

Installation Guide

PCR Charging Rack

Contents

1 Introduction	1
2 Safety Instructions	2
3 Installation	3
3.1 Charging Rack Master PCR-M and Extension PCR-E	4
3.2 Examples on how to Assemble the Modules	5
3.3 Mounting the Power Supply Module	6
3.4 Mounting the Charging Rack Module	6
3.5 Mounting Dimensions	7
3.6 Removing Covers	8
3.6.1 Power Supply Module	8
3.6.2 Charging Rack Module	9
3.6.3 Mounting Modules Together	10
4 Connection of Power Supply CR24	12
4.1 Connection of Mains Power Supply Cable (AC)	12
4.2 Wiring Run	15
4.3 Connection of Supply Voltage Connector	17
5 Maintenance Information	18
5.1 Upgrading the Software	18
6 Connection of Charging Rack Master PCR-M and Extension PCR-E	19
7 Installation Test	20
7.1 LED status on the PCR Charging Rack	20
8 Board Description, Master PCR-M and Extension PCR-E	21

1 Introduction

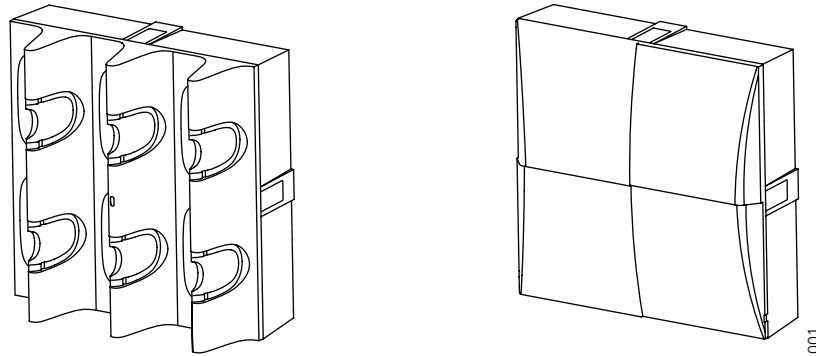


Figure 1. PCR Charging Rack and Power Supply CR24.

The PCR Charging Rack is used in the On Site Paging System and in the Personal Security System. It charges the a51 Alarm Transmitter.

The PCR Charging Rack is a modular system with three module parts; the Charging Rack Master PCR-M module, the Charging Rack Extension PCR-E module and the Power Supply CR24 module. Each Charging Rack (both Master PCR-M and Extension PCR-E) charges six portables.

IMPORTANT: Power Supply CR24 is the only power supply that can be used together with the PCR Charging Rack.

	PCR Charging Rack	Power Supply CR24
Supply voltage:	5 V	5V 12A max
Current consumption (normal operation)	100 mA (Master PCR-M) 35 mA (Extension PCR-E)	
Max current consumption:	4A (fuse)	4 A per PCR
Max output current:		12A

Note: A label of the power rating, rated voltage and rated current is attached on the metal shield cover of the power supply.

2 Safety Instructions

For safe and efficient operation, observe the guidelines given in this manual and all necessary safety precautions. Follow the operating instructions and adhere to all warnings and safety precautions located on the product and this Installation Guide.

The Power Supply module connects to 100 - 250 V AC. Therefore extra caution should be taken during operation.

IMPORTANT: Power Supply CR24 is the only power supply that can be used together with the PCR Charging Rack.

- For safety the covers must always be mounted during operation.
- The voltage safety cover in the Power Supply module has to be mounted on top of the voltage connector to prevent hazardous situations like electric shock.
- Ensure that the Power Supply is grounded after installation by measuring between the power supplies metal shield cover and an external ground. The Power Supply unit can otherwise be live.
- When working with the units the mains power supply cable must always be disconnected. Note the following:
 - for PERMANENTLY CONNECTED EQUIPMENT, a readily accessible disconnect device shall be incorporated in the building installation wiring
 - for PLUGGABLE EQUIPMENT, the socket-outlet shall be installed near the equipment and shall be easily accessible

The disconnect device shall disconnect both poles simultaneously.

- For continued protection against risk of fire only replace the fuse in the Charging Rack with the same type and rating of fuse (4A ATAB Art. No. 210265).
- Every installation must at least consist of one Power Supply CR24 and one Charging Rack Master PCR-M.

If the ambient temperature is 25 °C or lower the Power Supply CR24 can supply up to *three* Charging Racks (Master PCR-M and Extension PCR-E).

If the ambient temperature is higher than 25 °C the Power Supply CR24 can supply up to *two* Charging Racks (Master PCR-M and Extension PCR-E).

One Master PCR-M can support up to 20 Extensions PCR-E.

- Suomi: Laite on liitettävä suojamaadoituskoskettimilla varustettuun pistorasiaan.
- Norge: Apparatet må tilkoples jordet stikkontakt.
- Sverige: Apparatens skall anslutas till jordat uttag.

Information to user

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.

Modifications

Changes or modifications to the equipment not expressly approved by the party responsible for compliance could void the user's authority to operate the equipment.

3 Installation

- The units should be placed in a dry environment with a temperature range of 0 to +40° C.
- Avoid mounting the Charging Rack where the coverage is not sufficient. This can reduce the messaging capacity.
- The PCR Charging Rack module must be mounted according to the label. See [figure 6](#) on page 7.
- The units should be mounted on concrete or plaster walls only.

Delivery includes:

One Inlet accessory kit including;

- Cable supports and screws
- Rectangular assembly covers
- Clips (only used for Power Supply module)

A modular cable is included in the delivery of Extension PCR-E for connection to or from another Extension PCR-E or Master PCR-M.

Required tools and material:

- Three-wired cable for the mains power with diameter 4-8.5 mm. Make sure that the used cable is grounded and approved for the current and voltage in question.
- Screwdrivers
- Cutting pliers
- Multimeter
- Screws and wall plugs for wall mounting. Make sure the screws and wall plugs are correct for the type of wall used. See example below.

Wall material	Wall plug	Screw diameter
Single plasterboard	Thorsman TP1	3.5-5 mm
Double plasterboard	Thorsman TP2	3.5-5 mm
Concrete	Thorsman TP2	3.5-5 mm

3.1 Charging Rack Master PCR-M and Extension PCR-E

Every installation must at least consist of one Power Supply CR24 and one Charging Rack Master PCR-M. If the ambient temperature is 25 degrees C or lower the Power Supply CR24 can supply up to *three* Charging Racks (Master PCR-M and Extension PCR-E). If the ambient temperature is higher than 25 degrees C the Power Supply CR24 can supply up to *two* Charging Racks (Master PCR-M and Extension PCR-E). One Master PCR-M can support up to 20 Extensions PCR-E.

The Charging Racks are connected (see [6 Connection of Charging Rack Master PCR-M and Extension PCR-E](#) on page 19) with the modular cable (delivered with the Extension PCR-E).

