

5.6.3 Installing the LED Lamp Boards on the IP Room Controller Board

On the back side of the IP room controller PCB there are the four sets of through-board connections for the LED lamp boards. Each through-board connector has three holes which accept the three connecting pins on the LED lamp board.

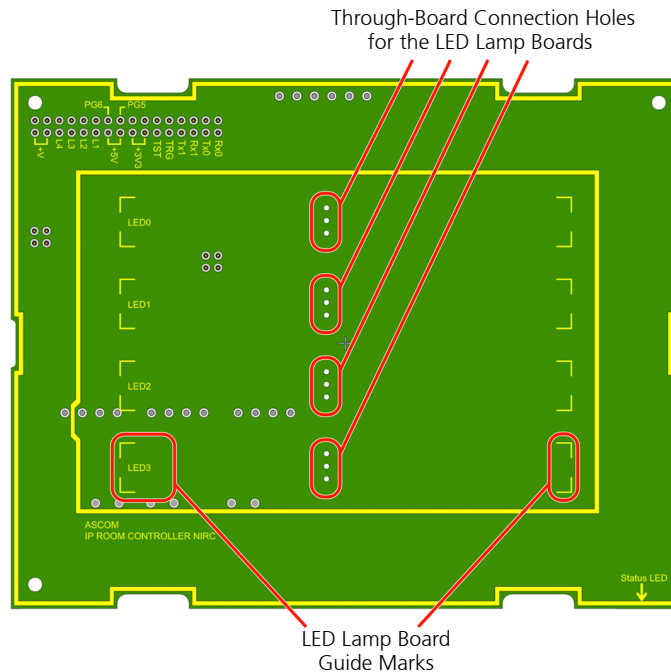


Figure 50. LED through-board connectors and guide marks

The LED lamp connection points are labeled LED0, LED1, LED2 and LED3. Any color LED board can be plugged into any of the connection points in the IP room controller. The appropriate position of the LED color is determined during the system setup.

Caution: The pins on the LED lamp board are not in the center of the board so it is important to make sure that the LED lamp board lines up with the guide marks on the IP room controller PCB when the pins are inserted.

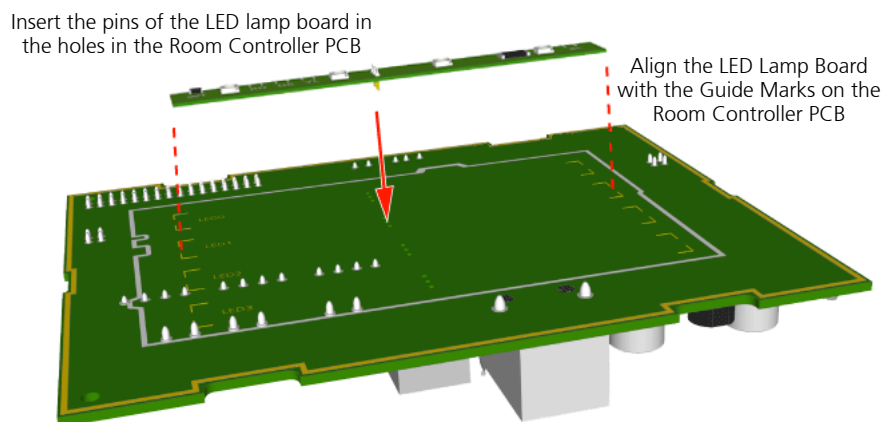


Figure 51. Plugging LED lamp board into the room controller PCB

With the three pins inserted and the LED lamp board lined up with the guide marks, firmly press the LED lamp board into the IP room controller PCB. Repeat the procedure on the other required LED lamp

boards.

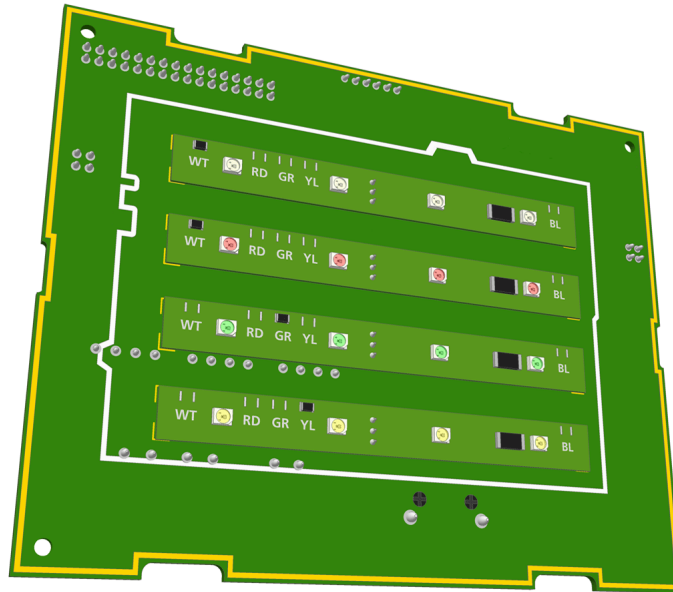


Figure 52. NIRC room controller PCB with 4 LED lamp boards

Example of the second generation LED lamp boards (NILD2) mounted on the NIRC3.

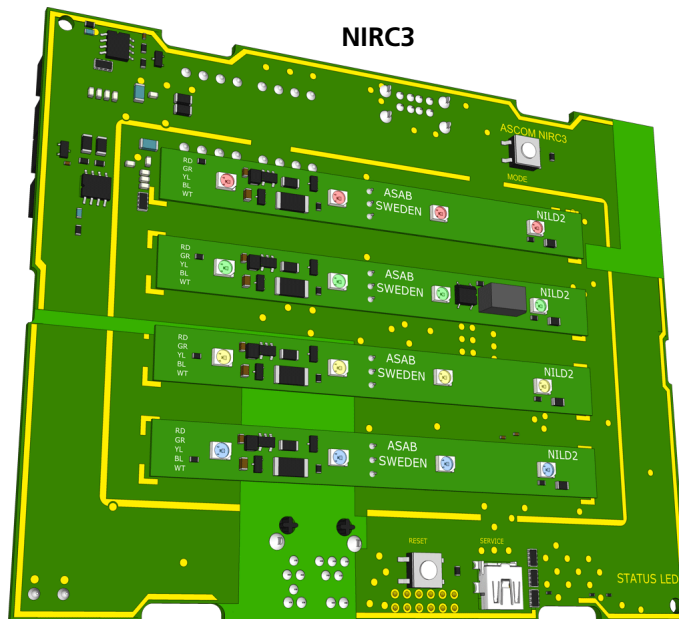


Figure 53. NIRC3- room controller PCB with 4 LED lamp boards

5.6.4 External Corridor Lamp Connections

The NIRC has a 6-pole connector for connection of an external corridor lamp with up to four separate LEDs.

The outputs L1, L2, L3 and L4 are parallel circuits to LED connections on the NIRC printed circuit board. Each external LED must be connected between the lamp connector (L1, L2, L3 or L4) and +V on the 6-pole connector.

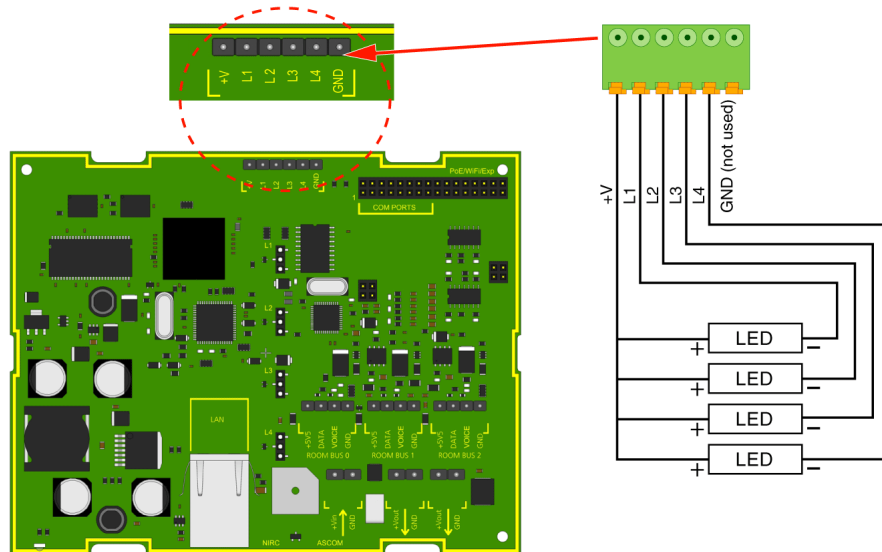


Figure 54. External corridor lamp connections of the NIRC

Caution: The maximum load on each external LED circuit is 60mA.

IMPORTANT: The maximum load on each external LED circuit is 60mA.

The room controller (NIRC3) circuit board does not support an external corridor lamp directly, however an external lamp can be connected through a green LED lamp board (NILD2-GAA) which has a galvanically separated output with a maximum switching capacity of 0.4A at 60V peak.

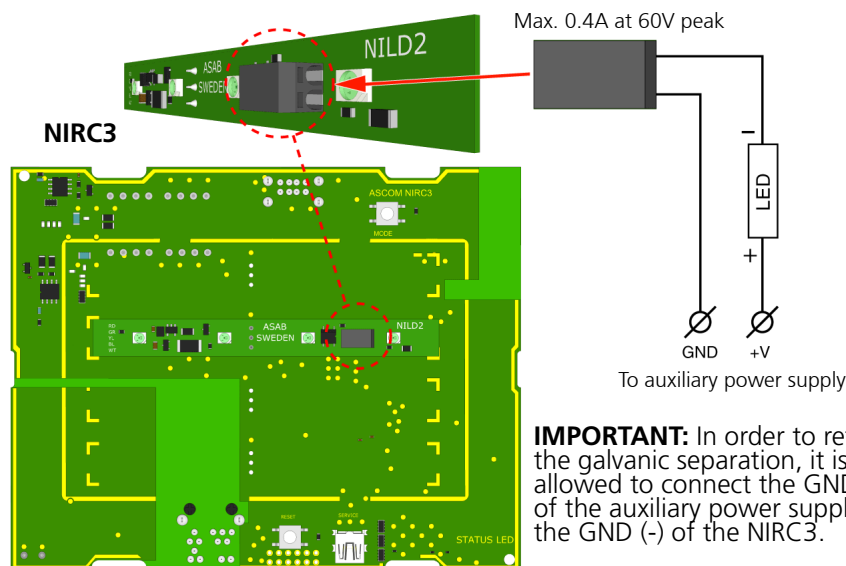


Figure 55. External corridor lamp connections through the NILD2-GAA

See "Auxiliary Lamp Connection - NILD2" on page 52. for detailed information.

5.7 Corridor Lamp (NICL)

The Corridor Lamp (NICL) is controlled by the IP room controller (NIRC only) and one IP room controller can support two corridor lamps. Each Corridor Lamp is connected to one of the three room buses of the IP Room Controller and it always has the fixed address 5.

