

# **Niko Home Control**

Installation manual



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## **Warnings regarding installation**

- The installation should be carried out by a registered installer and in compliance with the statutory regulations.
- This user manual should be presented to the user. It should be included in the electrical installation file, and it should be passed on to any new owners. Additional copies are available on the Niko website or via the Niko support service. The latest manual for this product is available on the Niko website at any time.
- During installation, the following should be taken into account (non-exhaustive list):
  - the statutory laws, standards and regulations.
  - the technology available at the time of installation.
  - this user manual, which only states general regulations and should therefore be read within the scope of each specific installation.
  - the rules of proper workmanship.
- In case of doubt or for the specific exchange procedure in case of a possible defect, contact the Niko support service (Belgium: +32 3 778 90 80 – the Netherlands: +31 183 64 06 60) or your wholesaler's. Contact details and more information can be found at [www.niko.eu](http://www.niko.eu) under the "Help and advice" section.

## Guarantee provisions

- The period of guarantee is four years from the date of delivery. The delivery date is the invoice date of purchase of the product by the consumer. If there is no invoice, the date of production applies.
- The consumer is obliged to inform Niko in writing about the non-conformity, within two months of noticing the defect.
- In case of a non-conformity, the consumer only has the right to a product repair or replacement free of charge, which shall be decided by Niko.
- Niko shall not be held liable for a defect or damage resulting from incorrect installation, improper or careless use, incorrect operation, transformation of the product, maintenance that does not adhere to the maintenance instructions or an external cause, such as damage due to moisture or overvoltage.
- The compulsory regulations of the national legislation concerning the sale of consumer goods and the protection of the consumer in the countries where Niko sells, directly or via sister companies, subsidiaries, chain stores, distributors, agents or permanent sales representatives, take priority over the above-mentioned rules and regulations.
- Certain Niko Home Control products and software are subject to licence terms and third-party copyright notices, which must be accepted by you first and can be found on [www.niko.eu](http://www.niko.eu).



This product complies with all of the relevant European guidelines and regulations. If applicable, you can find the EC declaration of conformity regarding this product at [www.niko.eu](http://www.niko.eu).

**Legend of symbols**

L	Phase
N	neutral conductor
$t_a$	maximum ambient temperature in which the product may be operated permanently and under normal circumstances
$\mu$	micro switch; the distance between the open contacts of a micro switch is less than 1.2 mm
$\epsilon$	without contact opening (switch with semiconductor element)
$\cos \varphi$	power factor



# 1. Installation preparations

Follow the guidelines below when installing Niko Home Control.

## Bus cable guidelines

- Use a bus cable with at least two wires. Choose two wires (two colours) and use these throughout the entire installation. The bus cabling used for connecting the control elements is non-polarised.
- The copper diameter of each wire should be between 0.5 to 1 mm.  
The cross-sectional area of the copper wire selected will determine the maximum permitted cable length between the connected controller and the furthest control element in the installation.

Copper diameter	Cross-sectional area of the copper	Maximum permitted cable length to the master
0.5 mm	0.20 mm <sup>2</sup> (e.g. UTP, FTP, STP, at least AWG24)	100 m
0.6 mm	0.25 mm <sup>2</sup> (e.g. TPVF)	150 mm
0.8 mm	0.5 mm <sup>2</sup> (e.g. SW, JYSTY)	250 m

- The bus cable to the control points has a free topology, which means that bus cables can be laid out in a star or in a bus topology, or in a combination of both. The rule of thumb is that at least two bus cable wires must be used between the electrical cabinet and the control points per power supply module. Do not loop cables.
- The total length of the bus cable used in a single installation should not exceed 1000 m.

## Control point guidelines

- Push buttons with or without status LED:
  - to be installed at 90 to 110 cm above floor level.
  - to be mounted onto a single or multiple wall-mounted printed circuit board (one flush-mounting box will suffice for a multiple wall-mounted printed circuit board).
  - to be connected to a two-wire bus cable.
- Push buttons with display (thermostat, HVAC thermostat, mood control eco-display):
  - to be installed at 120 to 150 cm above floor level.
  - to be mounted onto a standard single flush-mounting box.
  - to be connected to a two-wire bus cable.  
To function properly, it is recommended to limit the number of buttons with display to a total of 20. Per installation a maximum of 20 (HVAC) thermostats and five eco-displays can be installed.
- Indoor motion detectors:
  - to be installed at 90 to 110 cm above floor level.
  - to be mounted onto a standard single flush-mounting box.
  - to be connected to a two-wire bus cable.

- Touchscreens:
  - to be installed at eye level.
  - to be mounted onto a standard single flush-mounting box.
  - to be connected to an IP cable (twisted pair) and to a 26 Vdc power supply cable.
  - a total of ten touchscreens, smartphone or PC applications can be used per installation.

## Electrical cabinet set-up regulations

- The standard Niko Home Control installation includes one connected controller. Other modules are available separately.
- The internal layout of the electrical cabinet uses a left to right assembly system. Install the connected controller first. Then mount any other Niko Home Control modules onto the DIN rail and interlink them using a sliding contact. Do not place any dimming modules close next to, above or below the connected controller.
- A maximum of 12 Niko Home Control modules can be interconnected per DIN rail.
- A maximum of 20 DIN rails can be used per installation.
- A rail coupler, or a second power supply if needed, should be used first on every new DIN rail. Connect all four connection terminals (+, -, B1, B2) to the corresponding connection terminals of the rail coupler or the power supply on the previous and next rails.
- A maximum of two power supply modules can be used per installation. To calculate how many extra power supplies you need, see [Additional power supply unit on page 25](#).
- One installation may include several electrical cabinets. Connect the electrical cabinets in the same way as the rail couplers or power supply modules inside the cabinet, i.e. using four wires. If the cable length between the electrical cabinets exceeds 20 m, you use a new power supply for the second cabinet.
- Make sure that low-voltage signal cables, such as the bus cable, the IP cable and any cables connected to SELV components are kept separate from 230 V cables to avoid crosstalk and signal disruptions.

## Programming guidelines

- Program the installation via computer. The software is compatible with PC and Mac.
- The installation can be temporarily programmed manually during the testing phase. Manual programming options are limited and will be overwritten as soon as you program the installation via computer.
- The diagnostics page can be consulted via the programming software and allows you to make a quick analysis of the set-up and functioning of the installation.

Surf to <http://guide.niko.eu> for the Niko Home Control Software Guide. This online guide offers extra help for the programming of the Niko Home Control installation, both on the building site and at home when preparing the installation. With a convenient search function, you can easily navigate to the information necessary in order to program the installation in a customized manner for each customer: from the programming of basic functions, often used scenarios, cabinet lay-out and realisation to frequently asked questions. The Software Guide is permanently updated with new functionalities and scenarios. You can always find the most recent version online.

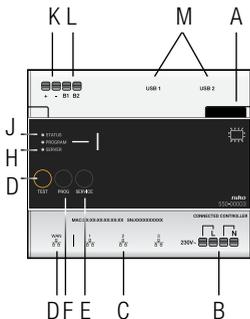
## 2. Connected controller

### Description

The connected controller is the central module of every Niko Home Control installation. It covers all basic functions on which a Niko Home Control installation is built. The basic functions include:

- The intelligence directing the Niko Home Control installation. Through the programming software, the logic is saved locally on the controller.
- The power supply module providing an input voltage of 26 V to the bus, the cabinet modules and the controls. Depending on the size of the installation, separate power supply modules can be added. For more information on the required number of power supplies, see [Additional power supply unit on page 25](#).
- The connection to Niko Home Control IP devices such as touchscreens and/or external video units. A built-in router allows the user to connect up to three devices directly to the controller. With an extra switch, this number can be increased.
- The connection to the home network and the internet. This enables the user to control the installation both indoors and outdoors (via mobile networks such as 3G, 4G, GPRS or WiFi hotspot) using mobile devices (smartphones and tablets with iOS or Android). It also ensures that you can use the Niko Home Control User settings software on PC/Mac and on the eponymous app on mobile devices.

### Overview



550-00003

- A. Sliding contact
- B. L/N approach terminals
- C. RJ45 port (1,2,3)
- D. WAN gateway
- E. SERVICE button
- F. PROG button
- G. TEST button
- H. SERVER LED
- I. PROGRAM LED
- J. STATUS led
- K. +/- approach terminals
- L. B1/B2 approach terminals
- M. USB connection

The sliding contact is used for connecting the connected controller with the next module, which means that the bus and the power supply module are then also interconnected.

This is where the 230 V mains voltage is connected. This is where the Niko Home Control IP devices are connected.

Use this port to establish a connection between the home network and the router.

Enables receiving upgrades.

Press this button to activate or deactivate the manual programming mode on the controller.

Press this button to activate TEST mode on the controller.

Provides information on the connection with the Niko server and the internet.

The PROG LED lights up when the controller is in manual programming mode.

Provides information on the general status of the installation.

The power supply provides secondary voltage via these terminals (26 Vdc extra low voltage).

This is where the bus is connected.

This is where a CoolMaster (HVAC interface) is connected for the connection to airconditioning installations (see [HVAC interface on page 199](#))

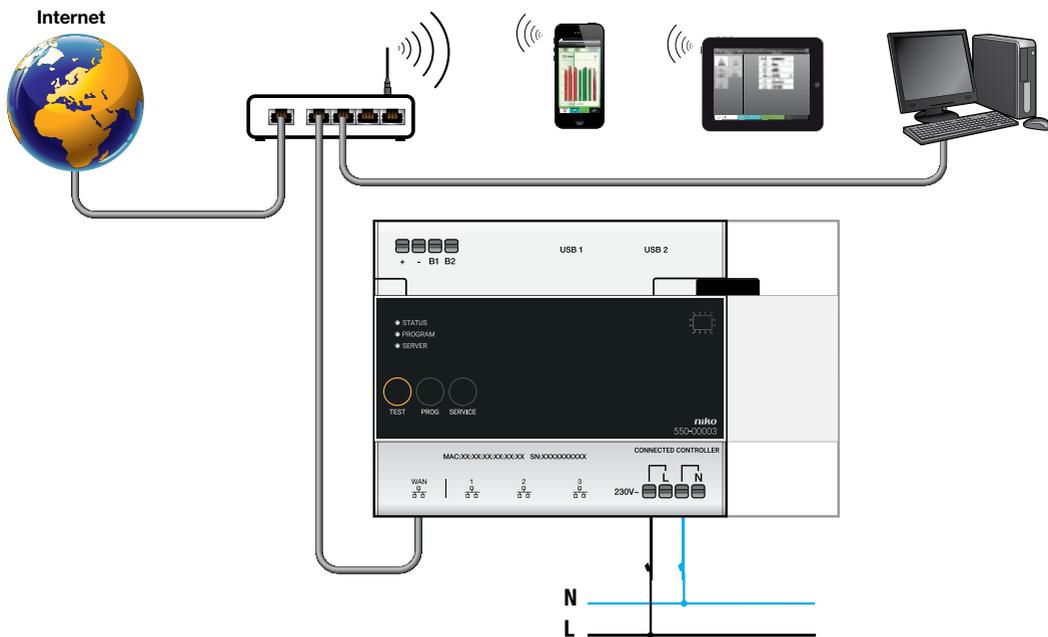
## Operation

The module includes a TEST button to verify the proper functioning and status of all other modules. Using the PROG button you can carry out temporary basic programming, without a computer. The SERVICE button allows you to perform waiting upgrades.

After registration on the registration page <https://mynikohomecontrol.niko.eu>, your installation is "connected", enabling remote control, and you can enjoy the Niko services for upgrade or diagnosis of the installation.

## Installation

### Wiring diagram



## Mounting instructions

Each installation must consist of one connected controller.  
Follow the steps below to mount the connected controller:



- Ensure that the installation is disconnected from the mains.

- 1 Click the controller onto the DIN-rail, ideally at the bottom left in the Niko Home Control part of the electrical cabinet.
- 2 Mount the other modules onto the rail, from left to right. Do not place any dimming modules close next to, above or below the controller. When there is no room left on the rail or the maximum number of 12 devices per rail has been reached, you simply continue on the rail above. Each following rail must start at the left with a rail coupler or an extra power supply if required (see [Additional power supply unit on page 25](#)).
- 3 Connect the connected controller with the module, placed next to it by sliding the sliding contact of the controller to the right until it clicks. This will ensure that the bus and the power supply voltage are connected.
- 4 Connect the network cable to the WAN port of the connected controller and connect it with the internet modem or router of the resident. Use a shielded network cable, preferably a STP network cable, and keep it separate from 230 V cables to avoid crosstalk. Run the network cable alongside the SELV cables, for instance. The resident must ensure that the network is secure.
- 5 Connect the Niko Home Control IP devices of the installation such as the touchscreens and/or external video units to the other three ports. If you have to connect more than three IP devices, you can use an Ethernet switch (no router!).
- 6 Connect the L phase wire and the N neutral wire to the L and N screw terminals respectively and switch on the mains supply.



Remember to give the resident the information listed on the sticker or to place the sticker in a clearly visible location on the connected controller or inside the electrical cabinet. The sticker includes the MAC address and serial number (SN) of the connected controller. The resident needs this information to register the installation via <https://mynikohomecontrol.niko.eu>.

## Power supply dimensioning

Depending on the size and the structure of the installation, up to two extra power supplies can be installed to complement the built-in power supply in the connected controller. As a general rule to determine whether an extra power supply is necessary, the following quick check can be used: the power supply built into the controller can handle up to 24 cabinet modules and 70 operating elements (of which 20 with indication LED). For larger installations, consult the point calculation, see [Additional power supply unit on page 25](#). Each control and module consumes a specific amount of energy. This consumption is expressed in points. An extra power supply is necessary as of 800 points.

## Check the status of the installation

### Using the indication LEDs on the controller

If the Niko Home Control installation functions normally, only the SERVER LED is illuminated on the connected controller. The remaining LEDs are not lit, to help save energy.

If an error occurs, simply switch the installation to TEST mode to check the status of the modules. First press the TEST button on the controller to switch the installation to TEST mode. The STATUS LEDS indicate the status of each module and each output. The TEST mode remains active for two minutes.

On the controller are three LEDs providing more information on the controller and the installation:

LED	Status	Information	Possible causes and actions
STATUS LED	The green LED lights up continuously	The installation functions normally.	/
	The green LED flashes	The installation is initializing or is currently being updated.	After approximately one minute, the status ends automatically. Under no circumstances should the installation be switched off.
	The orange LED lights up continuously	A problem has been detected.	Consult the diagnostics page in the programming software for more information (see <a href="#">Using the diagnostics page on page 13</a> ).
	The red LED lights up continuously	A serious problem has been detected.	Consult the diagnostics page in the programming software for more information (see <a href="#">Using the diagnostics page on page 13</a> ).
	The LED is not on	The controller does not receive power supply voltage or is defective.	Check if the TEST mode is active. Measure the power supply voltage. If the problem persists, contact the Niko customer service.
PROGRAM LED	The green LED lights up continuously	The controller is in manual PROGRAM mode.	The PROG button has been pressed to set the controller in manual programming mode. Push the PROG button again to leave this mode.
SERVER LED	The green LED lights up continuously	The connection with the Niko server is working properly and the installation was registered correctly.	/
	The orange LED lights up continuously	The connection with the Niko server is working properly but the installation was not yet registered.	Use the information of the controller (MAC address and serial number SN found on the controller and the included sticker) to register the installation on <a href="https://mynikohomecontrol.niko.eu">https://mynikohomecontrol.niko.eu</a> .
	The red LED lights up continuously	No communication possible with the Niko server. The internet connection was interrupted or the Niko server is not accessible.	Please check the internet connection. If the internet connection is working properly, contact the Niko customer service.

## Using the diagnostics page

Compared to installations with a conventional controller of 2U, the advantage of installations with a connected controller is that they can be monitored in detail with the diagnostics page. You can consult it via the programming software.

The diagnostics page is a valuable tool for the installer to detect errors. After all, it allows to quickly analyse the proper functioning and the set-up of the installation. For example, you can monitor the bus communication live and check which controls and/or modules have not yet been configured on the bus.

## Programming the installation manually

A number of basic functions can be temporarily programmed manually. It can be useful to test the installation or to test or control the lighting and the roller blinds while the home is still under construction. After programming with the computer, it is no longer possible to manually program the installation as it might delete or overwrite the saved programming.

Follow the steps below to manually program the installation:

- 1 Connect the installation to the mains power supply.
- 2 Press the TEST button and verify that the STATUS LED of each module lights up.
- 3 Press the PROG button briefly.  
The PROG LED lights up and the controller is in manual PROGRAM mode.



Manual programming is only possible if no programming was saved to the controller. If this is the case, nothing will happen and the PROGRAM LED will not light up.

- 4 Press on the button of the contact on the module you want to assign to an action button (e.g. a push button or thermostat). For example, press button one or button two on the dimming module.
- 5 Press the action button to which you will assign this contact.



This only applies to Niko Home Control action buttons. A potential-free push button connected via the push-button interface cannot be programmed manually.

- 6 Press the PROG button briefly.  
The PROG LED is no longer lit and the controller exits the manual PROGRAM mode.
- 7 Repeat steps 3 to 6 for each function you wish to program.



- The manually programmed outputs will be overwritten once you start programming the installation via computer.
- As soon as the installation has been programmed via computer, you can no longer program the installation manually.
- If you manually operate outputs via the buttons on the modules, the controller may modify your input at any time.

## Programming the installation

Program the installation with the most recent version of the programming software (available on [www.niko.eu](http://www.niko.eu)). Only once the programming has been completed, it can be loaded to the connected controller. If the installation is expanded and additional modules are added, you will need to reprogram the installation.

Follow the steps below to program the installation:

- 1 Connect the installation to the mains power supply.
- 2 Press the TEST button and verify that the STATUS LED of each module lights up. This way you are ensured that all sliding controls between the modules were slid closed properly.
- 3 Connect the computer to the installation:
  - If a router is already present for the home network, you can:
    - connect the computer with a free port to the router.
    - if it is a WiFi router, connect the computer with the installation wirelessly. This gives the advantage that you can walk around the home during the addressing of the inputs. To upload the programming to the installation, we recommend using a wired connection with a free port on the router as such a connection is more reliable than a WiFi connection.
  - If a router is not yet present, you can connect your computer directly to the WAN gateway of the connected controller. As an IP address is assigned automatically with this connection, it can take up to 2 minutes before the connection with the connected controller is realized.
- 4 Start up the programming software and open your installation project.
- 5 Select "Realisation" from the menu bar and follow the on-screen instructions until all the steps of the programming process are completed.
- 6 Disconnect the computer from the installation.  
All programmed outputs are now stored in the controller. At any time this programming can be read on the controller. Create a back-up on your computer and provide the resident with a copy.

## Remove programming

Use this function only if you wish to remove the programming completely from the controller (e.g. for training purposes or to debug a defective controller). After deletion, the controller can be manually programmed again.

To remove the saved programming:

- 1 Press the PROG button for 4 seconds.  
While holding down, the PROGRAM LED will remain off for the first 2 seconds, then flash 2 seconds and then switch off again once the deletion has completed.
- 2 Release the PROG button.

## Internet connection specifications

The connected controller is connected to the resident's home network via the WAN port. An IP address will be assigned to the connected controller by the network router. Via this connection, the controller communicates with Niko Home Control software, such as the user settings software or the energy software (to consult consumption or production data).



This port is a DHCP client and will therefore not assign IP addresses to other IP devices.

The router settings needed to establish this connection, correspond with the standard settings of new WiFi router:

- for DNS access outgoing port 53 must be opened
- for data traffic outgoing ports 80, 443 and 22 must be opened
- for (S)NTP outgoing port 123 must be opened.

## Register the installation

Have the MAC address and serial number (SN) of the connected controller ready (this data is printed on the controller and can also be found on the included sticker). Surf to <https://mynikohomecontrol.niko.eu> and register your installation using this MAC address and serial number. Enter the data of the customer or ask him to fill it out.

If you have chosen this on the registration page, the installation can now be controlled remotely (with exception of access control) and is now also accessible for upgrades and interventions of Niko customer service.

## **Technical data**

- equipped with a permanent memory for storage of the programming
- the saved programming can be read at any time
- dimensions: DIN 6U
- sliding contact to connect the module to the following module on the DIN rail
- input voltage: 230 Vac  $\pm$  10%, 50 Hz
- output voltage: 26 Vdc, 400 mA (SELV, safety extra-low voltage)
- 1 RJ45 port for connection to the home network and/or internet
- 3 RJ45 ports for the Niko Home Control network (connection IP devices such as touchscreens, external video units or Ethernet switch which groups them)
- 4 plug-in terminals at the top to connect the module with the rail coupler on the next DIN rail
- 4 plug-in terminals to provide the module with 230Vac power supply voltage; daisy-chained if necessary
- CE marked
- ambient temperature: 0 - 45°C
- protected against short-circuit, overvoltage and overheating

### 3. Connected controller light

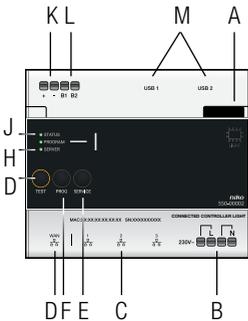
#### Description

The connected controller light is the central module of every Niko Home Control installation which, in contrast to the standard version of the connected controller, (see [Connected controller on page 9](#)) has no integrated IP functionalities such as control via touchscreen, smartphone and tablet and access control with an external video unit. Neither can the installation be extended with these functionalities.

The connected controller light offers the following basic functions:

- The intelligence directing the Niko Home Control installation. Through the programming software, the logic is saved locally on the controller.
- The power supply module providing an input voltage of 26 V to the bus, the cabinet modules and the controls. Depending on the size of the installation, separate power supply modules can be added. For more information on the required number of extra power supplies, see [Additional power supply unit on page 25](#).
- Using the WAN gateway, the installation can be connected to the internet via the home network. This allows using the Niko Home Control user settings software on PC or Mac to implement small changes in the programming and setting the time and ensures that the installation is connected in order to receive automatic upgrades and support from the Niko customer service in case of issues, if necessary.

#### Overview



550-0002

- |   |   |
|---|---|
| <p><b>A.</b> Sliding contact</p> <p><b>B.</b> L/N approach terminals</p> <p><b>C.</b> RJ45 port (1,2,3)</p> <p><b>D.</b> WAN gateway</p> <p><b>E.</b> SERVICE button</p> <p><b>F.</b> PROG button</p> <p><b>G.</b> TEST button</p> <p><b>H.</b> SERVER LED</p> <p><b>I.</b> PROGRAM LED</p> <p><b>J.</b> STATUS led</p> <p><b>K.</b> +/- approach terminals</p> <p><b>L.</b> B1/B2 approach terminals</p> <p><b>M.</b> USB connection</p> | <p>The sliding contact is used for connecting the connected controller light with the next module, which means that the bus and the power supply module are then also interconnected.</p> <p>This is where the 230 V mains voltage is connected.</p> <p>These ports are not active on the light version of the connected controller</p> <p>Use this port to establish a connection between the home network and the router.</p> <p>Enables receiving upgrades.</p> <p>Press this button to activate or deactivate the manual programming mode on the controller.</p> <p>Press this button to activate TEST mode on the controller.</p> <p>Provides information on the connection with the Niko server and the internet.</p> <p>The PROG LED lights up when the controller is in manual programming mode.</p> <p>Provides information on the general status of the installation.</p> <p>The power supply provides secondary voltage via these terminals (26Vdc extra low voltage).</p> <p>This is where the bus is connected.</p> <p>This is where a CoolMaster (HVAC interface) is connected for the connection to airconditioning installations (see <a href="#">HVAC interface on page 199</a>)</p> |
|---|---|

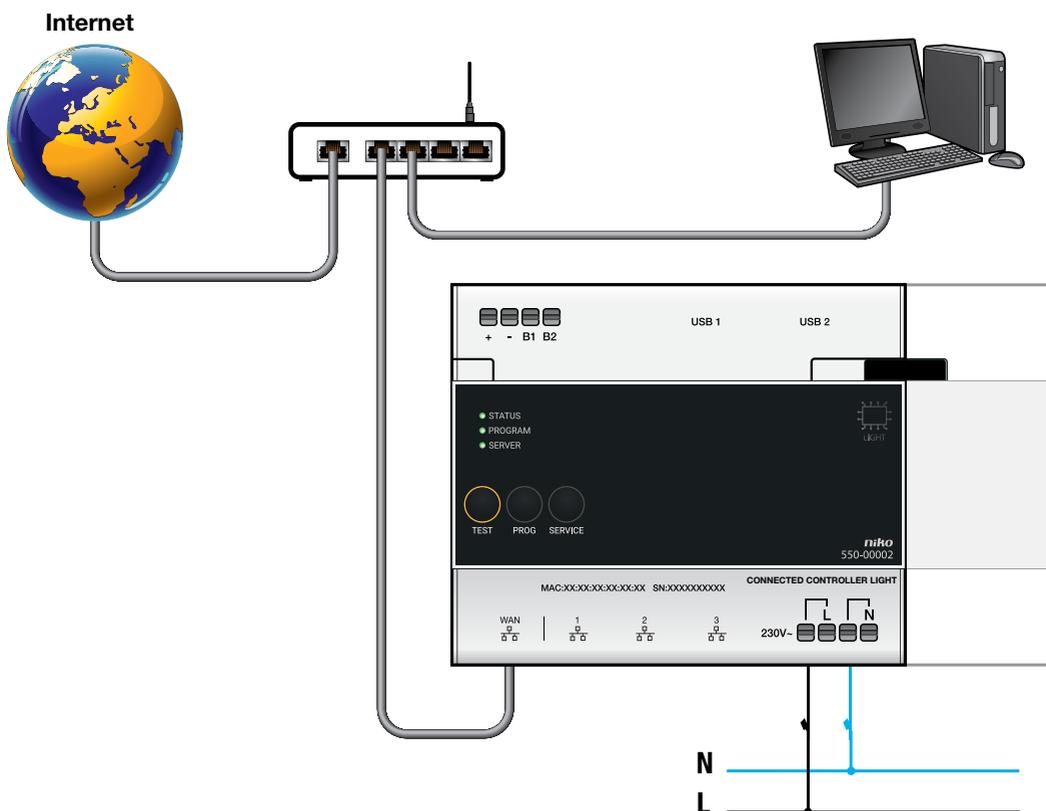
## Operation

The module includes a TEST button to verify the proper functioning and status of all other modules. Using the PROG button you can carry out temporary basic programming, without a computer. The SERVICE button allows you to perform waiting upgrades.

After registration on the registration page <https://mynikohomecontrol.niko.eu>, your installation is "connected", enabling remote control, and you can enjoy the Niko services for upgrade or diagnosis of the installation.

## Installation

### Wiring diagram



## Mounting instructions

Each installation must consist of one connected controller.

Follow the steps below to mount the connected controller light:



- Ensure that the installation is disconnected from the mains.

- 1 Click the controller onto the DINrail, ideally at the bottom left in the Niko Home Control part of the electrical cabinet.
- 2 Mount the other modules onto the rail, from left to right. Do not place any dimming modules close next to, above or below the controller. When there is no room left on the rail or the maximum number of 12 devices per rail has been reached, you simply continue on the rail above. Each following rail must start at the left with a rail coupler or an extra power supply if required (see [Additional power supply unit on page 25](#)).
- 3 Connect the connected controller with the module, placed next to it by sliding the sliding contact of the controller to the right until it clicks. This will ensure that the bus and the power supply voltage are connected.
- 4 Connect the network cable to the WAN port of the connected controller and connect it with the internet modem or router of the resident. Use a shielded network cable, preferably a STP network cable, and keep it separate from 230 V cables to avoid crosstalk. Run the network cable alongside the SELV cables, for instance. The resident must ensure that the network is secure.
- 5 Connect the L phase wire and the N neutral wire to the L and N screw terminals respectively and switch on the mains supply.



Remember to give the resident the information listed on the sticker or to place the sticker in a clearly visible location on the connected controller light or inside the electrical cabinet. The sticker includes the MAC address and serial number (SN) of the connected controller light. The resident needs this information to register the installation via <https://mynikohomecontrol.niko.eu>.

## Power supply dimensioning

Depending on the size and the structure of the installation, up to two extra power supplies can be installed to complement the built-in power supply in the connected controller light. As a general rule to determine whether an extra power supply is necessary,

the following quick check can be used: the power supply built into the controller can handle up to 24 cabinet modules and 70 operating elements (of which 20 with indication LED). For larger installations, consult the point calculation, see [Additional power supply unit on page 25](#). Each control and module consumes a specific amount of energy. This consumption is expressed in points. An extra power supply is necessary as of 800 points.

## Check the status of the installation

### Using the indication LEDs on the controller

If the Niko Home Control installation functions normally, only the SERVER LED is illuminated on the connected controller light.

The remaining LEDs are not lit, to help save energy.

If an error occurs, simply switch the installation to TEST mode to check the status of the modules. First press the TEST button on the controller to switch the installation to TEST mode. The STATUS LEDS indicate the status of each module and each output. The TEST mode remains active for two minutes.

LED	Status	Information	Possible causes and actions
STATUS LED	The green LED lights up continuously	The installation functions normally.	/
	The green LED flashes	The installation is initializing or is currently being updated.	After approximately one minute, the status ends automatically. Under no circumstances should the installation be switched off.
	The orange LED lights up continuously	A problem has been detected.	Consult the diagnostics page in the programming software for more information (see <a href="#">Using the diagnostics page on page 21</a> ).
	The red LED lights up continuously	A serious problem has been detected.	Consult the diagnostics page in the programming software for more information (see <a href="#">Aan de hand van de diagnosepagina on page 21</a> ).
	The LED is not on	The controller does not receive power supply voltage or is defective.	Check if the TEST mode is active. Measure the power supply voltage. If the problem persists, contact the Niko customer service.
PROGRAM LED	The green LED lights up continuously	The controller is in manual PROGRAM mode.	The PROG button has been pressed to set the controller in manual programming mode. Push the PROG button again to leave this mode.

SERVER LED	The green LED lights up continuously	The connection with the Niko server is working properly and the installation was registered correctly.	/
	The orange LED lights up continuously	The connection with the Niko server is working properly but the installation was not yet registered.	Use the information of the controller (MAC address and serial number SN found on the controller and the included sticker) to register the installation on <a href="https://mynikohomecontrol.niko.eu">https://mynikohomecontrol.niko.eu</a> .
	The red LED lights up continuously	No communication possible with the Niko server. The internet connection was interrupted or the Niko server is not accessible.	Please check the internet connection. If the internet connection is working properly, contact the Niko customer service.

### Using the diagnostics page

Compared to installations with a conventional controller of 2u, the advantage of installations with a connected controller light is that they can be monitored in detail with the diagnostics page. You can consult it via the programming software.

The diagnostics page is a valuable tool for the installer to detect errors. After all, it allows to quickly analyse the proper functioning and the set-up of the installation. For example, you can monitor the bus communication live and check which controls and/or modules have not yet been configured on the bus.

### Programming the installation manually

A number of basic functions can be temporarily programmed manually. It can be useful to test the installation or to test or control the lighting and the roller blinds while the home is still under construction. After programming with the computer, it is no longer possible to manually program the installation as it might delete or overwrite the saved programming.

Follow the steps below to manually program the installation:

- 1 Connect the installation to the mains power supply.
- 2 Press the TEST button and verify that the STATUS LED of each module lights up.
- 3 Press the PROG button briefly.  
The PROG LED lights up and the controller is in manual PROGRAM mode.



Manual programming is only possible if no programming was saved to the controller. If this is the case, nothing will happen and the PROGRAM LED will not light up.

- 4 Press on the button of the contact on the module you want to assign to an action button (e.g. a push button or thermostat). For example, press button one or button two on the dimming module.
- 5 Press the action button to which you will assign this contact.



This only applies to Niko Home Control action buttons. A potential-free push button connected via the push-button interface cannot be programmed manually.

- 6 Press the PROG button briefly.  
The PROG LED is no longer lit and the controller exits the manual PROGRAM mode.
- 7 Repeat steps 3 to 6 for each function you wish to program.



- The manually programmed outputs will be overwritten once you start programming the installation via computer.
- As soon as the installation has been programmed via computer, you can no longer program the installation manually.
- If you manually operate outputs via the buttons on the modules, the controller may modify your input at any time.

## Programming the installation

Program the installation with the most recent version of the programming software (available on [www.niko.eu](http://www.niko.eu)). Only once the programming has been completed, it can be loaded to the connected controller. If the installation is expanded and additional modules are added, you will need to reprogram the installation. The programming may not contain any elements which is not supported by this version of the connected controller such as a smartphone, touchscreen or access control. Such programming will not be able to be saved. If these functions are desired, the standard version of the connected controller must be installed. (See Controller on page 10)

Follow the steps below to program the installation:

- 1 Connect the installation to the mains power supply.
- 2 Press the TEST button and verify that the STATUS LED of each module lights up. This way you are ensured that all sliding controls between the modules were slid closed properly.
- 3 Connect the computer to the installation:
  - If a router is already present for the home network, you can:
    - connect the computer with a free port to the router.
    - if it is a WiFi router, connect the computer with the installation wirelessly. This gives the advantage that you can walk around the home during the addressing of the inputs. To upload the programming to the installation, we recommend using a wired connection with a free port on the router as such a connection is more reliable than a WiFi connection.
  - If a router is not yet present, you can connect your computer directly to the WAN gateway of the connected controller. As an IP address is assigned automatically with this connection, it can take up to 2 minutes before the connection with the connected controller is realized.
- 4 Start up the programming software and open your installation project.
- 5 Select "Realisation" from the menu bar and follow the on-screen instructions until all the steps of the programming process are completed.
- 6 Disconnect the computer from the installation.  
All programmed outputs are now stored in the controller. At any time this programming can be read on the controller. Create a back-up on your computer and provide the resident with a copy.

## Remove programming

Use this function only if you wish to remove the programming completely from the controller (e.g. for training purposes or to debug a defective controller). After deletion, the controller can be manually programmed again.

To remove the saved programming:

- 1 Press the PROG button for 4 seconds.  
While holding down, the PROGRAM LED will remain off for the first 2 seconds, then flash 2 seconds and then switch off again once the deletion has completed.
- 2 Release the PROG button.

## Internet connection specifications

The connected controller is connected to the resident's home network via the WAN port. An IP address will be assigned to the connected controller by the network router. Via this connection, the controller communicates with Niko Home Control software, such as the user settings software or the energy software (to consult consumption or production data).



This port is a DHCP client and will therefore not assign IP addresses to other IP devices.

The router settings needed to establish this connection, correspond with the standard settings of new WiFi router:

- for DNS access outgoing port 53 must be opened
- for data traffic outgoing ports 80, 443 and 22 must be opened
- for (S)NTP outgoing port 123 must be opened.

## Register the installation

Have the MAC address and serial number (SN) of the connected controller light ready (this data is printed on the controller and can also be found on the included sticker). Surf to <https://mynikohomecontrol.niko.eu> and register your installation using this MAC address and serial number. Enter the data of the customer or ask him to fill it out.

The installation is now accessible for upgrades and any possible interventions by Niko customer service.

## **Technical data**

- equipped with a permanent memory for storage of the programming
- the saved programming can be read at any time
- dimensions: DIN 6U
- sliding contact to connect the module to the following module on the DIN rail
- input voltage: 230 Vac  $\pm$  10%, 50 Hz
- output voltage: 26 Vdc, 400 mA (SELV, safety extra-low voltage)
- 1 RJ45 port for connection to the home network and/or internet
- 4 plug-in terminals at the top to connect the module with the rail coupler on the next DIN rail
- 4 plug-in terminals to provide the module with 230Vac power supply voltage; daisy-chained if necessary
- CE marked
- ambient temperature: 0 - 45°C
- protected against short-circuit, overvoltage and overheating

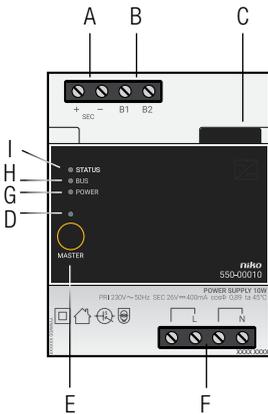
## 4. Additional power supply unit

### Description

In a regular Niko Home Control installation the integrated power supply of the connected controller (light) ensures the 26 Vdc voltage on the bus, the modules and the control elements. An extra power supply is only necessary for large installations with many consumers. Several extra power supply modules can be connected in parallel in one single installation.

### Overview

- |  |  |
|--|--|
| <p><b>A.</b> +/- screw terminals</p> <p><b>B.</b> B1/B2 screw terminals</p> <p><b>C.</b> Sliding contact</p> <p><b>D.</b> MASTER LED</p> <p><b>E.</b> MASTER address button</p> <p><b>F.</b> L/N screw terminals</p> <p><b>G.</b> POWER LED</p> <p><b>H.</b> BUS LED</p> <p><b>I.</b> STATUS LED</p> | <p>The power supply provides secondary extra low voltage via these terminals.</p> <p>This is where the bus is connected.</p> <p>The sliding contact is used for connecting the next module, which means that the bus and the power supply module are then also interconnected.</p> <p>In an installation with a connected controller (light), this button has no function.</p> <p>In an installation with a connected controller (light), this button has no function.</p> <p>This is where the 230 V mains voltage is connected.</p> <p>The POWER LED lights up when the power supply is connected to the mains voltage.</p> <p>The BUS LED lights up when the bus is communicating information.</p> <p>The STATUS LED lights up in TEST mode when the module is connected correctly and is functioning properly. If an error occurs, the LED will blink to indicate an error code. <a href="#">See Error codes on page 29.</a></p> |
|--|--|



550-00010

### Sizing

#### Rule of thumb

The following rule of thumb can be applied to calculate the number of extra power supplies required: a maximum of 24 modules inside the electrical cabinet and a maximum of 70 controls (of which 20 with status LED) per power supply. The integrated power supply of the connected controller (light) counts as one power supply. Depending on the size and layout of your installation, you will need to install no, one or two extra power supplies.

