

- > Our plants in Pomaz and Salgotaryan in Hungary, and in Shenzhen, China, are part of the worldwide manufacturing capacity to support our customers from a global perspective. Our processes are highly automated and utilize a compatible SMT assembly process that allows us to build any product in any location. All plants are ISO 9001 certified, and make use of advanced Six Sigma methodologies to deliver world class quality.
- > This catalog presents our broad product portfolio by family of products. Ranging from Dc-Dc board-mountable converters with a few watts of output power to large rectifiers providing tens of kilowatts, our portfolio is one of the broadest in the market. Our application experience includes not only telecommunications and information technology, but also extends to industrial applications, consumer products, medical devices, and distributed generation of energy.
- > If you have unique requirements, our experienced engineering teams can design power supplies to meet your exact specifications. We have successfully supported customers of all sizes for specialized applications from personal transportation to mainframes, plasma displays to telecom power supplies.
 - > Answering your need for precise, reliable and efficient power, our digital power products create value and leadership for our customers every day. That's the Uncommon Power of Magnetek.
Put it to work for you!



Magnetek corporate headquarters are in Los Angeles, CA.



The Chatsworth, CA, design and manufacturing center is a 65,000 sq. ft., highly-automated manufacturing center for standard and custom power supplies. The facility is also ISO 9001 certified.



Power Electronics Group headquarters, in Florence, Italy, occupies a 200,000 sq. ft. technology and design center focused on telecom power supplies, dc-dc converters, and energy-related products. It is a vertically integrated factory and has been ISO 9001 certified since 1992

Product Line Catalog



>page 5 to 57

> **System Products**

Rectifiers
Subracks
Energy Stations
Controllers
Rack Mountable Dc-Dc Converters
Inverters
iBreakers
Advanced Remote Control of Energy Stations

>>> >>>>

>page 59 to 83

> **Configurable Power Supplies**

400W to 1750W
Hot Swappable Series
Modular Group Series
Front-End Module

>>> >>>>

>page 85 to 97

> **Compact PCI Power Supplies**

200W to 500W

>> >>>>

>page 99 to 123

> **Board Mountable Converters**

3W to 200W

>> >> >>>>

>page 125 to 131

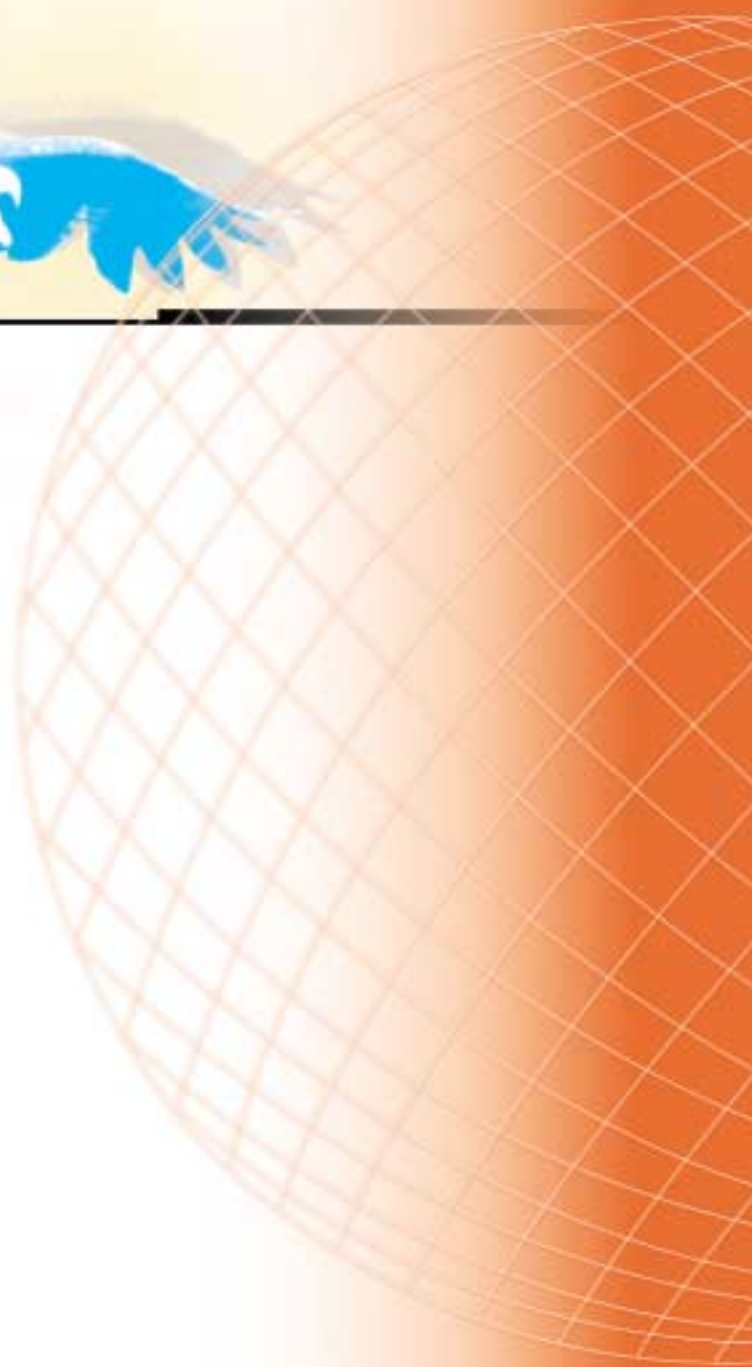
> **Specialty Products**

Custom Products
Smart Solutions in Home Appliances
Battery Chargers
Motor Drives
Wound Magnetic Components
Power Transformers

>page 133 to 144

> **Power Conversion Glossary**

> **Contacts and Sales Offices**



Magnum and Millennium Series Rectifiers

12 kW Rectifier Low THD	> 6
12 kW Rectifier	> 8
3000 W Enhanced Rectifier	> 10
3000 W 3U Compact Rectifier	> 12
2000 W Enhanced Rectifier	> 14
1500 W Rectifier	> 16
750 W Rectifier	> 18
400 W Rectifier	> 20
170 W Rectifier	> 22

Magnum and Millennium Series Subracks

Subrack for 3000 W Enhanced Rectifier	> 24
Subrack for 3000 W 3U Compact Rectifier	> 28
Subrack for 2000 W Enhanced Rectifier	> 30
Subrack for 1500 W Rectifier	> 32

SY Series Compact Energy Stations

3000 W Compact Energy Station	> 34
2000 W Compact Energy Station	> 36
1600 W Compact Energy Station	> 38

CTR Series Controllers

1U Slim Line Controller	> 40
Wall Mountable Controller	> 42
Display Unit	> 44

FE Series Rack Mountable Dc-Dc Converters

1200 W Compact Dc-Dc Converter	> 46
Subrack for 1200 W Compact Dc-Dc Converter	> 48

SLI Series Compact Inverters

1500 W 1U Compact Inverter	> 50
----------------------------	------

iBreakers Series

IB Family for Intelligent Distribution	> 52
Modular Power Distribution Unit	> 54

Advanced Remote Control of Energy Stations	> 56
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Magnum Series

12 kW Rectifier Low THD



General specifications

48 V- 200 A

Designed for superior performance in telecom, industrial and IT applications, Magnetek's 12000 W Rectifiers Low THD are fully electronic three-phase switch mode power supply modules. The compact size makes it one of the most compact 200 Amps forced cooled rectifiers in service. Measuring just 19"W x 5.2"H x 19.09"D this unit has a power density in excess of 7 W/in³. Magnetek 12000 W Rectifiers Low THD combine a digitally controlled active Power Factor Correction circuit with an innovative electronic design to achieve electrical efficiencies in excess of 90% and THD below 5%. The high efficiency and reliability of this unit ensures maximum system uptime for critical applications up to 12,000 Amps, to minimize cost and reduce installation time. The smart user interface makes remote or local programming and monitoring of all major rectifier parameters easy.

Remote computer communications is possible through an RS-485 serial connection interface (SCI). Modules are UL listed, CSA, CE, IEC and Broadcast NEBS Level 3 certified.

Key features of the 12000 W Rectifiers Low THD include:

- Low profile: 3U overall height
- Very high power density > 7 W/inch³
- High efficiency: > 91%
- Active Power Factor Correction > 0.99
- 3-phase 380-480 V nominal voltage input (50 or 60 Hz), no neutral
- One phase fault tolerant
- Hot pluggable
- Current share bus allows plug-and-play without adjustments
- Input/Output protection with UL Listed Breakers
- Thermal overload protection with derating
- Display and control panel
- Remote monitoring of alarms and setting/control of all major parameters via serial link RS 485
- Designed to digitally interface a control unit
- Fan cooled
- 19" or 23" shelf mountable
- Lightweight: 22.8 kgs (50.26 lbs)
- Safety standards: EN 60950, CAN/CSA-C22.2 N° 60950-00 / UL 60950

MODEL SUMMARY AND ORDERING CODE

Model Number	Output voltage, nominal	Output Current
REC-J200EH	-48 Vdc	200 A

Magnum Series

12 kW Rectifier Low THD

Input characteristics

Nominal input voltage:	380-480 Vrms
Input voltage range:	320-530 Vrms 3-phase, line to line
Input frequency:	47-63 Hz
Input current:	< 25 Arms per phase
Inrush current:	< 38 Apeak per Phase
Max. line current unbalance between phases:	± 10%
Line current harmonics:	IEC 61000-3-4
Power factor:	> 0.99 Active (Pout > 25%)
Total Harmonic Distortion:	THD < 5% (Pout > 50%)
Turn on delay:	4.5 sec
AC input OV protection:	530 Vrms
Input withstanding voltage:	560 Vrms, unlimited duration
Mains connector:	ICORE 4P63LXX
Input protection:	int. circuit breaker 37,5 A with mains on/off switch