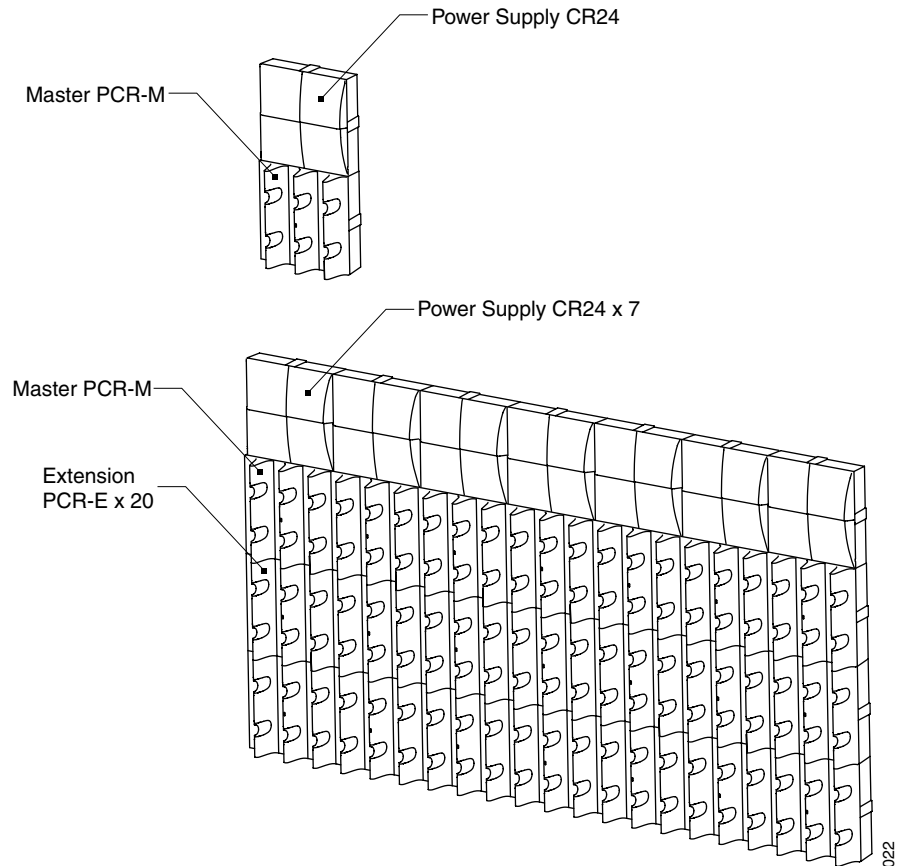
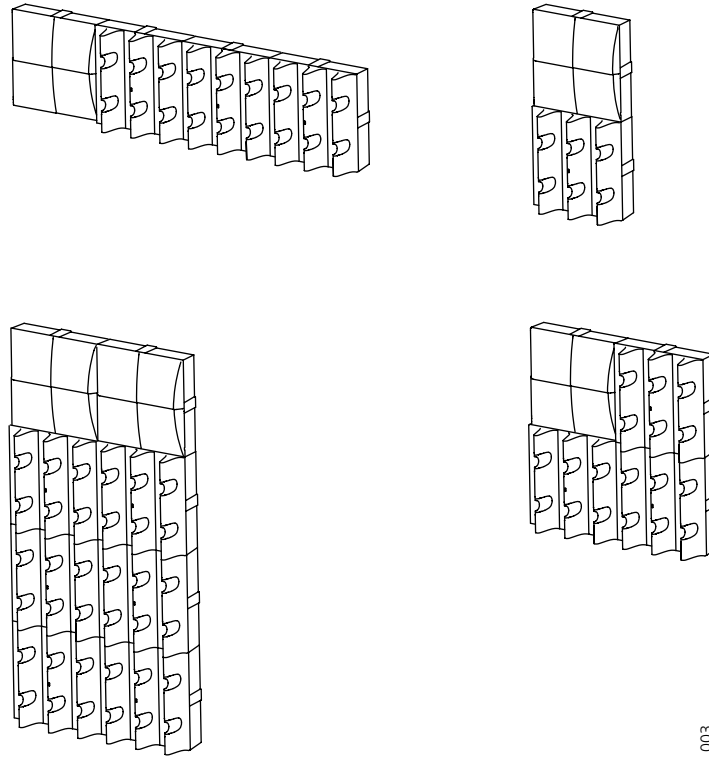


Figure 2. Example of minimum and maximum (if the ambient temperature is 25 degrees C or lower) configuration with one Master PCR-M.

3.2 Examples on how to Assemble the Modules



003

Figure 3. Four different examples on how to assemble the PCR Charging Rack.

The Power Supply module can also be placed apart from the Charging Rack modules.

Tip: When you are planning the location of the modules, start to mount them in a height that makes it easy to reach the portables.

3.3 Mounting the Power Supply Module

IMPORTANT: The Power Supply module must be mounted horizontally and with the clips down.

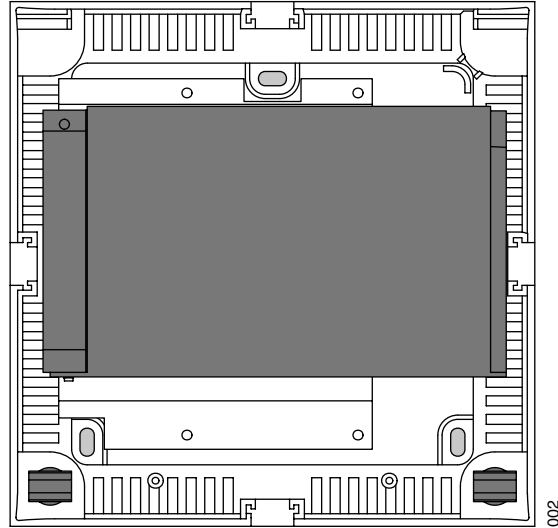


Figure 4. The Power Supply module must be mounted horizontally.

3.4 Mounting the Charging Rack Module

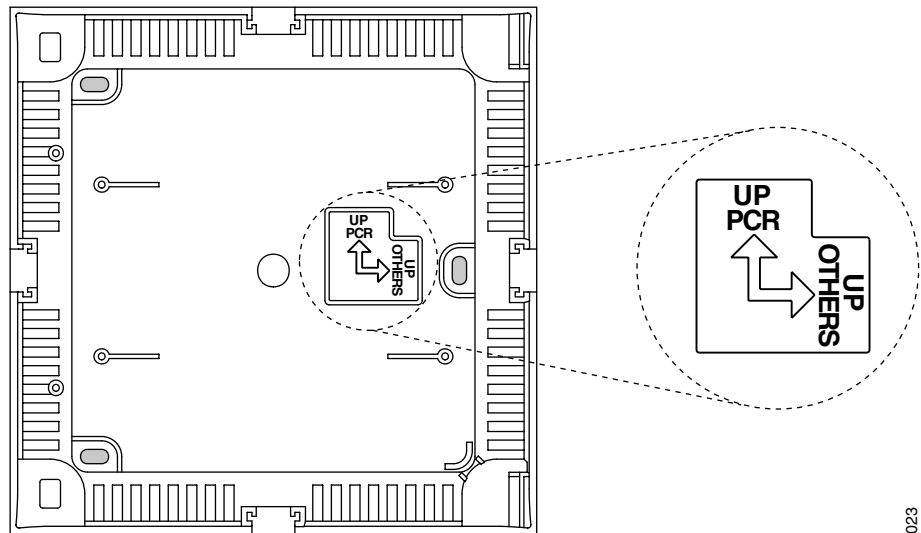


Figure 5. The Charging Rack modules must be mounted with the arrow marked "UP PCR" upwards.

