

## **TABLE OF CONTENTS**

<b>PRELIMINARY OPERATIONS .....</b>	<b>4</b>
Mounting Instructions .....	4
Electrical Connections .....	6
LONWORKS® Data Cable .....	8
<b>INSTALLATION.....</b>	<b>10</b>
Attaching the Unit to the Wall .....	10
Cabling Arrangements .....	12
Connecting the Cables .....	13
Turning on the Power Supply Unit .....	16
Closing the Power Supply Unit .....	17
Switching off the Power Supply Unit (Maintenance) .....	17
<b>TECHNICAL SPECIFICATIONS .....</b>	<b>18</b>
TemaPower TP U01 (RTU-Q01 code 1500074xxU) .....	18
Canadian Compliance Statement .....	18
Spare Parts .....	20
Optional parts .....	20
<b>ACTIVATION .....</b>	<b>21</b>
Identification via the Service Pin .....	21
Identification via Bar Code .....	22

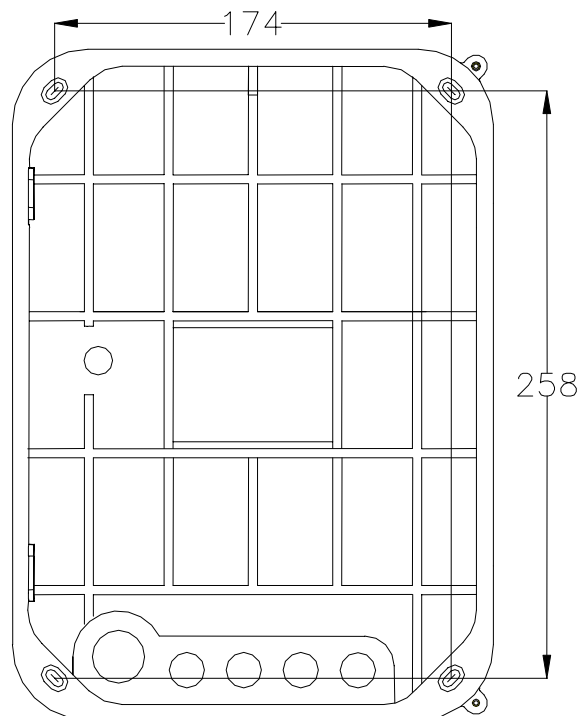
# PRELIMINARY OPERATIONS

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## Mounting Instructions

If the installation is wall-mounted, it is recommended that you attach the cables to an encased box.

1. Select a position that satisfies the requirements specified for mounting and opening the unit (see Figure 2: ).
2. Leave sufficient space to the right and rear of the unit to allow you to access the box with a screwdriver.
3. Make four holes in the wall, using the drilling sheet as a template.