Output characteristics

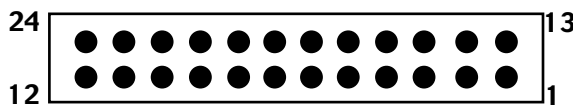
Factory setting:	54.5 Vdc programmable
Output voltage adj. Range:	40-60 Vdc programmable
Output voltage regulation:	± 0.4%
Output current:	200 Adc
Output power:	12 KW max. continuous
Output power, 2 phase operation (1 phase loss):	6 KW max. continuous
Hold-up time:	20 msec @ 340 Vrms input, full load
Output PARD:	500 mVpk; bw: 20 MHz, psophometric CCITT < 2 mVpp
Output current walk-in time:	10 sec

Output voltage rise time:	500 msec
Overcurrent protection type:	current limitation: <ul style="list-style-type: none"> • 220 Adc @ Vout = 54.5 Vdc • 200 Adc @ Vout = 60 Vdc
Thermally derated current limit:	linear derating from 50°C to 70°C: <ul style="list-style-type: none"> • 220 Adc @ 50°C • 110 Adc @ 70°C
Overvoltage protection (OV):	three levels of protection <ul style="list-style-type: none"> • Catastrophic OV: 65 Vdc hardware latch • Programmable OV: 56-66.1 Vdc, default 62 Vdc, turn-off, non-latching • Second OV (delayed 100ms): 60 Vdc (Selv), turn-off and latch
Overtemperature protection (OT):	shutdown with self-recovery
Overtemperature driven by fan failure:	shutdown with latch up
Overtemperature threshold:	70°C ambient
Current sharing accuracy:	within 5%
Output connection:	with copper blades
Output protection:	int. circuit breaker 350 A, with power switch and mechanical latch

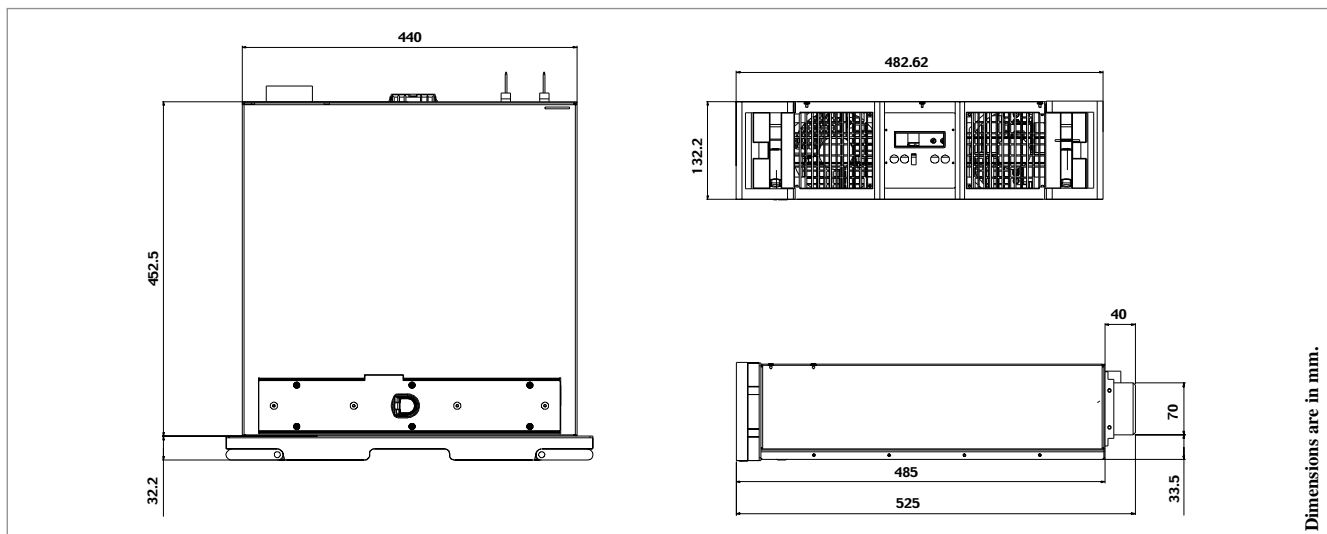
General characteristics

Efficiency:	>91% (92% full load, Vin = 360 Vrms)
Safety:	EN60950, CSA-C22.2 No.60950-00 / UL60950
EMI:	EN55022 class "A"
Operating temperature:	-5°C to 55°C, 12 KW Linearly derated to 6 KW @ 70°C
Alarms:	rect. fail (AC loss, OV,OT, fan failure), Dry contact: OV, OT, OC, rect. fail
Cooling:	forced cooling, 50 dBA 1 m @ 25°C
MTBF:	250000 hours (excluding fans)
Dimensions WxHxD:	19" x 5.205" x 19.09" (482.6mm x 132.20mm x 485mm)

Mechanical drawings



1 Insulated-Data	7 N.C.	13 Insulated + Data	19 Share RTN
2 Insulated RTN	8 N.C. 4	14 N.C.	20 N.C.
3 N.C.	9 Alarm "-"	15 Intdata	21 O.T."+"
4 -Intdata	10 O.T. "+"	16 Common	22 Alarm "+"
5 N.C.	11 N.C	17 V Trim	23 N.C.
6 N.C.	12 -S	18 Share	24 +S



Magnum Series

12 kW Rectifier



General specifications

48 V- 200 A

Designed for telecom, industrial and IT applications, Magnetek's 12000 W Rectifiers are fully electronic three-phase switch mode power supply modules.

Measuring just 19"W x 5.21"H x 17.4"D this unit has a power density in excess of 7 W/in³.

The unit achieves electrical efficiencies in excess of 90%.

The smart user interface makes remote or local programming and monitoring of all major rectifier parameters easy. Indicators, alarms and protection devices are standard with every unit including three level overvoltage protection, undervoltage and overtemperature protection, and rectifier fail alarm.

Key features of the 12000 W rectifiers include:

- Low profile: 3U overall height
- 19" or 23" shelf mountable
- Active power factor correction >0.95
- 3-phase 380-480 V nominal voltage input (50 or 60 Hz), no neutral
- One phase fault tolerant
- Very high power density > 7 W/inch³
- High efficiency: > 92%
- Hot pluggable
- Current share bus allows plug-and-play without adjustments
- Remote monitoring of alarms and setting/control of all major parameters via serial link RS 485
- Output protection through internal diode and fuse
- Fans removable
- Designed to digitally interface a control unit
- Lightweight 19 kgs (41.88 lbs)

MODEL SUMMARY AND ORDERING CODE

Model Number	Output voltage, nominal	Output Current
REC-J200ST	-48 Vdc	200 A

Magnum Series

12 kW Rectifier

Input characteristics

Input voltage range:	340-528 Vac (3-Phase)
Input frequency:	47-63 Hz
Input current:	<25 Arms per Phase
Inrush current:	<38 Apk per Phase
Power factor:	>0.95 Active
Turn on delay:	4.5 sec

Output characteristics

Output voltage range:	40-60 Vdc programmable
Factory setting:	54.5 V programmable
Output current:	200 A
Output power:	12 KW maximum continuous
Hold-up time:	20 msec 340 Vac 3-Phase, full load
Output voltage regulation:	+/-0.4%
Output PARD:	500 mVpk; bw: 20 MHz; psophometric CCITT <2mVpp
Output current walk-in time:	10 sec
Output voltage rise time:	500 msec
Overcurrent protection type:	current limitation: •220 A; Vout = 54.5 V •200 A; Vout = 60 V

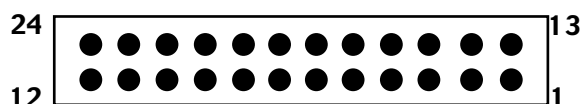
Overvoltage protection:	three levels of protection
• Catastrophic OV:	65 V hardware latch
• Prog. OV:	56-66.1 V, default 62 V, turn-off, not latching
• Second OV (delayed 100 ms):	60 V (Selv), turn-off and latch

Undervoltage protection:	
• UV int. (delayed 1 m)	33 V turn-off
Overttemperature protection:	shutdown with self-recovery
Overttemperature threshold:	70°C ambient
Current sharing accuracy:	5%

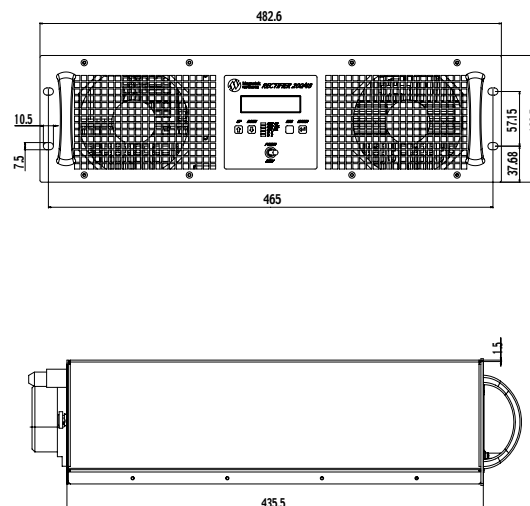
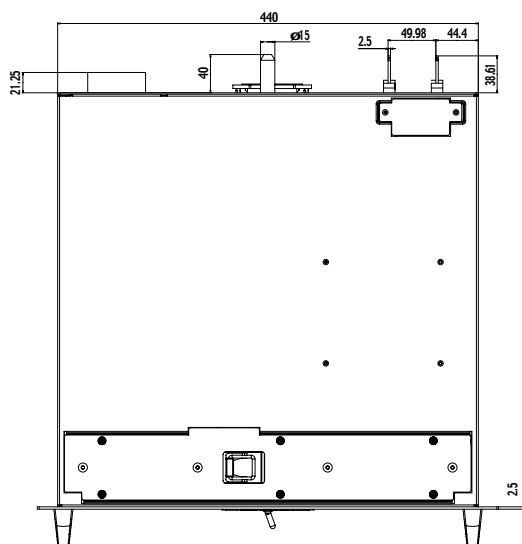
General characteristics

