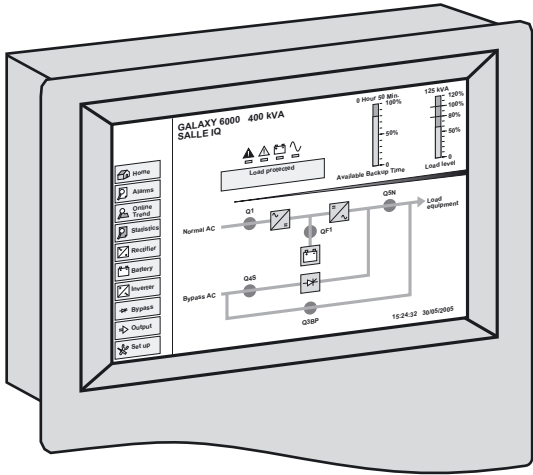


Remote vision



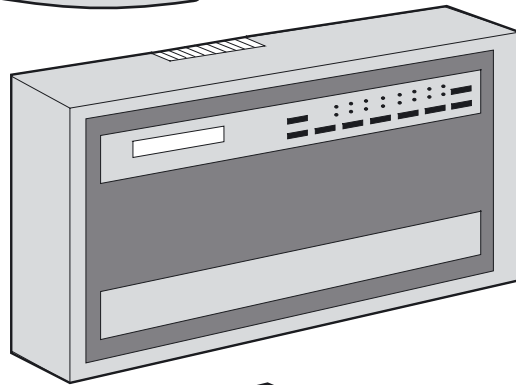
MGE™ Galaxy™ 6000

50, 60 Hz
250 - 600 kVA

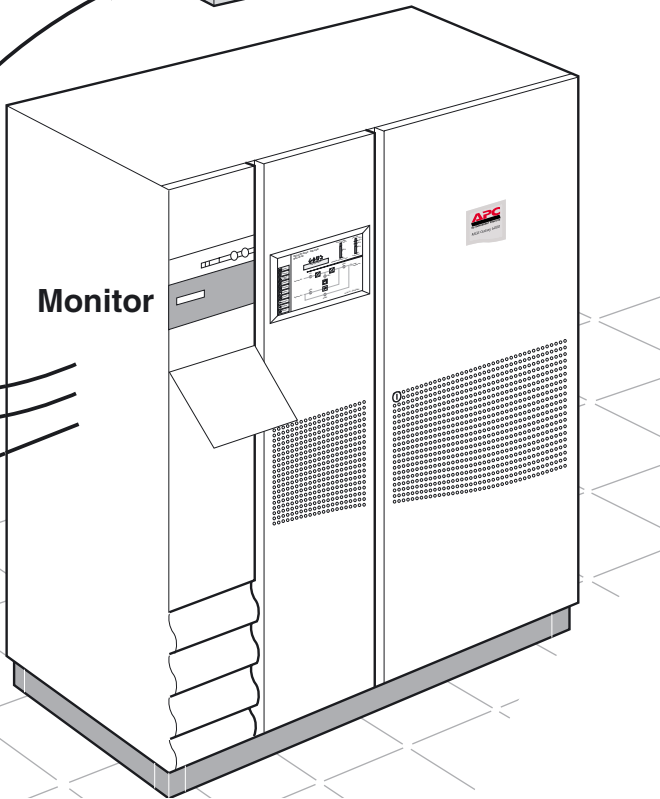
Communication options

Connection manual

Tele Monitor



Monitor



GTC link

APC®

by Schneider Electric

Introduction	4
Connecting a "GTC link"	5
"GTC link" option	5
"RAUZ 1" and "RAUZ 2" boards connectors.....	5
Cable characteristics	7
Connecting a "Tele Monitor"	8
"Tele Monitor" option	8
Opening the enclosure.....	8
Mounting the enclosure	9
"Tele Monitor" connections	9
Network connections.....	10
Connecting a "Remote vision"	11
"Remote vision" option.....	11
Mounting the enclosure	12
"Remote vision" connections.....	12
Network connections.....	13
Appendix	14
Unitary rectifier-inverter cubicle: 160 to 400 kVA	14
Unitary rectifier-inverter cubicle: 500 kVA.....	15
Unitary inverter right hand cubicle: 600 to 800 kVA	16
Static switch cubicle: 500/800 kVA	17
Static switch cubicle: 1200 kVA	18
Static switch left hand cubicle: 2000 kVA.....	19

All MGE™ Galaxy™ 6000 products are protected by patents. They implement original APC by Schneider Electric technology not available to other manufacturers.

To take into account evolving standards and technology, equipment may be modified without notice. Indications concerning technical characteristics and dimensions are not binding unless confirmed by APC by Schneider Electric.

This document may be copied only with the written consent of APC by Schneider Electric. Authorized copies must be marked "Connection of APC by Schneider Electric MGE™ Galaxy™ 6000 communication options n° 6739388EN".

Introduction

With the "GTC link", "Vision", "Remote vision" and "Tele Monitor" communication options the user can receive detailed information on the operating status of his equipment either locally ("Vision" option) or remotely ("Remote vision", "Tele Monitor" or customer specific "GTC link"). The "GTC link" option can even transmit this information over long distances using the switched telephone network via a modem. Both options require that the communication boards be installed in the **MGE™ Galaxy™ 6000** cubicles.

The installation and connection of the boards in the cubicle will be performed by the after-sales service. The options can only be put into operation by the after-sales service, since the cubicles in the system , must be reconfigured via a computer.

This manual only describes installation and connection operations external to the **MGE™ Galaxy™ 6000** cubicles that should be performed before the after-sales service arrives.

The connections to be made concern the communication network between "RAUZ 1" and "RAUZ 2" boards in the **MGE™ Galaxy™ 6000** cubicles and the "Remote vision", "Tele Monitor" or building and energy management system (BEM) computer (for the "GTC Link").

Since the "RAUZ 1" and "RAUZ 2" boards are installed by the after-sales service, they may not be present in the units when the network cables are installed (unless a communication option has been installed earlier). To prepare the cabling, refer to the location of the boards and the routing of the network cables as shown in the appendix of this manual.

Connecting a "GTC link"

"GTC link" option

The "GTC link" communication system is made up of hardware and software for transmitting the operating status of the **MGE™ Galaxy™ 6000 UPS** cubicles to the customer's building and

energy management (BEM) computer. It can also be used for remote "On/Off" and "Self-test" controls. Transmission can be over a telephone network, via a modem.

The following communication standards

are available:

- ▶ EIA RS 485 (2 or 4 wire);
- ▶ EIA RS232C, simplified (CCITT V24-V28);
- ▶ EIA RS232C, complete (CCITT V24-V28).

"RAUZ 1" board connectors

The "RAUZ 1" board offers the customer a choice of two connectors:

- ▶ XR11 for a standard EIA RS485 (2 or 4 wire). The male part of the connector is supplied with the "RAUZ 1" board and consists of a screw type terminal block. The ends of the wires must be appropriately prepared and marked;
- ▶ XM097 for a standard (simplified or complete) EIA RS232C (CCITT V24-V28). The male 25 pin Canon type connector (not supplied) resides on the "RAUZ 1" board. A female connector must therefore be placed at the cable's end.

"RAUZ 2" board connectors (option)

The "RAUZ" board offers the customer a choice of three connectors:

- ▶ XR11 for a standard EIA RS485 (2 or 4 wire). The male part of the connector is supplied with the "RAUZ 2" board and consists of a screw type terminal block. The ends of the wires must be appropriately prepared and marked;
- ▶ XM096 and XM097 for a standard (simplified or complete) EIA RS232C (CCITT V24-V28). The male 25 pin Canon type connector (not supplied) resides on the "RAUZ 2" board. Female connectors must therefore be placed at the cables' end.