IMPORTANT: *The room controller NIRC3 does not support the 24 volt output that is required to power the NICL, therefore the NICL should not be used in combination with the NIRC3.*



Figure 56. The teleCARE IP corridor lamp

The Corridor Lamp consists of a back box, a printed circuit module, a cover plate and translucent dome cover that can accept up to four LED boards, as shown in the following illustration:

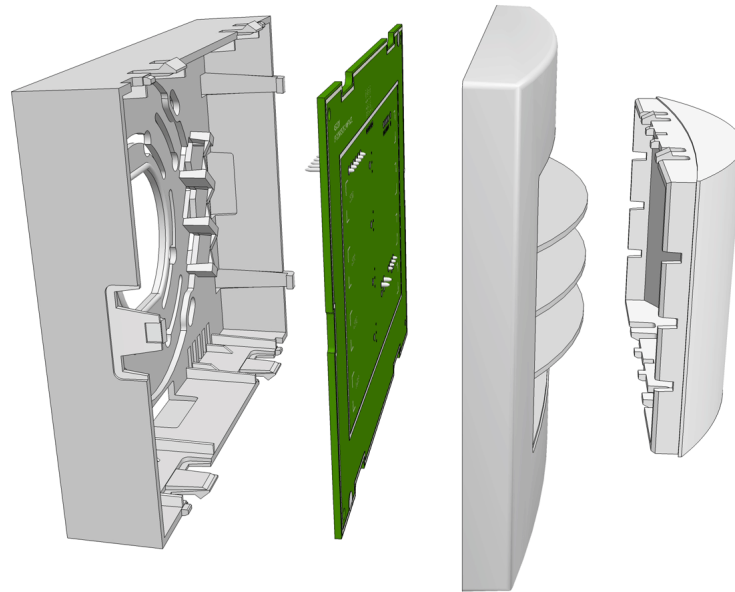


Figure 57. Corridor lamp (NICL) parts

5.7.1 Installing the Corridor Lamp

When installing the Corridor Lamp the first step is to separate the top section (cover, PC board and lamp dome) from the housing. To do that simply grip the top edge of the cover and pull it away from the housing, as shown in the following illustration:

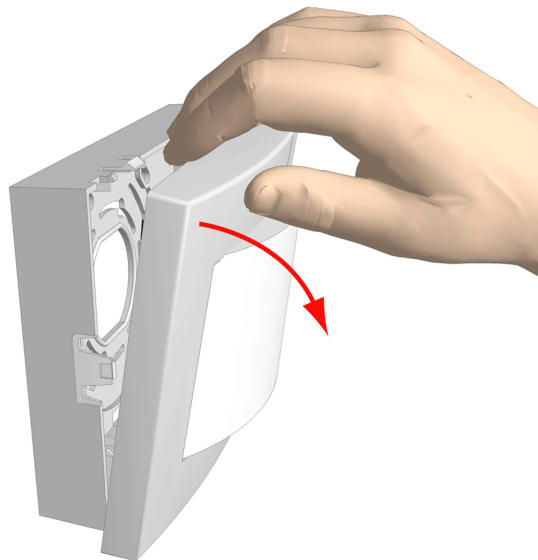


Figure 58. Separating the top section from the housing

5.7.2 Removing the Corridor Lamp Printed Circuit Board

To remove the circuit board from the housing, press the holding clip outwards until it releases the circuit board, as shown in the following illustration:

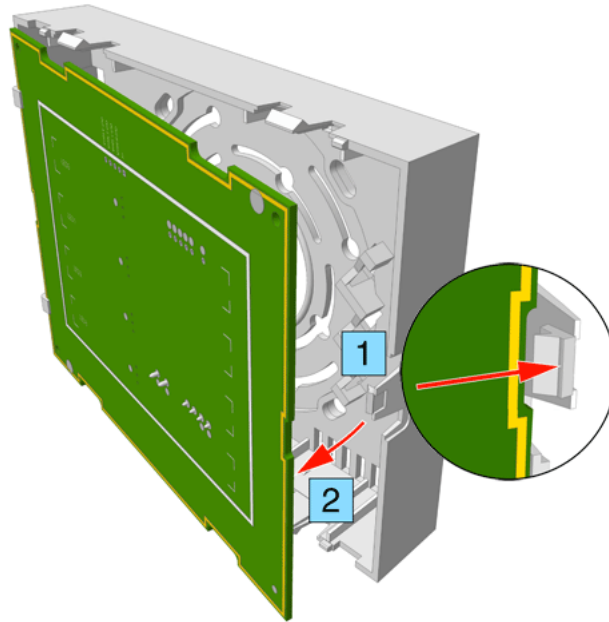


Figure 59. Removing the circuit board from the housing

With the printed circuit board released from the holding clip, partly rotate the circuit board and remove it from the housing.

5.7.3 Corridor Lamp Housing

The corridor lamp has the same housing as used for the IP room controller which is designed to be surface mounted. Refer to section [5.2.8, Room Controller Housing on page 24](#) for details of mounting

the housing.

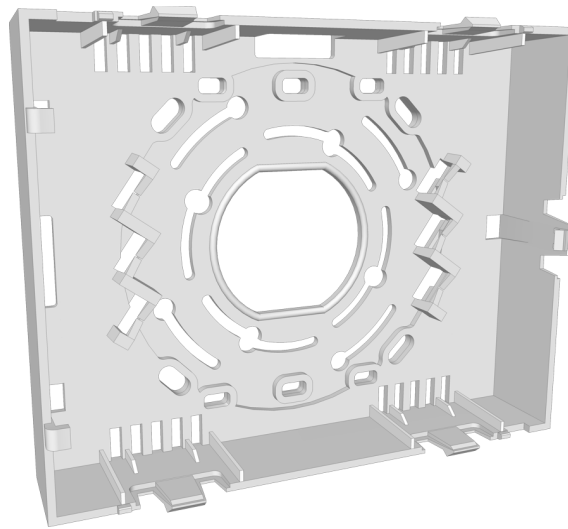


Figure 60. IP room controller housing

5.7.4 Corridor Lamp Electrical Connections

The wiring between NIRC Room Controller and the NICL Corridor Lamp consists of the teleCARE IP four-wire room bus plus two additional wires for 24Vdc to power the corridor lamp LEDs.

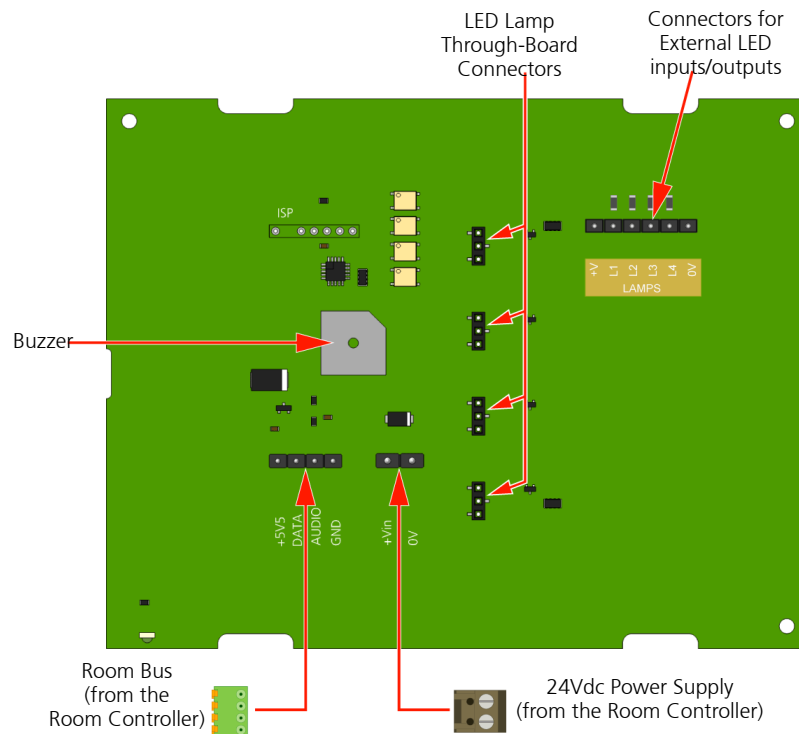


Figure 61. Corridor lamp PCB component side electrical connections

5.7.5 4-Pole Connector Terminal

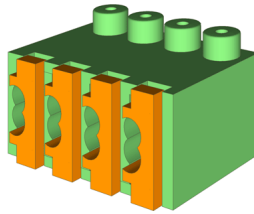


Figure 62. 4-pole connector terminal

The 4-pole connector terminal is used for connecting the room bus. It has a screw-less “spring-cage” connection technique and each terminal has two connection points.

The designation of the required four wires is as shown in the following illustration.

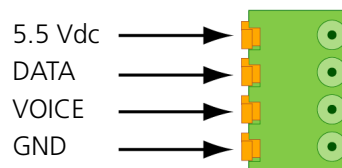


Figure 63. 4-pole connector terminal with the room bus

Preparing the wires and connecting the 4-pole connection terminal is described in section [5.4.1, 4-Pole Connector Terminal \(NICT-4AA\)](#) on page 31.

5.7.6 2-Pole Connector Terminal

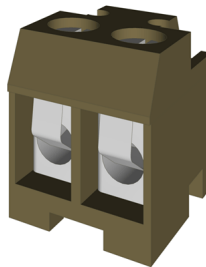


Figure 64. 2-pole connector terminal

The 2-pole connector terminal is used for connecting the 24Vdc power supply from the room controller to the corridor lamp. The designation of the required power supply wires is as shown in the following illustration.

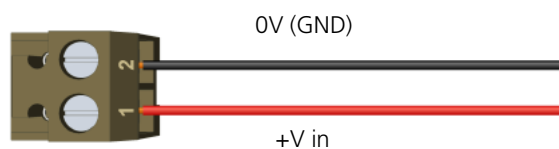


Figure 65. 2-pole connector terminal wiring

Preparing the wires and connecting the 2-pole connection terminal is described in section [5.4.2, 2-Pole Connector Terminal \(NICT-2BA\)](#) on page 33.

5.7.7 Connecting the Corridor Lamp Printed Circuit Board

When preparing the wiring for connecting the printed circuit board of the corridor lamp make sure that the power supply wires and the room bus wires are stripped of the cable outer jacket and that the wires are long enough, as described in section [5.3, Preparing the Room Bus and Power Cables](#) on page 26.

It is best to arrange the wires and cables neatly and securely inside the housing. The power wires and the room bus should be guided around the sides of the corridor lamp housing and held in place by the wire holding clips.

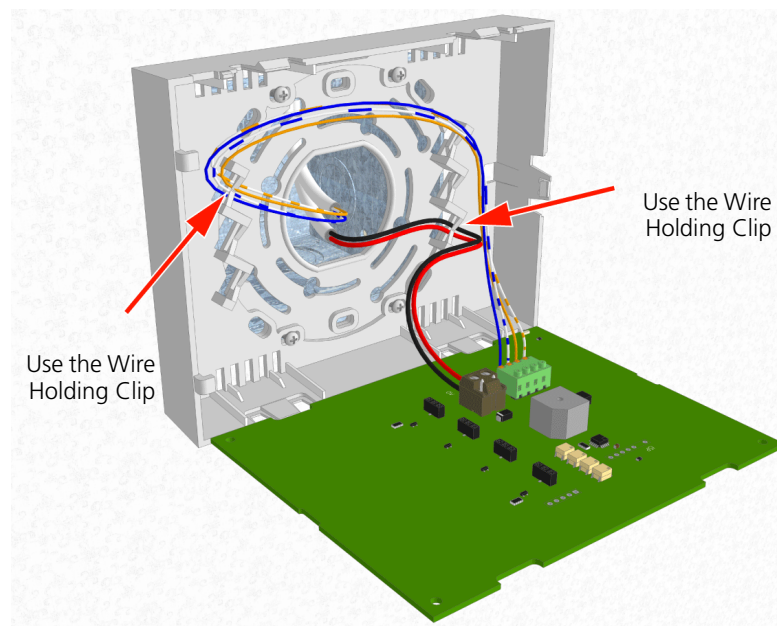


Figure 66. Connecting the corridor lamp

5.7.8 LED Lamp Boards for the Corridor Lamp

Note: The LED lamp boards are not delivered as part of the corridor lamp and therefore, must be ordered separately.

The LED lamp board contains four high intensity LED lamps which are used for the signaling of various types of calls including staff presence and system faults.

The three pins in the back side of the LED board are used to connect the LED lamp board through holes in the back side of the corridor lamp printed circuit board. The corridor lamp accepts up to four LED lamp boards.

The LED lamp connection points are labeled LED0, LED1, LED2 and LED3. Any color LED board can be plugged into any of the connection points on the IP room controller. The appropriate position of the LED color is determined during the system setup.

The LED lamp board is available in five colors: red, green, yellow, white and blue. The functions of the LEDs are determined by the system setup.

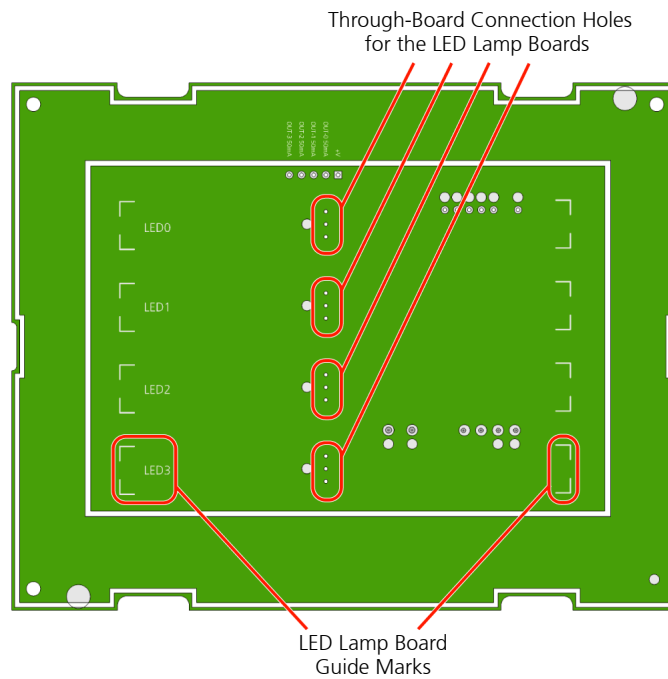


Figure 67. LED through-board connectors and guide marks

For full details of the LED lamp boards refer to section [5.6, LED Lamp Boards, page 43](#).

