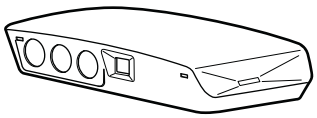
Installer reference guide

Daikin Altherma LAN adapter



BRP069A61
BRP069A62

Installer reference guide
Daikin Altherma LAN adapter

English

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1 About the documentation

1.1 About this document

Target audience

Authorised installers

Documentation set

This document is part of a documentation set. The complete set consists of:

- **General safety precautions**
  - Safety instructions that you must read before installing
  - Format: Paper (in the box of the indoor unit)
- **Installation manual:**
  - Installation instructions
  - Format: Paper (supplied in the kit)
- **Installer reference guide:**
  - Installation instructions, configuration, application guidelines,…
  - Format: Digital files on http://www.daikineurope.com/support-and-manuals/product-information/

Latest revisions of the supplied documentation may be available on the regional Daikin website or via your dealer.

The original documentation is written in English. All other languages are translations.

Technical engineering data

- A **subset** of the latest technical data is available on the regional Daikin website (publicly accessible).
- The **full set** of latest technical data is available on the Daikin extranet (authentication required).

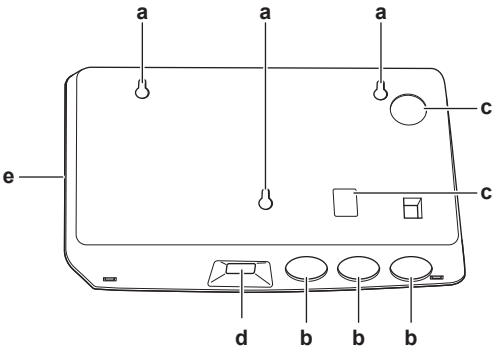
2 About the product

The Daikin Altherma LAN adapter allows for smartphone control of Daikin Altherma systems and, depending on the model, can be used in various Smart Grid applications, such as the storage of self-generated electrical energy as thermal energy (e.g. as domestic hot water).

The LAN adapter is available in 2 versions:

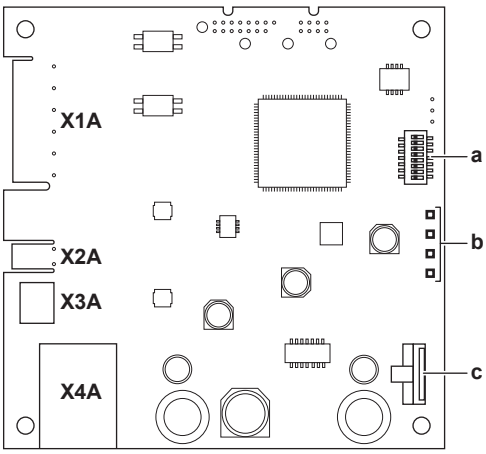
Model	Functionality
BRP069A61	Smartphone control + Smart Grid applications
BRP069A62	Smartphone control only

Components: casing



a Wall mounting holes
b Knockout holes (wiring from the bottom)
c Knockout holes (wiring from the rear)
d Ethernet connection
e Status LEDs

Components: PCB



a DIP switch
b Status LEDs
c microSD card slot

Status LEDs

LED	Description	Behaviour
♡	Indication of power to the adapter, and of normal operation.	▪ LED flashing: normal operation. ▪ LED NOT flashing: no operation.
品	Indication of TCP/IP communication with the router.	▪ LED ON: normal communication. ▪ LED flashing: communication problem.
P1P2	Indication of communication with the indoor unit.	▪ LED ON: normal communication. ▪ LED flashing: communication problem.
(a)	Indication of Smart Grid activity.	▪ LED ON: system running in the "Recommended ON", "Forced ON", or "Forced OFF" Smart Grid operation mode. ▪ LED OFF: system running in the "Normal operation" Smart Grid operation mode. ▪ LED flashing: LAN adapter performing a Smart Grid compatibility check.

(a) This LED is ONLY active for BRP069A61 (present for BRP069A62, but ALWAYS inactive).

INFORMATION

When the LAN adapter performs a Smart Grid compatibility check, the Smart Grid LED flashes. This is NOT erroneous behaviour. After a successful check, the LED will either stay ON or go OFF. When the LED keeps flashing for more than 30 minutes, the compatibility check failed, and NO Smart Grid operation is possible.

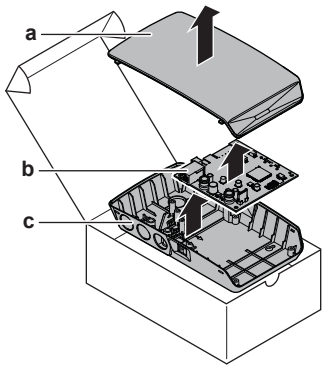
2.1 System requirements

Make sure your Daikin Altherma system is compatible for use with the LAN adapter (smartphone control and/or Smart Grid applications), and that all system components meet software requirements. For more information, see http://www.daikineurope.com/support-and-manuals/product-information/

3 About the box

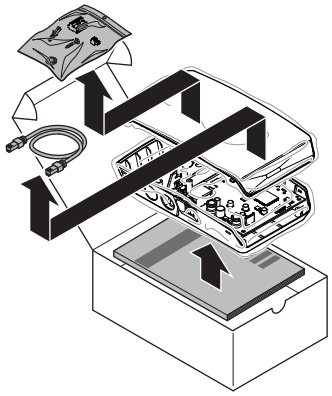
3.1 To unpack the LAN adapter

1 Unpack the LAN adapter.

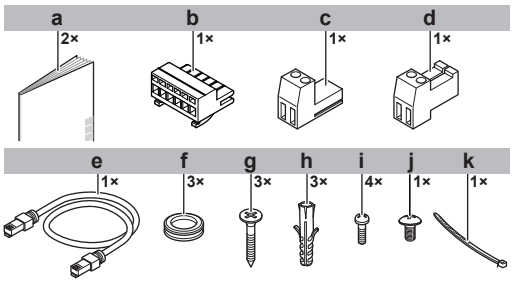


a Front casing
b PCB
c Rear casing

2 Separate the accessories.

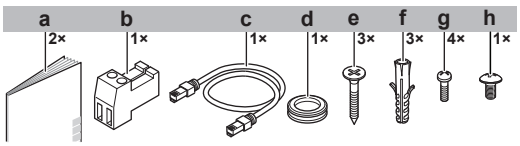


Accessories: BRP069A61



a Installation manual
b 6-pole slide connector for X1A
c 2-pole slide connector for X2A
d 2-pole plug connector for X3A
e Ethernet cable
f Grommets
g Screws to mount rear casing
h Plugs to mount rear casing
i Screws to mount PCB
j Screw to close front casing
k Cable tie