Communication connector details for the "RAUZ 1" or "RAUZ 2" board

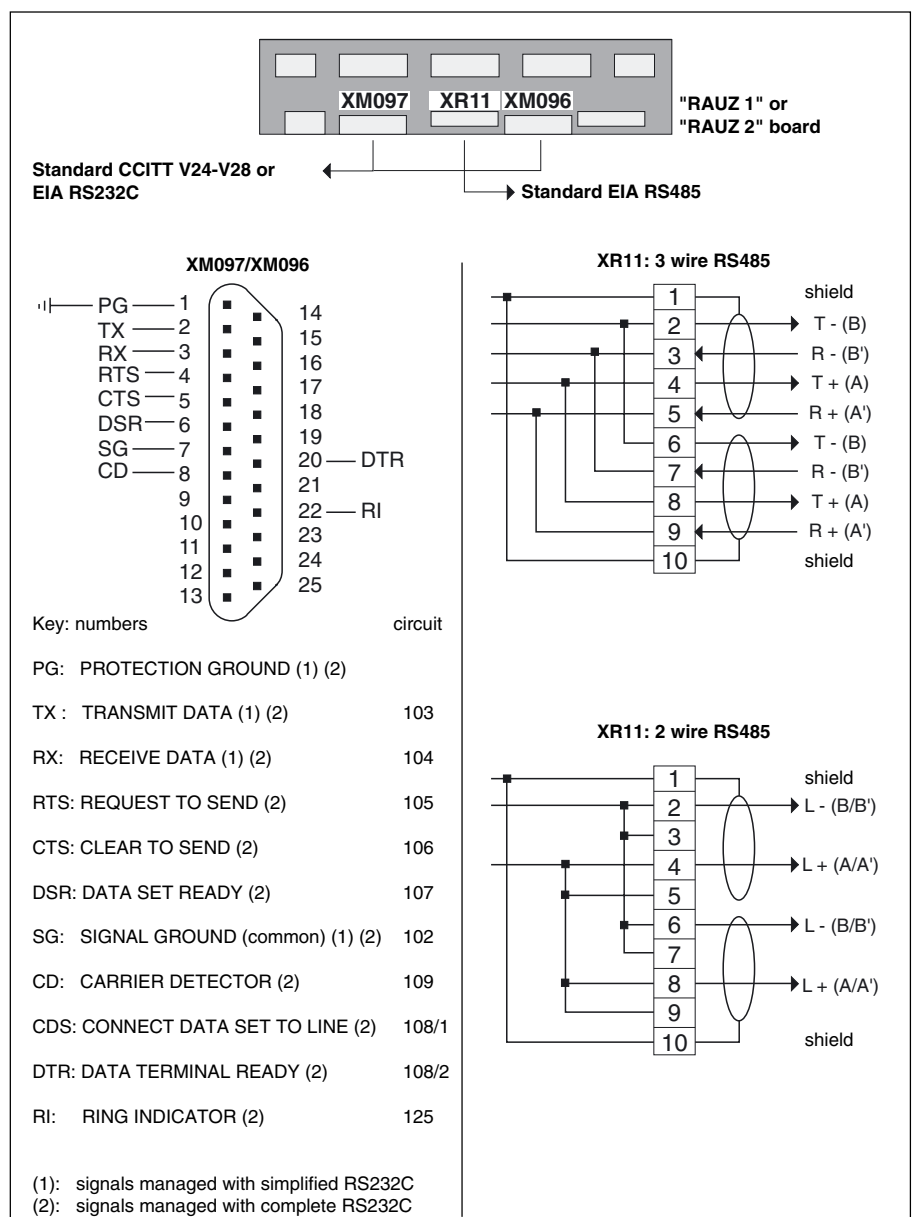


Fig. 1

Note: connector X11 allows the connection of two cables to daisy chain the cubicles in the communication network (pins 1 through 5 are doubled up on 6 through 10 as shown in figure 1).

Connecting a "GTC link" (continued)

For proper operation, the polarity of EIA RS485 2 or 4 wire lines must be set at only one point and the lines terminated at the end as shown in figure 2 (2 wire) and figure 3 (4 wire).

Normally the master unit in the network (in this case the customer BEM) sets the polarity of the line. A

MGE™ Galaxy™ 6000 cubicle cannot be the master unit of the line.

The "RAUZ 1" or "RAUZ 2" board contains switches that must be set correctly before startup. The polarity setting switches must be closed on the master and the termination switch closed on the board of the cubicle at the end of the line.

Block diagram of a 2 wire RS485 network

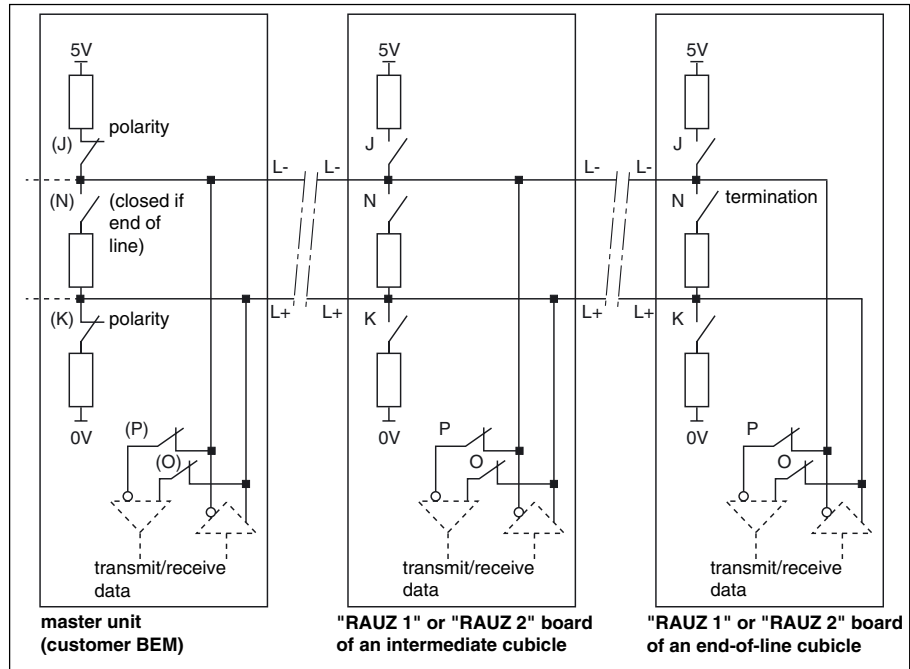


Fig. 2

Block diagram of a 4 wire RS485 network

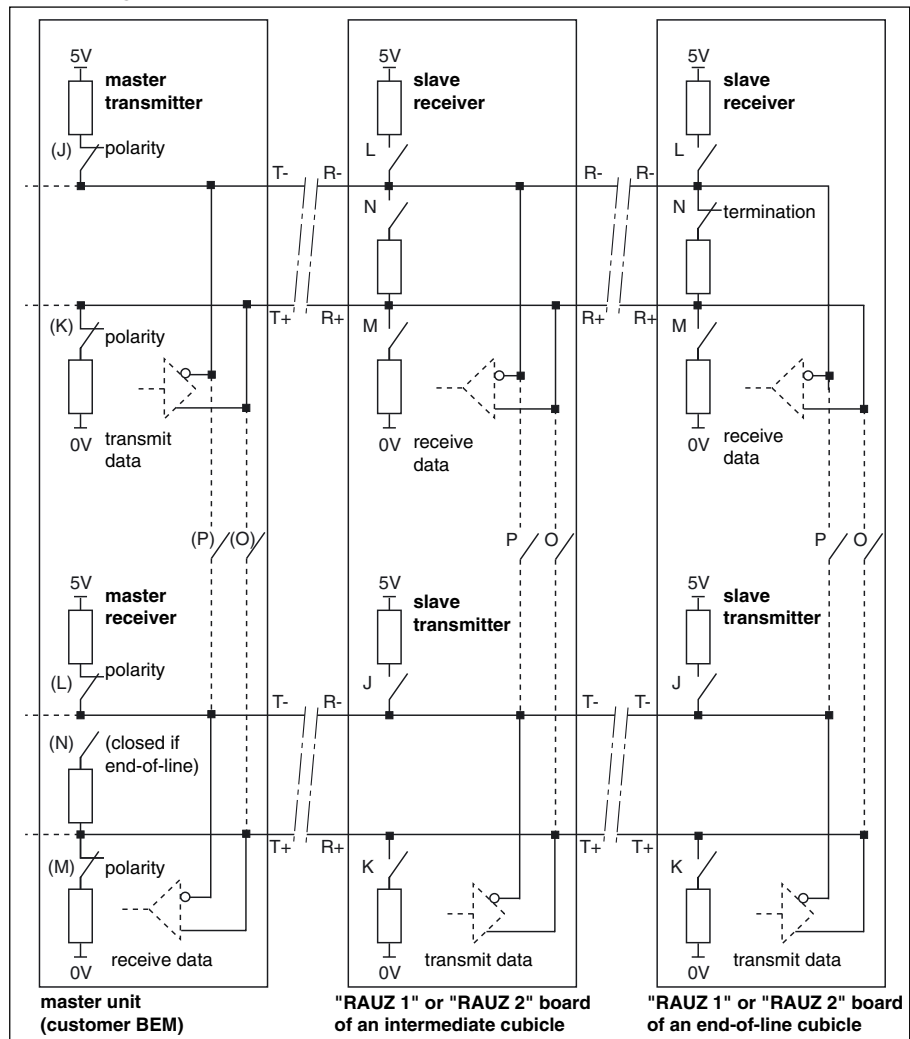


Fig. 3

Connecting a "GTC link" (continued)

Cable characteristics

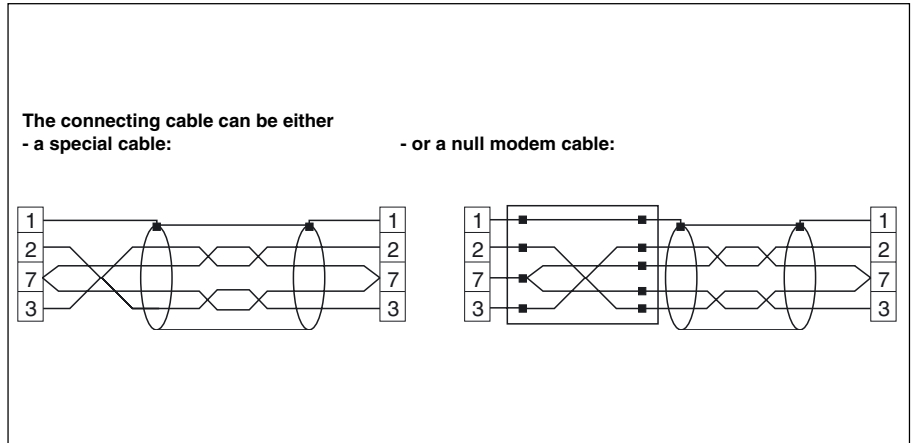
Connection without a modem

▶ **simplified EIA RS232C interface** (CCITT V24-28):

- ▷ point-to-point;
- ▷ telephone type wire: two twisted pairs with a shield connected at both ends of the cable;
- ▷ maximum length: 10 meters.

