

DC POWER SUPPLY SYSTEMS

single branch Rectifier - SCR type

TITANIUM 1R-SCR PLUS SERIES



TITANIUM 1R-SCR PLUS rectifier series belongs to the Single Branch category thus provided with a single AC / DC converter that powers the direct current loads and simultaneously charges a battery. Cabinet and open frame versions are available, combined with vented/sealed Lead Acid and Ni/Cd batteries. An input insulation transformer is present while the AC / DC power converter is of the removable type and made with SCR full controlled technology, in order to improve the efficiency and contain the ripple at the output. In this way the MTBF is high and MTTR extremely low.

APPLICATIONS:

Oil & Gas
Energy production and distribution
Process controls
Transportation
Safety
Telecommunications
Tertiary

PRODUCT PLUS:

- An input insulation transformer at power frequency, with an electrostatic shield
- SCR Power Bridge Rectifier full controlled **ON REMOVABLE UNITS**
- Control type: SCR with phase-cutting regulation
- Digital control Microprocessor + PLC
- Charge curve for each type of battery
- Digital control panel with touchscreen display
- High efficiency and reliability
- Easy maintenance with access from the front and removable power units
- Extended frequency range accepted as input
- Low residual ripple as output and on batteries (RIPPLE)
- Automatic and manual battery test (performing a true discharge battery test)
- Earth fault sensor with LED indications
- MODBUS TCP/IP communication
- Parallel connection ability for redundancy (optional)



DATA SHEET

MODEL

TITANIUM 1R-SCR PLUS

GENERAL	BATTERY TYPE	Suitable for Sealed (VRLA) Lead Acid - Vented Lead Acid - Ni/Cd			
	CHARGING CHARACTERISTICS	IU (according to DIN 41773)			
OUTPUT	NOMINAL VOLTAGE (V)	24	48	110	220
	CURRENT RANGE	60 ÷ 500A			60 ÷ 250A
	MAXIMUM POWER (W)	12000	24000	55000	55000
	RIPPLE NOISE (RMS)	≤ 1% Vn			
	Vout SETTING RANGE	+/- 5%			
	STABILITY	+/- 1%			
	Vin VARIATION SETTING	+/- 1%			
	LOAD VARIATION SETTING	+/- 1%			
	START-UP TIME	10 sec.			
INPUT	VOLTAGE RANGE	3Ph 400Vac +/-10%			
	INPUT FREQUENCY	50 ÷ 60 +/-5%			
	EFFICIENCY (Typ.)	≥ 90 %			
	I/O INSULATION	4kV BY TRANSFORMER			
PROTECTIONS	INPUT	Fuse switch			
	BATTERY	Fuses			
	OUTPUT	Switch			
	CYCLE DIRECTION	Shut down. Automatic restart after phase adjustment			
	MINIMUM INPUT VOLTAGE	Shut down if Vin<325Vac; Automatic restart if Vac>330Vac			
	CURRENT CURVE	CONSTANT			
	OVERVOLTAGE	+ 10% Vn			
	UNDERVOLTAGE	- 50% Vn			
	OVERTEMPERATURE	Shut down; automatic restart after temperature reset			
SPDT ALARMS 6Amp/250V	CUMULATIVE SYSTEM FAILURE*				
	BATTERY LOW VOLTAGE				
	OTHER OPTIONS AVAILABLE UPON REQUEST				
ENVIRONMENTAL DATA	OPERATING TEMPERATURE	-10+40°C			
	OPERATING HUMIDITY	2090% (NO COND.)			
	STORAGE TEMPERATURE	-20+50°C			
STANDARDS	MARKING	CE			
	DEGREE OF PROTECTION	IEC 60529			
	EMC	EN 61000-6-2 EN 61000-6-4			
	STATIC CONVERTERS	EN 60146			
DEGREE OF PROTECTION (closed door)		IP30			
COLOUR		RAL 7035			