5.7.9 Connecting the LED Lamp Boards

To connect the LED lamp board, insert the three pins of the LED lamp board into the appropriate three holes in the back side of the corridor lamp PCB.

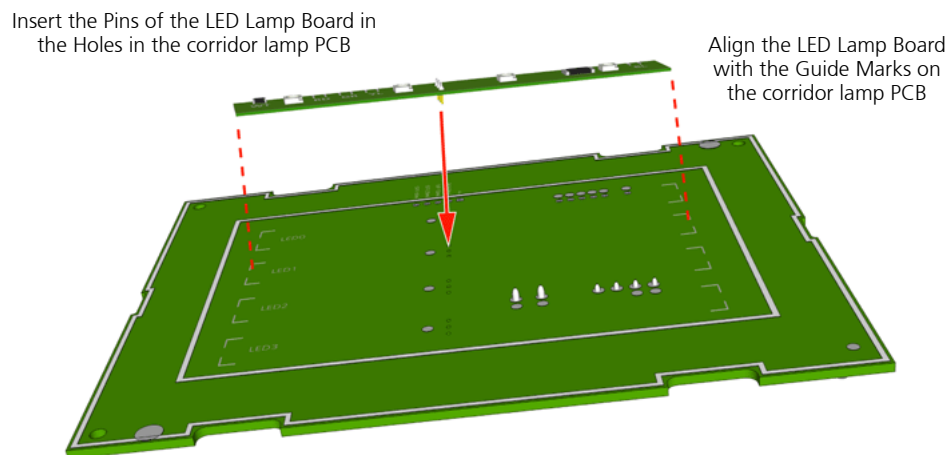


Figure 68. Plugging LED lamp board into the corridor lamp PCB

With the three pins inserted and the LED lamp board lined up with the guide marks, firmly press the LED lamp board into the corridor lamp PCB. Repeat the procedure on the other required LED lamp boards.

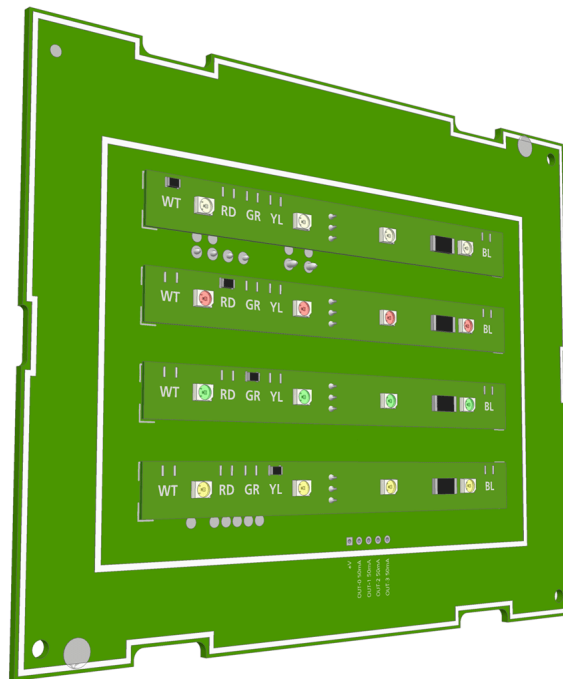


Figure 69. Corridor lamp PCB with 4 LED lamp boards

Caution: The pins on the LED lamp board are not in the center of the board so it is important to make sure that the LED lamp board lines up with the guide marks on the corridor lamp PCB when the pins are inserted.

5.7.10 External Corridor Lamp Connections

External Corridor Lamp Inputs

The NICL corridor lamp can be used as a passive LED corridor lamp connected to the NIRC External Corridor Lamp Outputs bus. When connected as such, the NICL LED display lamps operate in parallel with the NIRC display lamps.

The NICL corridor lamp can be used as a passive external LED corridor lamp (not connected to a room bus). It has a 6-pole input/output connector which can accept inputs from an external source (such as a NIRC room controller).

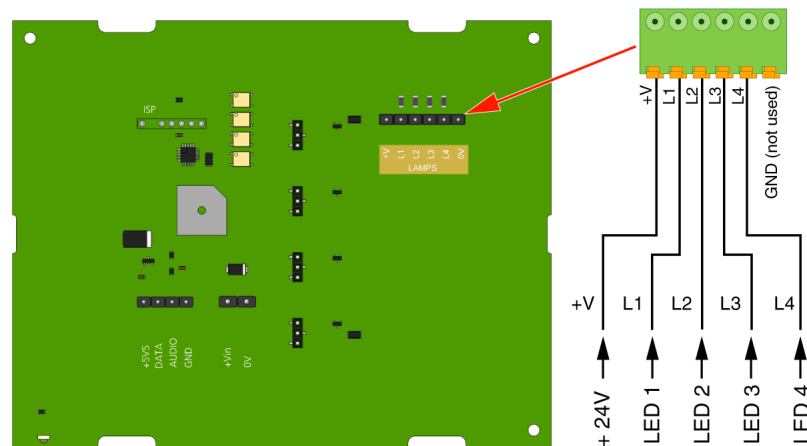


Figure 70. External LED inputs to the NICL corridor lamp

External Corridor Lamp Outputs

When the NICL corridor lamp is used as a passive slave to the room controller, a cable with 6-pole connectors is used to connect the NICL with the NIRC External Corridor Lamp Outputs bus. The +V pole from the bus applies continuous 24Vdc from the NIRC to the four LEDs on the NICL. Each LED is individually switched to 0 volts by the NIRC via the L1, L2, L3, L4 poles. In this configuration, the NICL LEDs operate in parallel to the LEDs on the NIRC.

5.8 System Manager (NISM2)

The teleCARE IP System Manager (NISM2) is an Ascom ELISE3 application. The ELISE3 module serves as the interface to a 100base-T Ethernet LAN and it contains a Linux based web server.

The NISM2 is the management tool for centrally managing the teleCARE IP system. It is used to setup and maintain the teleCARE IP system and it also includes a staff GUI for creating and maintaining staff assignments.

The NISM2 is connected to the IP network and stores the configurations for each of the teleCARE IP Room Controllers that are connected to the IP network.

In teleCARE IP installations which include NIRD Room Displays but do not include Ascom Messaging, the NISM2 is used as the Interactive Messaging server for the room displays.

A Java based graphical user interface (GUI) is supplied with the NISM2. The setup of the teleCARE IP system is done using a web browser. Any Internet browser that can interpret Java [™] script 1.2 (CSS-2) is acceptable. Microsoft Internet Explorer 7.0 or higher with Sun Java [™] Runtime Environment 1.6 or later is recommended.

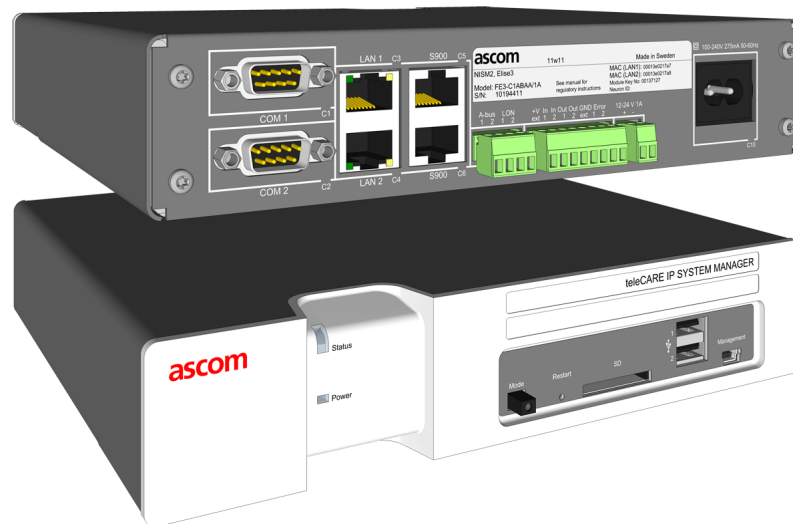


Figure 71. System Manager (NISM2)

The NISM2 power requirement is 100Vac to 240Vac 50-60Hz for the internal power supply. Optionally the 12-24Vdc power connection can be used to connect to an external power supply.

Note: Refer to the "Installation Guide ELISE3" (TD 92679GB) for ELISE 3 general information and mounting instructions.

5.8.1 NISM2 Electrical Connections

After connecting the power to the NISM2 the appropriate type of power supply should be selected in the NISM Advanced Configuration of the NISM System Setup. These settings are located under "Common" on the "Power supply" page.

There are four options available:

- Internal PSU only
- External PSU only
- Internal and external PSU
- Internal PSU and external battery

Note: For UL 2560 installations, select External PSU only.

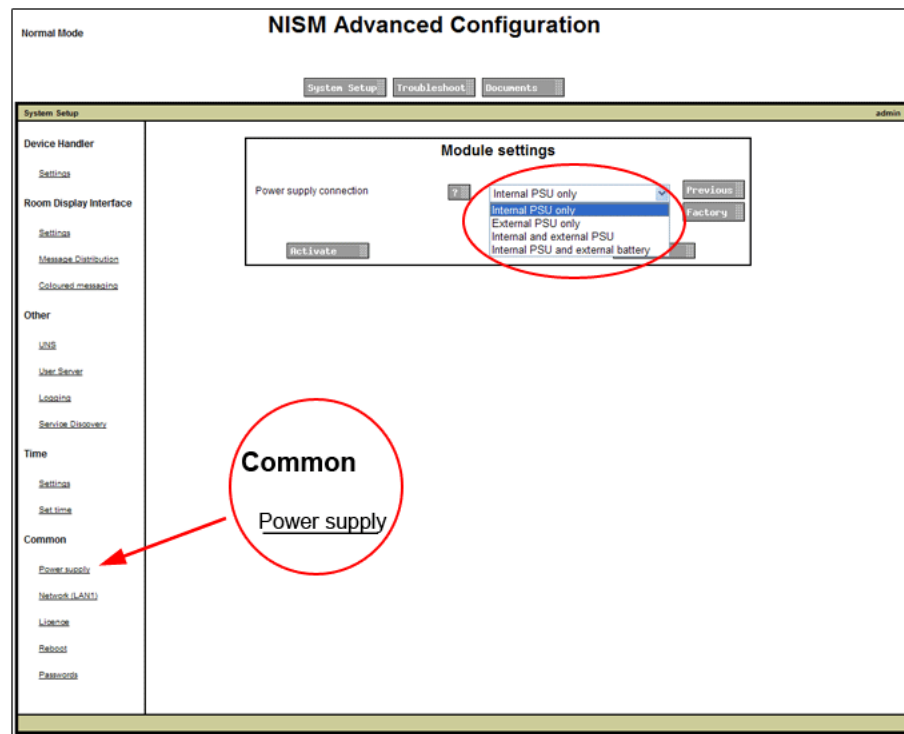


Figure 72. NISM power supply connection settings

When the correct power supply is set in the NISM System Setup the power LED on the front of the NISM2 will show a steady blue indication.

If there is a conflict between the NISM System Setup and the type of power supply then the NISM2 power LED will show a red flashing indication.

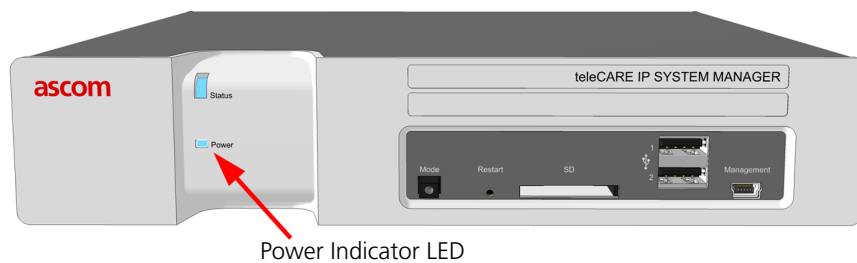


Figure 73. NISM power indicator LED

5.8.2 External DC Power Supply

In place of the internal power supply, the NISM2 can be connected to an external 12 - 24Vdc power supply.

Connect the Ethernet LAN cable to the "LAN 1" port and connect the external 12 - 24Vdc power supply to the "12-24Vdc 1A" connector on the NISM2 (ELISE 3) module.

