



SPECIFICATION T-2089-E

*48V DC Power Supply & Battery Charger
(30A)*

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SPECIFICATION T-2089- E
CHARGER – POWER SUPPLY 54/48 VDC (30A)

1. GENERAL

The requested device is intended to provide uninterrupted & stable power of 48V DC to the installed telecommunication equipment in the High Voltage IPTO substations. The DC Power Supply will be terminated in a DC Distribution Board. The DC Distribution Board can be “wall mounted metallic enclosure” or “floor mounted cubicle/rack”.

The equipment will be able to charge AGM/VRLA batteries of sealed type 4 x 12V, 90AH/20H/20°C, and will operate with the positive lead (+) to the ground. It must be Switching type and excellent construction quality. If there are not installed batteries, the charger must operate as a simple power supply.

The charger must be apt for installation in 19' rack and must fulfill the following:

1.1 Voltage Output Control:

- 1.1.1** Batteries protection circuit from deep discharge (must be configurable e.g. set at 44 VDC)
 - 1.1.2** Battery Current limiter (automatically limit the batteries recharge current). Capable to prevent batteries overcharging, in the case of under load situations. The current limit values (min, max) must be set.
 - 1.1.3** Automatic voltage control. Constant output voltage under varying load current by controlling the rectifier/charger output voltage to compensate for any voltage drop.
 - 1.1.4** Fast battery charge (Boost charge) (configurable: manual / automatic).
 - 1.1.5** Battery condition checks by predetermined output voltage level and predetermined time and duration of the test. Discharge rate checking.
 - 1.1.6** Low voltage disconnect (alarm & disconnect) to prevent VRLA batteries from deep discharge.
- 1.2** Input circuit breaker (230V AC).
- 1.3** Circuit breaker for the battery bank.
- 1.4** Load circuit breaker.
- 1.5** Free switching contacts (220 V AC, 1A, ON-ON, N/O-N/C contacts) (Normal Close in normal operation, in the case of malfunction the contact must be open) wired to appropriate terminal, for the following Alarms:
- 1.5.1** AC supply loss.
 - 1.5.2** 48 VDC output loss.
 - 1.5.3** Charger failure.
 - 1.5.4** Battery low voltage.
- 1.6** Digital voltmeter to display the voltage across the battery terminals and the voltage across the load.
- 1.7** Digital Ammeter to display the total current supplied to the load.
- 1.8** Expandability by modular rectifier units.
- 1.9** Hot swappable units.
- 1.10** Automatic setup by system controllers.
- 1.11** Isolation between AC (power grid ground lead) and DC (+ pole) telecom ground lead.

1.12 Battery and Ambient temperature sensors (Remote Measurement & system control).

1.13 Network access:

1.13.1 Ethernet communication (LAN/WAN).

1.13.2 RS232 modem communication.

1.13.3 USB.

1.13.4 SNMP traps.

1.14 Applications:

1.14.1 Remote monitoring / management software.

1.14.2 Web Application (operation & maintenance, management & monitoring).

1.14.3 Event log.

1.14.4 Data log (AC voltage, Bus Voltage, Load Current, Temperatures etc)

2. TECHNICAL SPECIFICATION

2.1	Input voltage	230VAC \pm 20% , 50Hz \pm 5%
2.2	Output voltage (batteries)	54 VDC adjustable \pm 5%
2.3	Output voltage (load)	48 VDC adjustable + 3%
2.4	Total current capacity of rectifier	30A (charging current of batteries limited to 10A)
2.5	Line regulation	500 mV max for line variation 185-263 V AC
2.6	Load regulation	400 mV max no load to full load
2.7	Ripple and noise	1% p-p
2.8	Efficiency	>85%
2.9	Overshoot	No overshoot at turn-on, turn-off or power failure
2.10	Electromagnetic Interference EMI	Build in filter
2.11	Output over voltage protection	1 volt above preset output voltage
2.12	Over load protection	Protected against overload and short circuit
2.13	Soft start	Soft start system
2.14	Input to output isolation	3 KV
2.15	Ambient temperature (operation)	-10 to 60° C (derate only above 50 °C)
2.16	Relative Humidity	5 to 95%
2.17	Standards (Safety & EMC)	EN 60950-1, EN 61000-3-2, EN 61000-3-3, EN 61000-6-2/-4

3. INSTRUCTION MANUALS -DRAWINGS

- 3.1** All manual must be supplied in three copies in Greek or English language. Manuals in any other language will be rejected.
- 3.2** The manuals must include:
 - 3.2.1** Block diagram
 - 3.2.2** Installation instructions and commission instructions
 - 3.2.3** Description of operation
 - 3.2.4** Detailed circuit diagrams and layout diagrams of each electronic board

4. BIDS EVALUATION

- 4.1** All bidders within ten (10) working days from the date of acceptance of their offer they must submit to the requesting department of IPTO a sample of the exact type of the equipment offered for further technical evaluation, otherwise the offer will be considered as non-acceptable.
- 4.2** In case that the offered equipment is identical / same to previously supplied sample to IPTO, it is not necessary to provide again the same equipment for assessment but must submit the number of the relevant contract.
- 4.3** The supplied sample will remain at the disposal of the IPTO as long as the duration of the financial offer is valid.