Honeywell

temakey

Modular Terminal

Installation Manual

temaline
Creative solutions

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FCC NOTICE

NOTE: This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However these is no guarantee that interference will not occur in a particular installation.
If this equipment does cause harmful interference to radio or television reception, which can be determined by tuning the equipment of and on, the user is encouraged to try to correct the interference by one or more the following measures:

-- Reorient or relocate the receiving antenna.
-- Increase the separation between the equipment and receiver.
-- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
-- Consult the dealer or an experienced radio/TV technician for help.

PRELIMINARY OPERATIONS

Mounting Instructions

The cables are attached to an encased box. **Make sure that you place the box at a height of 120cm from the floor** (see Figure 1).

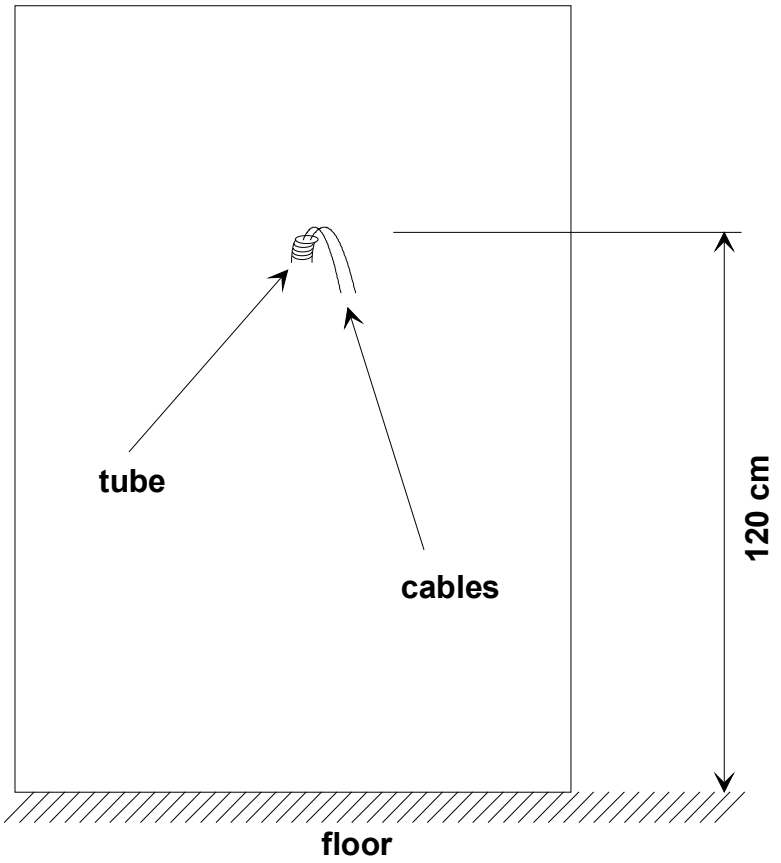


Figure 1: Space requirements for mounting

Arranging the Cable Tubes and Junction Boxes

All the cables consist of 4 wires that must be connected in parallel from one node to the next. It is possible to link nodes in free topology, i.e. by means of a star or bus configuration.

Cabling: Recommendations

Figure 2 provides an example of a typical free topology installation.

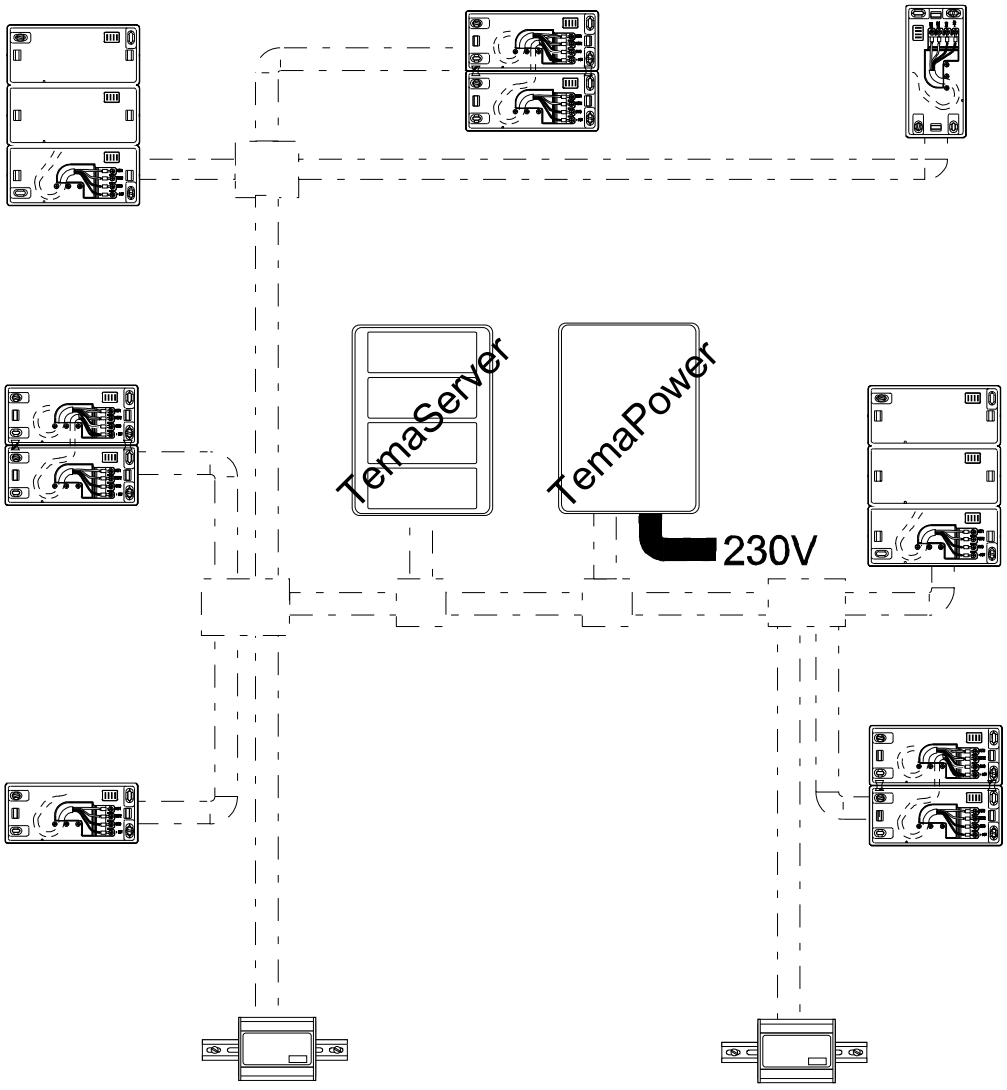


Figure 2: Example of a free topology installation

If you want to mount the tubes on the surface of the walls, it is advisable to place the junction boxes under each terminal (see example in Figure 3).