This rule of thumb leaves a considerable margin for error.

#### Exact calculation

Each control and module consumes a specific amount of energy. This consumption is expressed in points (see tables on the following pages). The first 800 points are absorbed by the integrated power supply in the connected controller (light). An extra power supply is needed for every additional 800 points. Add the points of all the controls and modules of the installation and divide this sum by 800 and subtract 800 points to determine the number of power supplies required. A maximum of two power supplies can be used per installation.

<b>Modules</b>			
<b>Ref.</b>	<b>Name</b>	<b>Points</b>	<b>Width</b>
550-00106	Switching module (6x)	5	4E
550-00103	Switching module (3x)	5	2E
550-00130	Motor module	5	4E
550-00340	Universal dimmer module (2 x 400W)	5	4E
550-00140	Ventilation module	5	2E
550-00150	Heating or cooling module	5	4E
550-00801	Electricity measuring module (1 channel)	20	2E
550-00803	Electricity measuring module (3 channels)	20	4E
550-00230	Analogue sensor module	10	2E
550-00210	Digital potential-free sensor module	10	2E
550-00240	Analogue control module 0-10 V	20	2E
550-00241	Analogue control module 1-10 V	20	4U
550-00250	Pulse counter	10	2E
550-00505	Nikobus interface	40	2E
550-00610	RF interface Easywave	20	2E

<b>Controls</b>		
<b>Ref.</b>	<b>Name</b>	<b>Points</b>
550-2021x + 1xx-55511	Indoor motion detector	10
550-20200	Outdoor motion detector	10
1xx-51001	Single push button	3
1xx-52001	Single push button with LED	4
1xx-51002	Double push button	3
1xx-52002	Double push button with LED	5
1xx-51004	4-fold push button	3
1xx-52004	4-fold push button with LED	5
1xx-51006	6-fold push button	3
1xx-52006	6-fold push button with LED	5
550-20000	Push-button interface	3
1xx-51033	Single motor control	3
1xx-52033	Single motor control with LED	5
1xx-51036	Double motor control	3
1xx-52036	Double motor control with LED	5
1xx-51043	Single dimming control	3
1xx-52043	Single dimming control with LED	5
1xx-51046	Double dimming control	3
1xx-52046	Double dimming control with LED	5
1xx-52054	Ventilation control with LED	5
550-1305x	Thermostat	14
550-1304x	Mood control	14
550-1308x	Eco-display	14

## Installation

### Wiring diagram



Each extra power supply has a capacity of 10 W. Determine the exact number of extra power supplies required prior to commencing the installation process. [See Dimensioning on page 25.](#)

Follow the steps below to connect and mount a power supply module:

- 1 Click the extra power supply on a DIN rail.
- 2 Connect all four connection terminals (+, -, B1, B2) to the corresponding connection terminals of the connected controller, rail coupler or the power supply on the previous and next rails.
- 3 Each module is fitted with a sliding contact. Slide the sliding contact to the right until it clicks into the next module. This will ensure that the bus and the power supply voltage are connected.
- 4 Connect the L phase wire and the N neutral conductor to the L and N screw terminals respectively.

### **Error codes**

When the module is functioning properly, the STATUS LED will light up in TEST mode only. If one or several errors occur, the LED will blink to indicate the error code of the error with the highest priority. The table below provides an overview of all error codes.

Press the TEST button on the controller to activate TEST mode.

LED	ACTION	ERROR	POSSIBLE CAUSES
STATUS LED	Blinks – one pulse per two seconds.	Software error	Wrong software version.* *Download the latest software version from the Niko website to upgrade the module.
	Blinks – two pulses per two seconds.	Overload or short circuit	The bus is connected incorrectly.
			The bus voltage is too low.
			Bus overload. Check all points.
Blinks – three pulses per two seconds.	Overheating	The temperature inside the electrical cabinet is too high.	
MASTER LED	No error codes applicable.	Not applicable	
BUS LED	No error codes applicable.		
POWER LED	No error codes applicable.		

## **Technical data**

- available power: 10 W
- input voltage: 230 Vac  $\pm$  10%, 50 Hz
- output voltage: 26 Vdc, 400 mA (SELV, safety extra-low voltage)
- dimensions: DIN 4U
- sliding contact to connect the module to the following module on the DIN rail
- 4 connection terminals at the top to connect the power supply with the rail coupler on the next DIN rail
- CE marked
- ambient temperature: 0 - 45 °C
- protected against short-circuit, overvoltage and overheating

## 5. Rail coupler

### Description

The rail coupler interconnects the power supply voltage and the bus of the rail below to the modules via the sliding contact.

### Overview



- A. +/- screw terminals
- B. B1/B2 screw terminals
- C. Sliding contact

550-00020

### Installation



A connected controller, power supply or a rail coupler must be used at the left beginning of every DIN rail.

Follow the steps below to install the rail coupler:

- 1 Click the rail coupler onto the left beginning of the DIN rail.
- 2 Connect all four connection terminals (+, -, B1, B2) to the corresponding connection terminals of the connected controller (light), rail coupler or the power supply on the previous and next rails.
- 3 Each module is fitted with a sliding contact. Slide the sliding contact to the right until it clicks into the next module. This will ensure that the bus and the power supply are connected.



- Bus cables can be used between terminals B1/B2 of any rail coupler and a control point.
- A rail coupler can be interconnected to another rail coupler located in a different electrical cabinet. The cable length between both rail couplers should not exceed 20 m. If the distance between the electrical cabinets exceeds 20 m, you use a new power supply for the second cabinet.

## **Technical data**

- dimensions: DIN 2U
- sliding contact to connect the module to the following module on the DIN rail
- 2 x 4 screw terminals for 3 x 1.5 mm<sup>2</sup> or 2 x 2.5 mm<sup>2</sup> or 1 x 4 mm<sup>2</sup>
- CE marked
- ambient temperature: 0 - 45 °C

## 6. Wall-mounted printed circuit boards and push buttons

### 6.1. Wall-mounted printed circuit boards

#### Description

A wall-mounted printed circuit board includes all the electrical and mechanical components required to connect one or several push buttons to the Niko Home Control installation. Niko offers horizontal, vertical, single or multiple printed circuit boards. Choose the type of printed circuit board depending on the number of action buttons required and on a horizontal or vertical assembly. The printed circuit board can be easily replaced by a larger one at a later stage if the need arises to expand the installation.

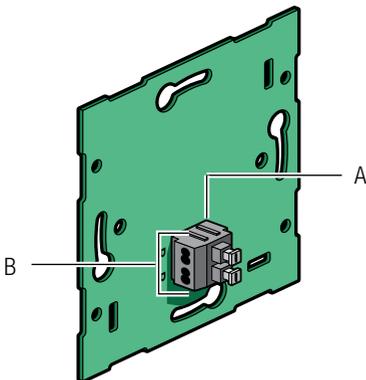
#### Order numbers

- 550-14020: double wall-mounted printed circuit board (centre-to-centre distance 71 mm, horizontal)
- 550-14021: double wall-mounted printed circuit board (centre-to-centre distance 60 mm, vertical)
- 550-14027: double wall-mounted printed circuit board (centre-to-centre distance 71 mm, vertical)
- 550-14030: 3-fold wall-mounted printed circuit board (centre-to-centre distance 71 mm, horizontal)
- 550-14031: 3-fold wall-mounted printed circuit board (centre-to-centre distance 60 mm, vertical)
- 550-14037: 3-fold wall-mounted printed circuit board (centre-to-centre distance 71 mm, vertical)
- 550-14040: 4-fold wall-mounted printed circuit board (centre-to-centre distance 71 mm, horizontal)
- 550-14090: connection unit for multiple wall-mounted printed circuit boards
- 550-14110: simple wall-mounted printed circuit board with connector
- 550-14115: simple wall-mounted printed circuit board with bridge
- 450-00067: set of claws for wall-mounted printed circuit board
- 450-00068: set of claws for connection unit

#### Installation

##### Connecting single wall-mounted printed circuit boards

- A. Double plug-in connector
- B. Two contacts with two openings each



550-14110

The double plug-in connector is used for connecting the bus cable to the wall-mounted printed circuit board and for establishing a connection to the next control element. It has two contacts with two openings each. To connect single wall-mounted printed circuit boards, you connect the bus using two wires from the bus cable. Connect each wire separately to one of the contacts. Each contact is marked by the letter B.

The wall-mounted printed circuit board is now connected. Use the other opening of the contact to establish a connection to the next control element if required.

- ⚠ Strip the wires of the bus cable 9 - 10 mm.
- A maximum of two wires with a diameter of 0.5 - 1 mm each can be connected per contact.

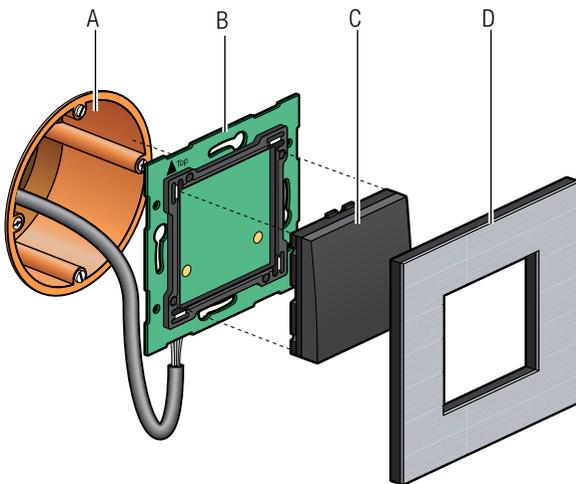
### **Connecting multiple wall-mounted printed circuit boards**

You need one connection unit for each multiple wall-mounted printed circuit board you wish to connect. Connection units are available separately. The connection unit includes a double plug-in connector, The connection unit includes a double plug-in connector, which allows you to connect the bus cable and establish a connection to the next control element. The double plug-in connector has two contacts with two openings each.

To connect multiple wall-mounted printed circuit boards:

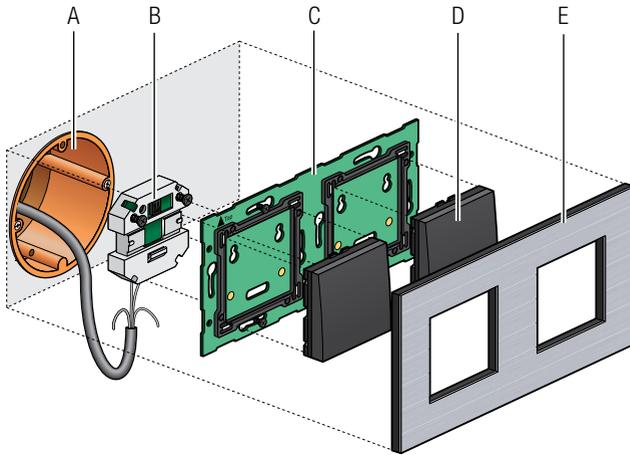
- 1 Connect two wires of the bus cable to the contacts of the connection unit.  
The connection unit is now connected. Use the other opening of the contact to establish a connection to the next control element if required.
  - ⚠ Strip the wires of the bus cable 9 - 10 mm.
  - A maximum of two wires with a diameter of 0.5 - 1 mm each can be connected per contact.
- 2 Remove the transparent tape from the wall-mounted printed circuit board where the connection unit will be mounted. This connection unit is mounted closest to the flush-mounting box.
- 3 Press the connection unit onto the wall-mounted printed circuit board until it clicks into place. Secure the connection unit using two screws.

### **Mounting instructions**



- A. Single flush-mounting box (not a Niko product)
- B. Single wall-mounted printed circuit board
- C. Push-button
- D. Flush surround plate

*Installation diagram for single wall-mounted printed circuit boards*



- A. Single flush-mounting box (not a Niko product)
- B. Connection unit
- C. Multiple wall-mounted printed circuit board
- D. Push-button
- E. Flush surround plate

*Installation diagram for multiple wall-mounted printed circuit boards*

To mount the wall-mounted printed circuit board, press the unit onto a single flush-mounting box until it clicks into place. Secure using screws.

Use a set of claws if no screw holes are provided in the flush-mounting box. Sets of claws for single and multiple wall-mounted printed circuit boards are available separately.

Secure the sides of larger wall-mounted printed circuit boards onto the wall using the screw holes provided in the wall-mounted printed circuit board.

Use a single wall-mounted printed circuit board with metal bridge on very uneven walls or in combination with other Niko flush-mounting units with bridge. The bridges can be clicked together.

## Technical data

- wall-mounted printed circuit board material: epoxy
- material thickness: 1 mm
- one double connector
- connection unit dimensions: 51 x 43 x 22 mm (H x W x D)

## 6.2. Generic push buttons

### Description

Single, double, 4-fold and 6-fold push buttons are available with or without status LED. These push buttons include one or more action buttons that allow the resident to operate the Niko Home Control functions.

### Overview



1XX-51001



1XX-51002



1XX-51004



1XX-51006



1XX-52001



1XX-52002



1XX-52004



1XX-52006

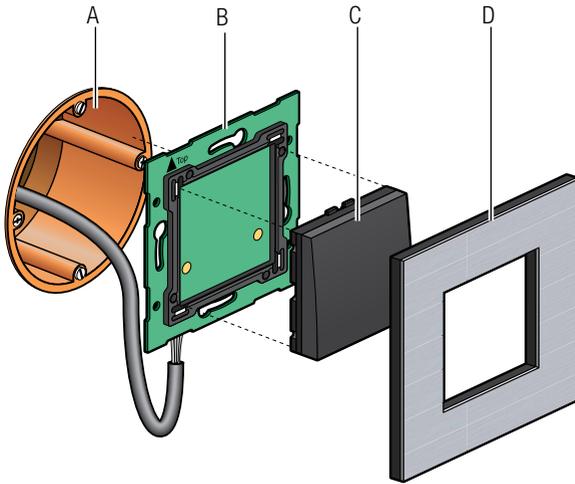
### Operation

Each action button can either control a light point or a light circuit, dim a dimmable light point up or down or activate a mood setting. A mood setting is a combination of pre-programmed output settings.

Action buttons with status LED will indicate the status of their respective output. Using the programming software, you can program the LEDs to light up when the output is either activated or deactivated .

## Installation

The control element consists of a push button and one or more action buttons. Complete the installation using the flush surround plate of your choice from our series Niko Pure, Niko Intense or Niko Original.



- A. Single flush-mounting box  
(not a Niko product)
- B. Single wall-mounted printed circuit board
- C. Push-button
- D. Flush surround plate

*Installation diagram for single wall-mounted printed circuit boards*

To mount the push button, press the unit onto a Niko Home Control wall-mounted printed circuit board until it clicks into place. The push button is now secure. The functions of the action buttons can be assigned while programming the installation by linking each function to the unique address of each action button during the addressing phase. This information is then stored in the controller.

### Technical data

- resting potential: 26 Vdc (SELV, safety extra-low voltage)
- ambient temperature: 0 - 50°C

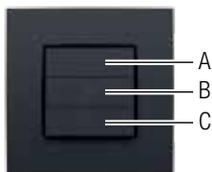
## 6.3. Specific push buttons

### 6.3.1. Push buttons for dimming

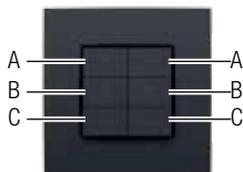
#### Description

Push buttons for dimming are available in a single-row (three action buttons) or double-row (six action buttons) configuration, with or without status LED. They allow the resident to operate one or two light points respectively, or groups of light points, via the Niko Home Control installation.

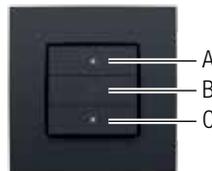
## Overview



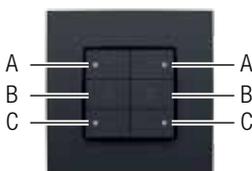
1XX-51043



1XX-51046



1XX-52043



1XX-52046

## Operation

The specific action buttons on each push button are arranged in groups of three. Each group consists of the following buttons: "A", "B" and "C".

Action buttons with status LED will indicate the status of their respective output. Using the programming software, you can program the LEDs to light up when the output is either activated or deactivated .

The table below provides an overview of all action button functions.

<b>'Before' status</b>	<b>Action</b>	<b>'After' status</b>
Light off	Briefly press "A" (< 0.4 s)	"Memory off" means the light intensity level will reach 100%. "Memory on" means the light intensity level will return to the previous setting, which is the last used light intensity level prior to the dimmer being switched off. The "Memory off" or "Memory on" option can be selected during the programming phase of the installation.
Light off	Briefly press "B" (< 0.4 s)	Preference setting (standard 50%)
Light off	Briefly press "C" (< 0.4 s)	The light is switched on. The light intensity level remains at the lowest setting.
Light off	Hold down "A" ( $\geq 0.4$ s)	The light intensity level will increase until the button is released or until the maximum level is reached.
Light off	Hold down "B" ( $\geq 0.4$ s and < 3 s)	Preference setting (standard 50%)
Light off	Hold down "B" (> 3 s)	The current light intensity level is now saved as the new preference setting.

<b>'Before' status</b>	<b>Action</b>	<b>'After' status</b>
Light off	Hold down "C" ( $\geq 0.4$ s)	The light is switched on. The light intensity level remains at the lowest setting.
Light on.	Briefly press "A" ( $< 0.4$ s)	The light intensity level will reach 100%.
Light on.	Briefly press "B" ( $< 0.4$ s)	Preference setting (standard 50%)
Light on.	Briefly press "C" ( $< 0.4$ s)	The light is switched off.
Light on.	Hold down "A" ( $\geq 0.4$ s)	The light intensity level will increase until the button is released or until the maximum level is reached.
Light on.	Hold down "B" ( $> 3$ s)	Preference setting (standard 50%)
Light on.	Hold down "B" ( $> 3$ s)	The current light intensity level is now saved as the new preference setting.
Light on.	Hold down "C" ( $\geq 0.4$ s)	The light intensity level will decrease until the button is released or until the minimum level is reached.

## Installation

See [Installation on page 37](#).

## Technical data

- resting potential: 26 Vdc (SELV, safety extra-low voltage)
- ambient temperature: 0 - 50°C

### 6.3.2. Push button for ventilation

#### Description

The push button for ventilation allows the resident to operate the central ventilation system (type C or D) via the Niko Home Control installation.

#### Overview



1XX-52054

#### Operation

The push button includes four action buttons: one for each setting of the central ventilation system (low, medium, high) and one that activates the boost function. There is also one that activates the boost function. This activates the highest setting during a preset amount of time. The installation then returns to the previous setting.

## Installation

See [Installation on page 37](#).

## Technical data

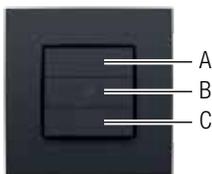
- resting potential: 26 Vdc (SELV, safety extra-low voltage)
- ambient temperature: 0 - 50°C

### 6.3.3. Push buttons for motor control

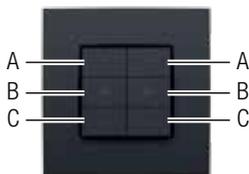
#### Description

Push buttons for motor control are available in a single-row (three action buttons) or double-row (six action buttons) configuration. They allow the resident to operate the motors of one or two groups of roll-down shutters, sun blinds or awnings integrated in the Niko Home Control installation.

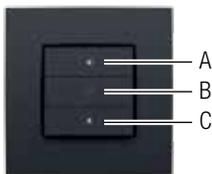
#### Overview



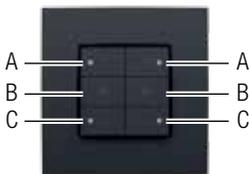
1XX-51033



1XX-51036



1XX-52033



1XX-52036

## Operation

The specific action buttons on each push button are arranged in groups of three. Each group consists of the following buttons: "A", "B" and "C".

Action buttons with status LED will indicate the status of their respective output. Using the programming software, you can program the LEDs to light up when the output is either activated or deactivated .

The table below provides an overview of all action button functions.

'Before' status	Action	'After' status
No motion	Briefly press "A" (< 0.4 s)	Fully open / upward motion
No motion	Briefly press "B" (< 0.4 s)	Preference setting (standard 50%)
No motion	Briefly press "C" (< 0.4 s)	Fully closed / downward motion
No motion	Hold down "A" ( $\geq 0.4$ s)	Opens / upward motion until the button is released.
No motion	Hold down "B" (> 3 s)	The current position is now saved as the new preference setting.
No motion	Hold down "C" ( $\geq 0.4$ s)	Closes / downward motion until the button is released.
In motion	Briefly press "A" (< 0.4 s)	Stops
In motion	Briefly press "B" (< 0.4 s)	Stops
In motion	Briefly press "C" (< 0.4 s)	Stops
In motion	Hold down "A" ( $\geq 0.4$ s)	Stops
In motion	Hold down "C" ( $\geq 0.4$ s)	Stops
In motion	Hold down "C" ( $\geq 0.4$ s)	Stops

## Installation

See [Installation on page 37](#).

## Technical data

- resting potential: 26 Vdc (SELV, safety extra-low voltage)
- ambient temperature: 0 - 50°C



## 7. Push buttons with display

### Description

Four types of push buttons with display are available:

- thermostat
- HVAC thermostat
- mood control
- eco-display

### Error codes

Push buttons with display are integrated in a bridge. The bridge is mounted onto a standard flush-mounting box using screws.

- 1 Connect the push button to the two-wire bus cable using the double plug-in connector (marked BB) on the back of the control element . Connect each wire separately to one of the contacts.



- Strip the wires of the bus cable 9 - 10 mm.
- A maximum of two wires with a diameter of 0.5 - 1 mm each can be connected per contact.

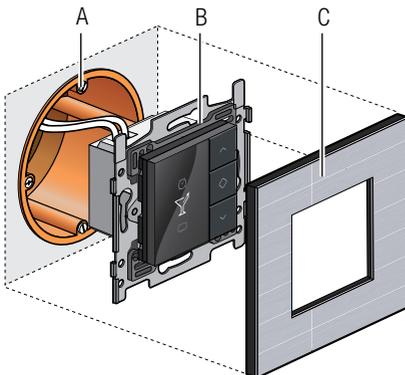
The push button with display is now connected. Use the other opening of the contact to establish a connection to the next control element if required.

- 2 Mount the bridge onto the single flush-mounting box using screws in order to secure the push button with display. Use a bridge with a set of claws if no screw holes are provided in the flush-mounting box.

Three types of bridges are available:

- bridge 60 x 71 mm with claw fixing (Belgium)
- bridge 71 x 71 mm with screw fixing (the Netherlands)

- 3 Complete the installation using the flush surround plate of your choice from our series Niko Pure, Niko Intense or Niko Original.



*Installation  
diagram for  
push button  
with display*

- A. Single flush-mounting box  
(not a Niko product)
- B. Push button with display
- C. Flush surround plate

## 7.1. Thermostat

### Description

Using the thermostat function, you can select heating or cooling options for several different zones or rooms. The thermostat operates in conjunction with a heating or cooling module. See [Heating or cooling module on page 163](#). Up to 20 thermostats may be added in one Niko Home Control installation.

### Overview



- A. Display
- B. Higher setting, or navigation key (up)
- C. Confirm/Menu
- D. Lower setting, or navigation key (down)
- E. Base

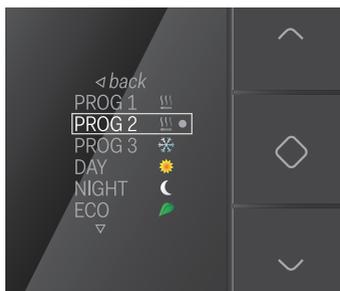
550-13050

### Operation

Each thermostat can be programmed independently. There are three weekly programmes to choose from: two for the heating function and one for the cooling function. In addition, there are five statuses (DAY, NIGHT, ECO, COOL, and OFF). You can use the pre-programmed settings or enter your personal settings.

Follow the steps below to select one of the pre-programmed weekly programmes or temperature settings:

- 1 Touch one of the buttons to light up the display. When not in use, the display is dimmed to reduce energy consumption.
- 2 Hold down button "C" to view the menu.  
The following screen will appear:



- 3 Navigate to the weekly programme or temperature setting of your choice and press button "C".

The following temperature factory settings are pre-programmed into the system:

DAY	21 °C
NIGHT	16 C
ECO	18 °C
COOL	24 °C
OFF	7 °C

The following weekly programmes are pre-programmed into the system:

PROG1	<p>Weekday          6 AM =&gt; 8 AM DAY          8 AM =&gt; 4 PM NIGHT          4 PM =&gt; 6 PM ECO          6 PM =&gt; 10 PM DAY          10 PM =&gt; 6 AM NIGHT</p> <p>Weekend:          8 AM =&gt; 10 PM DAY          10 PM =&gt; 8 AM NIGHT</p>
PROG2	<p>Weekday:          8 AM =&gt; 10 PM DAY          10 PM =&gt; 8 AM NIGHT</p> <p>Weekend:          8 AM =&gt; 10 PM DAY          10 PM =&gt; 8 AM NIGHT</p>
PROG3	<p>Weekday:          4 PM =&gt; 7 PM COOL          7 PM =&gt; 4 PM OFF</p> <p>Weekend:          10 AM =&gt; 7 PM COOL          7 PM =&gt; 10 AM OFF</p>

Residents can modify these settings according to their needs.

## Modifying pre-programmed settings

To modify one of the pre-programmed settings:

- 1 Touch one of the buttons to light up the display. When not in use, the display is dimmed to reduce energy consumption.
- 2 Press button "C" until the following screen appears:



- 3 Make sure PROG is selected and press button "C".  
The following screen will appear:



You can now select and modify the weekly programme or temperature level of your choice.

## Modifying fixed temperature settings

To modify one of the fixed temperature settings:

- 1 Navigate to the temperature setting you wish to modify.



- 2 Press button "C".  
The following screen will appear:



- 3 Enter the temperature setting of your choice using the navigation keys. Press button "C".  
The new temperature setting is now saved and you will be redirected to the previous screen.

## Modifying weekly programmes

Weekly programmes include one or more daily programmes. These can be modified or added individually.

To select a daily programme:

- 1 Navigate to the weekly programme you wish to modify.



- 2 Press button "C".

The following screen appears:

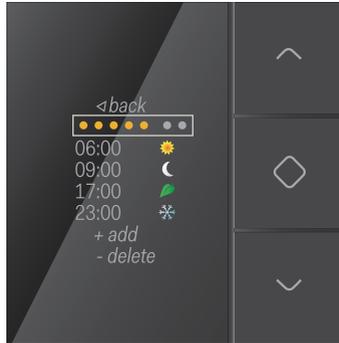


On this screen, the top row represents the week while the bottom row represents the weekend.

- 3 Select either the week or the weekend if you wish to modify an existing daily programme. Select add if you wish to add a new daily programme.

**4** Press button "C".

The daily programme will appear:



You can now modify the daily programme, add new time and temperature settings, or delete existing settings.

**To modify a daily programme:**

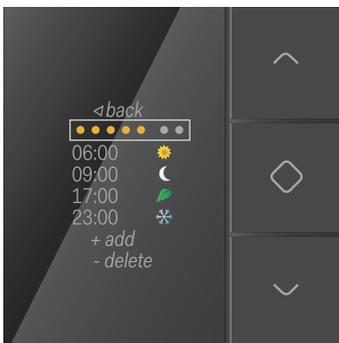
**1** Select week or weekend and press button "C".

The following screen will appear:

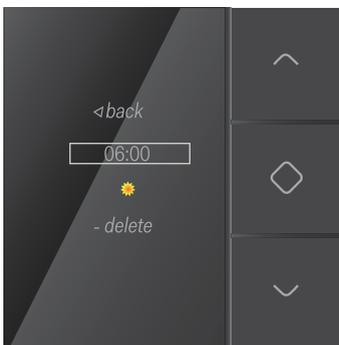


**2** Use the navigation keys to navigate through the days of the week. Press button "C" to activate or deactivate the days of your choice.

- 3** Select *back* using the navigation keys and press button "C".  
The following screen will appear:



- 4** Select the time and temperature setting you wish to modify and press button "C".  
The following screen will appear:

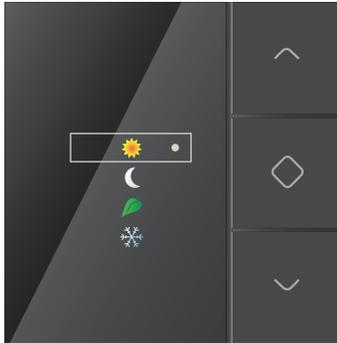


- 5** Select the new temperature setting and press button "C".  
The following screen will appear:



Enter the new time setting using the navigation keys. Press button "C" when you have completed the process.

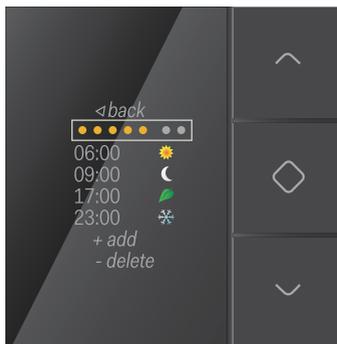
- 6** Select the new temperature setting and press button "C".  
The following screen appears:



If you do not select a temperature setting, the system will automatically select OFF.

The new temperature setting is now saved and you will be redirected to the previous screen.

- 7** Select *back* until you reach the following screen:



- 8** Repeat steps 4 to 7 for each time setting and temperature setting you wish to modify or add.

## Consult date and time



- The date and time of the Niko Home Control installation are centrally controlled.
- You can modify the data in the Niko Home Control user software.
- On the thermostat this data can only be consulted.

1 Select DATE on the following screen:



2 You can now see the settings for the year, month, day, hour and minutes.

3 Select *back* to return to the start screen.

## Calibrating the clock thermostat

If the thermostat temperature differs from the actual temperature, the thermostat must be calibrated.



- Only calibrate the thermostat after the installation has been in use for at least two hours as this will ensure that the temperature displayed has stabilised.
- Do not calibrate the thermostat temperature under extreme temperature conditions.

- 1 Measure the temperature in the centre of the room using a thermometer.
- 2 Select CALIBRATION on the following screen:



- 3 Press button "C".
- 4 Use the navigation keys until the temperature on the display corresponds to the temperature measured in the centre of the room. Press button "C".



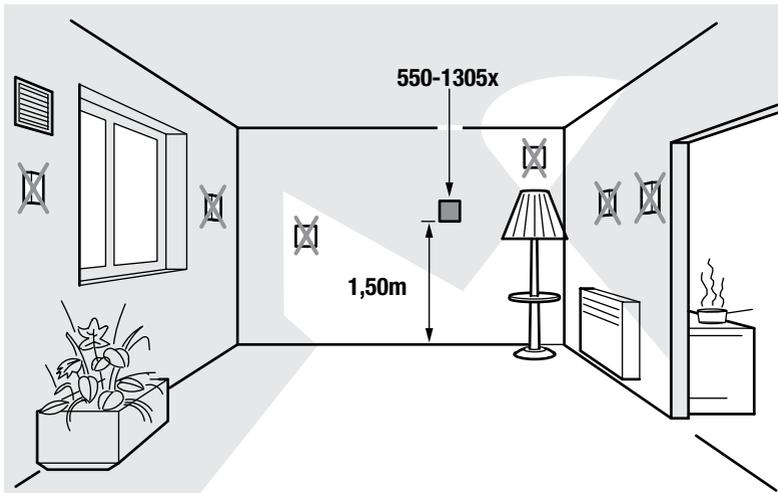
You can increase or decrease the temperature on the display by six degrees.

- 5 Select *back* using the navigation keys and press button "C".

## Installation

A thermostat can be mounted in any room fitted with underfloor heating, a radiator, heating unit or cooling unit. It controls the heating or cooling for the room in which it is mounted.

The thermostat only functions properly when the temperature within the room can be measured accurately. Try to eliminate as many factors as you can that may inhibit the thermostat's ability to accurately control the room temperature.



DO NOT mount the thermostat:

- in direct sunlight.
- on an exterior wall.
- within the immediate vicinity of a heat generating source (heater, radiator, etc.) or electrical equipment that may radiate heat (TV, computer, etc.).
- behind a curtain.

Do not allow air to circulate behind the thermostat. If needed, fill in any gaps in the flush-mounting box or bus cable duct using PU foam.

See [Installation on pagina 43](#).

## Technical data

- back-lit colour display
- resting potential: 26 Vdc (SELV, safety extra-low voltage)
- ambient temperature: 5 – 40 °C
- dimensions of the display: 45 x 45 x 32 mm (HxWxD)
- flush-mounting depth: 20 mm
- daily/weekly programmes
- 5 temperature settings: day, night, eco, off (frost-free) and cool
- temperature accuracy: 0.5 °C
- in conformity with IEC 60730-2-9, EN 50491-5-2, EN 50491-2 and EN 50090-2-3
- protection degree: IP20

## 7.2. HVAC thermostat

### Description

The HVAC thermostat allows you to control the air conditioning system (HVAC system) within a zone or room. The HVAC thermostat and the air conditioning system communicate via an HVAC interface (CoolMaster). See [HVAC interface on page 199](#).

The HVAC thermostat can be operated locally or remotely via a touchscreen, smartphone or tablet.

Unlike the HVAC thermostat, the thermostat as described in section 6.1 can operate in combination with a heating or cooling module. See [Heating or cooling module on page 163](#).

Up to 20 HVAC thermostats may be added in one Niko Home Control installation.

### Overview



- A. Display
- B. Higher setting, or navigation key (up)
- C. Confirm/Menu
- D. Lower setting, or navigation key (down)

550-13060

## Operation

Each HVAC thermostat can be programmed independently. There are three adjustable temperature settings (DAY, NIGHT and CUSTOM) and two weekly programmes to choose from. You can use the pre-programmed settings or enter your personal settings. Each temperature setting has two values depending on the operating mode that has been activated (COOLING or HEATING).

In addition, there are three status options (ECO, PROTECT and ON/OFF) as well as the option to enter the temperature of your choice. Statuses ECO and PROTECT cannot be selected via the HVAC thermostat.

Follow the steps below to select one of the temperature settings or pre-programmed weekly programmes:

- 1 Touch one of the buttons to light up the display. When not in use, the display is dimmed to reduce energy consumption.
- 2 Press button "C" to view the menu.  
The following screen will appear:



- 3 Navigate to the temperature setting or weekly programme of your choice and press button "C".

The following temperature factory settings are pre-programmed into the system:

TEMPERATURE SETTING	COOLING	HEATING
DAY	21 °C	24 °C
NIGHT	18 °C	27 °C
CUSTOM	19 °C	25 °C

The following weekly programmes are pre-programmed into the system:

<p>PROG1</p>	<p>Weekday: 6 AM =&gt; 10 PM DAY 10 PM =&gt; 6 AM NIGHT</p> <p>Weekend: 6 AM =&gt; 10 PM DAY 10 PM =&gt; 6 AM NIGHT</p>
<p>PROG2</p>	<p>Weekday 6 AM =&gt; 8 AM DAY 8 AM =&gt; 4 PM NIGHT 4 PM =&gt; 6 PM CUSTOM 6 PM =&gt; 10 PM DAY 10 PM =&gt; 6 AM NIGHT</p> <p>Weekend: 8 AM =&gt; 10 PM DAY 10 PM =&gt; 8 AM NIGHT</p>

The following settings for the HVAC thermostat are pre-programmed into the system:

<p>POWER</p>	 (off)
<p>FAN</p>	 (high)
<p>MODE</p>	 (heating)
<p>TEMPERATURE SETTING</p>	 (day)

Residents can modify these settings according to their needs.

## Modify temperature settings

Both the temperature setting for COOLING and the temperature setting for HEATING can be modified.

To modify one of the temperature settings:

- 1 Press button "C" until the following screen appears:



- 2 Press button "C".

The following screen will appear:



- 3 Navigate to the temperature setting you wish to modify. Press button "C".

The following screen will appear:



- 4 Navigate to the value of the temperature setting you wish to modify (COOLING or HEATING). Press button "C".
- 5 Enter the temperature setting of your choice using the navigation keys. Press button "C".  
The new temperature setting is now saved. Select *back* to go back to the start screen.



There is always at least one degree difference between the value selected for cooling and the value selected for heating. Each temperature setting has two values depending on the operating mode that has been activated (COOLING or HEATING).

## Modifying weekly programmes

Weekly programmes include one or more daily programmes. These can be modified or added individually. To select a daily programme:

- 1 Press button "C" until the following screen appears:



- 2 Press button "C".  
The following screen will appear:



- 3** Navigate to the weekly programme you wish to modify (PROG1 or PROG2). Press button "C".  
The following screen appears:



On this screen, the top row represents the week while the bottom row represents the weekend.

- 4** Select either the week or the weekend if you wish to modify an existing daily programme.  
Select add if you wish to add a new daily programme.

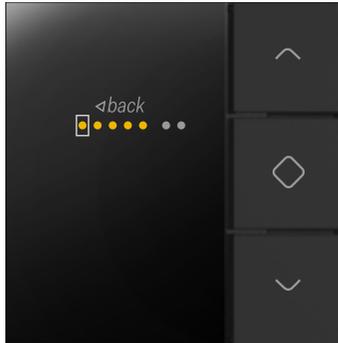
- 5** Press button "C".  
The daily programme will appear:



You can now modify the daily programme, add new time and temperature settings, or delete existing settings.

## To modify a daily programme:

- 1 Select week or weekend and press button "C".  
The following screen will appear:



- 2 Use the navigation keys to navigate through the days of the week. Press button "C" to activate or deactivate the days of your choice.
- 3 Select *back* using the navigation keys and press button "C".  
The following screen will appear:



- 4 Select the time and temperature setting you wish to modify and press button "C".  
The following screen will appear:



- 5** Select the new temperature setting and press button "C".  
The following screen will appear:



Enter the new time setting using the navigation keys. Press button "C" when you have completed the process.

- 6** Select the new temperature setting and press button "C".  
The following screen will appear:



If you do not select a temperature setting, the system will automatically select OFF.

The new temperature setting is now saved and you will be redirected to the previous screen.