3.5 Mounting Dimensions

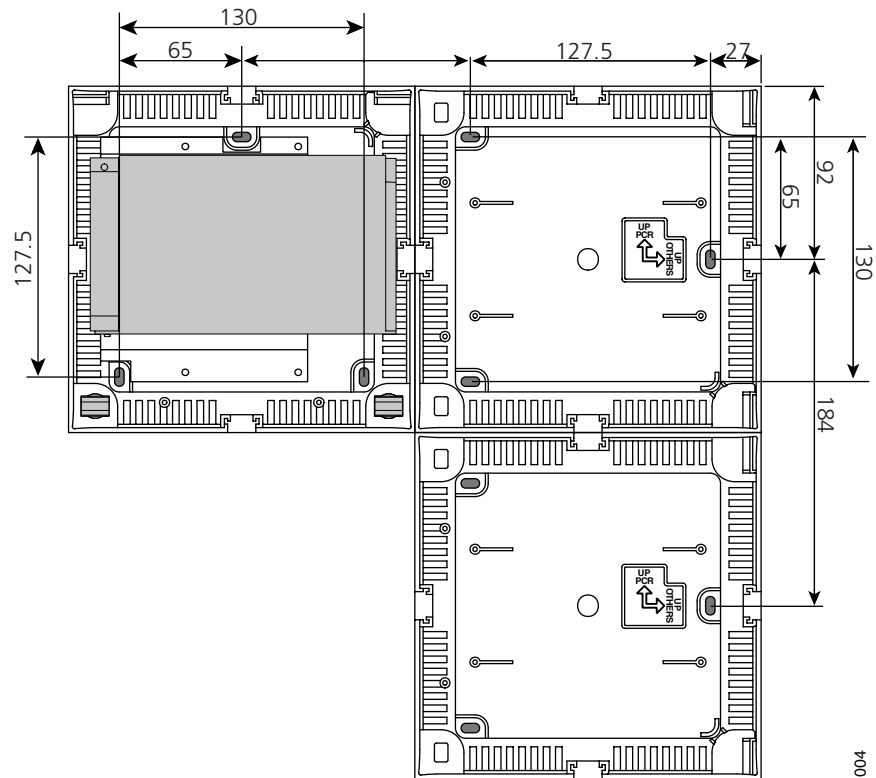


Figure 6. Mounting dimensions in mm.

For wall fitting, preparation can be done in two ways:

- Measure and mark out the drill holes by using the dimensions in [figure 6](#). Drill and fasten the modules on the wall with three screws.

or

- Remove the covers, see [3.6 Removing Covers](#) on page 8 and mount together some of the modules, see [3.6.3 Mounting Modules Together](#) on page 10. Hold the mounted modules up against the wall and mark the location of the drill holes. Drill and fasten the modules on the wall with three screws.

Note: The placing of the holes in the Power Supply module differ from the holes in the Charging Rack module.

3.6 Removing Covers

3.6.1 Power Supply Module

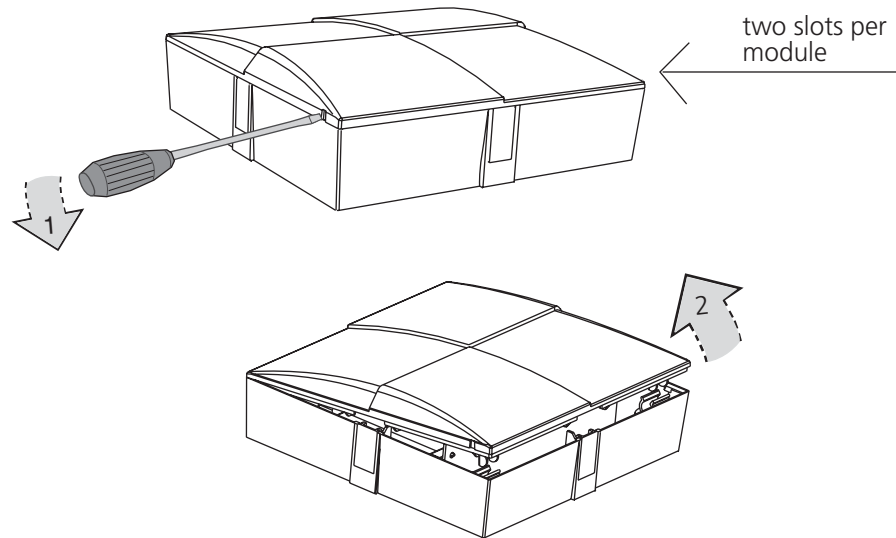


Figure 7. Removing the cover from the Power Supply module.

- 1 Put a screwdriver onto the slots and slightly bend the cover upwards (1).
- 2 Lift up the cover in the direction of the arrow (2).

