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tPower 12V 10A (TP1210)

CHARGER | AUTOMATIC POWER SUPPLY

The **tPower 12V 10A (TP1210)** is a high-performance smart charger designed for applications requiring maximum reliability in industrial, power, and control environments.
Its microprocessor manages the three-stage **IUoU charging curve (Recovery, Boost, Float)**, ensuring a complete and safe battery cycle.

It incorporates a **real-time self-diagnostic** system that detects reverse polarity, disconnected battery, short circuits, or incorrect voltage. Faults are reported via LED indicators or configurable dry contacts.

Thanks to its robust design, high efficiency and low maintenance, the TP1210 combines performance and safety for systems where continuous power is essential.

CHARACTERISTICS

- Nominal output voltage: 12 V DC
- Maximum output current: 10 A ± 5%
- Nominal power: 120 W
- IUoU load curve (DIN 41773): 3 automatic stages:
  - Recovery - Boost - Float
- Operating modes:
  - Battery charger
  - Independent power supply
- Compatible battery types: Open lead-acid, AGM, Gel, Ni-Cd.
- Automatic diagnosis:
  - Reverse polarity
  - Battery disconnection
  - Short circuit
  - Dead battery or defective cells
- LED indicators with flashing codes for charging stage and faults.
- Integrated protections:
  - Short circuit and overload
  - Overvoltage (35 V typ.)
  - Overtemperature
  - Reverse connection
- Signal outputs (potential-free contacts):
  - Battery failure
  - AC power failure
  - Low battery
- Adjustable current (Iadj): 20–100% of nominal value.
- Mounting: DIN rail or wall mount.
- Cooling: natural convection.
- Protection: IP20.

HIGHLIGHTS

- Automatic 12V/10A battery charger with dual charging and power supply functions.
- Switching technology and intelligent multi-stage IUoU charging management.
- Compatible with flooded, AGM, Gel, Ni-Cd.
- Real-time diagnostics with LED indicators and signal contacts for battery and AC mains failure.
- Complete protection against reverse polarity, overcharging, over-temperature, and short circuits.
- Adjustable charging current (20–100%).
- DIN mounting and natural convection cooling.
- Robust aluminum construction, IP20 protection rating.

TYPICAL APPLICATIONS

- Power backup systems (UPS, control panels).
- Industrial automation and SCADA equipment.
- Automatic generators and starter panels.
- Hybrid or DC-DC solar power systems.
- Communications, transportation, and marine systems.

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TECHNICAL DATA AND SPECIFICATIONS

ENVIRONMENTAL CONDITIONS

Operating temperature	–25 °C a +70 °C
Storage temperature	–40 °C a +85 °C
Humidity	95 % @ 25 °C (no condensation)
Refrigeration	Natural convection

INPUT/OUTPUT

Input	**Nominal voltage:** 115–230–277 V AC **Operating Range:** 90–135 / 180–305 V AC **Input Current:** 2.4 A @115V / 1.2 A @230V **Frequency:** 47–63 Hz **Inrush current:** ≤16 A (5 ms) **Internal fuse:** 4 A **Recommended external fuse:** 10 A MCB curve B
Output	**Nominal voltage:** 12 V DC **Maximum Current:** 10 A ±5 % **Rated Power:** 120 W **Typical efficiency:** (50% load) 89 % **Load curve IUoU:** – 3 Automatic stages **Boost Tension:** 14.4 V **Voltage fluctuation:** 13.75 V **Recovery:** 2–9 V **Derating:** –2.5%/°C for T>50°C **Adjustable current** 20–100 % / In **Maximum Output Contact Current:** 1A – 30 V DC / 60 V AC

MECHANICAL DATA

Material of the body	Aluminum with ventilation fins
Mounting	riel DIN 35 mm
Weight	0.65 kg
Dimensions (H x W x D)	114 × 72 × 136 mm
Protection	IP20

CERTIFICATIONS AND STANDARDS

IEC/EN 62368-1 (Electrical safety)
IEC/EN 61000-6-4 (Emission)
IEC/EN 61000-6-2 (Immunity)
UL 1236 Recognized– BBGQ2 Battery Chargers (File E353241)
Complies with Directives LVD 2014/35/UE y EMC 2014/30/UE

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