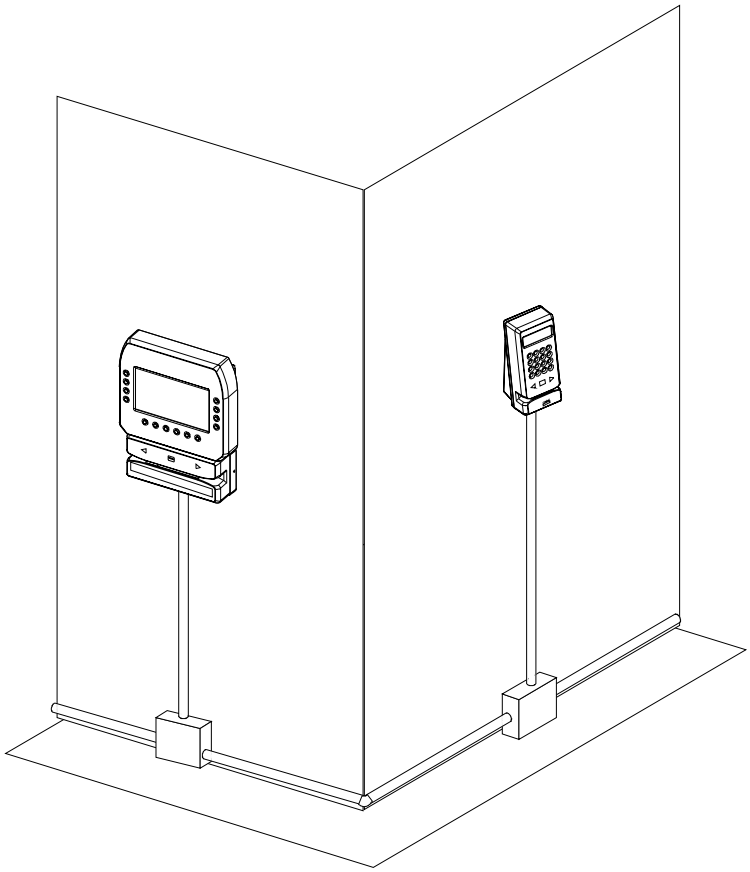


Figure 3: Location of the junction boxes

Electrical Connections

The RTU is powered at low voltage (12V_{DC} 120mA) by a battery-operated power supply module (RTU-Qxx). When determining the correct size for power cables, refer to the table below.

Type of cable			*Length (m) in relation to effective load*					
AWG	***mm2***	***ohm/Km***	***100 [mA]***	***200 [mA]***	***500 [mA]***	***1 [A]***	***2 [A]***	***5 [A]***
12	***3,3***	***5,7***	***1754***	***877***	***351***	***175***	***88***	***35***
14	***2***	***8,8***	***1136***	***568***	***227***	***114***	***57***	***23***
16	***1,3***	***14***	***714***	***357***	***143***	***71***	***36***	***14***
18	***0,9***	***21***	***476***	***238***	***95***	***48***	***24***	***10***
20	***0,6***	***34***	***294***	***147***	***59***	***29***	***15***	***6***
22	***0,35***	***52***	***192***	***96***	***38***	***19***	***10***	***4***
24	***0,2***	***85***	***118***	***59***	***24***	***12***	***6***	***2***

LONWORKS Data Cables

- The LONWORKS [1] data cable must be twisted pair
- In a free topology configuration, the sum total of the sections must not exceed 500m
- In a bus configuration, the sum total of the sections must not exceed 2700m
- In a free topology configuration, activate the 50ohm terminator by placing the appropriate jumper on the FTT10A plug-in of the CTU-PLG06 board inside the TemaServer
- In a bus configuration, place two terminators (with resistance values of 100ohm 1% ½W) at each end of the bus
- Check that the length of the LONWORKS data cable corresponds to the norms indicated in Table 1.

Type of cable			*Length [m] in relation to cable capacity*				
AWG	***mm2***	***Ohm/Km***	***50nF/Km***	***100nF/Km***	***200nF/Km***	***500nF/Km***	***1uF/Km***
12	***3,3***	***5,7***	***2676***	***1892***	***1338***	***846***	***598***
14	***2***	***8,8***	***2153***	***1523***	***1077***	***681***	***482***
16	***1,3***	***14***	***1707***	***1207***	***854***	***540***	***382***
18	***0,9***	***21***	***1394***	***986***	***697***	***441***	***312***
20	***0,6***	***34***	***1096***	***775***	***548***	***346***	***245***
22	***0,35***	***52***	***886***	***626***	***443***	***280***	***198***
24	***0,2***	***85***	***693***	***490***	***346***	***219***	***155***

Table 1: Length / capacity of LONWORKS data cables (m)

[1] LONWORKS® is a trademark of Echelon Corporation

- The FTT10A Echelon v1.2 User Guide recommends the cables indicated in Table 2.

Manufacturer and model	***AWG***	***Connection to bus - maximum total length [m]***	***Connection in free topology – maximum node-node length max. [m]***
Belden 85102	***16***	***2700***	***500***
Belden 8471	***16***	***2700***	***400***
Level IV (twisted pair, typically solid and unshielded)	***22***	***1400***	***400***
JY (St) 2x2x0.8 (4-wire helical twist, solid shielded)	***20***	***900***	***320***

Table 2: Recommended LONWORKS cables

Mounting the Unit on the Wall

Horizontal Assembly – Single Module

To assemble the unit in a horizontal position, follow these steps:

1. Drill two holes in the wall (to accommodate the 2 plastic dowels), so that the frame will cover the hole through which the cables pass.
2. Insert the cables in the cable clamp without pulling out the screws.
3. Use the dowels to fasten the frame to the wall. Make sure that the lamellar connector is in the **UP** position.
4. Adjust the length of the cables so that they protrude by ~10cm from the wall, and fasten them to the cable crimp.
5. Fasten the cable crimp to the contacts in the direction shown in Figure 4.
6. Place the remainder of the cable inside the frame and lock the cable clamp.

