



Features

- ◆ Constant Power rectifiers
- ◆ Two Rectifier Options (EP300 & EP1000)
- ◆ 1Ø AC Input Connectivity
- ◆ Wide AC input operating range (90V to 290Vac) with programmable Low voltage cut off through controller
- ◆ Extended temperature range : (-25°C to +75°C)
- ◆ Hot Swappable Rectifiers
- ◆ N+1 Redundancy options (load depended)
- ◆ Capacity Enhancement by addition of Rectifiers (up to Ultimate capacity only)
- ◆ Feature rich Digital controller with Back lit LCD and keypad
- ◆ Monitoring & control of Rectifier modules
- ◆ Display of parameters like AC voltage, DC Bus Voltage Plant Current, Load Current, Battery current, Battery temperature etc...
- ◆ Rectifiers Features
 - Voltage droop/Current Limiting
 - Soft start
 - Parallel operation
 - Low Noise <300mVp-p
- ◆ Rectifiers Protections
 - DC Over voltage,
 - AC Under/Over Voltage (through Controller)
 - Short circuit
- ◆ Auto float & boost charging option
- ◆ Combination of LCD& LEDs for Visual Alarm
 - Functional Indication for Rectifier and Controller
 - Alarm Indication for Local Monitoring as per MTS
- ◆ Provision for extension of 3 office alarms – 2 sets configurable (Local and Remote)
 - Default Alarms: AC Fail, Low Voltage, Rectifier Fail
- ◆ Temperature compensation based battery charging
- ◆ Energy management of rectifiers i.e. sleep mode to isolate rectifiers based on load conditions
- ◆ RS232 asynchronous port – T1.317 or EasyView
- ◆ Provision to terminate up to 1 battery string
- ◆ Provision to terminate up to 5/10 Load breakers
- ◆ Dual Earthing stud provision

Options

- ◆ Enhanced Surge protection with Class B&C SPD
- ◆ Integrated Distribution and battery cabinet (IP21)
- ◆ Battery Low voltage disconnect feature
- ◆ System cabinet in IP55 enclosure with Battery space
- ◆ Optional-Integrated 10/100BaseT Ethernet interface – TCP/IP, FTP, Telnet, HTTP, SMTP support

Applications

- ◆ Telecommunications networks
- ◆ Wireless broadband
- ◆ Transmission
- ◆ Data networks
- ◆ PBX
- ◆ Indoor/outdoor wireless
- ◆ Routers/switches
- ◆ Digital subscriber line (DSL)
- ◆ Fiber in the loop
- ◆ CPE application
- ◆ SCADA Power System





Description

The MPS48-EP300/MPS48-3R DC Power System is an extremely flexible power system designed for applications where space conservation is critical. These power systems provide power ranging from 300W to 3kW in a single cabinet. These DC Power Systems were designed to provide continuous, highly regulated and reliable -48V DC with all the necessary components contained in a single cabinet. These Power Systems are equipped with an advanced controller designed to fit the needs of Telecom, SCADA, Broadband and Wireless power systems. Its flexible and sophisticated feature set makes this front-end supply an excellent choice for power in a variety of application spaces. For the specifications of the EP Rectifier and the controller please refer to following individual datasheets:

- ◆ EP0300AC48TEZ.PDF
- ◆ Pluto Lite Controller.PDF
- ◆ EP1000 PDS. PDF
- ◆ I-Combo controller.PDF

Electrical Specifications AC Input

Parameter	
Input connectivity	1Ø, 2-wire (1 phase with Neutral)
Operating Input Voltage range (Phase to Neutral)	<ol style="list-style-type: none"> 1. Full power for the input voltage window of 176 Vac - 290Vac (90Vac to 290Vac for EP0300 rectifier) 2. Half power for the input voltage window of 175-90VAC. (No deration in EP0300 rectifier) 3. The rectifier will shutdown above 290Vac on the higher side and below 90Vac on the lower side. 4. The guaranteed No damage continuous voltage range is 0-300Vac.
Input Frequency Range	45Hz - 65Hz
Enhanced surge protection (Optional item)	1Ø Class B&C SPD <ul style="list-style-type: none"> - Nominal discharge current- 20kA, 8/20 µsec waveform, Protection level up to 4kV) - Nominal discharge current- 50kA, 10/350 µsec waveform, Protection level up to 4kV)