*Figure 1: rear view of RTUQ01: points for attachment to the wall*

4. Insert the anchors in the wall (note: use screws with max diameter of 4mm).

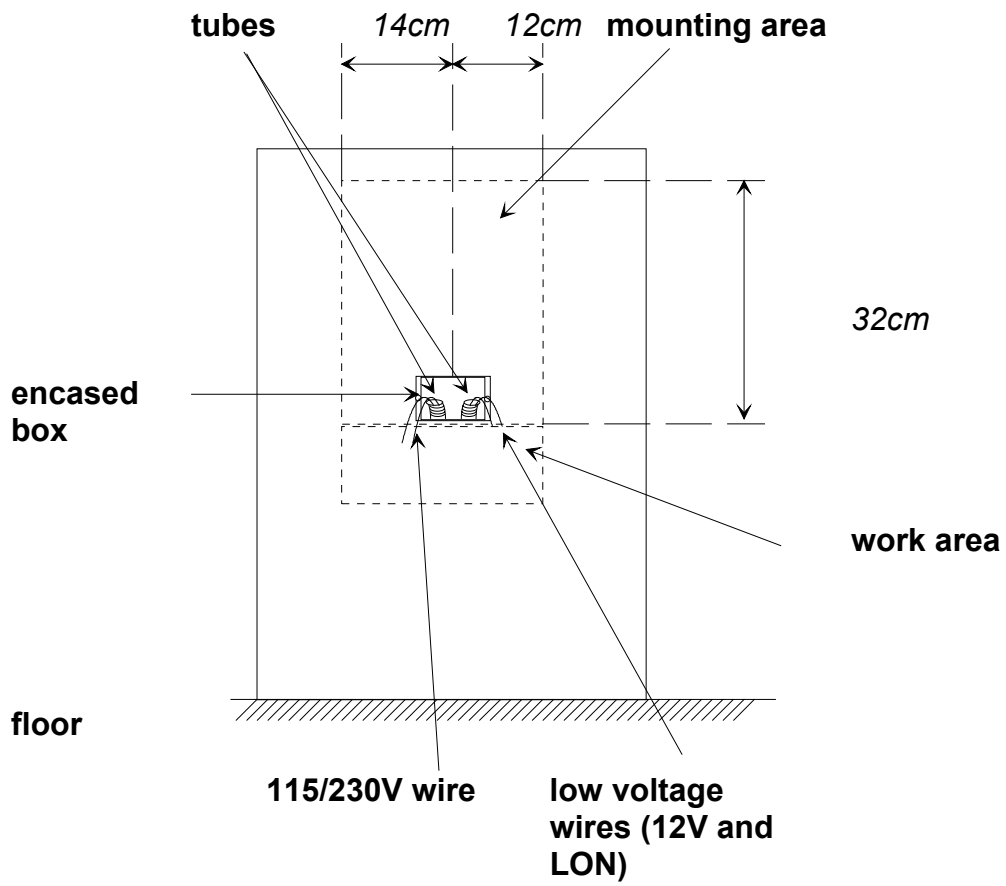


Figure 2: Space Requirements for Mounting

## Electrical Connections

If you use tubes to support the cables, you will need two tubes to accommodate the following cables for the RTU-Q01:

- tube 1
  - cable 230V 50Hz 250mA
- tube 2
  - 12V power cable
  - LONWORKS<sup>®1</sup> twisted-pair cable

For RTUs make sure that the 12V cable corresponds in size to the norms indicated in the table below (voltage cable drop max = 0,7V):

$$\text{Cable Length(m)} = 0,7V / (I[A] \text{ load} \times 2 \times (\text{res [Ohm/km]} / 1000))$$

Type of cable			Length (m) in relation to base load					
AWG	mm <sup>2</sup>	Ohm/Km	100 [mA]	200 [mA]	500 [mA]	1 [A]	2 [A]	5 [A]
10	5,25	3,41	1026	513	205	103	51	21
12	3,3	5,7	614	307	123	61	31	12
14	2	8,8	398	199	80	40	20	8
16	1,3	14	250	125	50	25	13	5
18	0,9	21	167	83	33	17	8	3
20	0,6	34	103	51	21	10	5	2
22	0,35	52	67	34	13	7	3	1

For RTUA01 with +12V sensors make sure that the 12V cable corresponds in size to the norms indicated in the table below (voltage cable drop max = 0,5V):

$$\text{Cable Length(m)} = 0,5V / (I[A] \text{ load} \times 2 \times (\text{res [Ohm/km]} / 1000))$$

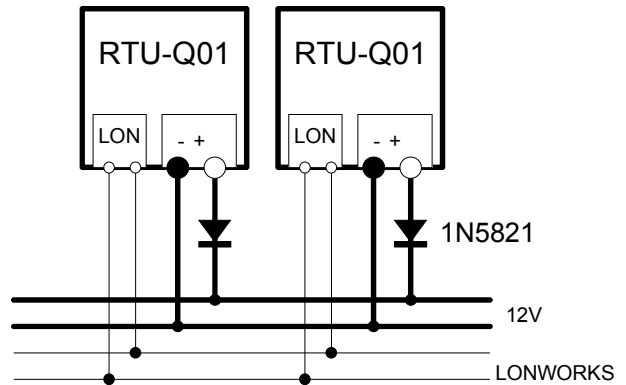
Type of cable			Length (m) in relation to base load					
AWG	mm <sup>2</sup>	Ohm/Km	100 [mA]	200 [mA]	500 [mA]	1 [A]	2 [A]	5 [A]
10	5,25	3,41	733	367	147	73	37	15
12	3,3	5,7	439	219	88	44	22	9
14	2	8,8	284	142	57	28	14	6
16	1,3	14	179	89	36	18	9	4
18	0,9	21	119	60	24	12	6	2
20	0,6	34	74	37	15	7	4	1
22	0,35	52	48	24	10	5	2	1

<sup>1</sup> LONWORKS<sup>®</sup> is a trademark of Echelon Corporation

You can place power supply units in parallel. In this mode, the overall power is equal to the total sum of the power ratings of the individual units. In this case, the effective load used to calculate the size of the cables is the sum of the loads of the sections placed in parallel.

**NOTE:**

For versions prior to 1500074BA, a parallel connection implies the use of external diodes, as illustrated in the diagram on the right.



## LONWORKS® Data Cable

- The LONWORKS<sup>®2</sup> 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 on 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<sup>®</sup> data cable corresponds to the norms indicated in Table 1.

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

Table 1: Length/capacity of LONWORKS<sup>®</sup> data cables (m)

- The FTT10A Echelon<sup>®</sup> v1.2 User Guide recommends the cables indicated in Table 2.