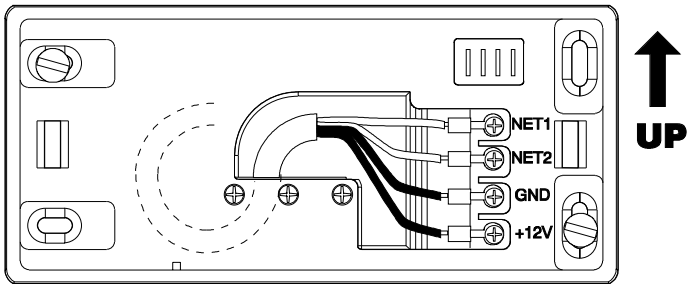


Figure 4: Wall position – horizontal position (single module)

Horizontal Assembly – Triple Module

To assemble the unit in a horizontal position, follow these steps:

1. Drill two holes in the wall (to accommodate the 2 plastic dowels), so that the frame will cover the hole through which the cables pass.
2. Insert the cables in the cable clamp without pulling out the screws.
3. Use the dowels to fasten the frame to the wall. Make sure that the lamellar connector is in the **UP** position.
4. Adjust the length of the cables so that they protrude by ~10cm from the wall, and fasten them to the cable crimp.
5. Fasten the cable crimp to the contacts in the direction shown in Figure 5.
6. Place the remainder of the cable inside the frame and lock the cable clamp.

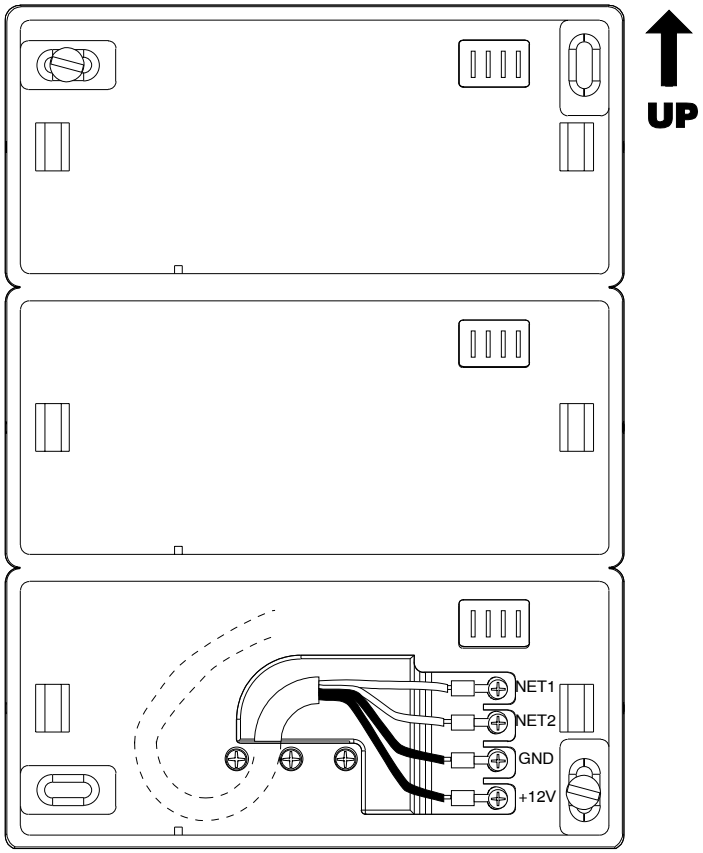


Figure 5: Wall position – horizontal position (triple module)

Combined Assembly - Single and Triple Modules

A combined wall assembly of single and triple modules allows you to create units consisting of 2, 4 and 5 units. This procedure consists of the following steps:

1. Drill the necessary holes in the wall (2 plastic dowels for each module), so that the lower plate will cover the hole through which the cables pass.
2. Insert the cables in the cable clamp without pulling out the screws.
3. Link the frames together by inserting the two enclosed attachment clips at the rear of the frames (see Figure 6 and Figure 7).
4. Use the dowels to fasten the frame to the wall. Make sure that the lamellar connector is in the **UP** position.
5. Adjust the length of the cables so that they protrude by ~10cm from the wall, and fasten them to the cable crimp.
6. Intertwine the terminators of the cables from the wall and the extension cable terminators, and fasten them to the cable crimps.
7. Fasten the cable crimp to the contacts in the direction shown in Figure 6 and Figure 7.
8. Place the remainder of the cable inside the frame and lock the cable clamp.