DC Output voltage

Parameter	
System Nominal Voltage	-48Vdc
Operating Voltage Range – Float	-42Vdc to -56.5Vdc (default setting at 54.0V)
Operating Voltage Range – Boost	-48Vdc to -58Vdc (default setting at 55.2V)

DC Output power and current (with EP Rectifiers)

Model Nos.	Provision for maximum no. of rectifiers	Output power in kW ($V_{in} > 176V_{ac}$)	Maximum Output current in A @ 48V ($V_{in} > 176V_{ac}$)	Output power in kW (V_{in} at 90Vac)	Maximum Output current in A @ 48V (V_{in} at 90Vac)
MPS48-EP300	3	900W	18.75A	900W	18.75A
MPS48-3R	3	3kW	60A	1.5kW	30A



Environmental Specifications

Parameter	
Operating ambient temperature range	-25°C to +50°C Full power +50°C to +75°C With power de-rating above 50°C
Operating Relative Humidity Range	5% to 95% non-condensing

Cable Entry and Termination Specifications

Parameter	
Input cable entry	Top, Front/Rear
Input cable termination	1. Directly on screw type terminal block (Max. cable size – 6 Sq.mm) 2. 2Pole Incomer MCB with neutral-Optional
Earthing cable termination	2 x M6 treaded inserts suitable for lugged cable termination on the body of the cabinet (Max. cable size – 6 Sq.mm)
Load cable entry	From Top, Front/rear
Load cable termination	-Ve: screw type terminal block suitable for pin type lugged cable termination (Max. cable size – 6/16 Sq.mm) +Ve: Busbar with threaded inserts /TBs suitable for ring type/Pin Type lugged cable termination (Max. cable size – 6/16 Sq.mm)
Battery cable entry	1. From Front/rear, Bottom 2. Internally wired for built- in battery (7.2Ah~26Ah)-optional
Battery cable termination	Directly on screw type terminal block (Max. cable size – 6 Sq.mm)
Thermal compensation cable entry	From Front/rear
Alarm cable entry	From Front/rear
Alarm/Thermal cable termination	1. Blunt cut cable 2. Screw type terminal block suitable for 0.5 Sq. mm/24AWG cable size

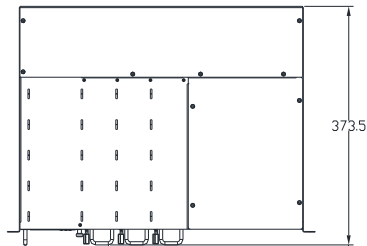
Mechanical Specifications (Preliminary)

Parameter	MPS48-EP300 (19")	MPS48-DB	MPS48-EP300	MPS48-3R
Height (H)	44mm (1U)	155mm	495mm	155mm
Width (L)	482.6 mm (19")	482.6 mm (19")	482.6 mm (19")	482.6 mm (19")
Depth (D)	375 mm	205mm	535mm	275 mm
Weight (without rectifiers)	4.5 kg Approx.			
Weight (with 3 rectifiers)	6 kg Approx.			
Mounting	19" rack mount	19" rack mount	Floor Mount	19" rack mount
Battery Stand	Designed to suit battery rating	-	Designed to suit battery rating	Designed to suit battery rating