Accessories: BRP069A62



a Installation manual
b 2-pole plug connector for X3A
c Ethernet cable
d Grommet
e Screws to mount rear casing
f Plugs to mount rear casing
g Screws to mount PCB
h Screw to close front casing

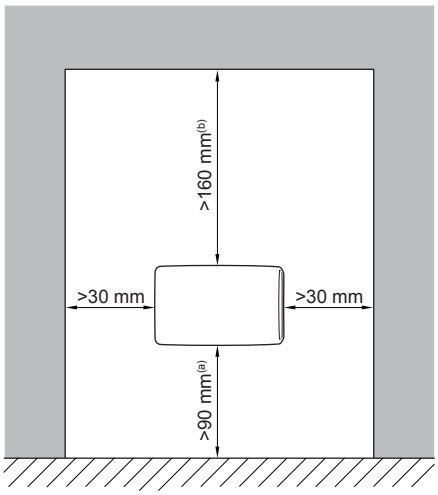
4 Preparation

4.1 Installation site requirements

INFORMATION

Also read the maximum cable length requirements set out in "4.2 Overview of electrical connections" on page 4.

- Mind the following spacing installation guidelines:



(a) Provide enough space to connect the Ethernet cable without exceeding its minimum bend radius (typically 90 mm)
(b) Provide enough space to open the casing with a flat-blade screwdriver (typically 160 mm)

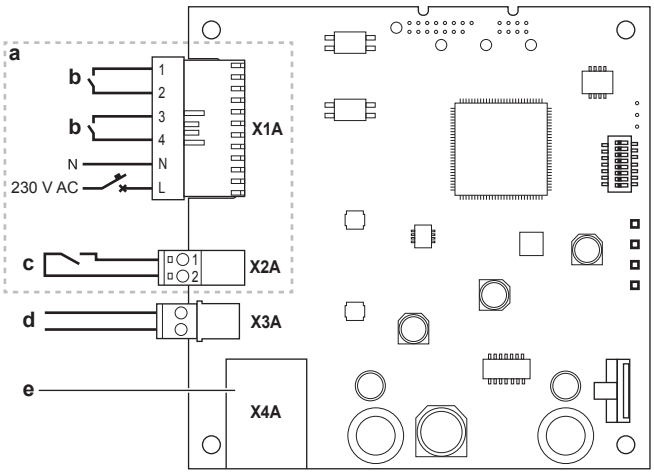
- The LAN adapter is designed to be wall-mounted in dry, indoor locations only. Make sure the installation surface is a flat and vertical non-combustible wall.
- The LAN adapter is designed to be mounted in the following orientation only: with the PCB on the right-hand side in the casing, and the Ethernet connector facing the floor.
- The LAN adapter is designed to operate in ambient temperature ranging from 5~35°C.

Do NOT install the LAN adapter in the following places:

- In places with high humidity (max. RH=95%), such as bathrooms.
- In places where frost is possible.

4.2 Overview of electrical connections

Connectors



a BRP069A61 only
b To digital inputs of solar inverter / energy management system
c To electrical pulse meter
d To indoor unit
e To router

Connections

Connection	Cable section	Wires	Maximum cable length
Accessory cables			
Router (X4A)	—	—	50/100 m(a)
Field-supplied cables			

Connection	Cable section	Wires	Maximum cable length
Indoor unit (X3A)	0.75~1.25 mm^2	2[(b)]	200 m
Electrical meter (X2A)	0.75~1.25 mm^2	2[(c)]	100 m
Digital inputs (X1A)	0.75~1.5 mm^2	Depends on application[(d)]	100 m

(a) The Ethernet cable delivered as an accessory is 1 m long. It is, however, possible to use a field-supplied Ethernet cable. In this case, respect the maximum allowed distance between LAN adapter and router, which is 50 m in case of Cat5e cables, and 100 m in case of Cat6 cables.
(b) These wires MUST be sheathed. Recommended strip length: 6 mm.
(c) These wires MUST be sheathed. Recommended strip length: 6 mm.
(d) All wiring to X1A MUST be H05VV. Required strip length: 7 mm. For more information, see "4.2.4 Digital inputs" on page 5.

4.2.1 Router

For the connection of the LAN adapter, the router requires a free LAN port.

The minimum category for the Ethernet cable is Cat5e.

4.2.2 Indoor unit

For power and communication with the indoor unit, the LAN adapter is to be connected to the indoor unit via a 2-wire cable. There is NO separate power supply: the adapter gets its power from the indoor unit.

4.2.3 Electrical meter

If the LAN adapter is connected to an electrical pulse meter (field supply), make sure the meter meets the following requirements:

Item		Specification
Type		Pulse meter (5 V DC pulse detection)
Possible number of pulses		▪ 0.1 pulse/kWh ▪ 1 pulse/kWh ▪ 10 pulse/kWh ▪ 100 pulse/kWh ▪ 1000 pulse/kWh
Pulse duration	Minimum On time	10 ms
	Minimum OFF time	100 ms
Measurement type		Depends on the installation: ▪ Single-phase AC meter ▪ Three-phase AC meter (balanced loads) ▪ Three-phase AC meter (unbalanced loads)

4.2.4 Digital inputs

Connector X1A is for the connection of the LAN adapter to the digital inputs of a solar inverter / energy management system, and allows for use of the Daikin Altherma system in various Smart Grid applications.

X1A/N+L supply a detection voltage to the input contact of X1A. The detection voltage enables the detection of the state (open or close) of the digital inputs, and does NOT supply power to the rest of the LAN adapter PCB.