Efficiency:	>92%
EMI:	EN55022 class "A"
Operating temperature:	-5°C to 55°C, 12 KW -5°C to 70°C, 6 KW Linearly derated to 6 KW @ 70°C
Alarms:	rectifier fail (AC loss, UV,OT), OV, OT
Cooling:	forced cooling, 50 dBA 1 m @ 25°C
MTBF:	250000 hours (excluding fans)
Dimensions WxHxD:	19" x 5.21" x 17.4" (482.6mm x 132.50mm x 435.50mm)

Mechanical drawings



1 Insulated-Data	7 N.C.	13 Insulated + Data	19 Share RTN
2 Insulated RTN	8 N.C. 4	14 N.C.	20 N.C.
3 N.C.	9 Alarm "++"	15 Intdata	21 O.T."++"
4 -Intdata	10 O.T. "+"	16 Common	22 Alarm "+"
5 N.C.	11 N.C.	17 V Trim	23 N.C.
6 N.C.	12 -S	18 Share	24 +S



Dimensions are in mm.

Visit our website for the most current technical data

Magnum Series

3000 W Enhanced Rectifier



General specifications

48 V-50 A / 24 V-100 A

Designed for superior performance in telecom, datacom, industrial and IT applications where small size and low weight is a requirement, Magnetek's 3000 W Enhanced Rectifiers convert commercial 176-264 Volts Ac input power at 50 or 60 hertz into a highly regulated, filtered, low-noise and isolated 48 Volt Dc output. The unit achieves electrical efficiencies of 92% at 48 V 50 A with a power density of 5.5 W/in³.

The unit is designed to work in N + 1 redundant configurations. The 3000 W Enhanced Rectifiers are hot swappable into Magnetek's standard 19" or 23" subracks for easy upgrading of your rectifiers—even while the system is online—without interrupting the load. Unit has "plug and play" capability (no adjustments needed) so installation is quick and simple. Up to five units will fit in a single shelf, mountable in 23" rack.

Remote communication to Magnetek's power system controllers is possible through an RS-485 serial connection interface (SCI). The built-in keypad and LCD makes local programming easy. Modules are UL listed and NEBS Level 3 certified and meet Bellcore standard TR-TSY000947.

Key features of the 3000 W Enhanced Rectifiers include:

- 19" or 23" subrack mountable, 4 units and 5 units across respectively
- Active power factor correction >0.99
- Very high power density >5.5 W /inch³
- High efficiency: 92% (48 V)
- Current share bus allows plug-and-play without adjustment
- Hot pluggability
- All major parameters are programmable either locally or remotely
- Designed to work with digital or analog control unit
- Ac Input protection by Input Ac breaker
- Output and reverse polarity protection by Output Dc breaker
- Weight: 6.04 kgs (13.28 lbs)
- UL, CSA, KEMA (48 V); cCSAus, KEMA (24 V) certified
- NEBS Level 3 certified

MODEL SUMMARY AND ORDERING CODE

Model Number	Output voltage, nominal	Output Current
REC-J050E	-48 Vdc	50 A
REC-F100E	+24 Vdc	100 A

Magnum Series

3000 W Enhanced Rectifier

Input characteristics

Input voltage range:	176-264 Vac
Input frequency:	47-63 Hz
Input current:	<20 Arms
Inrush current:	30 Apk
Power factor:	0.99 (above half load, 230 Vac)
Turn on delay:	1 sec

Output characteristics

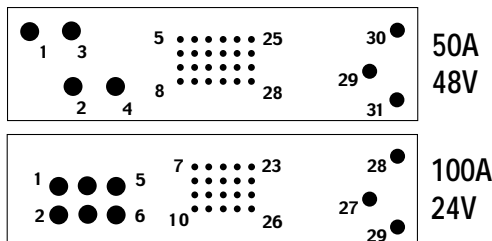
Output voltage range:	<ul style="list-style-type: none"> 40-60 Vdc (48 V) programmable 20-30 Vdc (24 V) programmable
Equalize voltage:	56 V (48 V version); 28 V (24 V version) programmable
Floating voltage:	54.4 V (48 V); 27.2 V (24 V) programmable
Output current:	50 A (48 V); 100 A (24 V)
Output power:	3000 W maximum continuous
Hold-up time:	20 msec 176 Vac, full load
Output voltage regulation:	+/-0.4%
Output PARD:	200 mVpk (48 V); 300 mVpk (24 V); bw: 100 MHz
Output current walk-in time:	10 sec
Output voltage rise time:	500 msec
Overcurrent protection type:	constant current limitation
Overcurrent and shortcircuit limitation:	55 A (48 V); 110 A (24 V)

Overvoltage protection:	two levels of protection. Latch up mode
• Catastrophic OV:	65 V (48 V); 32 V (24 V)
• First OV threshold:	61.5 V (48 V); 30.5 V (24 V)
Overtemperature protection:	shutdown with self-recovery
Overtemperature threshold:	110°C on most critical internal component
Current sharing accuracy:	2% (48 V); 4% (24 V)

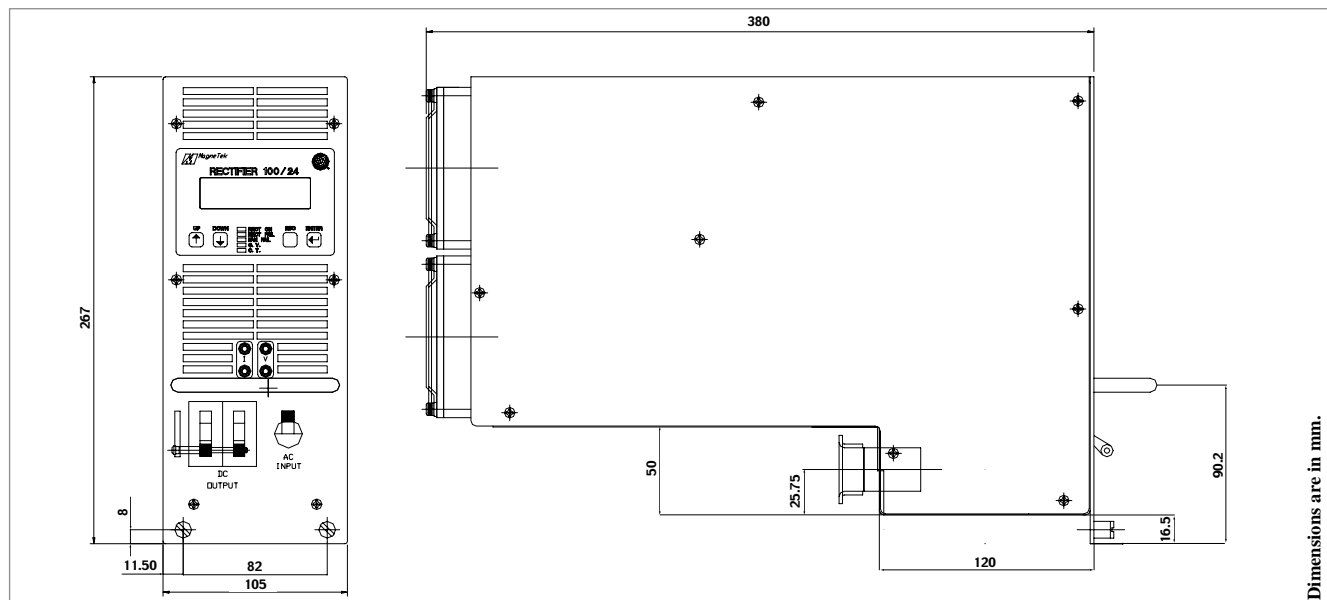
General characteristics

Efficiency:	<ul style="list-style-type: none"> 92% at 48 V 50 A 89% at 24 V 100 A
Safety:	UL1950, CAN/CSA C22.2 No 950-95, EN60950
EMI:	EN55022 class "B"
Operating temperature:	<ul style="list-style-type: none"> -10°C to 60°C fully operational -40°C to -10°C start up with LCD off
Alarms:	fan failure, OV, OT, UV, OC, AC loss
Cooling:	by two internal fan. In case of single fan failure alarm is triggered and the output current limitation lowered to 50% for continuous operation
MTBF:	150000 hours at 50°C
Dimensions WxHxD:	4.13" x 10.51" x 14.96" (105mm x 267mm x 380mm)

Mechanical drawings



1 -Vout	8 nc	14 0n/off	20 serial data 1	26 fan fail n/c
2 -Vout	9 nc	15 fl / eq	21 nc	27 fan fail n/o
3 +Vout	10 nc	16 trim	22 rect fail n/c	28 fan fail com
4 +Vout	11 +share	17 nc	23 rect fail no	29 prot. Earth
5 +sense	12 -share	18 gnd	24 rect fail com	30 Line
6 -sense	13 gnd	19 serial data 0	25 nc	31 Neutral
7 nc				
1 +Vout	7 +sense	13 fl / eq	19 nc	25 fan fail n/o
2 -Vout	8 -sense	14 trim.	20 rect fail n/c	26 fan fail com
3 +Vout	9 +share	15 nc	21 rect fail n/o	27 prot. Earth
4 -Vout	10 -share	16 GND	22 rect fail com	28 Line
5 +Vout	11 GND	17 serial data 0	23 nc	29 Neutral
6 -Vout	12 on/off	18 serial data 1	24 fan fail n/c	



Millennium Series

3000 W 3U Compact Rectifier



General specifications

48 V-50 A / 60 V-40 A

Designed for superior performance in telecom, datacom, industrial and IT applications, Magnetek's 3000 W 3U Compact Rectifiers achieve a very high efficiency (92%) as a result of a remarkably efficient special phase shift topology. Measuring just 5.13"W x 5.21"H x 12.5"D this unit has a power density in excess of 9 W/in³.

