

RTU513 Remote Terminal Unit DataSheet

Power Supply 48PSM12

Application

The power supply unit 48PSM12 generates the two supply voltages (5 V DC and 24 V DC) for the RTU513 subracks SMS10,SMS12,WMS10,WMS12. The output power is sufficient to supply a subrack with up to 4 communication units.

It is possible to configure redundant power supplies for project configurations with higher requirements to availability. In this configuration two power supply units 48PSM12 are operating in parallel mode. They are able to take over the full load, if one power supply fails.. Only power supplies of the same type and rubric should be used for red. operation.

The 48PSM12 power supply unit feed the +5 V DC (U1) and the +24 V DC (U2) for an RTU513 subrack.

There are two version available:

- R0001 Input Range 24 ... 60 V DC
- R0002 Input Range 24 ... 60 V DC



Characteristic

The power supply unit 48PSM12 has the following characteristics and functions:

- Potential isolation between the input and the out puts
- Cooling by natural convection
- Electronic power limitation
- Short-circuit proof
- Over-voltage protection
- Controlled load balancing
- 2 light emitting diodes for displaying output voltage 5V and 24V
- Parallel operation with monitoring of redundant power supply configuration
- Alarm indication (relay) in case of failure
- Reverse Voltage protection

Characteristic

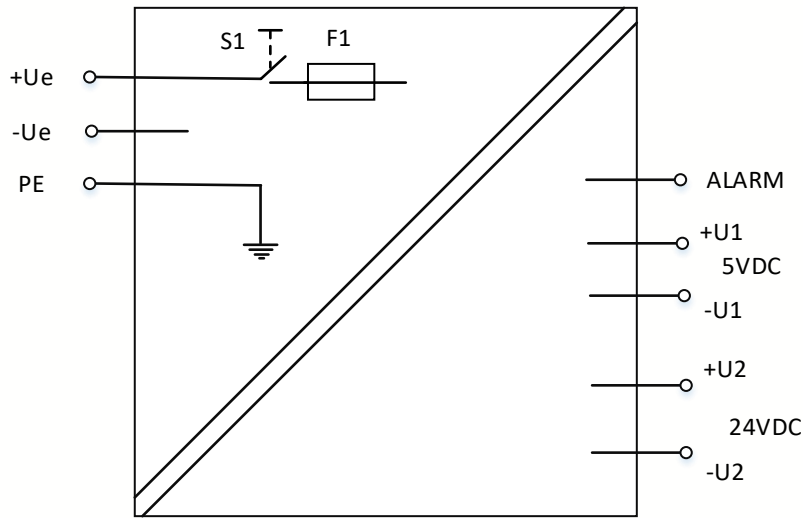


Fig.1: Function block diagram 48PSM12

Processing Functions

The primary fuse is placed on the right side of the power supply. If an output voltage is lost, the green LED is off. Replace only the same type of fuse to prevent power supply failures. The power supply is switched by the ON- -OFF switch (S1) on the front plate.

Total Power Output

R0001: The 48PSM12 supplies a total output of approx. 44.3 W. This is split to:

- + 5 V DC and 55000 mA = 27.5 W
- +24 V DC and 700 mA = 16.8 W

R0002: The 48PSM12 supplies a total output of approx. 50.016 W. This is split to:

- + 5 V DC and 6000 mA = 30W
- +24 V DC and 834mA = 20.016 W

Use table 1 to calculate the total load for subrack configurations.

Settings

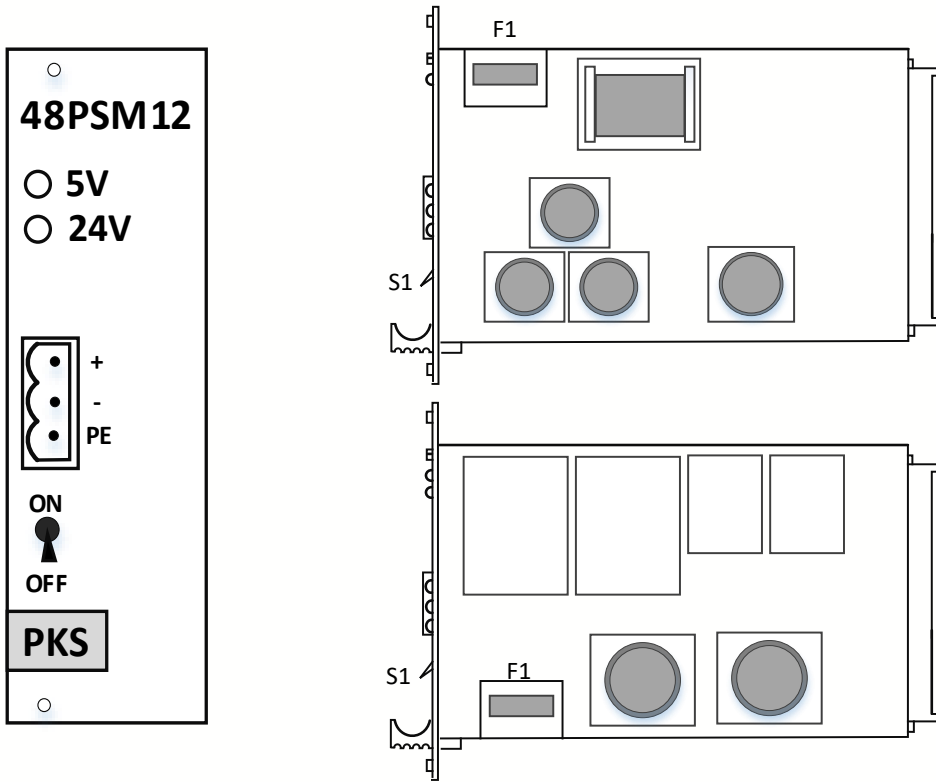


Fig.2: Board Layout and Fuse Position (R0001,R0002)