Make sure X1A/N+L are protected by a fast acting circuit breaker (rated current 100 mA~6 A).

The rest of the wiring to X1A differs depending on the Smart Grid application. For more information, see "7 Smart Grid application" on page 11.

5 Installation

5.1 Overview: Installation

The installation of the LAN adapter consists of the following stages:

1 Mounting the rear casing to the wall
2 Mounting the PCB to the back casing
3 Connecting electrical wiring
4 Mounting the front casing to the back casing

5.2 Mounting the LAN adapter

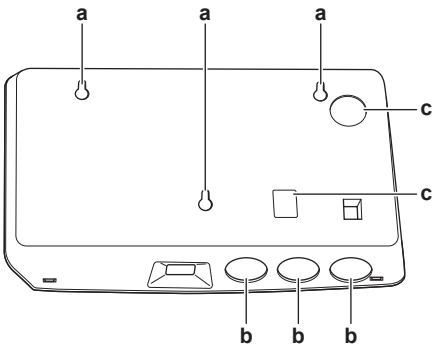
5.2.1 About mounting the LAN adapter

The LAN adapter is mounted to the wall by way of the mounting holes **(a)** in the rear casing. Before mounting the rear casing to the wall, you have to remove some knockout holes**(b)(c)**, depending on how you want to route the wiring and insert it into the adapter.

You can route and insert the wiring from the bottom or from the rear. Respect the following rules and restrictions:

Wiring	Possibilities and restrictions
Wiring routed and inserted from the bottom	▪ ONLY for surface wiring routed from the bottom. ▪ When routing wiring from the bottom, ALWAYS let it enter the adapter via the holes in the bottom of the casing **(b)**. It is NOT allowed to clamp this wiring between the casing and the wall and let it enter via the holes in the rear **(c)**. ▪ The wiring for X1A and X4A MUST be routed and inserted from the bottom. The wiring for X2A and X3A CAN be routed and inserted from the bottom (or from the rear). ▪ When routing and inserting wiring from the bottom, remove the required knockout holes in the bottom of the casing **(b)** and replace them with the grommets from the accessory bag.

Wiring	Possibilities and restrictions
Wiring routed and inserted from the rear	▪ ONLY for in-wall wiring entering the adapter from the rear. ▪ The wiring for X2A and X3A CAN be routed and inserted from the rear (or from the bottom). The wiring for X1A and X4A CANNOT be routed and inserted from the rear. ▪ It is NOT allowed to route wiring from the bottom, clamp it between the casing and the wall, and let it enter via the holes in the rear **(c)**.



a Mounting holes
b Bottom knockout holes
c Rear knockout holes

INFORMATION

Wiring from the bottom. ALWAYS replace any removed knockout holes with the grommets delivered in the accessory bag. Before inserting the grommets into the holes, cut them open with a utility knife, so that you can let the wiring enter the adapter through the grommets. The grommets MUST be inserted into the holes before you insert the wiring into the adapter.



NOTICE

Wiring from the rear. When removing knockout holes, make sure to remove any sharp edges that might arise around the holes, this to protect the wiring from damage.

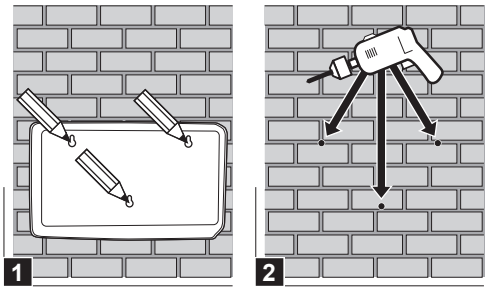
INFORMATION

- Letting the wiring enter the adapter from the rear allows you to hide the wiring in the wall.
- It is NOT possible to let the Ethernet cable enter from the rear. The Ethernet cable is ALWAYS connected from the bottom.

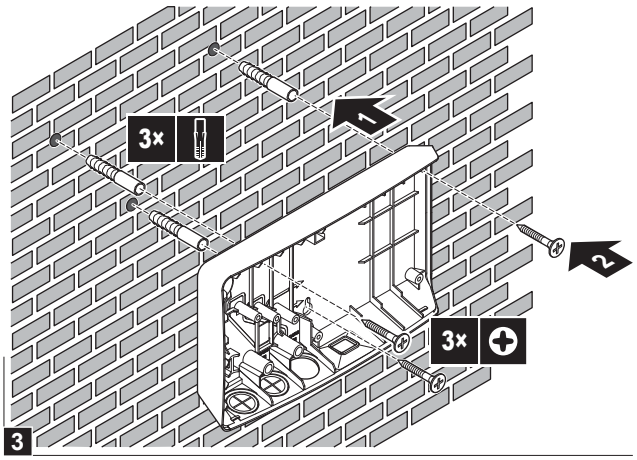
5.2.2 To mount the rear casing to the wall

1 Hold the rear casing against the wall and mark the position of the holes.

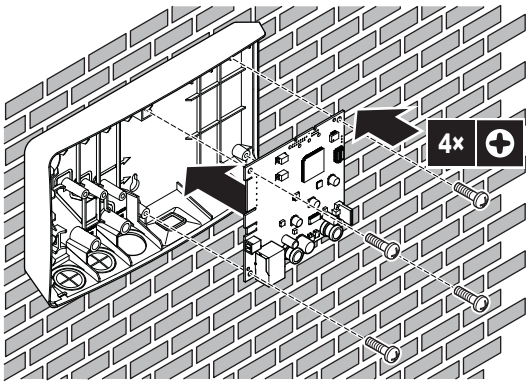
2 Drill the holes.



3 Mount the rear casing to the wall with the screws and plugs from the accessory bag.



5.2.3 To mount the PCB to the rear casing



NOTICE: Risk of electrostatic discharge

Before mounting the PCB, touch an earthed part (a radiator, the casing of the indoor unit, ...) to eliminate static electricity and protect the PCB from damage. ONLY handle the PCB by its sides.