005

3.6.2 Charging Rack Module

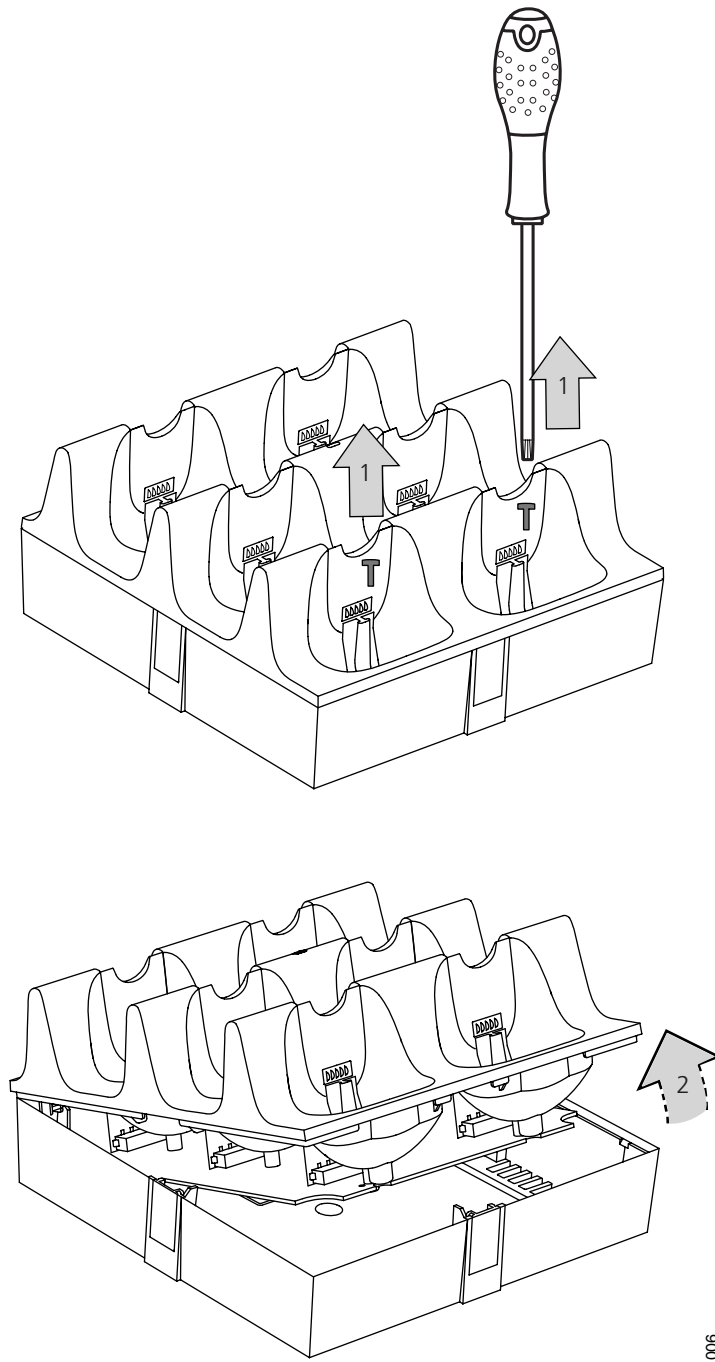
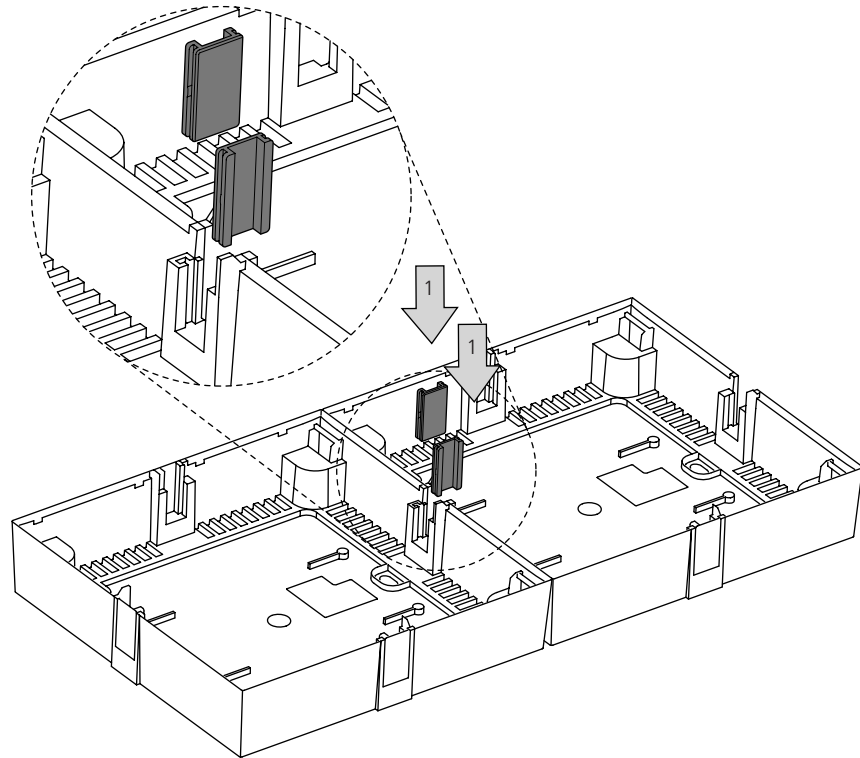


Figure 8. Removing the cover from the Charging Rack module

- 1 Unscrew the two screws (1).
- 2 Lift up the front in the direction of the arrow (2).

3.6.3 Mounting Modules Together



007

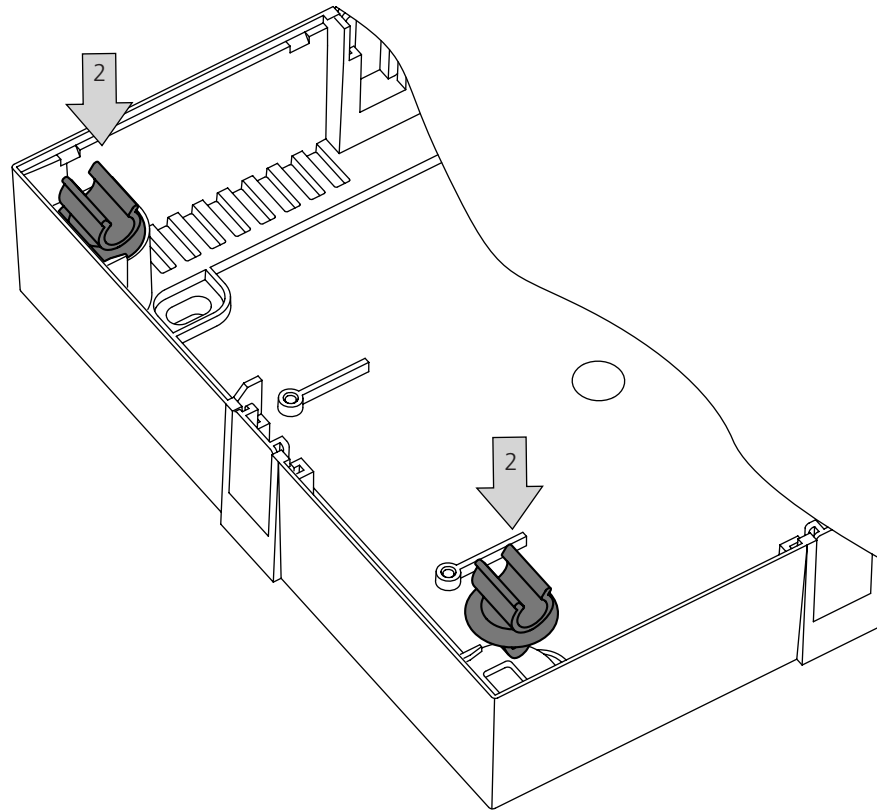
Figure 9. Mounting modules together.

- 1 Fasten the two adjacent modules together with two rectangular assembly covers, (which are provided in the parts bag). Place two covers in the adjoining slot (1).

Note: The Charging Rack modules must be mounted with the marking text, "UP PCR", upwards, see [figure 5](#) on page 6. The Power Supply module must be mounted horizontally and with the clips down, see [figure 4](#) on page 6.

