PRIMAX TECHNOLOGIES Inc.

P5500 Series DC Rectifiers

- Continuous duty rated c/w O/P voltage and current adjustment
- Safety focused & water room cabinet design
- 6 X SCR bridge with complete I/O isolation
- CE safety & EMC standards tested
- Listed to UL1012 Approved to CSA C22.2-107.1
- Optional Modbus RTU-RS232/485 ports
- Built to ISO 9000 QA standards

EDI RECTIFIERS

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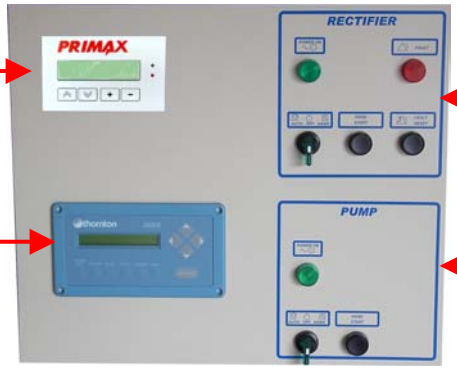
www.primax-e.com

UL/ANSI1012

CSA C22.2-107.1

Control Display :



Back light LCD to show all control, alarm and metering

Optional Resistivity

Rectifier Start/Stop/Reset control

Stack pump start/stop control

PRIMAX P5500 Rectifiers / DC Power Supplies are designed to suit all EDI applications. Voltages from 2 Volts up to 600 Volts with currents up to 1000 Amps are available in a compact and modular configurations. Optional remote control via RS232/485 ports provides full unit parameters reading and control from remote locations.
Regulated SCR units have inherent current limit and voltage regulation circuits to provide you with controlled power and improved performance.
Higher currents and power factor can be achieved by using multi-phase configurations. That reduces harmonics, losses and semiconductors size.

Metering & control

Standard Features

Metering:
- ❑ *0.5%RMS +/- 1 digit, digital ammeter and voltmeter*

Safety:
- ❑ *Main AC breaker with door interlock*
- ❑ *Emergency start/ stop pushbutton and contactor*
- ❑ *Remote shut-down*
- ❑ *Transformer over-temperature shutdown*
- ❑ *Rectifier over-temperature shutdown*

Control and adjustments:
- ❑ *Remote start/stop with 24VDC signal provided by User's control panel*
- ❑ *Automatic / Off / Manual switch*
- ❑ *Current control via the keyboard*
- ❑ *Voltage regulation via the keyboard*
- ❑ *Fault reset button*

Distribution:
- ❑ *1 pole/stack feeder fuses /stack*

Local indications and lamps (IEC):
- ❑ *AC power On green light*
- ❑ *DC power On green light*
- ❑ *Fault red light*
- ❑ *High rectifier temperature*
- ❑ *Rectifier shut down*

Remote annunciation voltage free (dry) contacts:
- ❑ *Auto Mode*
- ❑ *AC input contactor status*
- ❑ *DC output status*

Partial option list

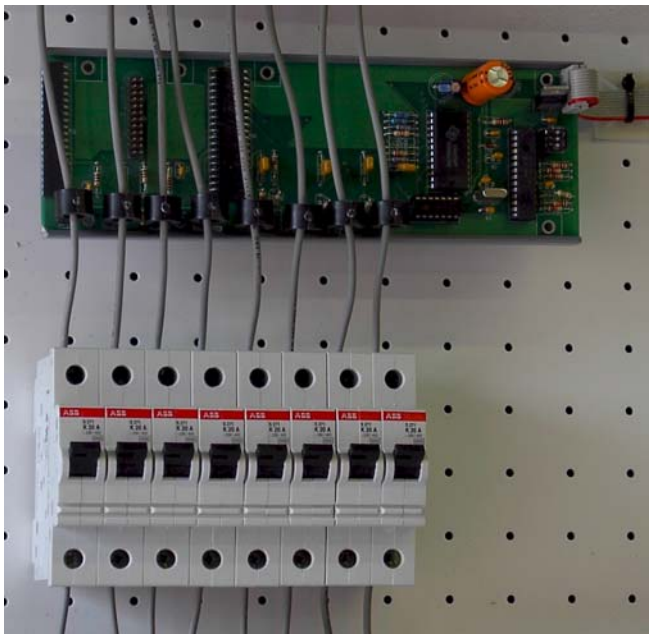
- *Non-standard input voltage*
- *Extra output filtering*
- *Main DC output circuit breaker*
- *RS 232 / 485 communication ports with Modbus/RTU*
- *Individual stack current monitoring & regulating*
- *I/P Voltage, current & frequency monitoring c/w High/low alarm and shutdown unit*
- *Analog meters*
- *Power factor correction to 0.90 lagging*
- *3 ph-575V-AC rated Water pump contactor(s) c/w overload relay rated, auxiliary dry contact and fuse protection activated with 24VDC signal provided by User's control panel*
- *Remote Start/Stop with AC voltages provided by User's control panel*
- *Special NEMA / IP protection*
- *Personalized mimic diagram (self adhesive Lexan)*
- *Special wiring and corrosion inhibitor*
- *Tropicalization and Fungus proofing*
- *Special paint*

Standard Electrical Specifications:

