

### | General description:

The SDH 12 power supply system is intended for uninterruptible supply of 48Vdc loads by direct current in direct full-float operating mode. The construction of the system using cooperation of rectifiers type PDH 48/4 and batteries under control of advanced MSS2M controller.

### | Application:

- + telecommunications and teletransmission;
- + IT applications;
- + industrial automation systems.

### | Features:

- + compact design (1.5U/19") adapted for assembling in cabinets (racks) 19", 21" or 23" (reduction brackets);
- + optional side panels to create enclosure (possibility of wall or ground mounting);
- + Protect the loads against power failure. In the event of mains power failure, battery without time delay take over power supply function;
- + modern rectifier modules;
- + easy installation of external cabling – terminals are located on the front panel of the system;
- + continuous control of system's operation and fast reporting of alarm states by means of controller;
- + easy and full safe operation;
- + immunity to short-circuits and overloads of output circuits;
- + immunity to electromagnetic interferences;
- + wide range of optional equipment.

### | Rectifiers:

PDH 48/4 rectifier with a rated power output of 200W has the UI output characteristic and PFC (Power Factor Correction) function. It corrects the phase shift between current and voltage input, increasing the value of power factor. The rectifier is equipped with: short circuit, overvoltage, overload and thermal protections. The cooling is realized by built-in fan with adjustable rotation speed. Total current drawn by the loads is split into individual rectifiers by using a passive system of load sharing.

### | Power supply of the system:

The SDH 12 system is supplied from single-phase AC supply line.

### | Design of the system:

In standard version the enclosure of the system is intended to installing in standard 19-inch cabinets (racks). The system can also work in stand-alone, or wall mounted version.

The standard version the power supply system consists:

- + microprocessor control unit MSS2M (signaling operation status by two-color LED, D-Sub RS232 to configuration parameters and obtain detailed information on the state of work by connected PC);
- + rectifier subrack for installation up to 3 pcs. of PDH 48/4 rectifiers;
- + battery protection SCP31- 1 pc.;
- + load protection SCP31- 2 pcs.;
- + signalization of blow out battery or load fuse;
- + temperature compensation of float voltage with temperature sensor.

Optionally the power supply system can be equipped with additional modules and elements:

- + LVD - automatic disconnection of the batteries from loads (protection against deep discharge);
- + battery shelf is designed for mounting one set of 7Ah battery;
- + side panels intended for creating floor mounting and wall mounting versions of the system.

Supervisory and monitoring elements are mounted as external components outside the SDH 12 system in the form of modules mounted on the TS35 mounting rail.

### | Safety and Environmental aspects:

During the system design process following aspects related to environmental protection have been taken into consideration:

- + compliance with the European Union's directive RoHS - restrict the use of certain hazardous substances,
- + compliance with the European Union's directive WEE regarding waste of electrical and electronic equipment,
- + compliance with the European Union's directives LVD and EMC - electrical safety and electromagnetic compatibility,
- + reduce of used electrical energy as the result of high efficiency,
- + reduce the amounts of used materials and wastes as a consequence of system dimensions minimization and high reliability.



## Basic parameters of the system:

### Input parameters:

Input voltage	Vac	184 - 253Vac
Frequency	Hz	45...65
Max. phase current	Aac	6,5 (fir 3xPDH and 180Vac)
Power factor $\lambda$		> 0,9

### Output parameters:

Nominal voltage	Vdc	48
Range of voltage regulation	Vdc	51 ÷ 57,6
Characteristic	-	UI
Stabilization of output voltage	%	±1
Maximum output current	Adc	13
Maximum output power	W	600
Output voltage ripples (psophometric value)	mV	< 2

### General data:

Range of ambient temperature	°C	-5 ÷ +50
Cooling	-	forced
Efficiency	%	≥ 90
Ingress protection		IP20
Electromagnetic compatibility	-	PN-ETSI EN 300 386
Electromagnetic compatibility	mm	66(1,5U) x 482,6 (19") x 240mm
System weight without rectifier units	kg	~2,5kg
Dimensions of the rectifier unit (HxWxD)	mm	50x99x199
Weight of the rectifier	kg	0,85

## | Basic functions of the control unit:

- + Measurements:
  - output voltage,
  - battery temperature,
  - 3 analog inputs 0÷5V;
- + Alarms:
  - load or battery fuse blow out,
  - LOW or HIGH output voltage,
  - LOW or HIGH temperature,
  - general alarm;
- + temperature compensation of float voltage;
- + visualization of operation status by two-color LED;
- + control of the LVD battery contactor with adjustable voltage battery disconnect;
- + sending alarm signals;
- + automatic reporting of alarm states to WinCN supervisory system.

## | Extended functions of the control unit:

- + remote computer monitoring of the system by selected Communications medium:
  - Ethernet,
  - fixed network (telecom modem),
  - mobile network (GSM/GPRS),
- + possibility of supervising up to 7 additional external digital signals and 3 analog.