



机柜操作说明
Instruction Manual
Cabinet

10 x PSI 81500-30 HS PV
1500V
300A
150kW



关于

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1. 技术规格

机柜类型: Rittal TS8 42U

尺寸 (WxHxD): 600mm x 2320mm x 800mm

可更改为: 无前门, 无后门, 带轮子(2个可锁定)

输入线类型: 5芯线4级别 (L1+L2+L3+PE)

输入电压: 340...460V AC

输入保险丝: 5x 63A的断路器模块

输入电流: 每相最大280A

特点:

- 可容纳多达10台PS/PSI 8000 3U电源
- 直流输出端连接在铜条上
- 冗余操作
- 出厂配置:
 - 8台 PSI 81500-30 3U HS PV

! 重要提示

- 切勿更改机柜内连接线的长度和线径!
- 切勿串联此类产品!
- 输入端必须外接保险丝进行熔断保护!

2. 安装

2.1 制冷

为了达到较好的制冷效果, 机柜后方必须预留至少20-30cm的空间。

2.2 单机输入端的连接

产品单机分开包装发货, 必须按照安装步骤装配于机柜内。

安装时以从高到低的顺序进行, 第二台直接位于前一台的正下方, 产品外壳之间不留任何空间。输入端的连接线已预先配置好, 可从每台单机后方获取。

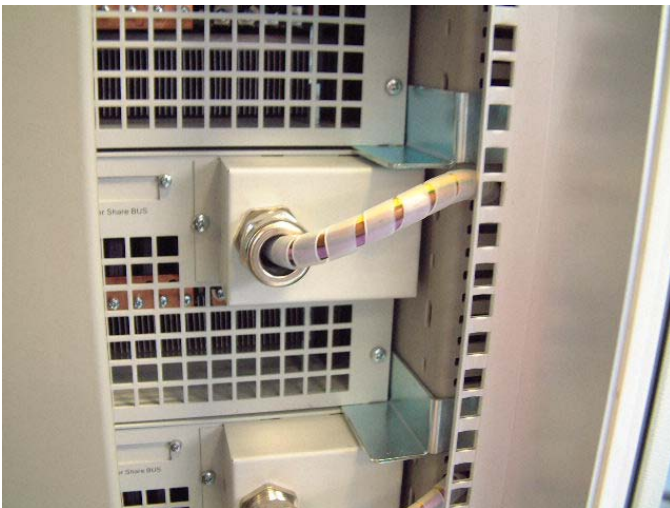


图 1: 单机输入端的连接

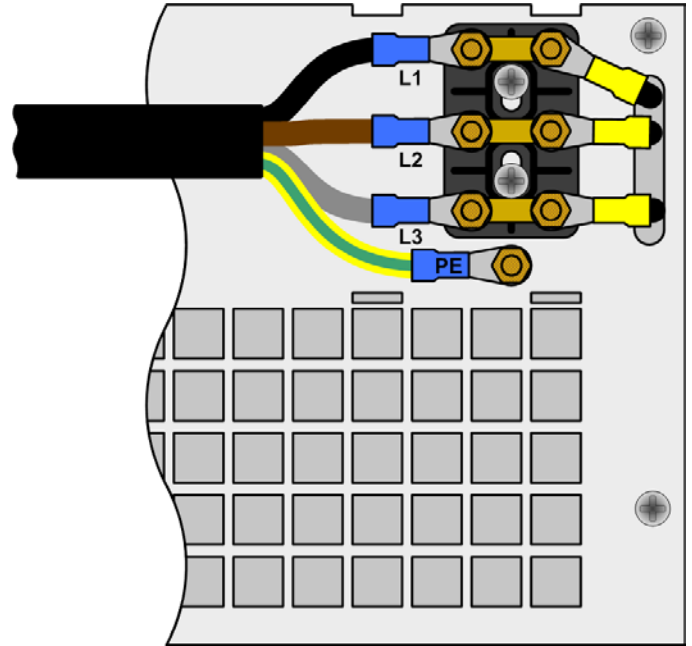


图 2: 输入端子（3相）和线材颜色分布图

如果其中一台或多台产品出故障, 必须从机柜内移出。移出前, 断开市电以及与负载连接的输出端连线。换上替代产品或维修好的产品, 需再次连接上输入端和直流输出端连线。

