ARYA FAN ABZAR

Flexible Modular Parallel Redundancy Battery Charger

R&D of Electronic Systems, Power Supplies and Industrial Chargers

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RECTIFIER

Product Highlits

- **High reliability**
  Wide input voltage and frequency range make it adapt to the harsh environment of the grid. The modular design combined with the sharing algorithm supports the parallel and redundant operation of each unit with a built-in temperature rise protection circuit.
- **Intelligent charging mode**
  Four charging mode can be configured which are constant current mode, constant voltage mode, float charging mode, and equalized charging mode.
- **Redundant control system**
  Each rectifier unit has an independent control circuit that controls the output power according to the sharing algorithm.
  Also, the status of each faulty unit is changed to standby automatically.
- **19inch Standard cabinet**
  Adopting 19-inch Standard cabinet design.
- **LCD Display**
  Each rectifier module has built-in 3.5-inch LCD to control and monitor the unit as well as event log recording and exporting.

FEATURES

- Parallel redundancy up to 8 unit
- IGBT Switching Technology
- High power density up to 80KW
- Wide voltage and frequency range of 3-phase TN network
- Easy-to-operate HMI display
- Output galvanic isolation
- Industrial Operating Temperature range
- Low Inrush Current

PROTECTIONS and ALARMS

- Earth Fault
- Under-Voltage
- Over-Voltage
- Over-Load
- Output Short Circuit Protection
- Mains input out of range
- High Temperature
- Communication Fault

HMI

A powerful monitoring device that continuously monitors the batteries, rectifier and network is built into the rectifier or supplied as a separate unit. The use of dual interface ensures the reliability of the power supply, since the rectifier and monitoring circuits are independent.

FEATURES

- Programmable output voltage from 24 to 550VDC
- Programmable maximum output current
- Intelligent charging algorithm
- Programmable control and monitoring software
- Multiple communication protocols: Modbus RTU, Modbus TCP and I2C

PLC

The I/O expansion PLC module is designed for remote alarm generation, reading external faults and measuring analog signals such as battery temperature which will be used in temperature-controlled float charging mode. All the 16 output relays are configurable independently.

FEATURES

- Output Voltage sensing
- Battery Temperature sensing
- Programmable I/O channels and Dry contact
- 18 Input channels
- 16 Relay output channels
- Modbus RTU, Modbus TCP Communication

Technical Specifications:

Model	CR10KW-24	CR10KW-48	CR10KW-110/125	CR10KW-220	CR10KW-440/500
INPUT					
Rated Voltage	380/400Vac 3-Phase				
Power Factor	>90%				
Overvoltage Protection	>580vac, the rectifier module is stopped				
Undervoltage Protection	<300vac, the rectifier module is stopped				
Frequency	45 - 65 Hz				
OUTPUT					
Nominal Output Voltage (VDC)	24	48	110	220	440
Maximum Output Voltage (VDC)	48	75	145	270	500
Output Power	<=10KW				
Voltage Deviation	<1%				
Voltage Ripple	<0.5%				
Efficiency	>90%				
ENVIRONMENT					
Class of Enclosure	IP20				
Cooling	Forced Air				
Operating Temperature	0 to +55 C				
Storage Temperature	-40 to +100 C				
Humidity	<90% RH, non-condensed				
Altitude	<2000m				
MECHANICAL					
Design	For 19" frame mounting				
Weight	23Kg				
Dimensions	177/483/400 mm (H/W/D)				
Color	RAL 7035 light grey (front panel)				
Cable inlets/outlets	From behind, via connector				
STANDARDS					
Safety	IEC 62040-1, IEC 62040-3				
EMC/EMI	IEC 61000-6-4:2018, IEC 61000-6-2:2016 IEC 61000-4-2, IEC 61000-4-3, IEC 61000-4-4, IEC 61000-4-5, IEC 61000-4-6, IEC 61000-4-8				

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