7 Select *back* until you reach the following screen:



8 Repeat steps 4 to 7 for each time setting and temperature setting you wish to modify or add.

## Modifying the temperature setting for a certain length of time

The temperature setting can be modified for a certain length of time.

To modify the temperature setting:

- 1 Touch one of the buttons to light up the display.
- 2 Press any navigation key.

The following screen will appear:



- 3 Increase or decrease the temperature setting using the navigation keys. Press button "C".  
The new temperature setting is now saved.



- 4 Enter the new time setting using the navigation keys. Press button "C".  
The temperature setting is now saved and you will be redirected to the start screen.



### Consult date and time



- The date and time of the Niko Home Control installation are centrally controlled.
- You can modify the data in the Niko Home Control user software.
- On the thermostat this data can only be consulted.

- 1 Select DATE on the following screen:



- 2 You can now see the settings for the year, month, day, hour and minutes.
- 3 Select *back* to return to the start screen.

## Changing the ventilation speed

Fans in indoor units have three available speed options.

To change the ventilation speed:

- 1 Select FAN on the following screen:



- 2 Increase or decrease the ventilation speed setting using button "C".  
The new ventilation speed setting is now saved.
- 3 Select *back* to return to the start screen.

## Changing the operating mode (cooling or heating)

To change the operating mode:

- 1 Select MODE on the following screen:



- 2 Change the operating mode using button "C".  
The new operating mode is now saved.
- 3 Select *back* to return to the start screen.

## Switching off the HVAC thermostat



- When the HVAC thermostat is switched off, all indoor units within the zone of the HVAC thermostat will also be switched off.
- When the HVAC thermostat is switched off, only the temperature will be displayed on the screen. This is read from the HVAC system. No temperature will be displayed if the temperature cannot be read.

To switch off the HVAC thermostat:

- 1 Select POWER on the following screen:



- 2 Press button "C".

The various options on this screen can no longer be selected:

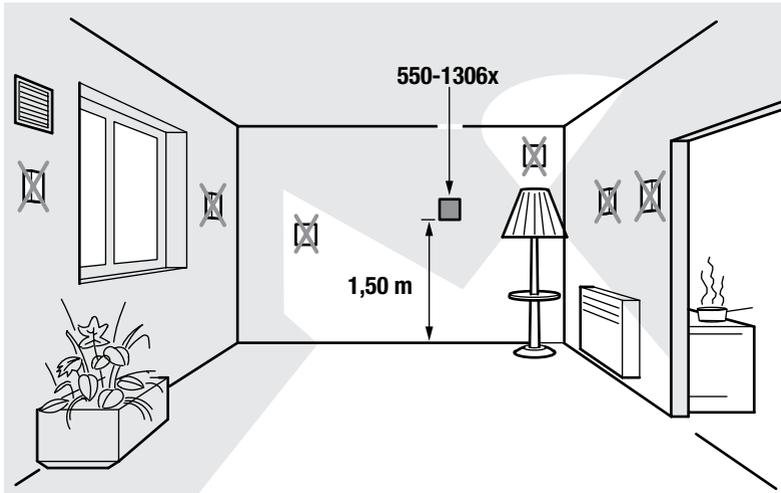


- 3 Select *back* to return to the start screen.

## Installation

An HVAC thermostat can be mounted in any room fitted with indoor units of the HVAC system. It controls the heating or cooling for the room in which it is mounted.

The HVAC thermostat only functions properly when the temperature within the room can be measured accurately. Try to eliminate as many factors as you can that may inhibit the thermostat's ability to accurately control the room temperature.



DO NOT mount the HVAC thermostat:

- in direct sunlight.
- on an exterior wall.
- within the immediate vicinity of a heat generating source (heater, radiator, etc.) or electrical equipment that may radiate heat (TV, computer, etc.).
- behind a curtain.

Do not allow air to circulate behind the HVAC thermostat. If needed, fill in any gaps in the flush-mounting box or bus cable duct using PU foam.

See [Installation on pagina 43](#).

## Technical data

- back-lit colour display
- resting potential: 26 Vdc (SELV, safety extra-low voltage)
- ambient temperature: 5 – 40 °C
- dimensions of the display: 45 x 45 x 32 mm (HxWxD)
- flush-mounting depth: 20 mm
- daily/weekly programmes
- 2 operating modes: cooling and heating
- 3 temperature settings with a value for cooling and a value for heating
- 3 statuses: eco, protect and on/off
- temperature accuracy: 1 °C
- in conformity with IEC 60730-2-9, EN 50491-5-2, EN 50491-2 and EN 50090-2-3
- protection degree: IP20

## 7.3. Mood control

### Description

The mood control is used by the resident to select one of the pre-programmed mood settings. A mood setting is a combination of output settings with regard to lighting, roll-down shutters, sun blinds, etc.

### Overview



- A. Display
- B. navigation key (up)
- C. Activate
- D. navigation key (down)
- E. Base

550-13040

## Operation

Mood settings are stored during the programming stage of the installation. The software includes 20 pictograms of which a maximum of eight pictograms can be selected. One or more actions are then linked to each one of those eight pictograms to help create the ideal mood for each occasion.

To activate a mood setting:

- 1 Touch one of the buttons to light up the display. When not in use, the display is dimmed to reduce energy consumption.
- 2 Press the navigation keys until the pictogram appears for the mood setting of your choice.
- 3 Press button "C".

The pictogram will change to an amber colour and will remain that way for as long as the mood setting is activated.



Mood settings can also be activated by sensors integrated in the Niko Home Control installation. You can select this option while programming the installation.

## Installation

See [Installation on pagina 43](#).

## Technical data

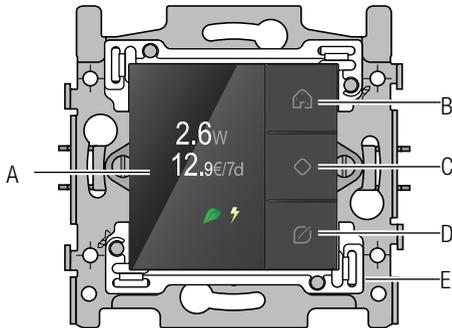
- back-lit colour display
- resting potential: 26 Vdc (SELV, safety extra-low voltage)
- ambient temperature: 5 – 40 °C
- dimensions of the display: 45 x 45 x 32 mm (HxWxD)
- flush-mounting depth: 20 mm

## 7.4. Eco-display

### Description

The eco-display allows residents to monitor the energy and water consumption as well as the amount of energy generated (if applicable) in their home. It can also be used to activate the eco-function or presence simulation function. Up to 5 eco-displays may be added in one Niko Home Control installation.

### Overview



- A. Display
- B. Presence simulation button
- C. Confirm/Menu/Cycle through screens
- D. Eco-button
- E. Base

550-13080

## Operation

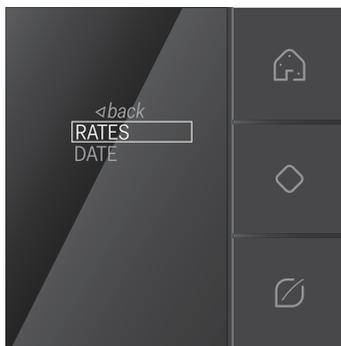
### Consumption details

The eco-display shows information on the electricity, gas and water consumption as well as the electricity production in the home. See [Electricity measuring modules on page 87](#). The type of information displayed will depend on the types of measuring modules installed. The electricity measuring module measures the electricity consumption or electricity production. The pulse counter communicates the electricity, gas and water consumption.

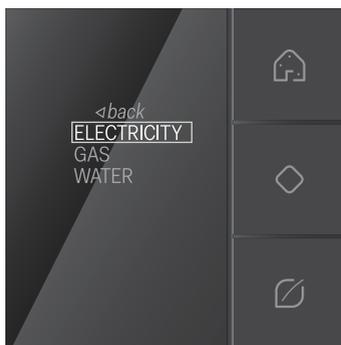
The current electricity consumption is expressed in W or kW, while gas consumption is expressed in m<sup>3</sup>. The total energy consumption for that week expressed in EUR, GBP or SEK is displayed underneath.

To view the rates:

- 1 Touch one of the buttons to light up the display. When not in use, the display is dimmed to reduce energy consumption.
- 2 Hold down button "C" to view the menu.  
The following screen will appear:



- 3 Press button "C" to select RATES.  
The following screen will appear:



- 4 Select ELECTRICITY, GAS or WATER and press button "C".

The selected rate will appear. You can modify the rate at this stage.

- 5 Select *back* using the navigation keys and press button "C".

### **Eco-function**

The eco-function applies to all the lights and connected circuits that the resident wishes to switch off upon leaving the home. You can determine the outputs that are to be included in this function while programming the installation.

Press the eco-button to activate the eco-function. The reduction in energy consumption will be registered immediately.

### **Presence simulation**

The presence simulation function allows the resident to have the lights switch on automatically at certain times. This way, it looks as though someone is home. While programming the installation, you can personally determine which lights should be included in the presence simulation as well as when they should switch on and how long they should be left on for.

Press the presence simulation button to activate the presence simulation function.

### **Installation**



Mount the eco-display:

- away from direct sunlight.
- near the door most commonly used by the resident to exit the home.

See [Push buttons with display on page 43](#).

## **Technical data**

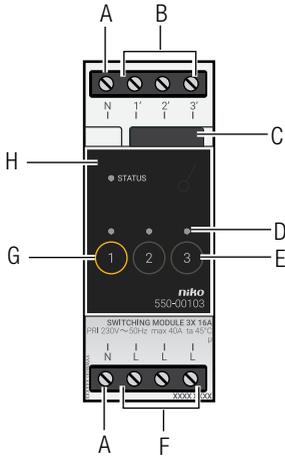
- back-lit colour display
- resting potential: 26 Vdc (SELV, safety extra-low voltage)
- ambient temperature: 5 – 40 °C
- dimensions of the display: 45 x 45 x 32 mm (HxWxD)
- flush-mounting depth: 20 mm
- weekly energy consumption in EUR or GBP
- in conformity with IEC 60730-2-9, EN 50491-5-2, EN 50491-2 and EN 50090-2-3

## 8. Switching modules

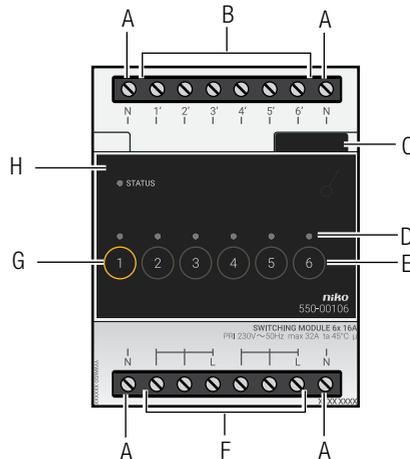
### Description

You can use three-fold or six-fold switching modules to connect three or six switching circuits respectively.

### Overview



550-00103



550-00106

- A. N screw terminals
- B. Screw terminals 1'-3' or 1'-6'
- C. Sliding contact
- D. CHANNEL LEDs
- E. Buttons 1-3 or 1-6
- F. L screw terminals
- G. ADDRESS button 1
- H. STATUS LED

This is where the neutral conductor is connected.

This is where you connect the phase conductor from the load that is connected to output 1' up to 3' or 1' up to 6'.

The sliding contact is used for connecting the next module, which means that the bus and the power supply module are then also interconnected.

One LED per channel. The CHANNEL LED lights up in TEST mode when the output is activated.

These buttons are used for activating or deactivating each individual output. Please remember that the activation or deactivation is only temporary as it will be overruled by the next bus communication.

This is where the phase of the 230 V mains voltage is connected.

The function of this button is twofold. In addition to the function described under "E", this button is also used while programming the installation to send the unique address of the module during the addressing phase.

The STATUS LED lights up in TEST mode when the module is connected correctly and is functioning properly. If an error occurs, the LED will blink to indicate an error code. See

[Error codes on pagina 78.](#)

## Operation

The bus signal of the controller activates one or several outputs of the switching module. Alternatively, the outputs can be activated or deactivated manually using the buttons on the switching module. Please remember that the activation or deactivation is only temporary as it will be overruled by the next bus communication.

The outputs are activated or deactivated via low-energy bistable relays in the module. The status of the relay only changes when a data pulse is generated by the controller or by one of the switch buttons.

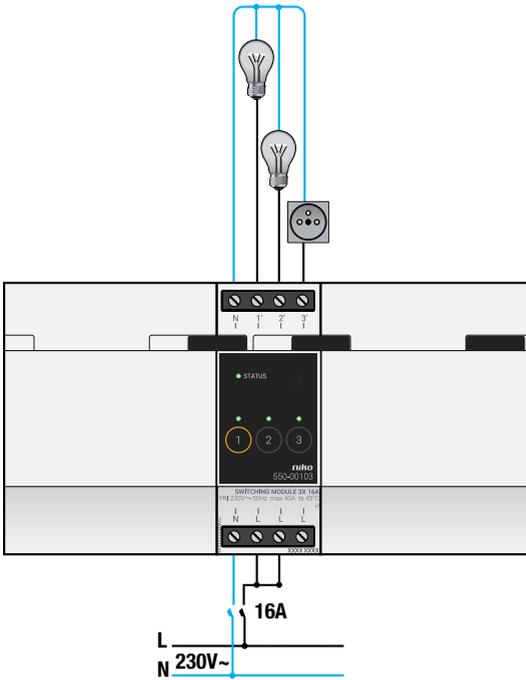
## Permitted loads

Check the table below to find out the maximum load for each type of lighting.

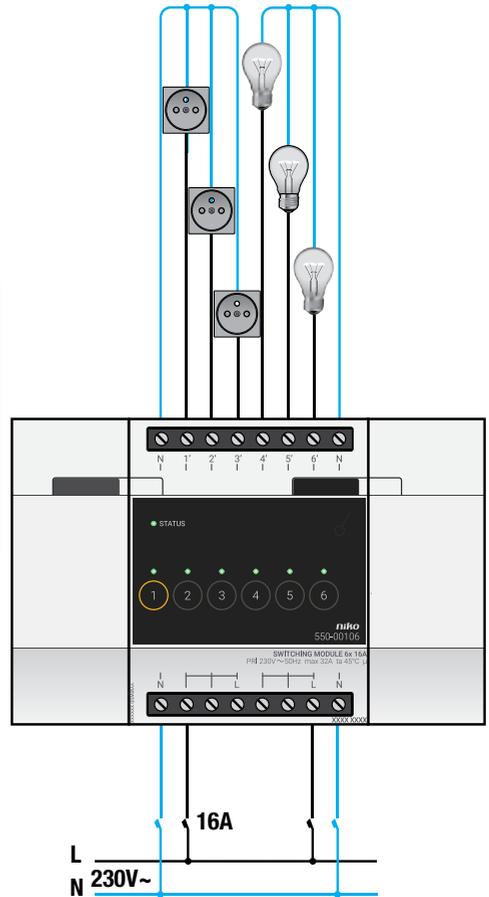
Type of lighting	Maximum RMS current
energy-saving lamps (CFLi), LEDs and HF fluo lamps with electronic control gear – ECG	3 A
fluorescent lamps (parallel compensated)	6 A
fluorescent lamps (non-compensated or serial-compensated)	10 A
low-voltage halogen lamps with ferromagnetic or electronic transformers	10 A
incandescent lamps, 230V halogen lamps (resistive load)	16 A

## Installation

### Connection diagrams



Three-fold switching module



Six-fold switching module



- Ensure that the installation is disconnected from the power mains when setting up the electrical cabinet.
- Observe all AREI regulations in force when connecting the load.
- Only one phase can be connected to each switching module.
- Use automatic fuses of 16A max. for the switching module. Mount the fuses in front of the Niko Home Control module.
- Verify whether each load corresponds to the specifications of the switching module. not connect loads that are outside the permitted range directly to this module. The total load should not exceed 32 A- 230V for a six-fold switching module and 40 A - 230V for a three-fold switching module.

Follow the steps below to install the module:

- 1 Press the switching module onto the DIN rail until it clicks into place.
- 2 Make a single-phase connection from the mains voltage to the L screw terminals.  
The three-fold switching module has three independent L screw terminals, which means three power circuits can be connected.  
In the six-fold switching module, all six screw terminals at the bottom are looped into two groups of three, which means two power circuits can be connected.
- 3 The switching circuits you wish to connect can now be connected to screw terminals 1'-3' or 1'-6'.
- 4 Group all neutral conductors and connect these to an N screw terminal.
- 5 Connect the switching module to the module before it. Slide the sliding contact of this module to the right until it clicks into the switching module. This will ensure that the bus and the power supply voltage are connected.

### **Error codes**

When the module is functioning properly, the STATUS LED will light up in TEST mode only. If one or several errors occur, the LED will blink to indicate the error code of the error with the highest priority. The table below provides an overview of all error codes.

LED	ACTION	ERROR	POSSIBLE SOLUTIONS
STATUS LED	Blinks – one pulse per two seconds.	Software error	Wrong software version.* *Download the latest software version from the Niko website to upgrade the module.

**Technical data*****Three-fold switching module***

- maximum load: 230 V – 16 A per switching contact
- total maximum load of the module: 230 V – 40 A
- 3 independent switching circuits possible on the same phase
- dimensions: DIN 2E
- sliding contact to connect the module to the following module on the DIN rail
- 2 x 4 screw terminals for 3 x 1.5 mm<sup>2</sup> or 2 x 2.5 mm<sup>2</sup> or 1 x 4 mm<sup>2</sup>
- CE marked
- ambient temperature: 0 - 45 °C

***Six-fold switching module***

- maximum load: 230 V – 16 A per switching contact
- total maximum load of the module: 230 V – 32 A
- 2 groups with 3 switching contacts each
- dimensions: DIN 4E
- sliding contact to connect the module to the following module on the DIN rail
- 2 x 8 screw terminals for 3 x 1.5 mm<sup>2</sup> or 2 x 2.5 mm<sup>2</sup> or 1 x 4 mm<sup>2</sup>
- CE marked
- ambient temperature: 0 - 45 °C

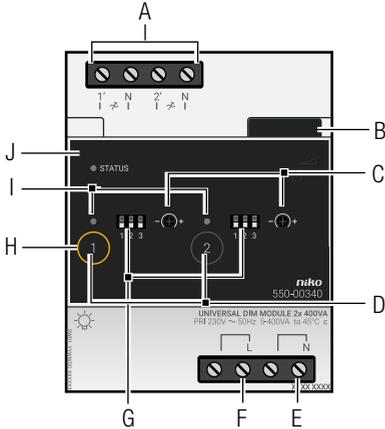


## 9. Universal dimming module

### Description

The universal dimming module has two channels for dimming light circuits.

### Overview



550-00340

- |   |  |
|---|--|
| <b>A.</b> L'1/N and L'2/N screw terminals | These screw terminals are used for connecting dimmable loads.  |
| <b>B.</b> Sliding contact                 | The sliding contact is used for connecting the next module, which means that the bus and the power supply module are then also interconnected.   |
| <b>C.</b> Potentiometer                   | Use the potentiometer to manually select the minimum light intensity.  |
| <b>D.</b> Buttons 1-2                     | These buttons are used for activating or deactivating each individual output. Please remember that the activation or deactivation is only temporary as it will be overruled by the next bus communication.                 |
| <b>E.</b> N screw terminals               | This is where the neutral conductor is connected.  |
| <b>F.</b> L screw terminals               | This is where the phase of the 230 V mains voltage is connected.   |
| <b>G.</b> DIP switches                    | These switches are used to manually select the type of lighting you wish to dim.   |
| <b>H.</b> ADDRESS button 1                | The function of this button is twofold. In addition to the function described under "D", this button is also used while programming the installation to send the unique address of the module during the addressing phase. |
| <b>I.</b> CHANNEL LEDs                    | One LED per channel. The CHANNEL LED lights up in TEST mode when the output is activated. If an error occurs in the channel, the LED will blink to indicate an error code. See <a href="#">Error codes on pagina 86</a> .  |
| <b>J.</b> STATUS LED                      | The STATUS LED lights up in TEST mode when the module is connected correctly and is functioning properly. If an error occurs, the LED will blink to indicate an error code. See <a href="#">Error codes on pagina 86</a> . |

## Operation

The transmission signal of the controller activates one or several outputs on the dimming module. These outputs can also be activated or deactivated manually using the buttons on the dimming module. Please remember that the activation or deactivation is only temporary as it will be overruled by the next bus communication.

 After a power failure, the dimming module will restore the settings from before the power failure.

You can select the type of lighting you wish to dim by adjusting the DIP switches on the front of the module. Use the potentiometer to select the minimum light intensity for each channel on the front of the module. See [Installation on pagina 83](#).

## Permitted loads

Check the table below to find out the maximum load for each type of lighting at an ambient temperature of 45 °C.

				CFLi*	dimbare ledlamp*
<b>Max.</b>	400 W	400 W	400 W	200 W	200 W
<b>Min.</b>	5 W	5 W	20 W	5 W	5 W

\* A maximum of 10 lamps may be connected.

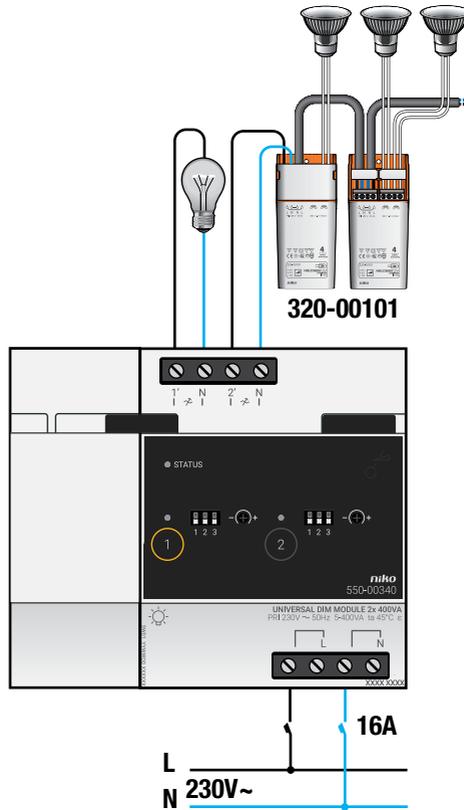
 Do not use the dimming module to adjust motors used in the installation.

The dimmer is fitted with a thermal protection device. If the temperature rises too much due to an overload, the dimmer will automatically switch itself off. In that case:

- verify that the load does not exceed the maximum permitted load. Remember to take into account the reactive power of ferromagnetic transformers.
- check the temperature inside the electrical cabinet (45 °C maximum).
- check whether mixed loads are being used.
- verify that the setting for the minimum light intensity is not too low.
- check whether the correct type of lighting has been selected.

## Installation

### Wiring diagram



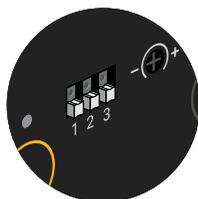
- Ensure that the installation is disconnected from the mains when setting up the electrical cabinet.
- Observe all AREI regulations in force when connecting the load.
- Preferably position the dimming modules at the bottom of the electrical cabinet, yet not underneath, above or close to heat-sensitive elements such as the connected controller or an extra power supply.
- Check the temperature inside the electrical cabinet. Provide extra ventilation if the temperature exceeds 35 °C. If necessary, install a fan. Ensure that any air is adequately vented at the top of the electrical cabinet.

Follow the steps below to install the module:

- 1 Press the dimming module onto the DIN rail until it clicks into place.
- 2 Connect the L phase wire and the N neutral wire to the L and N screw terminals respectively.
- 3 Connect the circuits you wish to dim to the outputs.
- 4 Connect the dimming module to the module before it. Slide the sliding contact of this module to the right until it clicks into the dimming module. This will ensure that the bus and the power supply voltage are connected.

## Selecting the type of lighting

Adjust the position of the DIP switch to manually select the type of lighting you wish to dim. Follow the instructions in the diagram below.



	Incandescent lamp – reverse phase control	
	Halogen lamp with electronic transformer – reverse phase control	
	Halogen lamp with ferromagnetic transformer – phase control	
<b>LED 1</b>	Dimmable LED lamp - reverse phase control	
<b>LED 2</b>	Dimmable LED lamp - phase control	
<b>CFL1</b>	Dimmable economy lamp - reverse phase control (*)	
<b>CFL2</b>	Dimmable economy lamp - phase control (*)	
<b>LED 3</b>	Dimmable LED lamp - reverse phase control (*)	
<b>LED 4</b>	Dimmable LED lamp - phase control (*)	

(\*) These lamp profiles are equipped with a boost function. This means that upon switching on, the lamp will shine bright briefly before going to the desired dimming level.

## Select profile for LED lamps

To select the right profile for the placed LED lamps, you proceed as follows:

- 1 Successively try the profiles LED 1 and LED 2. If one of these profiles operates properly, proceed to [Setting the minimum level on page 85](#).
- 2 If not, successively try the profiles Incandescent lamp or Halogen lamp with electronic transformer. If one of these profiles operates properly, you don't have to do anything further.
- 3 If not, the placed LED lamps need a lot of energy to start up. Therefore you should choose profile LED 3 or LED 4. These profiles have a boost function ensuring that when starting up, the lamps receive enough energy to go into the desired dimming level.

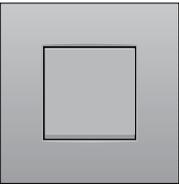
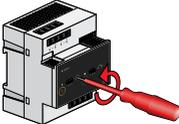
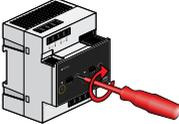
We provide an example of the advantages and disadvantages of the final two options below:

<b>Profile</b>	Incandescent lamp or halogen lamp with electronic transformer	LED 3 or LED 4
<b>Advantage</b>	The lamp does not shine bright briefly after being switched on	The lamp can be dimmed until its minimum level
<b>Disadvantage</b>	<ul style="list-style-type: none"> <li>The lamp cannot be dimmed until its minimum level</li> <li>In certain cases the difference that can be reached in light output is limited</li> </ul>	The lamp shines bright briefly after being switched on, if a low dimming level was chosen

Switch the dimmer off and on after setting the minimum level. If the lamp is not on, select a lamp profile with boost function (CFLi1, CFLi2, LED 3 or LED 4).

### Setting the minimum level

To reach the (optimal) maximum reach of each lamp, the minimum level can be adjusted. Use a screwdriver to manually adjust the minimum level. Turn the potentiometer to the right to increase the level. Turn to the left to reduce the level. Follow the instructions in the diagram below.

ACTION	CONTROL		CONCLUSION		ACTION	CONTROL
Dim to MINIMUM LEVEL  		Is on at minimum level		Minimum dimming level OK	/	
		Still shines too bright		Minimum dimming level too high		
	 OR 	Is not on or is flashing		Minimum dimming level too low		

## Error codes

When the module is functioning properly, the STATUS LED will light up in TEST mode only. If one or several errors occur, the LED will blink to indicate the error code of the error with the highest priority. The table below provides an overview of all error codes.

LED	ACTION	ERROR	POSSIBLE CAUSES
STATUS LED	Blinks – one pulse per two seconds.	Software error	Wrong software version. * *Download the latest software version from the Niko website to upgrade the module.
CHANNEL LED	Blinks – one pulse per two seconds.	Overvoltage	The mains voltage is disconnected. The load is disconnected. The power is too high. The lamp or cable used is faulty. The thermal protection has been activated. There is no transmission signal. The minimum level is set too low. The dimming profile is wrong. A combination of the above.
	Blinks – two pulses per two seconds.	Short circuit	
	Blinks – three pulses per two seconds.	Overload	
	Blinks – four pulses per two seconds.	Overheating	
	Blinks rapidly.	Module error	

## Technical data

- input voltage: 230 Vac  $\pm$  10 %, 50 Hz
- ambient temperature: 0 - 45 °C
- for use in locations with non-condensing humidity (30 % - 70 %)
- dimming capacity per channel: 5 - 400 VA (at 45 °C) or 5 - 500 VA (at 35 °C)
- minimum light intensity and phase control or reverse phase control can be adjusted manually
- 2 x 4 screw terminals for 3 x 1.5 mm<sup>2</sup> or 2 x 2.5 mm<sup>2</sup> or 1 x 4 mm<sup>2</sup>
- sliding contact to connect the module to the following module on the DIN rail
- in conformity with EN 60669-2-1
- short-circuit and overheating protections
- CE marked
- dimensions: DIN 4U

## 10. Electricity measuring modules

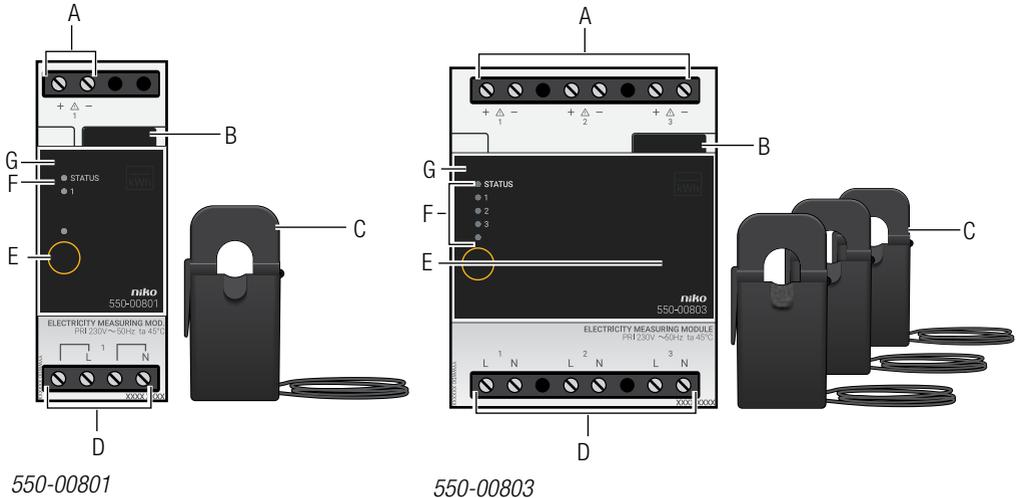
### Description

The electricity measuring module is available with one channel or three channels and is used for measuring the consumption or electricity production on one or several switching circuits or phases.

Typical applications for these modules:

- measuring the total electricity consumption of the dwelling that is connected to a single-phase supply network.
- measuring the total electricity consumption of the dwelling that is connected to a three-phase supply network 3N 400 Vac. measuring the total electricity consumption of the dwelling that is connected to a three-phase supply network 3 x 230 Vac is not possible.
- measuring the amount of energy generated by photovoltaic solar panels.
- measuring the consumption of specific circuits, such as the upper floor of a house, for instance.
- assessing which devices are heavy electricity users.

### Overview



- |                               |  |
|-------------------------------|--|
| <b>A.</b> +/- screw terminals | This is where you connect the accompanying current clamps.   |
| <b>B.</b> Sliding contact     | The sliding contact is used for connecting the next module, which means that the bus and the power supply module are then also interconnected.   |
| <b>C.</b> Current clamps      | Connect these current clamps to the conductors of the switching circuit of which the electricity consumption or production is to be measured.  |
| <b>D.</b> L/N screw terminals | This is where you connect the phase whose voltage is to be measured.   |
| <b>E.</b> ADDRESS button      | This button is used while programming the installation to send the unique address of the module during the addressing phase.   |
| <b>F.</b> CHANNEL LEDs        | One LED per channel. The CHANNEL LED lights up in TEST mode when the consumption or production of that channel exceeds 20 W. If an error occurs in the channel, the LED will blink to indicate an error code. See <a href="#">Error codes on page 97</a> . |
| <b>G.</b> STATUS LED          | The STATUS LED lights up in TEST mode when the module is connected correctly and is functioning properly. If an error occurs, the LED will blink to indicate an error code. See <a href="#">Error codes on page 97</a> .                                   |

## Operation

The measuring module measures the electrical current in one or several conductors via the current clamps supplied. The module measures the voltage of the phase to be measured via the connection terminals. By measuring both electrical current and voltage, the installation can accurately assess how much electricity is consumed or produced in the home. All values measured are sent to the Niko Home Control installation and logged by the connected controller (light). The eco-display shows the total electricity consumption and the electricity production, if applicable. A detailed overview of these data can be requested via the touchscreen\*, a smartphone\* or the Niko Home Control energy software.



- The measuring module should not be used for billing purposes. Only the data recorded by the meter of the energy supplier are valid for billing purposes. The data recorded by the measuring module should be used for information purposes only.
- Do not use the measuring module to measure direct current components.
- Only use the current clamps supplied with the module to ensure that measurements are accurate.

## Selecting the correct measuring module

Select an electricity measuring module with one channel or an electricity measuring module with three channels, based on the number and type of channels you wish to measure. Alternatively, the electricity consumption can be measured by a pulse counter provided that the electricity meter is fitted with a pulse output. See [Pulse counter on page 99](#).



A maximum of 20 channels can be measured per installation.

The electricity measuring module with three channels can be used for:

- measuring a three-phase connection (3N 400 Vac).
- measuring three individual switching circuits (1 x 230 Vac).

Use the programming software to select the operating mode of the electricity measuring module with three channels. Make a selection based on the table below:

Required for measuring total consumption and production	Electricity measuring module with one channel	Electricity measuring module with three channels
Single-phase connection	1	-
Single-phase connection with solar panels*	Minimum 2	1
Three-phase connection (3N 400 Vac)	-	1
Three-phase connection (3N 400 Vac) with single-phase solar panels	1	1
Single-phase connection with three-phase solar panels	-	2

\* In this case, use several measuring modules with one channel, or one measuring module with three channels.

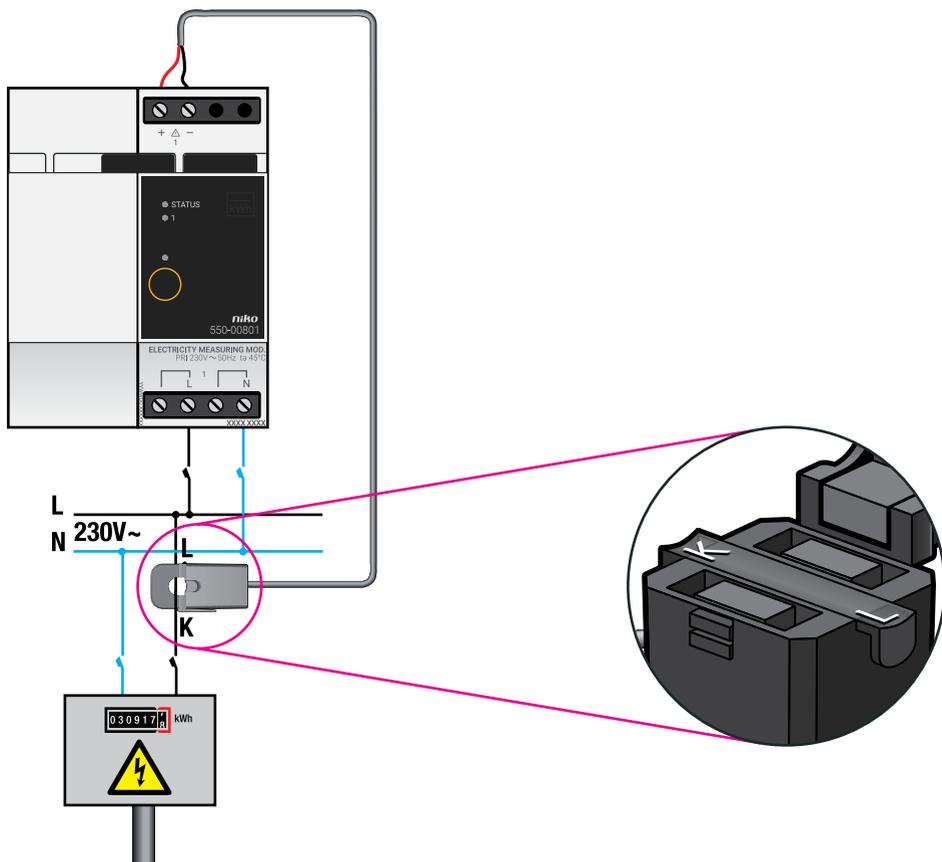
\* Not possible with the light version of the connected controller.

The measuring data is then stored in the memory of the connected controller (light). This data can be exported, backed up and restored using the Niko Home Control user settings software (consult the Niko Home Control manual). How long the connected controller (light) will store this data for will depend on the number of channels in the installation. An overview is provided in the table below. If the resident wishes to store this data for an extended period of time, then he or she must export this data using the Niko Home Control user settings software before the existing data will be overwritten.