关于输入端连接的更多介绍可参考各系列电源产品的操作说明。

2.3 机柜输入端的连线

栅极接线由5相4线连线直接接到相应的断路器模块上。这是因为断路器模块仅能接受25mm²以下的线径。相位的匹配请参考机柜内标贴。

每个断路器模块服务两台电源, 电源产品顺序按从高到低, 从1至10排列, 断路保护器模块的顺序是从左到右, 从1至5排列的。

也可见图 3的详细图释。

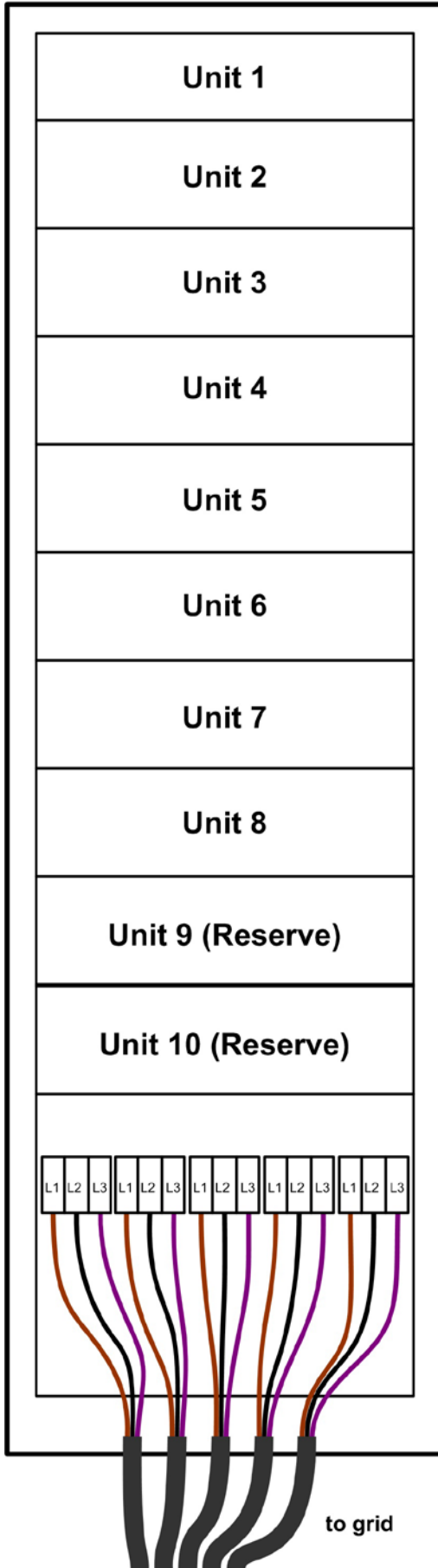


图 3: 机柜电源输入端的连接图

2.4 直流输出端

整机柜运行前，需建立直流输出端与负载应用间的连接。

! 提示

需检查输入线的直径是否够大！我们建议每个输出极要使用至少150mm² 或2x 75mm² 直径的连线，以便能承受整机柜300A的总电流。

负载线用M8螺丝直接固定于铜条上。

! 提示

在负载连线末端请使用M8的环形扣！

⚠ 有生命危险!