▶ **EIA RS485:**

- ▷ multi drop;
- ▷ telephone type wire: one twisted pair with shield (for 2 wire RS485) or two twisted pairs with shield (for 4 wire RS485). The shield must be connected at both ends of the cable;
- ▷ maximum total length: 1000 meters.

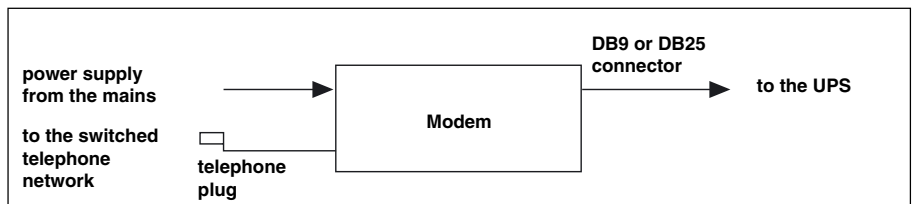


Connection with a modem

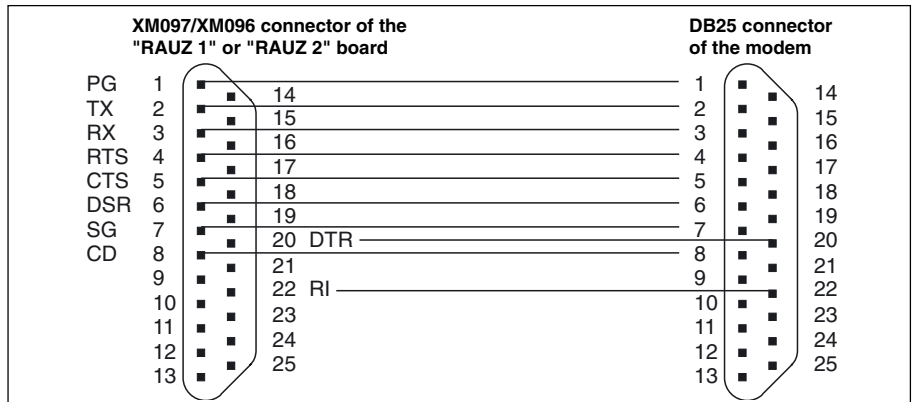
The "complete EIA RS232C" communications standard manages V25, V25 bis, V22 and V24 asynchronous modems or some 1200 baud asynchronous modems using AT commands. The "simplified EIA RS232C" communications standard manages some 1200 baud asynchronous modems using AT commands. The modems come in cases equipped with:

- ▶ a power plug to the electrical supply, usually via a transformer;
- ▶ a connector for connection to the switched telephone network;
- ▶ a connector for connection to the **MGE™ Galaxy™ 6000 UPS**. Either a DB9 or DB25 type connector can be used.

For correct operation of the serial interface, the distance between the modem and the inverter cubicle should not exceed 8 metres.

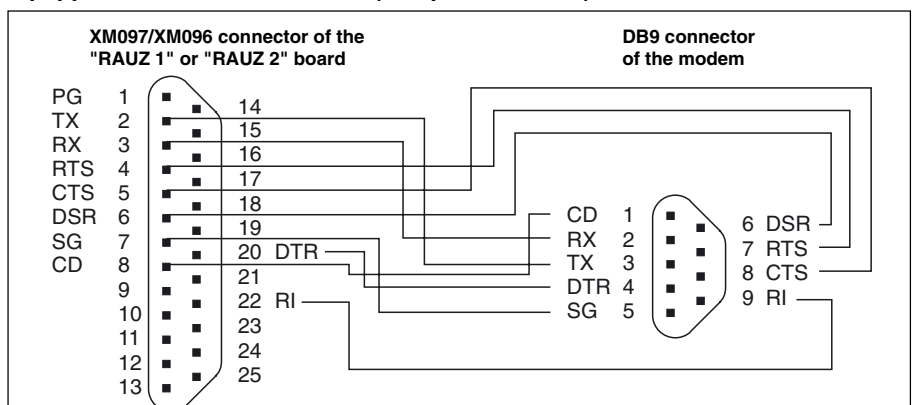


Connection cable between the "RAUZ 1" or "RAUZ 2" board and the modem equipped with a DB25 connector (complete RS232C)



Note: these cable are not supplied.

Connection cable between the "RAUZ 1" or "RAUZ 2" board and the modem equipped with a DB9 connector (complete RS232C)



Connecting a "Tele Monitor"

"Tele Monitor" option

With the "Tele Monitor" the user can remotely monitor the operating status of his UPS. It offers the same functions as the local "Monitor" which are described in user manual n° 6739380XT.

Two "Tele Monitors" can be connected to the same system:

- ▶ a **master unit** (monitor and remote control);
- ▶ a **slave unit** (monitor only).

The "Tele Monitor" can be mounted:

- ▶ on a horizontal surface;
- ▶ on a vertical surface.

The power for the "Tele Monitor" must be backed up (e.g. supplied by a **MGE™ Galaxy™ 6000**).

Dimensions of the "Tele Monitor" enclosure

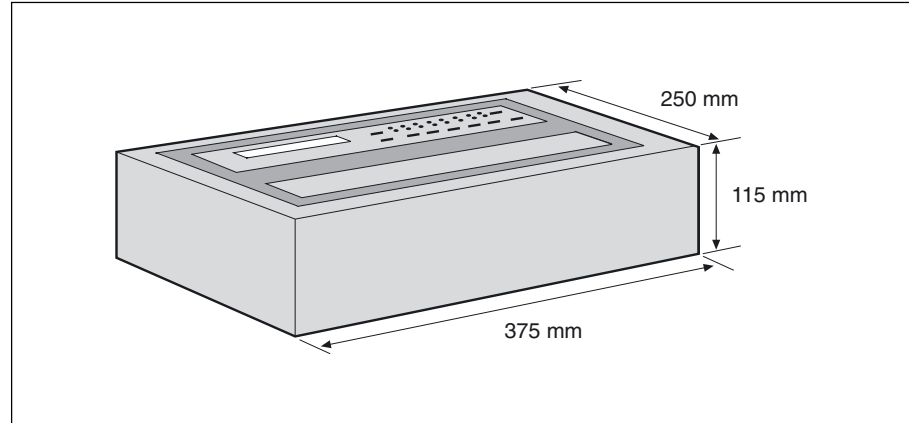


Fig. 4

Opening the enclosure

▶ insert the tip of a flat screw driver (max. diameter 4mm) at least 3 cm into one of the small slots on the left side of the enclosure (1 in figure 5) and pry up to loosen the control panel (2 in figure 5);

▶ repeat the procedure for the other slot;

▶ lift up the left side of the control panel and slide it towards the left to completely free the panel (3 in figure 5);

▶ disconnect the ribbon cable that connects the control panel with the "COMZ" board located at the bottom of the enclosure.