5.3 Connecting the electrical wiring

5.3.1 About connecting the electrical wiring

Typical workflow

Connecting the electrical wiring typically consists of the following stages:

1 Connecting the adapter to the indoor unit.
2 Connecting the adapter to a router.
3 Connecting the adapter to an electrical meter (BRP069A61 only).
4 Connecting the adapter to the digital outputs of a solar inverter / energy management system (BRP069A61 only).

5.3.2 Precautions when connecting the electrical wiring

INFORMATION

Also read the precautions and requirements in the following chapters:

- General safety precautions
- Preparation

DANGER: RISK OF ELECTROCUTION

Do NOT turn on the power supply (both the power supplied by the indoor unit to X3A and the detection voltage supplied to X1A) before you have connected all the wiring and closed the adapter.

NOTICE

To prevent damage to the PCB, it is NOT allowed to connect the electrical wiring with the connectors already connected to the PCB. First connect the wiring to the connectors, then connect the connectors to the PCB.

WARNING

To prevent damage and/or injury, do NOT make any connections to X1A and X2A on LAN adapter BRP069A62.

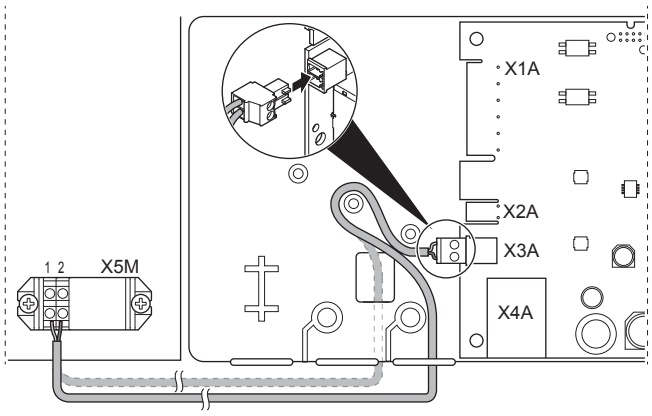
5.3.3 To connect the indoor unit

INFORMATION

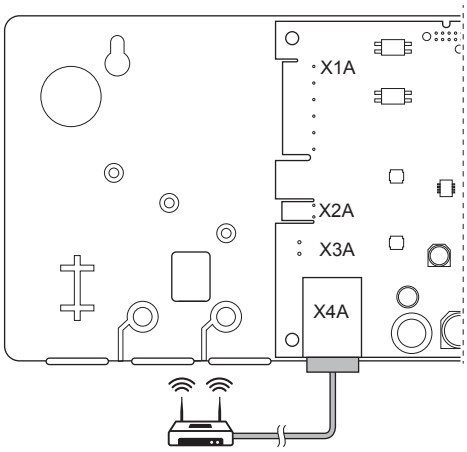
- In the indoor unit switch box, the cable is connected to the same terminals the user interface is connected to. For more information, see the installation manual of the indoor unit.
- The 2 wires from the cable are NOT polarised. When connecting them to the terminals, their polarity does NOT matter.

1 When entering the wiring from the bottom: inside the LAN adapter casing, ensure strain relief by routing the cable along the indicated cable path.

2 Connect indoor unit terminals X5M/1+2 to LAN adapter terminals X3A/1+2.



5.3.4 To connect the router



NOTICE

To prevent communication problems due to cable breakdown, do NOT exceed the minimum bend radius of the Ethernet cable.

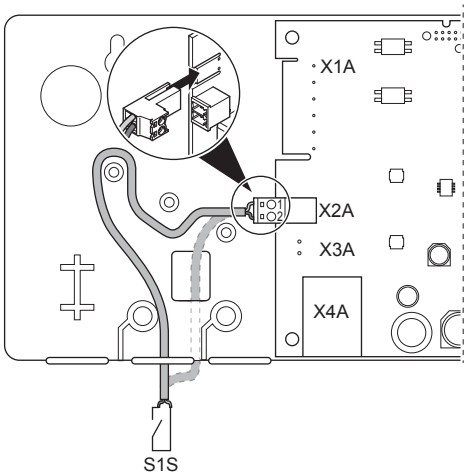
5.3.5 To connect the electrical meter

INFORMATION

This connection is ONLY supported by LAN adapter BRP069A61.

1 When entering the wiring from the bottom: inside the LAN adapter casing, ensure strain relief by routing the cable along the indicated cable path.

2 Connect the electrical meter to LAN adapter terminals X2A/1+2.



INFORMATION

Mind the polarity of the cable. The positive wire MUST be connected to X2A/1; the negative wire to X2A/2.

INFORMATION

Make sure to connect the electrical meter in the correct direction, so that it measures the total energy injected INTO the grid.

5.3.6 To connect the digital inputs

INFORMATION

This connection is ONLY supported by LAN adapter BRP069A61.

INFORMATION

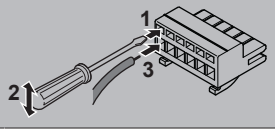
How the digital outputs are connected to X1A depends on the Smart Grid application. The connection described in the instructions below is for the system to run in the "Recommended ON" operation mode. For more information, see "7 Smart Grid application" on page 11.

WARNING

Make sure X1A/N+L are protected by a fast acting circuit breaker (rated current 100 mA~6A).

WARNING

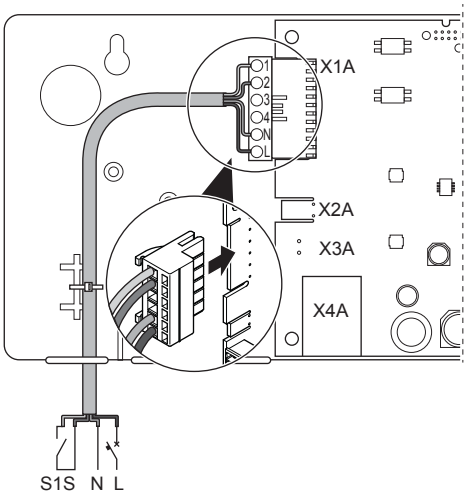
When connecting the wiring to LAN adapter terminal X1A, make sure each wire is securely fastened to the appropriate terminal. Use a screwdriver to open the wire clamps. Make sure the bare copper wire is fully inserted into the terminal (bare copper wire CANNOT be visible).