<b>Number of channels</b>	<b>Storage capacity of the connected controller (light)</b>
3	9 years
9	3 years
15	1.5 years
20	1 year

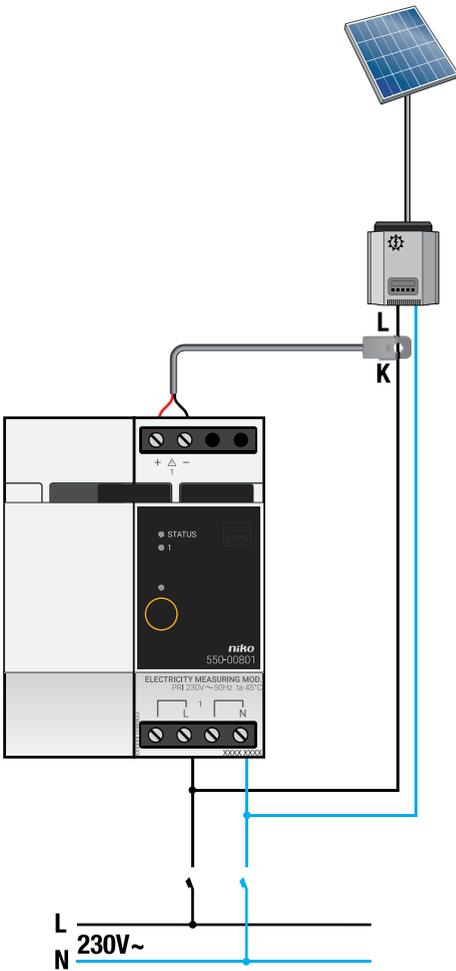
## Installation

### Wiring diagrams for measuring modules with one channel



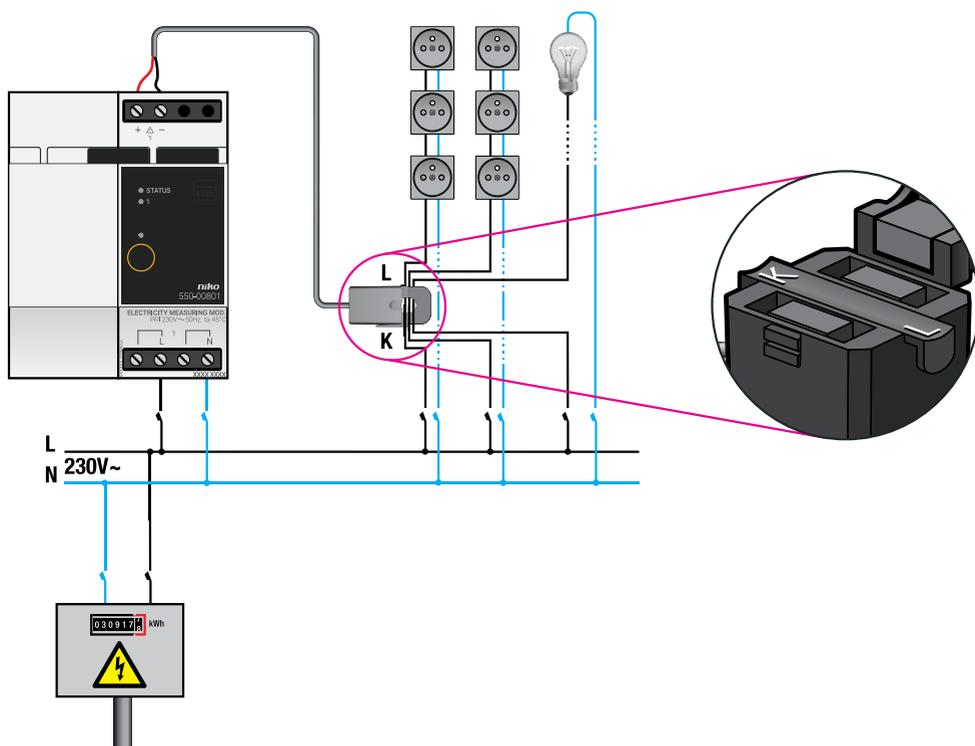
*Measuring the total consumption of the installation*

\* Maximum of 63 A with included current clamp. Expandable until 120 A with current clamp 550-00809.



*Measuring the amount of energy generated by the solar panels*

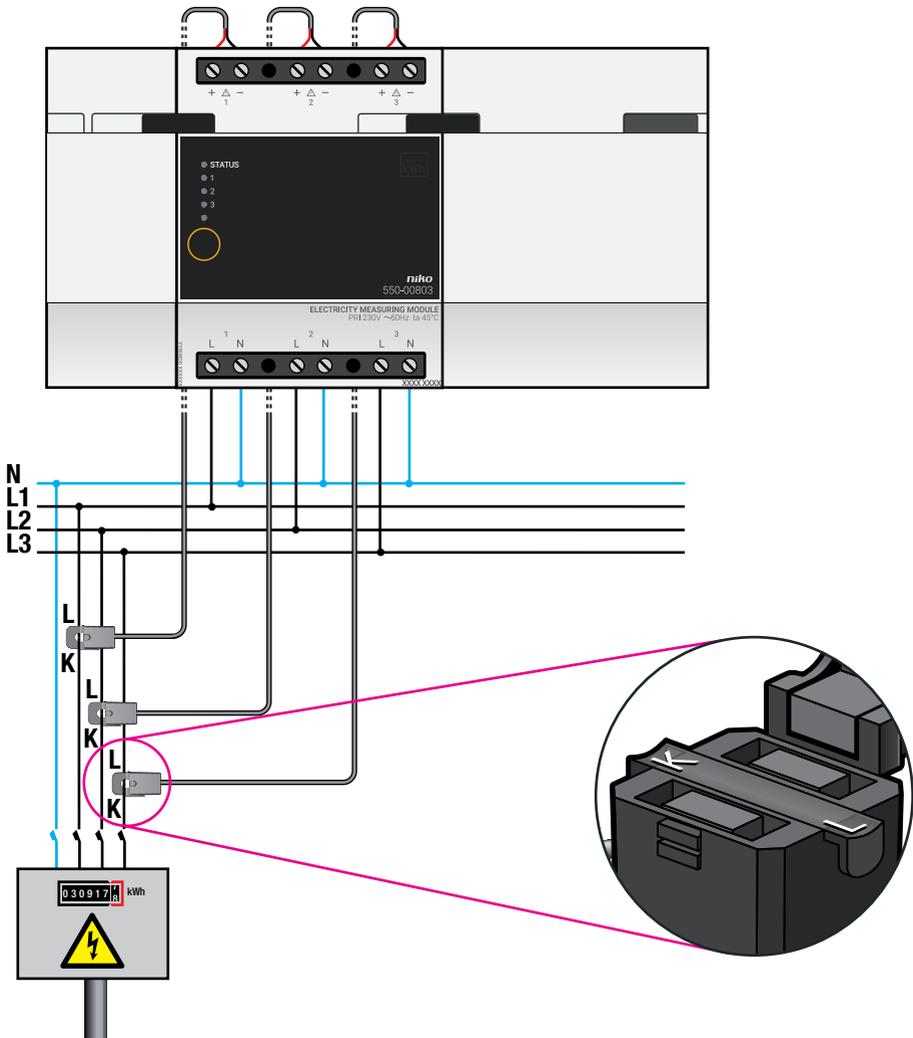
\* Maximum of 63 A with included current clamp. Expandable until 120 A with current clamp 550-00809.



*Measuring one or several switching circuits*

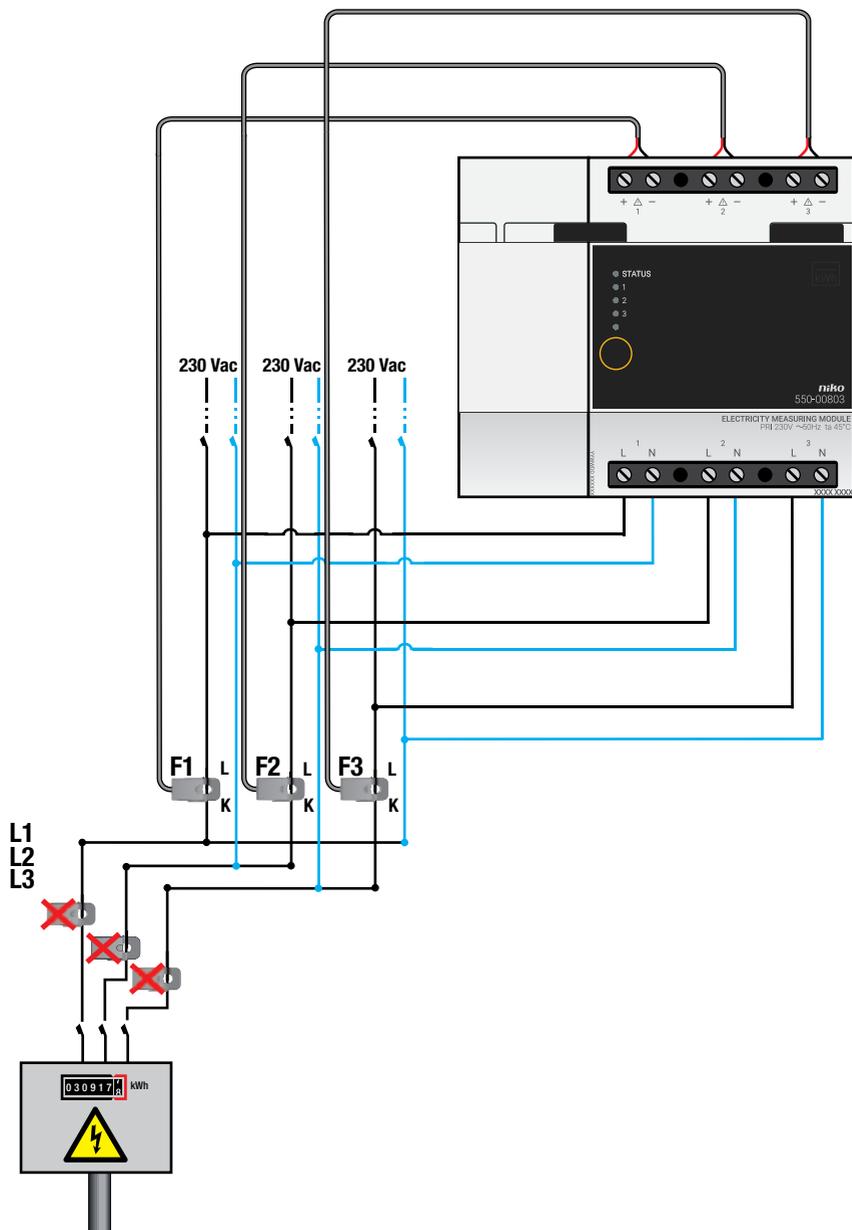
\* Maximum of 63 A with included current clamp. Expandable until 120 A with current clamp 550-00809.

## Wiring diagrams for measuring modules with three channels



Measuring the total consumption on a connection of 3N 400 Vac

\* Maximum of 63 A with included current clamp. Expandable until 120 A with current clamp 550-00809.



Measuring total consumption on a connection of 3 x 230 Vac, only possible when split into three single-phase circuits\*\*

\* Maximum of 63 A with included current clamp. Expandable until 120 A with current clamp 550-00809.

\*\* Not applicable in the Netherlands.

Follow the steps below to install the electricity measuring module:



- Ensure that the installation is disconnected from the mains.
- Always measure voltage and current on the same phase.
- The cable of the current clamp supplied with the module is calibrated. Do not shorten or extend this cable.

- 1 Press the measuring module onto the DIN rail until it clicks into place.
- 2 Clip the current clamp around the conductor(s) of the switching circuit(s) of which the electricity consumption or production is to be measured.



The L side of the current clamp must point away from the main meter. The K side of the clamp must point towards the main meter.

Several switching circuits on the same phase can be measured by one single current clamp. One current clamp can be fitted around several different conductors.



Remember to take into account the direction of the current.

- 3 Connect the wires of the current clamp to the +/- screw terminals of the measuring module. Respect the polarity: connect the red wire to the + screw terminal and the black wire to the - screw terminal.
- 4 Connect the switching circuit(s) to the L/N screw terminals of the measuring module.  
If you wish to measure the electricity consumption or production of several switching circuits on the same phase, you simply need to connect one of the switching circuits to the module.
- 5 Connect the measuring module to the module before it. Slide the sliding contact of this module to the right until it clicks into the measuring module. This will ensure that the bus and the power supply voltage are connected.



Swapping of:

- the L/N screw terminals of the measuring module, or
- the +/- screw terminals of the current clamp, or
- the L side and K side of the current clamp

will not damage the measuring module nor the installation. However, doing so will reverse the sign of the value measured, which means that the graphs displayed may contain errors.

Provided that everything is installed correctly, the electricity consumption will always be displayed as a positive number while the amount of electricity generated (e.g. by solar panels) will always be displayed as a negative number. You can verify this via the eco-display, the touchscreen or the energy software.

## **Programming measuring modules**

Use the programming software to select the currency of your choice: EUR, GBP or SEK. The following settings can be selected per channel:

- channel name.
- single-phase or three-phase use.
- channel type: global (meter from the energy supplier), consumer, amount generated.
-  • If the voltage at the power supply of the Niko Home Control installation is disrupted, no data will be logged, even if electricity is still being consumed or produced by the switching circuits measured.
- You will lose all data of a channel if you use the programming software to:
  - remove the channel.
  - change the energy type (electricity/gas/water).
  - change the measurement type.
  - change the load type.

Export the data beforehand using the Niko Home Control user settings software (consult the Niko Home Control manual).

## Error codes

When the module is functioning properly, the STATUS LED will light up in TEST mode only. If one or several errors occur, the LED will blink to indicate the error code of the error with the highest priority. The table below provides an overview of all error codes.

LED	ACTION	ERROR	POSSIBLE CAUSES
STATUS LED	Blinks – one pulse per two seconds.	Software error	Wrong software version. * *Download the latest software version from the Niko website to upgrade the module.
CHANNEL LED	Blinks rapidly.	Module error	The module is faulty. No voltage is provided to the L/N screw terminals.

## Technical data

### *Electricity measuring module with one channel*

- measuring range with current clamp supplied: 5 - 11 490 W, 22 mA - 63 A
- measuring range with current clamp 550-00809: 90 - 27 600 W, 400 mA – 120 A
- input voltage: 230 Vac
- 1 current clamp (included)
- accuracy: IEC62053-21 class 1 (R), class 2 (L)
- single-phase connection: 230 Vac, 50 Hz
- cable thickness for the included current clamp: 1 x 10 mm<sup>2</sup> or 6 x 2.5 mm<sup>2</sup> or 9 x 1.5 mm<sup>2</sup>
- maximum cable thickness for the current clamp 550-00809: 4 x 10 mm<sup>2</sup> or 12 x 2.5 mm<sup>2</sup> or 20 x 1.5 mm<sup>2</sup>
- length of the connector cable at the current clamp: 100 cm
- not suited to measuring direct current components
- measuring data only for information purposes, not valid for invoicing
- 4 screw terminals to measure the voltage of the connected switching circuit
- 2 screw terminals to connect the current clamp supplied
- sliding contact to connect the module to the following module on the DIN rail
- dimensions: DIN 2U
- CE marked
- ambient temperature: 0 - 45 °C

## **Electricity measuring module with three channels**

- measuring range with current clamps supplied: 5 - 14 490 W, 22 mA - 63 A
- measuring range with current clamp 550-00809: 90 - 27 600 W, 400 mA – 120 A
- maximum measuring range of the entire measuring module: 32768 W
- input voltage: 230 Vac
- 3 current clamps (included)
- accuracy: IEC 62053-21 class 1 (R), class 2 (L)
- connection:
  - three-phase: 3N 400 Vac, 50 Hz
  - single-phase: three switching circuits of 230 Vac, 50 Hz
- cable thickness for the included current clamps: 1 x 10 mm<sup>2</sup> or 6 x 2.5 mm<sup>2</sup> or 9 x 1.5 mm<sup>2</sup>
- maximum cable thickness for the current clamp 550-00809: 4 x 10 mm<sup>2</sup> or 12 x 12.5 mm<sup>2</sup> or 20 x 1.5 mm<sup>2</sup>
- length of the connector cable at each current clamp: 100 cm
- not suited to measuring direct current components
- measuring data only for information purposes, not valid for invoicing
- 3 x 2 screw terminals to measure the voltage of the connected switching circuits
- 3 x 2 screw terminals to connect the current clamps supplied
- sliding contact to connect the module to the following module on the DIN rail
- dimensions: DIN 4U
- CE marked
- ambient temperature: 0 - 45 °C

## **Current clamp 120 A**

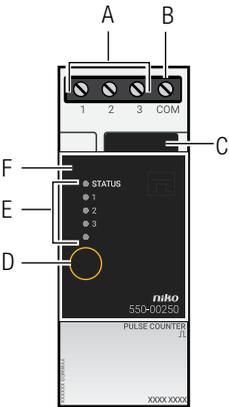
- expands the measuring range of the measuring modules up to 90 - 27600 W, 400 mA – 120 A per channel
- specify the type of current clamp during programming
- can be locked/unlocked up to ± 100 times
- length of the connector cable at the current clamp: 100 cm (may not be shortened or lengthened)
- maximum cable thickness for the current clamp: 4 x 10 mm<sup>2</sup> or 12 x 12.5 mm<sup>2</sup> or 20 x 1.5 mm<sup>2</sup>
- accuracy: IEC 62053-21 class 1 (R), class 2 (L)
- minimum insulation resistance: 100 MΩ (between core and output terminals)
- weight: 75 g
- ambient temperature: -20 °C - 50 °C
- dimensions: 55 x 29.5 x 31 mm (H x W x D)
- CE marked

## 11. Pulse counter

### Description

The pulse counter allows you to monitor gas, water and electricity consumption as well as electricity production.

### Overview

- 
- The diagram shows a rectangular pulse counter module. At the top, there are three screw terminals labeled 1, 2, and 3, and a fourth terminal labeled COM. A sliding contact is located below the terminals. On the left side, there are three status LEDs labeled 1, 2, and 3, and a larger STATUS LED. A button labeled ADDRESS is located below the status LEDs. The module is labeled with 'niko 550-00250 PULSE COUNTER J1' and 'XXXX XXXX' at the bottom.
- A.** Screw terminals 1 -3 This is where you can connect three pulse inputs. Each pulse input must be connected to the pulse output of a meter.
  - B.** Screw terminal COM This is where you connect the mass of the pulse output.
  - C.** Sliding contact The sliding contact is used for connecting the next module, which means that the bus and the power supply module are then also interconnected.
  - D.** ADDRESS button This button is used while programming the installation to send the unique address of the module during the addressing phase.
  - E.** CHANNEL LEDs One LED per channel. The CHANNEL LED lights up in TEST mode when the pulse counter detects a pulse from the meter.
  - F.** STATUS LED The STATUS LED lights up in TEST mode when the module is connected correctly and is functioning properly. If an error occurs, the LED will blink to indicate an error code. See [Error codes on page 102](#).

550-00250

### Operation

This module has three pulse inputs. It can therefore be connected to up to three meters. The pulse counter counts the pulses and converts the sum into m<sup>3</sup> or kWh.

The scale factor of the pulses (e.g. 1 pulse = 10 litres) and the meter type (gas, water or electricity) can be selected via the programming software.

The eco-display shows the total electricity consumption and the electricity production, if applicable. A detailed overview of the history of the energy consumption can be requested via the touchscreen\*, a smartphone\* or the Niko Home Control energy software.



The pulse counter should not be used for billing purposes. Only the data recorded by the meter of the energy supplier are valid for billing purposes. The data recorded by the pulse counter should be used for information purposes only.

### Selecting the correct measuring module

There are a few options available for measuring electrical data. Based on the number and type of channels you wish to measure, you can either select an electricity measuring module with one channel, an electricity measuring module with three channels, or a pulse counter for three channels in conjunction with a meter with pulse output. See [Electricity measuring modules on page 87](#).



A maximum of 20 channels can be measured per installation.

The measuring data is then stored in the memory of the connected controller (light). This data can be exported, backed up and restored using the Niko Home Control user settings software (consult the Niko Home Control manual). How long the

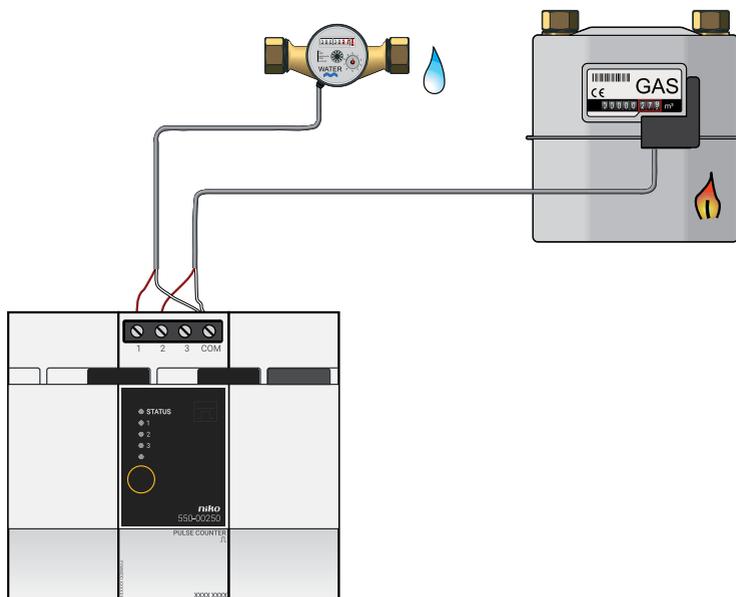
\* Not possible with the light version of the connected controller.

connected controller (light) will store this data for will depend on the number of channels in the installation. An overview is provided in the table below. If the resident wishes to store this data for an extended period of time, then he or she must export this data using the Niko Home Control user settings software before the existing data will be overwritten.

Number of channels	Storage capacity of the connected controller (light)
3	9 years
9	3 years
15	1.5 years
20	1 year

## Installation

### Wiring diagram



### Fitting a meter with pulse output

There are three options for fitting a meter with pulse output:

- An add-on device is available from the wholesaler's for most gas meters supplied by the energy supplier. This device clips onto the meter housing and generates a pulse whenever a certain amount of gas has been used. In a lot of cases, this add-on device can also be used on existing meters. Contact the gas meter manufacturer for more information.
- For a newly constructed dwelling, you can ask the client (building supervisor or architect) to request a gas or water meter with pulse output from the energy supplier.
- You can ask the installer of the heating or sanitary system to install a separate gas or water meter with pulse output.

### **Connecting and mounting the gateway**

Follow the steps below to mount and connect the pulse counter:



- Ensure that the installation is disconnected from the mains.
- The cable distance between the module and the pulse output should not exceed 50 m.
- A maximum of three meters can be connected to each module.
- If you establish a connection with the gas meter, make sure that the pulse output is galvanically isolated from the meter housing. In most cases, an add-on meter interface that generates pulses via an internal magnetic contact switch (reed contact) can be clipped onto the meter.

- 1** Press the module onto the DIN rail until it clicks into place. Preferably position the pulse counter in the top row inside the electrical cabinet to keep the SELV cables separate from the 230V cables.
- 2** Connect the pulse outputs to screw terminals 1-3.
- 3** Connect the mass of the pulse outputs to the common screw terminal COM.
- 4** Connect the module to the module before it. Slide the sliding contact of this module to the right until it clicks into the pulse counter. This will ensure that the bus and the power supply voltage are connected.

### **Programming the pulse counter**

Use the programming software to select the currency of your choice: EUR, GBP or SEK. Gas and water consumption are expressed in m<sup>3</sup>, and electricity in kWh. The following settings can be selected per channel:

- channel name.
  - channel type: gas, water, electricity.
  - pulse conversion factor:
    - 1 - 1,000 pulses/m<sup>3</sup> for gas and water.
    - 1 - 10,000 pulses/kWh for electricity.
  - for electricity: global, consumer, amount generated.
-  • If the voltage at the power supply of the Niko Home Control installation is disrupted, no data will be logged, even if electricity is still being consumed or produced by the switching circuits measured.
- You will lose all data of a channel if you use the programming software to:
    - remove the channel.
    - change the energy type (electricity/gas/water).
    - change the measurement type.

## Error codes

When the module is functioning properly, the STATUS LED will light up in TEST mode only. If one or several errors occur, the LED will blink to indicate the error code of the error with the highest priority. The table below provides an overview of all error codes.

LED	ACTION	ERROR	POSSIBLE CAUSES
STATUS LED	Blinks – one pulse per two seconds.	Communication error	The module is faulty or nothing has been connected to the connection terminals.

## Technical data

- maximum pulse frequency per input: 10 Hz
- minimum pulse duration: 30 ms
- only for meters with a pulse output isolated from the mains in accordance with SELV requirements (safety extra-low voltage)
- 4 screw terminals for 3 x 1.5 mm<sup>2</sup> or 2 x 2.5 mm<sup>2</sup> or 1 x 4 mm<sup>2</sup>
- sliding contact to connect the module to the following module on the DIN rail
- dimensions: DIN 2U
- CE marked
- ambient temperature: 0 - 45 °C

## 12. Touchscreen

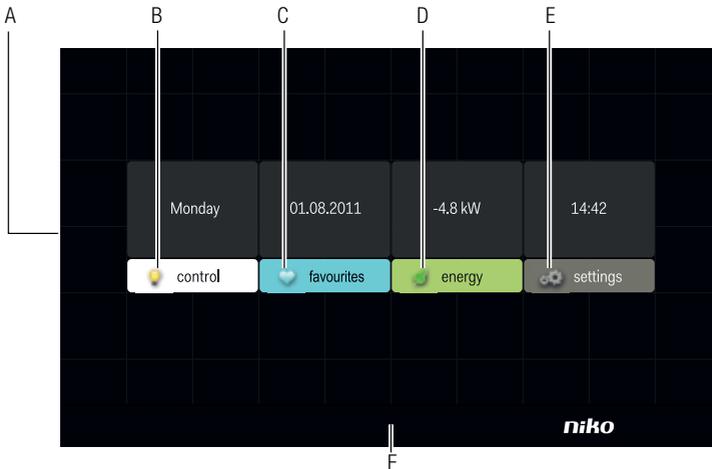
 This touchscreen does not support access control. To be able to use access control with the Niko Home Control installation, use touchscreen 2 (550-20101). Consult Chapter 13 for more information.

 This touchscreen cannot be used in installations with a connected controller light (550-00002).

### Description

The Niko Home Control touchscreen offers residents a user-friendly interface to operate all functions within their Niko Home Control installation. The symbol displayed next to each action represents the current status of that action. In addition, the touchscreen provides a detailed overview of the electricity, gas and water consumption in the home, provided that these functions have been included in the installation.

### Overview



550-20100

- A. Start screen** Displays the date, time and (provided this function has been activated) the measurement of the overall electricity consumption in the home. The start screen also displays four tabs, i.e. “control”, “favourites”, “energy” and “settings”.
- B. Control** Displays the standard symbols of the locations and actions that you programmed via the programming software.
- C. Favourites** Displays the favourites that you entered via the “settings” tab.
- D. Energy** Displays the values measured for gas, water and electricity consumption.
- E. Settings** This is where you can modify the settings for the “control” and “favourites” tabs, and where you can view the system information and the log book of notifications and alarms.
- F. Reset button** Use this button to reset the touchscreen. The button is located in the centre at the bottom of the touchscreen.

## Operation

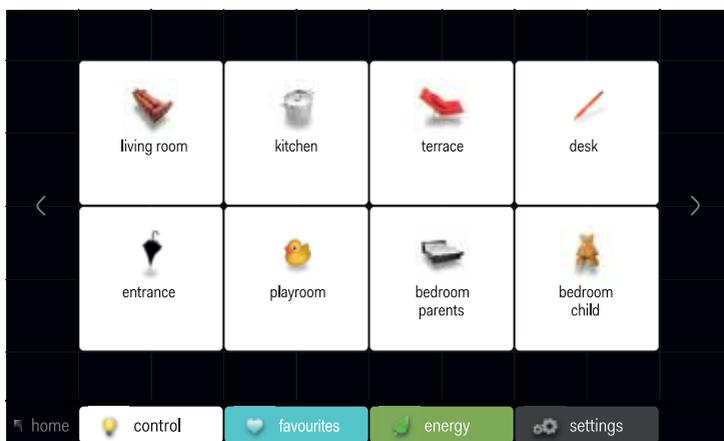
The symbols on the touchscreen are used by the resident to operate the functions that you assigned while programming the installation. The resident can also use the touchscreen to request more information about the electricity, gas and water consumption in the home.

### Using the touchscreen

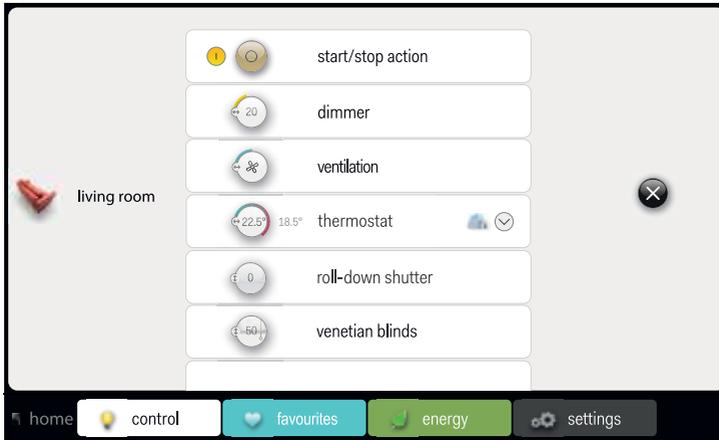
- 1 Touch the touchscreen.  
The start screen will appear. If you do not touch the screen during 30s, the display will be dimmed to reduce energy consumption.
- 2 Touch the corresponding tab to select “control”, “favourites”, “energy” or “settings”.

### Using the “control” tab

- 1 Select the “control” tab.



- 2 Select the location of your choice.



- 3 Select the function you wish to activate or deactivate.

### Using the “favourites” tab

 To be able to use favourites, these favourites must have been entered first via the “settings” tab.

- 1 Select the “favourites” tab.



- 2 Select the function you wish to control.

## Using the “energy” tab



- The installation must be fitted with an electricity measuring module (see [Electricity measuring modules on page 87](#)) or a pulse counter (see [Pulse counter on page 99](#)) to be able to display the measuring data for gas, water and electricity.
- If you are only using a pulse counter, live data for gas, water and electricity consumption will not be available.

1 Select the “energy” tab.



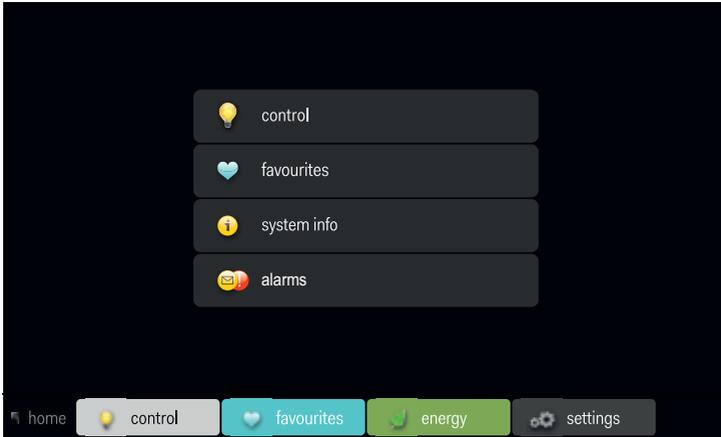
2 Select the measurement you wish to see: electricity, gas or water.

3 Select a period: live, day, week, month or year.

4 Select the display for the chosen period: consumption or cost (you cannot choose a display in EUR for a live measurement).

## Using the “settings” tab

- 1 Select the “settings” tab.



- 2 Do one of the following:

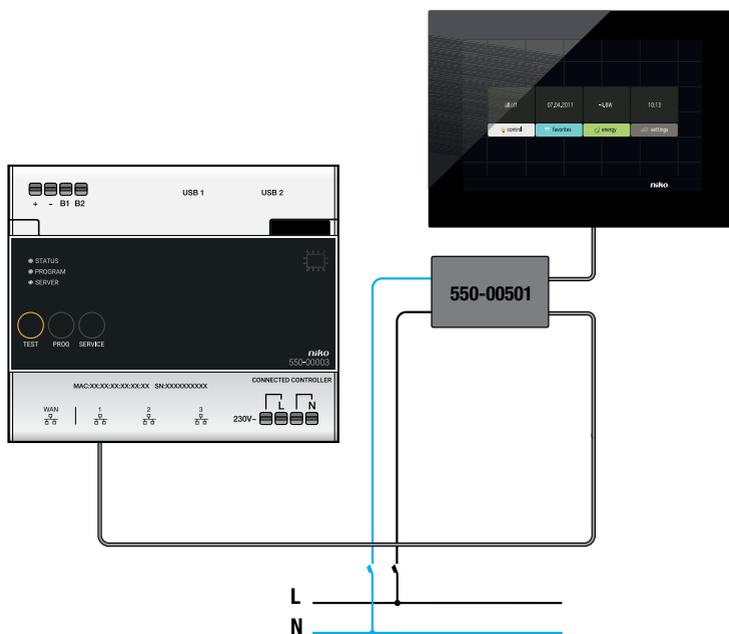
- Select “control” to select different symbols for the various locations.
- Select “favourites” to add or remove actions from the list of favourites.
- Select “system info” to view the system information.
- Select “alarms” to consult the log book of notifications and alarms.

## Installation



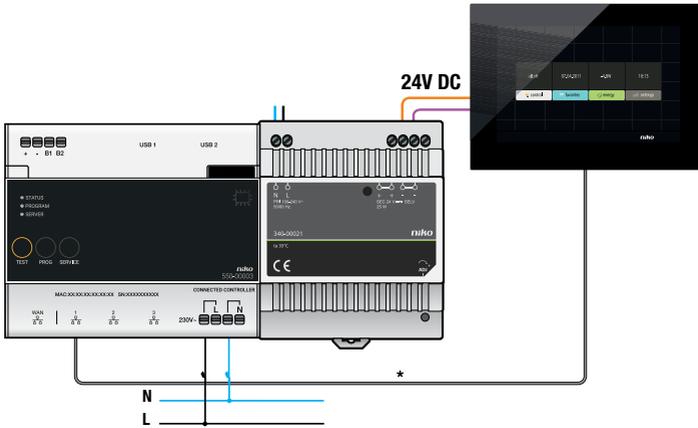
- Connect the touchscreen with the RJ45 port 1, 2 or 3 of the connected controller. Use a twisted pair cable (preferably a shielded FTP or STP). Both the touchscreen and the connected controller are equipped with a RJ45 port. Therefore the RJ45 connectors must be attached to the cable to connect the connected controller on the one side and the touchscreen on the other, or you can make use of a cable with pre-mounted RJ45 connectors.
- The touchscreen can be supplied with power using Power over Ethernet (PoE) via the same twisted pair cable, for which you use the Niko PoE power supply (550-00501). Alternatively, you can provide a separate power supply cable, which you connect to a separate 24 Vdc power supply module in the electrical cabinet. In that case, you will need a 24 V power supply cable such as an SVV, JYSTY, TPVF or UTP cable in addition to the twisted pair cable.

## Connection diagrams



*With Power over Ethernet (PoE)*

\* twisted pair cable (UTP, FTP or STP)

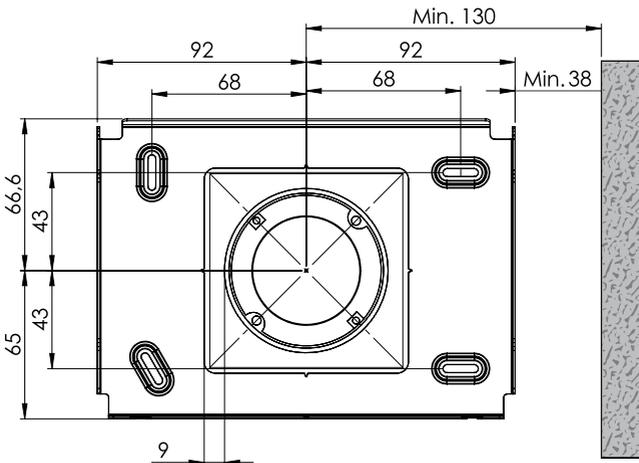


*With 24V power*

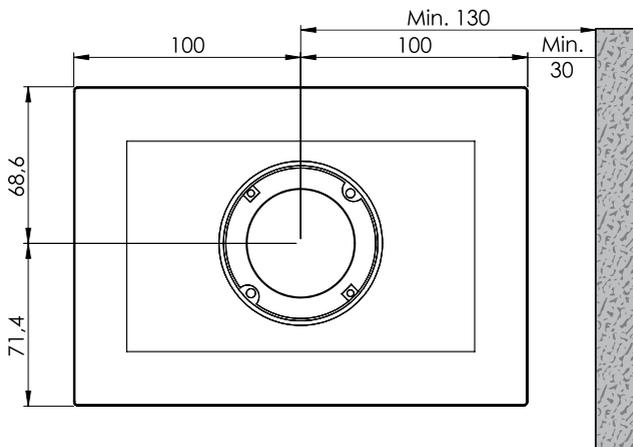
\* twisted pair cable (UTP, FTP of STP)

Take into account the dimensions of the mounting bracket and the touchscreen in the images below to determine the exact location of the touchscreen on the wall.

 Horizontally, the centre of the flush-mounting box must be at a distance of at least 130 mm from other walls, doors, etc.



*Mounting bracket dimensions*



## Touchscreen dimensions

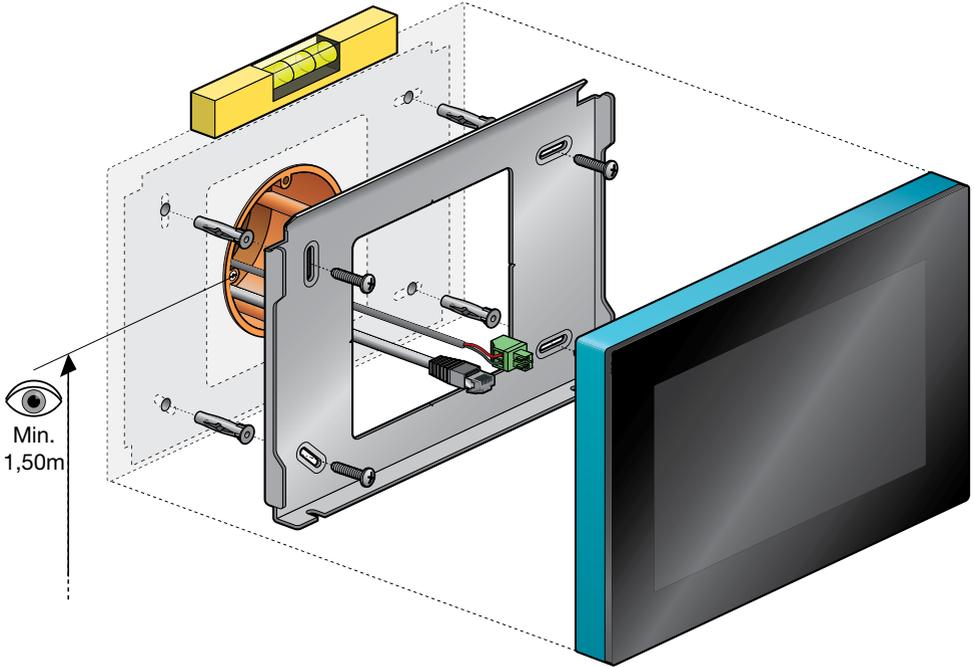


- Mount the touchscreen:
  - at eye level for optimum visibility ( $\pm 150$  cm).
  - Do NOT mount the touchscreen: in direct sunlight
  - within the immediate vicinity of a fireplace, heater, or any other heat-generating source.
  - in damp locations.
- The touchscreen itself is not suitable for flush mounting. Mount the touchscreen onto the wall using a standard flush-mounting box with a depth of at least 40 mm.
- A total of ten touchscreens, smartphone or PC applications can be used per installation.