- 2 Fasten each module on the wall with three screws, see [figure 6](#) on page 7.

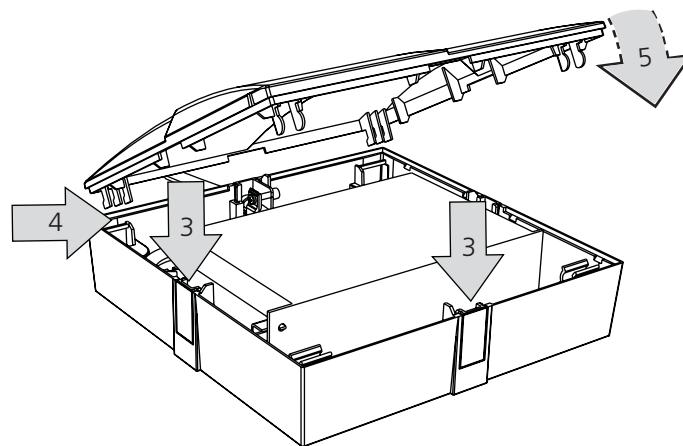
- 3 Mount two clips (which are provided in the parts bag) in the Power Supply module.
(2).



008

Figure 10. Mounting of clips. Only in the Power Supply module.

- 4 Mount rectangular covers (which are provided in the parts bag) at the openings where there are no adjacent modules (3), see [figure 11](#) below.
- 5 Fasten the cover's angled hooks on the holders (4).
- 6 Snap on the Power Supply module cover (5).
- 7 Fasten the screws in the Charging Rack module cover.



009

Figure 11. Power Supply module, mounting of rectangular covers and replacing the covers.

4 Connection of Power Supply CR24

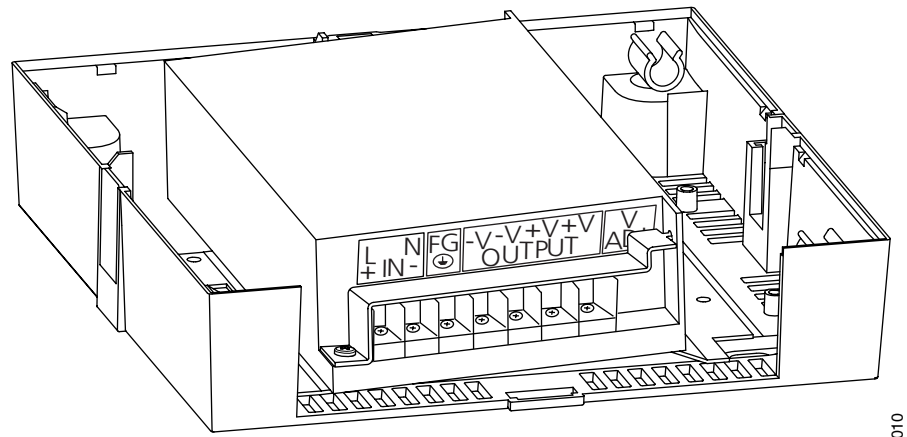


Figure 12. Power Supply module.

IMPORTANT: The Power Supply module connects to 100 - 250 V AC. When working with the units the mains power supply cable must always be disconnected. For safety the covers must always be mounted after an installation. The voltage safety cover has to be mounted on top of the voltage connector in the Power Supply module to prevent hazardous situations, like electric shock, see [figure 16](#) on page 14.

4.1 Connection of Mains Power Supply Cable (AC)

- 1 Unscrew the voltage safety cover.

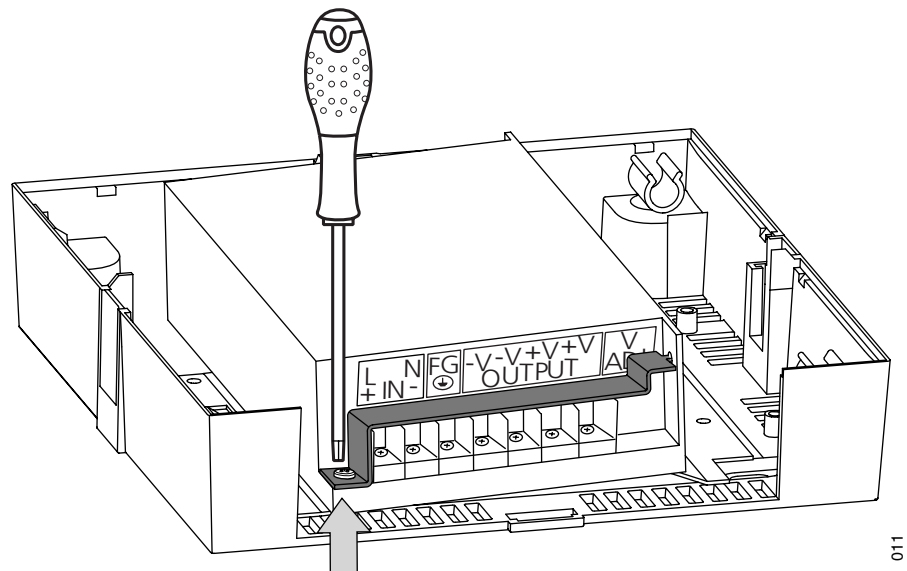


Figure 13. Removing the voltage safety cover.

- 2 Run the mains power supply cable through the cable support holder (which is provided in the parts bag).

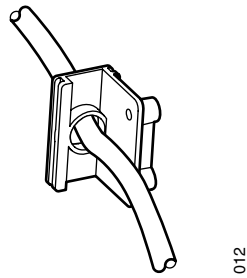


Figure 14. Mains power supply cable with cable support holder.

- 3 Cut and strip the mains power supply cables.
- 4 Connect the mains power supply cable onto the indicated positions on the connector, see [figure 15](#).

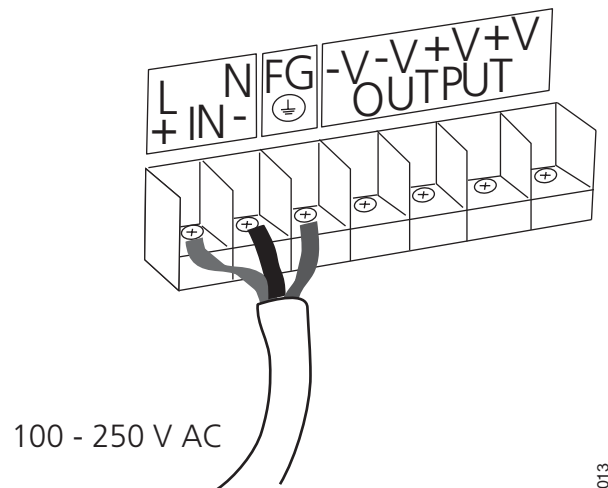


Figure 15. The mains power supply connection.

- 5 Mount the voltage safety cover on its position (1), fasten it with one screw (2), see figure 16.