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

Table 2: Recommended LONWORKS<sup>®2</sup> cables

<sup>2</sup> LONWORKS<sup>®</sup> is a trademark of Echelon Corporation



# INSTALLATION

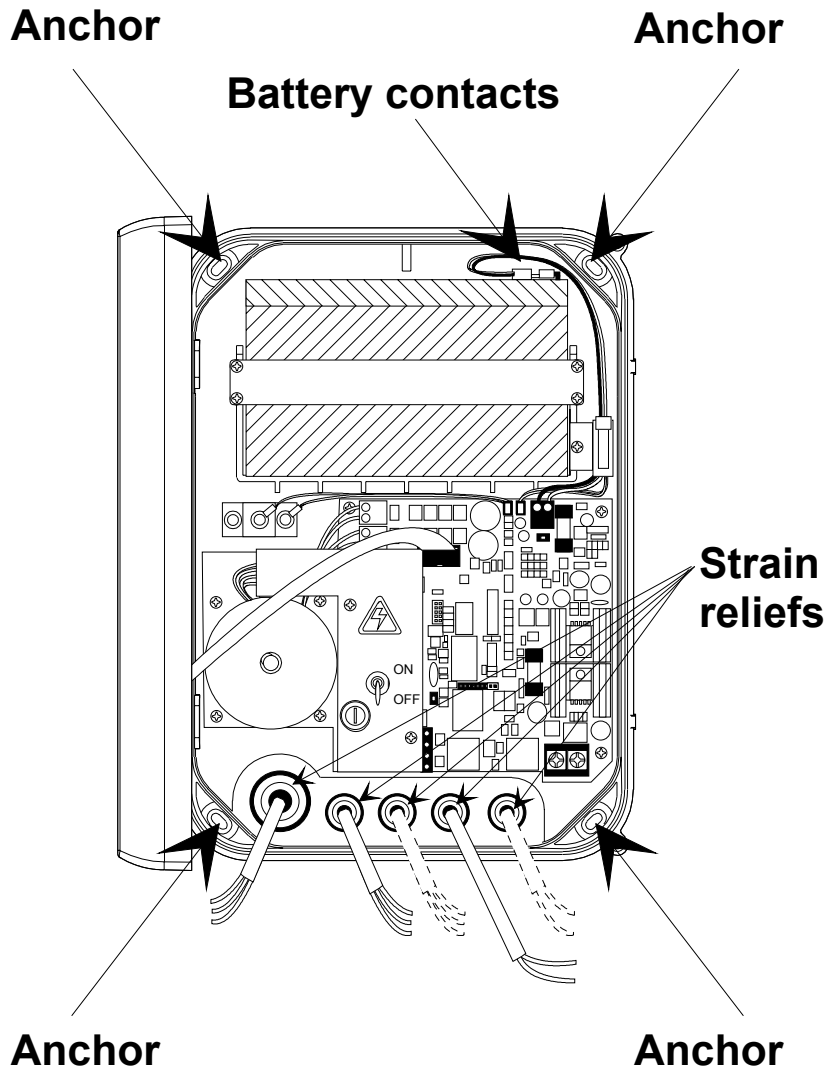
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## **Attaching the Unit to the Wall**

To attach the unit to the wall (after performing the initial preparations described in **Mounting Instructions**, pag. 4), follow these steps (see Figure 3):

1. Place the power supply unit on the floor with the cover pointing upwards.
2. Unscrew the two special lateral screws and open the cover of the power supply unit.
3. Unplug the battery contacts.
4. Switch off the 230V (or 115V) input power and use a tester to check for the voltage levels of the cables.
5. Place the device close to the wall and insert the cables into the strain reliefs at the bottom of the unit.
6. Place the power supply unit on the wall and insert the four M4 screws into the support anchors.
7. Screw in the anchors and then tighten the strain relief.





*Figure 3: Wall-Mounted Assembly*

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## Cabling Arrangements

To prepare the cables, follow these steps (see Figure 4):

1. Insert the cables into the battery contacts. Make sure to observe the correct polarity (red=+, black=-); Pay attention to the fuse in series with the cable: do not allow the conductor to bend near the fuse so as to avoid a mechanical breakage of the fuse.
2. Remove the 4 screws holding the safety cover (you will need a Ø 3mm Phillips screwdriver).
3. Crimp the spade terminals onto the output power cables (14V).