Opening the "Tele Monitor" enclosure

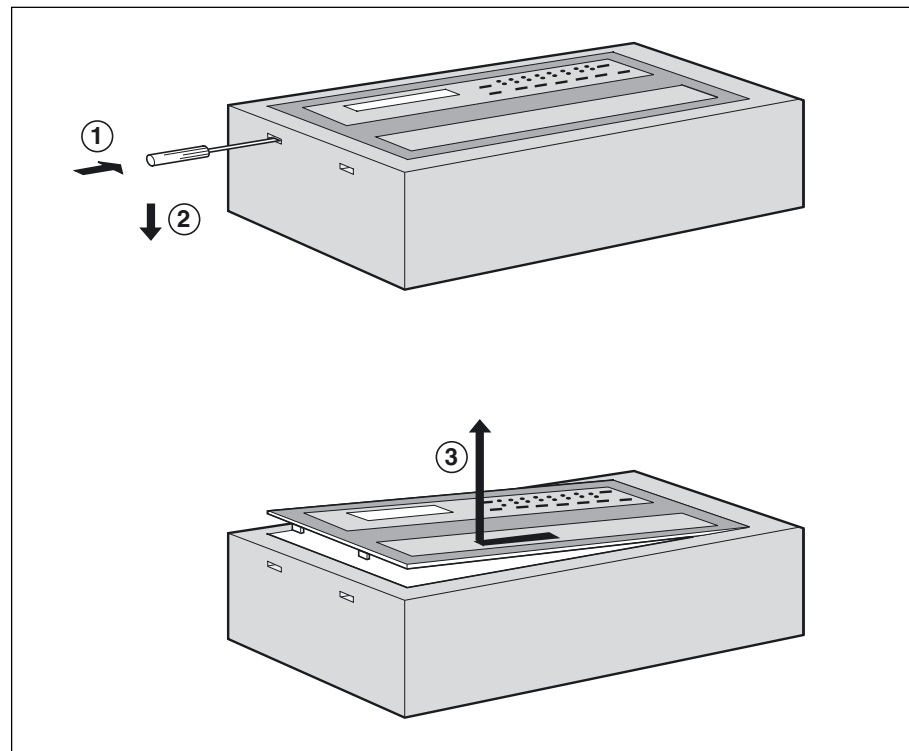


Fig. 5

Connecting a "Tele Monitor" (continued)

Mounting the enclosure

If the "Tele Monitor" is placed on a horizontal surface, no special installation procedure is required: the enclosure sits on four rubber feet and the connecting cable exits via the back or the front.

When the "Tele Monitor" is mounted vertically, the enclosure must be secured with three 6mm (max) screws:

- ▶ remove the four rubber feet (no longer required);
- ▶ hold the enclosure against the vertical surface and mark the position of the screws (at the top of the oblong holes shown in figure 6);
- ▶ screw in but don't tighten the two upper screws as shown to hold the enclosure in place;
- ▶ make the "COMZ" board connections using XR081 through XR84, as described in the next section (see figure 7);
- ▶ route the cables through the upper or lower bushings in the enclosure (cables can exit at the top or bottom);
- ▶ secure the cables with ties at the bottom (small rectangular holes are provided for the cable ties);
- ▶ screw in the third screw;
- ▶ tighten all 3 screws to hold the enclosure securely in place;

Mounting of the enclosure on a verticale surface

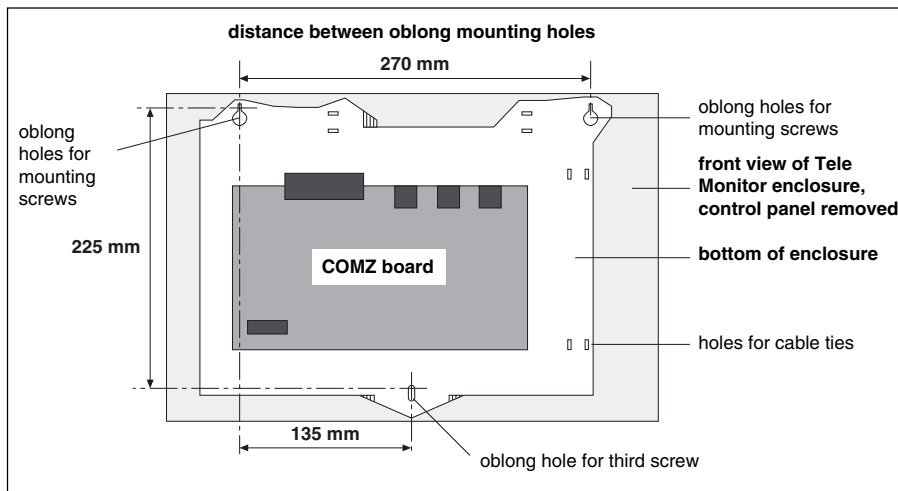


Fig. 6

- ▶ connect the ribbon cable between the board and control panel using connector XM080 on the "COMZ" board;
- ▶ close the "Tele Monitor" by letting the control panel snap into the enclosure.

"Tele Monitor" connections

The "Tele Monitor" connections consist of connector XR081 and terminal blocks XR82, XR83 and XR84 located on the "COMZ" board at the bottom of the enclosure (refer to figure 6 and 7):

- ▶ XR081 on the "Tele Monitor" COMZ board must be connected to the XR10 connectors on the "RAUZ 1" boards in the MGE™ Galaxy™ 6000 cubicles (data lines);
- ▶ terminal 1 of XR82 and XR83 must be connected to the phase and neutral respectively of a protected and backed up power supply, e.g. power supplied by MGE™ Galaxy™ 6000 ("Tele Monitor" supply);
- ▶ terminal 1 of XR84 must be connected to earth.

note: the earth wire of the "Tele Monitor" supply can be connected to the "COMZ" board mounting screw (using an M4 cable lug) located near terminal block XR84 (figure 7). Terminal 2 of terminal XR82, XR83 and XR84 can be used to power a second "Tele Monitor".

Important: the "Tele Monitor" enclosure must absolutely be earthed

"Tele Monitor" connection details

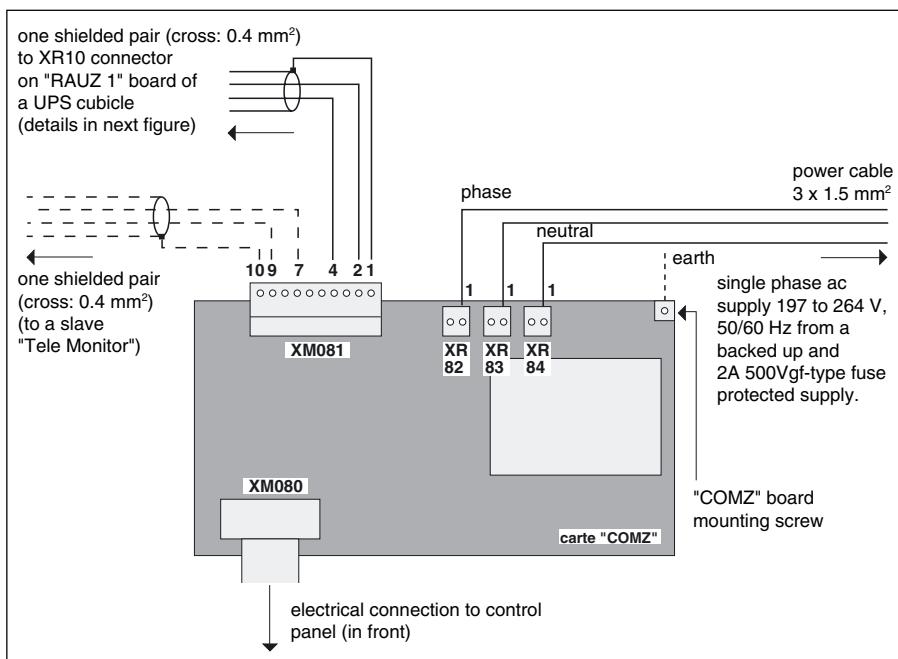


Fig. 7

Connecting a "Tele Monitor" (continued)

by the conductor protecting the mains power supply cable (earth wire). For physical protection reasons should the mains power supply cable be torn away, the protective conductor must be longer than the phase and neutral conductors.

Network connections

The cables required for interconnecting "Tele Monitors" with

MGE™ Galaxy™ 6000 cubicles and cubicles with each other are specified as follows:

- ▶ not supplied;
- ▶ the 2 wire RS485 type network uses the XR10 connectors on the "RAUZ 1" boards in the cubicles and the XM081 connectors on the "COMZ" boards in the "Tele Monitors" according to figure 8;
- ▶ telephone type wires are used: one shielded twisted pair;
- ▶ the shield must be connected at both ends;
- ▶ the total cable length may not exceed 1000 meters.