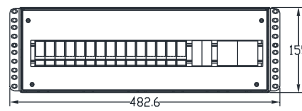


Mechanical Outline

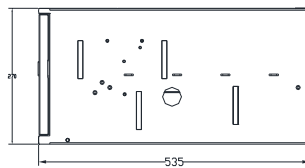
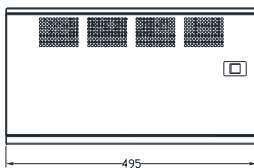
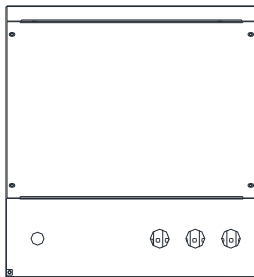
1. MPS48-EP300 (19" Cabinet)



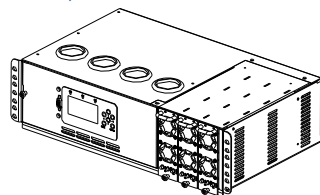
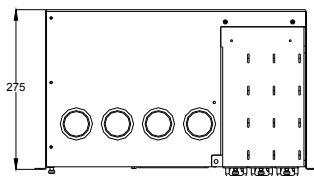
2. MPS48-DB (Distribution Cabinet)



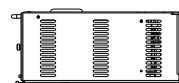
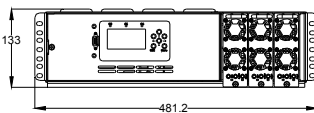
3. MPS48-EP300 (Integrated Distribution)



4. MPS48-3R, EP1000 (19" Cabinet)



NOTE: ALL DIMENSIONS ARE IN mm





Feature Description

Maximum Design Efficiency

The MPS48- EP300/ MPS48-3R DC Power system has exceptional power density. Incremental, cost-effective system growth is made possible through convenient front-access design and lightweight modular components. In addition, using a single set of components over a wide range of applications reduces training, parts inventory, and management.

Simplified Engineering, Installation and Maintenance

The MPS48- EP300/ MPS48-3R DC Power system eliminates the need for pre-system engineering and testing associated with piece-part assembly and minimizes need for costly power cables and connectors. These DC Power systems are designed to provide you with easy installation and minimal maintenance. Every building block within the Power system is designed to the highest quality and reliability standards. By adding remote monitoring and configuration management to your system, MPS48- EP300/ MPS48-3R DC Power system will provide you with fault indication and general performance data; valuable input to assist in reducing service intervals and when planning for future expansion.

Automated System Setup

For automated installation and set up, the controller and rectifiers communicate via a digital interface. A newly added power module automatically identifies itself to the controller by transmitting its type and serial number, and the controller then sets the output voltage to the pre-established value. The digital interface automates the installation and setup process and eliminates the need to use potentiometers to separately set the output voltage or balance current sharing. Should communications with the controller be lost, each power module will continue to function at the latest programmed values.

The MPS48- EP300/ MPS48-3R DC Power system is designed for continuous operation and in-service upgrades, allowing system components including rectifiers, load distribution MCBs/fuses to be added in the field without interrupting service.

Single Point Controller

The standard offering is the advanced digital controller, which can be conveniently mounted on the door. The controller offers a plethora of features including digital interface and control to all power modules. Sophisticated

battery monitoring, testing and recharge control are standard features with all digital controllers. All features are accessible via the local control / display panel and remotely through RS485 port (optional).

Controller Features

- ◆ Monitoring & Control of EP Rectifier modules
- ◆ Slope thermal compensation mode voltage control
- ◆ Back lit LCD display with key pad
- ◆ Combination of LCD& LEDs for Visual Alarm
- ◆ Parameter measurement AC voltage, DC Voltage & currents, Battery temperature etc...
- ◆ Battery recharge current limit
- ◆ Battery Testing
- ◆ Real time reserve time prediction
- ◆ Battery disconnect contactor control options
- ◆ Combination of LCD& LEDs for Visual Alarm
 - Functional Indication for Rectifier and Controller
 - Alarm Indication for Local Monitoring as per MTS
- ◆ 6 office alarm programmable relays /Provision for extension of 3 office alarms – 2 sets configurable (Local and Remote)
 - Default Alarms: AC Fail, Low Voltage, Rectifier Fail
- ◆ RS 232 port for local monitoring
- ◆ Alarm test function
- ◆ Secure access – Multiple security levels
- ◆ Configurable alarm severity and relay assignments
- ◆ System Statistics Time/Date stamped
- ◆ System History Time/Date stamped
- ◆ Future Options (optional)
 - RS 485 port for MODBUS
 - Optional 10/100BaseT Ethernet interface – TCP/IP, FTP, Telnet, HTTP, SMTP support



