

7.6 PSU-240516

7.6.1 Power Supply Unit 24/5 V DC, 16 A

The PSU-240516 power supply unit converts incoming 24 V DC to (local) 5 V DC and (redundant) 5 V DC, and is located in the Controller chassis (see CPCHAS-0001 or CPCHAS-0002 or CPCHAS-0003).

The below figure shows the front view of the PSU-240516 module.

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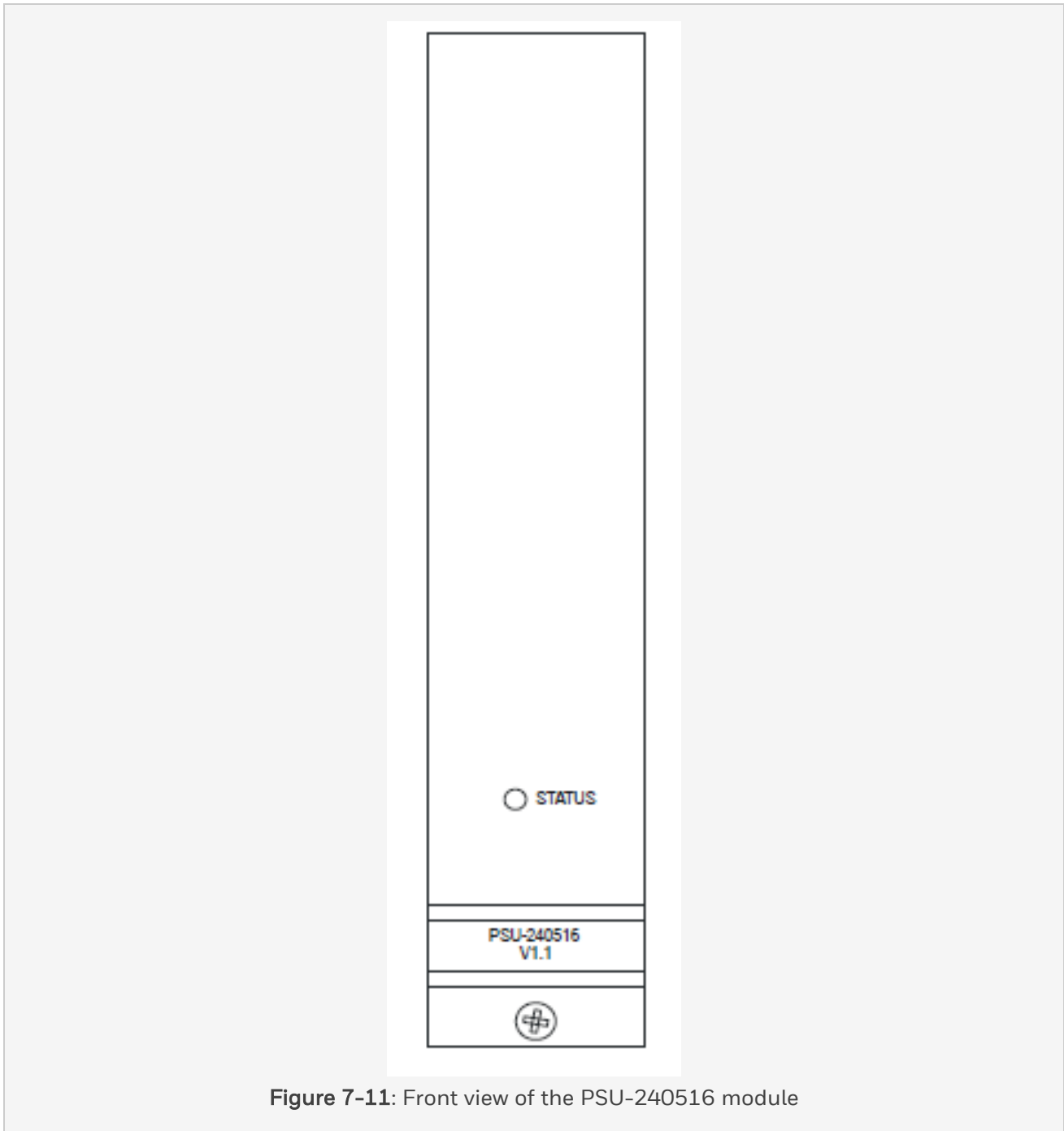