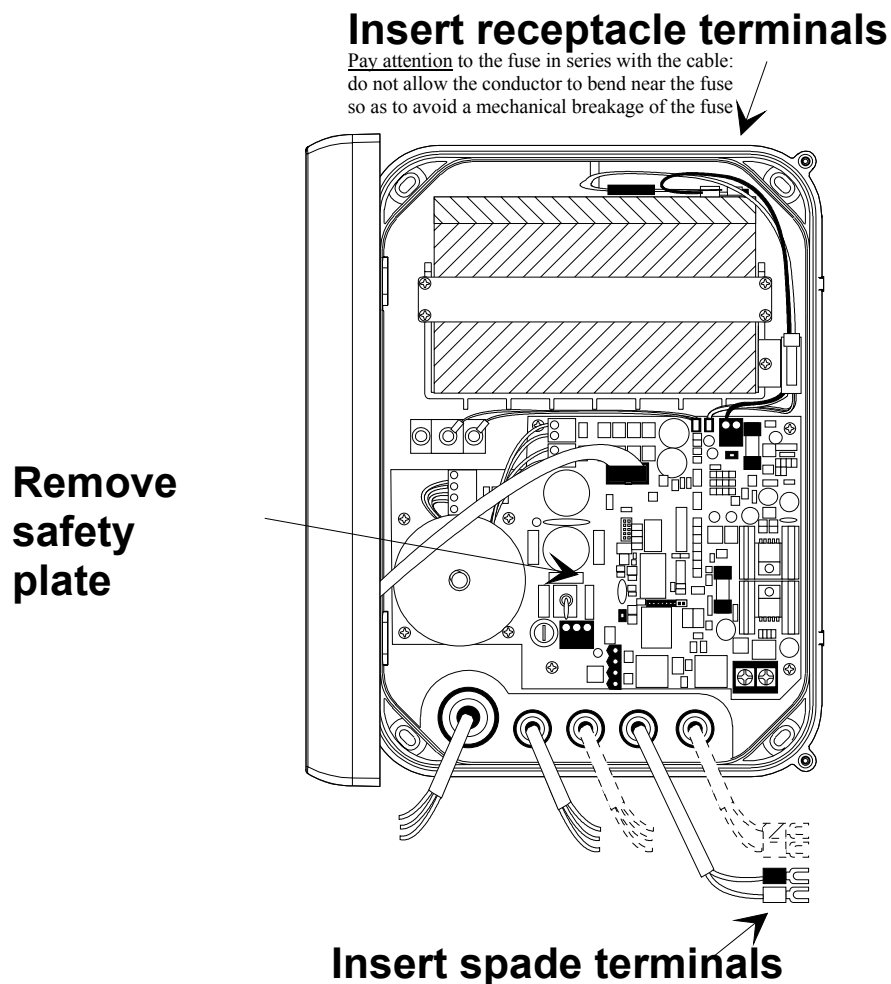


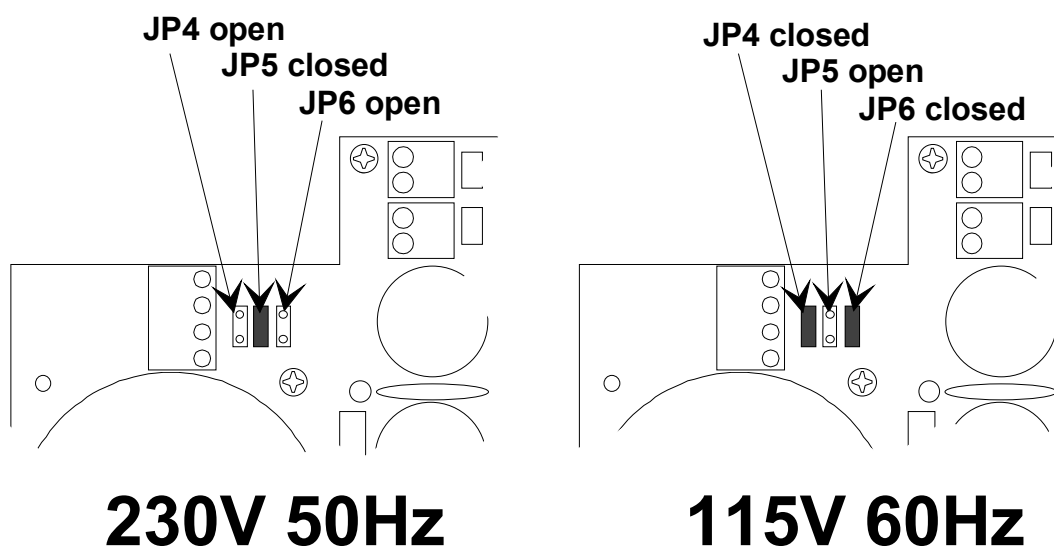
Figure 4: Cabling Arrangements

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## Connecting the Cables

To connect the cables, follow these steps (see Figure 6):

1. Turn the power switch to «Off».
2. Crimp the ground cable (yellow-green) and screw it onto the ground screw. Cut the cable to 5cm more than the 230V/115V cables.
3. Set the jumpers JP4, JP5, JP6 according to 115V/230V input (default setting = 230V).
4. In case of **115V** line input, replace the 200mA fuse F1 with the **400mA** fuse provided in the toolkit.
5. Insert and fasten the 230V/115V entry cables.
6. Replace the safety cover by screwing in the 2 screws (requires 3mm Philips screwdriver)
7. Insert and fasten the 12V wires (you will need a  $\varnothing$  5mm Philips screwdriver). The ends of the wire must be fitted with the M4 plastic grip ring terminals (included in the kit), as appropriate for each section of cable: a yellow terminal for AWG 10-12 or a blue terminal for AWG 14-16 (or lower). It is possible to combine two terminals so as to extend the power cable.
8. Insert and fasten the LONWORKS<sup>®</sup> **twisted-pair** cable (you will need a  $\varnothing$  3mm Philips screwdriver).