Available System Configuration

Parameter		
Ultimate capacity of the system	900W, 18.75A @48V (with 3 x EP0300 rectifier) 3 kW , 60A @ 48V (with 3 x EP1000 rectifiers)	
Rectifier	48V, 6.25A, 300W Rectifier (Model- EP0300) 48V, 20A, 1000W Rectifier (Model- EP1000)	
Controller	Pluto Lite Controller/I-Combo controller	
Cabinet	IP21 IP55 (optional)	
AC Distribution	Main Incomer	G100: 1Ø TBs G101: 2Pole 20A MCB G102: 2Pole 40A MCB
	Surge Protection Device (SPD)	G111: Nil (Not required) G112: 1Ø Phase Class-B&C
Battery Distribution	Common Low Voltage Battery disconnect (LVBD) options for isolation of all battery strings	G200: Nil (Not required) G201: 1 x 10A G202: 1 x 20A G202: 1 x 40A
	Battery fuse/MCB options	G210: Nil (Not required) G211: 1 x 6A~63A, 1pole MCB G212: 2 x 6A~63A, 1pole MCB
Load distribution	Load MCBs combinations (Priority Loads only i.e. PL)	G310: 5 x 6A~63A, 1pole G311: 10 x 6A~63A, 1pole

Note: As a result of continuous product improvement, all specifications are subject to change without prior notice. All performance parameters are valid at Nominal input (230Vac) and nominal output (48Vdc) conditions unless otherwise specified.

Applicable Standards

Electrical safety (Rectifier Module)	IEC 60950-1
	UL 60950-1
	CSA 22.2
EMI (CE)	EN55022:2006+A1:2007 (Class A)
EMI (RE)	EN55022:2006+A1:2007 (Class A)
EMC	EN 61000-4-3:2006, Level 3 (Radiated Electromagnetic Field immunity limits)
	EN 61000-4-6:2009, Level 3 (RF Conducted susceptibility immunity limits)
	EN 61000-4-2:1995+A1:1998+A2:2001, Level 4 (ESD Immunity limits)
Environment	QM-333/Issue-1/September 1990 (EP1000)
Other Type Testing on Request	

Country of Sale

South Asia	India
SE Asia	-
NA	-
CALA	-
European	-

Note: As a result of continuous product improvement, all specifications are subject to change without prior notice. All performance parameters are valid at Nominal input and output conditions unless otherwise specified.



Ordering Information -

Please contact your GE Critical Power's Sales Representative for pricing, lead-time/availability of the listed model nos. and incase of any customized requirement.

India Headquarters (Bangalore)

GE Power Electronics (India) Private Ltd.
#186/3, Khata No.-117, Hoody Village, Mahadevapura
Post, Whitefield Road, Bangalore- 560 048
Tel: +91 80 28411634 – 639 Fax: +91 80 28411641
Email: sales_india@ge.com
www.gecriticalpower.com

Customer support Help line (For Post Sales support)
Toll free No.: 1800-102-1633

GE Critical Power reserves the right to make changes to the product (s) or information contained herein without notice. No liability is assumed as a result of their use or application. No rights under any patent accompany the sale of any such product(s) or information.

© 2014 **GE Critical Power** (Bangalore, India) All Rights Reserved.

Document Rev No: 0.4, Dated 11th February 2014

PDF name: MPS48 PDS.pdf