The unit is designed to work in N + 1 redundant configurations. The 3000 W 3U Compact Rectifiers are hot swappable into Magnetek's standard 19" or 23" subracks for easy upgrading of your rectifiers—even while the system is online—without interrupting the load. Unit has "plug and play" capability (no adjustments needed) so installation is quick and simple.

The unit has alarm LED's and test points on the front panel to visualize working conditions.

It interfaces via serial link to Magnetek's power system controllers, or can be easily interfaced with most system controllers available on the market.

Key features of the 3000 W 3U Compact Rectifiers include:

- 3U high
- 19" or 23" subrack mountable, 3 units and 4 units across respectively
- Active power factor correction >0.99
- Very high power density >9 W /in³
- Very high efficiency: 93% (48 V)
- Communication by RS485 serial link
- All major parameters are programmable either locally or remotely
- Current share bus allows plug-and-play without adjustment
- Hot pluggable
- Output diode
- Designed to work with digital and analog control units
- Weight 4.5 kgs (9.9 lbs)
- cCSAus, IEC, CE certified
- Designed to meet NEBS Level 3 requirements

MODEL SUMMARY AND ORDERING CODE

Model Number	Output voltage, nominal	Output Current
REC-J0503U	-48 Vdc	50 A
REC-K0403U	-60 Vdc	40 A

Millennium Series

3000W 3U Compact Rectifier

Input characteristics

Input voltage range:	176-264 Vac
Input frequency:	47-63 Hz
Input current:	<20 Arms
Inrush current:	25 Apk
Power factor:	0.99 (above half load, 230 Vac)
Turn on delay:	2 sec

Output characteristics

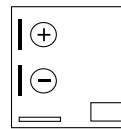
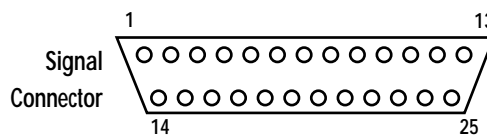
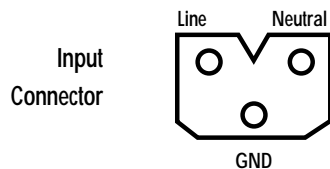
Output voltage range:	<ul style="list-style-type: none"> 48 V model: 40-60 Vdc programmable 60 V model: 50-75 Vdc programmable
Factory setting:	<ul style="list-style-type: none"> 48 V model: 54.4 Vdc 60 V model: 68.1 Vdc
Output current:	<ul style="list-style-type: none"> 48 V model: 50 A 60 V model: 40 A
Output power:	3000 W maximum continuous
Hold-up time:	20 msec at 176 Vac input, full load
Output voltage regulation:	+/-0.5%
Output PARD:	260 mVpk (48 V model); bandwidth 100 MHz
Output current walk-in time:	11.5 sec

Output voltage rise time:	750 msec
Overcurrent protection type:	constant current limitation
Overcurrent and shortcircuit limitation:	<ul style="list-style-type: none"> 48 V model: 54 A 60 V model: 43 A
Overvoltage protection: two levels of protection:	
• Catastrophic OV:	64 V (80 V for 60 V model) latch up
• OV alarm:	60 V (75 V for 60 V model), programmable, latch up, factory set to 58.5 V (73.1 V for 60 V model)
Overtemperature protection:	shutdown with self-recovery
Overtemperature driven by fan fail:	shutdown with latch up
Overtemperature threshold:	63°C ambient
Current sharing accuracy:	5%

General characteristics

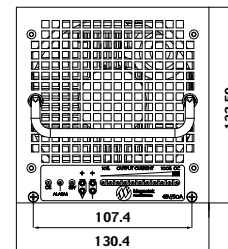
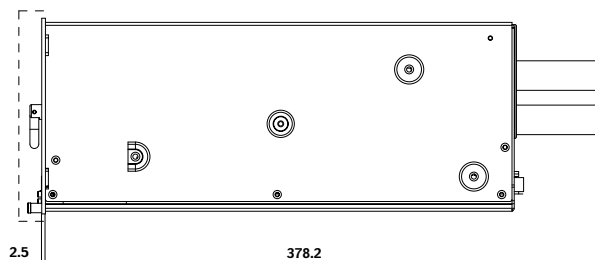
Efficiency:	92% at 48 V 50 A
EMI:	EN55022 class "B"
Operating temperature:	-40°C to 60°C fully operational
Alarms:	rectifier fail (fan failure, AC loss, UV,OT), OV, OC, AC fail
Cooling:	by internal fan. In case of fan failure the unit is latched up
MTBF:	200000 hours at 50°C (excluding fans)
Dimensions WxHxD:	5.13" (130.40mm) x 5.21" (132.50mm) x 12.5" (317.50mm)

Mechanical drawings



Output power blades polarity

1 + sense	8 ADD 2	14 - sense	20 ADD 1
2 share bus	9 ADD 4	15 Vout trim	21 ADD 3
3 share bus return	10 ADD 6	16 secondary GND	22 ADD 5
4 on / off	11 fault alarm	17 shared to pin 5	23 ADD 7
5 shared to pin 17	12 signal return	18 signal return	24 AC fail alarm
6 serial data	13 I-LIM alarm	19 serial data	25 OT alarm
7 ADD 0			



Dimensions are in mm.

Millennium Series

2000 W Enhanced Rectifier



General specifications

48 V-37 A

Designed for superior performance in telecom, datacom, industrial and IT applications, Magnetek's 2000 W Enhanced Rectifiers convert commercial 180-270 Volts Ac input power at 50 or 60 hertz into a highly regulated, filtered, low-noise and isolated 48 Volt Dc output. The compact size makes it one of the most compact convection cooled rectifiers in service.

Measuring just 3.40"W x 10.47"H x 14.70"D this unit has a power density close to 4 W/in³.

The compact unit size allows for system expansion at minimal cost.

The unit is designed to work in N + 1 hot swappable redundant configurations for easy upgrading of your rectifiers—even while the system is online—without interrupting the load. Unit has “plug and play” capability (no adjustments needed) so installation is quick and simple. Up to six units will fit in a single shelf, mountable in 23" rack.

All connections are on the front for easy system connection. The smart user interface makes remote or local programming and monitoring of all major rectifier parameters easy.

UL, CSA and IEC certified.

Key features of the 2000 W Enhanced Rectifier include:

- 6U high
- 19" or 23" shelf mountable, 5 units and 6 units across respectively
- Active power factor correction >0.99
- High power density: close to 4 W/in³ including heatsink
- Very high efficiency: 93%
- Current share bus allows plug-and-play without adjustments
- All major parameters are remotely programmable
- Output protection through internal fuse
- Designed to digitally interface a control unit
- Weight 7 kgs (15.45 lbs)
- UL, CSA and IEC certified

MODEL SUMMARY AND ORDERING CODE

Model Number	Output voltage, nominal	Output Current
REC-J037E	-48 Vdc	37 A

Millennium Series

2000 W Enhanced Rectifier

Input characteristics

Input voltage range:	180-270 Vac
Input frequency:	47-63 Hz
Input current:	<13 Arms
Inrush current:	20 Apk
Power factor:	0.99
Turn on delay:	4.5 sec

Output characteristics

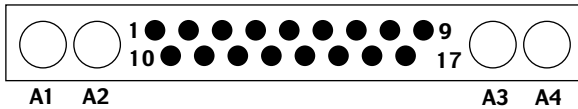
Output voltage range:	40-60 Vdc programmable
Factory setting:	54.5 V programmable
Output current:	37 A
Output power:	2000 W maximum continuous
Hold-up time:	20 msec 176 Vac, full load
Output voltage regulation:	+/-0.4%
Output PARD:	250 mVpk (48 V); bw: 100 MHz Psophometric CCITT < 2 mVpp
Output current walk-in time:	10 sec programmable
Output voltage rise time:	500 msec
Overcurrent protection type:	constant power limitation plus current limitation

Overcurrent and shortcircuit limitation:	constant power 2000 W, constant current 50 A
Overvoltage protection:	three levels of protection. Latch up mode 65 V latch up 60 Vdc (Selv), turn-off and latch programmable, turn-off non latching shutdown with self-recovery
• Catastrophic OV:	
• Second OV (delayed 100 ms):	
• First OV:	
Overtemperature protection:	75°C ambient
Overtemperature threshold:	75°C ambient
Current sharing accuracy:	5%