1 Ensure strain relief by fastening the cable with a cable tie to the cable tie mounting.

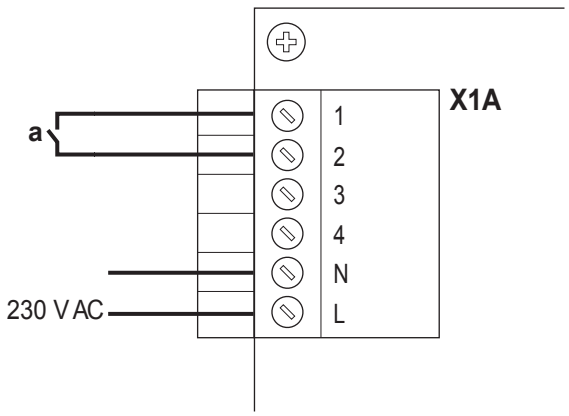
2 Provide a detection voltage to X1A/N+L. Make sure X1A/N+L are protected by a fast acting circuit breaker.

3 For the system to run in the "Recommended ON" operation mode (Smart Grid application), connect the digital input to the X1A/1+2 LAN adapter digital input.



To connect to a voltage free contact (Smart Grid)

If the solar inverter / energy management system has a voltage free contact, connect the LAN adapter as follows:



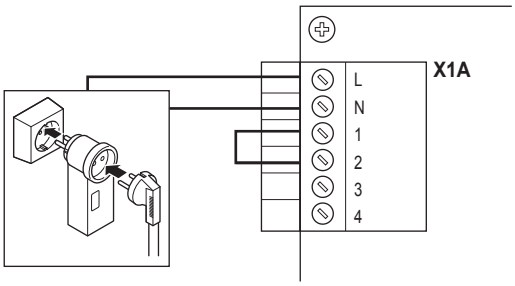
a To voltage free contact

INFORMATION

The voltage free contact should be able to switch 230 V AC – 20 mA.

To connect to a controllable wall socket (Smart Grid)

If a wall socket is available that is controlled by the solar inverter / energy management system, connect the LAN adapter as follows:



NOTICE

Make sure a fast acting fuse or circuit breaker is present in the setup (or as part of the wall socket, or install an external one (rated current 100 mA~6 A)).

5.4 Finishing the LAN adapter installation

5.4.1 LAN adapter serial number

Before closing the LAN adapter, note down its serial number. This number can be found on the adapter's Ethernet connector (bottommost number on X4A). Note it down in the table below.

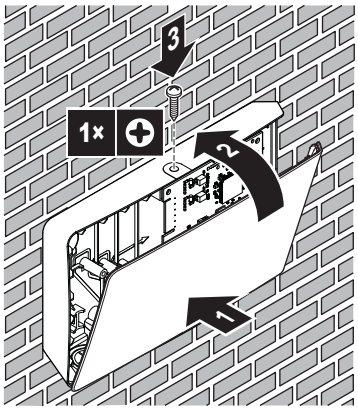
Serial number

INFORMATION

The serial number is used during the configuration of the LAN adapter. For more information, see "6 Configuration" on page 9.

5.4.2 To close the LAN adapter

1 Put the front casing to the rear casing and tighten the screw.



5.5 Opening the LAN adapter

5.5.1 About opening the LAN adapter

The average installation procedure does NOT involve opening the adapter. However, in case you do have to open it, follow below procedure.

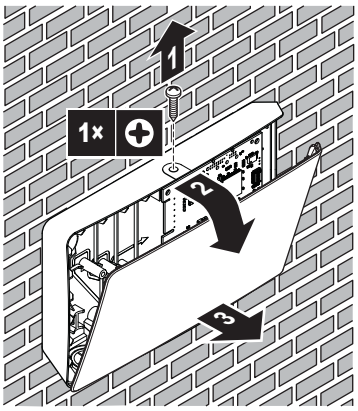
DANGER: RISK OF ELECTROCUTION

Before opening the LAN adapter, turn OFF all power supply (both the power received from the indoor unit to X3A and the detection voltage supplied to X1A, if applicable).

5.5.2 To open the LAN adapter

1 Remove the screw with a screwdriver.

2 Pull the top of the front casing towards you.



6 Configuration

6.1 Overview: Configuration

The LAN adapter is configured via the:

- Configuration web interface
- DIP switch

The LAN adapter is mostly plug-and-play. You ONLY have to make changes to settings in the following cases:

Case	Configuration
Software update: the software of the LAN adapter, Daikin Altherma unit, or user interface is NOT up-to-date.	Update to the required software. Follow the instructions set out in "6.2 Updating software" on page 9.
Network settings: you want to make changes to the network settings (e.g. make use of a custom, static IP address).	Go to the configuration web interface and change the network settings there. See "6.3 Configuration web interface" on page 10 and "6.3.2 Network settings" on page 10.
Smart Grid: you want to use the LAN adapter in a Smart Grid application.	Go to the configuration web interface and make Smart Grid settings there. See "6.3 Configuration web interface" on page 10 and "6.3.3 Smart Grid settings" on page 10.

For more information on the DIP switch, see "6.4 DIP switch" on page 11. For instructions on how to perform a factory reset, see "6.3.4 Factory reset" on page 10.

6.2 Updating software

You can update the LAN adapter software in the following ways:

- using the Online Controller app
- using a micro SD card
- using the configuration web interface

INFORMATION

For ease of use and to save time, it is recommended to update the LAN adapter software using the app.

INFORMATION

For the Daikin Altherma unit and user interface to function with the LAN adapter, it is required that their software meets requirements. ALWAYS make sure the unit and user interface have the latest software version. For more information, see http://www.daikineurope.com/support-and-manuals/product-information/.

6.2.1 To update with the Daikin Online Controller app

Prerequisite: The Online Controller app is installed on your smartphone, and you received a notification that a new update is available.

1 Open the app and start the update.

Result: The new software is automatically downloaded to the LAN adapter.

Result: To implement changes, the LAN adapter automatically performs a power reset.

Result: The LAN adapter software is now updated to the latest version.

