - Before obtaining access to terminal devices, all power supply circuits must be interrupted.
 - Water or detergent may deteriorate the insulation of electronic components and result in burn-out of these components.



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