IMPORTANT: To prevent hazardous situations like electric shock, the voltage safety cover must always be mounted before the power is switched on.

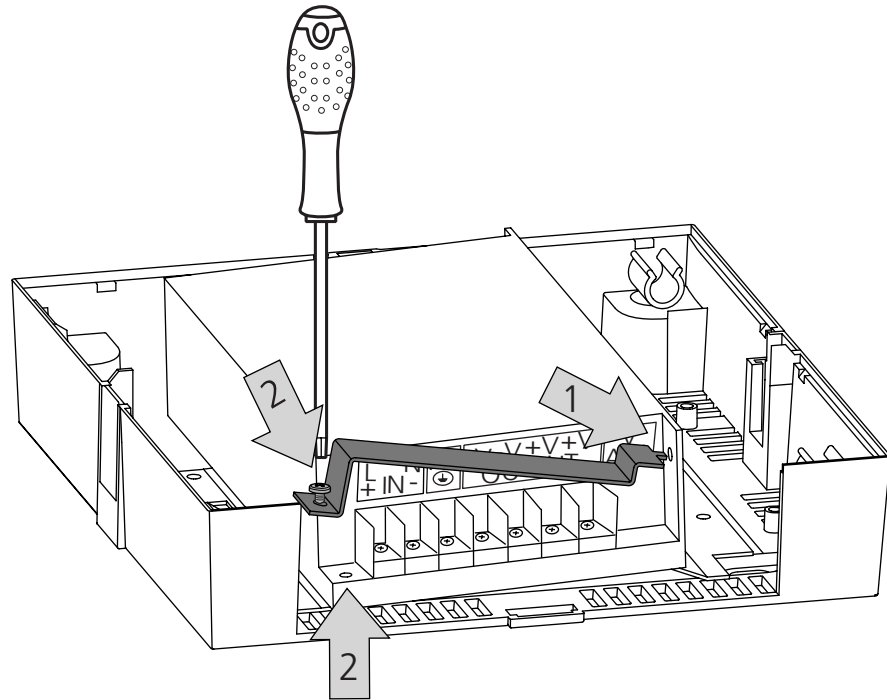


Figure 16. Mounting of the voltage safety cover.

4.2 Wiring Run

Mains Power Supply Cable (AC)

Note: To avoid cable break, make sure that the cable is not tight around the sharp edge of the power supply.

- 1 Secure the mains power supply cable with two screws (1), which are provided in the parts bag.
- 2 Mount the cable support holder at the opening on the Power Supply module, closest to where the wall socket is placed (2).

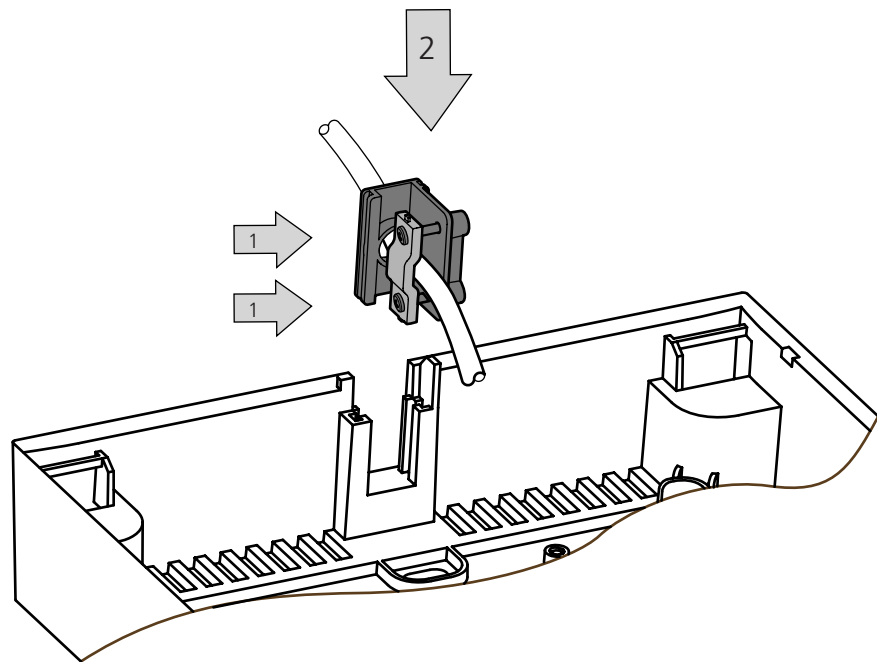
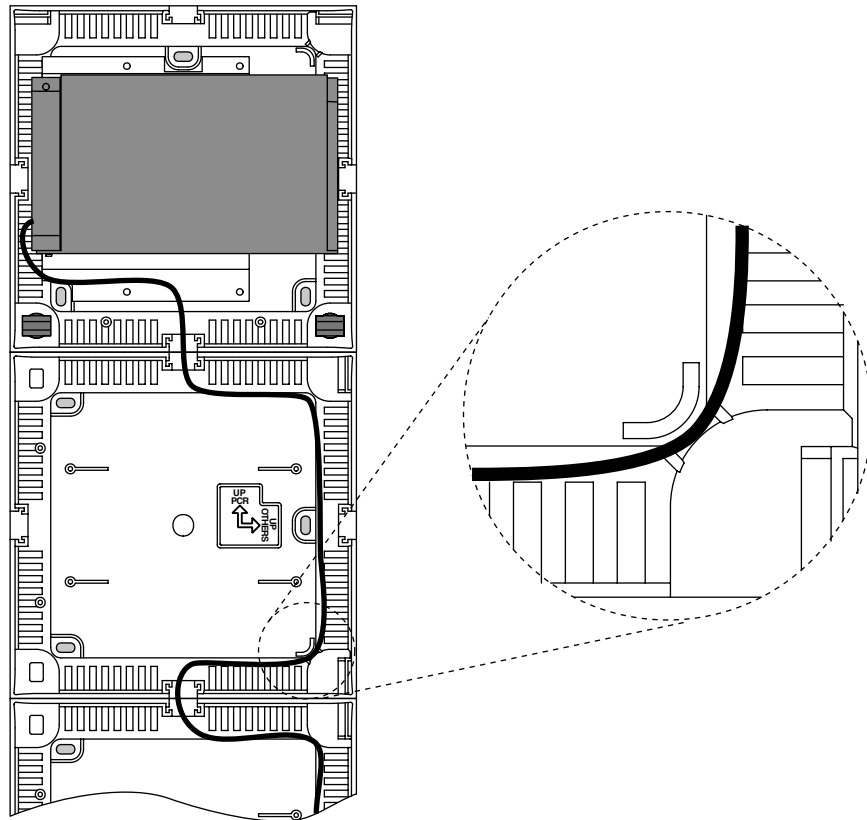


Figure 17. Securing the mains power supply cable (1) and mounting of the cable support holder (2).