操作直流输出端的功能前请确保所有机台都已关闭，且无任何输出电压存在。小心地打开保护罩！

连接负载后或更改配置后，必须重新盖上保护罩！

3. 操作

3.1 冗余操作

若因产品故障或过热而出现一台或多台产品停止运行，则冗余操作被激活。此时剩下的产品仍继续工作，但是机柜的功率和电流将不再是满额定值，而被相应地减少。

3.2 PV 操作手动控制

内置光伏选项功能（PV）能使产品模拟太阳能电池板的特性，从而执行太阳能逆变器的测试。**此时须总是将机柜内所有产品的设定值和操作模式调节为一样的。**

3.2.1 手动控制

不建议运行并联系统的手动控制，因为此时不能对称地调节设定值。

3.2.2 远程控制

经模拟接口或可选数字接口，通过并联控制能让所有产品获得相同的设定值。见章节„4. 连线图“的图例。

我们建议使用CAN数字接口卡，因它具有广播信息类型特点。意思是，设定值的一个指令，如电流=200A，可同时发送给机柜内所有产品。

4. 连线图

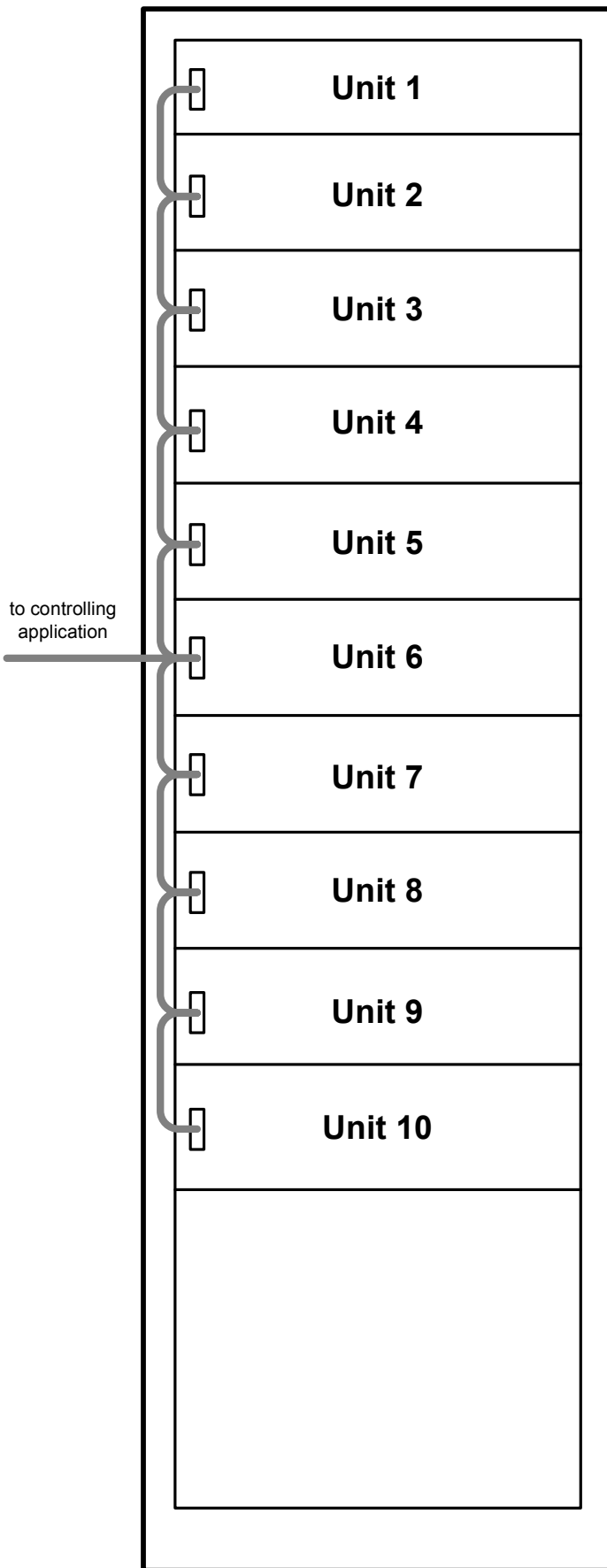


图 4: 模拟接口连线举例

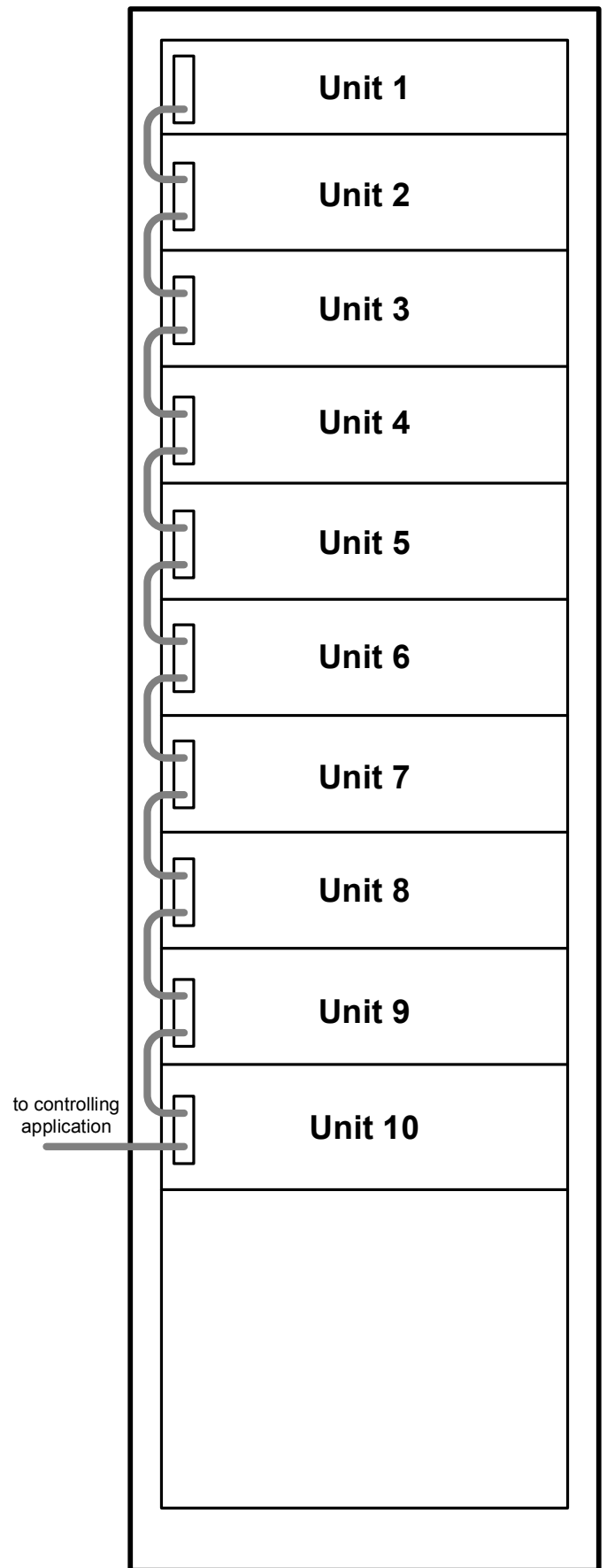


图 5: GPIB接口连线举例

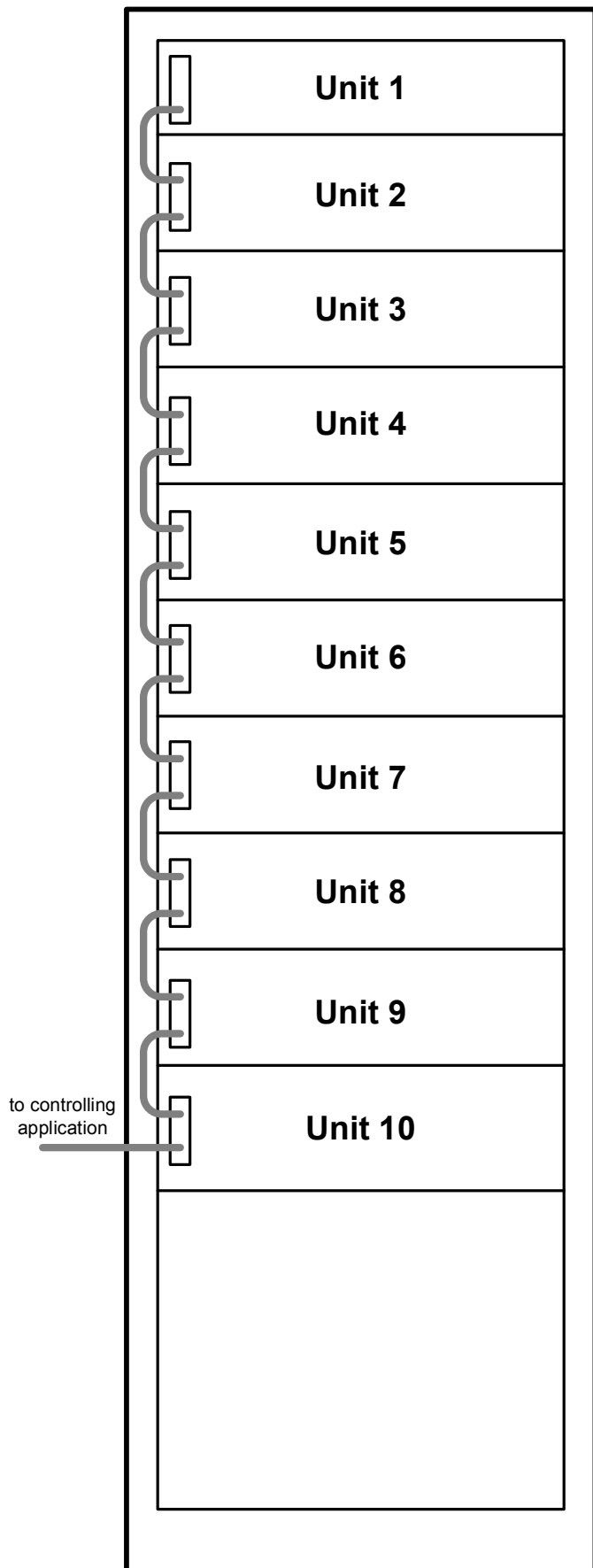


图 6: CAN接口连线举例

About

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1. Technical specifications

Cabinet type: Rittal TS8 42U

Dimensions (WxHxD): 600mm x 2320mm x 800mm

Variation: no front door, no rear door, on wheels (2x fix)

