

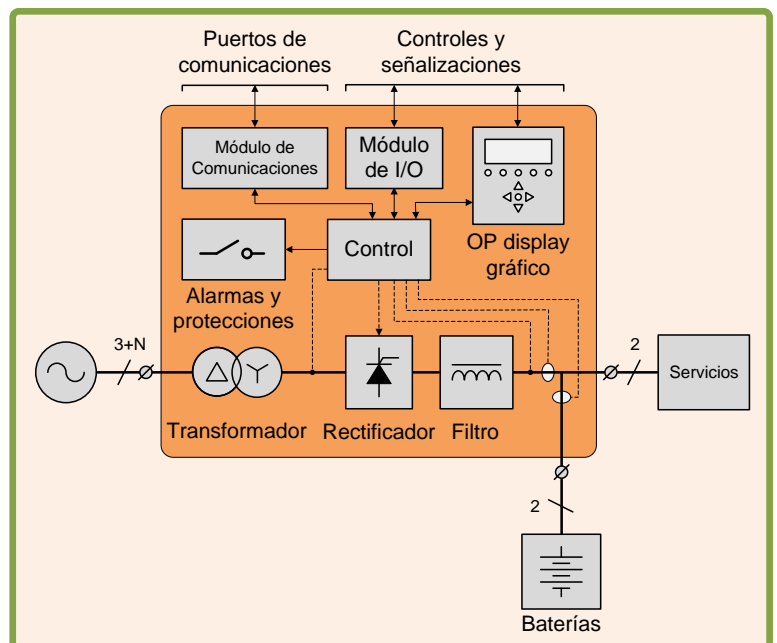
General description

- TR-110 series consists of battery rectifiers-chargers with three-phase supply and powers between 3 and 10kVA, designed to provide an uninterrupted continuous supply to the services that require it. In turn, its design as a charger allows to maintain the batteries in an optimal state of charge and protects them against deep discharges, lengthening its lifetime.
- Its configuration makes easier the maintenance of its components and thanks to its easy operation and intuitive software, the user will be able to take full advantage of this equipment and provide services with great security and reliability.



Main Features

- Conventional thyristor technology.
- Isolation transformer.
- Cutting-edge microprocessor-based digital control system.
- 6 or 12 pulses rectifiers for a lower harmonic distortion.
- Alarm signalling and adequate battery charging.
- Charger Current limitation.
- Communications via MODBUS - RS485 or TCP / IP over Ethernet.
- OP with display and keypad for monitoring, parameter input, configuration and protection with password.
- Pc software (RS232 communication) for configuration and monitoring of parameters and internal variables, alarm signalling and history logging.



TR 110 SERIES INPUT ELECTRICAL CHARACTERISTICS	
Rated Input CD voltage	400/230V _{ac} + 10% - 15% (three-phase)
Frequency	50Hz ± 5%
Apparent power	3 / 5 / 7.5 / 10 kVA
Maximum input current	7.5 / 12.6 / 18.8 / 25.1 A (230V _{ac}) 4.3 / 7.2 / 10.8 / 14.4 A (400V _{ac})
Cos (φ)	0.85 (6 pulses) and 0.89 (12 pulses)
Typical performance	95.1%
THD	38% (6 pulses) and 13% (12 pulses)
THD with filter (optional)	25% (6 pulses) and 8% (12 pulses)
TR 110 SERIES OUTPUT ELECTRICAL CHARACTERISTICS	
Rated voltage	110V _{cc}
Output Voltage Adjustment Ranges	V _{LOAD} : 80V at 100V ±1% V _{FLOAT} : 104V a 124V ±1% V _{BALANCE} : 104V a 130V ±1%
Rated current	18 / 30 / 48 / 64 A
Output Voltage Adjustment Ranges	I _{LOAD} : 18 / 30 / 48 / 64 A I _{BALANCE} : 0 a 9 / 15 / 24 / 32 A
Rated power	2.5 / 4.3 / 6.4 / 8.5 kW
Temperature Compensation	-2mV / ° C per battery element
Load characteristic	IU according to IEC-478-1
TR 110 SERIES MECHANICAL CHARACTERISTICS	
Dimensions (high x depth x width) (mm)	1200 (100 base) x 600 (450 optional) x 600
Weight (Kg)	90 / 120 / 135 / 150
ENVIRONMENTAL CONDITIONS	
Working temperature	-10° to 45°C
Storage temperature	-15° to 65°C
Maximum relative humidity	100%
Altitude	<1000m.s.n.m.
Refrigeration	Natural convection or forced by fan
Protection degree	IP23
PROTECTIONS	
Input protection	Fuses, Circuit Breaker, Contactor
Output protection	Fuses, Circuit Breaker
Digitally programmed protections	Overloads and short circuits in semiconductors, input asymmetric currents and surges, output short-circuit
Protection against input voltage peaks	Varistors
Allowed output overload	120%
Other protections	Insulation faults and DC ground leaks, charger current limitation, overtemperature, ground fault, emergency stop
INSTRUMENTS AND CONTROLS (ALL ON FRONT PANEL)	
OP with display and keypad for monitoring and configuration	
Ammeter on charger analogue output busbar (0 - 30/40/60/80 A)	
Voltmeter on charger output busbars (0 - 150V)	
Low voltage DC alarm, adjustable from 90V to 100V	
High voltage DC alarm, adjustable from 115V to 130V	
State of charge indicator (fast charge, equalization or float)	
State of Input and Output Switches indicator	
Individual alarm indicators	
Output voltage and current limit controls	
Connected power supply indicator	
Charger indicator working	
Current limit performance indicator	
REGULATIONS	
EC	Marking
Directives	EMC 6100-6-2, 6100-6-4, EN 50178