Network connections

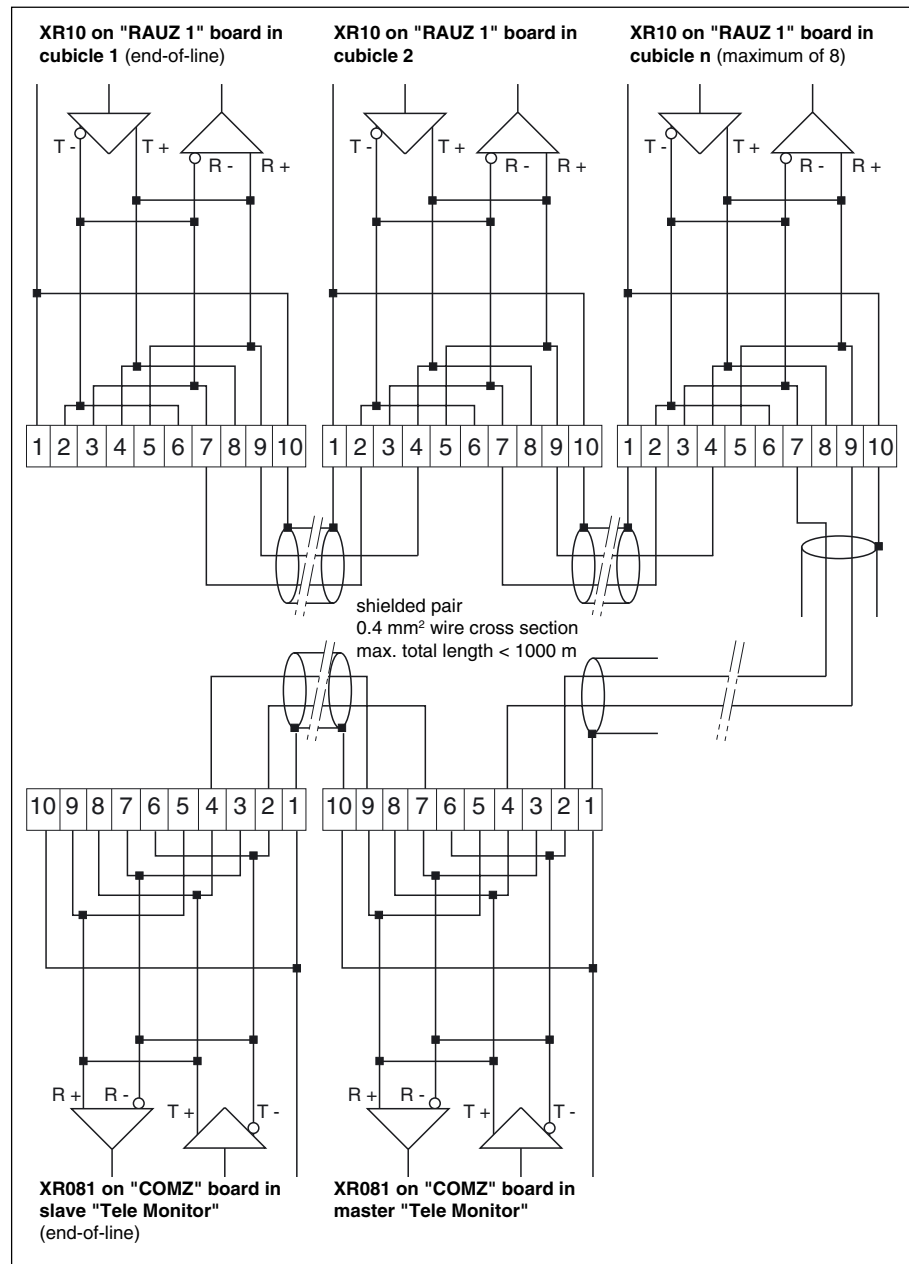


Fig. 8

Figure 8 gives an example of a system with 3 MGE™ Galaxy™ 6000 cubicles and 2 "Tele Monitors". This example can easily be changed to a different number of cubicles (between 1 and 8). A system may be equipped with either one or two "Tele Monitors".

Connecting a "Remote vision"

"Remote vision" option

With the "Remote vision" the user can remotely monitor the operating status of his UPS.

► a slave unit (**monitor only**).

The "Remote vision" can be mounted:

- on a horizontal surface;
- on a vertical surface.

The power for the "Remote vision" must be backed up (e.g. supplied by a **MGE™ Galaxy™ 6000**).

Dimensions of the "Remote vision" enclosure

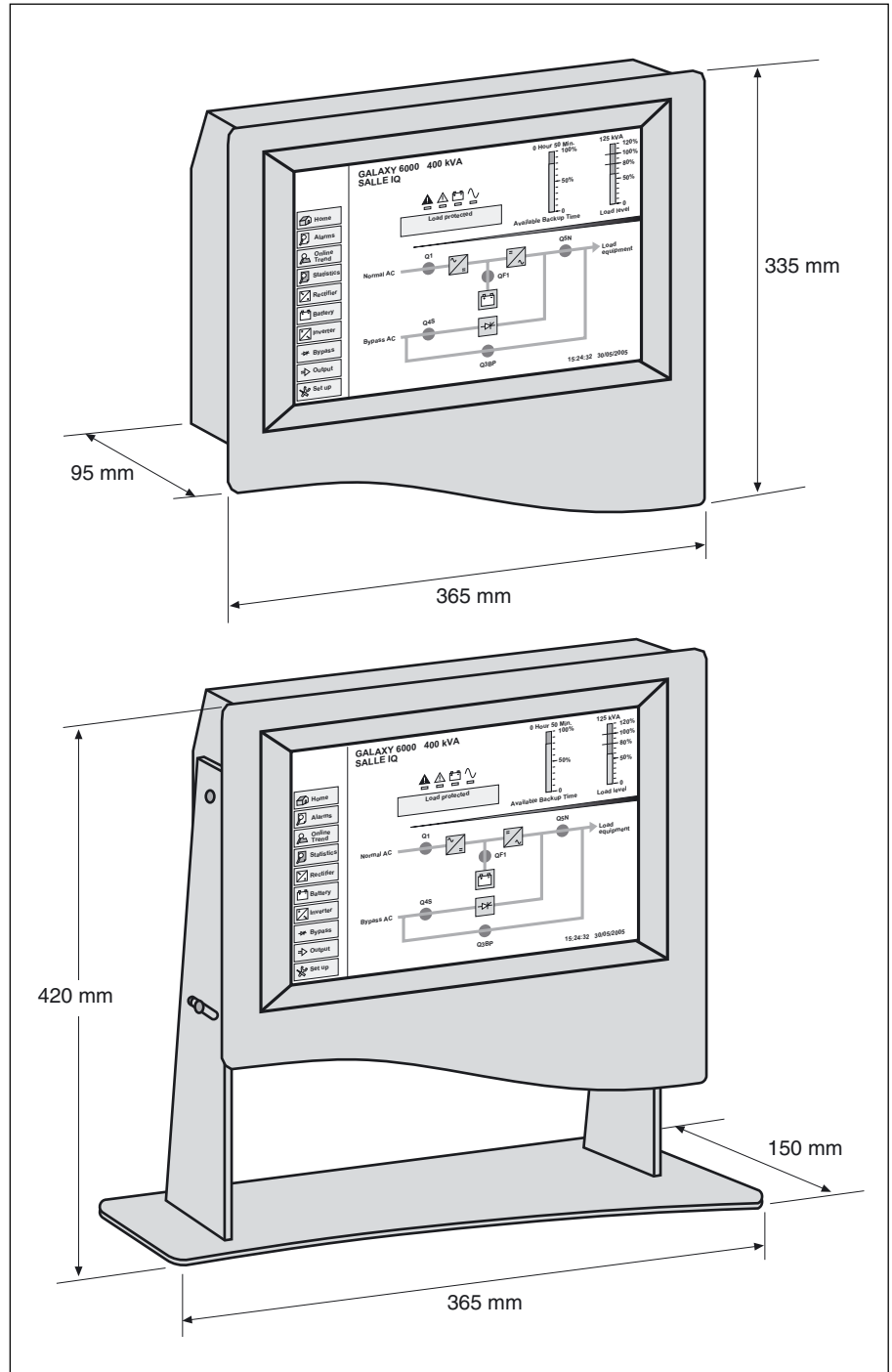


Fig. 9

Connecting a "Remote vision" (continued)

Mounting the enclosure

If the "Remote vision" enclosure has to be placed on a horizontal surface, no fasteners need be provided. The enclosure rests on the foot delivered with it that will be secured to the left-hand lateral side, with the connection cables leaving the enclosure via the bottom panel.

If the "Remote vision" enclosure has to be mounted on a vertical wall, it will be fastened by 2 screws with a diameter of 4 mm maximum:

- ▶ place the enclosure in its position on the vertical wall and mark the location of the screws (at the top of the oblong holes marked on figure 11);
- ▶ fit the 2 screws on the vertical wall at the marked positions;
- ▶ connect as described in the paragraph below (see figure 12);
- ▶ connection is on the bottom panel of the enclosure (the cables leave via the bottom);
- ▶ hook the enclosure onto the screws fitted on the vertical wall;
- ▶ fully screw in the 2 screws to lock the enclosure in its position.