Input type: 5x cable 4-pole (L1+L2+L3+PE)

Input voltage: 340...460V AC

Input fuse: 5x breaker block 63A

Input current: max. 280A per phase

Features:

- Up to 10 units PS/PSI 8000 3U
- DC output on copper bars
- Redundancy
- Factory setup:
 - 8x PSI 81500-30 3U HS PV equipped

! Important notes

- Do not change the wiring inside the cabinet regarding length and cross section!
- Series connection of the units is not allowed!
- Mains supply has to be fused externally!

2. Installation

2.1 Cooling

In order to achieve sufficient cooling, it is absolutely necessary to leave at least 20-30cm space behind the cabinet.

2.2 Input connection of the single units

The units are delivered separately and have to be equipped to the cabinet during installation process.

Install the units from top to bottom, the next one directly below the previous one, leaving no space between the enclosures. The mains input wires are preconfigured and accessible from the rear for every unit.

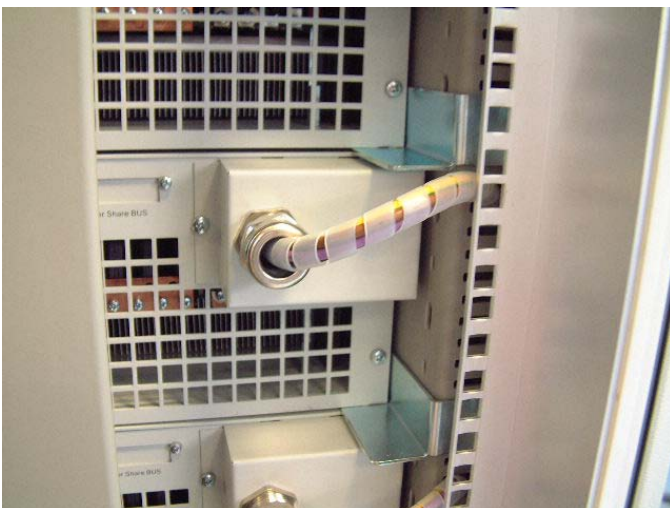


Figure 1: Input connection of a single unit

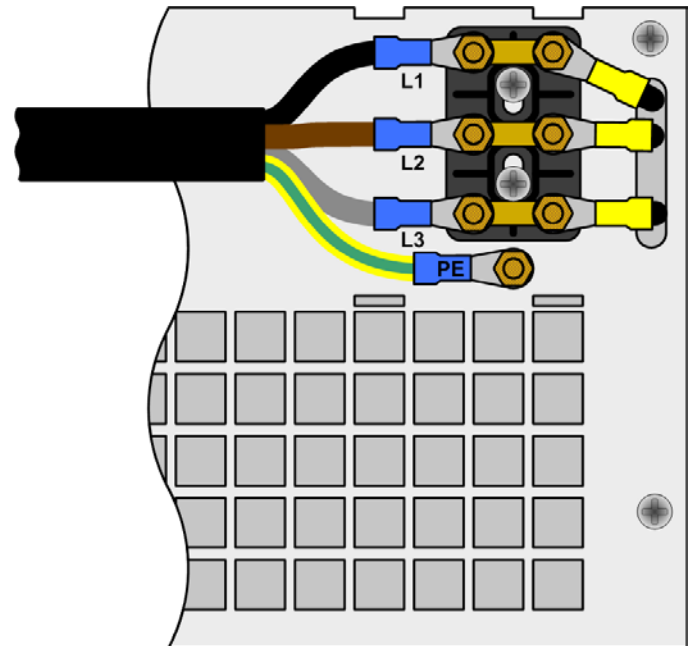


Figure 2: Input terminal (3-phase) and example colour scheme

In case of a defect of one or multiple units, these have to be removed from the cabinet. Before removal, disconnect mains supply and DC output to load. After the replaced or repaired units have been installed again, connect input and DC output again.

More details about the input connection can be found in the instruction manuals of the power supplies.

2.3 Cabinet input wiring

Grid connection is done with 5 pcs. of 4-pole wires which are directly tied to the corresponding breaker block. This is because the breaker blocks can only accept cables up to 25mm². For phase mapping see the labelling inside the cabinet.