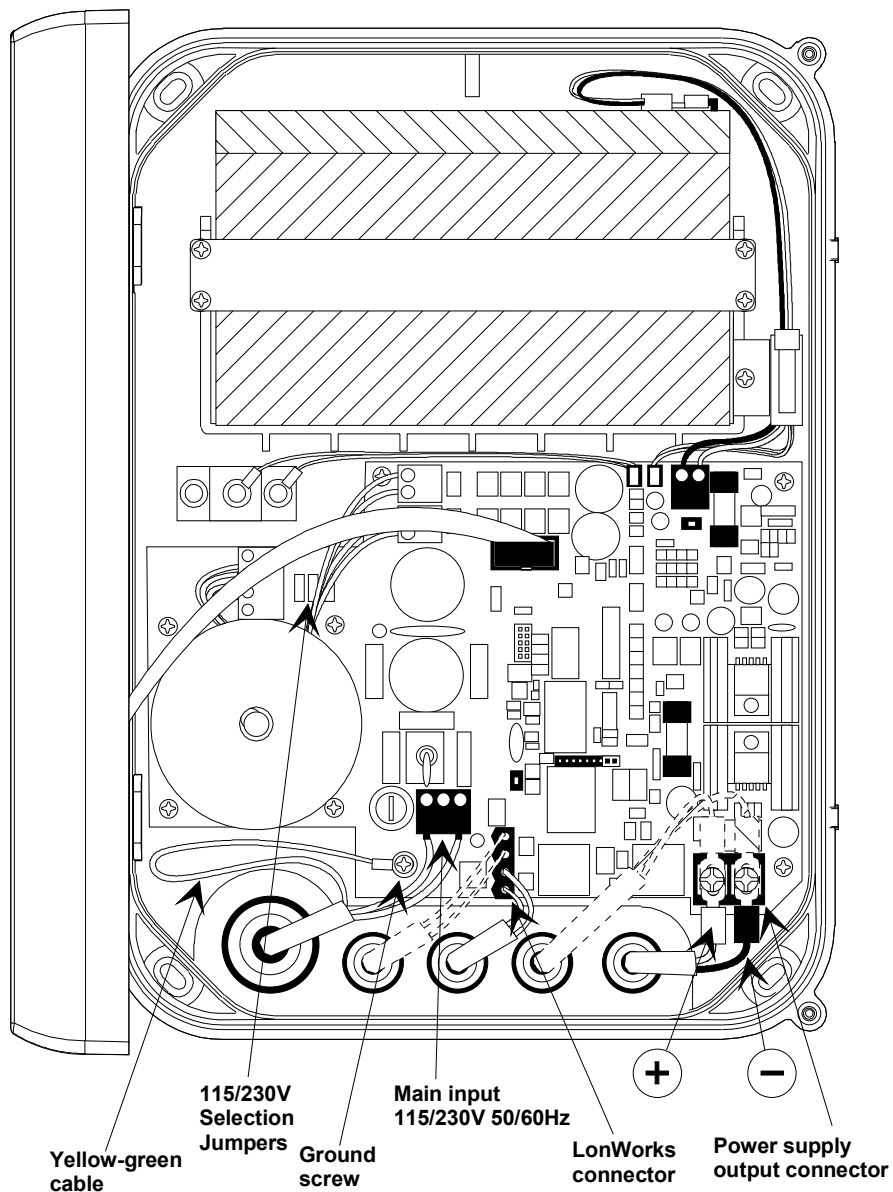
**230V 50Hz**

**115V 60Hz**

*Figure 5: Jumper Settings for 115V/230V Selection*

## NOTES

- The polarity of the LONWORKS® pair cable is not significant.
- The branch cables are shown as dashed lines.



*Figure 6: Connecting the Cables*



### **CAUTION:**

**Risk of explosion if the battery is replaced with an incorrect type.**

**Batteries should be recycled when possible.**

**Disposal of used batteries must be in accordance with local environmental regulations.**

## Part Details

Figure 7 provides a detailed representation of the electronic boards and shows the main connectors, fuses, and jumpers.

