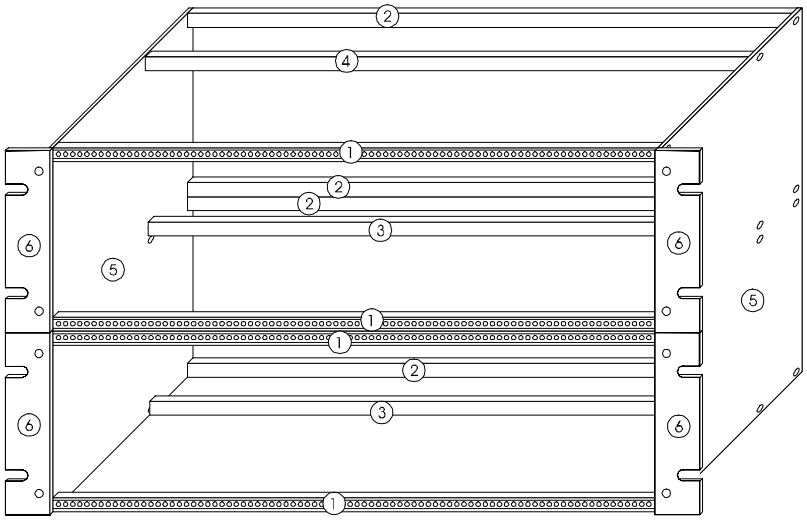
A-100G6 - Basic frame assembly diagram



Parts:

① Rail with lip, and with tapped hole strip inserted (with M3 threads).

② Rail with lip, with three M3 hexagon nuts inserted for connecting the rear panel.

③ Rail without lip, with eight M3 hexagon nuts inserted for connecting the system bus board.

④ Rail without lip and without nuts.

⑤ Side panel

⑥ Rack ears

☞ For the sake of clarity, system busses and top and bottom panels are omitted from the diagram.

The following are construction notes for the A-100G6 rack system - see the diagram on page 1.

Rack system construction

The two sides ⑤ are connected by 11 rails. To connect each rail to the side panels, two self-tapping bolts are used, which can be partially screwed in to the side panels ready for the insertion of the rails.

There are two different sorts of rail, with different cross-sections: the one with a lip has one section sticking out further; the one without a lip doesn't! It's very important to make sure that these two types are used in their correct places, to avoid problems. Look at the diagram to see where the rails go - but before fitting them, read on.

Before fixing, insert a tapped hole strip with M3 threads into each of the four front lipped rails (①). These strips are what the A-100 modules will later be fixed to. Also, put the rack ears (⑥) on the outside of each side panel (⑤) before installing and fixing the rails.

Before installing the four (lipped) back rails (②), insert three sliding nuts - one in the middle, and one at each end. These are what the backplate is fastened to.

In two of the three 'unlipped' rails (③), insert eight sliding nuts. This will be where the system bus board is fixed.

The third 'unlipped' rail ④ is installed without any insert. It acts as structural re-inforcement for the top cover.

On installation, the nuts in rail ② should face the back of the case, while the nuts in rail ③ and the mounting strip in ①, should face the front.

Once the rails, side panels and rack ears have been assembled, go round double-checking that everything is tightly screwed together.

Mounting the system bus board

Next, mount the bus board to rail ③ with eight of the M3 cross-head bolts. To do this, tip the rack onto its back, hold the bus board on the rail just above where it will be fixed, and, using a small screwdriver, push the sliding nuts till they match up with the holes in the bus board. You only need to use alternate holes in the bus board. Mount the bus board so that the connectors face towards the front of the rack.

Mounting the power supply

To mount the factory-tested power supply assembly to the back panel, use long round-headed M3 bolts, serrated washers (on the outside of the back panel and next to the fixing nuts on the circuit board), and stand-off bolts. Make sure that the whole assembly is very firmly fixed to the back panel. The fuse holder, switch and power supply socket should fit exactly through the rear panel. If there is a separate cover this should be screwed on tightly.

Important:

Under no circumstances connect the unit to the main power supply until the whole rack is completely assembled and covered.

The three cables from the power supply should be connected to spade connectors ST1/2/3 on the power supply board, making absolutely sure they are pressed fully in. Connect them as follows:-

- yellow/green striped cable to ST1 (earth)
- black (or brown) cable to ST2 (230V AC)
- blue cable to ST3 (230V AC)

Warning:

Double check that the connections have been made as described. Especially make absolutely certain that the yellow/green striped cable is connected to ST1 (near the earth or ground symbol).