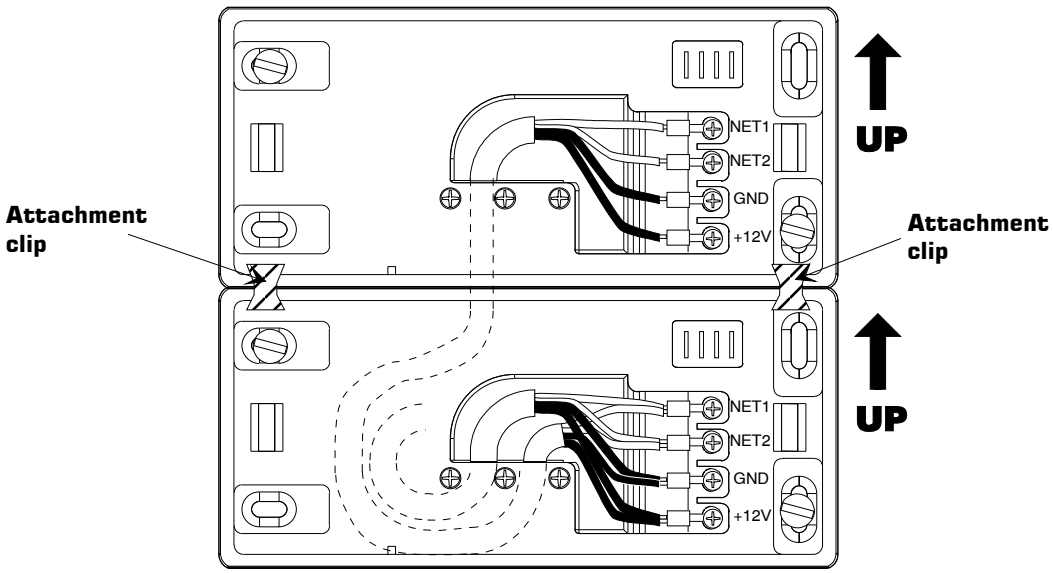


Figure 6: Combined assembly of two single module wall units

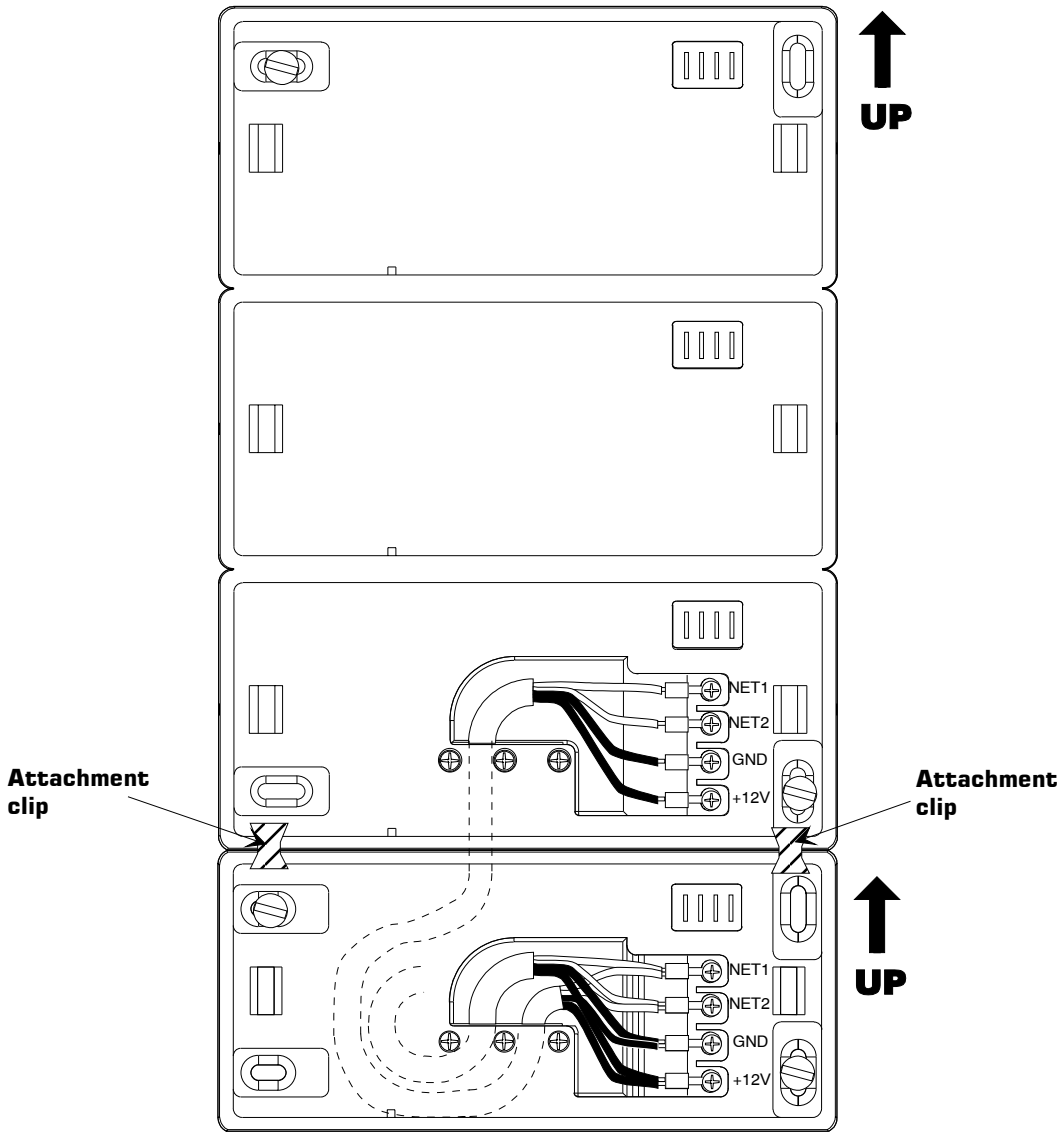


Figure 7: Combined assembly of single and triple module wall units

Fastening the Cables

Fasten the cable clamps to the cable bar so that the cables are arranged towards the **inside** of the frame (see Figure 8).

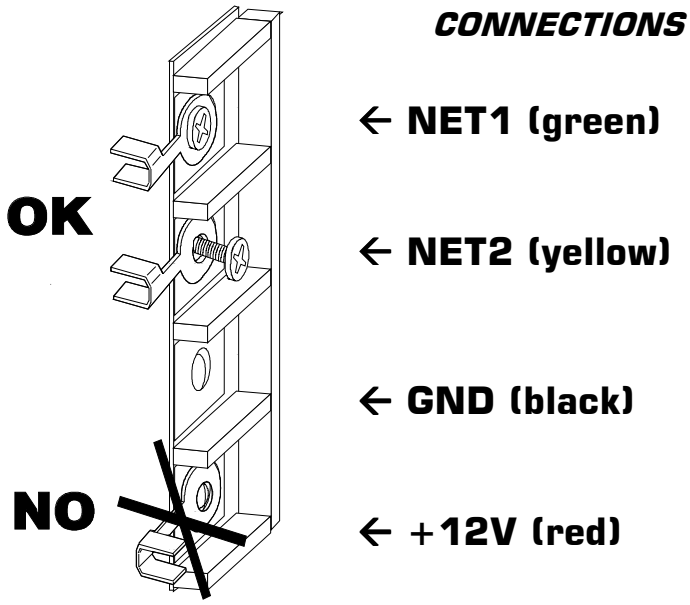


Figure 8: Fastening the cables

Vertical Assembly

To assemble the unit in a vertical position, follow these steps:

1. Drill two holes in the wall (to accommodate the 2 plastic dowels), so that the frame will cover the hole through which the cables pass.
2. Insert the cables in the cable clamp without pulling out the screws.
3. Use the dowels to fasten the frame to the wall. Make sure that the lamellar connector is in the **UP** position.
4. Adjust the length of the cables so that they protrude by ~10cm from the wall, and fasten them to the cable crimp.
5. Fasten the cable crimp to the contacts in the direction shown in Figure 9.
6. Place the remainder of the cable inside the frame and lock the cable clamp.