Mounting of the enclosure on a verticale surface

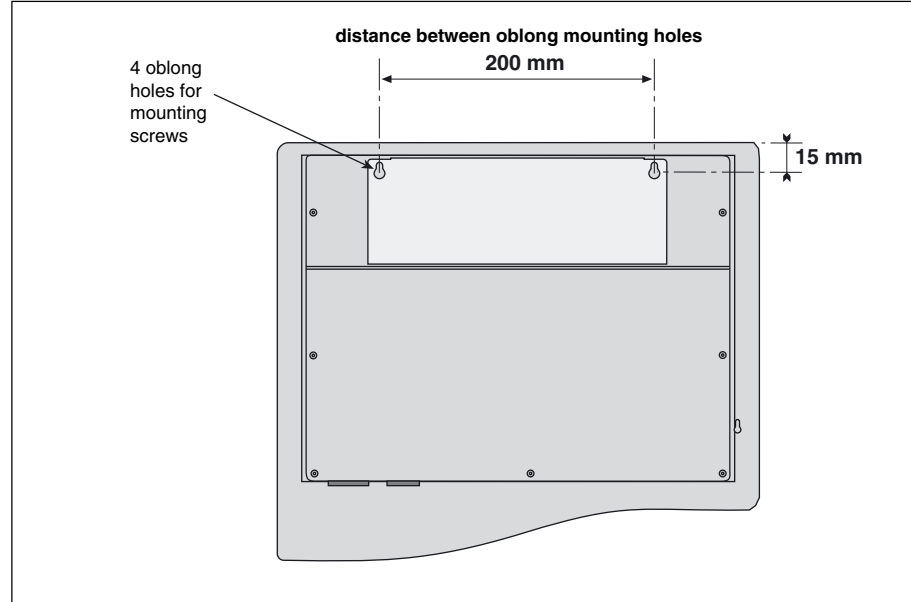


Fig. 11

"Remote vision" connections

Information is connected by means of the communication terminal block placed on the bottom panel of the enclosure (see figure 12):

- ▶ this terminal block must be connected to the XR10 connectors of the "RAUZ 1" boards of the MGE™ Galaxy™ 6000 cubicle: communication information;
- ▶ the enclosure supply connector placed on the bottom panel of the enclosure must be connected to a phase, to the neutral and to the earth of a backed up protected voltage supply (for example voltage delivered by MGE™ Galaxy™ 6000).

"Remote vision" connection details

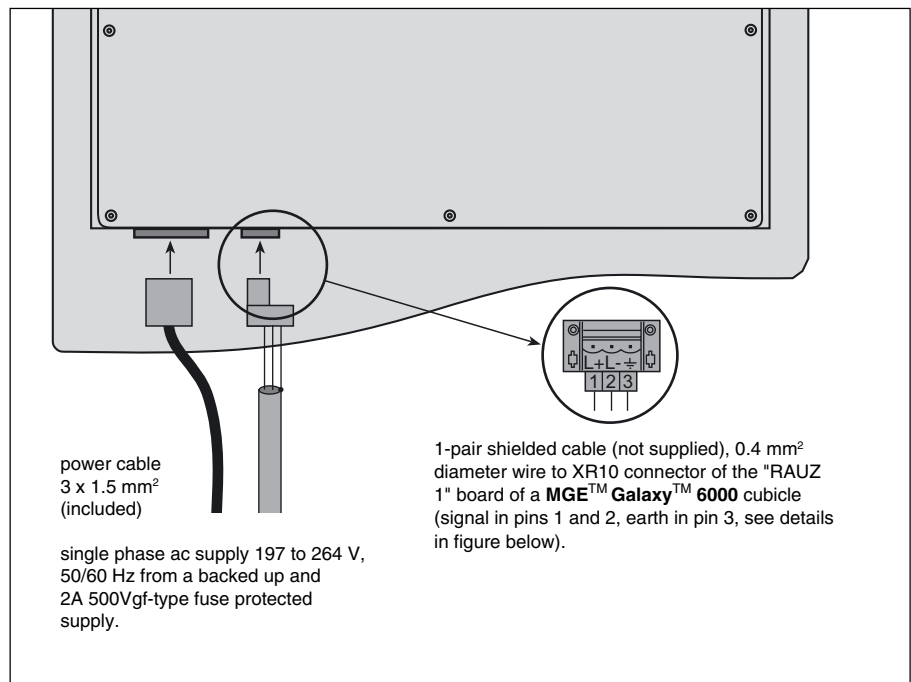


Fig. 12

Connecting a "Remote vision" (continued)

Network connections

Characteristics of the connection cords between the "Remote vision" enclosure and the **MGE™ Galaxy™ 6000** cubicles as well as the links between cubicles:

- ▶ they are not supplied;
- ▶ the link is of the RS485 2-wire type and is made between the XR10 connectors of the "RAUZ 1" boards of the cubicles and terminals 1 and 2 of the communication terminal block of the "Remote vision" enclosure as per the diagram in figure 13;
- ▶ cords are of the shielded twisted telephone type (1 pair);
- ▶ the cord shield must be connected to both ends;
- ▶ total length of all cords must not exceed 1000 m.