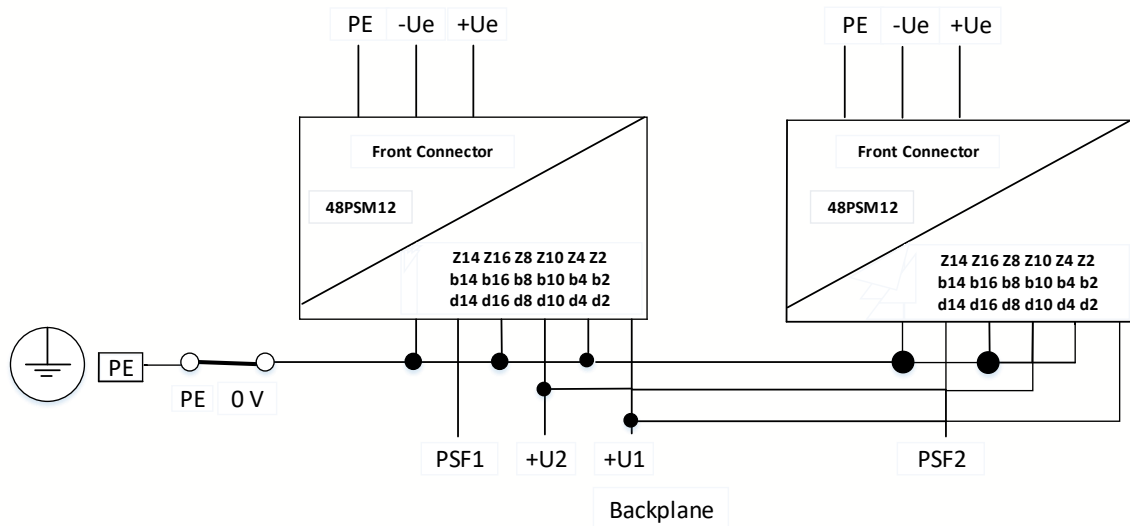


Figure. 3: Subrack Wiring in a communication subrack CSMS10

Settings

Board/Unit	5V DC Input Current [mA]		24V DC Input Current [mA]		Max.per Subrack	Number of Boards in the Subrack	Total 5V DC [mA]	Total 24 V DC [mA]
	normal	maximum	normal	maximum				
2AOM10	600	650	--	--	19			
8AIM10	--	210	--	--	19			
16DIM10	--	110	--	--	19			
16DOM10	100	120	30	60	19			
16DOSM10	--	130	--	--	19			
FOSM10	220	280	--	4	19			
FSKM10	600	--	140	--	19			
513BCM02	80	--	60	--	1			
513BCM03	80	--	60	--	1			
513BCM05	80	--	60	--	1			
513BCM10	--	1060	--	--	2/4			
Maximum [mA]							≤5000	≤800

Table 1: Power Consumption RTU513

Technical Data

In addition to the PKS RTU 513 general technical data, the following applies:

Input

R0001 R0002	24 to 60 V DC nominal 19,2 ... 69 V DC (-20 ... +15 %)
Voltage Interruption	≤ 50 ms; 0 % UN (no failure)
Starting Current:	≤ 10 A according IEC 60870-4
Efficiency	≈ 85%
Fuse	F1=5A
Nominal voltage	48 VDC according to IEC60870-2-1

Output

Output Power	44.3 W total
De-rating	-2,5 % per Kelvin ≥ 55 Grad C

Output1

Voltage	5.1 V DC
Tolerance	5.0 ... 5.3 VDC
Current min	0.2 A
Current max	5.5 A
Residual Ripple	≤ 30 mVss

Output2

Voltage	24 V DC
Tolerance	22,4 ... 26,3 V DC
Current min	0 A
Current max	0.7 A
Residual Ripple	≤80 mVss

Electromagnetic Compatibility

EN61000-4-2 Electrostatic Discharge Immunity	8KV Air 6KV direct Performance criteria A
EN61000-4-3 Radiated RF Field	10V/m Performance criteria A
R0001: EN61000-4-4 Fast Transient Immunity (Burst)	2KV Performance criteria A
R0002: EN61000-4-4 Fast Transient Immunity (Burst)	4KV
EN61000-4-5 Surge Immunity	2KV direct Performance criteria A
EN61000-4-6 Conducted RF Field	10V Performance criteria A
EN55011 RF emissions air	30MHz up to 1GHzclass B (Industry)
EN55011 RF emissions cable	0,01 MHz up to 30 MHzclass B (Industry)
EN61000-4-16	300 V / 0,6 A 30 V / 6 A
EN61000-4-17	12,5% AC simple
EN61000-4-18	2 KV DC PE 1KV DC+ / DC-

Technical Data

Mechanical—Layout

PCB	3HE, Euro-Card format (160 x 100 mm)
Front panel	8R, 2 Slots (40 mm)
Weight	ApCa. 0,6 kg

Environmental conditions

Temperature	0 ... 70 °C
Relative humidity	5 ... 95 %(non condens- ing)

Connection types

Connector	Indirect, 48-pole, Type F DIN 41612
Supply connection	Indirect, 3-pole, COMBICON terminal connection