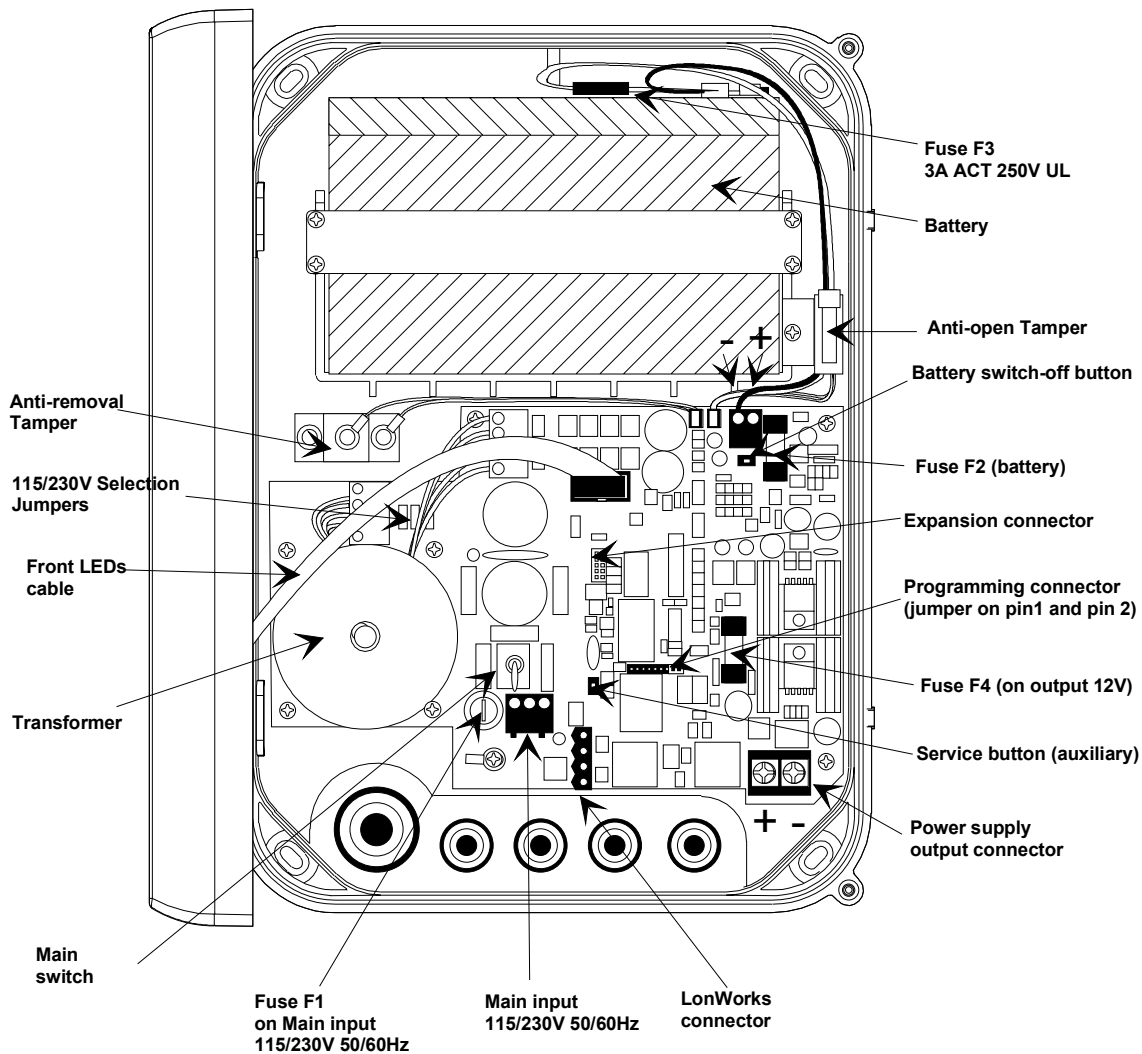


Figure 7: Part Details

## NOTES ON PREVIOUS VERSIONS

- 115V 60Hz input is available for version 1500074EA and higher
- Versions prior to 1500074EA require EMS filters (code 1520175AA) mounted on both LonWorks and 12V output cables
- Output polarity differs from early versions (1500074BA)

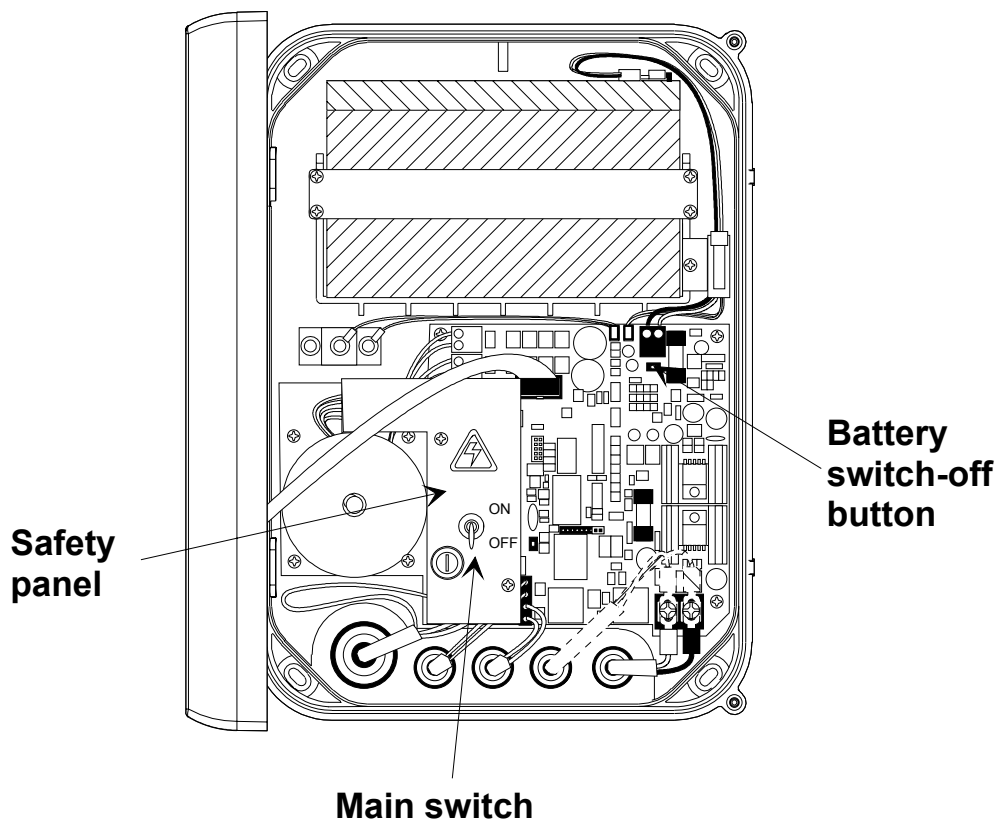
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## Turning on the Power Supply Unit

To turn on the power supply unit, follow these steps:

1. Set the power switch to «On», but do not plug in the battery cable of the J1 connector. The unit is now in operation.
2. Close the cover.
3. Wait 2 to 3 seconds. A red LED indicator light signifies that an output overload or short-circuit has occurred (or that the internal tamper has been left open): Check the cable arrangements and remove the cause of the problem.