INFORMATION

During the software update, the LAN adapter and the app CANNOT be operated. It is possible that the user interface of the Daikin Altherma unit displays error U8-01. When the update is finished, this error code will disappear automatically.

6.2.2 To update with a micro SD card

Prerequisite: You have an empty micro SD card with a capacity 256 MB~32 GB.

1 Insert the micro SD card into the SD card slot of your computer.

2 Go to http://www.daikineurope.com/support-and-manuals/product-information/ and download the latest LAN adapter software (zip file) to the root directory of the micro SD card.

3 Unzip the zip file in the root directory of the micro SD card.

Result: A folder appears on the SD card. In that folder there is a software file.

4 Make sure the power to the LAN adapter is turned OFF.

5 Insert the micro SD card into the SD card slot of the LAN adapter.

6 Turn ON the power to the LAN adapter.

Result: The LAN adapter software is now updated to the latest version.

Result: To implement changes, the LAN adapter automatically performs a power reset.

INFORMATION

After the automatic power reset, the status LEDs go ON and OFF alternately for 5 times. After this, the heartbeat LED will start flashing, indicating normal LAN adapter operation. It can take up to 30 minutes before the LAN adapter is synchronised with the Daikin Altherma unit.

6.2.3 To update using the configuration web interface

1 Go to http://www.daikineurope.com/support-and-manuals/product-information/ and download the latest LAN adapter software (zip file) to your computer.

2 Unzip the zip file on your desktop.

3 Go to the configuration web interface.

4 On the configuration web interface, go to Upload adapter SW.

5 Follow the upload instructions set out on the web interface.

Result: The LAN adapter software is now updated to the latest version.

Result: To implement changes, the LAN adapter automatically performs a power reset.

INFORMATION

After the automatic power reset, the status LEDs go ON and OFF alternately for 5 times. After this, the heartbeat LED will start flashing, indicating normal LAN adapter operation. It can take up to 30 minutes before the LAN adapter is synchronised with the Daikin Altherma unit.

INFORMATION

For instructions on how to access the configuration web interface, see "6.3.1 Accessing the configuration web interface" on page 10.

6.3 Configuration web interface

The LAN adapter is largely configured via a dedicated configuration web interface. It allows you to make changes to network settings, and configure the adapter for use of the system in Smart Grid applications. Additionally, it allows you to update the LAN adapter software, and perform a factory reset.

INFORMATION

If 2 LAN adapters are present in the same LAN network, configure them separately.

6.3.1 Accessing the configuration web interface

Normally, you should be able to access the configuration web interface by browsing to its URL (http://altherma.local). If this is NOT possible, 2 workarounds are available.

Access via URL

Prerequisite: Your computer is connected to the same router the LAN adapter is connected to.

Prerequisite: The router supports DHCP.

1 In your browser, go to http://altherma.local

Workaround - LAN adapter IP address

Prerequisite: Your computer is connected to the same network the LAN adapter is connected to.

Prerequisite: You have retrieved the LAN adapter's IP address.

1 In your browser, go to the LAN adapter's IP address.

To retrieve the LAN adapter's IP address, various ways are possible:

Retrieval via	Instruction
The Daikin Online Controller app	1 In the app, go to "Adapter information" > "IP address". 2 Retrieve the LAN adapter's IP address.
Your router's DHCP client list	3 Find the LAN adapter in the router's DHCP client list. 4 Retrieve the LAN adapter's IP address.

Workaround - DIP switch + fixed IP address

Prerequisite: Your computer is directly connected to the LAN adapter with an Ethernet cable, and is NOT connected to any network (wifi, LAN, …).

Prerequisite: The power to the LAN adapter is OFF.

1 Put DIP switch 4 in the ON position.

2 Turn ON the power to the LAN adapter.

3 In your browser, go to http://169.254.10.10

INFORMATION

For BRP069A61, 'power' is both the power supplied by the indoor unit AND the 230 V AC detection voltage supplied to X1A.

NOTICE

Use appropriate tooling to set the DIP switches to another position. Beware of electrostatic discharge.

For more information on the DIP switch, see "6.4 DIP switch" on page 11.

6.3.2 Network settings

To make changes to network settings, go to Network settings on the configuration web interface.

To enable/disable DHCP

1 To enable DHCP, select Automatic.

2 To disable DHCP, select Manually.

To define a static IP address

Prerequisite: Make sure Manually is selected.

1 Fill in the desired network settings.

2 To implement the settings, perform a power reset on the adapter.

6.3.3 Smart Grid settings

To make changes to Smart Grid settings, go to Smart Grid on the configuration web interface.

6.3.4 Factory reset

To perform a factory reset, go to Factory reset on the configuration web interface.

INFORMATION

Performing a factory reset is also possible by way of the DIP switch. For instructions, see "6.4 DIP switch" on page 11.

To perform a factory reset

1 Click the reset button below Factory reset.

6.4 DIP switch

Some LAN adapter functions are controlled by the DIP switch. The adapter ONLY checks the configuration of the DIP switch after a power reset. To configure the DIP switch, therefore make sure the power to the adapter is OFF.

NOTICE

Use appropriate tooling to set the DIP switches to another position. Beware of electrostatic discharge.

INFORMATION

For BRP069A61, 'power' is both the power supplied by the indoor unit AND the 230 V AC detection voltage supplied to X1A.

The following functions are controlled by the DIP switch:

DIP switch	Function
1[(a)]	**Enable/disable Smart Grid functionality.** ▪ OFF: enabled (factory state) ▪ ON: disabled
2	**Factory reset.** By performing below procedure, you can reset the LAN adapter to default configuration parameters (i.e. those set in the configuration web interface). The factory state of the pin is "OFF". Procedure: 1 Turn OFF the power. 2 Set the switch to "ON". 3 Turn ON the power. 4 Wait for 15 seconds. 5 Turn OFF the power. 6 Set the switch back to "OFF". 7 Turn ON the power.
3	**Spare switch**
4	**Enable/disable a custom static IP address.** By default, IP settings are configured dynamically by way of the DHCP protocol. However, it is possible to bypass this protocol and activate a custom static IP address. This is useful in case you are NOT able to access the configuration web interface automatically. For more information, see "6.3.1 Accessing the configuration web interface" on page 10 and "Workaround - DIP switch + fixed IP address" on page 10. ▪ OFF: dynamic IP address (factory state) ▪ ON: fixed IP address (169.254.10.10) **Remark:** to implement changes, a power reset is required.
5-8	Spare switches

(a) ONLY supported by LAN adapter BRP069A61.