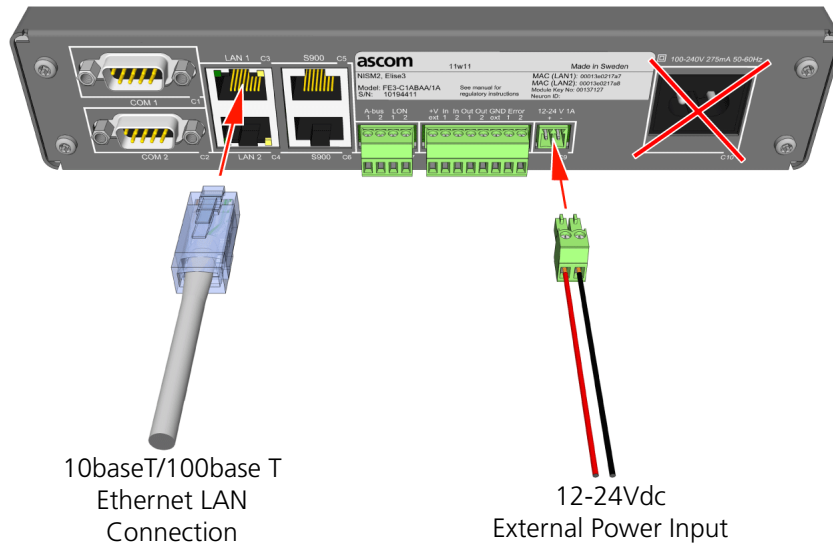


Figure 74. NISM2 with external 12-24Vdc power input

6 Peripherals

The switch modules all have the same basic format and can be mounted as a single unit on a single backplate or as a double unit on a double backplate.

The switch modules have one, two or three buttons with LEDs and some switch modules have a buzzer. The functions of the buttons and buzzer are determined by the software when the system is configured using the system manager (NISM).

6.1 Preparation

It is important to refer to the following teleCARE IP switch module installation instructions for complete electrical connection and assembly details before starting the installation.

Ensure that the electrical power to the equipment is switched off before connecting the switch modules.

The Ingress Protection of the switch modules is IP40, therefore it is important that the area in which the teleCARE equipment is to be installed must be clean, dry and weatherproof.

The walls on which the switch modules are to be installed should be finished (painted, wall papered, etc.) before the switch modules are installed.

It is important to ensure that a minimum of 14in (35cm) of free cable is pulled through at every location where teleCARE IP switch modules are to be installed.

It is important to have the appropriate lengths of stripped cable and exposed copper wire.

6.2 Installation Instructions

This section describes the basic installation of the following devices:

- "Bedside Module (NIBM2)" on page 72
- "Medical Rail Socket (NIMS2)" on page 77
- "Door Side Module (NIDM)" (details on page 81)
- "Pull Cord Module - Active (NIPC-G3A and NIPC-W3A)" (details on page 82)
- "Toilet Cancel Module - Active (NITC-XXA)" (details on page 84)
- "Pull Cord Module - Passive (NIPC-XXP)" (details on page 85)
- "Toilet Cancel Module - Passive (NITC-XXP)" (details on page 86)
- "Pull Cord Module (NIPC2) Active and Passive" (details on page 87)
- "Duty Selector (NIDS)" (details on page 97)
- "Card Reader (NICR)" (details on page 86)
- "Speech Module (NISP)" (details on page 104)
- "Room Display (NIRD)" (details on page 106)
- "Television Interface Module" (details on page 113)
- "Sunblind Control Module" (details on page 115)

6.3 Backplates and Surface Mounting Spacer

The teleCARE IP switch modules are designed to be mounted on flat walls using the teleCARE backplate. The backplate is designed to be mounted over flush fitted back boxes and an array of holes in the backplate allows it to be mounted over various international back boxes.

As an alternative to the backplate a spacer is available for surface mounting the teleCARE switch modules, with or without a back box. The spacer can be mounted directly on to a flat wall surface or alternatively, the holes in the base of the spacer allows it to be mounted over various international back boxes.

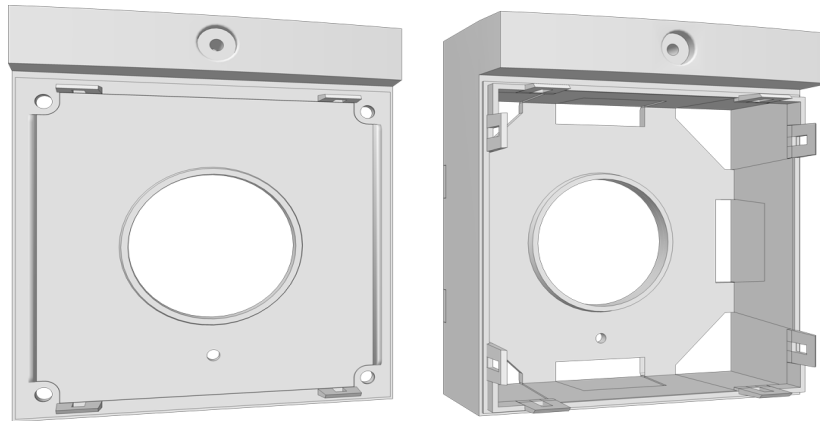


Figure 67. Backplate and surface mounting spacer

Note: The duty selector can only be mounted on a surface mounting spacer, not on a switch module backplate.

6.3.1 Mounting the Backplate on a Back box

To mount the backplate on a back box the mounting screws in the back box should not be removed but partially unscrewed to extend at least 0.2in (5mm) above the wall surface.

Important: Use only the plastic back boxes listed in Table 8.

Single	Raco 7887RAC or equivalent
Dual	Raco 7488RAC or equivalent

Table 8. Plastic Back Box Manufacturer/Model/Part Number

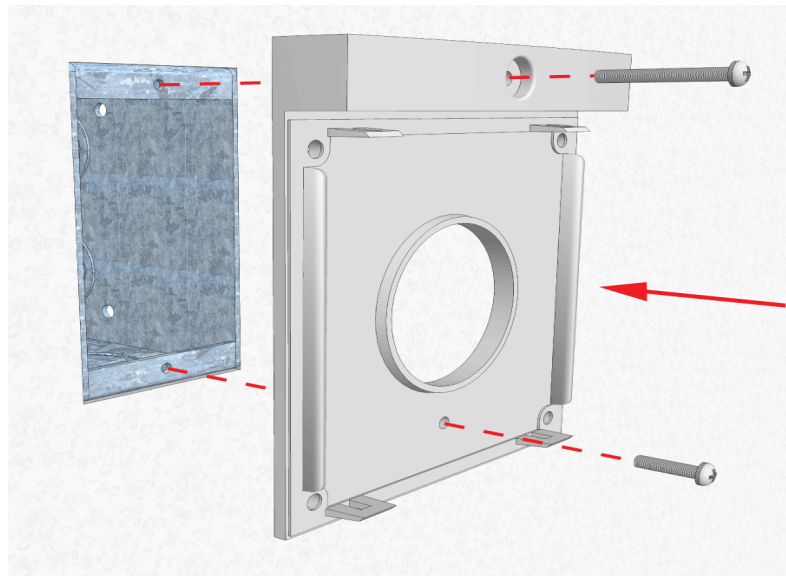


Figure 68. Mounting the backplate (or spacer) on the back box

The backplate should be placed over the back box with the side marked "TOP" at the top. Then turn the backplate so that the heads of the screws pass through the eyes of the appropriate "key-hole" slots (1). The backplate must then be turned (2) until the side marked "TOP" is up. Finally the back box screws should be tightened (3).

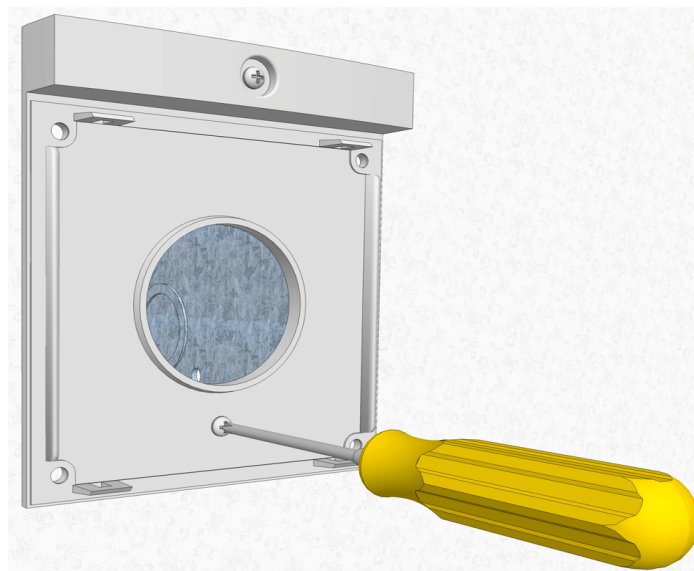


Figure 69. Securing the backplate (or spacer) to the back box

6.3.2 Surface Mounting Spacer

The surface mounting spacer is available for surface mounting the teleCARE IP bgv switch modules, with or without a back box. The spacer can be mounted directly on to a flat wall surface or alternatively, the holes in the base of the spacer allows it to be mounted over various international back boxes.

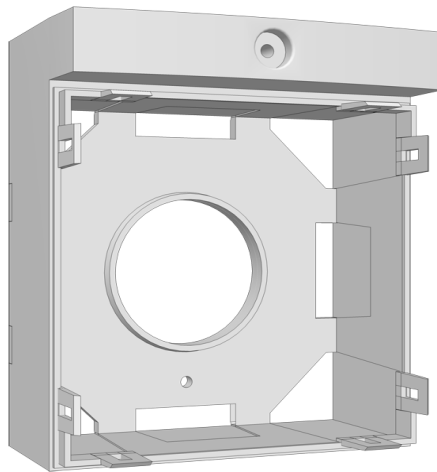


Figure 70. Surface mounting spacer

Note: When no back box is available it is best to use the screw holes furthest from the center to mount the spacer on a flat surface.

6.3.3 Mounting the Spacer on a Back Box

To mount the spacer on a back box the mounting screws in the back box should not be removed but partially unscrewed to extend at least 0.2in (5mm) above the wall surface.

The spacer should be placed over the back box so that the side marked “TOP” will be up. Then pass the heads of the screws through the eyes of the “key-hole” slots in the base of the spacer (1). The spacer must then be turned until the side marked “TOP” is uppermost (2) and finally the back box screws should be tightened.

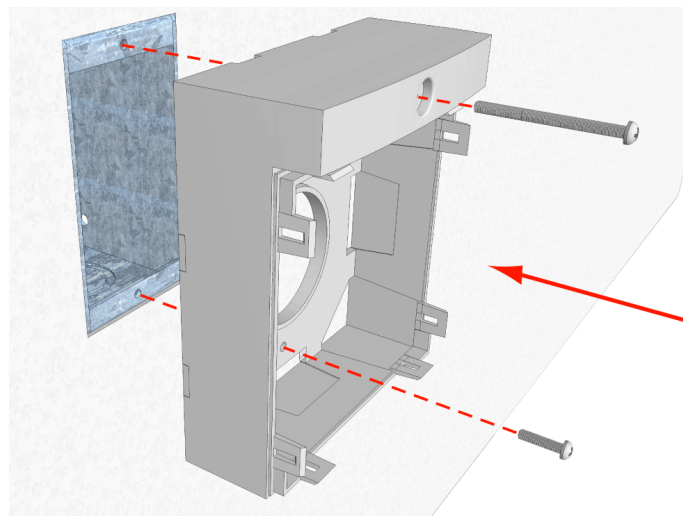


Figure 71. Mounting the spacer on the back box

6.4 Switch Module Electrical Connections

It is important to ensure that a minimum of 14in (35cm) of free cable is pulled out of the back box at every location where teleCARE peripherals are to be installed.

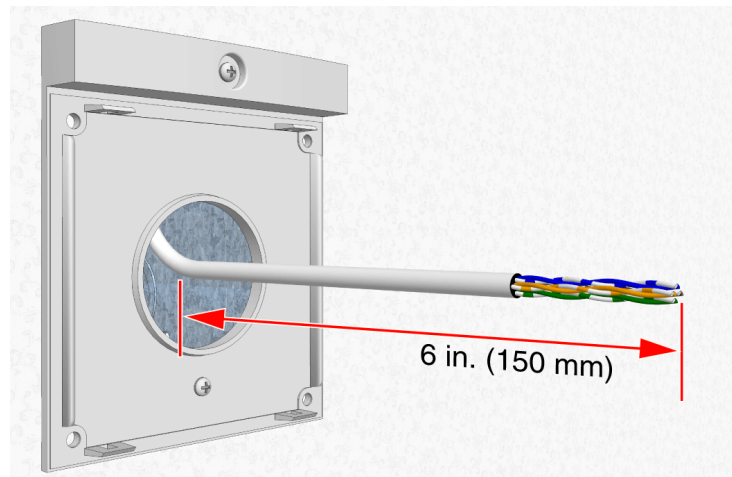


Figure 72. Connecting the switch module

Refer to the relevant switch module description in the following sections for details of the electrical connections.