Supply Voltage Cable (DC)

The +5 V DC supply voltage cable is pre-assembled.

- 1 If possible run the +5 V DC supply voltage cable around the cable support, to avoid cable break. See [figure 18](#).



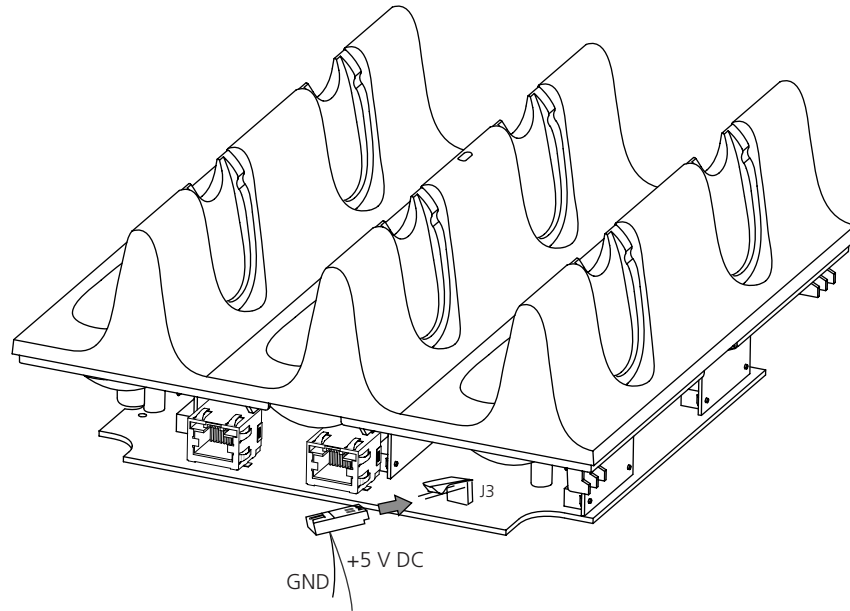
017

Figure 18. +5 V DC supply voltage cable support.

4.3 Connection of Supply Voltage Connector

IMPORTANT: Power Supply CR24 is the only power supply that can be used together with PCR Charging Rack.

Connect the +5 V DC supply voltage connector to J3.



018

Figure 19. Position of connector J3.

5 Maintenance Information

5.1 Upgrading the Software

Note: Only Mater PCR-M is possible to upgrade.

- 1 Attach a serial cable (Interface Cable U982 & PCR, Art.No. 660142) between connector J403 on the Master PCR-M, see [figure 20](#) below, and a PC.

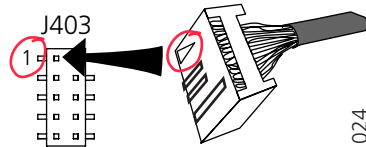


Figure 20. Attach the arrow marking to pin 1 on J403.

- 2 Switch to software download mode by setting "Section 1" on SW400 to ON, see [Switch SW400 Configuration](#) on page 22.
- 3 Perform a reset by pressing the reset button SW300, see [8 Board Description, Master PCR-M and Extension PCR-E](#) on page 21. Make sure that the Function Indicator indicates Software Download Mode, see [figure 5](#) on page 6.
- 4 Open the software "Ascom Loader", see [figure 21](#) below.

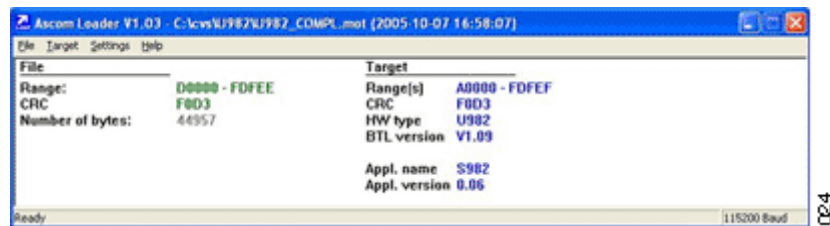


Figure 21. Ascom Loader main view.

- 5 Check the communication settings by: Settings > Communication:
 - Baud rate: 115200 (normally)
 - Com port: Check active Com port settings
- 6 Open the upgrade file by: File > Open. Then select required file to download.
- 7 Upgrade the Master PCR-M by selecting: Target > Program. The upgrading starts. The upgrade is completed when "Job succeeded!" appears. Press OK to confirm.

6 Connection of Charging Rack Master PCR-M and Extension PCR-E

The modular cable is used for connection to or from another Extension PCR-E or Master PCR-M.

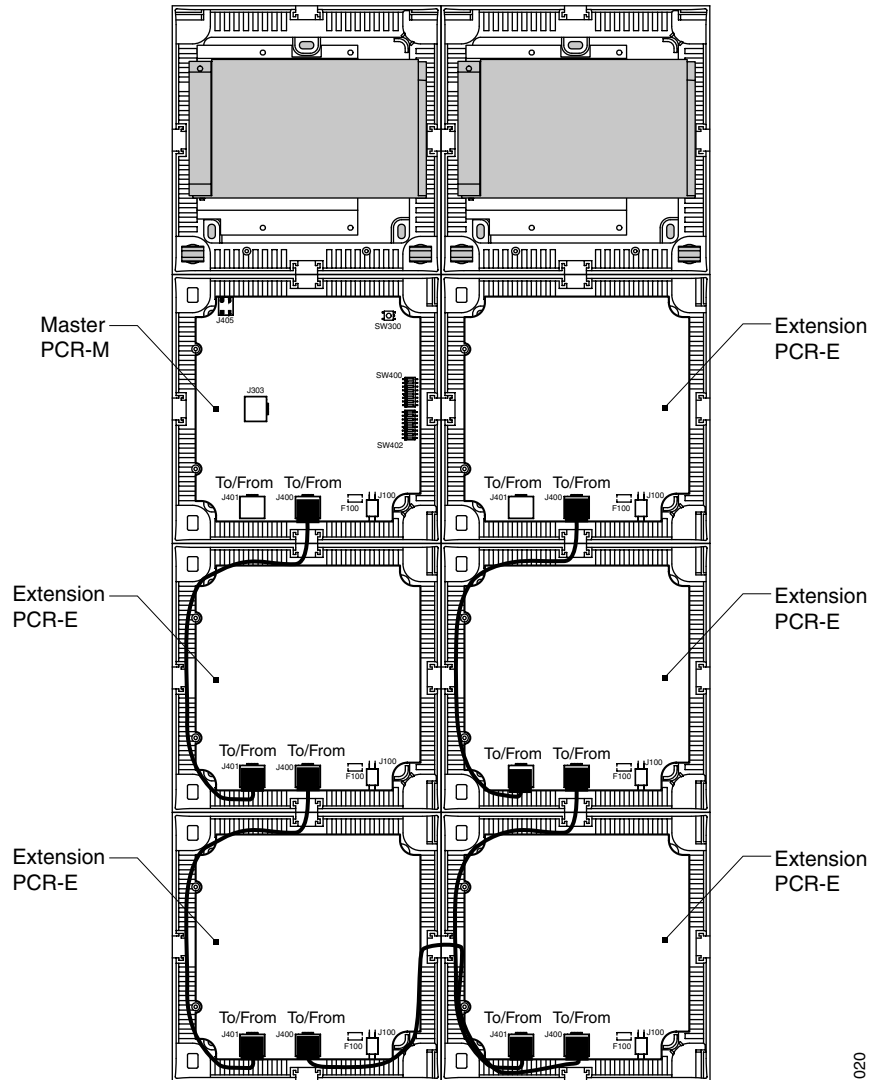


Figure 22. Connection of the Extension PCR-E.