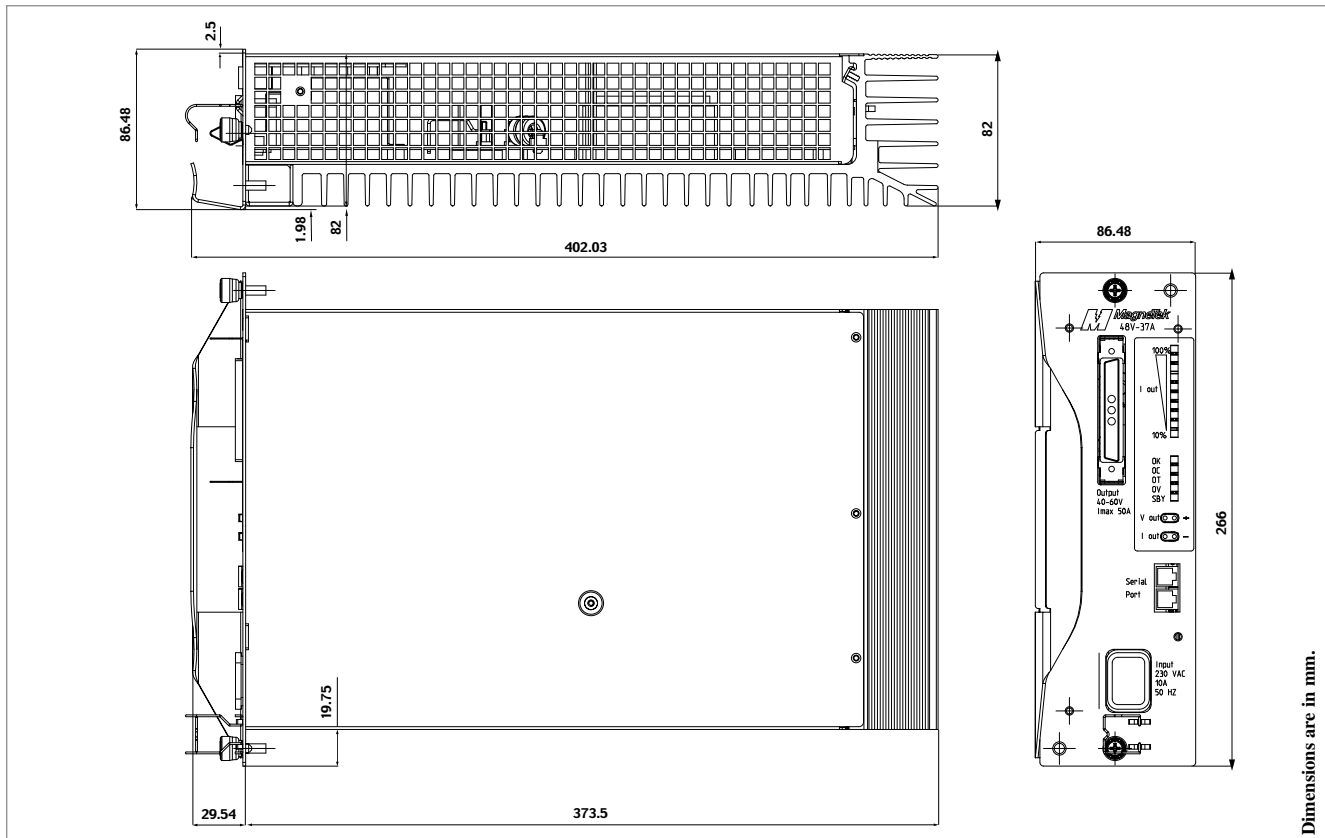
General characteristics

Efficiency:	93%
EMI:	EN55022 class "B"
Operating temperature:	-40°C to 55°C
Alarms:	rectifier fail (AC loss, UV, OT), OV, OT, AC Loss AC fail
Cooling:	natural convection cooling
MTBF:	200000 hours at 50°C
Dimensions WxHxD:	3.40" x 10.47" x 14.70" (86.48mm x 266mm x 373.5mm)

Mechanical drawings



A1 0V	1 +sense	9 -sense
A2 0V	2 Ground	10 Ground
A3 -48V	3 share bus	11 Ground
A4 -48V	4 Ground	12 Ground
	5 Vtrim	



Dimensions are in mm.

Millennium Series

1500 W Rectifier



General specifications

48 V-25 A / 24 V-50 A

Designed for superior performance in telecom, datacom, industrial and IT applications, Magnetek's 1500 W Rectifiers convert commercial 85-264 Volts Ac input power at 50 or 60 hertz into a highly regulated, filtered, low-noise and isolated 48 Volt Dc output. The unit achieves electrical efficiencies of 89% with a power density of 4.8 W/in³.

The unit is designed to work in N + 1 redundant configurations. The 1500 W Rectifiers are hot swappable into Magnetek's standard 19" or 23" subracks for easy upgrading of your rectifiers—even while the system is online—without interrupting the load. Unit has "plug and play" capability (no adjustments needed) so installation is quick and simple. Up to five units will fit in a single shelf, mountable in 23" rack.

Unit has alarm LED's and test points on the front panel to visualize working conditions. It interfaces via analog link to Magnetek's power system controllers, or can be easily interfaced with most system controllers available on the market.

Key features of the 1500 W Rectifiers include:

- 3U high
- 19" or 23" shelf mountable, 4 units and 5 units across respectively
- Active power factor correction >0.99
- Very high power density >4.8 W/inch³
- High efficiency: 89% (both versions)
- Current share bus allows plug-and-play without adjustment
- Hot pluggable
- Output diode
- Designed to work with digital and analog control unit
- Weight 3.48 kgs (7.65 lbs)
- UL, CSA and IEC certified

MODEL SUMMARY AND ORDERING CODE

Model Number	Output voltage, nominal	Output Current
REC-J025B	48 Vdc	25 A
REC-F050B	24 Vdc	50 A

OPTION LIST

Option suffix	Description
-S	Serial communication link

Millennium Series

1500 W Rectifier

Input characteristics

Input voltage range:	85-264 Vac
Input frequency:	47-63 Hz
Input current:	<19 Arms at 85 Vac
Inrush current:	10 Apk
Power factor:	0.99 (above half load, 200 Vac)
Turn on delay:	1.2 sec

Output characteristics

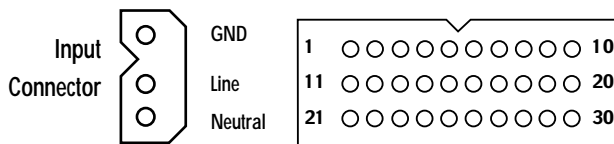
Output voltage range:	<ul style="list-style-type: none"> 48 V model: 42-60 Vdc programmable 24 V model: 21-30 Vdc programmable
Factory setting:	<ul style="list-style-type: none"> 48 V model: 54.5 V 24 V model: 27.25 V
Output current:	<ul style="list-style-type: none"> 48 V model: 25 A 24 V model: 50 A
Output power:	1500 W maximum continuous
Hold-up time:	30 msec at 85 Vac input, full load
Output voltage regulation:	+/-0.5%
Output PARD:	200 mVpk (48 V); 200 mVpk(24 V), bandwidth 100 MHz
Output current walk-in time:	8 sec
Output voltage rise time:	400 msec
Overcurrent protection type:	constant current limitation

Overcurrent and shortcircuit limitation:	27.5 A (48 V); 54 A (24 V)
Overvoltage protection:	three levels of protection
• Catastrophic OV:	65 V (48 V); 32 V (24 V) latch up
• First OV (delayed 100 ms):	60 V (48 V); 30 V (24 V) latch up
• OV alarm:	110% (programmable) of nominal output voltage (alarm only)
Overtemperature protection:	shutdown with self-recovery
Overtemperature driven by fan fail:	shutdown with latch up
Overtemperature threshold:	75°C ambient
Current sharing accuracy:	5%