Each breaker block supplies two units of power supplies, counting the units from top to bottom and from 1 to 10, as well as the breaker blocks from left to right and from 1 to 5.

Also see Figure 3 for clarification.

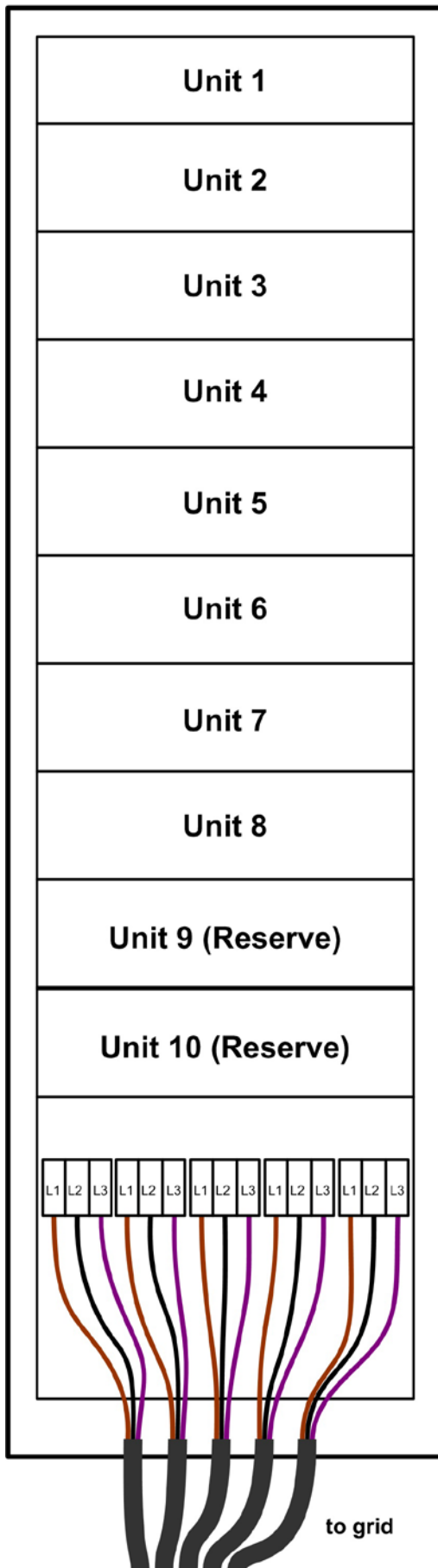


Figure 3: Main input connection scheme of cabinet

2.4 DC output

Before the cabinet is put into operation, the DC output connection to the load application should be established.

! Note

Take care of sufficient input cable cross section! We recommend to use at least 150mm² or 2x 75mm² cross section per output pole for the total 300A of the cabinet.

The load cables are directly screwed to the coppers bars by M8 screws.

! Note

Use M8 ring lugs at the end of the load cables!

⚠ Danger to life!

Make sure that all units are switched off before working on the DC output and that no output voltage is still present. Remove the protective cover carefully!

After connecting the load or changing the configuration, it is imperative to mount the protective cover again!

3. Operation

3.1 Redundancy

Redundancy becomes active, if one or multiple units discontinue operation because of a defect or overheating. The remaining units will continue to work in such a case, but nominal power and current of the cabinet can not be achieved anymore.

3.2 PV operation

The integrated photovoltaics option (PV) enables the device to simulate solar panel behaviour and thus to run solar inverter tests. **It is imperative to always adjust all active units to the same set values and operation mode.**

3.2.1 Manual control

Manual control of the parallel system is not recommended, because the set values can not be adjusted simultaneously here.

3.2.2 Remote control

Identical set values on all units can be achieved by parallel control via the analogue interfaces or optional, digital interfaces. See example figures in section „4. Wiring schematics“.

We recommend to use CAN digital interfaces, which feature broadcast message type. It means, one command with set value, for example current = 200A, is sent to all units simultaneously.