6.5 Removal

When you connect the LAN adapter to the Daikin Altherma unit, the system registers its presence automatically. However, when you remove the adapter from the system after installation, you have to configure this manually.

6.5.1 To remove the LAN adapter from the system

1 On the user interface, go to [A.2.2]: Installer settings > System layout > Options.

2 In the options list, select LAN adapter.

3 Select "No".

7 Smart Grid application

INFORMATION

This information ONLY applies to LAN adapter BRP069A61.

The LAN adapter allows for the connection of the Daikin Altherma system to a photovoltaic system, minimising the power injection into the grid, and maximising the self-consumption of the power generated by the photovoltaics.

The Smart Grid application poses the following requirements to the Daikin Altherma system:

Item	Requirement
LAN adapter software	It is recommended to ALWAYS keep the LAN adapter software up-to-date.
Unit control method	The Daikin Altherma unit CANNOT be controlled with the user interface in LWT control ([C-07]=0).
Power consumption control settings	▪ Power consumption control setting [A.6.3.1] (Mode) MUST be set to "Continuous" ([4-08]=1). ▪ Power consumption control setting [A.6.3.2] (Type) MUST be set to "Power" ([4-09]=1).

For the Smart Grid application, the LAN adapter PCB has 2 digital inputs (SG0 (X1A/1+2) and SG1 (X1A/3+4)). These inputs need to be controlled by an external controller, such as a solar inverter, or a home energy management system. Depending on the state of the inputs, you can make the system run in 4 Smart Grid operation modes:

Smart Grid operation mode	SG0	SG1
Normal operation (free mode)	0	0
Recommended ON	1	0
Forced OFF	0	1
Forced ON	1	1

7.1 "Normal operation" mode

In "Normal operation" mode, the Daikin Altherma unit operates as normal, according to its owner's settings and schedules. No Smart Grid functionalities are enabled.

7.2 "Recommended ON" mode

In "Recommended ON" operation mode, the Daikin Altherma system makes use of photovoltaic energy for space heating/cooling and/or domestic hot water production (i.e. energy buffering), minimising the power injection into the grid. The amount of photovoltaic energy that is used for buffering depends on the domestic hot water tank and/or the room temperature. To align the photovoltaic capacity and the power consumption by the Daikin Altherma system, the power consumption of the Daikin Altherma unit is limited either statically or dynamically.

7.2.1 Energy buffering

The "Recommended ON" operation mode allows for buffering of electrical energy into thermal energy. On the configuration web interface, you can choose what to use as buffer: the domestic hot water tank only, or the domestic hot water tank and the room.

To use the room as buffer

1 Make the appropriate setting on the configuration web interface.

2 Make sure user interface setting [C-07] is set to 2: RT Control.

To use the domestic hot water tank as buffer

1 Make the appropriate setting on the configuration web interface.

2 Make sure a domestic hot water tank is part of the system.

3 Make sure user interface setting [E-05] is set to 1: DHW.

4 Make sure user interface setting [E-06] to 1: DHW tank.

INFORMATION

- The system will ONLY buffer energy when the Daikin Altherma unit is in standby mode. Normal operation (scheduled actions, etc.) has priority over energy buffering.
- On the configuration web interface, the buffering is default set to "domestic hot water tank only".
- The domestic hot water setpoint during domestic hot water tank buffering is the maximum tank temperature for the applicable tank type.
- The space heating/cooling setpoint during room buffering is the comfort setpoint for the room.

7.2.2 Power limitation

In "Recommended ON" operation mode, the power consumption of the Daikin Altherma system is limited either statically or dynamically. In both cases, it is possible to include the power consumption of the electrical heaters in the calculation (default NOT the case).

INFORMATION

- The electrical heaters will ONLY operate when the power limitation is higher than the power rating of the heaters.
- For ERLQ011~016 outdoor units, the power limitation functionality is NOT available. When these outdoor units are used in a Smart Grid system, they will operate without power limitation. Electrical heater assistance, however, will be disabled.

Static power limitation

The power consumption of the Daikin Altherma unit is limited statically based on a fixed value (default 1.5 kW) that is set in the configuration web interface. During energy buffering, the power consumption of the Daikin Altherma unit will NOT exceed this limit.

Dynamic power limitation

To enable dynamic power limitation, the system requires an electrical meter. In this case, the power limitation is auto-adaptive, and dynamically performed based on the power injection into the grid, measured by the electrical meter.

INFORMATION

- Make sure to connect the electrical meter in the correct direction, so that it measures the total energy injected INTO the grid.
- For dynamic power limitation to be possible, a single connection point to the grid is required (one connection point for the photovoltaic system AND the domestic appliances). To function properly, the Smart Grid algorithm requires the net sum of generated AND consumed energy. The algorithm will NOT work when there are separate meters for generated energy and consumed energy.
- Since dynamic power limitation is performed based on electrical meter input, you do NOT have to set the power limitation value in the configuration web interface.

7.3 "Forced OFF" mode

In "Forced OFF" operation mode, the external controller can be set to trigger the system to deactivate the operation of the outdoor unit compressor and the electrical heaters. This is especially useful when a controller is available that can react to high energy tariffs. Once active, "Forced OFF" mode will cause the system to stop space heating/cooling, as well as domestic hot water production.

INFORMATION

Once connected to run in one of the Smart Grid operation modes, the system will keep running in that mode until the input state is changed. Beware that if the system runs in "Forced OFF" mode for a long time, comfort issues can occur.

7.4 "Forced ON" mode

In "Forced ON" operation mode, there is NO power limitation. The system selects the comfort setpoint for domestic hot water production. The outdoor unit compressor and the electrical heaters will consume as much energy as possible.