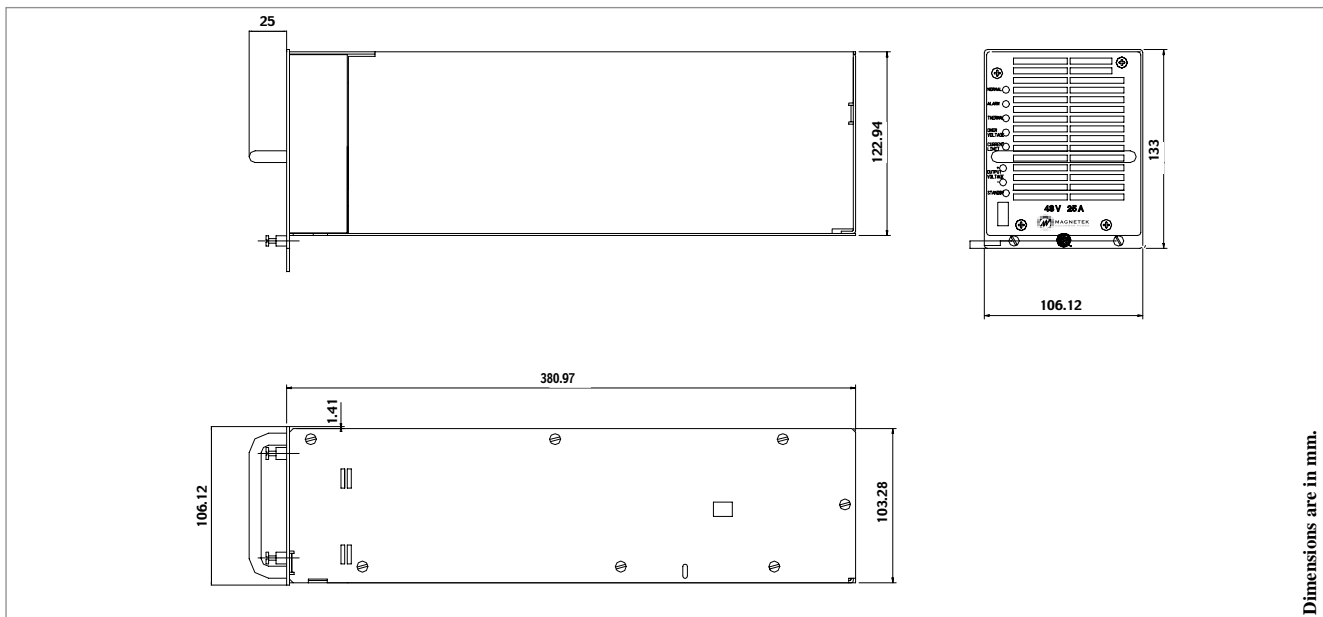
General characteristics

Efficiency:	89% at 230 Vac
EMI:	EN55022 class "B"
Operating temperature:	<ul style="list-style-type: none"> -40°C to 0°C power up 0 to 50°C fully operational 50°C to 70°C, 50 % automatic power derating
Alarms:	rectifier fail (fan failure, UV, AC loss, OT), OV, OC, AC Loss
Cooling:	by internal fan. In case of single fan failure the unit is latched up. Above 50°C the current limitation is lowered to 50% I nominal
MTBF:	200000 hours at 50°C (excluding fans)
Dimensions WxHxD:	4.07" (103.28mm) x 4.84" (122.94mm) x 15" (380.97mm)

Mechanical drawings



1 +Vout	7 OC alar	13 GND	19 GND	25 nc
2 +Vout	8 Iout monitor	14 GND	20 rect fail	26 nc
3 GND	9 Share bus	15 +sense	21 +Vout	27 AC sense
4 GND	10 enable	16 nc	22 GND	28 OV adjust
5 -sense	11 +Vout	17 V shift	23 GND	29 lamp test
6 Vout adjust	12 +Vout	18 OV alarm	24 GND	30 on / off



Dimensions are in mm.

Millennium Series

750 W Rectifier



General specifications

48 V-13.7 A

Designed for telecom, industrial and IT small-sized power applications, Magnetek's 750 W Rectifiers convert commercial 90-264 Volts Ac input power at 50 or 60 hertz into a highly regulated, filtered, low-noise and isolated 48 Volt Dc output. The unit achieves electrical efficiencies of 91% at 230 Volt Ac.

The unit is designed to be used in N + 1 multiple shelf configuration as well as a stand-alone unit. The 750 W Rectifiers are hot swappable into Magnetek's standard 19" or 23" subracks for easy upgrading of your rectifiers—even while the system is online—without interrupting the load. Unit has “plug and play” capability (no adjustments needed) so installation is quick and simple. Designed to interface with control unit either analogically or digitally. Front LED's allow easy visualization of unit status. UL, CSA and IEC certified.

Key features of the 750 W rectifiers include:

- 19" or 23" subrack mountable, 4 units and 5 units across respectively
- Active power factor correction >0.99
- High efficiency: 91%
- Current share bus allows plug-and-play without adjustment
- Hot pluggability
- Output diode
- Designed to be analogically or digitally interfaced with a control unit
- Weight 2.8 kgs (6.18 lbs)
- Certified according to UL, CSA and IEC

MODEL SUMMARY AND ORDERING CODE

Model Number	Output voltage, nominal	Output Current
REC-J014B	-48 Vdc	13.7 A

Millennium Series

750 W Rectifier

Input characteristics

Input voltage range:	90-264 Vac
Input frequency:	47-63 Hz
Input current:	<9 Arms
Inrush current:	<16 Apk
Power factor:	0.99 (above half load, 230 Vac)
Turn on delay:	<1 sec

Output characteristics

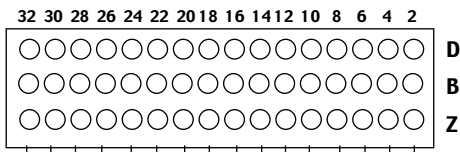
Output voltage range:	42-59 Vdc
Factory setting:	54.2 V
Output current:	<ul style="list-style-type: none"> • 13.7 A @ 54.5 V • 18 A @ 42 V
Output power:	750 W constant limitation
Hold-up time:	>20 msec @ 90 Vac input, full load
Output voltage regulation:	+/-0.9%
Output PARD:	200 mVrms; bandwidth 100MHz
Output current walk-in time:	5 msec
Output voltage rise time:	50 msec

Overcurrent protection type:	constant power limitation
Overcurrent and shortcircuit limitation:	<18 A
Overvoltage protection:	two levels of protection. Self.recovery
• Higher threshold:	60 V non delayed
• Lower threshold:	59 V non delayed
Overtemperature protection:	shutdown with self-recovery
Overtemperature driven by fan fail:	shutdown with auto-restart
Overtemperature threshold:	110°C on most critical internal component
Current sharing accuracy:	10%

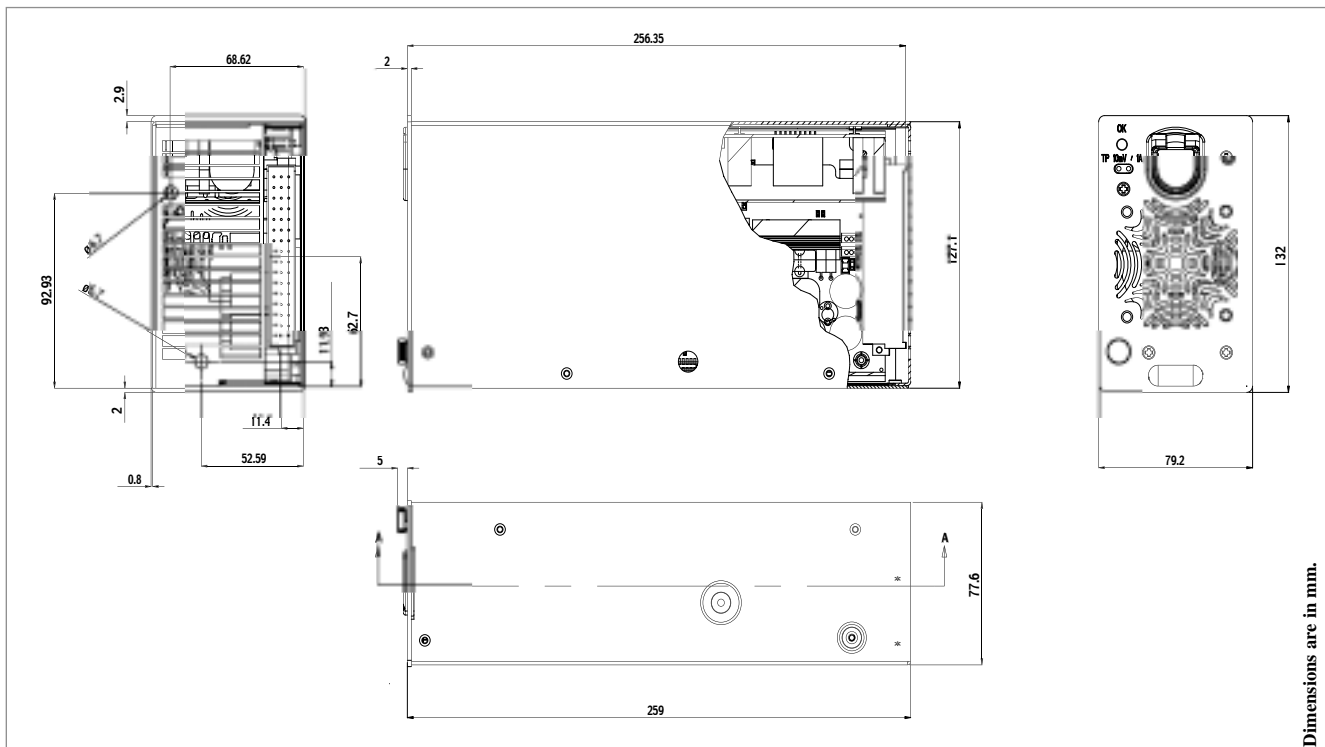
General characteristics

Efficiency:	85% @ 100 Vac; 91% @ 230 Vac
EMI:	EN55022 class "B"
Operating temperature:	-40°C to 55°C fully operational
Alarms:	rectifier fail (UV,OT, OC, AC loss), AC fail
Cooling:	fan cooled.
MTBF:	250000 hours at 30°C calculated
Dimensions WxHxD:	3.12" x 5.19" x 10.09" (79.2mm x 132mm x 256.35mm)

Mechanical drawings



	Z	B	D
2	Protective Earth	PE	PE
4	NC	NC	NC
6	Neutral	Neutral	Neutral
8	line	line	line
10	NC	NC	NC
12	-48Vout	-48Vout	-48Vout
14	-48Vout	-48Vout	-48Vout
16	-48Vout	-48Vout	-48Vout
18	NC	+sense	-sense
20	0Vout	0Vout	0Vout
22	0Vout	0Vout	0Vout
24	0Vout	0Vout	0Vout
26	Current monitor	share bus	Vadj
28	Ground	alarm return	Lamp test
30	Rect failure	AC fail	Remote on/off
32	serial RX	serial COM	serial TX



Dimensions are in mm.

Millennium Series

400 W Rectifier



General specifications

48 V-7.5 A

Designed for telecom, industrial and IT small-sized power applications, Magnetek's 400 W Rectifiers convert commercial 85-264 Volts Ac input power at 50 or 60 hertz into a highly regulated, filtered, low-noise and isolated 48 Volt Dc output. The unit achieves electrical efficiencies of 87%.