7 Installation Test

IMPORTANT: To ensure that the Power Supply unit is grounded after installation, measure between the power supplies metal shield cover and an external ground. The Power Supply unit can otherwise be live.

- 1 Connect the mains power supply cable to the wall socket.
- 2 Check that each charging slot starts charging by putting a portable in each charging slot. The beep only indicates that the portable is placed in the PCR Charging Rack. The portable is charged when the LED on the portable is flashing orange.

7.1 LED status on the PCR Charging Rack

Green steady:	Up and running
Green flashing:	Starting up
Red:	Reset/watchdog
Orange flashing:	A-bus is not connected

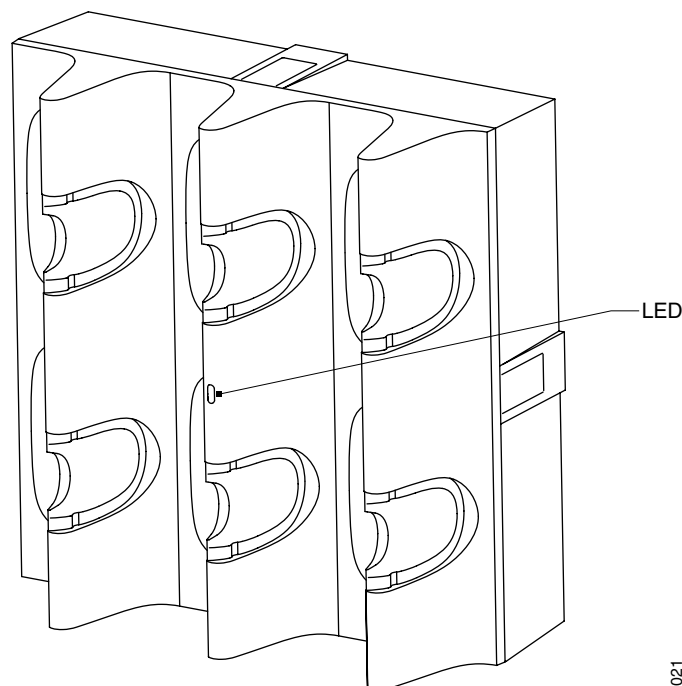


Figure 23. The position of the LED on the PCR Charging Rack.

8 Board Description, Master PCR-M and Extension PCR-E

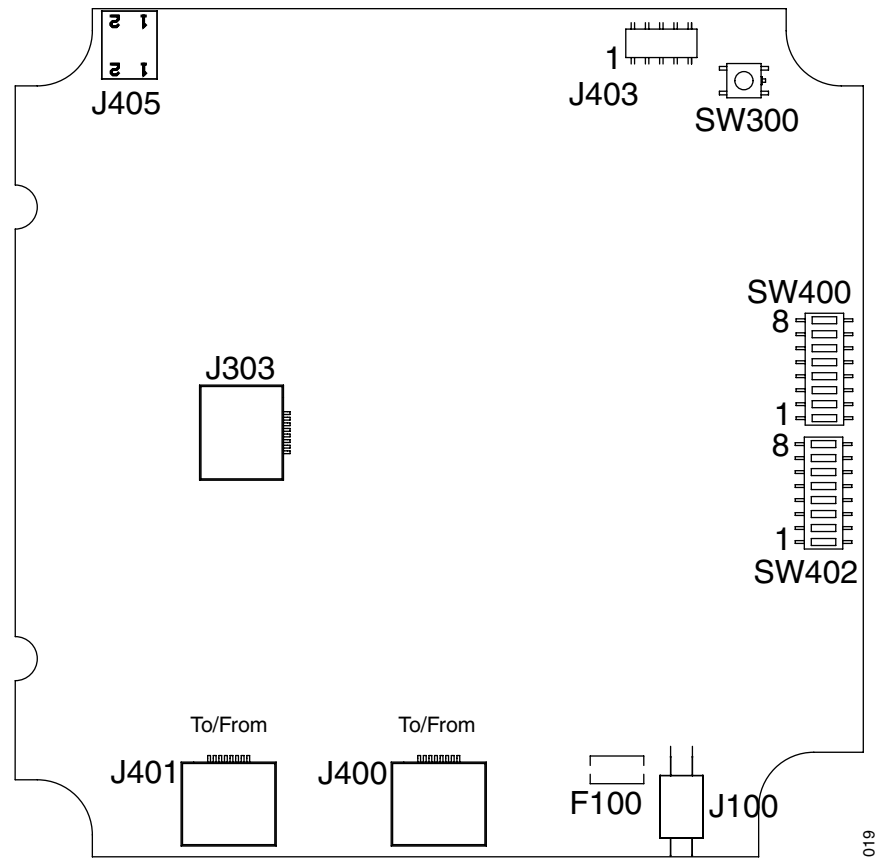


Figure 24. PCR Charging Rack circuit board.

Connectors

J403	For connection to PC for software upgrade.
J405	A-bus (only Master PCR-M)
SW300	Reset button (only Master PCR-M)
SW402	Address module/A-bus (only Master PCR-M)
SW400	Configuration (only Master PCR-M)
J100	Power supply
J303	Ethernet
J400/J401	Modular connector for connection to or from another Extension PCR-E or Master PCR-M.

Fuse

F100	4A fuse for protection against risk of fire.
------	--

Switch SW400 Configuration

- Section 1: Normally set to OFF. Set to ON to enter software download mode.
- Section 2: ON=A-bus, OFF=Ethernet
- Section 3: Debug messages
- Section 4: Not used, must be set to OFF
- Section 5: Not used, must be set to OFF
- Section 6: Not used, must be set to OFF
- Section 7: Not used, must be set to OFF
- Section 8: Not used, must be set to OFF

Switch SW402 Address module/A-bus

Select a proper address by setting the address selector switch SW402 hexadecimally (see System Installation, On Site Paging System, TD 90227GB and System installation, Personal Security System, TD 90678GB, under section Addressing).
When connecting the A-bus to the PCR Charging Rack the address must not be 00 nor the same as any other unit address on the same data bus in the installation.

	Date	Description
A	2005-12-12	First released version
B	2006-09-07	Update with safety instructions and software upgrade
C	2007-03-15	Update with FCC compliance