4. Wiring schematics

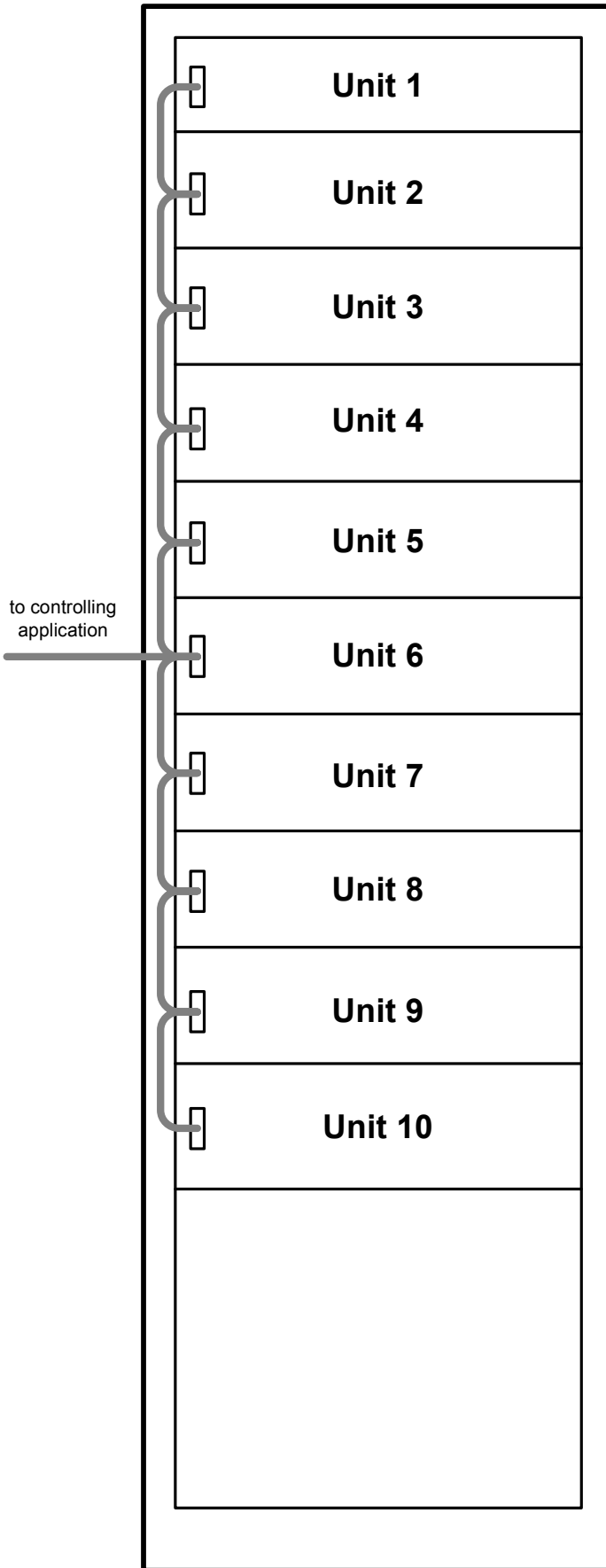


Figure 4: Wiring example for analogue interface

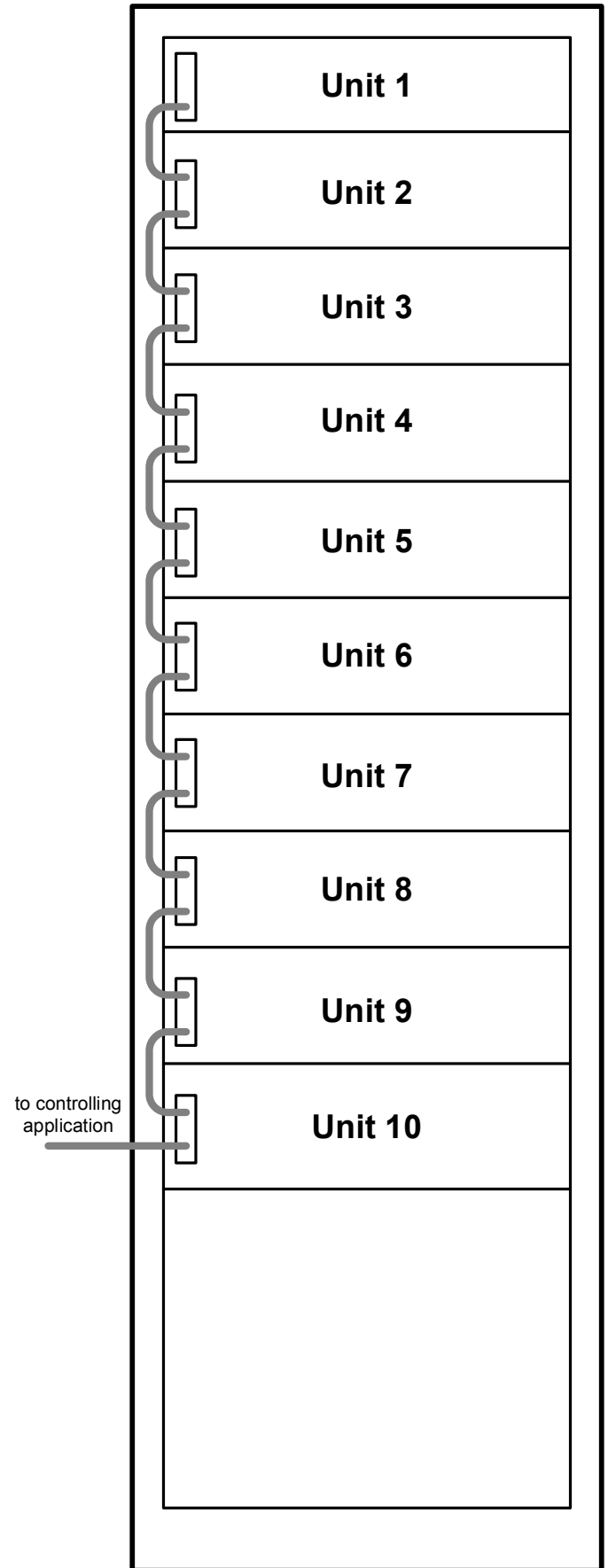