* = Relay normally operating in positive safety

TOUCH SCREEN ALARMS

AC NETWORK POWER OFF

RECTIFIER FAILURE

BATTERY OPERATION

BATTERY LOW VOLTAGE

END OF BATTERY

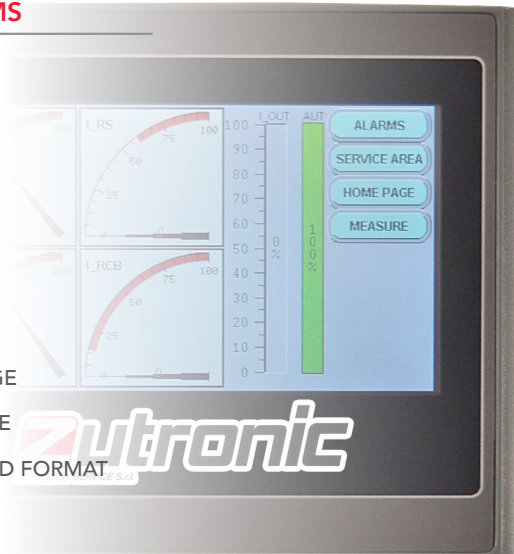
BATTERY TEST FAILURE

OVERLOAD

RECTIFIER MAXIMUM VOLTAGE

RECTIFIER MINIMUM VOLTAGE

ALARMS AVAILABLE ON WORD FORMAT



TOUCH SCREEN ELECTRICAL MEASURES

OUTPUT VOLTAGE

OUTPUT CURRENT

BATTERY RECHARGING CURRENT (OPTIONAL)

OUTPUT POWER

% OUTPUT CURRENT USED

% REMAINING CHARGE

SPECIAL FUNCTIONS AVAILABLE

AUTOMATIC AND MANUAL BATTERY TEST

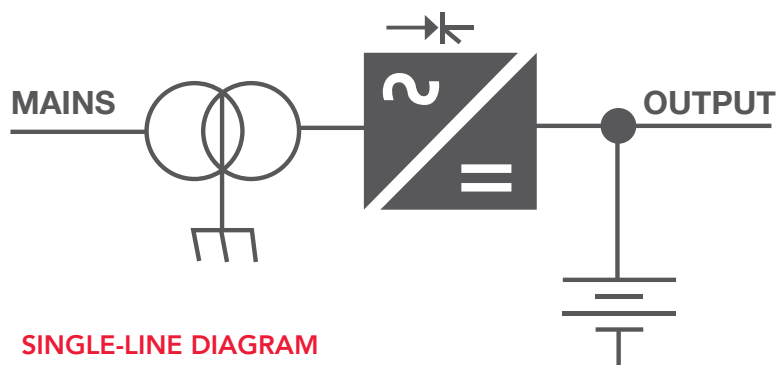
EARTH FAULT SENSOR

OVERLOAD INDICATION

MODBUS TCP/IP AND VNC VIEWER COMMUNICATION

% CORRENTE UTILIZZATA IN USCITA

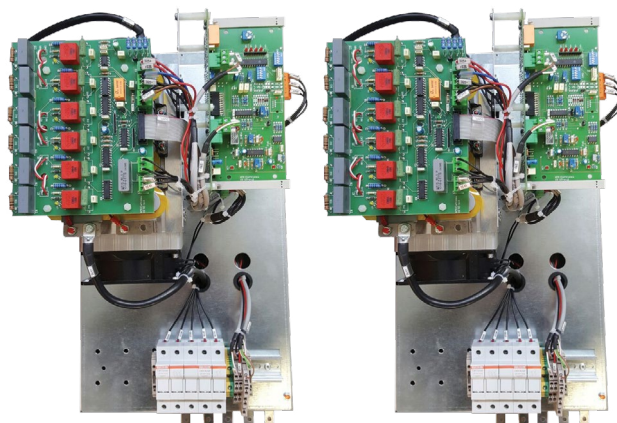
% AUTONOMIA RESIDUA



SINGLE-LINE DIAGRAM

REMOVABLE AC/DC CONVERTERS

REMOVABLE AC/DC CONVERTERS TO SIMPLIFY THE REPLACEMENT IN CASE OF FAILURE (VERY SHORT MTTR)



AVAILABLE ACCESSORIES (OPTIONAL):

- Automatic circuit breaker on input, output and battery (with or without auxiliary contact and/or opening coil)
- UP board for BOOST CHARGE and MANUAL functions
- UP board for Compensation in temperature function automatically adjusting the charging voltage to the battery temperature
- Temperature probe
- BRPCU device; protection against reverse battery polarity. It may be associated with an automatic battery circuit breaker with automatic opening
- Disconnection device for battery discharge end; disconnects the load from the battery to prevent a battery deep discharge and makes the equipment compliant with CEI 0-16 standard
- E.P.O. Device (Emergency Power Off)
- Relay alarm customization
- Battery monitoring system to check single mono blocks or "channels" with failure alarm
- Field Bus communication interface available with different protocols allowing the status transmission
- Voltage drop cell; It contains the voltage loads within acceptable limits
- Special cabinets with seismic certification or with high degree of protection
- Distribution; circuit breakers for output line protection



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BUREAU VERITAS
Certification