6.4.1 4-Pole Connector Terminal

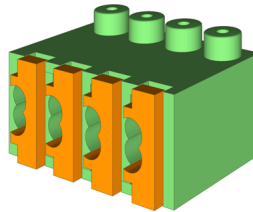


Figure 73. 4-pole connector terminal

The 4-pole connector terminals required for the room bus and also for the connection of a passive bus or the bed light switching relays. It has a screw-less “spring-cage” connection technique and each terminal has two connection points.

The 4-pole connector is not supplied with the switch modules but they are available as accessories and must be ordered separately.

The designation of the room bus wires is shown in the following illustration.

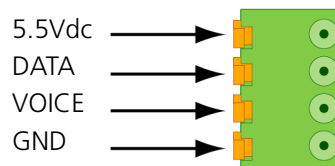


Figure 74. 4-pole connector terminal with the room bus

The designation of the passive bus wires is shown in the following illustration.

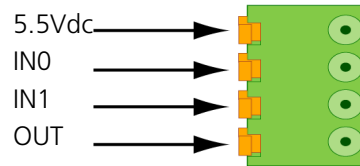


Figure 75. 4-pole connector terminal with the passive bus

The designation of the light switching relay connections is shown in the following illustration.

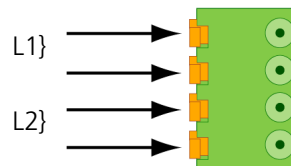


Figure 76. 4-pole connector terminal for the light relay

6.4.2 Preparing the Wires for the 4-pole Connector Terminal

The 4-pole connector terminal has four terminals with two connection points at each terminal. Each connection point accepts one solid wire of maximum wire size 24 gauge (0.5mm²) 0.03inØ (0.8mmØ).

To connect the wires first strip the jacket from the cables and pull the wires through the housing leaving a length of 6in (150mm) free, as described in section 5.3, [Preparing the Room Bus and Power Cables on page 26](#). Then strip 0.25in (6.5mm) of the insulation from the end of each wire which is to be connected.

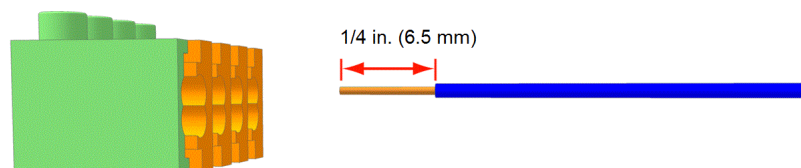


Figure 77. Stripping the wires for insertion in the connection terminal

6.4.3 Connecting the wire in the 4-pole Connector Terminal

After stripping the wire to expose 0.25in (6.5mm) of conductor, insert the wire in the appropriate opening of the connection point by pressing the wire firmly into the terminal, as illustrated below.

Note: Each connection point in the connector terminal accepts only one wire. Maximum wire size 24 gauge (0.5mm²) (0.8mmØ).

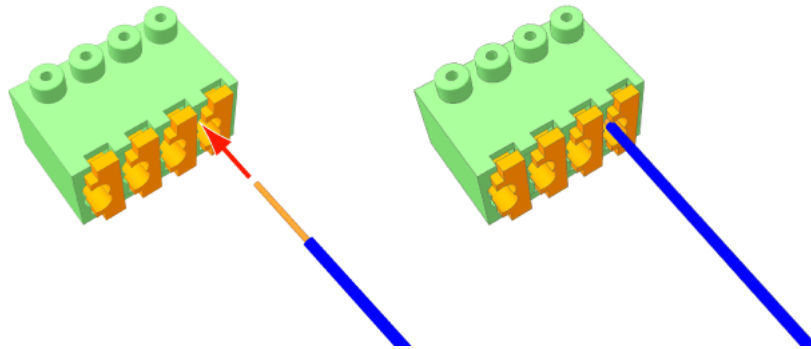


Figure 78. Inserting a wire in the connection point

Check that a good connection has been made by gently pulling on the wire after it has been inserted. The wire should stay fixed in the terminal.

Four wires are required for the room bus, passive bus and light relay outputs, so repeat the above illustrated procedure on the remaining three wires.

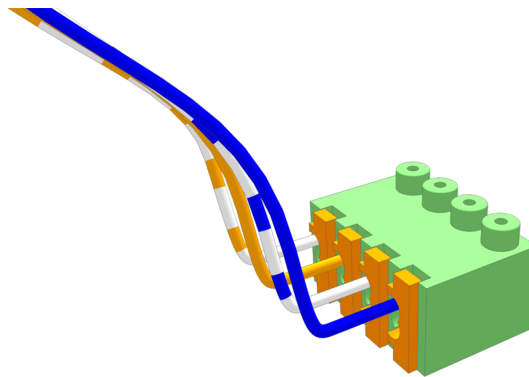


Figure 79. Connector terminal complete with four wires

6.4.4 4-Pole Connector Terminal with Looped Wiring

In cases where the cable loops from peripheral to peripheral (with incoming and outgoing wiring) one set of wires should be inserted in the top connection points and the other set in the lower connection points, as shown in the following illustration:

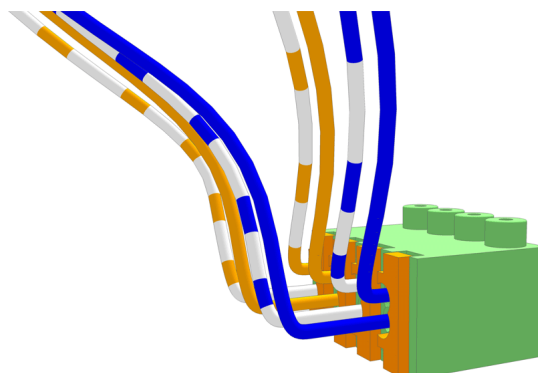


Figure 80. Connector terminal with looped wiring

6.4.5 Disconnecting a Wire from the Connector Terminal

First carefully place the point of a small screw driver (point approximately 0.10in (2.5mm) wide on the relevant orange colored release key of the connection terminals and press the key in firmly to open the spring-cage connector (1). With the release key pressed in pull the wire from the terminal (2) then remove the screw driver.

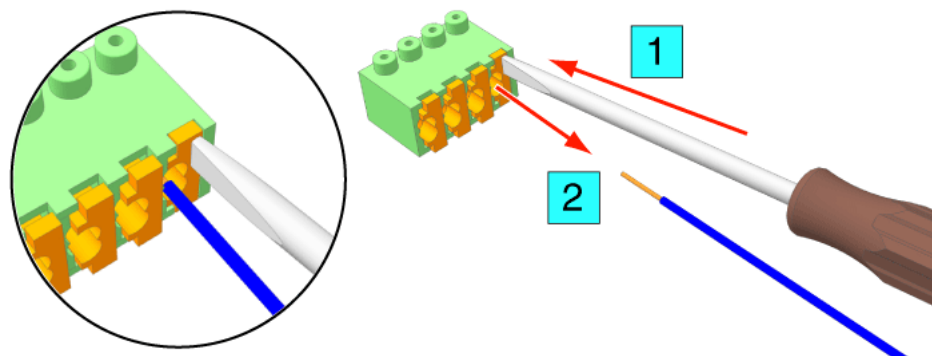


Figure 81. Removing a wire from a connection point

6.4.6 Mounting the Switch Module to the Backplate

To mount the switch module onto the backplate or spacer, after connecting the switch module place the lower edge of the switch module on the two lower snap fasteners of the backplate (1). Next place the switch module on to the two top fasteners (2) and press the switch module firmly so that it snaps closed on the backplate.

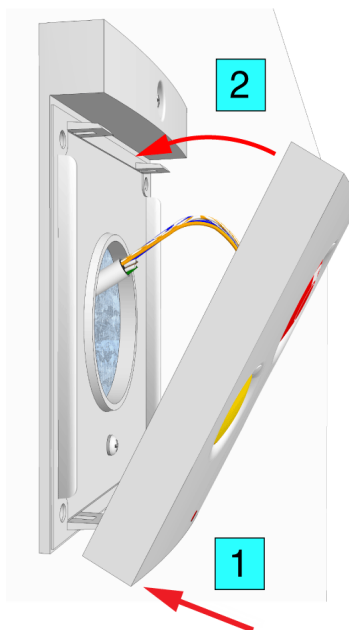


Figure 82. Mounting the switch module on the back plate

6.4.7 Mounting the Switch Module to the Surface Mounting Spacer

To mount the switch module onto the spacer, place the lower edge of the switch module on the two lower snap fasteners of the spacer (1). Next place the switch module on to the two top fasteners (2) and press the switch module so that it snaps closed on the spacer.

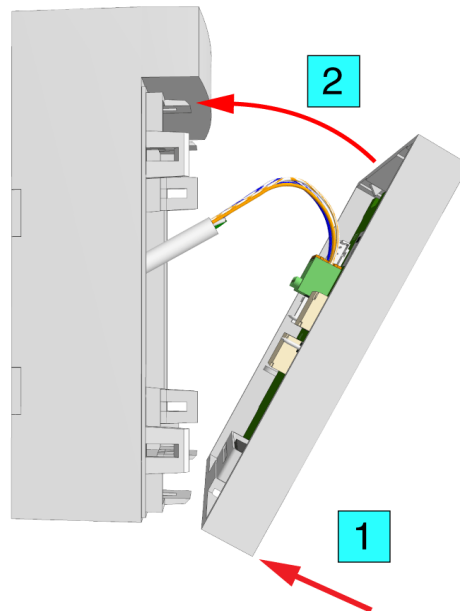


Figure 83. Mounting the switch module on the spacer

6.4.8 Dismantling the Switch Modules

To separate the switch module from the backplate, a screwdriver with a point of approximately 0.25in (6mm) wide should be used.

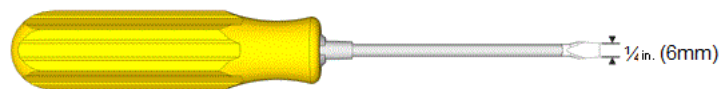


Figure 84. Suitable screwdriver for dismantling switch modules

Insert the point of the screwdriver into the groove at the side of the switch module between the faceplate and the back plate at about 0.4in (10mm) down from one of the top corners.

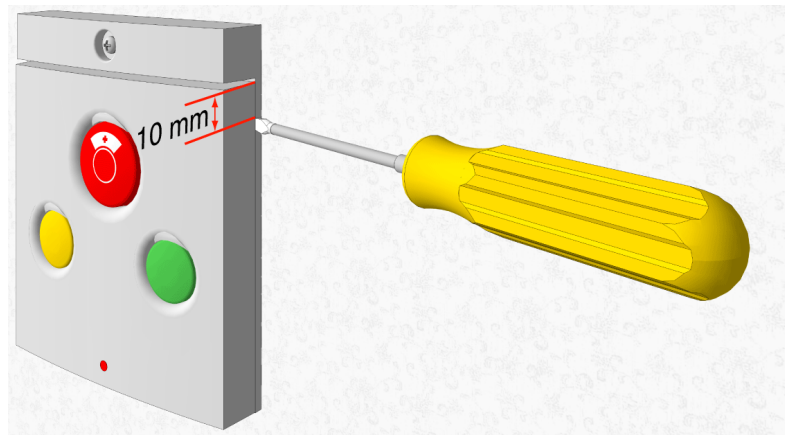


Figure 85. Inserting the screwdriver

Gently push and turn the screwdriver until the switch module releases from the back plate.

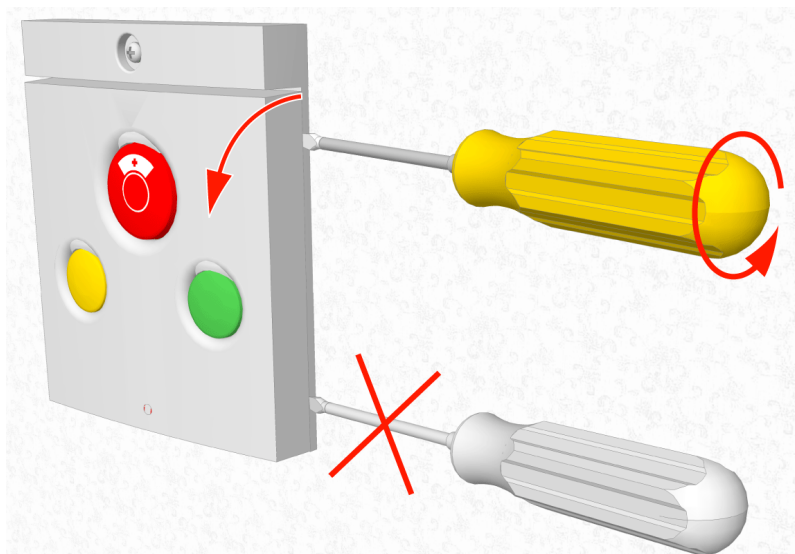


Figure 86. Removing the switch module from the back plate

Note: Do not insert the screwdriver into the bottom corner of the faceplate.

