TECNOCORR Marine & Industry Cathodic Protection

Switching Mode Power Supply Units

Datasheet DS 002

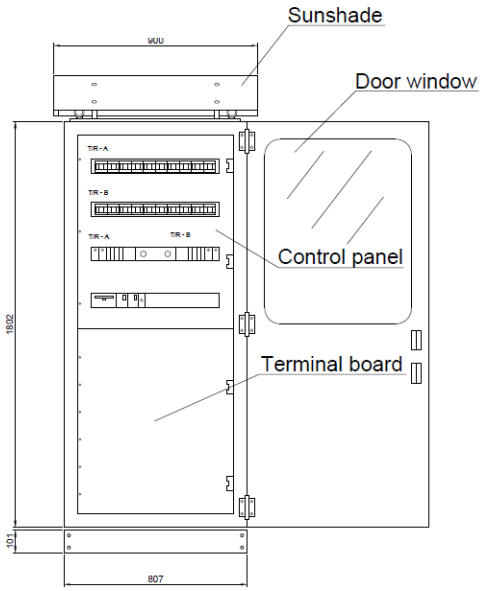
Rev.02

TECNOCORR S.R.L. is proud to offer an **innovative** range of power supply units using **Switching Mode Technology (SMPS)** to achieve a new level of stability and control. Switching mode technology allows high-power delivery using **small, reliable and lightweight** units. High efficiency also means no power wasted and minimal heating of the unit.

SMPS can work in both manual and **automatic mode**. In manual mode, output voltage and current are set and regulated by an operator through multi-steps selectors or potentiometer.
In automatic mode, SMPS will measure the actual ON protection potential of the structure using a standard **Cu/$CuSO_4$ or Zinc reference electrode**, and automatically regulate the output current in order to maintain the structure at the potential level set by the user.

Automatic control allows the SMPS to compensate for the changes in soil or water resistivity and structure's insulation and current need, **without the need of an external operator**.

Our SMPS use a **proprietary controller unit** to regulate the output power with a never-reached **speed and precision**.
Thanks to its finer regulation and superior stability, Switching Mode Technology allows our units to **remain stable even when delivering extremely low output voltage and current**, overcoming most of the problems that characterized traditional regulation systems.
External LC filters can be included for a further improvement of residual ripple.



Thanks to their high efficiency, our SMPS suffer only minimal heating, so oil cooling is not required. Our modules are housed in a **high-quality AISI 304** (or optional AISI 316L) **stainless steel** cabinets for superior corrosion resistance and durability, also in **marine and aggressive climates**.

Our stainless steel enclosures are certified **up to IP67** rating according IEC 60529, suitable for outdoor installation also in the harshest conditions. Cabinets can be equipped with an IP rated window to allow an easy and immediate check of functionality.

Our SMPS are available both in single-channel or **multi-channel** option, where multiple fully independent units are integrated in a single cabinet.

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Our SMPS are available for both 220 V **single phase** and optional 400V tri-phase input; switching mode technology will maintain a fine regulation even in presence of massive input voltage and frequency variations.

The front panel will house control devices and digital **measuring instruments** (option analogue instruments).
AC input and DC output lines (electrode and anodes) can be protected via high-speed fuses, varistors or **integrated surge diverters** according to Customer's requirements.

Our SMPS are fully compatible with our **remote monitoring and control system**, which allows the user to operate on the SMPS from a remote control room and keep under control the output parameters and **alarm signals** like, under/over protection, faults and over-temperature.
A built-in **4-20 mA interface** allows easy reading and acquisition of output values and parameters
Optional **dry contacts** for alarm signaling are available on request.
To perform instant-off potential measures, TECNOCORR offers a wide complete range of **On-Off** cyclic current interrupters.

Standard Technical Characteristics	
Electrical characteristics:	
Input voltage	220 V single-phase or optional 400 V three-phase
Input voltage allowed fluctuations	± 15% min.
Input protection	Circuit breaker and overvoltage protection
Signaling devices	LED indicators for power-on, operating mode, over-temperature, ON-OFF insertion, alarms, etc.
Maximum output voltage	48 V DC
Maximum output current	150 A DC (typical)
Output parameters stability	± 2% Max.
Output voltage ripple	< 150 mVp-p
Line regulation	< 200 mV
Output protection	High-speed fuses and overvoltage protection
Panel instruments	Digital panel with user interface and Voltage/current readings or class 1.5 analog voltmeters and ammeters. ø 4 mm sockets for direct measurements.
On request:	4-20 mA output transducers, dry contacts for alarm, ON-OFF interrupter, data loggers, interface for remote monitoring and control.
Mechanical characteristics:	
Standard temperature range	-15 ÷ +65°C. Other ranges available on request.
Enclosure	AISI 304 or AISI 316L Stainless Steel
IP rating	IP 54 (standard) – IP 67 Max (on request)
Cooling	Air cooled – optional forced ventilation
Construction features:	Plinth or floor mounting, lifting eyebolts, optional panel window.
Nameplate	Manufacturer name and address, manufacturer's serial number, input and output ratings. Further information according customer's requirements.

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