

RTU7M – Power Supply Cards

General Description

Power supply cards serve for the powering of RTU7M, all cards and slave units in bus. We deliver two principally different types:

- ☒ DC, galvanically isolated card,
- ☒ AC / DC, galvanically isolated card with battery backup.

DC, Galvanically Isolated Card

This card has a galvanically separated input from the output, a wide range of power supply voltage (according to the version of the card) and does not enable to connect the backup battery. The card is mostly used for the powering from DC power supplies or from a battery with various voltage levels according to the specification. In version C (with processor), it allows to measure the input value of the primary supply voltage in the entire supply range.



AC / DC, Galvanically Isolated Card with Battery Backup

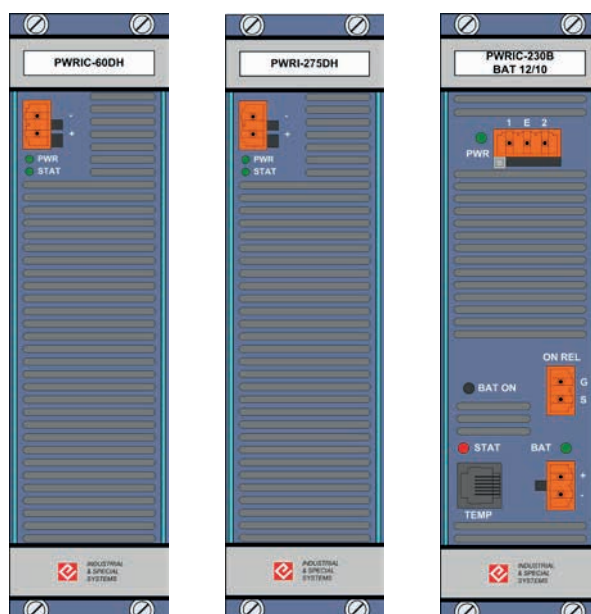
This card can be used for powering from AC or DC. The CPU on card PWRIC controls the battery charging, input voltage and temperature measurement. During operation from the backup battery, the battery status is checked for protection against the full discharging. In the case of a decrease of the battery voltage below the minimal value, the unit enters into the shutdown regime for one minute. Information about this status, as well as the information about the outage of the input voltage is transferred into the master system. After one minute, if there is no restoration of the supply of input voltage, the unit is automatically switched off. The power supply card includes the integrated charger for 12 V or 24 V backup batteries with various capacities. The maximum maintenance charging current is 1 A. The charging of the battery is controlled by the CPU depending on the temperature, measured by digital sensor connected via RJ-12 connector on card. The battery capacity is periodically tested (loaded with a current 9 A for a 24 V battery and 4.5 A for a 12 V battery) and the value is transferred to the master system. The card is equipped with an auxiliary contact – connector ON REL, which works as life contact, used for battery protection against another discharging, when system is off. There is button BAT ON on card, which activates the unit during the operation only from the backup battery. The card also enables to measure the effective value of the primary power supply voltage within the whole supply range.

Technical Specification of Galvanically Isolated Power Supply Cards

Card	PWRI-60DH	PWRIC-60DH	PWRI-275DH	PWRIC-275DH
Input voltage	10 ÷ 60 V DC (max. 60 W)		80 ÷ 275 V DC (max. 60 W)	
Range in RTU UC	Card is without CPU	0 ÷ 60 V	Card is without CPU	0 ÷ 275 V
Max. input current	6 A DC		0.8 A DC	
Input protection	SMD fuse F 10 A		SMD fuse F 4 A	
External protection	In case of connection to network system IT, it is necessary two-pole protection			
Output voltage	+5 V DC/10 A (50 W)			
Isolation	Input-output: 2210 V AC/1 min.		Input-output: 3250 V AC/1 min., input-PE: 2200 V AC/1 min.	
Connectors	1× WAGO 231-302/026-000 (part of delivery)			
Wire cross-section	0.08 ÷ 2.5 mm ²			
Signaling LED	PWR	PWR, STAT	PWR	PWR, STAT
Dimensions (with mounted front panel)	45 mm × 172 mm × 92 mm (W × H × D)			
Measuring accuracy	Card without measuring	±0.5 %	Card without measuring	±0.5 %
Position in bus	1			

Technical Specification of Galvanically Isolated Power Supply Cards with Battery Backup

Card	PWRIC-230B BAT24/10	PWRIC-230B BAT12/10
Input voltage	80 ÷ 260 V AC/47–63 Hz 110 ÷ 360 V DC	
Range in User Center	0 ÷ 360 V	
Max. input current	1.4 A AC; 0.7 A DC	
Permanent output power	40 W	
Input protection	Fuse T 4 A	
External protection	Recommended circuit breaker 4 A or 6 A char. C. In case of connection to network system IT, it is necessary two-pole protection.	
Output voltage	+5 V DC / 5 A (25 W), no -5 V DC / 0.3 A (1.5 W)	
Isolation	Primary – secondary 3 kV AC for 1 minute Primary – ground 1.5 kV AC for 1 minute Secondary – ground 500 V AC for 1 minute	
Battery voltage	24 V	12 V
Range in User Center	0 ÷ 30 V	0 ÷ 15 V
Max. battery loading current	1 A (optionally lower current after consulting with producer)	
Max. battery maintenance voltage	27.4 V	13.7 V
Battery protection	3.2 A polyswitch	
Switch off voltage (battery protection)	22 V	11 V
Battery tester	Yes	
Testing current	9 A	4.5 A
Auxiliary contact ON REL	Contact (type NO) 250 V / 3 A AC, 30 V / 3 A DC	
BAT ON (switch on button)	Yes, usage for switch on of unit running from battery	
Measurement accuracy	±0.5 %, measuring of voltage on input and battery	
Temperature sensor	Measured range -55 ÷ +125 °C, accuracy ±0.5 °C in range -10 ÷ +85 °C	
Connectors	2 × WAGO 231-302/026-000, 1 × WAGO 231-303/026-000 (part of delivery), RJ-12	
Wire cross-section	0.08 ÷ 2.5 mm ²	
Signaling LED	PWR, STAT, BAT	
Dimensions (with mounted front panel)	45 × 172 × 92 mm (W × H × D)	
Position in bus	1	



Front panels with connectors for individual types of power supply cards