6.4.9 Dismantling a Switch Module from a Spacer

Insert the point of the screwdriver into the groove at the side of the switch module between the faceplate and the spacer at about 0.40in (10mm) down from one of the top corners.

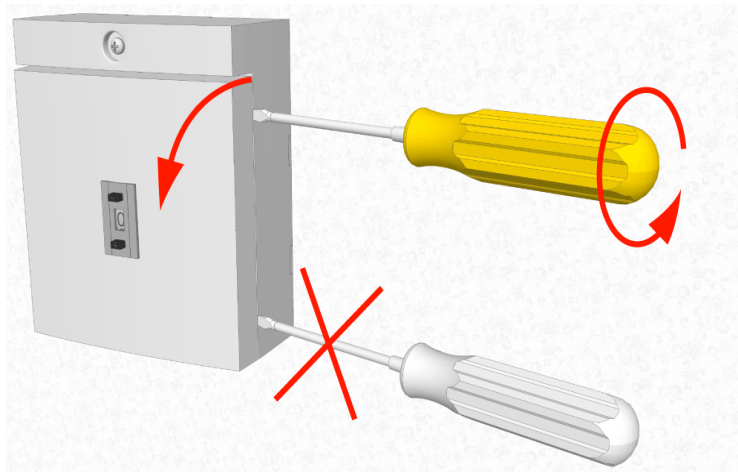


Figure 87. Inserting the screwdriver

Gently push and turn the screwdriver until the switch module releases from the spacer.

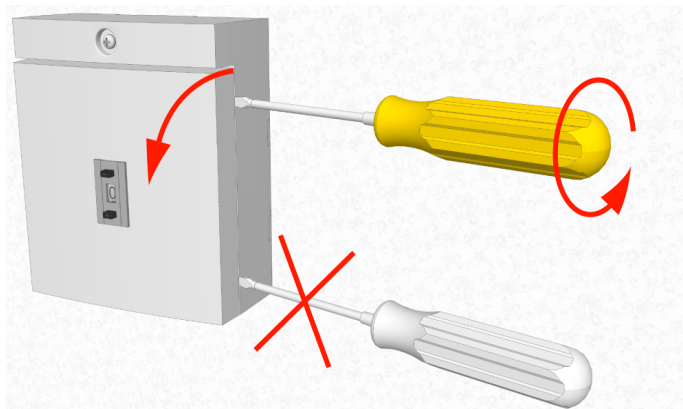


Figure 88. Removing the switch module from the backplate

Caution: Do not insert the screwdriver into the bottom corner of the faceplate.

6.4.10 Dip Switch Settings

Each room bus provides eight addresses for the connection of teleCARE IP switch modules. The lower four of these addresses are set by a DIP switch that is located on the PCB of the certain switch module. The upper four addresses cannot be set as they are dedicated to certain switch modules which have the appropriate address permanently set in the switch module.

The image below shows the location of the DIP switch which is in the same place on all active switch modules.

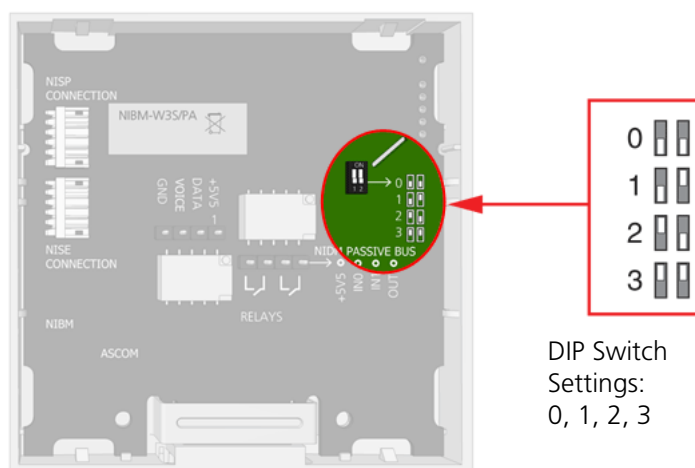


Figure 89. Active switch module DIP switch location

The the DIP switch allows 4 addresses to be set: 0, 1, 2 and 3. These settings are only used for active switch modules and active socket modules.

Address 4 is used for the toilet cancel module and this module has the address fixed and it is not set by a DIP switch.

The addresses 5 to 7 are used for special teleCARE IP peripherals consisting of the corridor lamp and the duty selector. These module have the address fixed and it is not set by a DIP switch. Addresses 6 and 7 are reserved for future extensions.

The room bus address assignments are summarized in the following table:

Room Bus Address	Active Peripheral	Address Setting
0 - 3	Door side Modules Bedside Modules Pull Cord Modules Medical Rail Socket	Set by DIP switch
4	Toilet Cancel Module	Fixed
5	Corridor Lamp Duty Selector	Fixed
6	Card reader	Fixed
7	Room Display	Fixed

6.5 Bedside Module (NIBM2)

The Bedside Module (NIBM2) is designed for use in the teleCARE IP system. It is suitable for use with all teleCARE IP handsets and it supports teleCARE IP speech and entertainment.

The NIBM2 has a Safe Release connection socket for the handset and it is available with three or one button. The NIBM2-G3S and NIBM2-W3S have three function buttons: red, green and yellow. The NIBM2-W1S and NIBM2-G1S have one red button.



Figure 90. Bedside module NIBM2: front and back view

In addition to the a 4-pole connector for the room bus, the NIBM2 has connectors for the following inputs and outputs:

- Control outputs for 2 light switching relays
- Stereo TV audio input from the television interface module
- External call input with a reassurance LED output
- NISP speech module

6.5.1 NIBM2 Electrical Connections and DIP Switch Settings

The Bedside Module (NIBM2) is an “active peripheral” therefore it must be connected to one of the three room buses of a teleCARE IP room controller by the 4-pole room bus connector. The room bus connector includes the 5.5Vdc power supply for the NIBM2.

Each room bus offers individual addresses for up to four switch modules. The address is selected using the DIP switch on the switch module printed circuit board.

The NIBM2 requires a single switch module back-plate. Alternatively, a spacer with installation kit is available for surface mounting. A double backplate is required when the NIBM2 is combined with a speech module.

For details of the backplates and surface mounting spacer see [6.3, Backplates and Surface Mounting Spacer on page 62](#).

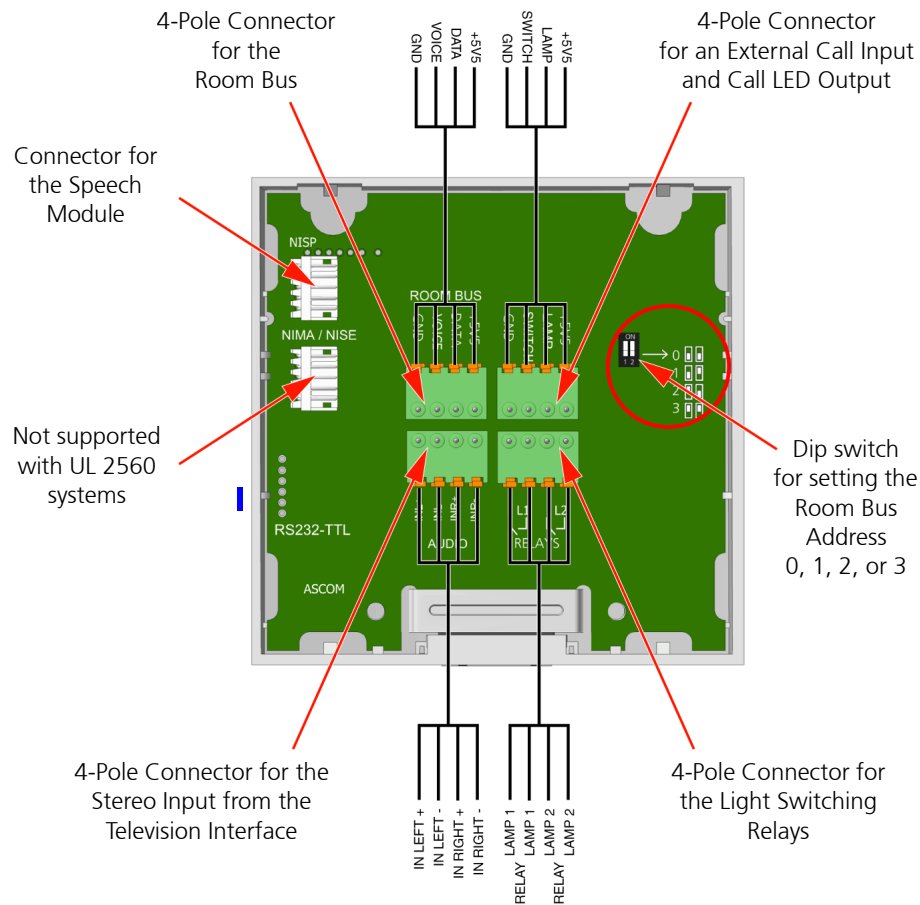


Figure 91. Bedside module NIMB2 electrical connections and address setting

The address is selected using the DIP switch on the switch module printed circuit board. For details of the DIP switch settings see [6.4.10, Dip Switch Settings on page 71](#).

For details of the 4-Pole connector see [6.4.1, 4-Pole Connector Terminal on page 65](#).

For light switching relay details see [6.5.2, Light Switching Relay Maximum Load and Surge Damping Diode on page 75](#).

For details of connecting a speech module see [6.15.1, Connecting the Speech Module on page 104](#).

For details of connecting the external call see [6.5.3, External Call Contact with Call Lamp Output on page 75](#).

Note: The 4-pole connector terminals required for the room bus and other inputs and outputs are not supplied with the switch module. They are available as accessories and must be ordered separately.

6.5.2 Light Switching Relay Maximum Load and Surge Damping Diode

The teleCARE switch module NIBM2 with a socket and bed light control include 2 light switching circuits. Each circuit is suitable for switching a bi-stable 24Vdc relay. The maximum switching current for each relay must not exceed 0.3A at maximum 30Vdc.

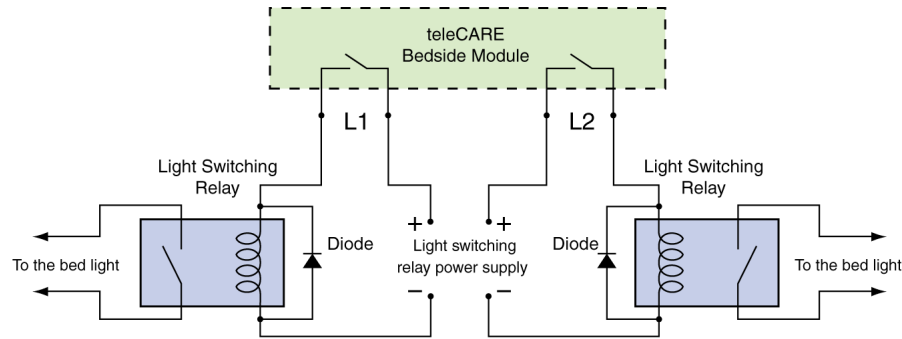


Figure 92. Light switching relay with surge damping diode

WARNING:

- The equipment that is connected to this interface is not considered to be part of the system configuration unless the equipment complies with ANSI/UL 2560 standard for Emergency Call Systems for Assisted Living and Independent Living Facilities.
- Do not connect the bed light circuitry directly to the L1 and L2 switch contacts on the NIBM2.
- The Light Switching Power Supply and Relay must be UL listed or recognized components.
- The maximum switching current for the L1 and L2 contacts on the NIBM2 must not exceed 0.3A at 30Vdc.
- A diode (1N4004 or equivalent) must be connected across the coil of the bed light switching relay to prevent surges caused by the relay coil.

6.5.3 External Call Contact with Call Lamp Output

The external call connection allows an external normally open third-party contact to activate a teleCARE call in parallel to the red button of the bedside module.

The 4-pole connector provides SWITCH and GND terminals for connection to a normally open contact of an external switching device. These terminals provide 5.5Vdc at 0.6mA, for monitoring the external device contact.