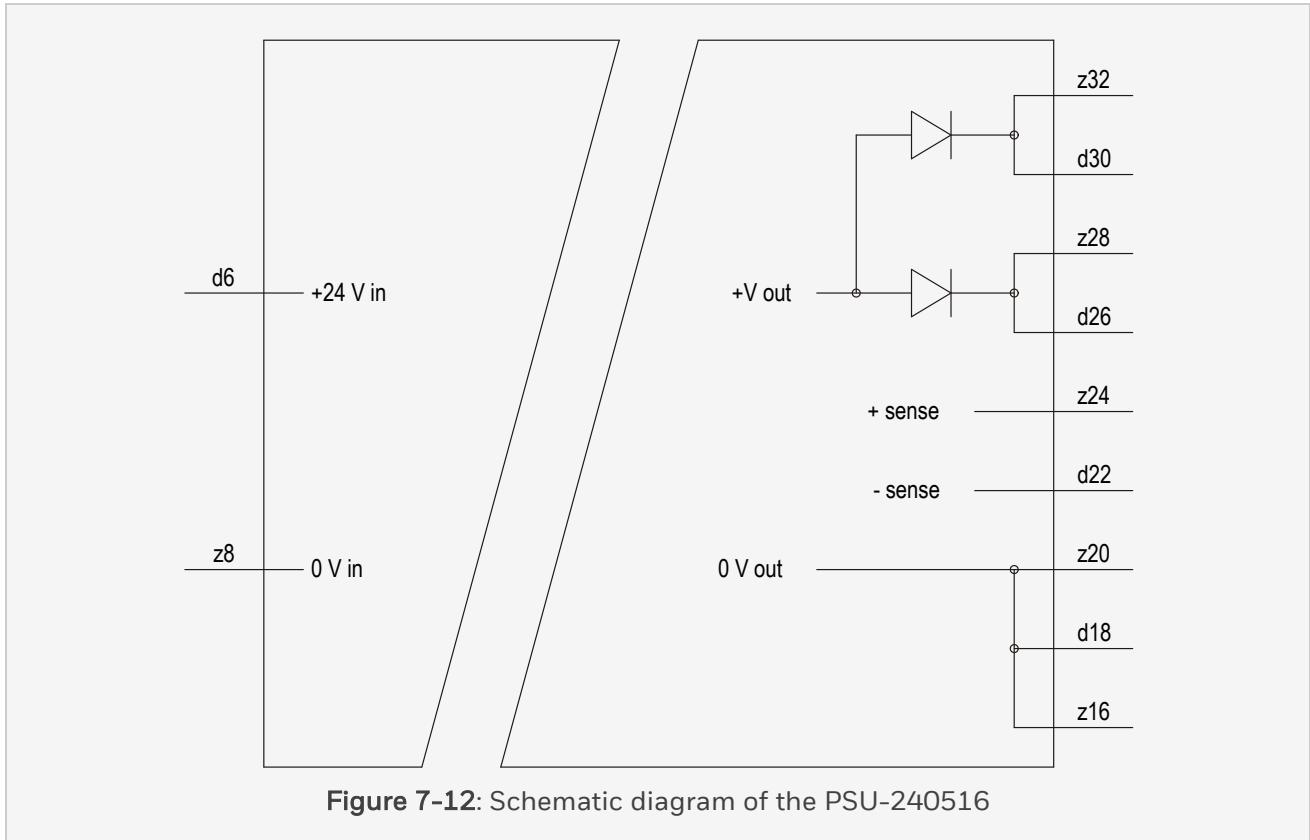
Figure 7-11: Front view of the PSU-240516 module

The (local) 5 V DC output (5V1 resp. 5V2) supplies 5 V to its Control Processor and the redundant IO modules of its Control Processor. The (redundant) 5 V DC output (5VR) shares the 5 V load of the non-

redundant IO modules with the PSU-240516 of the other Control Processor. All 5 V supply signals are available on the WdPx connectors of the Controller backplane.

The PSU-240516 module has two independent overvoltage protection circuits. This makes the module suitable for safe applications without maintenance checks on regular intervals.

The below figure shows a schematic diagram of the PSU-240516.



7.6.2 Pin allocation

The back view and pin allocation of the PSU-240516 module are as follows:

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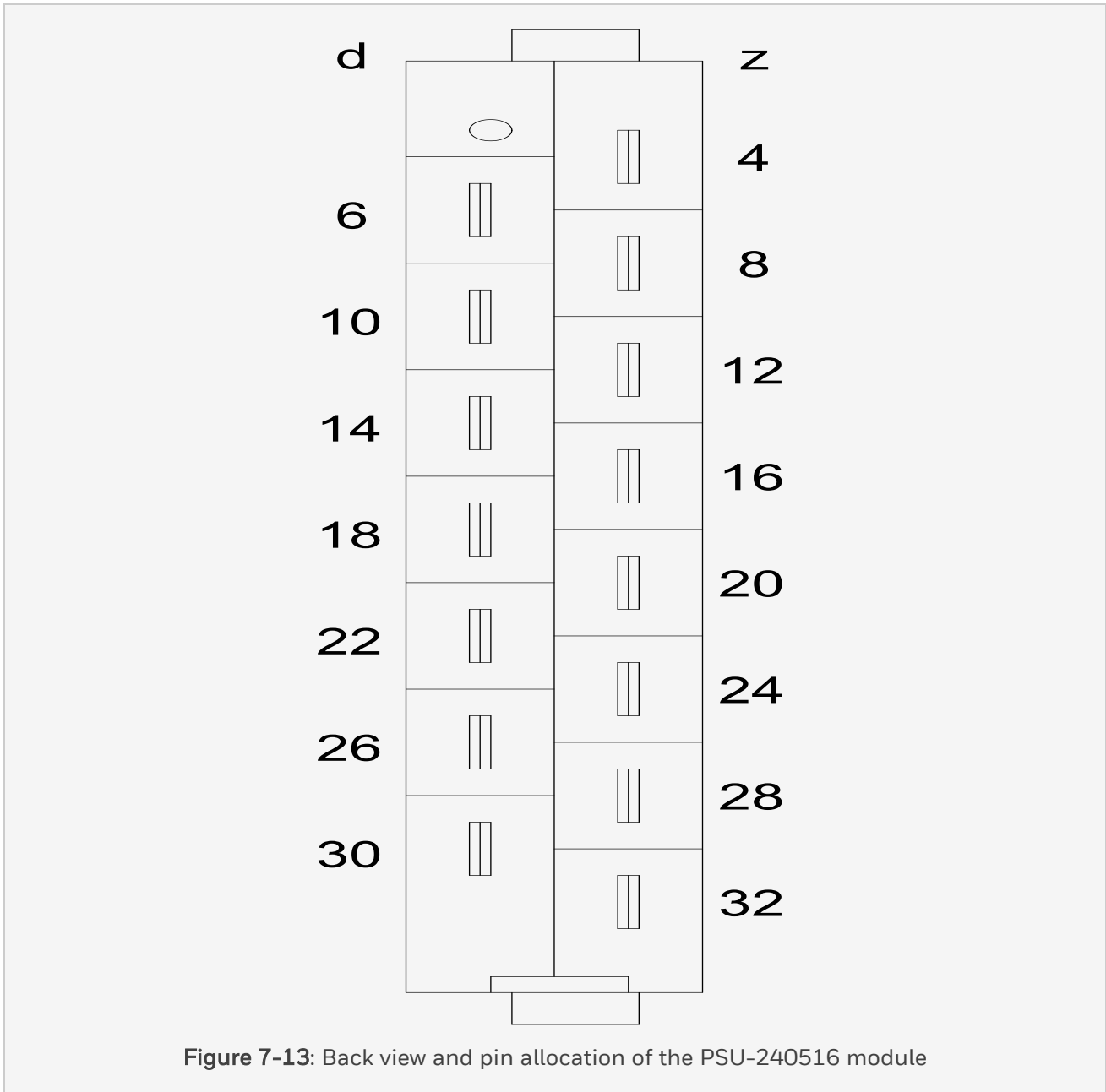


Figure 7-13: Back view and pin allocation of the PSU-240516 module

d6	Supply 24 V DC in
d10	
d14	
d18	Supply 0 V DC out
d22	- sense
d26	Supply 5 V DC out (5Vx)
d30	Supply 5 V DC out (5VR)
z4	Earth
z8	Supply 0 V DC in
z12	
z16	Supply 0 V DC out
z20	Supply 0 V DC out
z24	+ sense
z28	Supply 5 V DC out (5Vx)
z32	Supply 5 V DC out (5VR)

7.6.3 Status LED

The below table lists the possible LED status indications that are visible at the front side of the PSU-240516 module.

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Table 1. LED indicators of the PSU-240516 module

LED	Status	Description
STATUS	Off	The (24 V DC) power on the module is down or too low.
	Red	The 5 V DC output level is too low.
	Green	The 5 V DC output level is within range.

7.6.4 Additional functionality

The PSU-240516 module has a galvanic isolation of:

- ≥ 2.5 kVdc between the 24 V DC input and the 5 V DC outputs.
- ≥ 1 kVdc between the 24 V DC and the casing of the PSU-240516.
- ≥ 1.5 kVdc between the 5 V DC outputs and the casing of the PSU-240516.

7.6.5 Technical data

The PSU-240516 has the following specifications.