Network connections

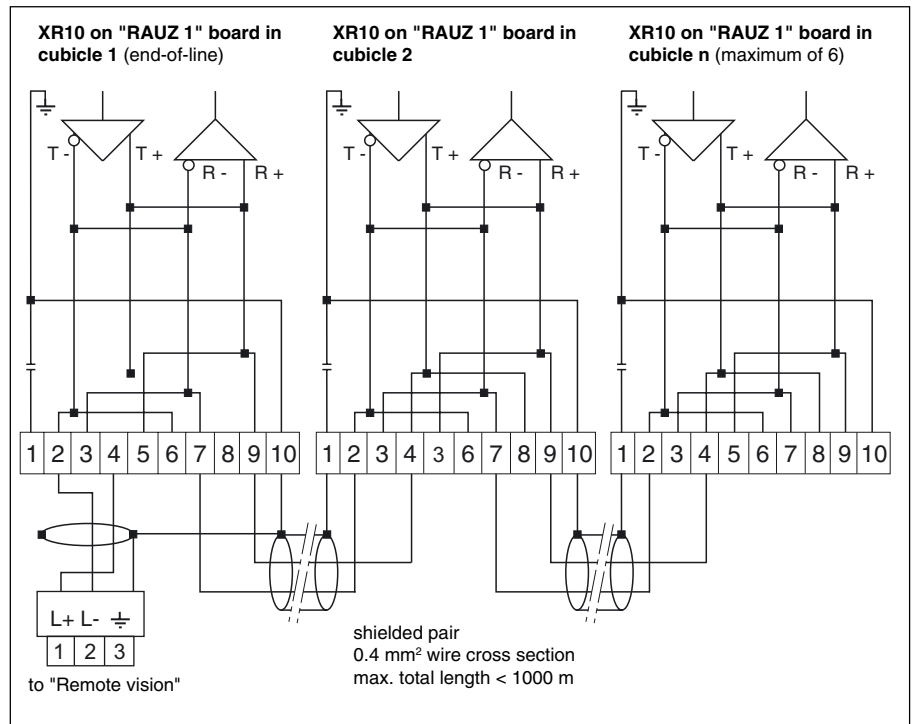


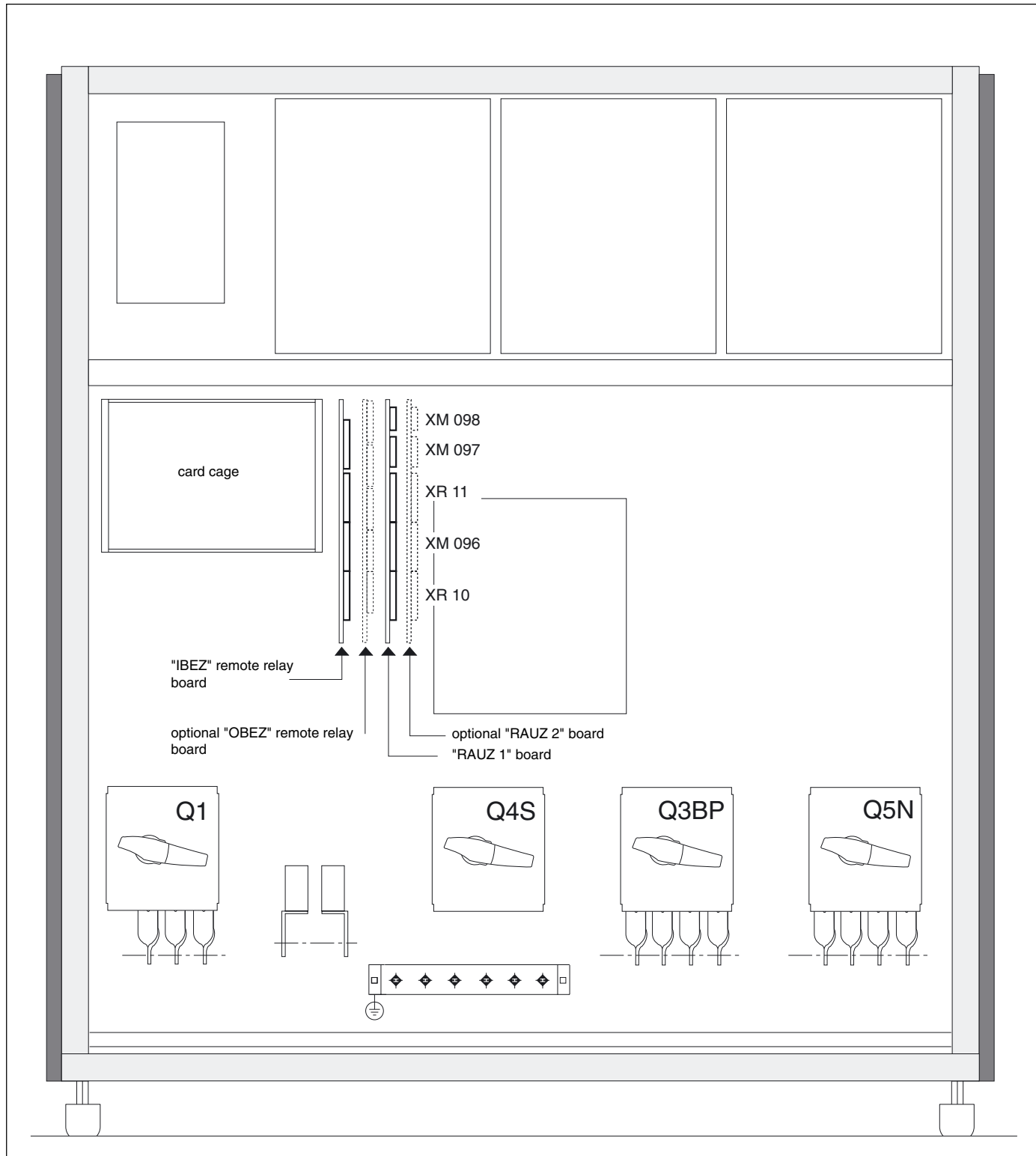
Fig. 13

Figure 13 gives an example of a system with 3 **MGE™ Galaxy™ 6000** cubicles and 1 "Remote vision". This example can easily be changed to a different number of cubicles (between 1 and 6).

Appendix

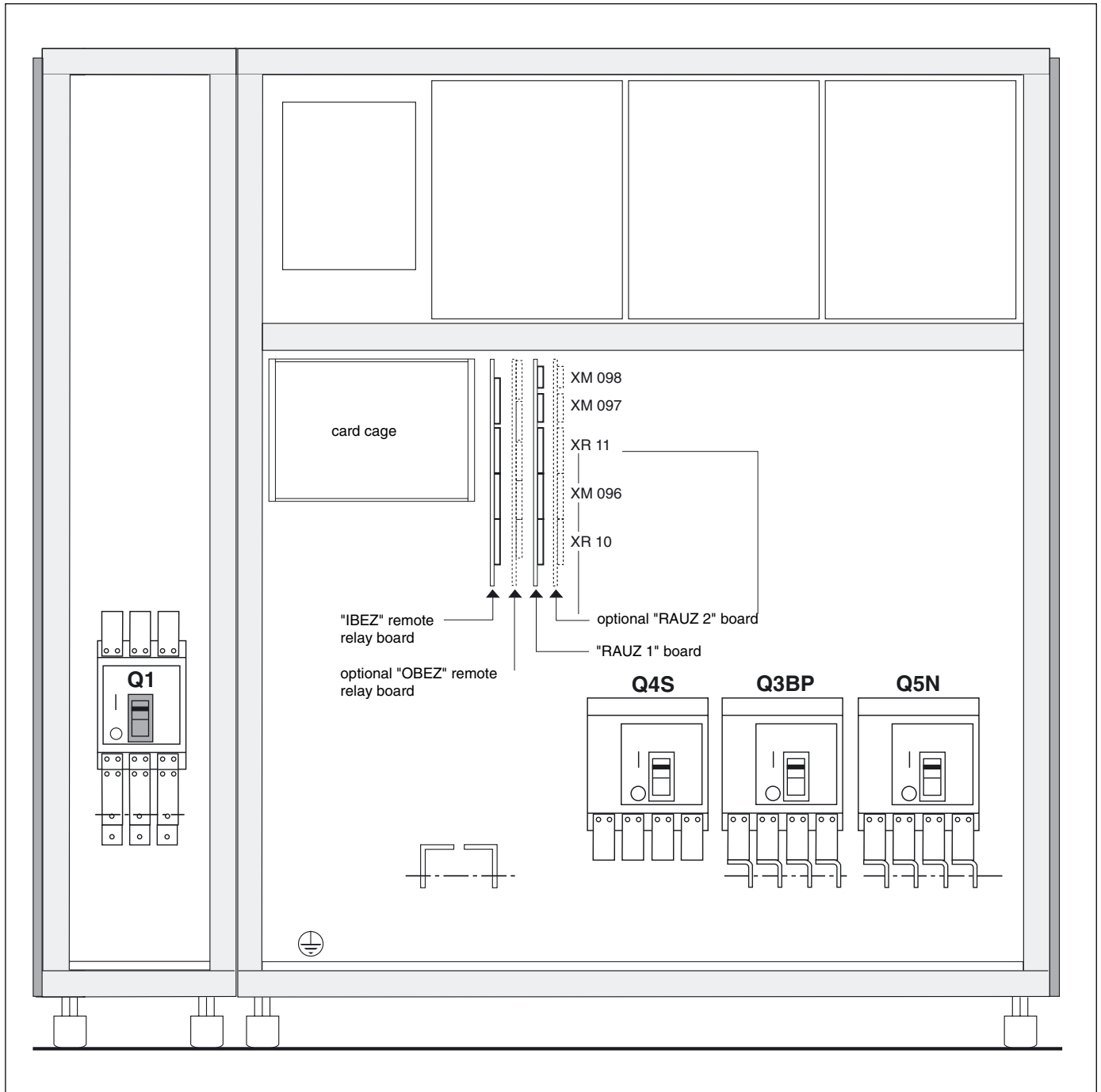
The appendix lists the locations of the "RAUZ 1" or "RAUZ 2" board in the MGE™ Galaxy™ 6000 cubicles.

Unitary rectifier-inverter cubicle: 160 to 400 kVA



Note: the location of the "RAUZ" boards is identical for both unitary and parallel-connected systems.

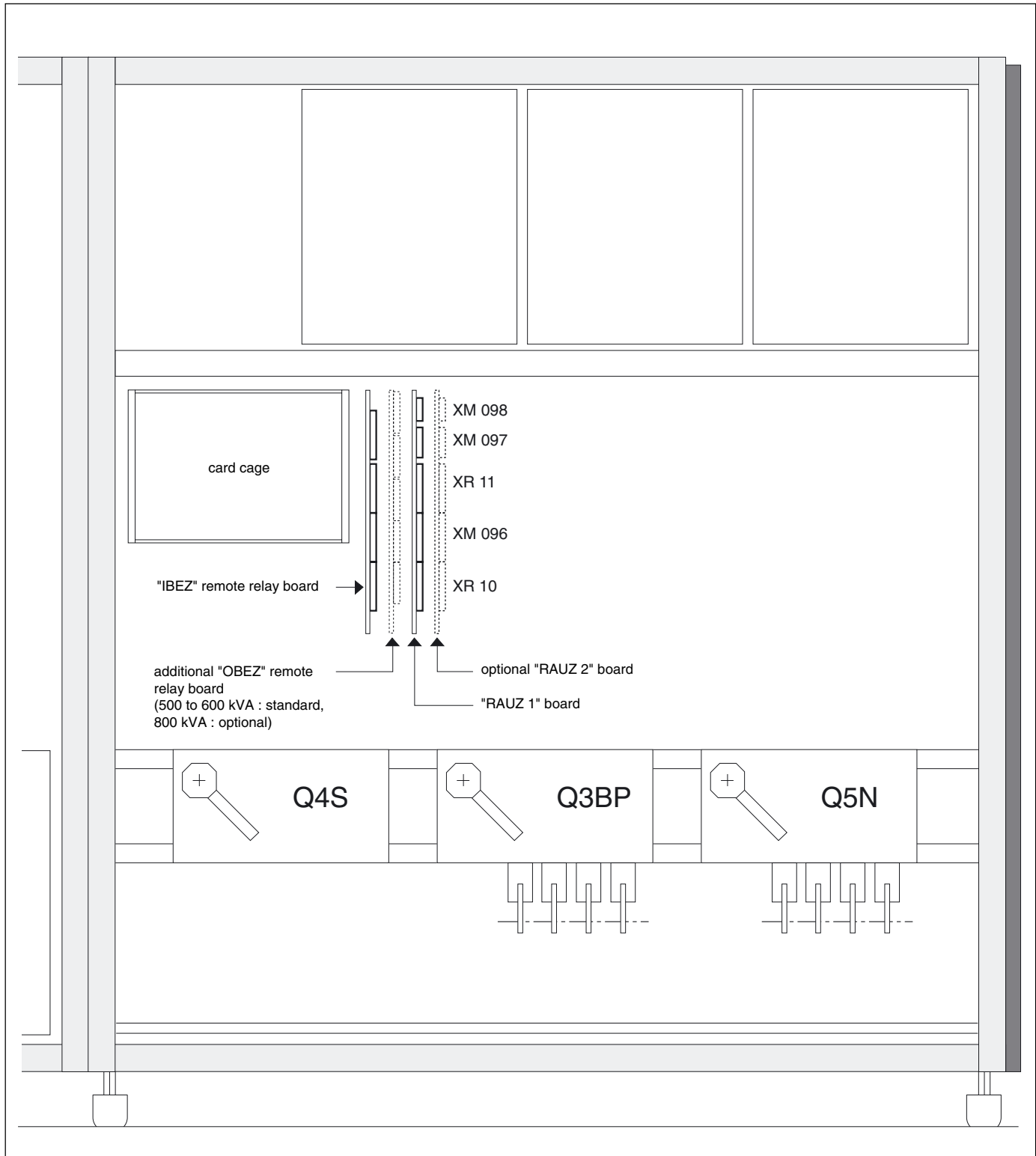
Unitary rectifier-inverter cubicle: 500 kVA



Note: the location of the "RAUZ" boards is identical for both unitary and parallel-connected systems.