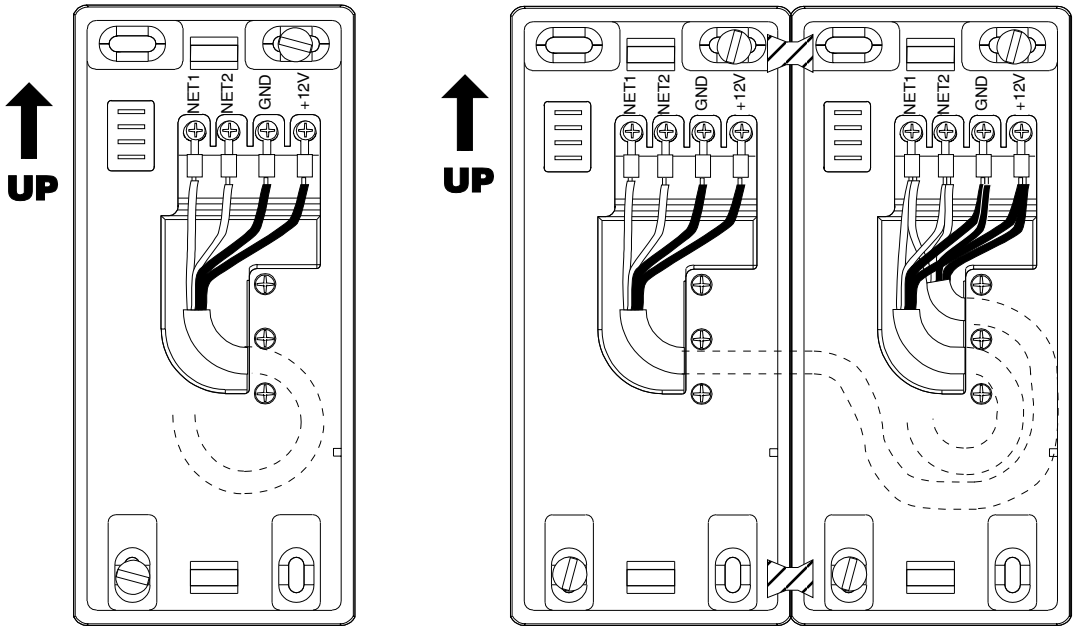


Figure 9: Wall position – vertical assembly

Channeling the Cables from the Bottom of the Box

As an alternative, you can channel the cables so that they exit from the bottom of the frame. This alternative procedure consists of the following steps:

1. Drill a hole in the wall so that the hole from which the cables exit is in the center of the lower plate.
2. Break off the lower removable tab from the upper support.
3. Break off the upper and lower tab from the lower support.
4. Insert both the cables from the wall and the remainder of the cable in the cable clamp (be careful not to pull out the screws).
5. Use the dowels to attach the frame to the wall.
6. Adjust the length of the cables so that they protrude by ~10cm from the wall.
7. Roll up the terminators of the cables from the wall and the extension cables, and fasten them to the cable crimps (see Figure 10).
8. Fasten the cable crimp to the contacts in the direction shown in Figure 10.
9. Place the remainder of the cables inside the frame and lock the cable clamps.

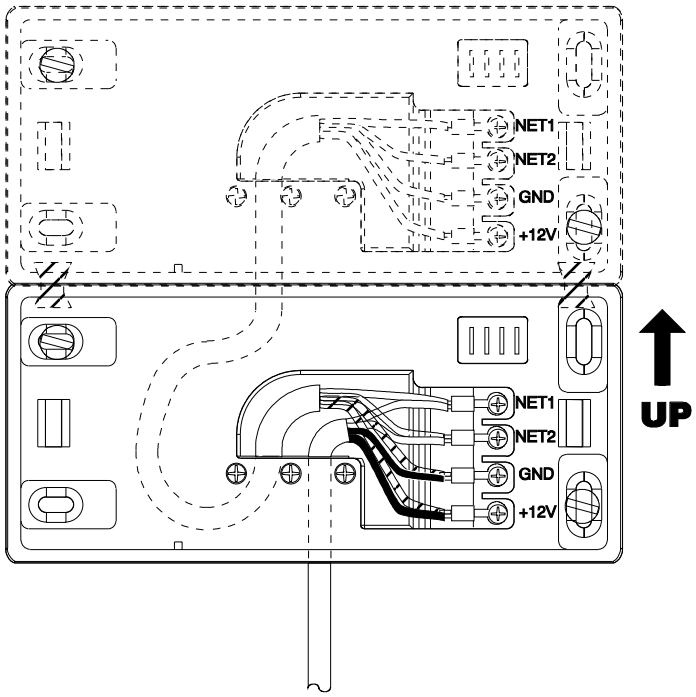


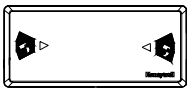
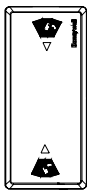
Figure 10: Channeling the cables from the bottom of the box

INSTALLATION

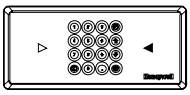
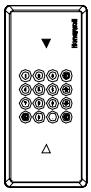
Combining the Modules

Each TemaKey consists of one or more RTU modules that must be positioned and connected to their respective wall attachment frames (RTU-Sxx) as indicated in the table below.