A green LED indicator light signifies that the unit is functioning correctly.



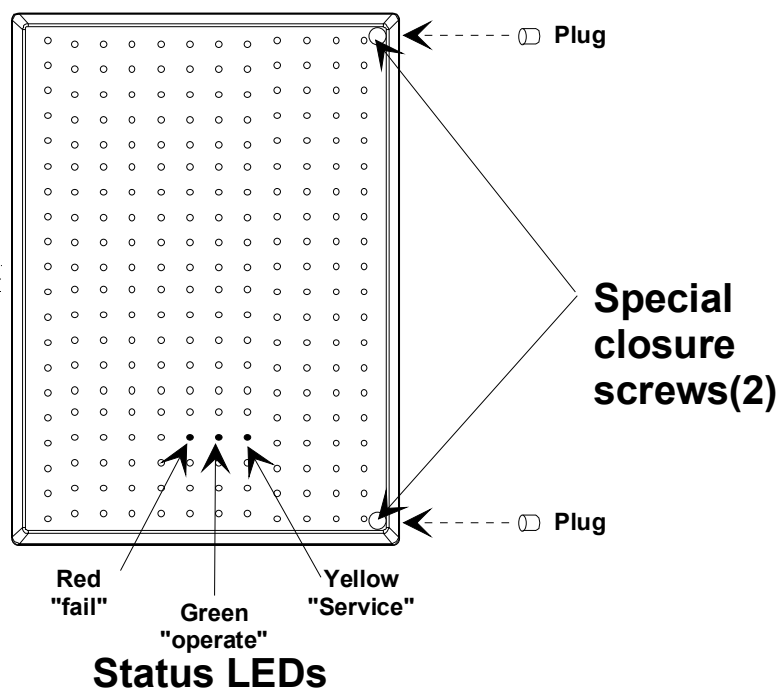
*Figure 8: View of Unit prior to Closure*

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## Closing the Power Supply Unit

To close the unit, follow these steps (see Figure 9):

1. Check that the fitting is correctly positioned and close the terminal by rotating its cover.
2. Use the two special lateral screws to secure the cover (requires a TORX anti-tamper TX10 screwdriver).
3. Insert plastic plugs to cover closure screws.



*Figure 9: Closing the Unit*

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## Switching off the Power Supply Unit (Maintenance)

To switch off the unit, follow these steps:

1. Set the power switch to «Off».
2. Press the battery exclusion button for about 2 seconds. The unit is now switched off.

# TECHNICAL SPECIFICATIONS

## TemaPower TP U01 (RTU-Q01 code 1500074xxU)

### 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, there 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 off and on, the user is encouraged to try to correct the interference by one or more of 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.

### Canadian Compliance Statement

This Class B Digital apparatus meets all the requirements of the Canadian Interference-Causing Equipment Regulations.  
Cet appareil numérique de la classe B respecte les exigences du Règlement sur le matériel brouilleur du Canada.

<b>Parameter</b>	<b>Value</b>
<b>Power supply</b> (jumpers set to 230V)	230V <sub>AC</sub> ±15% 50Hz 80 mA (nominal, at 10W) 200 mA max. (for fast battery recharge)
<b>Power supply</b> (jumpers set to 115V)	115V <sub>AC</sub> ±15% 60Hz 160 mA (nominal, at 10W) 400 mA max. (for fast battery recharge)
<b>Weight</b>	5.9 kg
<b>Size</b>	221x305x95 mm
<b>Protection level</b>	IP55
<b>Environmental temperature for correct operation</b>	0÷40°C
<b>Operational humidity</b>	0 ÷ 85% relative, without condensation



<b>Storage temperature</b>	-20°C ÷ 40°C
<b>Storage humidity</b>	0 ÷ 70% relative, without condensation
<b>LONWORKS<sup>®3</sup> connection</b>	Unshielded, <b>twisted-pair</b> cable in free topology (transceiver FTT10A, 78Kbps)
<b>Outputs</b>	Voltage 12.5V <sub>DC</sub> +15% -10% Current 0 ÷ =0.8A (nominal) 1A (max.)
<b>Battery recharge</b>	80% of capacity in 4 hours
<b>Battery autonomy</b>	4 hours with an 800mA load
<b>Safeguard</b>	<ul style="list-style-type: none"> <li>• Switch-off of battery when output current &gt;1.9A (automatically restores battery when current &lt;1.5A)</li> <li>• Switch-off of output on short-circuit (without burning fuses)</li> </ul>
<b>Regulations compliance</b>	 Directive EMC 89/336/EEC, 92/31/EEC, Directive Low Voltage 72/23/EEC, 93/68/EEC: EN60950, EN55024, EN55022, EN61000-3-2/3
	 <div style="border: 1px solid black; padding: 5px; width: fit-content;"> <p>This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) this device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.</p> </div>
	<div style="border: 1px solid black; padding: 5px; width: fit-content;">  <b>US LISTED</b> <b>UL60950</b> <b>E221152</b> Honeywell Model: RTU-Q01 Manufacturer: Meg Italia S.R.L. <div style="float: right; margin-left: 20px;"> Input: 115 or 230 Vac 60Hz or 50Hz 0.4 or 0.2A  Output: 12.5 V d.c. 0.8 A </div> </div>