The unit is designed to be used in N + 1 multiple shelf configuration as well as a stand-alone shelf.

The 400 W Rectifiers are hot swappable into Magnetek's standard 19" or 23" subracks for easy upgrading of your rectifiers—even while the system is online—without interrupting the load.

Unit has “plug and play” capability (no adjustments needed) so installation is quick and simple.

Designed to interface with control unit either analogically or digitally.

Front LED's allow easy visualization of unit status.

UL, CSA and IEC certified.

Key features of the 400 W Rectifiers include:

- 19" or 23" subrack mountable, 4 units and 5 units across respectively
- Active power factor correction >0.99
- High efficiency: 87%
- Current share bus allows plug-and-play without adjustment
- Hot pluggability
- Output diode
- Designed to be analogically interfaced with a control unit
- Weight 2.50 kgs (5.50 lbs)
- UL, CSA and IEC certified

MODEL SUMMARY AND ORDERING CODE

Model Number	Output voltage, nominal	Output Current
REC-J007B	48 Vdc	7.5 A

Millennium Series

400 W Rectifier

Input characteristics

Input voltage range:	85-264 Vac
Input frequency:	47-63 Hz
Input current:	<5 Arms
Inrush current:	<40 Apk
Power factor:	0.99 (above half load, 230 Vac)
Turn on delay:	<1 sec

Output characteristics

Output voltage range:	42-58 Vdc programmable
Factory setting:	54.2 V
Output current:	7.5 A
Output power:	400 W maximum continuous
Hold-up time:	>20 msec @ 90 Vac input, full load
Output voltage regulation:	+/-0.9%
Output PARD:	250 mVrms; bandwidth 100 MHz
Output voltage rise time:	300 msec
Overcurrent protection type:	constant current limitation
Overcurrent and shortcircuit limitation:	<8.1 A
Overvoltage protection:	two levels of protection. Self.recovery
• Higher threshold:	60 V triggers within 100 msec
• Lower threshold:	59 V triggers within 4 sec

Overtemperature protection:	shutdown with latch-up
Overtemperature threshold:	105°C on most critical internal component
Current sharing accuracy:	10%

General characteristics

Efficiency:	82% @ 100 Vac; 87% @ 230 Vac
EMI:	EN55022 class "B"

Operating temperature:

- -40°C to 50°C natural convection
- -40°C to 75°C fan assisted

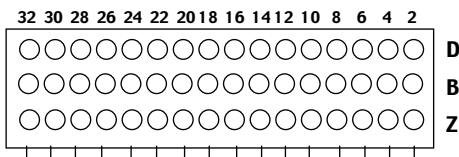
Alarms:	rectifier fail (UV,OT, OC, AC loss), AC fail
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Cooling:	natural convection up to 50°C, fan assisted from 50°C to 75°C
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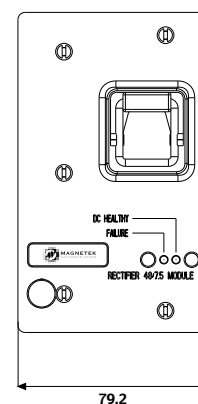
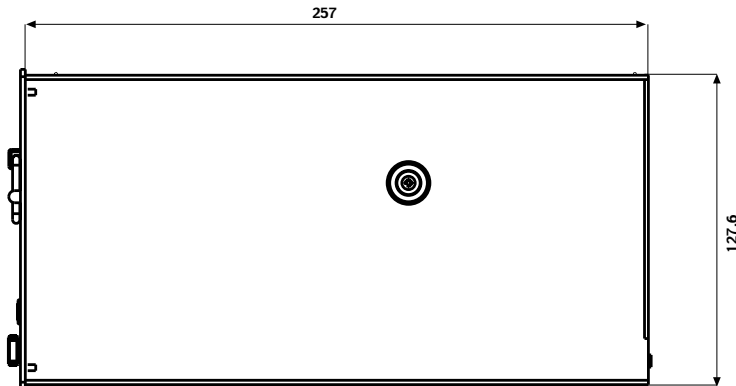
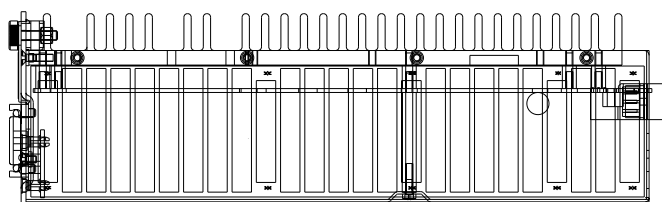
MTBF:	260000 hours at 40°C calculated
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Dimensions WxHxD:	3.12" x 5.02" x 10.11" (79.2mm x 127.6mm x 257mm)
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Mechanical drawings



2	Z	B	D
4	GND	GND	GND
6	Line	Line	Line
8	Neutral	Neutral	Neutral
10	nc	+ Vout	nc
12	+ Vout	Sense +	+ Vout
14	- Vout	Sense -	- Vout
16	Iout monitor	Vout adjust +	Vout adjust -
18	Share bus +	Share bus -	RFA
20	nc	Alarm return	On / off
22	nc	Lamp test	AC loss
24	nc	nc	nc
26	nc	nc	nc
28	nc	nc	nc
30	nc	nc	nc
32	nc	nc	nc



Dimensions are in mm.

Millennium Series

170 W Rectifiers



General specifications

48 V-3 A / 24 V-6 A / 12 V-12 A

Magnetek's 170 W Rectifier is designed for small power systems for Telecom, Industrial and IT applications.

The rectifier can be used in N+1 multiple shelf configuration as well as a stand-alone shelf. Front plated LED's allow easy visualization of unit status.

Key features of the 170 W Rectifiers include:

- 19" or 23" subrack mountable
- 2U high
- Active power factor correction: 0.99 typical
- High efficiency: 85%
- Current share bus allows plug-and-play without adjustments
- Hot pluggability
- Output diode
- Designed to analogically interface a control unit
- Weight 1.27 kgs (2.79 lbs)
- UL, CSA and IEC certified

MODEL SUMMARY AND ORDERING CODE

Model Number	Output voltage, nominal	Output Current
REC-J003B	48 Vdc	3 A
REC-F006B	24 Vdc	6 A
REC-D012B	12 Vdc	12 A

Millennium Series

170 W Rectifiers

Input characteristics

Input voltage range:	85-264 Vac
Input frequency:	47-63 Hz
Input current:	<3 Arms
Inrush current:	<6 Apk
Power factor:	0.99 typical full load
Turn on delay:	<2 sec

Output characteristics

Output voltage range:	38-60 Vdc (48 V); 21-29 Vdc (24 V); 10.5-14.5 Vdc (12 V) programmable
Factory setting:	54.5 V (48 V); 27.25 V (24 V); 13.63 V (12 V)
Output current:	3 A (48 V); 6 A (24 V); 12 A (12 V)
Output power:	180 W maximum continuous
Hold-up time:	30 msec
Output voltage regulation:	+/-0.5%
Walk in time:	8-16 sec
Output PARD:	250 mVrms; bandwidth 100 MHz
Output voltage rise time:	100 msec
Overcurrent protection type:	constant current limitation
Overcurrent and shortcircuit limitation:	110% of nominal output current

Overvoltage protection: two levels of protection. Self recovery

- Latching OV threshold: 65 V triggers within 100 msec
- Non latching OV threshold: 110% of nominal Vout only alarm

Overttemperature protection: shutdown with self-recovery

Overttemperature threshold: 75°C ambient

Current sharing accuracy: 5% of I_{max}

General characteristics

Efficiency: 81% @ 85 Vac; 85% @ 180 Vac

EMI: EN55022 class "B"

Operating temperature:

- -40°C to 50°C
- 50°C to 70°C with automatic 50% power derating

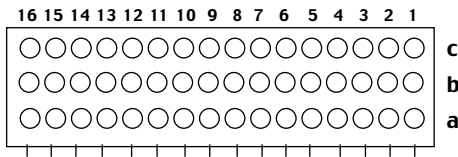
Alarms: rectifier fail (UV,OT), OC, OV, AC fail

Cooling: natural convection up to 50°C at full power; natural convection with 50% power derating from 50°C to 75°C