INFORMATION

Once connected to run in one of the Smart Grid operation modes, the system will keep running in that mode until the input state is changed.

8 Troubleshooting

8.1 Overview: Troubleshooting

This chapter describes what to do in case of problems.

It contains information about:

- Solving problems based on symptoms
- Solving problems based on error codes

8.2 Solving problems based on symptoms

8.2.1 Symptom: Cannot access the web page

Possible causes	Corrective action
The LAN adapter is not powered (heartbeat LED not blinking).	Make sure that the LAN adapter is correctly connected to the Daikin Altherma unit, and that the power of all connected equipment is turned ON.
The configuration web interface is ONLY available for 2 hours after every power reset. Its timer can have run out.	Perform a power reset on the LAN adapter.
The LAN adapter is NOT connected to the network (network connection LED NOT blinking).	Connect the LAN adapter to a router.
The LAN adapter is NOT connected to the router or the router does NOT support DHCP.	Connect the LAN adapter to a router that supports DHCP.
The computer is NOT connected to the same router as the LAN adapter.	Connect the computer to the same router as the LAN adapter.

INFORMATION

If none of the corrective actions work, try performing a power reset of the total system.

8.2.2 Symptom: Router does not support DHCP

In the rare case that the router does NOT support DHCP, or this functionality is disabled, you can use the following steps to assign a fixed IP address to the router:

1. Set DIP switch 4 to the "ON" position and reset the adapter by turning the Daikin Altherma unit OFF and ON again.

   Result: The adapter now uses a fixed IP address (169.254.10.10).
2. Using an Ethernet cable, connect a computer directly to the LAN adapter.
3. In your browser, go to the fixed IP address.

   Result: The configuration web interface opens.
4. On the configuration web interface, go to Network settings, and define a fixed IP address (Static IP address)(make sure Manually is selected).
5. Turn OFF the power to the unit.
6. Set DIP switch 4 back to the "OFF" position.
7. Turn ON the power to the unit.

Result: The adapter now uses a custom-set fixed IP address.

8.3 Solving problems based on error codes

8.3.1 Error codes of the indoor unit

If the indoor unit loses its connection with the LAN adapter, the following error code appears on the user interface:

Error code	Detailed error code	Description
U8	01	Connection with adapter lost Please contact your dealer.

8.3.2 Error codes of the LAN adapter

LAN adapter errors are indicated by the status LEDs. There is a problem if one or more status LEDs have the following behaviour:

LED	Error behavior	Description
♡	Heartbeat LED NOT blinking	No normal operation. Try resetting the LAN adapter or contact your dealer.
品	Network LED flashing	Communication problem. Check the network connection.
P1P2	Daikin Altherma communication LED flashing	Communication problem with the Daikin Altherma unit.
⚡	Smart Grid LED flashing for more than 30 minutes.	Smart Grid compatibility problem. Try resetting the LAN adapter or contact your dealer.

INFORMATION

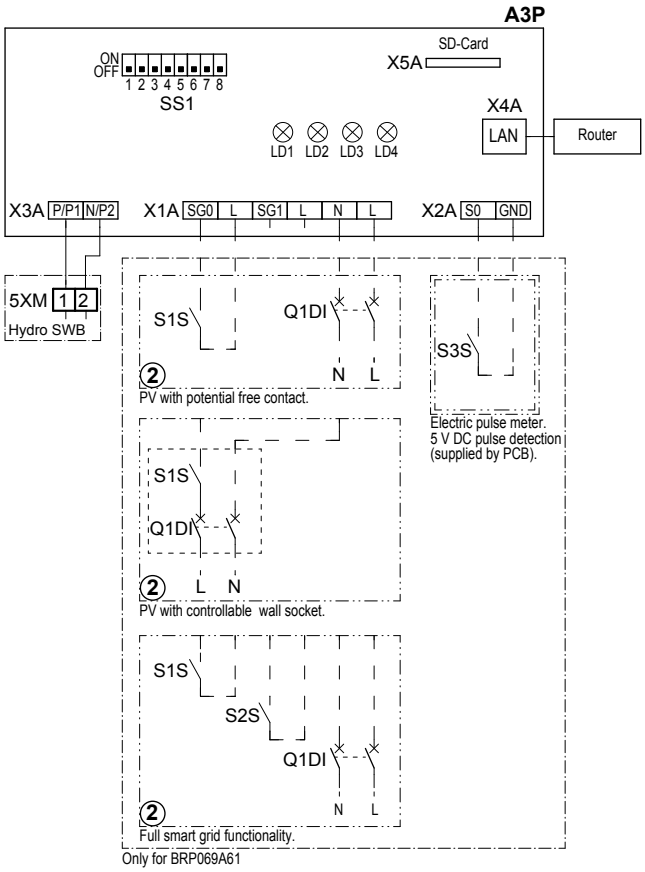
When the LAN adapter performs a Smart Grid compatibility check, the Smart Grid LED flashes. This is NOT erroneous behaviour. After a successful check, the LED will either stay ON or go OFF. When the LED keeps flashing for more than 30 minutes, the compatibility check failed, and NO Smart Grid operation is possible.

For a complete description of the status LEDs, check "2 About the product" on page 2.

9 Technical data

A **subset** of the latest technical data is available on the regional Daikin website (publicly accessible). The **full set** of latest technical data is available on the Daikin extranet (authentication required).

9.1 Wiring diagram



4D105877-1

A3P		LAN adapter PCB
LD1~LD4		PCB LED
Q1DI	#	Circuit breaker
SS1 (A3P)		DIP switch
S1S	#	SG0 contact
S2S	#	SG1 contact
S3S	*	Electrical pulse meter input
X*A		Connector
X*M		Terminal strip
	*	Optional
	#	Field supply

English	Translation
①	Several wiring possibilities
	Option
	Not mounted in switch box
	Wiring depending on model
	PCB

Notes to go through before starting the unit

English	Translation
X1M	Main terminal
X2M	Field wiring terminal for AC
X5M	Field wiring terminal for DC
—·—·—·—	Earth wiring
15	Wire number 15
– – – – – – –	Field supply
—> **/12.2	Connection ** continues on page 12 column 2



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