<sup>3</sup> LONWORKS<sup>®</sup> is a registered trademark of Echelon Corporation

## Spare Parts

<b>Fuses</b>	<p>F1 : 200mA 250V delayed (if set to 230V)          F1 : 400mA 250V delayed (if set to 115V)          F2 : 2A 250V delayed          F3: 3A 250V delayed with terminals (soldered to the "+" pole of the battery cable)          F4 : 3.15A 125/250V delayed</p>
<b>Battery</b>	<p>12V 6.5 Ah (Dryfit A500 Sonnenschein)          code 1800994          Alternatively:          • 12V 7.2Ah FIAMM-GS type FG20721          code 1800086</p>

## Optional parts

<b>TORX TX10 screwdriver</b>	code 1500108AA
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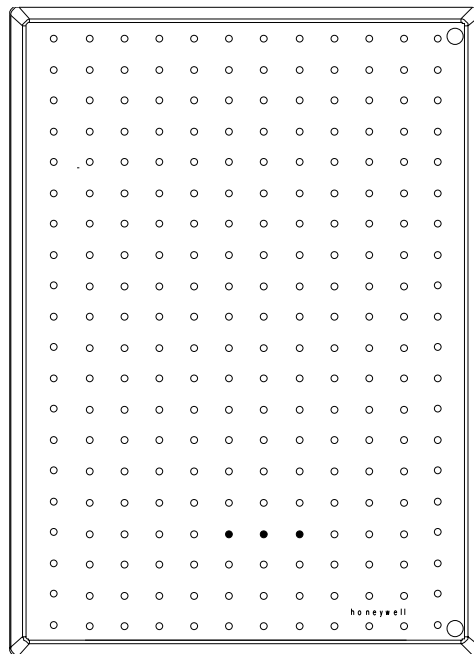


Figure 10: TemaPower TP U01

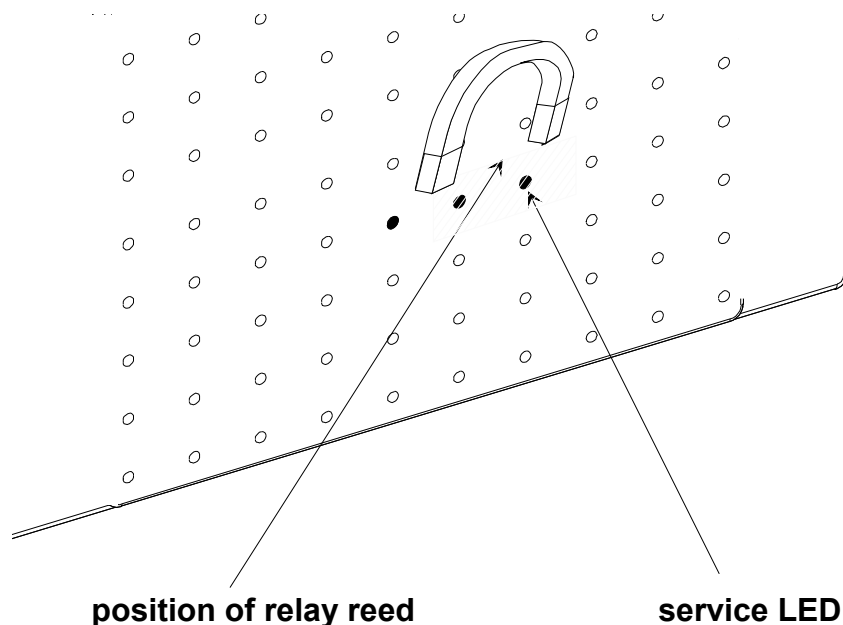
# ACTIVATION

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## Identification via the Service Pin

To identify the node, you can activate the service pin by means of a relay-reed located inside the unit (see Figure 11). This procedure consists of the following steps:

1. Position a small magnet as illustrated in Figure 11 to activate the service pin. This signal is linked to the yellow, central service LED, which lights up when the service pin is activated and continues to flash during the node configuration procedure.
2. Check that the service LED remains off after you have completed this operation.



*Figure 11: Using a Magnet to Activate the Service Pin*

## 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 <i>Office entrance area, first floor - staircase E</i>	
Description of TemaServer <i>Panel 2 entrance area, first floor - staircase E</i>	
 <b>RTU-Q01</b>	<div style="border: 1px solid black; padding: 5px;">           PROG.ID= 4896873498696586  <small>(2/5 INTERLEAVED - DECIMAL)</small>    <b>255000255000255000</b> </div>

*Table 3: Example of Completed Identification Form*