General	Type numbers ¹ :	FS-PSU-240516 FC-PSU-240516
	Operating temperature:	-5°C-+70°C (+23°F-+158°F)
	Storage temperature:	-40°C-+85°C (-40°F-+185°F)
	Relative humidity:	10-95% (non condensing)
	Approvals:	CE, TUV, UL, CSA, FM
Power	24 V supply voltage:	24 V DC -15%-+30%
	24 V supply current:	< 6 A at 24 V _{in} (16 A load)
		< 7 A at 20.4 V _{in} (16 A load)
	Inrush current:	< 5 A at 24 V _{in}
	5 V _{load} :	min. 0.5 A
		max. 16 A
	5 V _{Rload} :	min. 0.5 A
max. 16 A		
Hold-up time:	< 1ms	
Physical	Dimensions:	176 × 35.2 × 212 mm (H × W × D)
		6.93 × 1.4 × 8.35 in (H × W × D)
	Weight:	0.85 kg

Note:

1. Modules with suffix code V1.1 contain modified components. There are no functional changes.

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7.7 Controller power supply configuration

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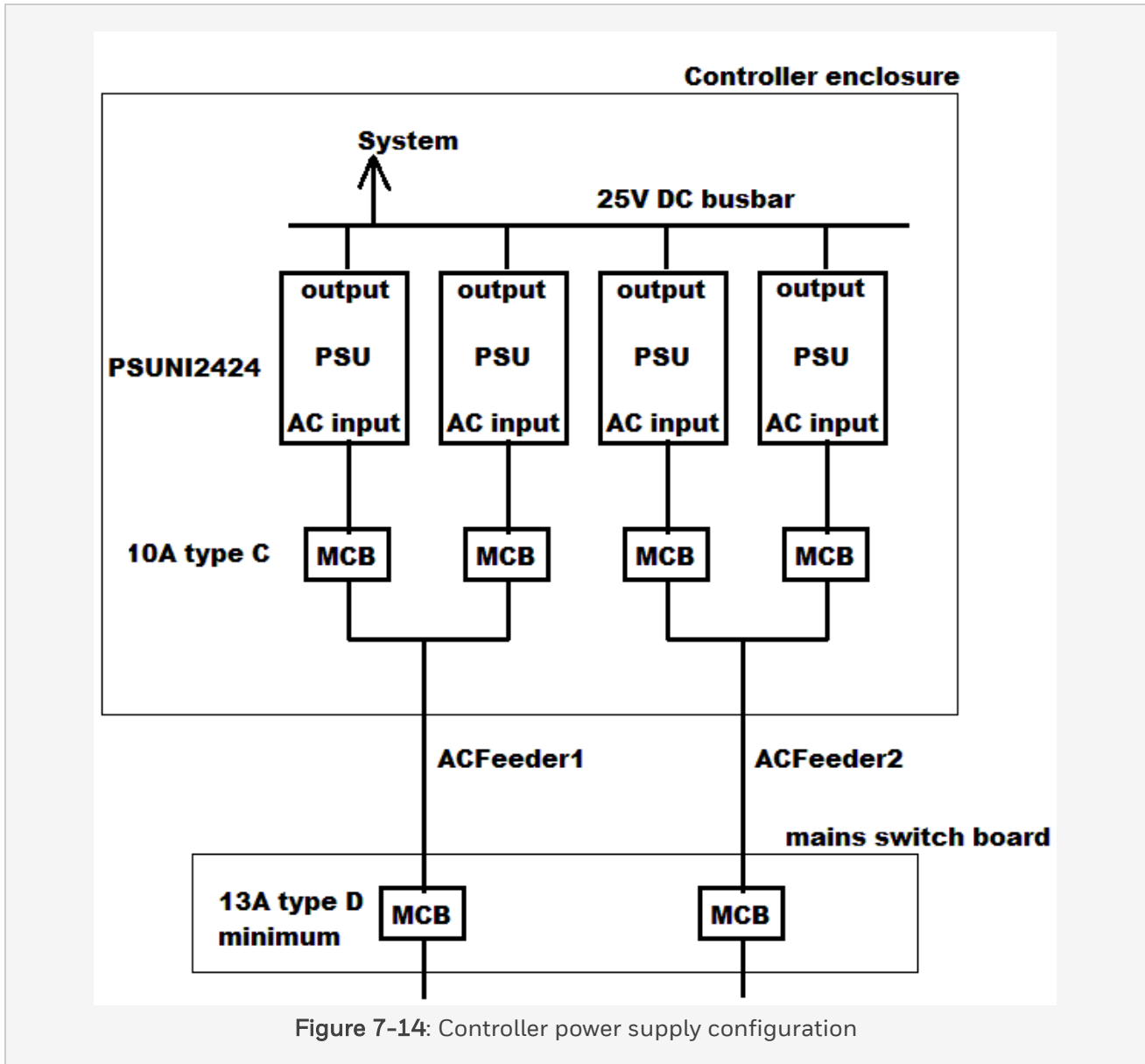


Figure 7-14: Controller power supply configuration

The mains switch board mini circuit breaker or fuse needs to support 120 A inrush current. It is supported with 13 A type D circuit breaker or higher.