Figure 5: Wiring example for GPIB interface

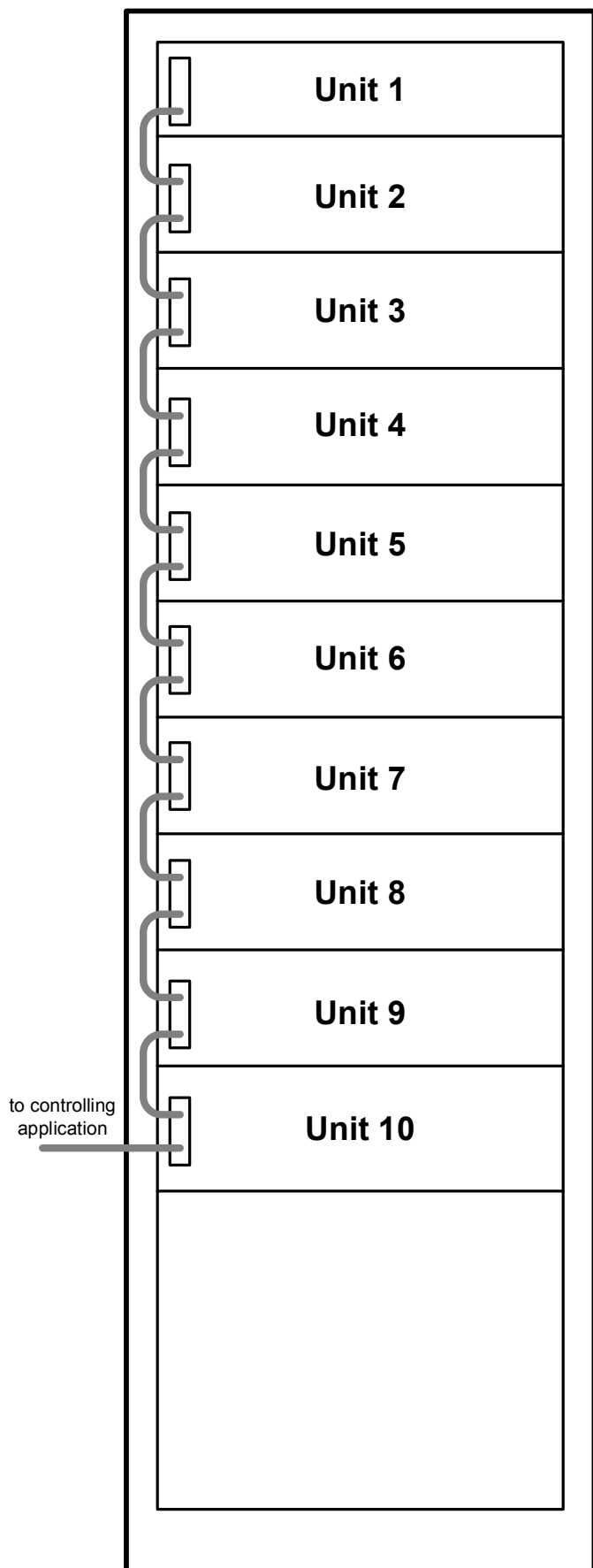


Figure 6: Wiring example for CAN interface



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