Use a drill (with a 6 mm diameter) to drill a hole of 40 mm for each connector. If you are drilling in wood, you will not need to use the connectors, and only a drill hole of 20 mm with a 3 mm diameter will be required.

Follow the steps below to mount the touchscreen:

- 1 Screw the mounting braket onto the wall using the four screws and connectors supplied.



- Mount the mounting braket in a central position on top of the flush-mounting box.
- Make sure the mounting plate is level.
- The unevenness of walls cannot exceed 2 mm.

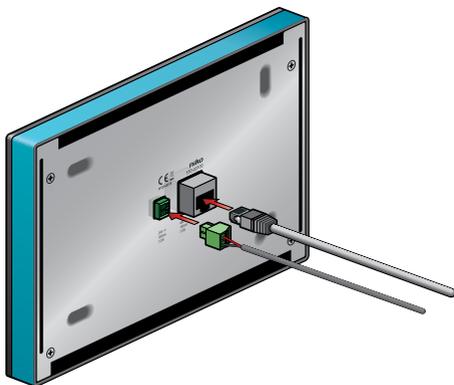
- 2 Connect the green screw connector supplied to the 24V power supply cable while observing the polarity as indicated on the back of the touchscreen.



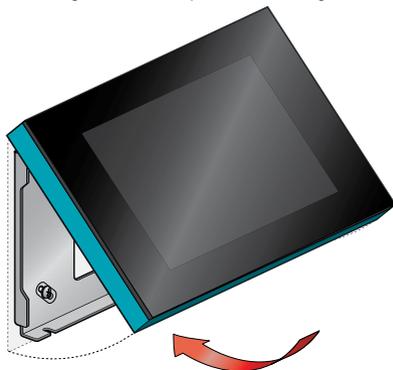
- If you are using a PoE power supply, you do not need a separate 24V power supply cable.
- Only use the Niko PoE power supply type IEEE802.3af. This power supply provides voltage via the free pairs.
- The green screw connector supplied (24V power supply) is suitable for a maximum copper diameter of 1.5 mm<sup>2</sup>.

- 3 Mount a RJ45 connector on the twisted pair cable (UTP, STP or FTP) according to T568B.

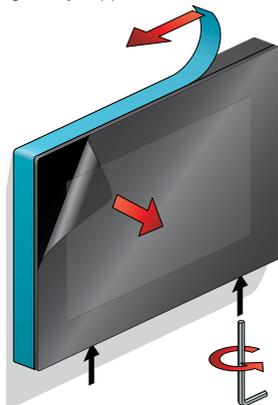
- 4 Place the RJ45 connector and, if applicable, the 24V power supply cable, to the touchscreen.



- 5 Hang the touchscreen onto the mounting bracket and press it down against the wall in one smooth motion.



- 6 Tighten the touchscreen using the hexagon key supplied and remove the protective foil.



## Programming the touchscreen



- Add the touchscreen at the beginning of the project.
- The touchscreen can display a maximum of 256 actions across 100 locations.
- Several touchscreens used in one single installation cannot be programmed differently.

When you add the touchscreen to the project of the installation via the programming software, all pre-programmed actions will automatically be linked to the touchscreen.

The programming software allows you to create locations and link actions to each location. This will give you a better overview of the home. If an action is not linked to a location, the software will link the action to a virtual location. When all actions have been linked, click the touch icon to open the overview. In this overview, you can remove any actions that you do not want to be displayed on the touchscreen.

## Touchscreen maintenance

Use a soft dry or slightly damp cloth to clean the touchscreen. Do not use detergents or other cleaning agents.

## Troubleshooting

Problem	Possible cause	Solution
Nothing is displayed on the screen.	Communication error	Check whether network communication is possible between the touchscreen and the connected controller.
You cannot operate the installation.		Reset the touchscreen. Use an unfolded paperclip to press the reset button. There is no need to disassemble the touchscreen.

## Technical data

### ***Touchscreen***

- cannot be used in installations with a connected controller light (550-00002)
- power supply voltage: 24 V DC ( $\pm 10\%$ ) (SVV, JYSTY, TPVF, UTP, etc.) or Power over Ethernet (PoE) (UTP, STP, FTP) (48 V Vdc)
- electricity consumption: 300 mA (24 Vdc) or 150 mA (PoE 48 Vdc)
- ambient temperature:
  - in operation: 5 - 40 °C
  - storage and transport: -10 - 65 °C
- ethernet connection speed: 10 - 100 Mbit/s
- in conformity with EN 60950-1 + A11
- CE marked
- dimensions: 140 x 200 x 22 mm (H x W x D)
- screen size: 7"
- screen resolution: 800 x 480
- weight: 934 g (excluding connectors and screws)

### ***PoE power supply***

- suitable for touchscreen (550-20100), touchscreen 2 (550-20101) and external video unit (550-22001, 550-22002, 550-21001, 550-21002 and 550-21004)
- type IEEE 802.3af
- input voltage: 96 - 264 Vac
- output voltage: 48 V
- output power: 15.4 W
- data in via RJ45 port
- data and power supply out via RJ45 port
- indication LEDs:
  - LED 1 (ON): green if correct input voltage
  - LED 2 (FAULT): red if error message
  - LED 3 (CONNECT): green if correct detection and connection
- operating temperature: 0 – 40 °C
- storage temperature -25 – 65 °C
- dimensions: 36 x 65 x 140 mm (H x W x D)
- CE marked

## 13. Touchscreen 2



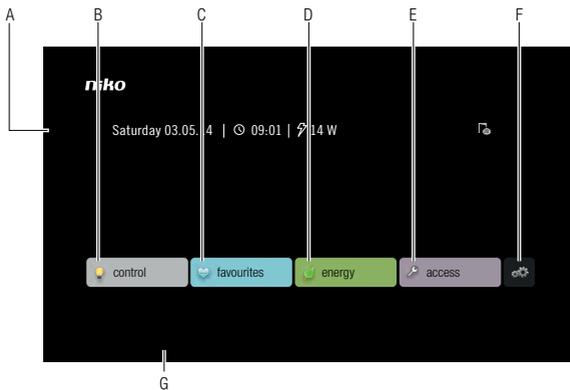
This touchscreen cannot be used in installations with a connected controller light (550-00002).

### Description

Thanks to the Niko Home Control touchscreen 2, access control is also possible via the Niko Home Control external video unit (see [External video unit on page 129](#)). This gives the resident direct control over the access door or gate. He can see on the screen who is ringing the doorbell and can decide whether or not to answer the call. He can also see who has been at the door during his absence: the built-in HD camera on the external video unit automatically starts recording 10 seconds before someone rings. Thanks to this wired connection to the home network you can always count on this touchscreen. We recommend providing at least one touchscreen 2 in the installation, on top of the mobile devices.

This touchscreen 2 offers residents a more user-friendly interface to operate all functions within their Niko Home Control installation. The symbol displayed next to each action represents the current status of that action. Like its predecessor, this touchscreen also provides a detailed overview of the electricity, gas and water consumption in the home, provided that these functions have been included in the installation.

### Overview



550-20101

- A. Start screen** Displays the date, the time, the measurement of the global electricity consumption (if this function is present), two symbols for a muted chime and ringtone sound, the number of missed calls, the presence of notifications in the log book as well as five tabs for control, favourites, energy, access control and (displayed by a symbol) settings.
- B. Control** Displays the standard symbols of the locations and actions that you programmed via the programming software.
- C. Favourites** Displays the favourite actions that you entered via the “control” tab.
- D. Energy** Displays the values measured for gas, water and electricity consumption.
- E. Access** Shows all recent calls with their video recording. You can also set the sound settings for the chime and the ringtone.
- F. Settings** This is where you can modify the settings for the access control, and where you can view the system information and the log book of notifications.
- G. Reset button** This resets the touchscreen 2. This button is on the left of the bottom of the touchscreen 2.

## Operation

The symbols on the touchscreen 2 are used by the resident to operate the functions that you assigned while programming the installation. The resident can also use the touchscreen to request more information about the electricity, gas and water consumption in the home.

### Using the touchscreen 2

- 1 Touch the touchscreen 2.  
The start screen will appear. If you do not touch the screen during 1 minute, the display will be dimmed to reduce energy consumption.
- 2 Touch the corresponding tab to select "control", "favourites", "energy", "access" or "settings".

### Using the "control" tab

- 1 Select the "control" tab.



- 2 Select the location of your choice on the left-hand side.
- 3 Select the function you wish to activate or deactivate on the right-hand side.

### Using the “favourites” tab

 To be able to use favourites, each of these favourites must have been entered first for each action via the “control” tab.

- 1 Select the “favourites” tab.



- 2 Select the function you wish to control.

## Using the “energy” tab



- The installation must be fitted with an electricity measuring module (see [Electricity measuring modules on page 87](#)) or a pulse counter (see [Pulse counter on page 99](#)) to be able to display the measuring data for gas, water and electricity.
- If you are only using a pulse counter, live data for gas, water and electricity consumption will not be available.

### 1 Select the “energy” tab.



### 2 Select the measurement you wish to see: electricity, gas or water.

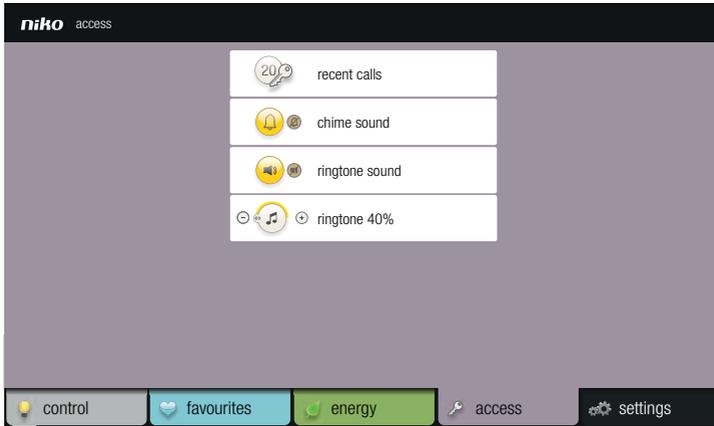
### 3 Select a period: live, day, week, month or year.

### 4 Select the display for the chosen period: consumption or cost (you cannot choose a display in EUR for a live measurement).

### 5 Compare two consumption periods of an energy measurement using the button “split view” at the top right.

## Using the “access” tab

- 1 Select the “access” tab.

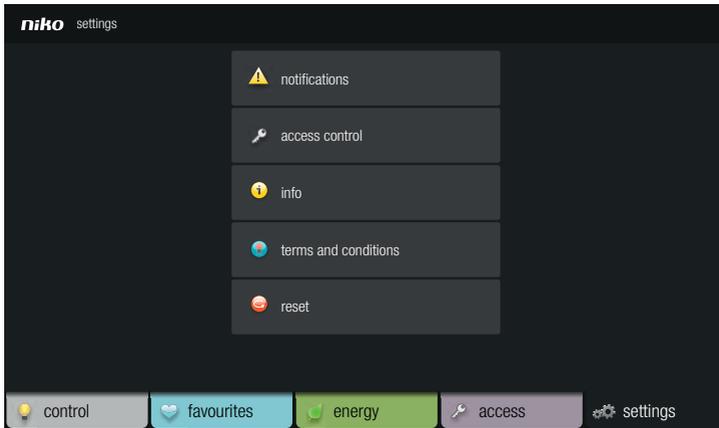


- 2 Do one of the following:

- Select “recent calls” to view the latest calls of all touch buttons. You can also view the video recording per call.
- Select “chime sound” to switch off the sound of the chime (if present in the installation).
- Select “ringtone sound” to switch off the ringtone sound.
- Select “ringtone” to adjust the volume of the ringtone.

## Using the “settings” tab

- 1 Select the “settings” tab.



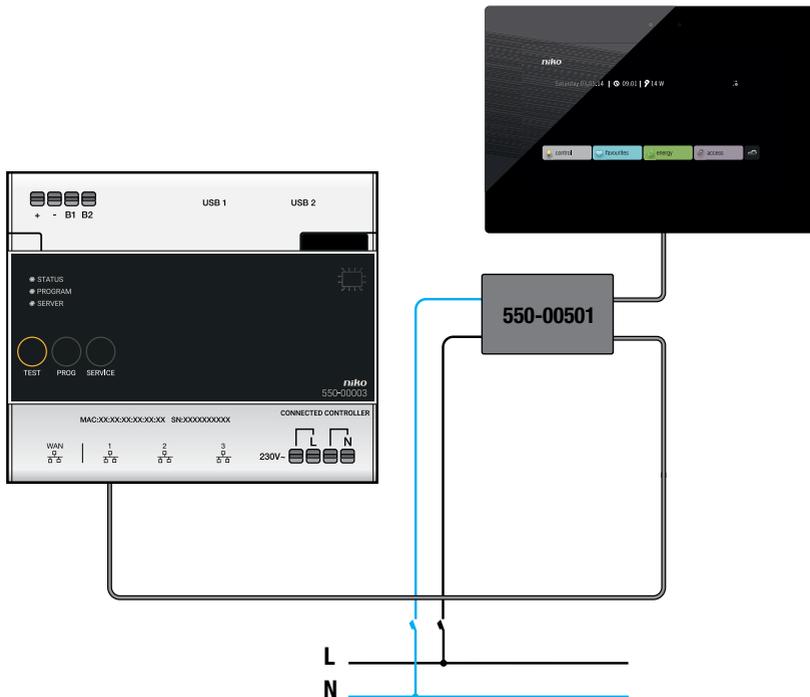
- 2 Do one of the following:

- Select “notifications” to consult the log book of notifications.
- Select “access control” to set the external video unit(s) and/or modify the settings, or to select which chime to sound along with the touchscreen 2 when someone rings the bell.
- Select “info” to view the system information.
- Select “terms and conditions” to view the usage conditions.
- Select “reset” to reset all external video unit settings to their factory settings. All set favourite actions, the symbols selected by the resident for each location and the order of the actions per location disappear.

## Installation

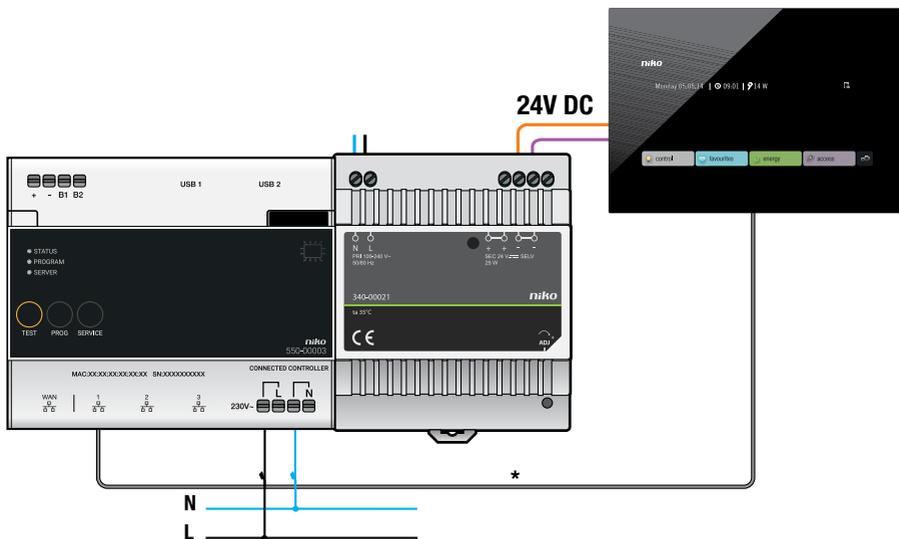
- Connect the touchscreen with the RJ45 port 1, 2 or 3 of the connected controller. Use a twisted pair cable (preferably a shielded FTP or STP). Both the touchscreen 2 and the connected controller are equipped with a RJ45 port. Therefore the RJ45 connectors must be attached to the cable to connect the connected controller on the one side and the touchscreen 2 on the other.
- The touchscreen 2 can be supplied with power using Power over Ethernet (PoE) via the same twisted pair cable, for which you use the Niko PoE power supply (550-00501). Alternatively, you provide a separate power supply cable, which you connect to a separate 24 Vdc power supply module in the electrical cabinet. In that case, you will need a 24 V power supply cable such as an SVV, JYSTY, TPVF or UTP cable in addition to the twisted pair cable.

## Wiring diagrams



*With Power over Ethernet (PoE)*

\* twisted pair cable (UTP, FTP or STP)



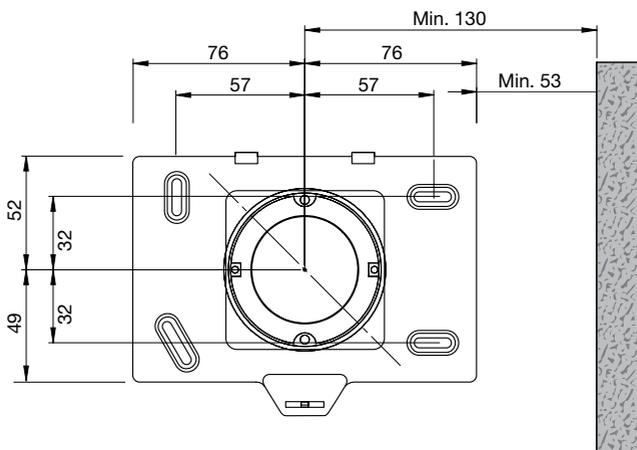
With 24 V power

\* twisted pair cable (UTP, FTP or STP)

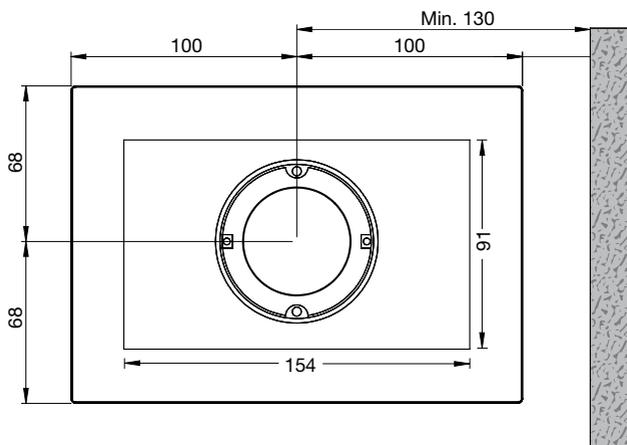
Take into account the dimensions of the mounting bracket and the touchscreen in the images below to determine the exact location of the touchscreen 2 on the wall.



Horizontally, the centre of the flush-mounting box must be at a distance of at least 130 mm from other walls, doors, etc.



## Mounting bracket dimensions



## Touchscreen 2 dimensions

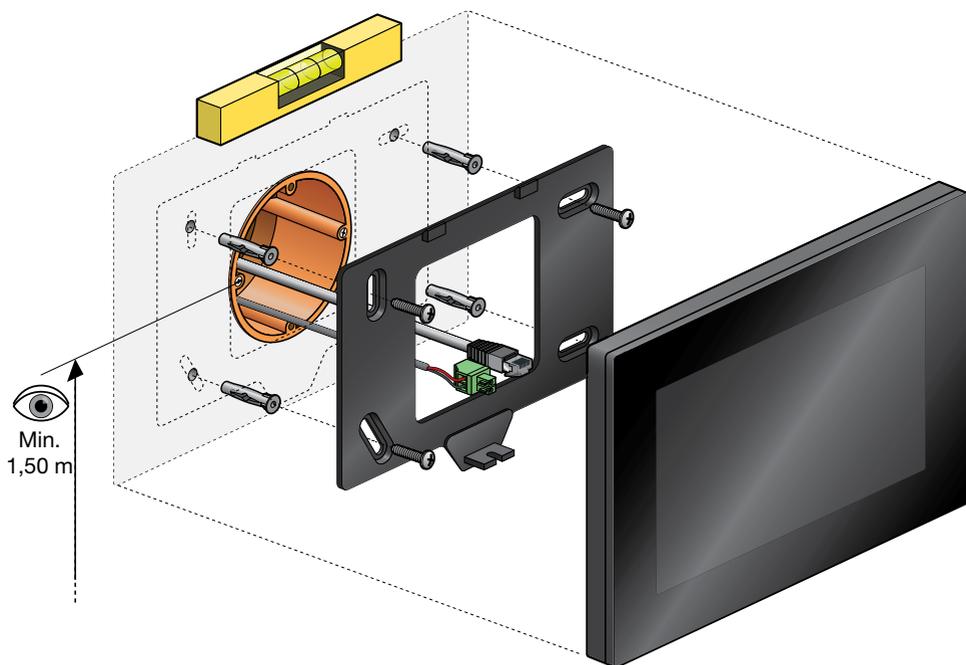


- Mount the touchscreen 2:
  - at eye level for optimum visibility ( $\pm 150$  cm).
  - Do NOT mount the touchscreen: in direct sunlight
  - within the immediate vicinity of a fireplace, heater, or any other heat-generating source.
  - in damp locations.
- The touchscreen 2 itself is not suitable for flush mounting. Mount the touchscreen onto the wall using a standard flush-mounting box with a depth of at least 40 mm.
- A total of ten touchscreens, smartphone or PC applications can be used per installation.

Use a drill (with a 6 mm diameter) to drill a hole of 40 mm for each connector. If you are drilling in wood, you will not need to use the connectors, and only a drill hole of 20 mm with a 3 mm diameter will be required.

Follow the steps below to mount the touchscreen 2:

- 1 Screw the mounting plate onto the wall using the four screws and connectors supplied.



- Mount the mounting bracket in a central position on top of the flush-mounting box.
- Make sure the mounting bracket is level.
- The unevenness of walls cannot exceed 2 mm.

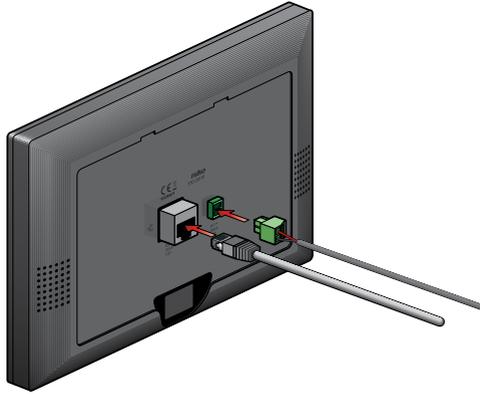
- 2 Connect the green screw connector supplied to the 24 V power supply cable while observing the polarity as indicated on the back of the touchscreen 2.



- If you are using a PoE power supply, you do not need a separate 24 V power supply cable.
- Only use the Niko PoE power supply type IEEE802.3af.
- The green screw connector supplied (24 V power supply) is suitable for a maximum copper diameter of 1.5 mm<sup>2</sup>.

- 3 Mount a RJ45 connector on the twisted pair cable (UTP, STP or FTP) according to T568B.

- 4 Place the RJ45 connector and, if applicable, the 24 V power supply cable, to the touchscreen 2.



- 5 Hang the touchscreen 2 onto the mounting bracket and press it down against the wall in one smooth motion.



- 6 Tighten the touchscreen 2 using the hexagon key supplied and remove the protective foil.



## Programming the touchscreen 2



- Add the touchscreen 2 at the beginning of the project.
- The touchscreen can display a maximum of 256 actions across 100 locations.
- Several touchscreens 2 used in one single installation cannot be programmed differently (except for access control).

When you add the touchscreen 2 to the project of the installation via the programming software, all pre-programmed actions will automatically be linked to the touchscreen.

The programming software allows you to create locations and link actions to each location. This will give you a better overview of the home. If an action is not linked to a location, the software will link the action to a virtual location. When all actions have been linked, click the touch icon to open the overview. In this overview, you can remove any actions that you do not want to be displayed on the touchscreen.

### Touchscreen 2 maintenance

Use a soft dry or slightly damp cloth to clean the touchscreen 2. Do not use detergents or other cleaning agents.

### Troubleshooting

Problem	Possible cause	Solution
Nothing is displayed on the screen.	Communication error	Check whether network communication is possible between the touchscreen 2 and the connected controller.
You cannot operate the installation.		Reset the touchscreen 2. Use an unfolded paperclip to press the reset button. There is no need to disassemble the touchscreen 2.

## Technical data

### ***Touchscreen 2***

- cannot be used in installations with a connected controller light (550-00002)
- power supply voltage: 24 V DC ( $\pm 10\%$ ) (SVV, JYSTY, TPVF, UTP, etc.) or Power over Ethernet (PoE) (UTP, STP, FTP) (48 V Vdc)
- power consumption: 350 mA (24 Vdc) or 175 mA (PoE 48 Vdc)
- ambient temperature:
  - in operation: 5 - 40 °C
  - storage and transport: -10 - 65 °C
- ethernet connection speed: 10 - 100 Mbit/s
- CE marked
- dimensions: 132 x 200 x 20 mm (H x W x D)
- screen size: 7"
- screen resolution: 1024 x 600
- weight: 720 g (excluding connectors and screws)

### ***PoE power supply***

- suitable for touchscreen (550-20100), touchscreen 2 (550-20101) and external video unit (550-22001, 550-22002, 550-21001, 550-21002 and 550-21004)
- type IEEE 802.3af
- input voltage: 96 - 264 Vac
- output voltage: 48 V
- output power: 15.4 W
- data in via RJ45 port
- data and power supply out via RJ45 port
- indication LEDs:
  - LED 1 (ON): green if correct input voltage
  - LED 2 (FAULT): red if error message
  - LED 3 (CONNECT): green if correct detection and connection
- operating temperature: 0 – 40 °C
- storage temperature -25 – +60 °C
- dimensions: 36 x 65 x 140 mm (H x W x D)
- CE marked



## 14. External video unit

 This touchscreen cannot be used in installations with a connected controller light (550-00002).

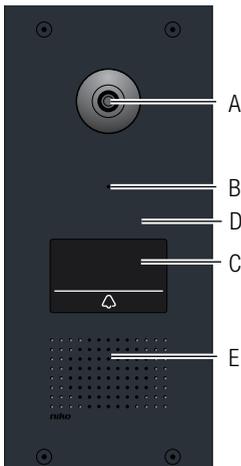
### Description

With this external video unit for flush mounting, the resident can see and communicate with a visitor. If a door lock is coupled to the Niko Home Control installation, the resident can also allow the visitor to enter. At the same time, he can activate one manual action linked to the bell of the incoming call. The built-in camera automatically starts recording 10 seconds before the visitor rings the doorbell.

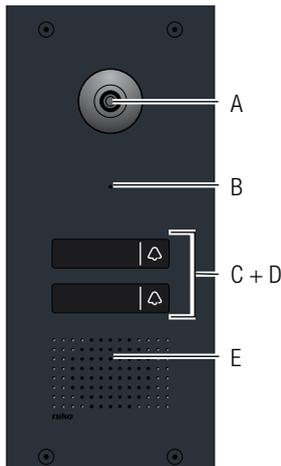
This external unit is available with one or two backlit touch buttons. There is always a suitable alternative for use in a variety of situations.

- an individual residence
- a residence with a private and a practice section
- a city residence with a shop on the ground floor and an apartment above

### Overview



550-22001



550-22002

- A.** HD camera
- B.** Microphone
- C.** Name plate
- D.** Touch button(s)
- E.** Speaker

The resident sees the visitor via the HD camera.

The resident communicates with the visitor via the microphone.

On this name plate with backlight, the resident can have his name engraved.

The visitor uses these backlit button(s) to make a call.

The resident communicates with the visitor via a full-duplex speech connection.

## Operation

When the visitor calls by pressing one of the touch buttons, the HD camera and the full-duplex speech connection are activated. The visitor automatically hears the Niko on-hold music as confirmation of the call. The touch buttons are piezo buttons which are resistant to wear and vandalism and which also react if the visitor is wearing gloves.

Via the connected controller the call is sent to the Niko Home Control touchscreen 2 and possibly also to the smartphone or tablet with Android or iOS application. We recommend providing at least one touchscreen 2 on top of the smartphones and/or tablets, because a wired device is always more reliable than a mobile one. The connected controller acts as an SIP server (telephone exchange). See [Connected controller on page 9](#).

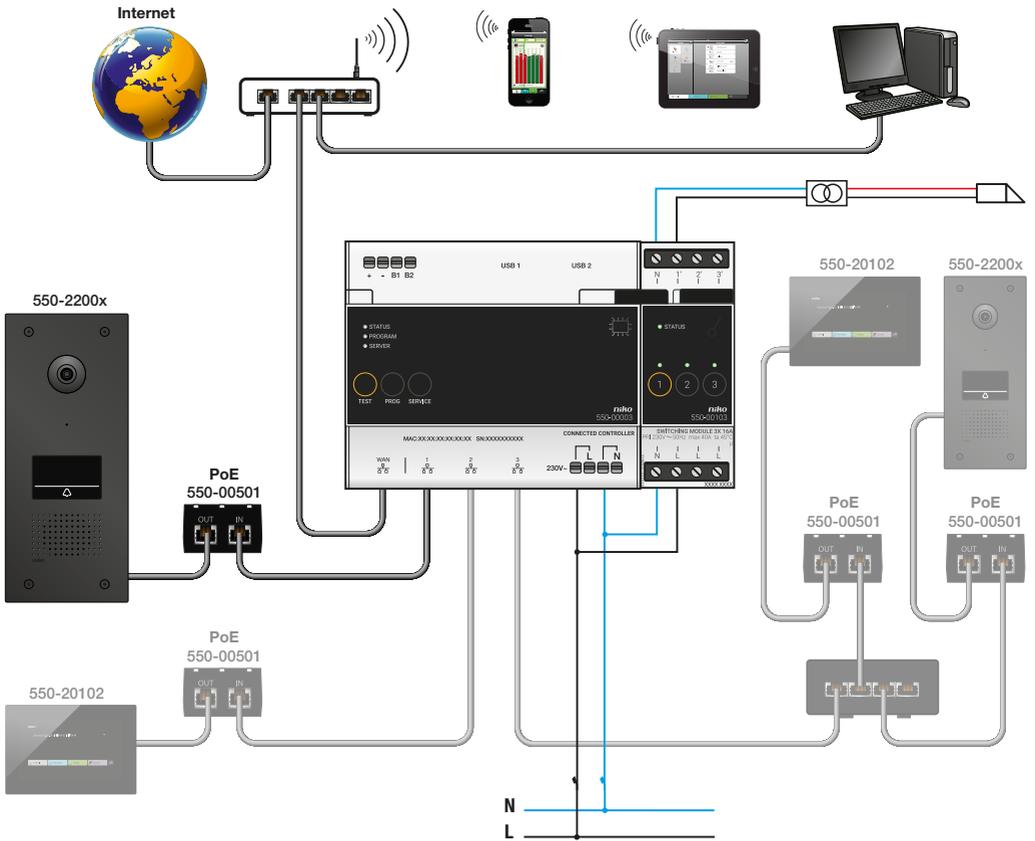
The resident sees the visitor on the screen, and a pop-up appears with the call screen in the Niko Home Control application.

With the Niko Home Control application, the resident can do the following:

- see who is at the door.
- accept or reject the call.
- communicate with the visitor. There are no interruptions in the speech traffic since speech is possible in two directions simultaneously thanks to the full-duplex speech connection. Interfering ambient noises are reduced to a minimum.
- allow the visitor to enter if a door lock is coupled to the Niko Home Control installation.
- adjust the speech volume of the visitor.
- adjust the volume of his own microphone (mute, unmute).
- see who was at the door thanks to the built-in HD camera. The video recording starts 10 seconds before the visitor rings the bell.
- activate one manual Niko Home Control if this action is linked to a bell. For example, he can open the garage door or switch on the lighting on the driveway at the time of the incoming call.

## Installation

### Wiring diagram



## Dimensions

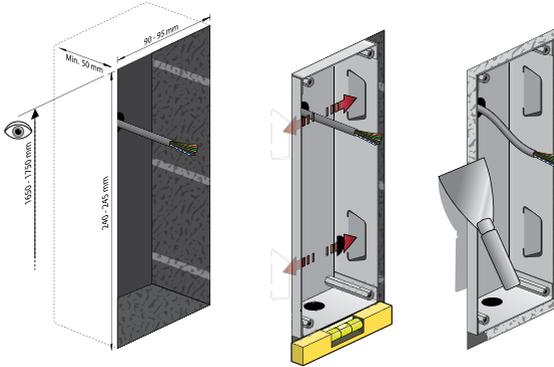


### Connecting and mounting the external video unit

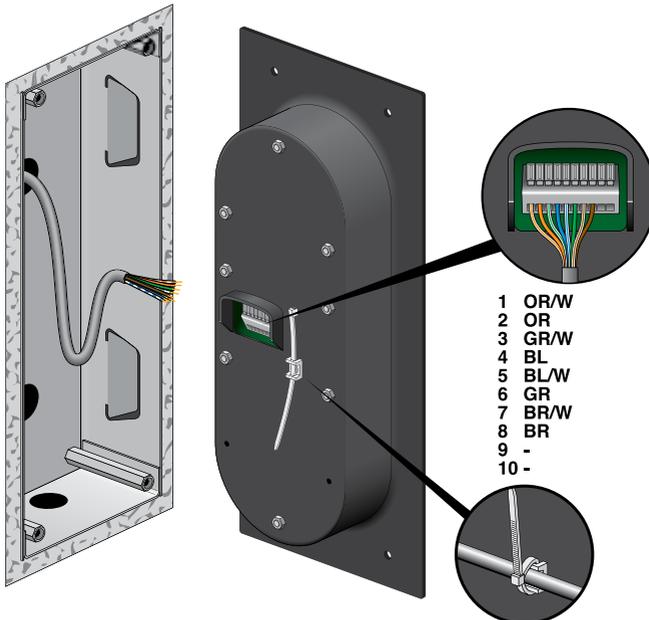


- Each external video unit can only be connected to one Niko Home Control installation.
- The resident must have a secured WiFi network (if the Niko Home Control application is used).
- A maximum of three external video units may be connected per Niko Home Control installation.
- Connect a maximum of 10 Niko Home Control IP devices (touchscreen 2, smartphone, tablet) to the installation.

- 1 Flush mount the flush-mounting box for the external video unit in the outside wall.

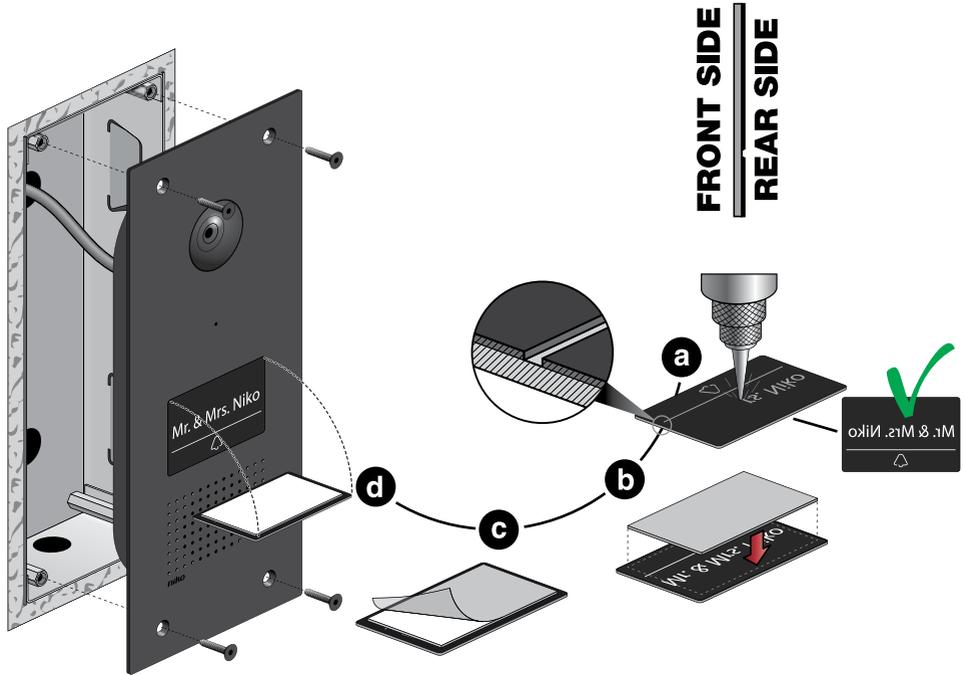


- 2 Draw a twisted pair cable (UTP, FTP or STP) to the flush-mounting box.
- 3 Connect the wires from the cable to the plug-in terminals of the external video unit.



- 4 Mount the external video unit onto the flush-mounting box using screws. Respect the bending radius of the twisted pair cable.
- 5 Engrave the text chosen by the user on the rear of the nameplate in mirror writing.

- 6 Affix the name plate with the double-sided adhesive tape provided.



- 7 On the side of the electrical cabinet, attach an RJ45 connector to the cable according to the T568B standard. Connect the RJ45 connector to the output of the Power over Ethernet power supply. The PoE power supply acts as the power supply for the external video unit.
- 8 Use a patch cable RJ45-RJ45 to connect the PoE power supply with the RJ45 port 1,2 or 3 of the connected controller (possibly with an extra switch).

For the connection of the touchscreen 2, see [Touchscreen 2](#) on page 115.



As soon as you have completed the installation, switch on the power to program the settings of the external video unit. After approximately 1 minute, you will hear a brief signal tone at the external video unit.