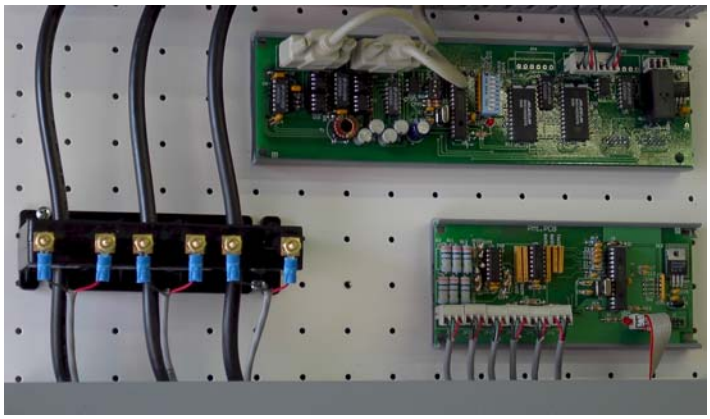
Basic design features	• *100% continuous duty: 24 hour a day at full output voltage. Output de-rating must be applied for lower O/P voltage operation (refer to the de-rating table in application notes)* • *UL/ANSI 1012 Listed, CSA C22.2 107.1 Certified and applicable IEC standard compliant* • *ISO 9002-1994 Quality control compliant* • *3 phase SCR (Thyristor) based rectifier c/w double wound isolation transformer* • *Electronic control, current limiting and voltage regulation* • *Modular construction using the latest power and microelectronic devices* • *Color coded PVC copper stranded wire for control and signals* • *30 year design, MTBF of 300 000 hours typical, MTTR less than 1 hour*
Input:	
Voltages	• *380-400-480VAC*
Phases	• *3 phase*
Frequency	• *50-60Hz*
Power factor	• *0.75 Typical*
Efficiency at full load	• *> 92% Typical*
Output:	
Available nominal voltages	• *100 – 200 – 300 – 400 – 500 & 600VDC.*
Available Power	• *200 kVA++*
AC ripple voltage	• *6% at rated output and low input mains*
Static regulation	• *< +/-1%RMS*
*Emc**	• *Conducted (150kHz-30mHz) and radiated (30MHz-1GHz): en55011 class A* • *Electrostatic discharge EN61000 4-2 level 2/3 (4kV contact, 8kV air)* • *Radiated susceptibility: EN61000-4-3 level 3 annex D (80MHz- 1GHz @ 10V/m)* • *Electrical fast transient: EN61000-4-4 level 3 (2kV)* • *Surge immunity: EN61000-4-5 level 3 (1kV l/l, 2 kV L/GND)* • *Conducted susceptibility: EN61000-4-6 level 3 (150kHz to 80mHz, 10v)* • *Voltage interrupt: EN61000-4-11 (30,60&90%- 10-10&5000 ms)*
** CE marked units only*	
Protection:	
Over-current	• *Automatic current limiting circuit, adjustable from 0% to 100% of nominal rating* • *Input thermal-magnetic circuit breaker* • *UL rated 600VDC rated output fuse* • *UL rated 600VDC rated distribution fuses (1 per stack)*
Remote/local ON/OFF	• *Via 3 phase input contactor*
Over-temperature (AC input disconnect)	• *SCR overheat* • *Power transformer internal windings overheat*
Voltage transients	• *Surge suppression on input and output*
Power transformer features:	• *Low flux density* • *Splice free copper windings* • *220 degree Celsius insulation* • *115 degree Celsius temperature rise* • *Vacuum Pressure impregnation with high temperature thermosetting varnish (VPI)* • *BIL of 10kV* • *Thermal overload device in each coil*

Mechanical and physical:	
Enclosure	• *CEMA/NEMA3R (IP33), 14GA (2mm) steel C/W hinged front access door*
Finish	• *Standard powder baked RAL7032, light beige*
Cooling	• *Forced air convection cooling*
	N.B. Floor mounted models are provided with 3 in. (75mm) clearance at bottom to facilitate handling by lift truck, pallet truck or slings
Environmental	
Audible noise	• *45 to 65 dBa at 3ft (1 meter) rating dependant*
Operating temperature range	• *0°C to 40°C / Storage -40°C to 85°C*
Temperature de-rating	• *0.83% / °F from 122°F to 140°F (1.5% / °C from 50°C to 60°C)*
Operating humidity	• *Up to 95% (non condensing)*
Altitude de-rating	• *0% for 1st 3300ft (1000m), 7% per 3300ft (1000m) over 3300ft (1000m)*

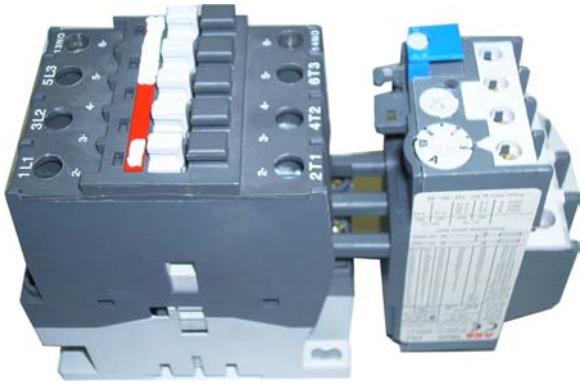
Structured Wiring in channels and modular components for easy access and service



Individual stack current metering unit c/w overcurrent protection



AC current metering unit and RS232/485 port with Modbus*/RTU protocol



Optional 575V rated pump contactor c/w thermal relay

**:Modbus is Schneider trade mark

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