The 4-pole connector also provides a +5.5V output and an open collector driver on the Lamp terminal. Together, the +5.5V and Lamp terminals provide power and switching for an external LED lamp. The external LED lamp will be switched on when the contact on the external switching device connected to the SWITCH and GND terminals closes.

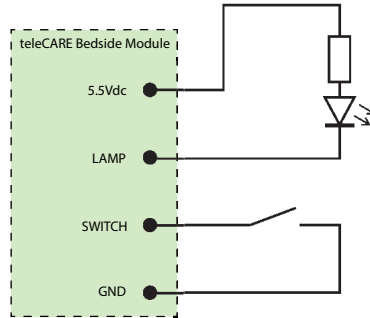


Figure 93. External Call Contact with Call LED

WARNING:

- The equipment that is connected to this interface is not considered to be part of the system configuration unless the equipment complies with ANSI/UL 2560 standard for Emergency Call Systems for Assisted Living and Independent Living Facilities.
- The SWITCH and LAMP circuits are not electrically isolated.
- The cable length for the SWITCH circuit must not exceed 33ft (10m) and the cable must be appropriately separated from power cables and sources of electromagnetic interference.
- The LAMP circuit is power limited to 5.5Vdc at 06.mA.
- The SWITCH circuit is power limited to 5.5Vdc at 06.mA.

6.6 Medical Rail Socket (NIMS2)

The Medical Rail Socket (NIMS2) is a teleCARE IP peripheral. The NIMS2 is designed to be flush mounted by two screws in an opening in a medical rail.

The NIMS2 supports teleCARE IP speech and stereo TV audio input from the television interface module.

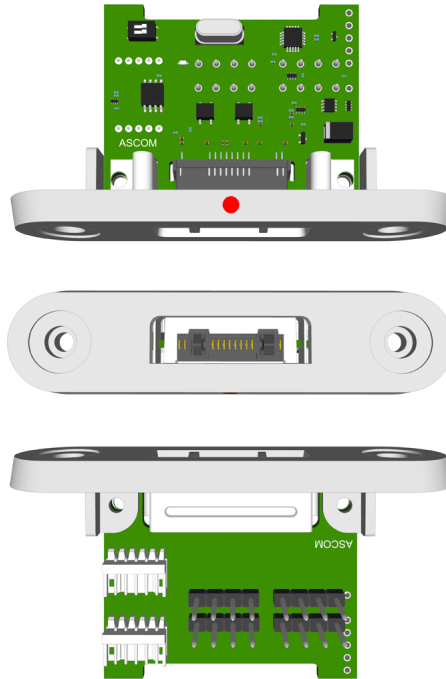


Figure 94. Medical Rail Module NIMS2 (top, front, bottom)

The NIMS2 is connected to the teleCARE IP room bus by a 4-pin connector. The room bus connector includes the 5.5Vdc power supply for the NIMS2.

The medical rail socket is functionally compatible with the teleCARE IP bedside module. It includes the teleCARE Safe Release Socket.

The medical rail socket is supplied with two self-tapping screws which are used to mount the socket in the medical rail.

In addition to the a 4-pole connector for the room bus, the NIBM2 has connectors for the following inputs and outputs:

- Control outputs for 2 light switching relays
- Stereo TV audio input from the television interface module
- External call input with a reassurance LED output
- NISP speech module

The medical rail socket (NIMS2) is an “active peripheral” which must be connected to one of the three room buses of a teleCARE IP room controller by the 4-pole room bus connector. The room bus connector includes the 5.5Vdc power supply for the NIMS2.

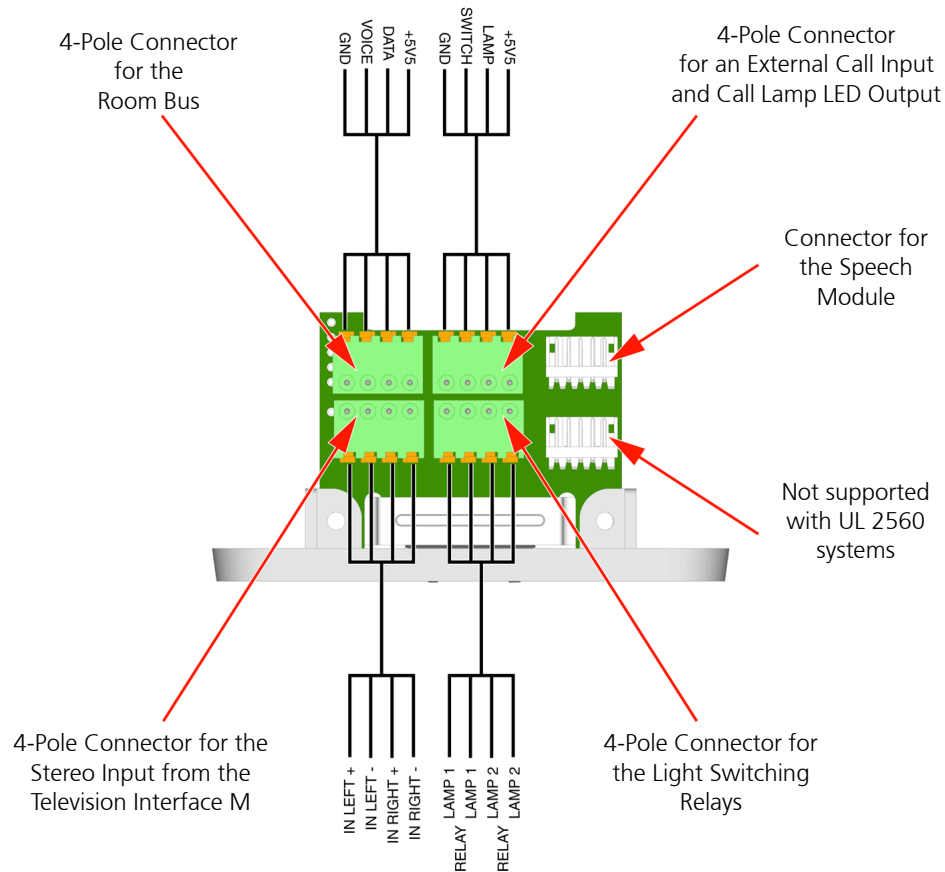


Figure 95. Medical Rail Socket NIMS2 electrical connections and address setting

For light switching relay details see [6.5.2, Light Switching Relay Maximum Load and Surge Damping Diode on page 75](#).

For details of connecting the external call see [6.5.3, External Call Contact with Call Lamp Output on page 75](#).

Note: The 4-pole connector terminals required for the room bus and other inputs and outputs are not supplied with the switch module. They are available as accessories and must be ordered separately.

6.6.2 NIMS2 Room Bus Address Setting

The room bus address of the medical rail socket is selected using the DIP switch on the top side of the printed circuit board. For details of the DIP switch settings see [6.4.10, Dip Switch Settings on page 71](#).

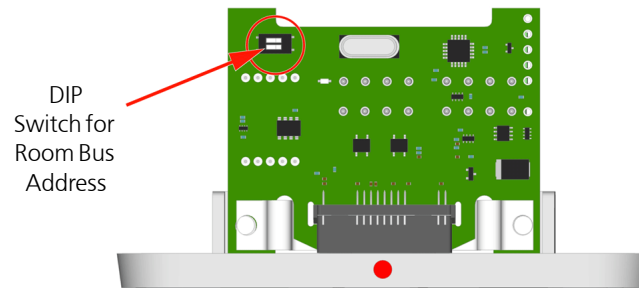


Figure 96. NIMS2 DIP switch

6.6.3 Light Switching Relay Maximum Load and Surge Damping Diode

The medical rail socket NIMS2 includes 2 light switching circuits with normally open (N/O) contacts. The contacts are potential free and galvanically isolated. Each circuit is suitable for switching a bi-stable 24 volt DC external relay. The maximum switching current for each relay must not exceed 0.3A at maximum 30Vdc.

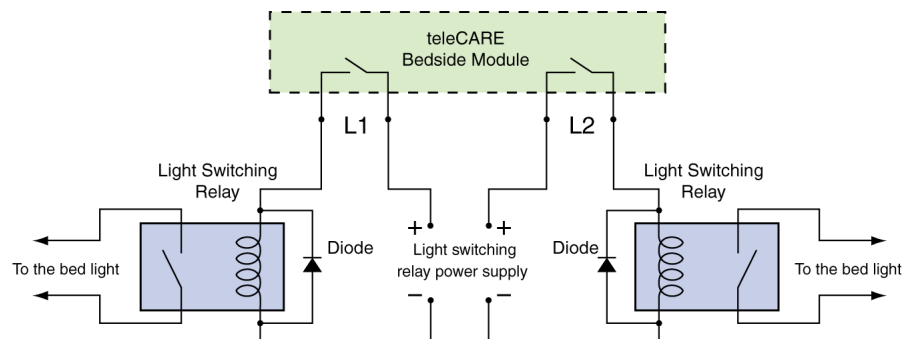


Figure 97. Light switching relay with surge damping diode

WARNING:

- The equipment that is connected to this interface is not considered to be part of the system configuration unless the equipment complies with ANSI/UL 2560 standard for Emergency Call Systems for Assisted Living and Independent Living Facilities.
- Do not connect the bed light circuitry directly to the L1 and L2 switch contacts on the NIMS2.
- The Light Switching Power Supply and Relay must be UL recognized components.
- The maximum switching current for the L1 and L2 contact on the NIMS2 must not exceed 0.3A at 30Vdc.
- A diode (1N4004 or equivalent) must be connected across the coil of the bed light switching relay to prevent surges caused by the relay coil.

6.6.4 External Call Contact with Call LED Output

The external call connection allows an external normally open third-party contact to activate a teleCARE call in parallel to the red button of the bedside module.

The 4-pole connector provides SWITCH and GND terminals for connection to a normally open contact of an external switching device. These terminals provide 5.5Vdc at 0.6mA, for monitoring the external device contact.

The 4-pole connector also provides a +5.5V output and an open collector driver on the Lamp terminal. Together, the +5.5V and Lamp terminals provide power and switching for an external LED lamp. The external LED lamp will be switched on when the contact on the external switching device connected to the SWITCH and GND terminals closes.

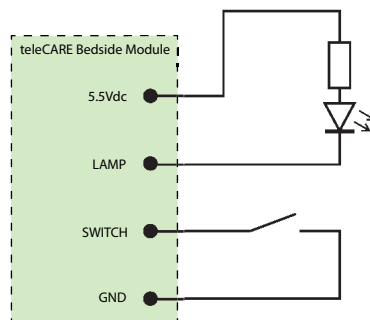


Figure 98. External Call Contact with Call LED

WARNING:

- The equipment that is connected to this interface is not considered to be part of the system configuration unless the equipment complies with ANSI/UL 2560 standard for Emergency Call Systems for Assisted Living and Independent Living Facilities.
- The SWITCH and LAMP circuits are not electrically isolated.
- The cable length for the SWITCH circuit must not exceed 33ft (10m) and the cable must be appropriately separated from power cables and sources of electromagnetic interference.
- The LAMP circuit is power limited to 5.5Vdc at 06.mA.
- The SWITCH circuit is power limited to 5.5Vdc at 06.mA.

6.6.5 Mounting the Medical Rail Socket

The following illustration shows how the medical rail socket is mounted in the underside of a medical rail.

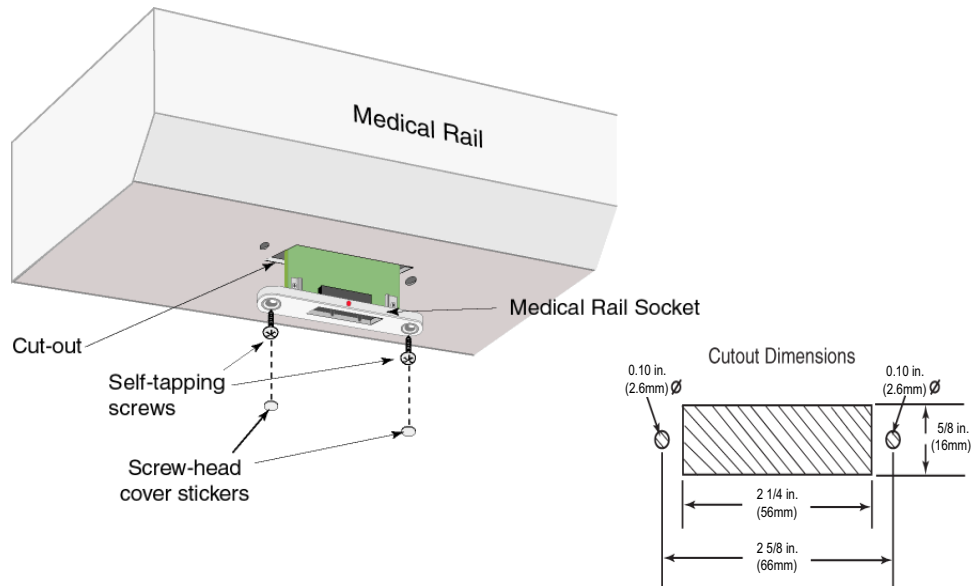


Figure 99. Medical rail socket mounting and cut-out dimensions

6.7 Door Side Module (NIDM)

The Door Side Module (NIDM) is a three-button switch module which is connected to the teleCARE IP room bus. It has a buzzer which can be used to signal calls, a 4-pole connector for the room bus, a 4-pole connector for a passive bus and connector for speech module.