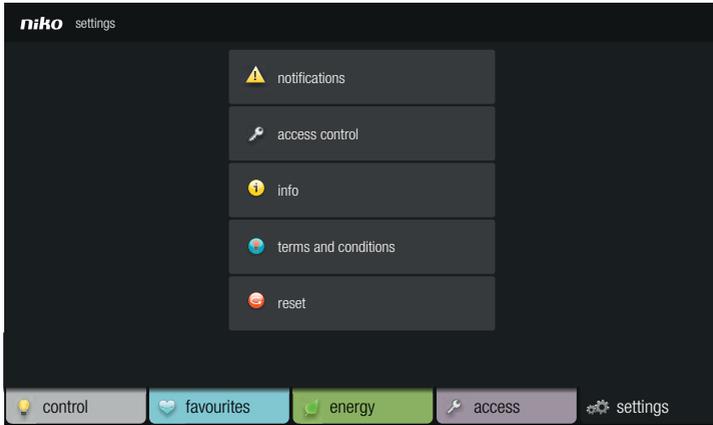
## Setting the touchscreen 2, the tablet or the smartphone for access control

 If using a smartphone or tablet, make sure that you have the latest version of the Niko Home Control application.

To set up access control:

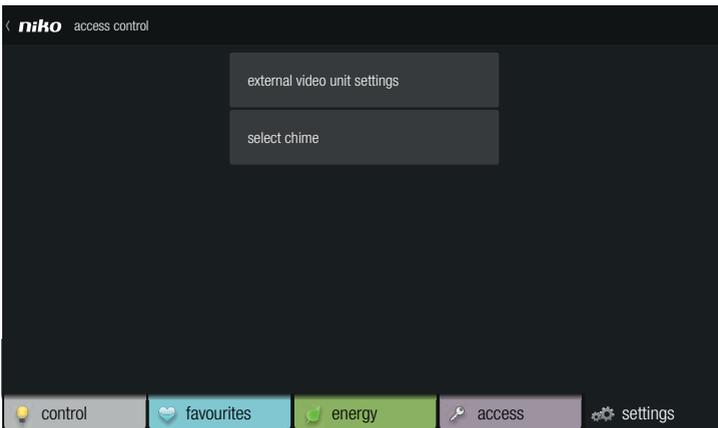
- 1 Select the “settings” tab.

The following screen will appear:



- 2 Select "access control".

The following screen will appear:

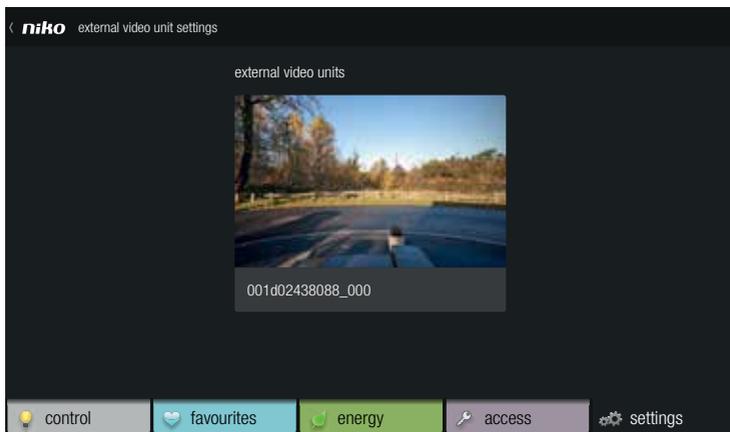


- 3 Do one of the following:

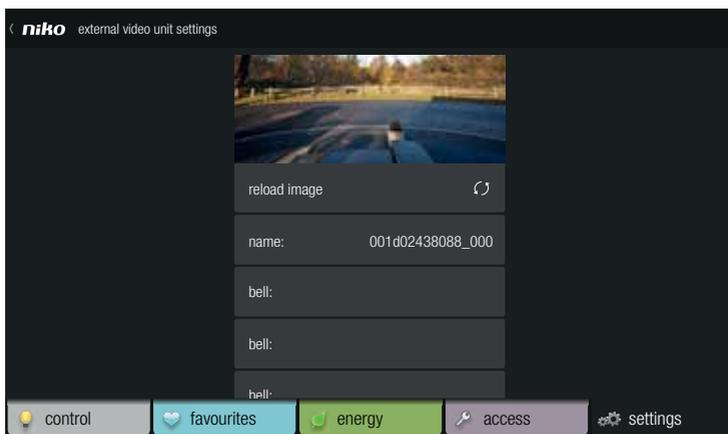
- Select “external video unit settings” to make and/or change the settings on the external video unit(s).
- Select the chime to sound along with the touchscreen 2 if the bell is rung.

To make or change the settings on the external video unit(s):

- 1 Select an external video unit from the list of external video units.

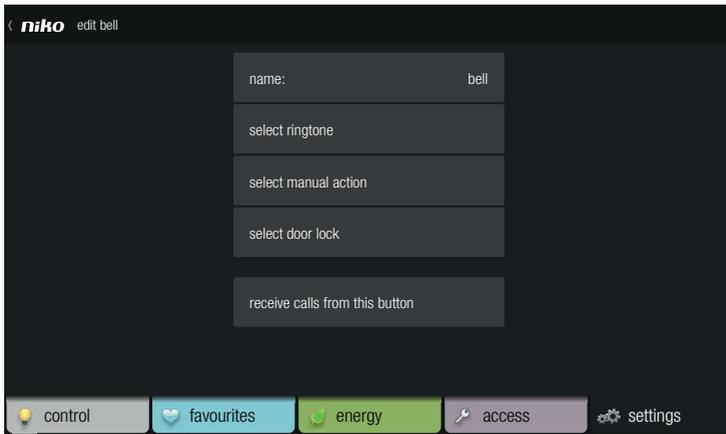


The following screen will appear:



## 2 Do one of the following:

- Press the refresh button to call up the current camera image if the image is insufficient.
- Select “name” to rename the external video unit. A keyboard will appear on which you can enter the new name.
- Select the bell of the external video unit to change its settings. In the case of an external video unit with several touch buttons several bells are shown. The following screen appears:



From this screen you can change the name of the bell, select the ringtone on the touchscreen 2 for this bell, select one manual action the resident will activate himself during a call of this bell and determine the door lock which is controlled during a call of this bell. If the touchscreen 2 must receive a call from the selected bell, uncheck "receive calls from this button" on this screen.



Door lock actions, an extra gong, an extra doorbell and a manual action must be made in the programming software under “Add functions access control”.

## Troubleshooting

Problem	Possible cause	Solution
The visitor does not hear the Niko on-hold music.	Bad contact at a connection terminal	Check the connections of the cables to the connection terminals.
	Incorrect connection	Check whether the cables are connected correctly: <ul style="list-style-type: none"> <li>• from the “OUT” port on the PoE power supply to the external video unit.</li> <li>• from the “IN” port on the PoE power supply to RJ45 port 1, 2 or 3 of the connected controller.</li> </ul> Both of the green LEDs on the PoE power supply ports must be illuminated.
The resident does not receive any calls from the external video unit on the touchscreen 2, smartphone or tablet. The resident hears only a brief signal tone ( $\pm$ 1s) at the external video unit.	Poor or absent WiFi signal reception.	Check whether: <ul style="list-style-type: none"> <li>• the correct WiFi network has been selected.</li> <li>• the WiFi signal is sufficiently powerful.</li> </ul>
	Outdated operating system	Make sure that one of the following operating systems is installed: <ul style="list-style-type: none"> <li>• iOS version 6.0 (or later)</li> <li>• Android version 4.0 (or later) for video and audio (Android version 2.3 for audio only)</li> </ul>
The audio and video quality is inferior	Poor WiFi reception	Check whether the WiFi signal is sufficiently powerful.
	Overloaded network	
	Bad contact at a connection terminal	Check the connections of the cables to the connection terminals.
No door lock action appears in the pop-up on the call screen.	No door lock action was selected from the “external video unit settings” submenu.	See <a href="#">Setting the touchscreen 2, the tablet or the smartphone for access control on page 135</a> .
The door lock list is empty.	The door lock actions have not been named or have been incorrectly created.	Create correct door lock actions in the programming software.
The resident receives no video or call signal.	The Niko Home Control application is completely shut down.	Open the Niko Home Control application. Let the Niko Home Control application run in the background at all times.
The resident sees the video signal but does not hear the call signal.	The mute function (mute, unmute) of the touchscreen 2, the smartphone or the tablet is activated.	Switch off this function of the device.

## Technical data

### External video unit

- cannot be used in installations with a connected controller light (550-00002)
- power supply voltage: 48 Vdc  $\pm$  10%
- power consumption: 5 W
- ambient temperature: -30 - 60 °C
- dimensions flush-mounting box: 239 x 89 x 47 mm (HxWxD)
- dimensions external unit: 256 x 110 mm (HxW)
- HD camera resolution: 720 horizontal TV lines
- camera angle: 130°
- light sensitivity: 1 lux
- mounting: flush-mounting
- protection degree: IP53
- CE marked

### PoE power supply

- suitable for touchscreen (550-20100), touchscreen 2 (550-20101) and external video unit (550-22001, 550-22002, 550-21001, 550-21002, 550-21004)
- type IEEE 802.3af
- input voltage: 96 - 264 Vac
- output voltage: 48 V
- output power: 15.4 W
- data in via RJ45 port
- data and power supply out via RJ45 port
- indication LEDs:
  - LED 1 (ON): green if correct input voltage
  - LED 2 (FAULT): red if error message
  - LED 3 (CONNECT): green if correct detection and connection
- operating temperature: 0 – 40 °C
- storage temperature -25 – 65 °C
- dimensions: 36 x 65 x 140 mm (H x W x D)
- CE marked

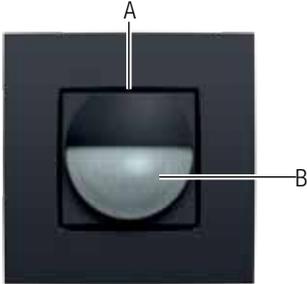


## 15. Indoor motion detector

### Description

The indoor motion detector detects moving heat sources and activates or deactivates Niko Home Control functions.

### Overview



- |  |  |
|--|--|
| <p><b>A.</b> Manual mode button / address button</p> | <p>The function of this button is twofold:</p> <ul style="list-style-type: none"> <li>• the button activates manual mode.</li> <li>• while programming the installation, this button sends the unique address of the motion detector during the addressing phase.</li> </ul> |
| <p><b>B.</b> Sensor</p>                              | <p>The sensor lights up when manual mode is activated.</p>   |

*Consists of two components:*

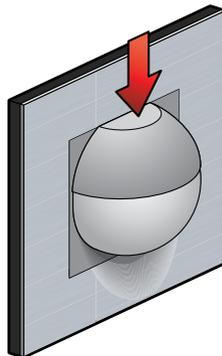
*550-20210 (base) and 1XX-55511 (sensor)*

### Operation

The indoor motion detector detects moving heat sources by using Passive Infrared Technology (PIR). When motion is detected, the motion detector activates or deactivates certain Niko Home Control functions. These functions are assigned while programming the installation by linking functions to the unique address of each indoor motion detector.

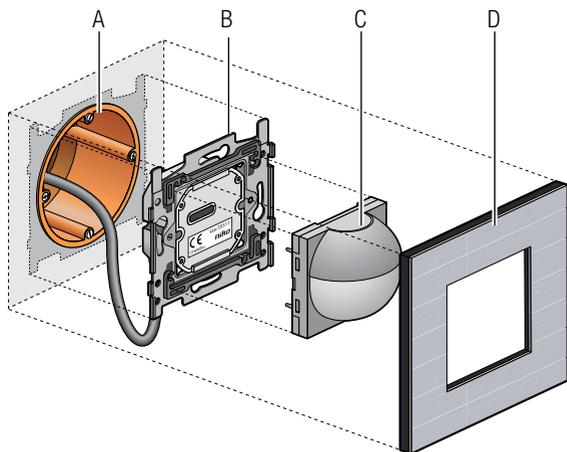
When a person enters the detection area, the motion detector initiates the starting behaviour. When the person has left the detection area or remains motionless within the area (up to 10 s after last detection) the stopping behaviour will be initiated.

The indoor motion detector includes a manual mode option. In manual mode, the indoor motion detector will behave as if there were permanent motion. Press the manual mode button to activate or deactivate this mode. If manual mode is not deactivated, the function linked to that motion detector will remain active for 4 hours.



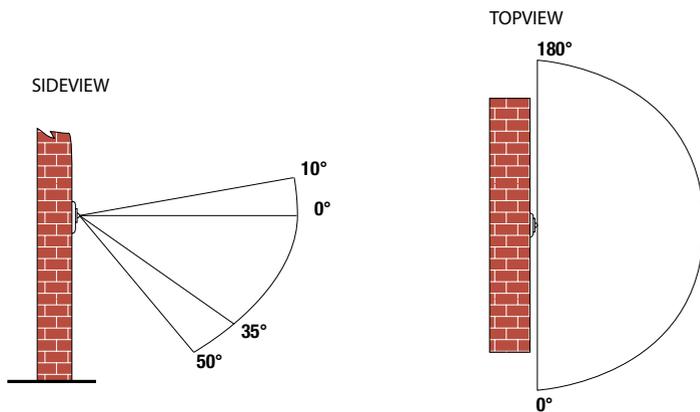
## Installation

The indoor motion detector consists of two parts: the sensor and the base. The bridge is mounted onto a standard flush-mounting box using screws.



- A. Single flush-mounting box (not a Niko product)
- B. Base
- C. Sensor
- D. Flush surround plate

Installation diagram for indoor motion detectors



Vertical detection angle (side view) and horizontal detection angle (top view)



- The indoor motion detector is for indoor use only.
- Mount the indoor motion detector at 90 - 110 cm above floor level.
- The maximum detection range is 8 m.

To install the indoor motion detector:

- 1 Connect the base to the two-wire bus cable. There are two "B1" contacts and two "B2" contacts at the back of the base. Connect each individual wire to one "B1" contact and one "B2" contact.



- Strip the wires of the bus cable 9 - 10 mm.
- A maximum of one wire with a diameter of 0.5 - 1 mm can be connected per contact.
- In this case, polarity does not matter.

The base is now connected. Use the other "B1" and "B2" contacts to establish a connection to the next control element if required.

- 2 Mount the base onto the single flush-mounting box using screws. Use a base with a set of claws if no screw holes are provided in the flush-mounting box. Three types of bridges are available:

- bridge 60 x 71 mm with claw connection (Belgium)
- bridge 71 x 71 mm with screw connection (the Netherlands)

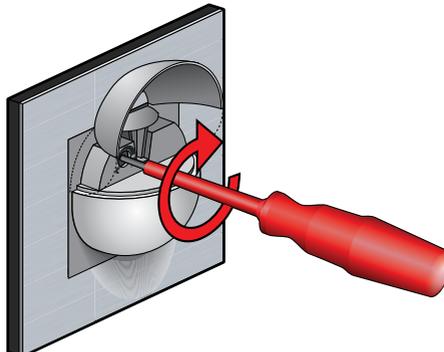
- 3 Press the sensor onto the base until it clicks into place.

### Selecting the indoor motion detector settings

The potentiometer underneath the cover of the sensor can be used for changing the light sensitivity setting to any value between 5 and 1,200 lux.

To change these settings:

- 1 Open the cover.
- 2 Use a screwdriver to turn the potentiometer to the desired setting. Turn the potentiometer clockwise to decrease the light sensitivity (up to a maximum of 1,200 lux or daylight). Turn the potentiometer counter-clockwise to increase the light sensitivity (up to a minimum of 5 lux or night-time).



## **Technical data**

- resting potential: 26 Vdc (SELV, safety extra-low voltage)
- CE marked
- detection angle: 180° horizontal, 60° vertical
- detection range: 8 m (horizontal)
- light sensitivity: 5 - 1,200 lux
- manual mode option
- ambient temperature: 5 – 40 °C

## 16. Mini detector for Niko Home Control

### Description

The mini detector detects movement and changes in light intensity. Using this information Niko Home Control functions can be activated or deactivated. The product is suitable for ceiling mounting in suspended ceilings, both indoors and outdoors.

### Overview



- 1 Lens
- 2 Spring clips
- 3 Shields
- 4 Cord end terminals

## Operation

### General

The mini detector detects movement by using Passive Infrared Technology (PIR).

Whenever the detector detects movement the start behaviour of a programmed action will be carried out. If no movement is detected after a set time (e.g. once everyone has left the room) then the programmed stop behaviour will be activated. The start and stop behaviour for the actions is programmed using the Niko Home Control programming software.

The mini detector is also equipped with a photo cell measuring incoming light intensity. When programming you decide whether only to take incoming light or movement into consideration or both of these aspects. This means you can choose to start an action every time movement is detected or only during the day or in the evening. Alternatively you can choose only to take incoming light intensity into consideration and not movement.

A few optional applications:

- as a presence detector (automatic on/off using mini detector): the mini detector switches on the lights automatically, depending on the chosen lux value and/or whether it detects movement.
- as an absence detector (manual on using push button /off automatically using mini detector): you switch on the light with a push button and the mini detector switches off the lights when no more movement is detected over a set period.
- as a light sensor (automatically on/off using mini detector): the mini detector automatically switches on the lights once the light in the room goes below a set lux value and switches off again on reaching the set value.

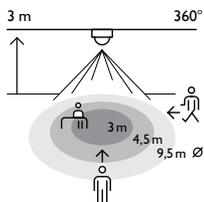
More information about this and other programming can be found on [guide.niko.eu](http://guide.niko.eu).



The detector calibrates automatically once connected to the bus. After about 40 sec. it is ready to use. The programming remains intact even after a disruption to the current and the detector will continue to work properly.

### Detection area

The recommended mounting height is 2 to 3 m. When installed at a height of 3 m the mini detector has a detection range of 9.5 m diameter (when the sensitivity to movement is set to "high").



Mounting height	2 m	2.5 m	3 m	6 m
2 m	2 m	2.5 m	3 m	6 m
2.5 m	2.5 m	3.7 m	4.5 m	8 m
3 m	3 m	4.5 m	9.5 m	9.5 m



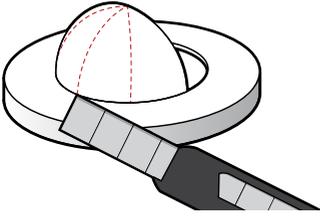
The above table is relevant to the "high" setting. Should the detector's sensitivity be set to "medium high", "medium low" or "low", then the detector will be less sensitive to movement (heat transfer) and the detection area will be reduced.



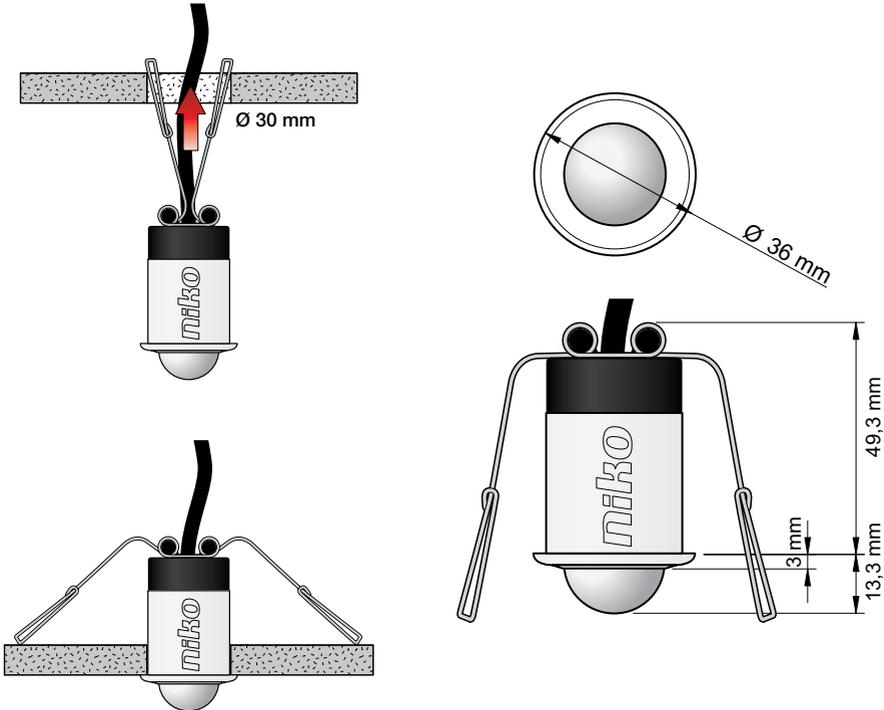
The mini detector is most sensitive to movements passing through the detection area.

**Detection angle**

The mini detector has a detection angle of 360°. The detection angle can be reduced to 180° by using the shields supplied (in white or black). The shields may be rotated 360° around the lens and can be cut down to size.

**Installation**

The mini detector is designed for flush installation in suspended ceilings.



To install the mini detector:

- 1 Make an opening with a diameter of 3 cm in the ceiling.
- 2 Connect the mini detector to the two-wire bus cable using a standard connector (not included). To do this use the two wires that emerge from the top of the detector. These are 50 cm long, have a diameter of 0.5 mm<sup>2</sup> and the ends are fitted with cord end terminals with a diameter of 1 mm and a length of 8.8 mm.
- 3 Bend the spring clamps upwards and insert the mini detector carefully into the opening in the ceiling. The spring clips make it easy to fix the device.



Do not install the mini detector in the vicinity of heat sources, air currents from ventilation systems or moving objects. These may set off the mini detector.

## Configuration

You can determine and modify the settings of the mini detector in the Niko Home Control programming software. The following three settings can be modified:

- the light level (2 – 25,000 lux)
- the sensitivity to movement (“low”, “medium low”, “medium high”, “high”)
- the switch-off delay.

In the software you can determine which action should be carried out upon reaching a particular light intensity and/or with movement.

Once in operation, users are free to adjust the light sensitivity and switch-off delay of their mini detector in the Niko Home Control user settings software.

## Addressing

Once you have installed the mini detector in the ceiling and followed the steps "Project information", "Creation" and "Cabinet set-up" in the programming software you end up in the step "Realisation". Here you will be asked to address all inputs individually.

As soon as you start the addressing the green light on the mini detector will start to flash. The mini detector will only pass on an address when detecting a significant difference in light intensity. This kind of difference in light intensity is made by shining a torch onto the mini detector (when there is little light in the area) or by covering it (when there is lots of light in the area). As soon as the address has been sent correctly the green LED will start to shine continuously.



Addressing is also possible by entering the unique MAC address manually in the programming software. You can find this MAC address on the mini detector.

**Technical data**

- Reference code: 550-20220
- Dimensions: 13.3 x 36 mm (HxW) / 62.6 x 36 mm (HxW) (incl. invisible part)
- Idling voltage: 26 V DC (SELV, safety extra-low voltage)
- Consumption: 0.1 W / 5 mA (10 Niko Home Control points)
- Detection angle: 360°
- Detection range: circle, maximum 9.5 m at a height of 3 m (sensitivity set to "high")
- Connection: cable 50 cm, 2 x 0.5 mm<sup>2</sup> (featuring cord end terminals of 8.8 mm long and a diameter of 1 mm)
- Mounting height: 2 – 3 m
- Drill diameter: 30 mm
- Light sensitivity: 2 – 25,000 lux
- Switch-off delay: 1 – 60 min
- Protection degree: IP65
- Ambient temperature: -20 °C – 50 °C
- CE marked

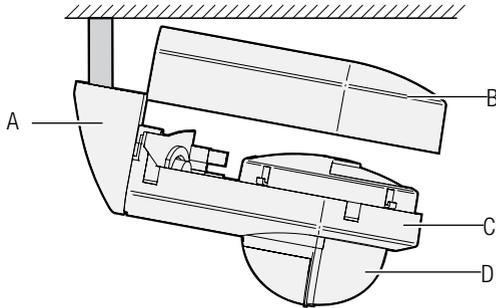


## 17. Outdoor motion detector

### Description

The outdoor motion detector detects moving heat sources and activates or deactivates Niko Home Control functions. Outdoor motion detectors are typically used near driveways, outdoor patios, garden areas and garages.

### Overview



550-20200 (white) or 550-20201 (black)

- |  |  |
|--|--|
| <p><b>A.</b> Ceiling installation bracket<br/>(not included)</p> <p><b>B.</b> Cover</p> <p><b>C.</b> Housing</p> <p><b>D.</b> Sensor</p> | <p>Use this bracket to mount the outdoor motion detector to a ceiling.</p> <p>Protects the sensor and the connection terminals.</p> <p>Contains the sensor and the connection terminals for connecting the outdoor motion detector to the installation.</p> <p>Detects motion and light.</p> |
|--|--|

### Operation

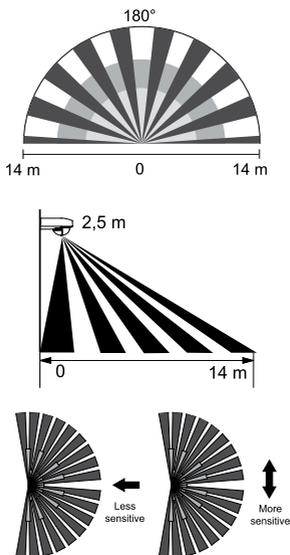
The outdoor motion detector detects motion by using Passive Infrared Technology (PIR). It detects motion within a 180° angle and within an area between 0 and 14 m (if mounted at a height of 2.5 m). It also includes an integrated light sensor. You can change the settings of the outdoor motion detector via the module itself to activate or deactivate Niko Home Control functions during the day, in the evening or during the night. These functions are assigned while programming the installation by linking functions to the unique address of each outdoor motion detector.



After a power failure, the outdoor motion detector will still function properly after the installation has been restarted.

## Installation

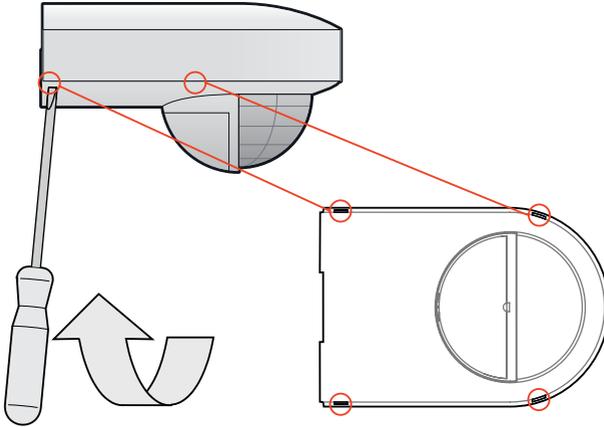
### Connecting and mounting the gateway



- The outdoor motion detector is more sensitive when mounted laterally to the walking direction.
- Mount the outdoor motion detector at a height of 2 - 3 m.
- Do not mount the outdoor motion detector near trees with branches and leaves that may blow in front of the outdoor motion detector.
- Do not mount the outdoor motion detector near heat sources or air currents.
- Do not position the outdoor motion detector towards the light source it is meant to activate.

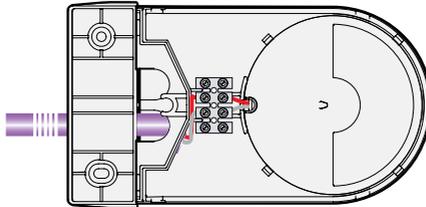
### Opening the outdoor motion detector

Insert the tip of a screwdriver into the holes provided to remove the cover. Open the outdoor motion detector.

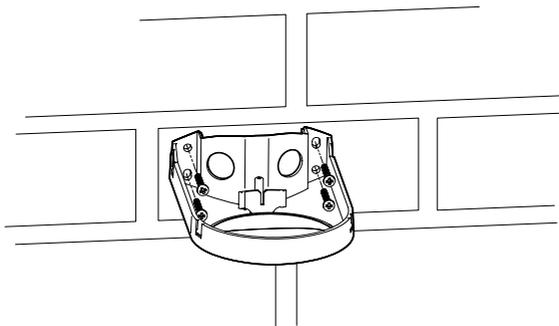


### Mounting the outdoor motion detector onto a wall

- 1 Guide the bus cable through the holes provided in the housing and connect the sensor.



- 2 Mount the housing onto the wall using the screws supplied.



- 3 Reposition the cover on top of the housing until it clicks into place.

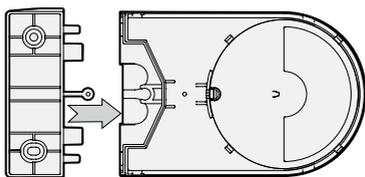
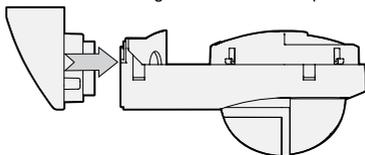
## Mounting the outdoor motion detector onto a ceiling



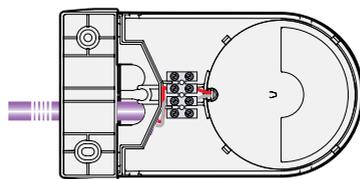
To attach the motion detector to a ceiling, a mounting brace is required.

Ceiling installation brackets are available separately for the installation of outdoor motion detectors onto ceilings.

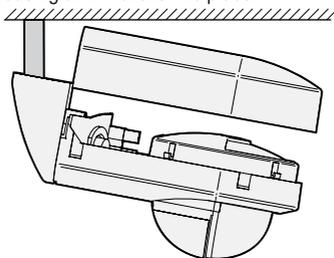
- 1 Push the ceiling installation bracket onto the housing until it clicks into place.



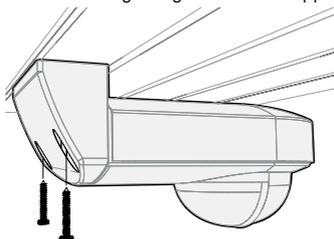
- 2 Guide the bus cable through the holes provided in the housing and connect the sensor as shown in the image.



- 3 Reposition the cover on top of the housing until it clicks into place.



- 4 Mount the outdoor motion detector onto the ceiling using the screws supplied.



## Selecting the outdoor motion detector settings

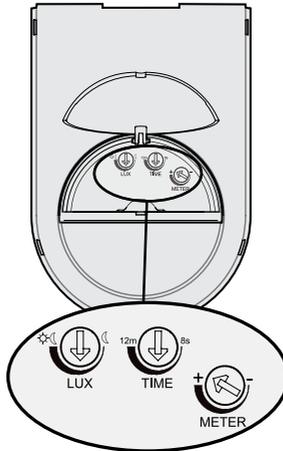
Below are the factory settings for the light sensitivity, switch-off delay and detection range of the device:

Light sensitivity	maximum
Switch-off delay	7 min
Detection range	14 m

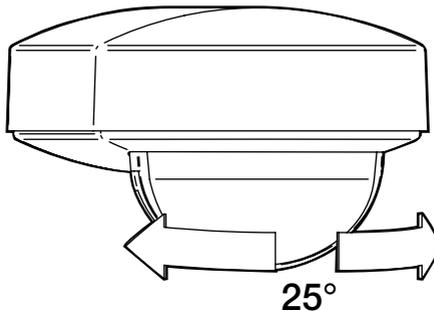
The potentiometers underneath the cover can be used for changing the settings as follows:

Light sensitivity	5 lux to infinity
Switch-off delay	8 s to 30 min
Detection range	0 to 14 m

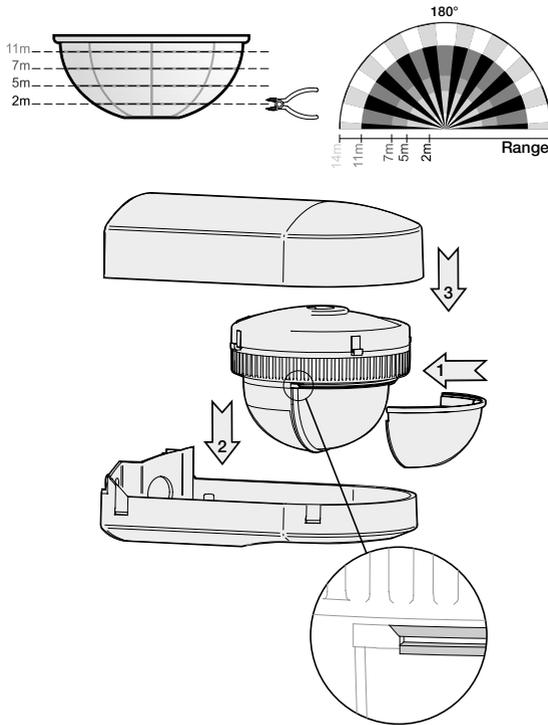
To change these settings, simply open the cover and use a screwdriver to turn each potentiometer to the desired setting.



The sensor can be rotated horizontally within a 25° angle to modify the direction of detection.



If a portion of the detection area is to be excluded from monitoring, cover the sensor lens using the cover cap supplied. Follow the instructions in the image.



## Maintenance of the outdoor motion detector

Dirt and grime may prevent the outdoor motion detector from functioning properly. Make sure the lens is clean at all times. Use a damp cloth and water with some detergent to clean the lens. Avoid pressing hard against the lens. Replace the outdoor motion detector if the lens or other parts of the outdoor motion detector are faulty.

## Reading the addresses of several outdoor motion detectors while programming the installation



Switch the light sensitivity of all outdoor motion detectors to the minimum setting before reading the addresses.

To read the address of an outdoor motion detector:

- 1 Switch the light sensitivity of the outdoor motion detector to the maximum setting and wave your arms in front of the lens.
- 2 Switch the light sensitivity to the minimum setting again.
- 3 Repeat steps 1 and 2 for each outdoor motion detector.

## Troubleshooting

Problem	Possible cause	Solution
The outdoor motion detector is not activated.	The outdoor motion detector is not connected properly.	Connect the outdoor motion detector as described in the manual.
No/little detection during the walk-by test.	The outdoor motion detector is not mounted properly.	Mount the outdoor motion detector as described in the manual.
	The lens is covered, dirty or faulty.	Remove the cover mask and/or clean the lens. Replace the sensor if the lens is faulty.

## Technical data

- resting potential: 26 Vdc (SELV, safety extra-low voltage)
- CE marked
- detection angle: 180°
- detection range: semi-circle, up to 14 m max. (if mounted at a height of 2.5m)
- light sensitivity: 5 lux to infinity
- hysteresis on light sensitivity: 10 %.
- switch-off delay: 8 s - 30 min
- mounting height: 2.5 m
- cable inlet: 2 x 12.5 mm
- protection degree: IP54
- ambient temperature: -20 - 45 °C
- in conformity with EN 60669-2-1
- accessories: ceiling installation bracket (white: 390-20050, black: 390-20150)

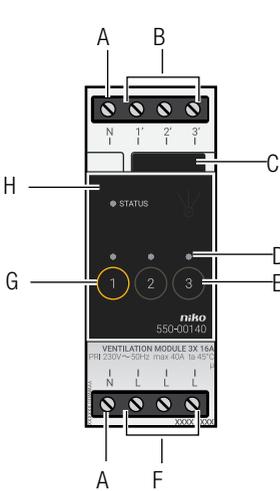


## 18. Ventilation module

### Description

The ventilation module controls the central ventilation system via the Niko Home Control installation. The module is suitable for use with type C systems (mechanical extract ventilation) or type D systems (mechanical supply and extract ventilation with heat recovery). Connect the ventilation system to the ventilation module as opposed to the three or four-way switch supplied with the system.

### Overview



The diagram shows the front panel of the Niko 550-00140 Ventilation Module. At the top, there are screw terminals labeled 'N', '1', '2', and '3'. Below these is a sliding contact labeled 'C'. The main panel features three circular buttons labeled '1', '2', and '3', and three small LEDs labeled 'D'. A 'STATUS' LED is located at the top left of the panel. At the bottom, there are screw terminals labeled 'N', 'L', 'L', and 'L'. The module is labeled 'niko 550-00140' and 'VENTILATION MODULE 3K 16A IPI 230V~50Hz max 40A Ia 45°C'.

- A. N screw terminal** This is where the neutral conductor is connected (many ventilation systems do not require this).
- B. Screw terminals 1' -3'** This is where you connect the control wires of the ventilation unit for the different settings (low (eco), normal and high).
- C. Sliding contact** The sliding contact is used for connecting the next module, which means that the bus and the power supply module are then also interconnected.
- D. CHANNEL LEDs** One LED per channel. The CHANNEL LED lights up in TEST mode when the output is activated.
- E. Buttons 1-3** These buttons are used for activating an output. The others will be deactivated. Please remember that the activation is only temporary as it will be overruled by the next bus communication.
- F. L screw terminals** This is where each terminal is connected to the common of the ventilation unit.
- G. ADDRESS button 1** The function of this button is twofold. In addition to the function described under "E", this button is also used while programming the installation to send the unique address of the module during the addressing phase.
- H. STATUS LED** The STATUS LED lights up in TEST mode when the module is connected correctly and is functioning properly. If an error occurs, the LED will blink to indicate an error code.

550-00140

## Operation

The bus signal of the controller activates one of the outputs on the ventilation module. Each output corresponds with one setting on the ventilation unit: low (eco), normal or high. The outputs can also be activated manually via the buttons on the ventilation module. Please remember that the activation is only temporary as it will be overruled by the next bus communication.

The outputs are activated or deactivated via low-energy bistable relays in the module.

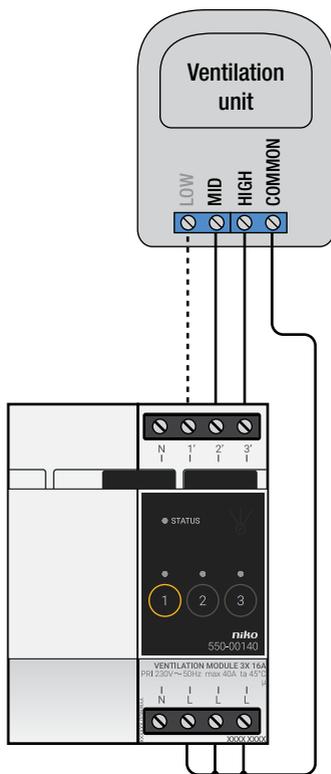


Use the specific push buttons for ventilation (see [Wall-mounted printed circuit boards and push buttons on page 33](#)) to operate the ventilation system in the home. The ventilation function can also be incorporated in mood settings.