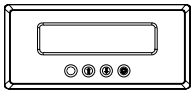
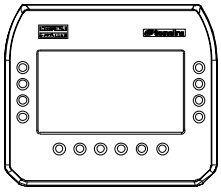
Reader

Code	Grouping	Horizontal	Vertical	Notes
TK-S07	1 x RTU-B07 1 x RTU-S01			Weight=0.45Kg Power=0.8W Current=60mA

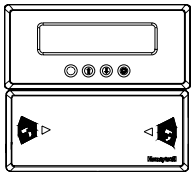
Keyboards

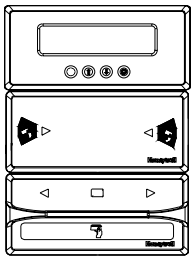
Code	Grouping	Horizontal	Vertical	Notes
TK-S31	1 x RTU-T01 1 x RTU-S01			Weight=0.4Kg Power=0.4W Current=30mA

Display

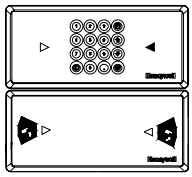
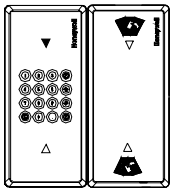
Code	Grouping	Horizontal	Vertical	Notes
TK_S21	1 x RTU-C01 1 x RTU-S01		NO	Weight=0.45Kg Power=1.9W Current=140mA
TK-S22	1 x RTU-C02 2 x RTU-S01		NO	Weight=0.95Kg Power=5.2W Current=380mA

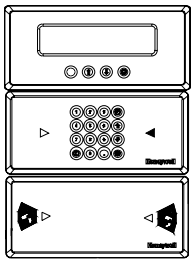
Terminals

Code	Grouping	Horizontal	Vertical	Notes
TK-D07	1 x RTU-C01 1 x RTU-B07 2 x RTU-S01		NO	Weight=0.9Kg Power=2.7W Current=200mA

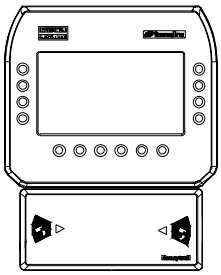
Code	Grouping	Horizontal	Vertical	Notes
TK_T09	1 x RTU-C01 1 x RTU-B07 1 x RTU-B01 1 x RTU-S03		NO	Weight=1.15Kg Power=3.1W Current=230mA

Terminals with Keyboards

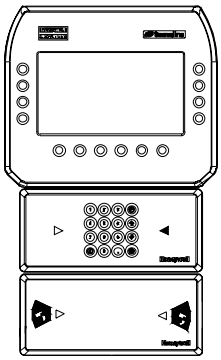
Code	Grouping	Horizontal	Vertical	Notes
TK_D37	1 x RTU-T01 1 x RTU-B07 2 x RTU-S01			Weight=0.85Kg Power=1.2W Current=90mA

Code	Grouping	Horizontal	Vertical	Notes
TK-T07	1 x RTU-C01 1 x RTU-T01 1 x RTU-B07 1 x RTU-S03		NO	Weight=1.15Kg Power=3.1W Current=230mA

Interactive Terminals

Code	Grouping	Horizontal	Vertical	Notes
TK-D27	1 x RTU-C02 1 x RTU-B07 1 x RTU-S03		NO	Weight=1.25Kg Power=6W Current=440mA

Interactive Terminals with Keyboards

Code	Grouping	Horizontal	Vertical	Notes
TK_T27	1 x RTU-C02 1 x RTU-T01 1 x RTU-B07 1 x RTU-S03 1 x RTU-S01		NO	Weight=1.65Kg Power=6.4W Current=470mA

Attaching the Modules to the Wall

All **tema**line modules are equipped with a simple attachment mechanism; the module clicks into position without the need for tools. To attach the module to the frame, follow these steps:

1. Check that the fitting at the back of the RTU modules is positioned correctly.
2. Attach each RTU module to the wall-mout frame as illustrated in Figure 11.

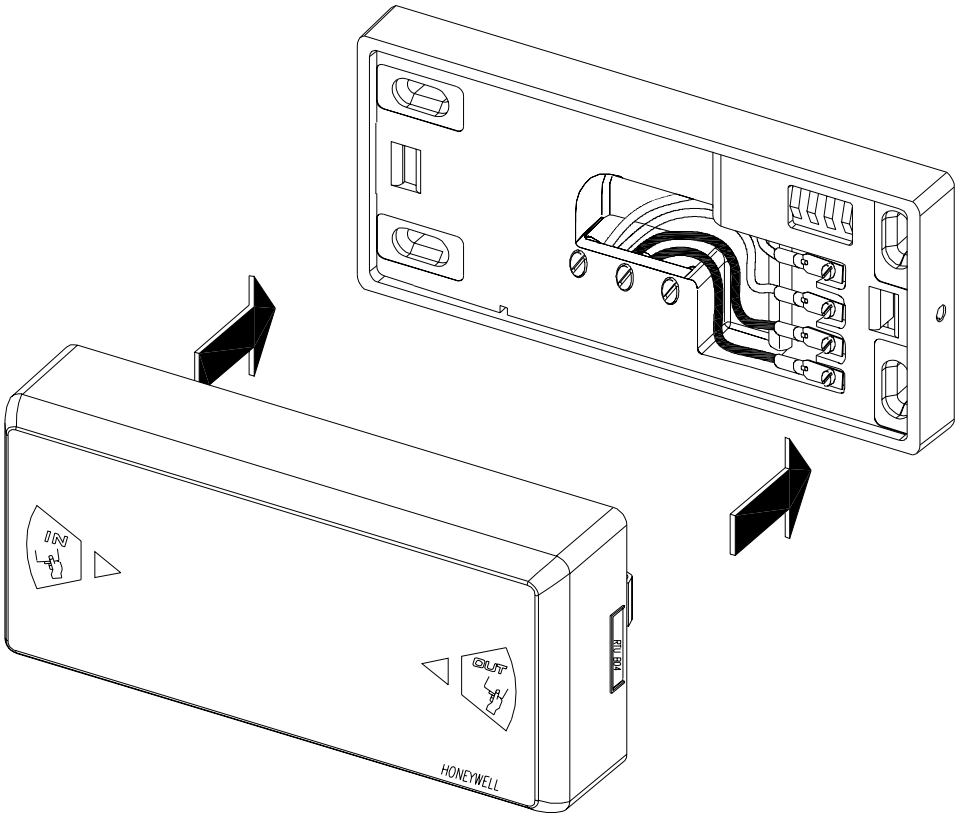


Figure 11: Attaching the module to the wall-mount frame

Applying the Entry/Exit Labels

Apply the two entry/exit labels to the magnetic reader according to the pre-configured transit direction. Make sure that you place the labels in the appropriate hollows (see details in Figure 12 and Figure 13).