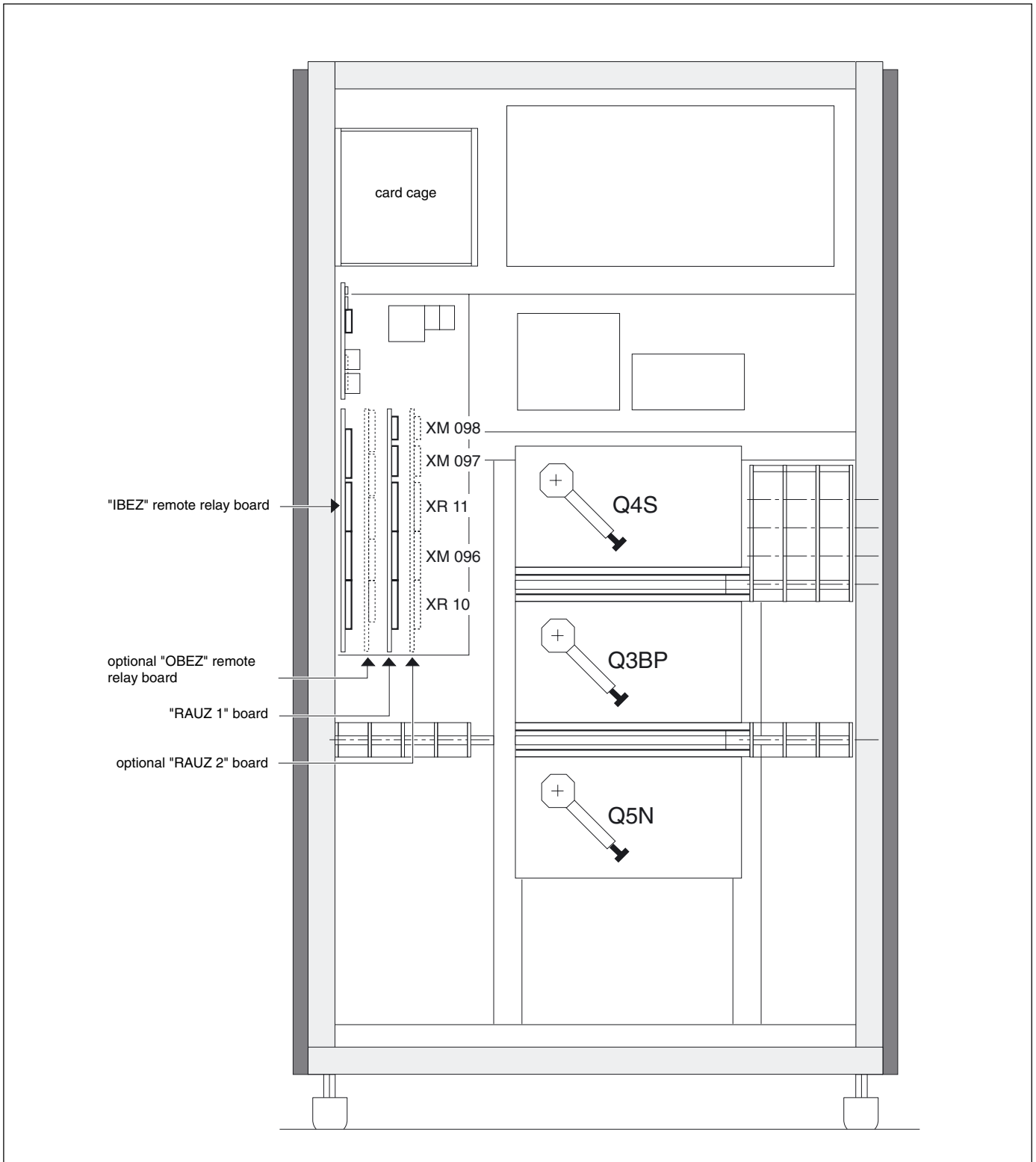
Appendix (continued)

Unitary inverter right hand cubicle: 600 to 800 kVA



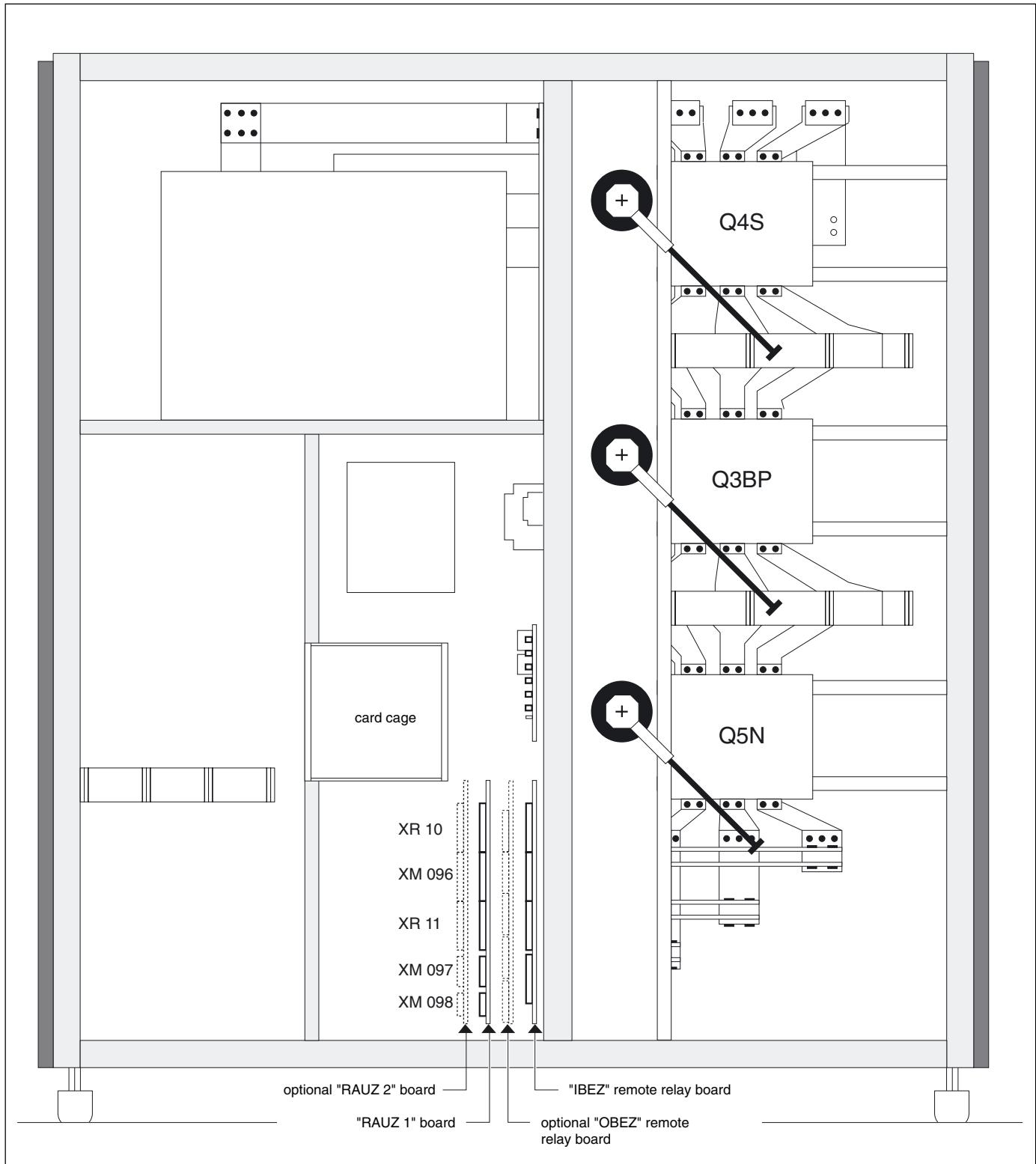
Note: the location of the "RAUZ" boards is identical for both unitary and parallel-connected systems.

Static switch cubicle: 500/800 kVA



Appendix (continued)

Static switch cubicle: 1200 kVA



Static switch left hand cubicle: 2000 kVA