## Installation

Contact the HVAC installer prior to commencing the installation process. Contact the manufacturer of these systems for more information on how to properly adjust the settings.

## Wiring diagram



Follow the steps below to install the module:

- Ensure that the installation is disconnected from the mains.
- Refer to the manual of the ventilation unit to check whether it should be connected using two or three control wires.

A ventilation unit can generally be connected in two different ways:

- With two-wire control, you connect the common terminal from the ventilation unit in between two control wires. If no control wire is selected, the ventilation system will function at the lowest setting.\*
- With three-wire control, you connect the common terminal from the ventilation unit in between three control wires. Each control wire represents one specific ventilation setting.

Ventilation setting	Three-wire	Two-wire
low (eco)	contact 1	*
normal	contact 2	contact 2
high	contact 3	contact 3

- 1 Press the module onto the DIN rail until it clicks into place.
- 2 Connect ventilation setting 'low' (eco) to screw terminal 1' (only for systems with three-wire control), 'normal' to screw terminal 2' and 'high' to screw terminal 3'.
- 3 Connect the common terminal from the ventilation unit to the L screw terminals.
- 4 Connect the ventilation module to the module before it. Slide the sliding contact of this module to the right until it clicks into the ventilation module. This will ensure that the bus and the power supply voltage are connected.

## Programming the ventilation module

Use the programming software to select when and for how long the ventilation system should remain activated for each setting, i.e. 'low' (eco), 'normal' and 'high'. You can also select how long the highest setting should remain activated in boost mode. Furthermore, ventilation control can be incorporated in other Niko Home Control functions, such as the eco-function or calendar-based functions.

## Error codes

When the module is functioning properly, the STATUS LED will light up in TEST mode only. If one or several errors occur, the LED will blink to indicate the error code of the error with the highest priority. The table below provides an overview of all error codes.

LED	ACTION	ERROR	POSSIBLE SOLUTIONS
STATUS LED	Blinks – one pulse per two seconds.	Software error	Wrong software version. *Download the latest software version from the Niko website to upgrade the module.

## **Technical data**

- maximum load: 230 V – 16 A per channel
- screw terminals to control 3 settings: low (eco), normal or high
- 2 x 4 screw terminals for 3 x 1.5 mm<sup>2</sup> or 2 x 2.5 mm<sup>2</sup> or 1 x 4 mm<sup>2</sup>
- dimensions: DIN 2U
- sliding contact to connect the module to the following module on the DIN rail
- CE marked
- ambient temperature: 0 - 45 °C



- I. ADDRESS button 1      The function of this button is twofold. In addition to the function described under "H" this button is also used while programming the installation to send the unique address of the module during the addressing phase.
- J. CHANNEL LEDs      One LED per channel. The CHANNEL LED lights up in TEST mode when the output is activated.
- K. STATUS LED      The STATUS LED lights up in TEST mode when the module is connected correctly and is functioning properly. If an error occurs, the LED will blink to indicate an error code. See [Error codes on page 168](#).

## Operation

The module has four outputs to operate control valves (e.g. zone valves at 230 V AC or 24 V DC), pumps, electric heating units or individual cooling units (e.g. air-conditioning units or fan convectors) in four different zones or rooms. This allows you to apply different heating or cooling settings to each one of the four zones or rooms fitted with a Niko Home Control thermostat.

The module uses one output to control the heating or cooling system. When the module receives a heating or cooling request from the Niko Home Control thermostat in one of the zones or rooms, the H/C contact of all the modules will be closed which then activates the central boiler or cooling unit. The most centrally located boilers or cooling units are fitted with an input contact (e.g. a telephone or boiler contact) for this purpose. If not, a special regulation module will be added to the central boiler or cooling unit. In installations with a hot water reservoir, the circulation pump will be activated.

To avoid conflict in the installation, the module takes into account the opening and closing times of the zone valves as well as the lag time of the heating or cooling system .



The module does not change the settings of the heating or cooling system.

## Sizing

Each module controls the heating or cooling in four different zones or rooms but cannot perform both functions at the same time. Two separate modules will be required to use the heating function at the same time as the cooling function. One extra module is required for every four additional zones or rooms to be heated or cooled.

A maximum of 12 zones or rooms can be heated and cooled. In other words, a maximum of six modules can be used per installation.



If a heating or cooling request is received for one of the zones, the H/C contacts of all modules will be closed. This setting cannot be changed.

## Permitted loads

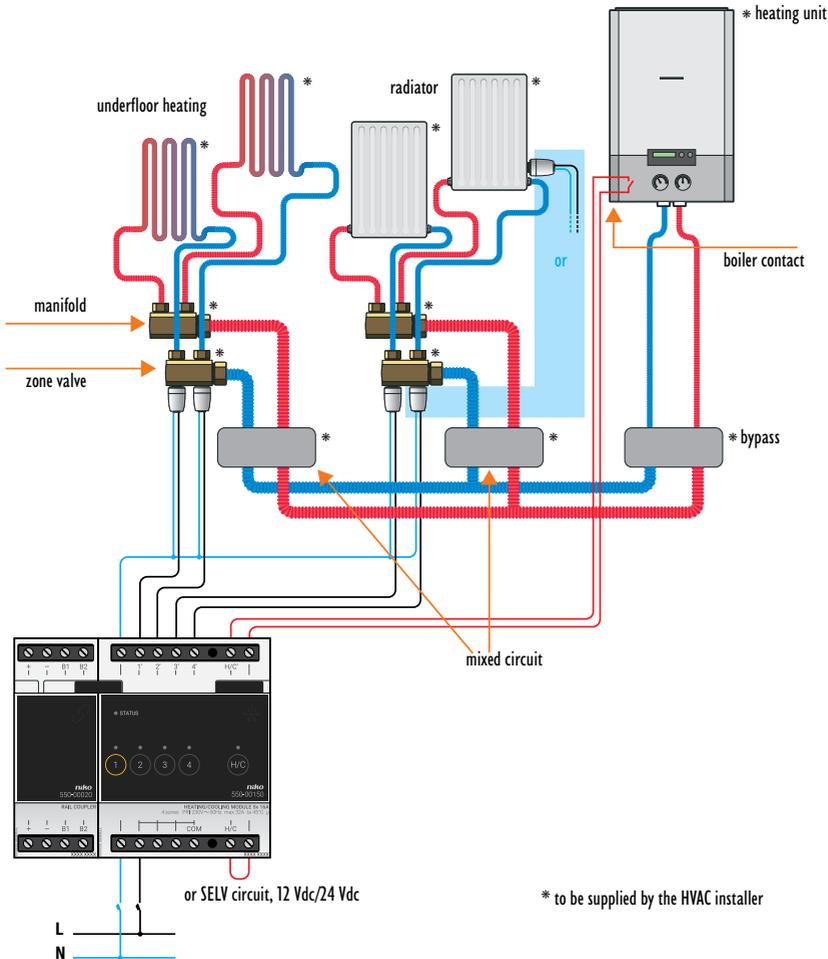
The module is suitable to switch potential-free boiler contacts. Check the table below to find out the maximum load for each type.

Type of load	Maximum RMS current
inductive load (circulation pumps ...)	6 A
capacitive load	10 A
resistive load (electric heating units ...)	16 A

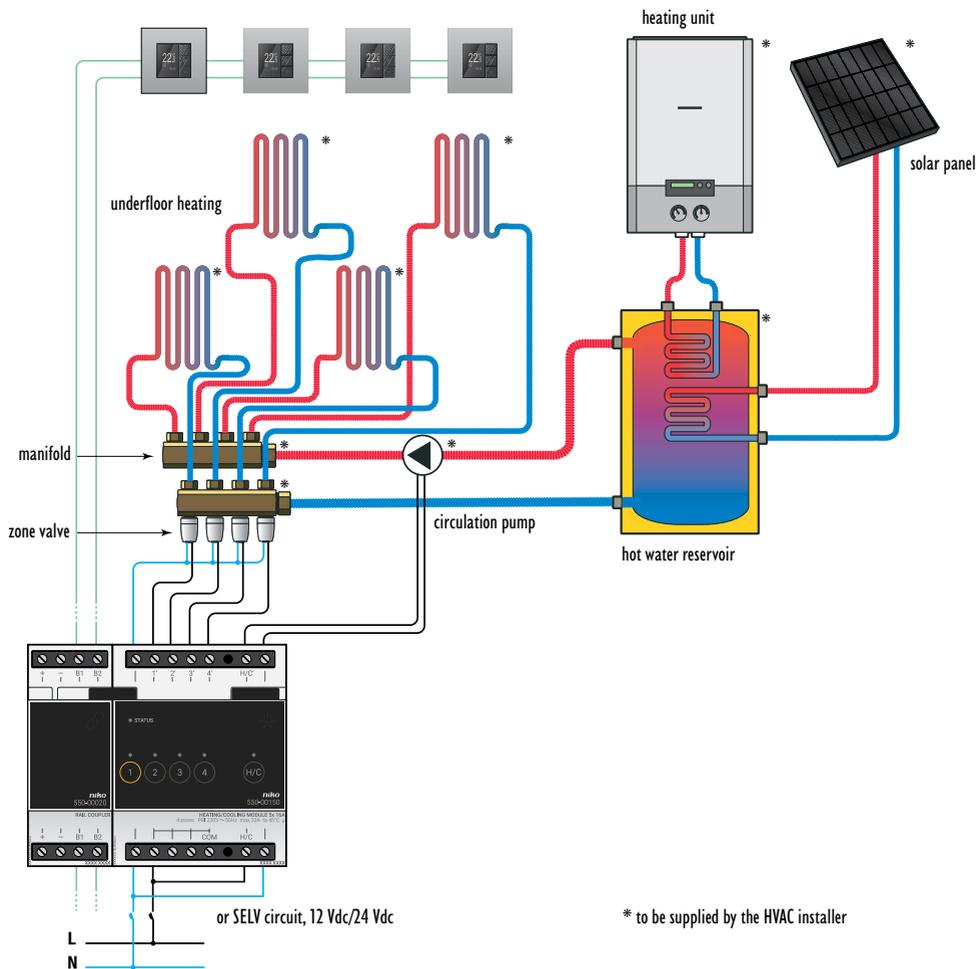
## Installation

Contact the HVAC installer prior to commencing the installation process. The installer will provide the heating or cooling system with control valves (e.g. zone valves at 230 Vac or 24 Vdc on the heating manifold or radiator) and will verify which type of contact to use for the connection of the central boiler or cooling unit. Furthermore, the installer will ensure that the central boiler or cooling unit (boiler, control or telephone contact, etc.) or the circulation pump can be connected. Contact the manufacturer of these systems for more information on how to properly adjust the settings.

## Connection diagrams



Installation with central boiler



Installation with hot water reservoir and circulation pump

 Ensure that the installation is disconnected from the power mains when setting up the electrical cabinet.

Follow the steps below to install the module:

- 1 Press the switching module onto the DIN rail until it clicks into place.
- 2 Connect the control valves, pumps, electric heating units or individual cooling units (e.g. air-conditioning units or fan convectors) to screw terminals 1'-4'. Ideally, a dedicated control unit is used for the cooling unit.



- All four connections must use the same voltage. Do not use both 230Vac and 24Vdc on the same module.
- The module can control a maximum of 16 A of power. If the electric heating unit uses more power, you will need to use an external relay contact.
- The cooling unit must have a potential-free input contact.
- If you are using electric heating units or individual cooling units, the H/C contact has no function.

- 3 Connect the boiler or cooling unit to screw terminals H/C'.
- 4 Depending on the heating or cooling system used in the home, you need to connect the safety extra-low voltage (SELV) to screw terminals H/C or connect screw terminal H/C to the screw terminal next to it.
- 5 Connect the safety extra-low voltage (SELV) for the control valves, pumps, electric heating units or individual cooling units (e.g. air-conditioning units or fan convectors).



Zone valves on 24 Vdc should not be powered by the bus power supply.

- 6 Connect the heating or cooling module to the module before it. Slide the sliding contact of this module to the right until it clicks into the heating or cooling module. This will ensure that the bus and the power supply voltage are connected.

### Programming the heating or cooling module

Use the programming software to change the following settings for the heating or cooling module.

The response time of the control valves connected to outputs 1'-4'.	
What is this?	The time required for the control valves to open or close.
Why is this necessary?	To avoid conflict with the central boiler or cooling unit. The module first opens the control valve for the zone specified before activating the central boiler or cooling unit.
Standard setting	1 minute
Details	If you are using electric heating units or individual cooling units, the response time must be zero.



The response time applies to all valves connected to the heating or cooling module. Choose similar valves for each output.

Lag time of the central boiler or cooling unit.	
What is this?	The time required by the central boiler or cooling unit to stop heating or cooling.
Why is this necessary?	To release residual heat or cold. The control valve for the zone will remain open for the time selected to allow the central boiler or cooling unit to release its residual heat or cold.
Standard setting	3 minutes
Details	If you are using electric heating units or individual cooling units, the lag time must be zero. If the central heating or cooling unit is fitted with a circulation pump, the lag time must be zero.

## Error codes

When the module is functioning properly, the STATUS LED will light up in TEST mode only. If one or several errors occur, the LED will blink to indicate the error code of the error with the highest priority. The table below provides an overview of all error codes.

LED	ACTION	ERROR	POSSIBLE SOLUTIONS
STATUS LED	Blinks – one pulse per two seconds.	Software error	Wrong software version.* *Download the latest software version from the Niko website to upgrade the module.

## Technical data

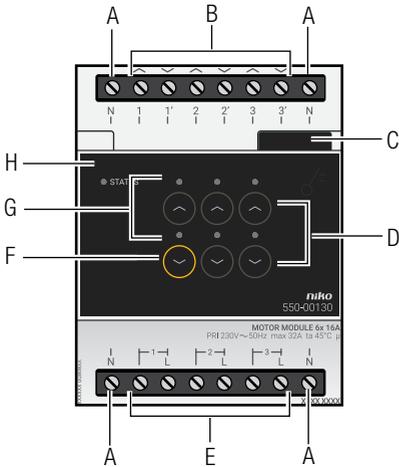
- each zone or room should be equipped with a Niko Home Control thermostat
- maximum current per module: 16 A
- screw terminals for controlling 4 zone valves at 230 Vac or 24 Vdc (do not mix per module)
- 2 x 7 screw terminals for 3 x 1.5 mm<sup>2</sup> or 2 x 2.5 mm<sup>2</sup> or 1 x 4 mm<sup>2</sup>
- dimensions: DIN 4U
- sliding contact to connect the module to the following module on the DIN rail
- CE marked
- ambient temperature: 0 - 45 °C

## 20. Motor module

### Description

The motor module can operate three applications that are motor-controlled, such as roll-down shutters, venetian blinds or sun blinds.

### Overview



- A. N screw terminal** This is where the neutral conductor is connected.
- B. Screw terminals 1-3'** This is where you connect the load that is connected to output 1 up to 3'.
- C. Sliding contact** The sliding contact is used for connecting the next module, which means that the bus and the power supply module are then also interconnected.
- D. Buttons** These buttons are used for activating or deactivating an output. Please remember that the activation or deactivation is only temporary as it will be overruled by the next bus communication.
- E. L screw terminals** This is where the phase of the 230 V mains voltage is connected. The L screw terminals are internally linked in groups of two.
- F. ADDRESS button** The function of this button is twofold. In addition to the function described under "D", this button is also used while programming the installation to send the unique address of the module during the addressing phase.
- G. CHANNEL LEDs** One LED per channel. The CHANNEL LED lights up in TEST mode when the output is activated.
- H. STATUS LED** The STATUS LED lights up in TEST mode when the module is connected correctly and is functioning properly. If an error occurs, the LED will blink to indicate an error code. See [Error codes on page 172](#).

550-00130

## Operation

Each module can operate up to three motors. The desired opening and closing times can be entered via the programming software. This will ensure that the exact position of the roll-down shutter is known at all times, and it allows you to enter the position of your preference.

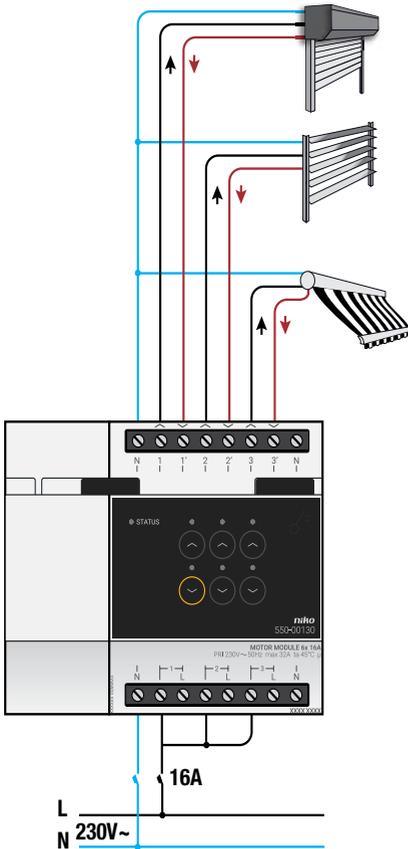
Buttons "D" can be used to manually activate or deactivate the motors from the motor module via low-energy bistable relays in the module. The status of the relay only changes when a data pulse is generated by the controller or by one of the switch buttons. Please remember that the manual activation or deactivation is only temporary as it will be overruled by the next bus communication.



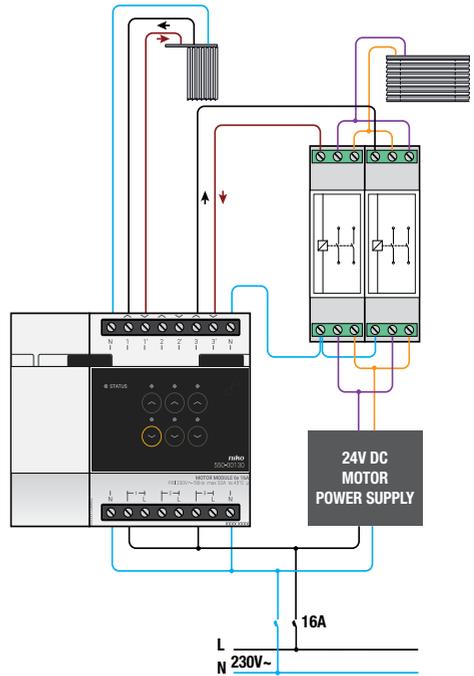
Use the specific push buttons (see [Wall-mounted printed circuit boards and push buttons op pagina 33](#)) to operate the motor module. This function can also be incorporated in a mood setting.

## Installation

### Connection diagrams



For roll-down shutters and sun blinds



For venetian blinds



- Ensure that the installation is disconnected from the power mains when setting up the electrical cabinet.
- Observe all AREI regulations in force when connecting the load.
- Only one phase can be connected to each motor module.
- Use automatic fuses of 16 A max. for the motor module. Mount the fuses in front of the Niko Home Control module.
- The maximum power for each channel is 6 A.
- Do not connect different voltages to the same motor module.

Follow the steps below to install the module:

- 1 Press the motor module onto the DIN rail until it clicks into place.
- 2 Make a single-phase connection from the mains voltage to the L screw terminals.
- 3 The switching circuits you wish to connect can now be connected to the outputs.
- 4 Group all neutral conductors and connect these to one N screw terminal.
- 5 Connect the motor module to the module before it. Slide the sliding contact of this module to the right until it clicks into the motor module. This will ensure that the bus and the power supply voltage are connected.

A 230 Vac or 24 Vdc motor is used for the operation of venetian blinds or vertical blinds.



Keep in mind the following when installing the motor module:

- Venetian blinds are operated with a 230 Vac motor in the same way as roll-down shutters.
- To operate venetian blinds using a 24 Vdc motor, you will need two switchover contacts (not a Niko product) per venetian blind or vertical blind.

## Error codes

When the module is functioning properly, the STATUS LED will light up in TEST mode only. If one or several errors occur, the LED will blink to indicate the error code of the error with the highest priority. The table below provides an overview of all error codes.

LED	ACTION	ERROR	POSSIBLE SOLUTIONS
STATUS LED	Blinks – one pulse per two seconds.	Software error	Wrong software version. * Download the latest software version from the Niko website to upgrade the module.

## Technical data

- switching delay: 0.5 s
- maximum number of motors permitted: 3
- maximum load: 230 V – 6 A per switching contact
- dimensions: DIN 4U
- sliding contact to connect the module to the following module on the DIN rail
- 2 x 8 screw terminals for 3 x 1.5 mm<sup>2</sup> or 2 x 2.5 mm<sup>2</sup> or 1 x 4 mm<sup>2</sup>
- CE marked
- ambient temperature: 0 - 45 °C

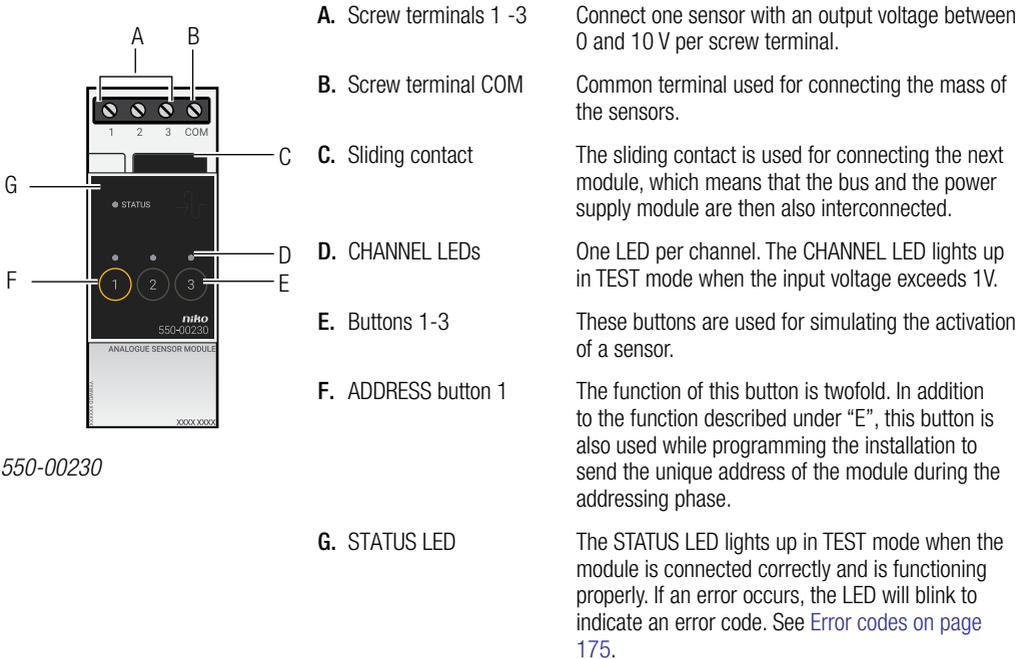
## 21. Analogue sensor module

### Description

Three external analogue sensors are connected to the Niko Home Control installation using the analogue sensor module. The sensors must be suitable for use in applications with a safety extra-low voltage (SELV).

This type of sensor is used for measuring sunlight, wind, rain, CO<sub>2</sub>, humidity, or temperature. In function of the values measured, applications such as sun blinds, roll-down shutters, and lights can be operated automatically.

### Overview



550-00230

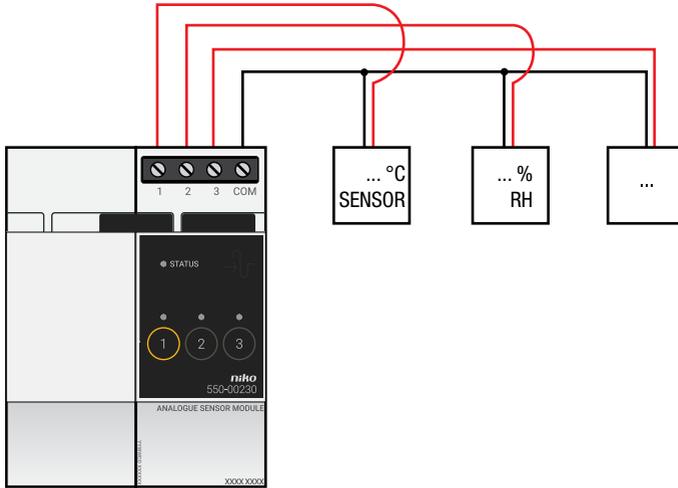
### Operation

When a connected sensor is activated, the corresponding input will receive a signal between 0 and 10 V and the module will forward this value and the address to the controller, which then activates one or several pre-programmed actions. Each value corresponding to a certain input voltage is set via the programming software.

Activation of a connected sensor can be simulated by pressing the button. The real input will in that case be deactivated for two minutes.

## Installation

### Wiring diagram



Follow the steps below to install the module:



- Ensure that the installation is disconnected from the mains.
  - The distance between the sensors and the module should not exceed 100 m.
  - A maximum of three sensors can be connected per module. Up to 10 modules can be connected per installation.
  - Always use sensors that are suitable for applications with a safety extra-low voltage (SELV).
    - If the sensor uses an SELV (24Vdc) power supply, then it is always suitable.
    - If the sensor uses a 230 Vac power supply, then it must have a galvanically isolated output (SELV).
- 1 Press the module onto the DIN rail until it clicks into place. Preferably position the module in the top row inside the electrical cabinet to keep the SELV cables separate from the 230V cables.
  - 2 Connect the sensors to one of the screw terminals 1-3.
  - 3 Connect the mass of the sensors to the common screw terminal COM.
  - 4 Connect the analogue sensor module to the module before it. Slide the sliding contact of this module to the right until it clicks into the analogue sensor module. This will ensure that the bus and the power supply voltage are connected.

## Error codes

When the module is functioning properly, the STATUS LED will light up in TEST mode only. If one or several errors occur, the LED will blink to indicate the error code of the error with the highest priority. The table below provides an overview of all error codes.

LED	ACTION	ERROR	POSSIBLE SOLUTIONS
STATUS LED	Blinks – one pulse per two seconds.	Software error	Wrong software version. * *Download the latest software version from the Niko website to upgrade the module.

## Technical data

- maximum distance between sensors and sensor module: 100 m
- 4 screw terminals for 3 x 1.5 mm<sup>2</sup> or 2 x 2.5 mm<sup>2</sup> or 1 x 4 mm<sup>2</sup>
- dimensions: DIN 2U
- sliding contact to connect the module to the following module on the DIN rail
- ambient temperature: 0 - 45 °C
- CE marked

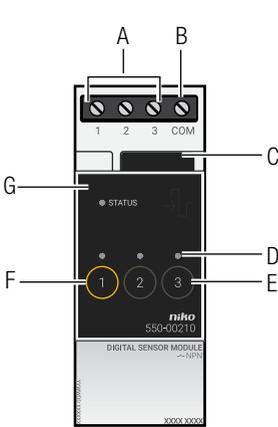


## 22. Digital potential-free sensor module

### Description

The digital potential-free sensor module allows you to connect up to three sensors to the Niko Home Control installation. The sensors must be suitable for use in applications with safety extra-low voltage (SELV). Examples are: twilight switches, smoke detectors, motion detectors, door communication systems or door lock contacts, telephone interfaces, alarm installations, etc.

### Overview



- A.** Screw terminals 1 -3      Connect one normally-open (NO) contact or NPN transistor output of a sensor per screw terminal.
- B.** Screw terminal COM      Common terminal used for connecting the mass of the sensors.
- C.** Sliding contact      The sliding contact is used for connecting the next module, which means that the bus and the power supply module are then also interconnected.
- D.** CHANNEL LEDs      One LED per channel. The CHANNEL LED lights up in TEST mode when the external contact is connected.
- E.** Buttons 1-3      These buttons are used for simulating the activation of a sensor.
- F.** ADDRESS button 1      This button is used while programming the installation to send the unique address of the module during the addressing phase.
- G.** STATUS LED      The STATUS LED lights up in TEST mode when the module is connected correctly and is functioning properly. If an error occurs, the LED will blink to indicate an error code, see [Error codes on page 179](#).

550-00210

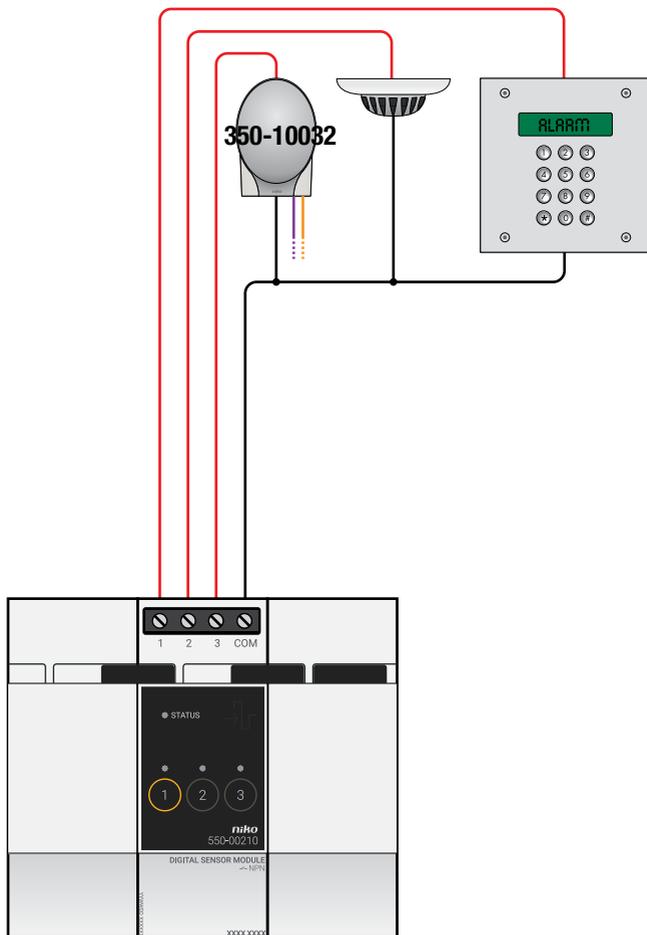
### Operation

When a connected sensor is activated, the module sends the address to the controller, which then activates one or several pre-programmed actions.

The contact can be temporarily closed manually by pressing the button to simulate a particular status. The real input will in that case be deactivated for two minutes.

## Installation

### Wiring diagram



Follow the steps below to install the module:



- Ensure that the installation is disconnected from the mains.
- The distance between the sensors and the module should not exceed 50 m.
- A maximum of three sensors can be connected per module.
- Always use sensors that are suitable for applications with a safety extra-low voltage (SELV).
  - If the sensor uses an SELV (24Vdc) power supply, then it is always suitable.
  - If the sensor uses a 230 Vac power supply, then it must have a galvanically isolated output (SELV), or an intermediate relay must be used.

- 1** Press the module onto the DIN rail until it clicks into place. Preferably position the module in the top row inside the electrical cabinet to keep the SELV cables separate from the 230V cables.
- 2** Connect the sensors to one of the screw terminals 1-3 using the normally-open (NO) contact or the NPN transistor output.
- 3** Connect the mass of the sensors to the common screw terminal COM.
- 4** Connect the digital potential-free sensor module to the module before it. Slide the sliding contact of this module to the right until it clicks into the digital potential-free sensor module. This will ensure that the bus and the power supply voltage are connected.

## Error codes

When the module is functioning properly, the STATUS LED will light up in TEST mode only. If one or several errors occur, the LED will blink to indicate the error code of the error with the highest priority. The table below provides an overview of all error codes.

LED	ACTION	ERROR	POSSIBLE SOLUTIONS
STATUS LED	Blinks – one pulse per two seconds.	Software error	Wrong software version. * *Download the latest software version from the Niko website to upgrade the module.

## Technical data

- maximum distance between sensors and sensor module: 50 m
- 4 screw terminals for 3 x 1.5 mm<sup>2</sup> or 2 x 2.5 mm<sup>2</sup> or 1 x 4 mm<sup>2</sup>
- dimensions: DIN 2U
- sliding contact to connect the module to the following module on the DIN rail
- ambient temperature: 0 - 45 °C
- CE marked



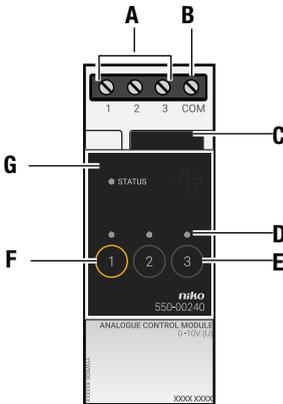
## 23. Analogue control module 0-10 V

### Description

Three high-power dimmers are connected to the Niko Home Control installation using the analogue control module 0-10V. Three dimmers with an analogue input of 0-10 V can be connected to this module.

Useful Niko reference codes: 05-711, 05-715, 65-410, 65-412, 65-416, 330-00701.

### Overview



550-00240

- |  |  |
|--|--|
| <p><b>A.</b> Screw terminals 1-3</p> <p><b>B.</b> Screw terminal COM</p> <p><b>C.</b> Sliding contact</p> <p><b>D.</b> CHANNEL LEDs</p> <p><b>E.</b> Buttons 1-3</p> <p><b>F.</b> ADDRESS button 1</p> <p><b>G.</b> STATUS LED</p> | <p>Connect one dimmer per screw terminal.</p> <p>Common terminal used for connecting the mass of the dimmers.</p> <p>The sliding contact is used for connecting the next module, which means that the bus and the power supply module are then also interconnected.</p> <p>One LED per channel. The CHANNEL LED lights up in TEST mode when the output is activated.</p> <p>These buttons are used for activating or deactivating each individual output. Please remember that the activation or deactivation is only temporary as it will be overruled by the next bus communication.</p> <p>The function of this button is twofold. In addition to the function described under “E”, this button is also used while programming the installation to send the unique address of the module during the addressing phase.</p> <p>The STATUS LED lights up in TEST mode when the module is connected correctly and is functioning properly. If an error occurs, the LED will blink to indicate an error code, see <a href="#">Error codes on page 183</a>.</p> |
|--|--|

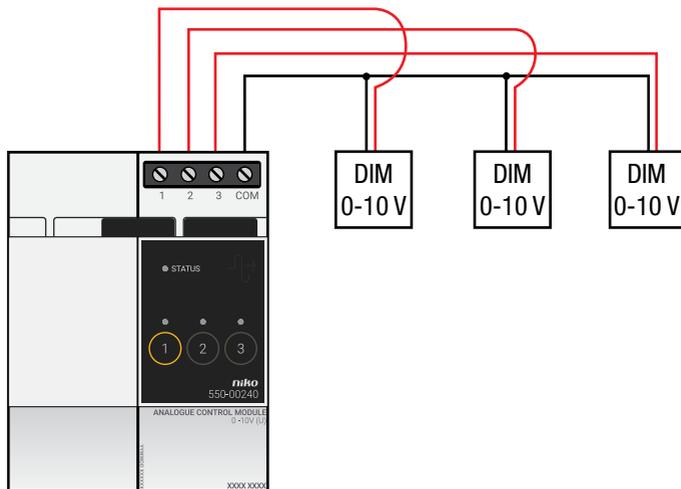
## Operation

The output will send a signal between 0 and 10 V to control the connected dimmer, which allows programmed actions or mood settings to be activated.

By pressing the corresponding button, the status of each output can be changed manually and temporarily to connect a light. Please remember that the activation or deactivation is only temporary as it will be overruled by the next bus communication.

## Installation

### Wiring diagram



Follow the steps below to install the module:



- Ensure that the installation is disconnected from the mains.
- The distance between the dimmers and the module should not exceed 50m.
- A maximum of three dimmers can be connected per module.

- 1 Press the module onto the DIN rail until it clicks into place. Preferably position the module in the top row inside the electrical cabinet to keep the SELV cables separate from the 230 V cables.
- 2 Connect the dimmers to one of the screw terminals 1-3.
- 3 Connect the mass of the dimmers to the common screw terminal COM.
- 4 Connect the analogue control module 0-10 V to the module before it. Slide the sliding contact of this module to the right until it clicks into the analogue control module 0-10 V. This will ensure that the bus and the power supply voltage are connected.

## Error codes

When the module is functioning properly, the STATUS LED will light up in TEST mode only. If one or several errors occur, the LED will blink to indicate the error code of the error with the highest priority. The table below provides an overview of all error codes.

LED	ACTION	ERROR	POSSIBLE SOLUTIONS
STATUS LED	Blinks – one pulse per two seconds.	Software error	Wrong software version. * *Download the latest software version from the Niko website to upgrade the module.

## Technical data

- 3 outputs: 0-10 V (FELV, functional extra-low voltage), voltage-controlled (U)
- maximum distance between dimmers and module: 50 m
- maximum load: 10 mA per channel
- short circuit protection per channel
- 4 screw terminals for 3 x 1.5 mm<sup>2</sup> or 2 x 2.5 mm<sup>2</sup> or 1 x 4 mm<sup>2</sup>
- dimensions: DIN 2U
- sliding contact to connect the module to the following module on the DIN rail
- ambient temperature: 0 - 45 °C
- CE marked



## 24. Analogue control module 1-10 V

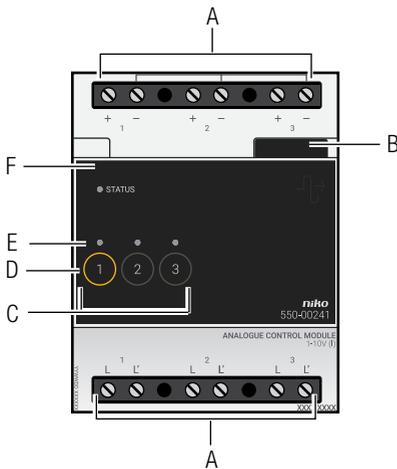
### Description

Three dimmers and/or switching devices are connected to the Niko Home Control installation using the analogue control module 1-10 V:

- dimmers with an analogue input of 1-10 V for dimming monochrome LEDs.
- electronic control gear for fluorescent lights.
- high-power dimmers with an analogue input of 1-10 V.

Useful Niko reference codes: 05-715, 65-410, 65-412, 65-416, 330-00701.

