PSM3.1

4921240643-D

Power supply module (Controller)

Data sheet

DEIF Improve Tomorrow

1. Series 300

1.1 About the hardware modules

The hardware modules are printed circuit boards that slot in to either a R7.1 or R4.1 rack. Depending on the type of module, they can provide AC or other measurements, inputs, outputs and give communication indication.

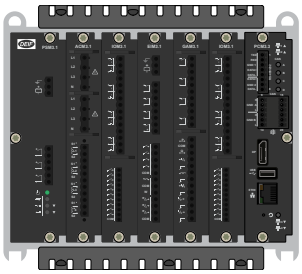
Controller racks

R4.1

Modules

1 PSM3.1
2 module selection
1 PCM3.3

R7.1

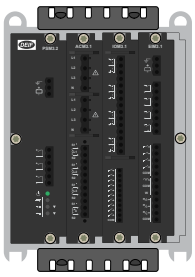


Modules

1 PSM3.1
5 module selection
1 PCM3.3

Extension racks (EtherCAT)

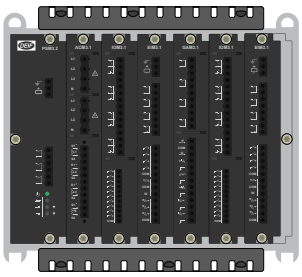
R4.1



Modules

1 PSM3.2
3 module selection
1 small blind module

R7.1



Modules

1 PSM3.2
6 module selection
1 small blind module

The hardware modules feature:

- Placement flexibility in the rack.
- Add, replace, or remove on-site.
- Automatically recognised.
- Configurable input and output functions (digital and analogue):
  - Digital input functions: Commands from operators or 3rd party equipment, changing configuration, operating information.
  - Digital output functions: Alarm status, commands to 3rd party equipment, operating information.
  - Analogue input functions: External set points, operating information, supervised binary inputs.
  - Analogue output functions: Regulation *, operating information.

NOTE * Only available on certain types of controller.

All slots must be covered during operation and blind modules can be used to cover unused slots.

2. Technical specifications

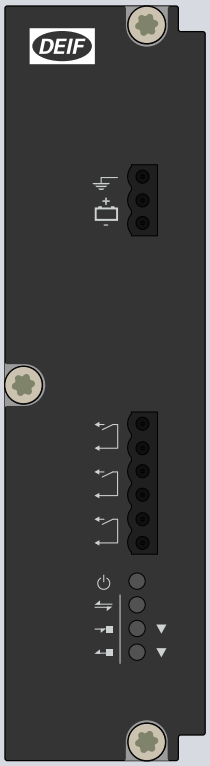
2.1 Power supply module PSM3.1 (Controller)

The power supply module provides power to all hardware modules in the rack. The rack status and alarms activate the three relay outputs. There are two ports for internal communication (EtherCAT) only with extension racks.

The PSM3.1 must to be powered by a power supply with Power Boost function.

The PSM3.1 manages the hardware module self-checks for the rack and includes a power LED. The power supply terminals include circuit protection against load dump transients and JEM177 surge transients (rugged design). These terminals also include battery voltage measurement.

PSM3.1 terminals

Module	Count	Symbol	Type/Info	Name
	1		Ground	Frame ground
	1		12 or 24 V	Power supply
	3		Relay output	1 × Status OK (fixed) 2 × configurable
	1		**Off** : No power supply **Red flash** : PSM is starting or module failure **Green** : Power supply **Green flash** : Controller identification	Power supply indication
	1		**Off** : No EtherCAT communication **Green** : EtherCAT Communication	EtherCAT communication connections (to connect to extension racks). LEDs are on the module front, connections are at the module bottom.
	1		EtherCAT communication (RJ45) input **Off** : No communication **Green** : Communication connected **Green flash** : Active communication	
	1		EtherCAT communication (RJ45) output **Off** : No communication **Green** : Communication connected **Green flash** : Active communication	

PSM3.1 technical specifications

Category	Specification
Frame ground	Voltage withstand: ±36 V DC to the power supply positive (terminal 1) and negative (terminal 2)
Controller power supply	Input voltage: 12 or 24 V DC nominal (8 to 36 V DC continuously) UL/cUL Listed: 10 to 32.5 V DC 0 V DC for 50 ms when coming from at least 8 V DC (cranking dropout) Consumption: Typical 20 W, maximum 35 W Voltage measurement accuracy: 0 to 30 V: ±1 V; 30 to 36 V: +1/-2 V Internal protection: 12 A fuse (not replaceable) (fuse size determined by load dump requirements) Voltage withstand: ±36 V DC Load dump protected by TVS diodes

Category	Specification

	Start current
	• Power supply current limiter
	  ◦ 24 V: 4 A minimum
	  ◦ 12 V: 8 A minimum
	• Battery: No limit

Relay outputs 	Relay type: Solid state Electrical rating and UL/cUL Listed: 30 V DC and 1 A, resistive Voltage withstand: ±36 V DC
Terminal connections	**Frame ground and power supply**: • Terminals: Standard 45° plug, 2.5 mm^2 • Wiring: 1.5 to 2.5 mm^2 (16 to 12 AWG), multi-stranded **Other connections**: • Terminals: Standard 45° plug, 2.5 mm^2 • Wiring: 0.5 to 2.5 mm^2 (22 to 12 AWG), multi-stranded
Communication connections	EtherCAT communication: RJ45. Use an Ethernet cable that meets or exceeds the SF/UTP CAT5e specifications
Torques and terminals	Module faceplate screws: 0.5 N·m (4.4 lb-in) Connection of wiring to terminals: 0.5 N·m (4.4 lb-in) UL/cUL Listed: Wiring must be minimum 90 °C (194 °F) copper conductors only
Galvanic isolation	Between power supply and other I/Os: 600 V, 50 Hz for 60 s Between relay groups and other I/Os: 600 V, 50 Hz for 60 s Between internal communication ports and other I/Os: 600 V, 50 Hz for 60 s
Ingress protection	Unmounted: No protection rating Mounted in rack: IP20 according to IEC/EN 60529
Dimensions	L×H×D: 43.3 × 162 × 150 mm (1.5 × 6.4 × 5.9 in)
Weight	331 g (0.7 lb)

3. Legal information

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