Failure to follow these instructions could cause a potentially LETHAL accident when the unit is switched on.

With the power supply properly attached to it, screw the rear panel to the rack casing, using six M3 round-headed bolts. You will first need to get the sliding nuts into position (see the instructions for mounting the system bus board).

As a general rule, one power supply should be sufficient for a whole 6U rack system, so in most cases a blanking panel is all that's needed for the second part of the back panel. This is also fixed with six M3 bolts. If two power supplies are needed, then two back panels each with a power supply will have to be used.

Joining the power supply and system bus

The next stage is to connect the low voltage outputs of the power supply to the system bus. On the power supply board are three sets of four spade connectors, which are the low voltage outputs:

- ST4A/B/C/D = GND (ground or earth)
- ST5A/B/C/D = +12 V
- ST6A/B/C/D = -12 V.

They are to be found at the end of the circuit board, next to the heatsink.

On the system bus board, there are identical spade connectors, each likewise marked with GND, +12 V or -12 V. Join up the corresponding connectors on the power supply and system bus boards, using the three colour-coded cables: GND = black, +12 V = red, and -12 V = green.

Connect the power supply outputs to the spade connectors in the centre of the system bus board (leaving the connector points at either end of the board unused). Make absolutely sure that the connectors are firmly pressed down at both ends.
If you need to use two power supplies in one 6U rack, then each power supply needs to be connected to its own system bus only. Then connect another black lead between the system busses, so that they have a common ground.

Fixing the top and bottom covers

When all the electrical installation is completed and visually checked, it's time to fix the top and bottom covers in place, slotting them in to the front and back rails. In order to do this without bending the covers, undo the front rail bolts one set at a time, so that you can ease the rail forward. Then replace the bolts, and re-tighten them.

Stick the power supply and safety warning label on the back panel, close to the socket.

The A-100 system rack is now ready for action. The next steps to take (putting modules into it, how to use it, etc.) are described in the A-100 manual.

Parts list (complete list of all components)

Description	Amount
17” rail with lip	8
17” rail without lip	3
Side panel 6U high	2
19” rack ear 3U	4
Self-tapping M4 flat cross-headed installation bolt	22
17” module mounting strip	4
Sliding nut (M3, of either hexagonal or square section)	28
Round-headed 6mm bolt M3 (for mounting system busses)	16
Round-headed 6mm bolt M3 (4 for mounting power supply, 12 for back panel)	16
84 HP back panel (for mounting power supply)	1
84 HP back panel (blanking panel)	1
A-100 power supply, +/-12V, 650 mA (factory assembled and tested)	1
Power supply input system, with soldered cables and spade connectors	1
Power supply to system bus connecting cable with spade connector, black	2
Power supply to system bus connecting cable with spade connector, green	2
Power supply to system bus connecting cable with spade connector, red	2
System bus board (factory assembled and tested)	2
Top / bottom cover (with ventilation holes)	2
Sticker with power supply notice and safety warning	1

Kit parts list (complete packing list)

Description	Amount
19" rack system, 2 x 3U (ProMa). This kit already contains:	1
17" rail with lip	8
6U side panel	2
3U 19" rack ear	4
Self-tapping M4 bolt	16
Casing components (ProMa). This kit already contains:	1
Top or bottom cover (with ventilation holes)	2
17" rail without lip	2
Self tapping M4 bolt	4
The following parts are supplied in addition to the ProMa kit:	
17" rail without lip	1
Self tapping M4 bolt	2
17" module mounting strip	4
Sliding nut (M3, of either hexagonal or square section)	28
Round-headed bolt M3 (for mounting system busses	16
Round-headed bolt M3 (4 for mounting power supply, 12 for back panel)	16
84 TEE back panel (for mounting power supply)	1
84 HP back panel (Blanking plate)	1
A-100 power supply, +/-12V, 650mA (factory assembled and tested)	1
Power supply input system, with soldered cables and spade connectors	1
Power supply to system bus connecting cable with spade connector, black	2
Power supply to system bus connecting cable with spade connector, green	2
Power supply to system bus connecting cable with spade connector, red	2
System bus board (factory assembled and tested)	2
Sticker with power supply notice and safety warning	1