### Overview



- |           |                      |   |
|-----------|----------------------|---|
| <b>A.</b> | Screw terminals 1 -3 | This is where you connect a dimmer.   |
| <b>B.</b> | Sliding contact      | The sliding contact is used for connecting the next module, which means that the bus and the power supply module are then also interconnected.  |
| <b>C.</b> | Buttons 1-3          | These buttons are used for activating or deactivating each individual output. Please remember that the activation or deactivation is only temporary as it will be overruled by the next bus communication.                    |
| <b>D.</b> | ADDRESS button 1     | The function of this button is twofold. In addition to the function described under "C" this button is used for transmitting the unique address of the module during the addressing phase while programming the installation. |
| <b>E.</b> | CHANNEL LEDs         | One LED per channel. The CHANNEL LED lights up in TEST mode when the output is activated.   |
| <b>F.</b> | STATUS LED           | The STATUS LED lights up in TEST mode when the module is connected correctly and is functioning properly. If an error occurs, the LED will blink to indicate an error code, see <a href="#">Error codes on page 187</a> .     |

550-00241

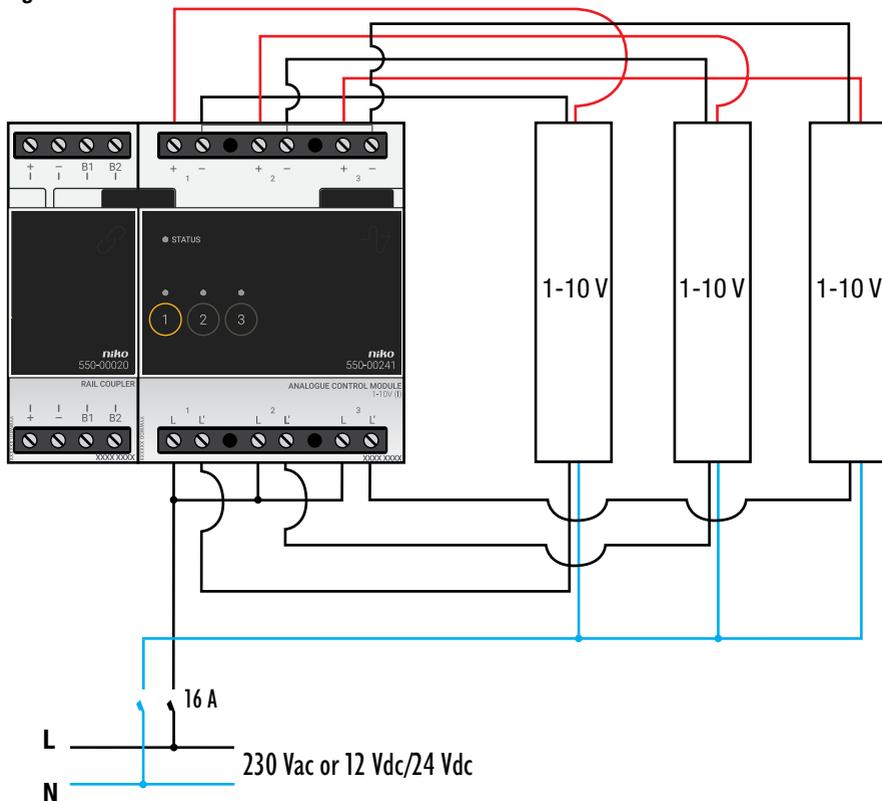
### Operation

The output will send a signal between 1 and 10 V to control the connected dimmer/electronic control gear, which allows programmed actions or mood settings to be activated.

By pressing the corresponding button, the status of each output can be changed manually and temporarily to connect a light. Please remember that the activation or deactivation is only temporary as it will be overruled by the next bus communication.

## Installation

### Wiring diagram



Follow the steps below to install the module:



- Ensure that the installation is disconnected from the mains.
- The distance between the dimmers and the module should not exceed 50m.
- A maximum of three dimmers can be connected per module.

- 1 Press the module onto the DIN rail until it clicks into place. Preferably position the module in the top row inside the electrical cabinet to keep the SELV cables separate from the 230V cables.
- 2 Connect the dimmers to one of the screw terminals 1-3.



It is possible to connect three individual phases.

- 3 Connect the analogue control module 1-10 V to the module before it. Slide the sliding contact of this module to the right until it clicks into the analogue control module 1-10 V. This will ensure that the bus and the power supply voltage are connected.

## Error codes

When the module is functioning properly, the STATUS LED will light up in TEST mode only. If one or several errors occur, the LED will blink to indicate the error code of the error with the highest priority. The table below provides an overview of all error codes.

LED	ACTION	ERROR	POSSIBLE SOLUTIONS
STATUS LED	Blinks – one pulse per two seconds.	Software error	Wrong software version. * *Download the latest software version from the Niko website to upgrade the module.

## Technical data

- 3 outputs: 1-10 V (FELV, functional extra-low voltage), current-controlled (I)
- option of connecting 3 individual phases
- maximum distance between dimmers and module: 50 m
- maximum load: 20 mA per channel, protected from 50 mA per channel and maximum 11 V
- galvanic isolation when connecting the power circuit (6 A per channel)
- 2 x 6 screw terminals for 3 x 1.5 mm<sup>2</sup> or 2 x 2.5 mm<sup>2</sup> or 1 x 4 mm<sup>2</sup>
- dimensions: DIN 4U
- sliding contact to connect the module to the following module on the DIN rail
- ambient temperature: 0 - 45 °C
- CE marked



## 25. Push-button interface

### Description

The push-button interface is used for connecting potential-free push buttons and NPN transistor outputs to the Niko Home Control installation. The interface converts the switching impulse of the push buttons into a Niko Home Control bus command.

### Overview



- A. Connection wires C 1 2 3 4 These are used for connecting potential-free push buttons and NPN transistor outputs. The blue wire is the common. The other four wires are used for connecting the external push buttons.
- B. B screw terminals This is where you connect the Niko Home Control bus and possibly loop to other control elements of the Niko Home Control installation.

550-20000

### Operation

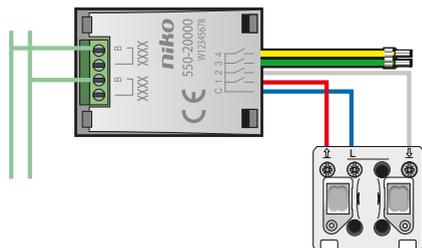
The push-button interface sends a command when the push button is activated. The interface comes with bus voltage detection, which verifies that all communications with the Niko Home Control installation are functioning properly.



Potential-free push buttons connected via this push-button interface cannot be programmed manually. See [Programming the installation manually on page 9](#).

## Installation

### Connection diagrams



- Only connect the push-button interface to an SELV (safety extra-low voltage) contact and NOT to the 230 V mains voltage.
- Ensure that there is no contact between loose wires and other wires.
- The cable length between the push-button interface and the push button or transistor output should not exceed 2 m.
- The push-button interface can be used in an outdoor environment provided that the unit is fitted with splash-proof housing (e.g. New Hydro).

To connect the push-button interface:

- 1 Connect the bus wire to the B screw terminals.  
Loop to other control elements of the Niko Home Control installation if required.
- 2 Connect the potential-free push button or NPN transistor output.

### Technical data

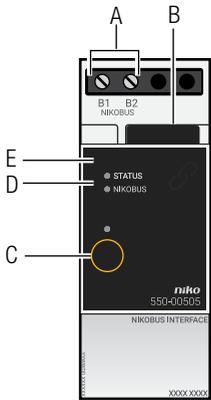
- maximum distance to push button: 2 m
- resting potential: 26 Vdc (SELV)
- dimensions: 40 x 27 x 5 mm (HxWxD)
- CE marked
- ambient temperature: -25 - 55 °C

## 26. Nikobus interface

### Description

The Nikobus interface allows you to expand the existing Nikobus installation by adding several functions of the Niko Home Control installation. Note that programming via PC must be enabled within the Nikobus installation, i.e. at least PC Link, PC Logic or a feedback module is required.

### Overview



- |           |                       |   |
|-----------|-----------------------|---|
| <b>A.</b> | B1/B2 screw terminals | This is where you connect the Nikobus bus cable.  |
| <b>B.</b> | Sliding contact       | The sliding contact is used for connecting the next module, which means that the bus and the power supply module are then also interconnected.  |
| <b>C.</b> | ADDRESS button        | This button is used while programming the installation to send the unique address of the module during the addressing phase.  |
| <b>D.</b> | NIKOBUS LED           | The NIKOBUS LED lights up when the Nikobus is live and blinks briefly when communication is detected on the Nikobus system.   |
| <b>E.</b> | STATUS LED            | The STATUS LED lights up in TEST mode when the module is connected correctly and is functioning properly. If an error occurs, the LED will blink to indicate an error code. See <a href="#">Error codes on page 193</a> . |

550-00505

### Operation

The Nikobus interface allows you to operate Niko Home Control functions using Nikobus control elements, and vice versa. Functions of the Nikobus installation can only be operated via the generic push buttons of the Niko Home Control installation. Specific push buttons such as push buttons for dimming, motor and ventilation control, or push buttons with display, cannot be used.



- Feedback is not possible between the acting elements of the Nikobus installation and those of the Niko Home Control installation.
- Specific Niko Home Control push buttons or push buttons with display cannot be used to operate the functions of a Nikobus installation.
- A maximum of 100 Nikobus controls can be used per installation. In other words, a maximum of 100 Niko Home Control action buttons can be assigned to one Nikobus installation.
- A maximum of 100 virtual Nikobus push buttons can be used per installation. In other words, a maximum of 100 Nikobus buttons can be assigned to one Niko Home Control installation.
- If you need to reprogram the Niko Home Control installation, you do not need to reprogram the Nikobus installation provided that the Nikobus addresses of the Nikobus control and of the virtual Nikobus push buttons have not been modified.

## Operating a Nikobus module using a Niko Home Control action button

- 1 Link the Nikobus control to an action in the Niko Home Control installation.

This Nikobus control behaves like an output, but instead of controlling a contact, the Nikobus interface sends an address to the Nikobus installation.



Use one Nikobus control for each Niko Home Control action. If you use a push button with six action buttons, you will need to provide six Nikobus controls.

The address you need to select or enter in the Nikobus software can be found under the parameters of the Nikobus control for this action button.

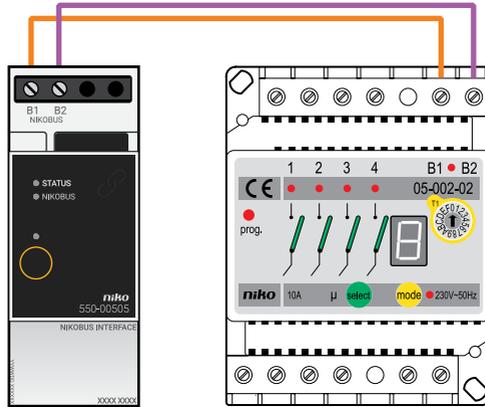
- 2 Use the Nikobus software to manually add one virtual Nikobus push button per Nikobus control. The virtual push button can be connected to any Nikobus module with single or dual-button mode:
  - Select dual-button mode if you want to activate and deactivate the action via the Niko Home Control action button.
  - Select single-button mode if the action is only to be started via the Niko Home Control action button.
- 3 Go to the “Address/Parameters” tab sheet in the Nikobus software to add the address you selected or received while programming the Niko Home Control installation to this virtual push button.

## Operating a Niko Home Control module using a Nikobus push button

- 1 Find the address of the Nikobus push button that you wish to use.
- 2 While programming the Niko Home Control installation, add a virtual Nikobus push button for the action you wish to execute. Link the Nikobus push buttons to the virtual Nikobus push button. The same method as with all other Niko Home Control push buttons is used to assign and address this virtual push button. Enter the following parameters for the virtual Nikobus push button:
  - the address of the Nikobus push button.
  - the actual button on the Nikobus push button that you want to use for activating the action: A, B, C or D

## Installation

### Wiring diagram



- Ensure that the installation is disconnected from the power mains when setting up the electrical cabinet.
- The bus cables of the Nikobus installation are not compatible with those of the Niko Home Control installation. Connecting cables from both systems to one another may cause damage.

Follow the steps below to install the Nikobus interface:

- 1 Press the Nikobus interface onto the DIN rail until it clicks into place. Preferably position the interface in the top row inside the electrical cabinet to keep the cables separate from the 230V cables.
- 2 Connect the Nikobus cables to screw terminals B1 and B2.

### Error codes

When the module is functioning properly, the NIKOBUS LED will light up in rest mode and the STATUS LED of the module will light up in TEST mode only. If one or several errors occur, the STATUS LED will blink to indicate the error code of the error with the highest priority. The table below provides an overview of all error codes.

LED	ACTION	ERROR	POSSIBLE SOLUTIONS
STATUS LED	Blinks – one pulse per two seconds.	Software error	Wrong software version.* *Download the latest software version from the Niko website to upgrade the module.
	Blinks – two pulses per two seconds.	No Nikobus voltage detected.	Check the cables. Check whether the Nikobus installation is functioning properly.
NIKOBUS LED	Does not light up:		Add a Nikobus module to supply bus power.

## **Technical data**

- dimensions: DIN 2E
- sliding contact to connect the module to the following module on the DIN rail
- 2 screw terminals for 3 x 1.5 mm<sup>2</sup> or 2 x 2.5 mm<sup>2</sup> or 1 x 4 mm<sup>2</sup>
- CE marked
- in conformity with EN 60669-2-1
- ambient temperature: 0 - 45 °C
- short-circuit and overheating protections

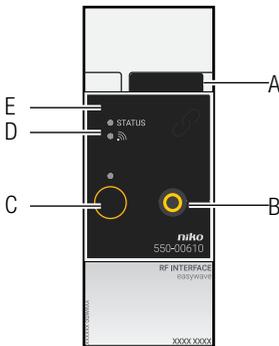
## 27. RF interface Easywave

### Description

The RF Interface Easywave lets you use Niko wireless Easywave controls in the Niko Home Control installation. This module receives Easywave radio signals, which allows the use of controls:

- where this would not normally be possible, e.g. on glass or concrete surfaces.
- for the renovation of heritage-listed buildings.
- for expansions of existing installations where drilling or channelling work is not permitted.
- in office areas with movable partition walls.
- when complex cabling is to be avoided

### Overview



**A.** Sliding contact

The sliding contact is used for connecting the next module, which means that the bus and the power supply module are then also interconnected.

**B.** ANTENNA connection

Connection for the external antenna (supplied in the box).

**C.** ADDRESS button

This button is used while programming the installation to send the unique address of the module during the addressing phase.

**D.** LED for communication

This LED will blink when communication is received from an Easywave control.

**E.** STATUS LED

The STATUS LED lights up in TEST mode when the module is connected correctly and is functioning properly. If an error occurs, the LED will blink to indicate an error code.

550-00610

## Operation

This modular receiver allows a connection to be established between Niko wireless Easywave controls and the Niko Home Control installation. The remote control or wireless control operates on the basis of signal transmission via radio waves on the licence-free ISM frequency band 868.3 MHz according to the European standard. Only products that do not continuously transmit are permitted at this frequency, meaning 1% per hour or 36 seconds. As a result, the chance of interference is minimal.

The system consists of a modular set-up including transmitters and one receiver. The wall transmitters are shaped like switches and are mounted onto the wall. The hand-held transmitters are shaped like traditional remote controls.

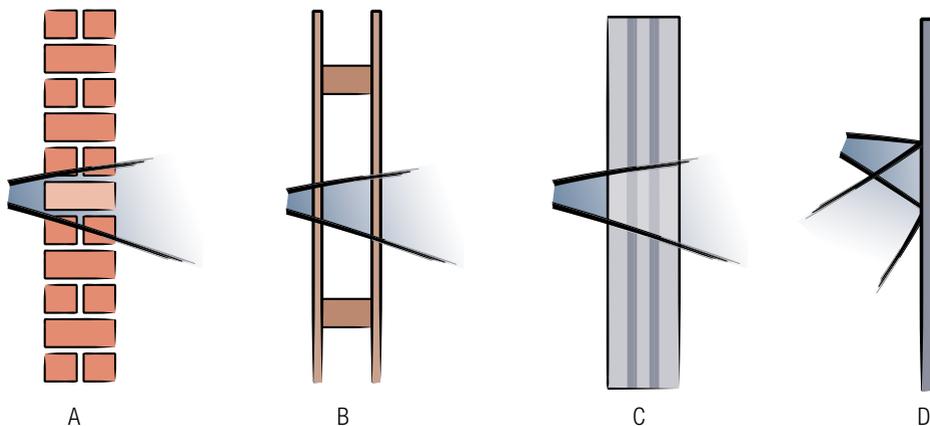
In particular, these products comply with the European guideline 1999/5/EG on radio equipment and telecommunications terminal equipment, also known as the R&TTE Directive.



Use single-button controls only. Program a different button for each action.

## Signal range

The operation of devices with a remote control, such as a TV or video and audio devices, is not disrupted by an Easywave hand-held transmitter. The hand-held transmitter does not have to be aimed towards the wireless Easywave receiver. The indoor range is  $\pm 30$  m. In open spaces the range reaches 100 m. The range of the hand-held transmitter depends on the materials used in the residence.



- |  |                    |
|--|--------------------|
| <b>A.</b> brick, concrete                | Loss of 20 to 40%  |
| <b>B.</b> wood partitions, plaster walls | Loss of 5 to 20%   |
| <b>C.</b> reinforced concrete            | Loss of 40 to 90%  |
| <b>D.</b> confined metal space           | Loss of 90 to 100% |

A diagnostic device (05-370) can be used to determine the wireless signal strength in an environment. The appliance recognizes all 868.3 Mhz signals. The nine LEDs on the device will indicate the quality of the signals received or the strength of any interrupting signals. This allows you to determine whether or not the signal range of the hand-held transmitter will meet your needs.

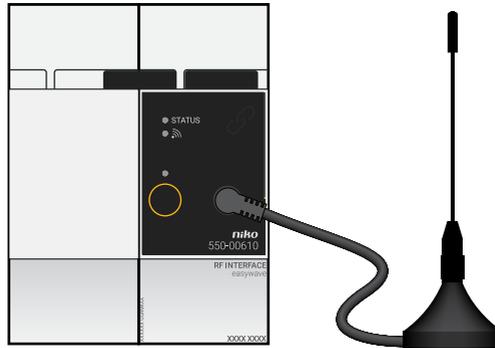
## Compatibility

The following wireless Easywave switches/controls are compatible for use with the RF interface Easywave:

- switch with two control buttons (410-00001)
- switch with four control buttons (410-00002)
- switch with eight control buttons (410-00003)
- mini RF hand-held transmitter with one channel, one control button (05-311)
- remote control with five channels, three control buttons (05-313)
- mini RF hand-held transmitter with one channel, four control buttons (05-314)
- mini transmitter interface with battery (05-315)

## Installation

### Wiring diagram



Follow the steps below to install the module:

-  Ensure that the installation is disconnected from the mains.
- Position the antenna outside the electrical cabinet on a metallic surface of minimum 15 x 15 cm for a maximum signal range.

1. Press the module onto the DIN rail until it clicks into place.
2. Connect the external antenna (supplied in the box) to the module. The external antenna includes a connection cable of 2 m.
3. Connect the RF Interface Easywave to the module before it. Slide the sliding contact of this module to the right until it clicks into the RF interface Easywave. This will ensure that the bus and the power supply voltage are connected.

## Error codes

When the module is functioning properly, the STATUS LED will light up in TEST mode only. If one or several errors occur, the LED will blink to indicate the error code of the error with the highest priority. The table below provides an overview of all error codes.

LED	ACTION	ERROR	POSSIBLE SOLUTIONS
STATUS LED	Blinks – one pulse per two seconds.	Software error	Wrong software version.* *Download the latest software version from the Niko website to upgrade the module.

## Technical data

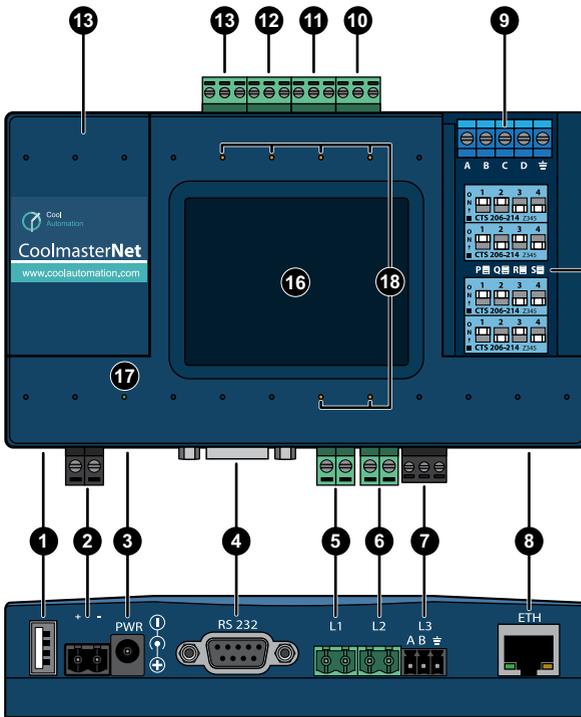
- one RF interface Easywave per installation
- to be used with included external antenna
- place antenna on a metallic surface of minimum 15 x 15 cm
- reception range: ± 30 m indoors, 100 m in open spaces
- dimensions: DIN 2E
- sliding contact to connect the module to the following module on the DIN rail
- ambient temperature: 0 - 45 °C
- CE marked

## 28. HVAC interface

### Description

The HVAC Universal Interface allows you to connect a VRV, VRF or multi-split air conditioning system (HVAC system) to the Niko Home Control installation. This module acts as the interface between the air conditioning system and the Niko Home Control gateway and allows communication between both devices.

### Overview



- 1 USB host (not applicable)
- 2 power supply connection
- 3 power supply connection via transformer (included)
- 4 RS232 port
- 5 HVAC line
- 6 HVAC line
- 7 HVAC line
- 8 ethernet port (not applicable)
- 9 GPIOs (not applicable)
- 10 HVAC line
- 11 HVAC line
- 12 HVAC line
- 13 HVAC line
- 14 USB ports
- 15 DIP switches P,Q,R,S
- 16 lcd with touchscreen
- 17 green LED
- 18 orange LED

550-0055X [X = 1-4, 6-9]

## Order numbers

550-00551: HVAC interface for Daikin VRV

550-00552: HVAC interface for Sanyo (Panasonic) VRF

550-00553: HVAC interface for Toshiba VRF

550-00554: HVAC interface for Mitsubishi Electric VRF

550-00556: HVAC interface for LG VRF

550-00557: HVAC interface for Fujitsu (Atlantic) VRF

550-00558: HVAC interface for Mitsubishi Heavy VRF

550-00559: HVAC interface for Hitachi VRF

Visit [www.niko.eu](http://www.niko.eu) (Products > Niko Home Control) to find out which HVAC systems are supported.

## Operation

The HVAC interface allows you to control an HVAC system using a Niko Home Control HVAC thermostat. See [Push buttons with display on page 43](#).

Only one HVAC interface is needed for the different HVAC systems. Only one HVAC interface can be connected to an HVAC system. To connect a multi-split air conditioning system, you will need an additional module in each indoor unit.



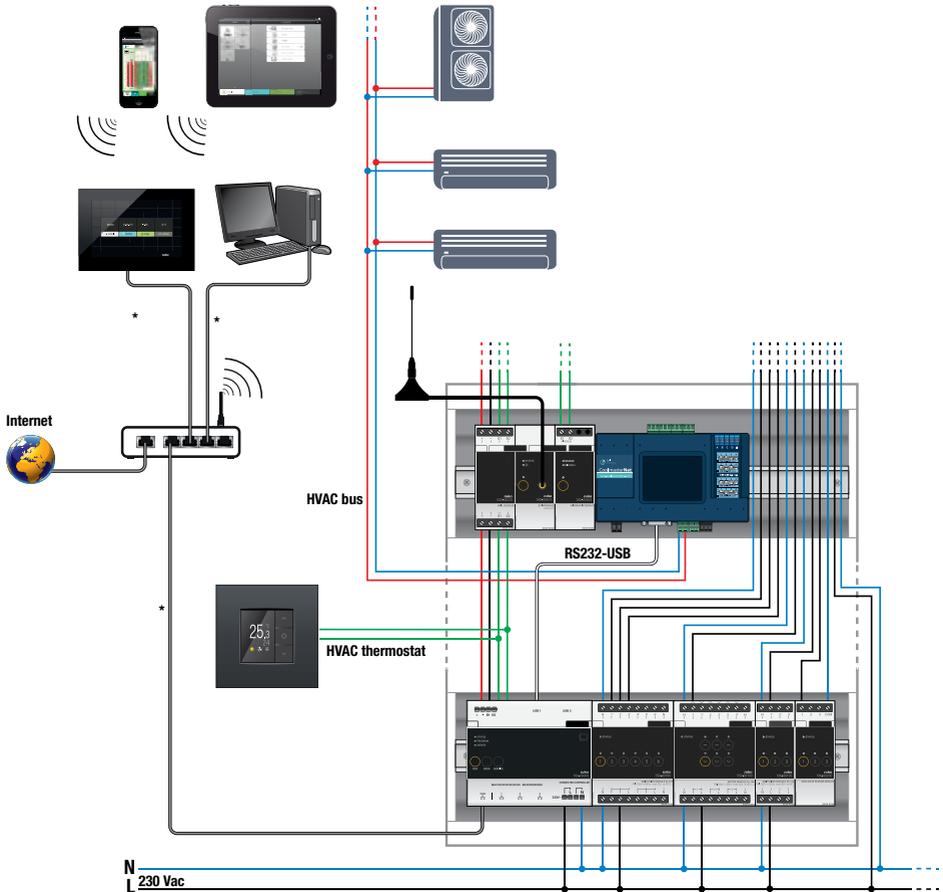
- It is not possible to combine different brands of air conditioning systems into one Niko Home Control installation.
- It is not possible to connect an additional heating element to the HVAC thermostat.
- The HVAC interface synchronises the Niko Home Control installation and the HVAC system every 10 minutes and after every action from the installation. The parameters that will be synchronised are: heating/cooling, on/off, ventilation speed, desired temperature and temperature settings.
- A maximum of 20 HVAC thermostats can be connected to the Niko Home Control installation. This means you can create up to 20 zones.
- The Niko Home Control installation can control a maximum of 8 indoor units per zone/HVAC thermostat.
- The HVAC system has its own order of priority when responding to various commands from different zones.

## Installation

### Connection diagrams



- To avoid crosstalk in new installations, connect all SELV cables on the left inside the electrical cabinet and all high-voltage cables to the right inside the electrical cabinet.
- Group all low-voltage modules together, such as the Nikobus interface or the Easywave RF interface, to ensure that the Nikobus cable or the antenna can run alongside the SELV cable.



*Cabling example for one single electrical cabinet*

\* twisted pair cable (UTP, FTP or STP)

## Connecting and mounting the HVAC interface



The 'ventilation speed control' and 'room temperature monitoring' functions are not available when the HVAC interface is connected to a Daikin KRP with DTA D3 interface. Hitachi models do not transfer temperature to the thermostat

- Preferably, use an HVAC system that is galvanically isolated from the mains.
- Do not connect more than one HVAC interface to the Niko Home Control installation.
- The resident must ensure that the WiFi network is secure. This protection is necessary for using the app on a smartphone or tablet.

1 To connect the HVAC interface to a VRV or VRF air conditioning system or a multi-split air conditioning system:

- To connect the HVAC interface to a **VRV or VRF air conditioning system**, connect the HVAC interface via a two-wire HVAC bus cable to the indoor unit(s). The following table provides an overview of the bus connection to the indoor unit(s) for each type of HVAC system:

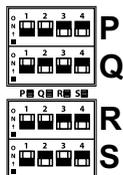
HVAC system	Communication network	Bus connection	Polarity	No. of indoor units	No. of outdoor units	Shielded network cable
Daikin	D3 Net	F1 F2	None	64	10	Not required
Toshiba	TCC Link	U1 U2	None	64	10	Required
Sanyo (Panasonic)	S3 Net	U1 U2	None	64	10	Required
Mitsubishi Electric	M-Net (TB3,TB7)	M1 M2	None	50	10	Required
Fujitsu (Atlantic)	VRF transmission line	X1 X2	None	64	10	Required
Mitsubishi Heavy	Super Link New Super Link	A B	None	128	10	Required
Hitachi	H Link, H Link 2	1 2	None	64	10	Required
LG		Inter A, Inter B (only outdoor)	None	128	10	Required

The HVAC interface is equipped with a USB port and seven connections: L1 - L7. Five of these seven connections can be controlled simultaneously, but L2 and L6 cannot because they share the same electronics. The next table gives an overview of which connection on the HVAC interface must be used for which system.

HVAC manufacturer	Abbreviation	USB	L1	L2	L3	L4	L5	L6	L7
Daikin	DK		●	●					
Mitsubishi Electric	ME		●	●					
Sanyo (Panasonic)	SA		●	●					
Toshiba	TO		●	●					
Hitachi	HT		●	●					
Fujitsu (Atlantic)		●							
LG	LG				●	●	●	●	●
Mitsubishi Heavy Industries	MH				●	●	●	●	●
Gree	GR				●	●	●	●	●

- To connect the HVAC interface with a **multi-split air conditioning system**, you must first connect an additional module (PCB connection) for each indoor unit. The HVAC interface cannot be connected directly to the indoor unit(s) of a multi-split air conditioning system. The supplier of the HVAC system should supply these additional module(s) to be connected to the two-wire HVAC bus cable.

2 Open the flap on the top right-hand side of the HVAC interface and check to ensure the dip switches are set as follows.



- DIP switch P**

Switch	On	Off
P3	L6 active, L2 inactive	L2 active, L6 inactive
P4	production mode	normal operating mode

- **DIP switches Q**

HVAC type	DIP switch Q - HVAC line L1			
	Q1	Q2	Q3	Q4
DK	ON	OFF	ON	OFF
ME	OFF	OFF	OFF	OFF
TO	OFF	ON	OFF	ON
SA	OFF	ON	OFF	ON

- **DIP switches R**

HVAC type	DIP switch Q - HVAC line L2			
	R1	R2	R3	R4
DK	ON	OFF	ON	OFF
ME	OFF	OFF	OFF	OFF
TO	OFF	ON	OFF	ON
SA	OFF	ON	OFF	ON



If all DIP switches R1, R2, R3 and R4 are placed in the ON position, the HVAC interface goes into BOOT mode.

- **DIP switches S**

Switch	ON	OFF
S1, S2	turn on DC output on HVAC line L1	turn off DC output on HVAC line L1
S3, S4	turn on DC output HVAC line L2	turn off DC output on HVAC line L2

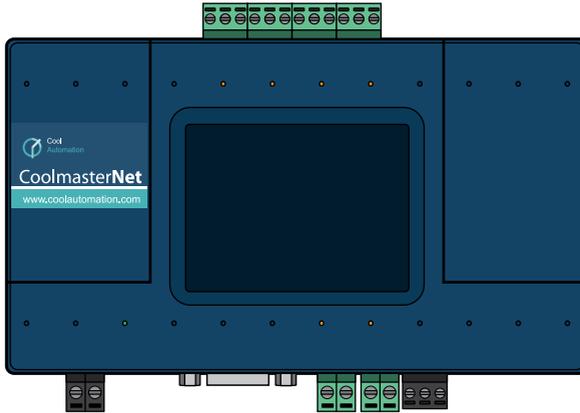


Switch S1 must always be in the same position as S2; switch S3 in the same position as S4.

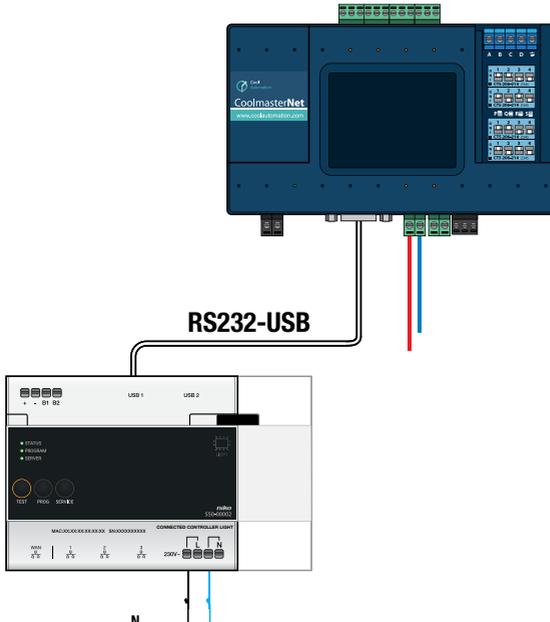
These settings only apply if you have to connect the HVAC interface to a non-VRF system via a KRP or MAC adapter.

- 3 Press the HVAC interface anywhere onto the DIN rail until it clicks into place. Ensure that the module is within reach of the gateway.

- 4 Connect the bus of the HVAC system to the green interface connector (included). Click the green interface connector at the bottom/top on the HVAC interface on line L1, L2, L3, L4, L5, L6 or L7, depending on the type of indoor unit that is used.

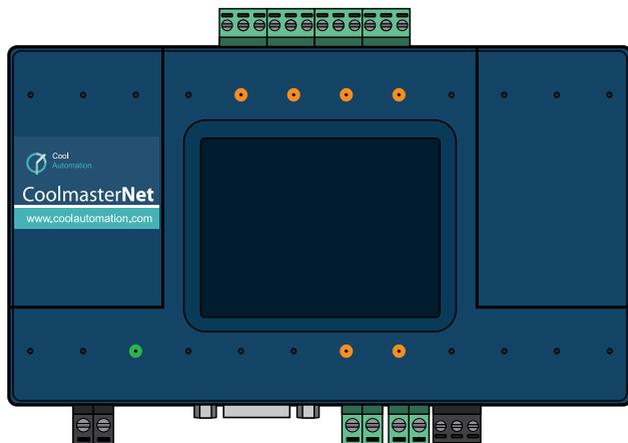


- 5 Connect the cables supplied (RS232 cable and RS232 USB cable) to each other.
- 6 Connect the RS232 connector to the HVAC interface and the USB connector of the RS232 USB cable to an available USB port on the connected controller (light).



- 7 Connect the power adapter to the HVAC interface and connect the adapter to the mains.

The display and the green LED will light up.



The orange LEDs blink:

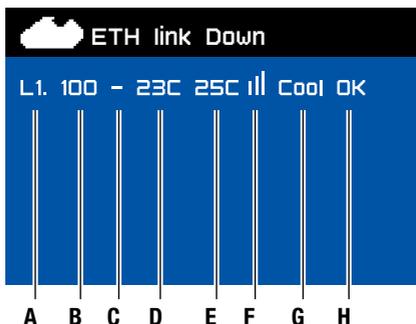
- during data transfer from the HVAC thermostat to the HVAC interface
- only if line L1, L2, L3, L4, L5, L6, L7 is connected to an indoor unit.

LED	colour	status	status
connection	green	on off	good connection no connection
activity	orange	blinking	data transfer

## Information on the display

When there is communication with the HVAC system, the display provides extra information about the installation. Below, you can see an example of this type of display. The values shown in the example are only indicative and could differ from actual values.

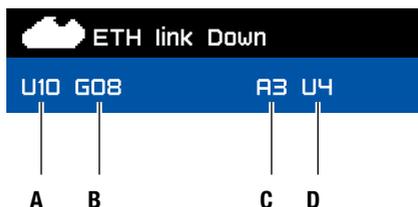
Information shown on the display with the status of the indoor units:



	Value displayed	Value range	Symbol	Value in example display							
<b>A.</b>	Line to which indoor unit is connected	L1 – L7		L1							
<b>B.</b>	Address of the indoor unit	<table border="1"> <thead> <tr> <th>HVAC type</th> <th>XYX range</th> </tr> </thead> <tbody> <tr> <td>DK</td> <td>100...115 200...215 300...315 400...415</td> </tr> <tr> <td>ME</td> <td>001...050</td> </tr> </tbody> </table>	HVAC type	XYX range	DK	100...115 200...215 300...315 400...415	ME	001...050		100	
		HVAC type	XYX range								
		DK	100...115 200...215 300...315 400...415								
ME	001...050										
<b>C.</b>	Power supply	on		-							
		off									
<b>D.</b>	Desired temperature setting	16 – 32 °C		23 °C							
<b>E.</b>	Measured room temperature	16 – 30 °C		25 °C							

	Value displayed	Value range	Symbol	Value in example display	
<b>F.</b>	Ventilation speed on/off	low			
		normal			
		high		high	
<b>G.</b>	Mode	Cool Heat		Cool	
<b>H.</b>	Error status	OK		OK	
		error code displayed			

Information shown on the display with the number of indoor units and zones:



Value displayed	Symbol	Value in the example display
<b>A.</b> No. of recognised indoor units	U	10
<b>B.</b> No. of groups	G	8
<b>C.</b> Error code		A3
<b>D.</b> Error code		U4

## Troubleshooting

Problem	Possible cause	Solution
No information appears on the display.	Malfunctioning power supply	Verify that there is a steady signal from the 9V DC power adapter.
The number of indoor units displayed on the display is not correct.	It may take a few minutes before the HVAC system is recognised.	<ul style="list-style-type: none"> <li>• Wait five minutes.</li> <li>• Check communication to the HVAC system. The orange LED must blink.</li> <li>• Check the connection between the HVAC bus cable and the HVAC system.</li> </ul>
	There is a problem with communication to the HVAC system.	

## Technical data

- power supply voltage: 9 - 24 Vdc
- installation method: wall mounting or DIN rail mounting
- operating conditions:
  - ambient temperature: 0 - 45 °C
  - air moisture: less than 85 % RH
- dimensions: 90 x 155 x 33 mm (H x W x D)
- weight: 270 g
- maximum number of indoor units and outdoor units: depends on the manufacturer (see the table in [Connecting and mounting the HVAC interface on page 202](#))
- maximum length of the RS232 cable: 25 m
- maximum length of the ethernet cable: 100 m
- CE marked

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