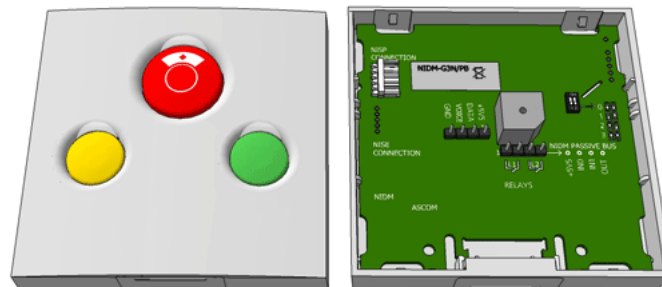


Figure 100. Door-Side module: front and back view

6.7.1 Door Side Module Electrical Connections and DIP Switch Settings

The Door Side (NIDM) Module is an “active peripheral” therefore it must be connected to one of the three room buses of a teleCARE IP room controller by the 4-pole room bus connector (see [6.4.1, 4-Pole Connector Terminal on page 65](#)).

Each room bus offers individual addresses for up to four switch modules. The address is selected using the DIP switch on the switch module printed circuit board. The door Side module also has another 4-pole connector for a “passive bus” which is used to connect a passive pull cord switch module and a

passive cancel switch module.

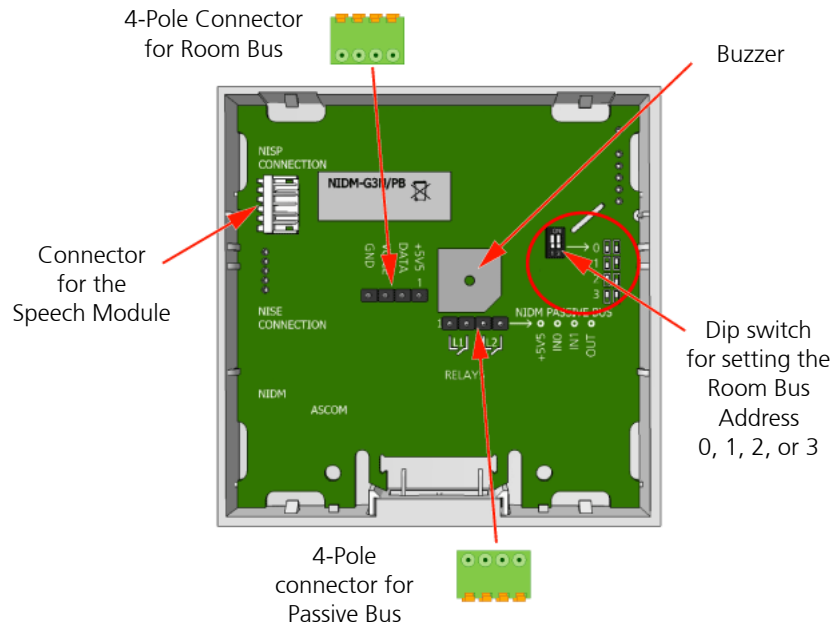


Figure 101. Door Side module electrical connections and address setting

The NIDM has a 5-pin connector for connecting a speech module. Refer to [6.15.1, Connecting the Speech Module on page 104](#) for details of the speech module.

Note: The 4-pole connector terminals required for the room bus and the passive bus connections module must be ordered separately.

6.8 Pull Cord Module - Active (NIPC-G3A and NIPC-W3A)

The Pull Cord Module (NIPC) is intended for use in the teleCARE IP system, in areas such as bathrooms and toilets. It is an "active peripheral" therefore it must be connected to one of the three room buses of a teleCARE IP room controller.

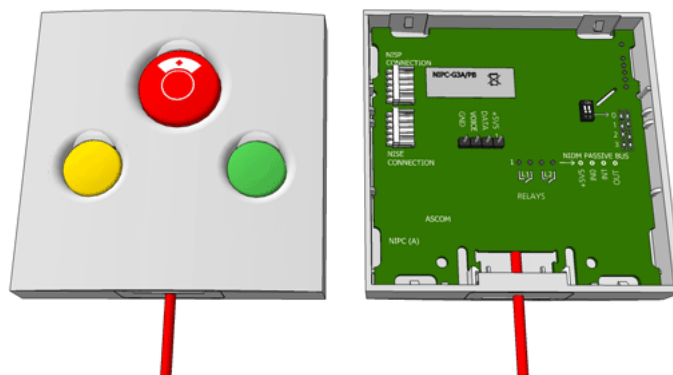


Figure 102. Pull cord module (active)

The NIPC has a 4-pin connector for the room bus, a 5-pin connector for the speech module and a 5-pin connector for future use.

Each room bus offers individual addresses for up to four switch modules. The address is selected using the DIP switch on the switch module printed circuit board.

The NIPC has a 2 meter long pull cord for call activation with two safety break plastic balls, and it is available with three function buttons: red, green and yellow.

Important: At least one active NIPC module must be permanently located in the bathroom of each resident apartment.

Note: The 4-pole connector terminal required for the room bus is not supplied with the switch module. It is available as an accessory and must be ordered separately.

The NIPC requires a single backplate which must be ordered separately. The backplate enables this switch module to be mounted over different types of back-boxes. Alternatively, a spacer with installation kit is available for surface mounting the switch module.

6.8.1 Pull Cord Module (Active) Electrical Connections and DIP Switch Settings

This pull cord module is an “active peripheral” therefore it must be connected to one of the three room buses of a teleCARE IP room controller by the 4-pole room bus connector (see [6.4.1, 4-Pole Connector Terminal on page 65](#)).

Each room bus offers individual addresses for up to four switch modules. The address is selected using the DIP switch on the switch module printed circuit board.

For details of connecting a speech module refer to [6.15.1, Connecting the Speech Module on page 104](#)

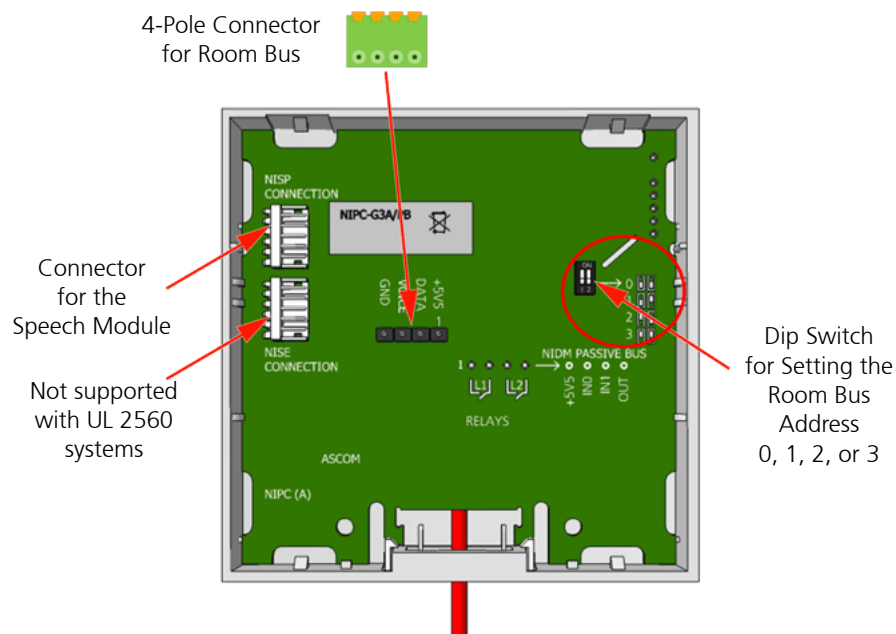


Figure 103. Pull cord module electrical connections and address setting

6.8.2 Assembling and Attaching the Pull Cord

6 inch (150 mm) min.

6.5 feet (2000 mm) max.

1

6 inch (150 mm) min.

2

click!

3

Figure 104. Assembling and attaching the pull cord

6.9 Toilet Cancel Module - Active (NITC-XXA)

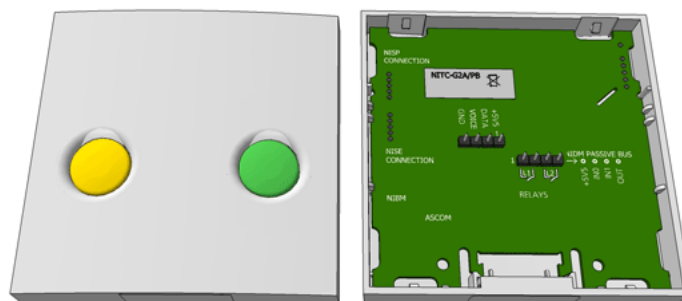


Figure 105. Toilet cancel module (active)

The toilet cancel module requires a single backplate which must be ordered separately. The backplate enables this switch module to be mounted over different types of back-boxes. Alternatively, a spacer with installation kit is available for surface mounting.

6.9.1 Toilet Cancel Module (Active) Electrical Connections

The toilet cancel module is an “active peripheral” therefore it must be connected to one of the three room buses of a teleCARE IP room controller by the 4-pole room bus connector (see [6.4.1, 4-Pole Connector Terminal on page 65](#)).

The toilet cancel module also has a 4-pole connector for the passive bus to which a passive pull-cord call module can be connected (see [6.10.1, Pull Cord Module \(Passive\) Electrical Connections on page 86](#)).

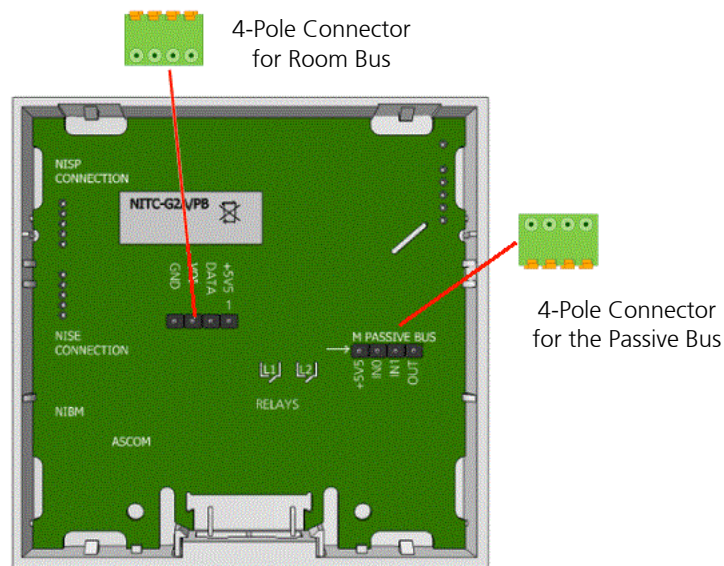


Figure 106. Toilet cancel module electrical connections

Note: The 4-pole connector terminals required for the room bus and the passive bus must be ordered separately as accessories.

6.10 Pull Cord Module - Passive (NIPC-XXP)

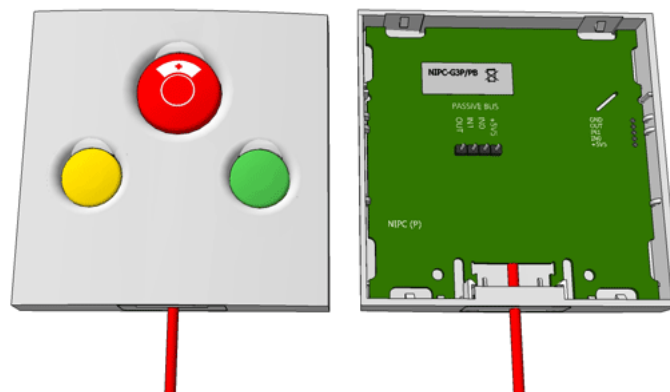


Figure 107. Passive pull cord module 3 buttons