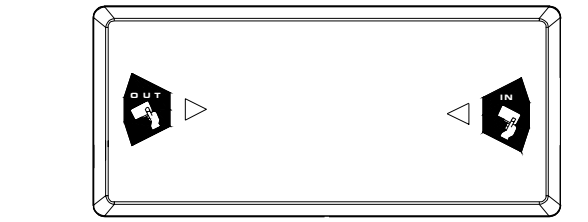


Figure 12: Entry / exit labels

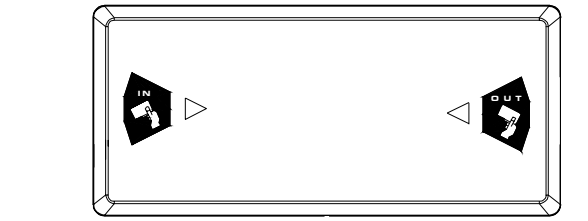


Figure 13: Entry / exit labels

Identification via Bar Code

The components enclosed in the packaging include a bar code label. The person responsible for installing the terminal must apply this label to the corresponding identification form, and indicate the location of the terminal in the appropriate box (see example in Table 3).

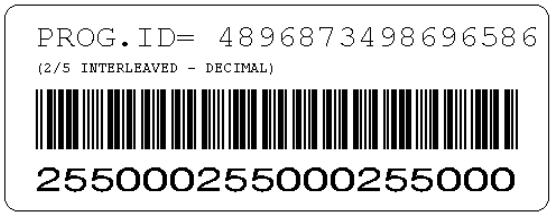
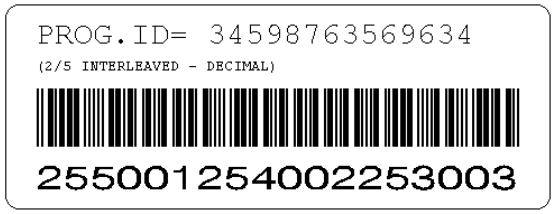
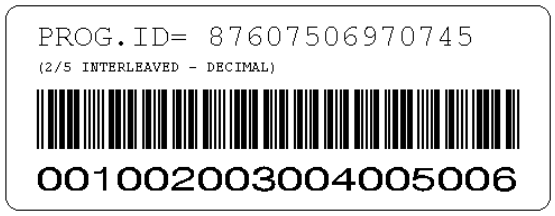
Description of location *Office entrance area, first floor - staircase E*	
Description of TemaServer *Panel 2 entrance area, first floor – staircase E*	
RTU *C01*	
RTU *T01*	
RTU *B07*	
RTU -	

Table 3: Example of completed identification form

TECHNICAL DATA

Summary of Modular Devices

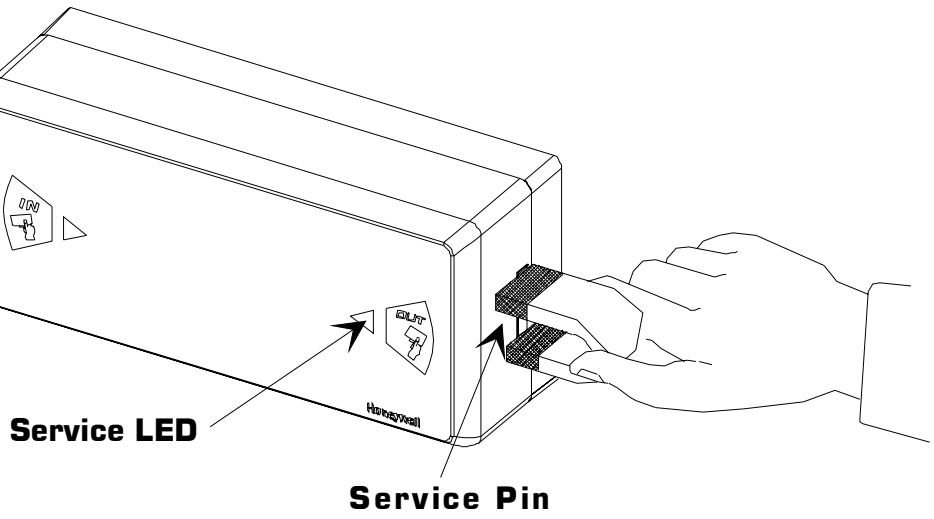
This section contains technical data regarding the modular devices:

- RTU-B07 (Reader module for HID proxy cards)
- RTU-C01 (Alphanumeric LCD module)
- RTU-C02 (Graphic LCD module)
- RTU-T01 (Numeric keyboard module)

RTU-B07 (Proxy Reader for HID Cards)

Code 1520145

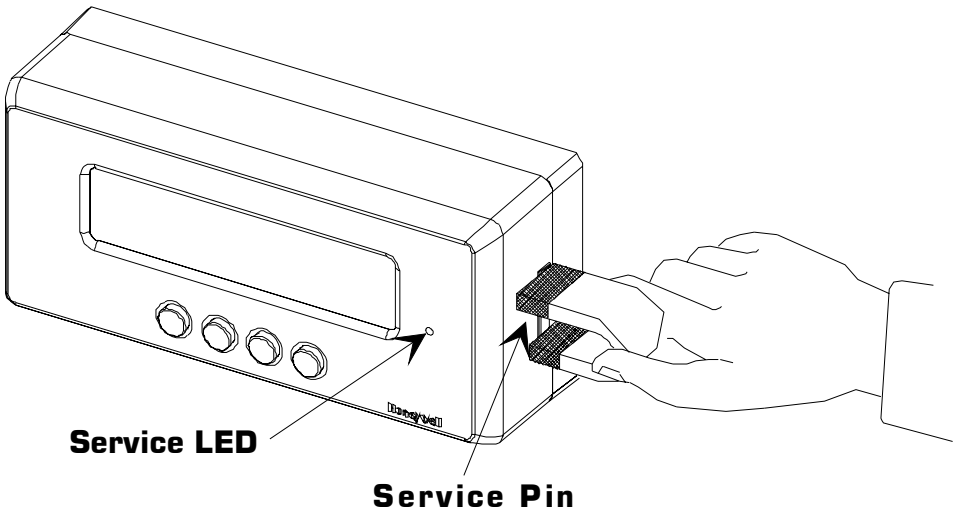
Parameter	Value
DC power supply	$12V_{DC} \pm 15\%$ 60mA
Weight	0.30 Kg
Dimensions	72 x 160 x 52 mm
IP Protection Rating	IP55
Operating temperature	0-50 °C
Proxy receiver	For HID cards Double-antenna receiver (bidirectional)
LONWORKS® connection	Unshielded twisted pair cable (transceiver FTT10A, 78Kbps
Signaling	2 LED tricolor (green/red/yellow) 1 buzzer



RTU-C01 (Alphanumeric LCD Module)

Code 1500105

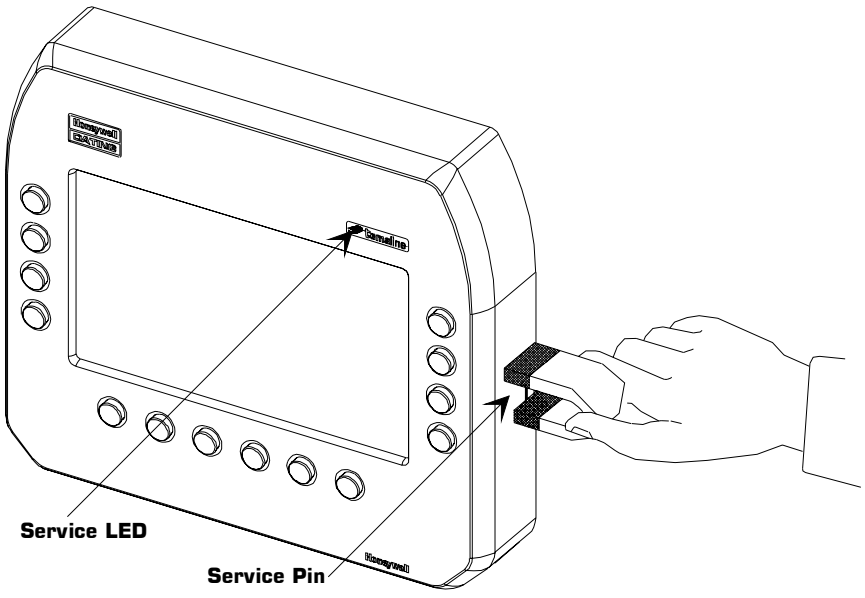
Parameter	Value
DC power supply	$12V_{DC} \pm 15\%$ 140mA (nominal) 70mA (backlight off)
Weight	0.30 Kg
Dimensions	72 x 160 x 52 mm
IP Protection Rating	IP55
Operating temperature	0-50 °C
Display	Alphanumeric LCD with backlight 2 rows of 16 characters format
Keyboard	4 keys with symbols
LONWORKS® connection	Unshielded twisted pair cable (transceiver FTT10A, 78Kbps
Signaling	1 LED yellow 1 buzzer



RTU-C02 (Graphic LCD Module)

Code 1500101

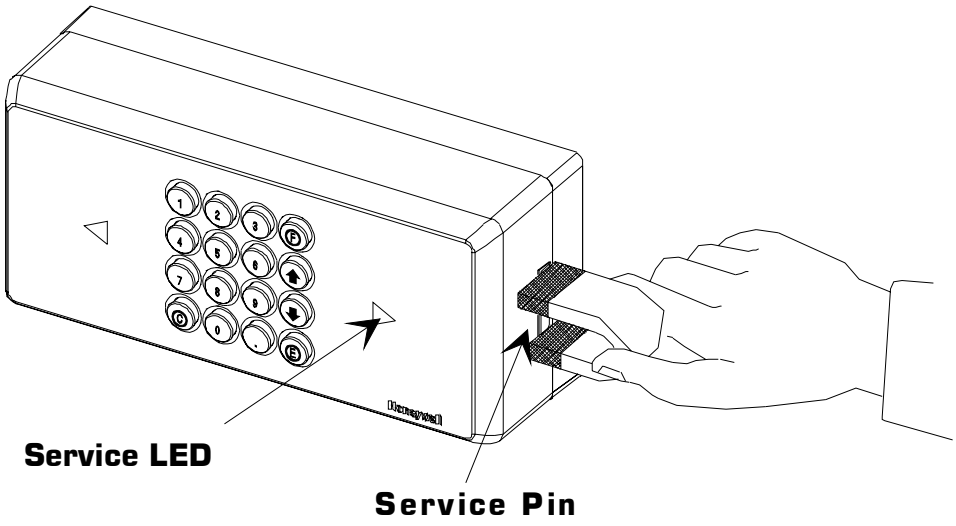
Parameter	Value
DC power supply	$12V_{DC} \pm 15\%$ 380mA (nominal), 140mA (backlight off)
Weight	0.65 Kg
Dimensions	166 x 190 x 52 mm
IP Protection Rating	IP55
Operating temperature	0-50 °C
Display	Graphic LCD with backlight 240 x 128 pixels format
Keyboard	14 function keys
LONWORKS® connection	Unshielded twisted pair cable (transceiver FTT10A, 78Kbps
Signaling	1 LED yellow 1 buzzer



RTU-T01 (Numeric Keyboard Module)

Code 1500104

Parameter	Value
DC power supply	$12V_{DC} \pm 15\%$ 30mA (nominal), 50mA (max)
Weight	0.25 Kg
Dimensions	72 x 160 x 52 mm
IP Protection Rating	IP55
Operating temperature	0-50 °C
Keyboard	16 keys with symbols
LONWORKS® connection	Unshielded twisted pair cable (transceiver FTT10A, 78Kbps
Signaling	2 LED bicolor (red/green/yellow) 1 buzzer



Optional Parts

Unlocking tool	code 3900695AB

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