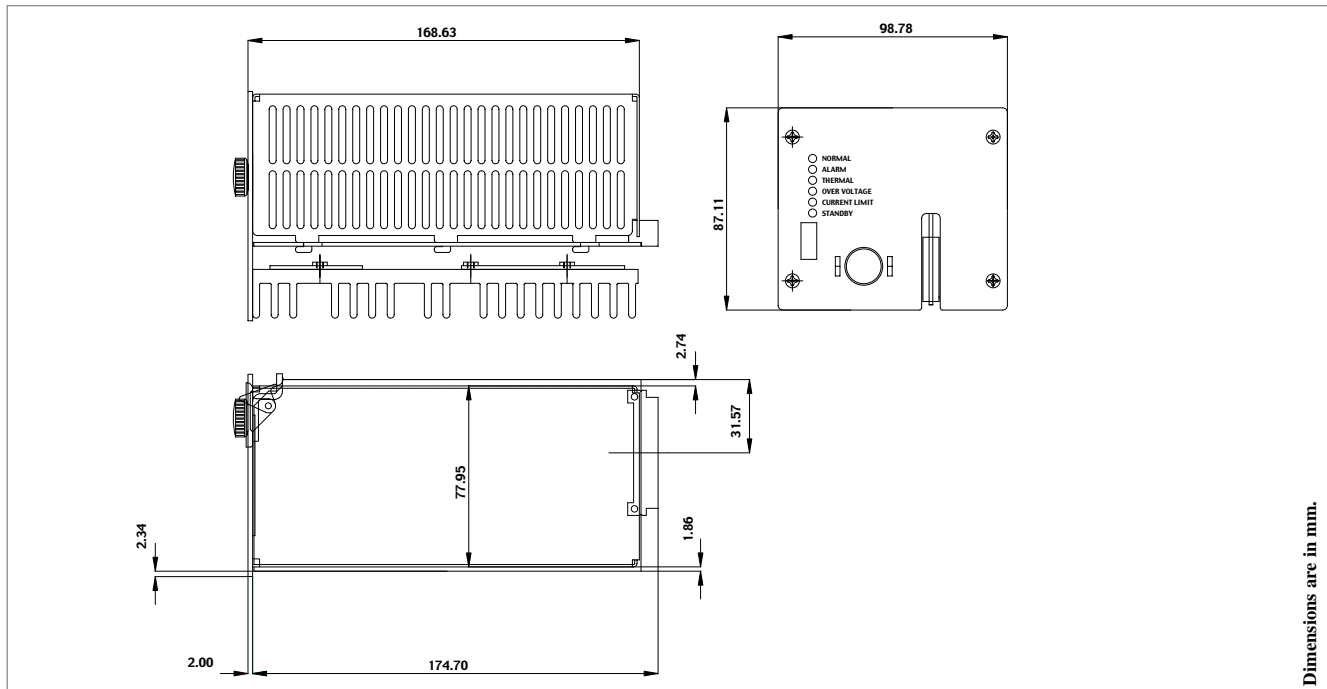
MTBF: 260000 hours at 40°C

Dimensions WxHxD: 3.88" x 3.42" x 6.87"
(98.78mm x 87.11mm x 174.70mm)

Mechanical drawings



1	a remote sense+	b Lamp test	c nc
2	On / off	Vshift +	OV adjust
3	Ac sense	Enable	Sense -
4	OV	Rect Fail	Vout adjust
5	OC	Iout monitor	Share bus +
6	OUT return	OUT return	OUT return
7	OUT return	OUT return	OUT return
8	Vout +	Vout +	Vout +
9	Vout +	Vout +	Vout +
10	GND	GND	GND
11	nc	nc	nc
12	nc	nc	nc
13	nc	nc	nc
14	Neutral	Neutral	Neutral
15	nc	nc	nc
16	Line	Line	Line



Dimensions are in mm.

Magnum Series Subrack

for 3000 W Enhanced Rectifier

Side Bus Bars



General specifications

19" or 23" Subrack with Side Bus Bars for 3000 W Enhanced Rectifier

This subrack is designed to house 5 3000 W Enhanced Rectifiers (4 for the 19" version). It provides additional EMC filtering for guardbanding, mechanical retention of the rectifiers and interconnection between the rectifiers to the output logic and power connections. Its design is optimized for usage in Energy Station with side bus bars.

Key features of the Subrack include:

- 19" or 23" versions
- Weight 9.3 kgs (20.50 lbs) (19" version)
- Weight 11 kgs (24.25 lbs) (23" version)
- cCSAus, IEC, CE certified
- Designed to meet NEBS Level 3 requirements

MODEL SUMMARY AND ORDERING CODE

Model Number	Version	Number of slots	Output voltage, nominal	Output Current
SH4-J050E-S	19"	4	-48 Vdc	200 A
SH5-J050E-S	23"	5	-48 Vdc	250 A
SH4-F100E-S	19"	4	24 Vdc	400 A
SH5-F100E-S	23"	5	24 Vdc	500 A

Magnum Series Subrack for 3000 W Enhanced Rectifier Side Bus Bars

Input characteristics

Input voltage range: 176-264 Vac

Input frequency: 47-63 Hz

Output characteristics

Output voltage range: -48 or 24 Vdc programmable

Factory setting: 54.4 V (-48 V); 27.2 V (24 V)

Output current:

• 19" version (4 slots): 200 A (-48 V); 400 A (24 V)

• 23" version (5 slots): 250 A (-48 V); 500 A (24 V)

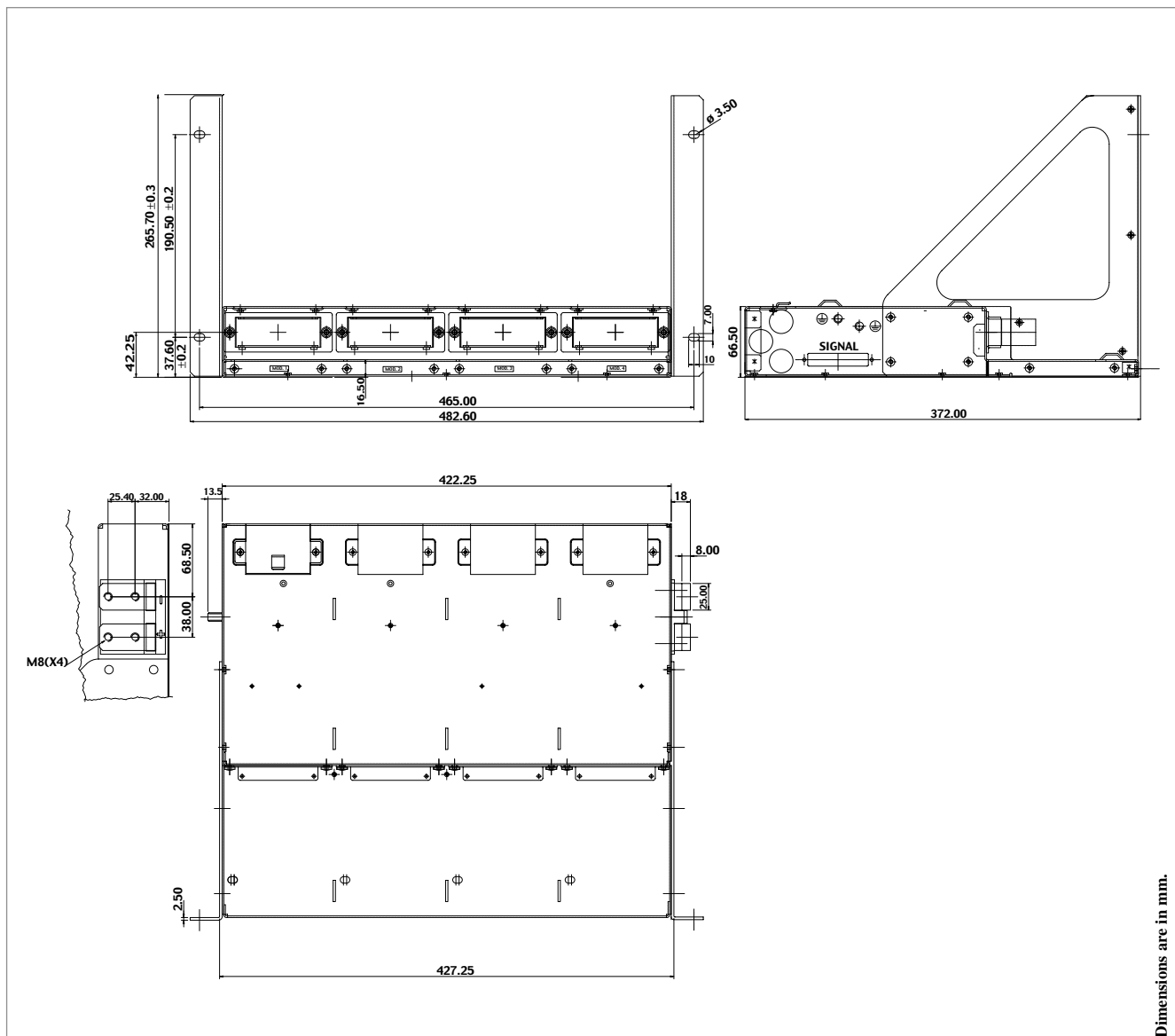
General characteristics

Dimensions WxHxD:

• 19" version: 19" (482.60mm) x 10.46" (265.7mm) x 14.65" (372.00mm)

• 23" version: 23" (584.2mm) x 10.46" (265.7mm) x 14.65" (372.00mm)

Mechanical drawings



Visit our website for the most current technical data

Magnum Series Subrack for 3000 W Enhanced Rectifier Rear Bus Bars



General specifications

19" or 23" Subrack with Rear Bus Bars for 3000 W Enhanced Rectifier

This subrack is designed to house 5 3000 W Enhanced Rectifiers (4 for the 19" version). It provides additional EMC filtering for guardbanding, mechanical retention of the rectifiers and interconnection between the rectifiers to the output logic and power connections. Its design is optimized for usage in Energy Station with rear bus bars.

Key features of the Subrack include:

- 19" or 23" versions
- Weight 9.9 kgs (21.82 lbs) (19" model)
- Weight 11.50 kgs (25.35 lbs) (23" model)
- cCSAus, IEC, CE certified
- Designed to meet NEBS Level 3 requirements

MODEL SUMMARY AND ORDERING CODE

Model Number	Version	Number of slots	Output voltage, nominal	Output Current
SH4-J050E-U	19"	4	-48 Vdc	200 A
SH5-J050E-U	23"	5	-48 Vdc	250 A
SH4-F100E-U	19"	4	24 Vdc	400 A
SH5-F100E-U	23"	5	24 Vdc	500 A

Magnum Series Subrack for 3000 W Enhanced Rectifier Rear Bus Bars

Input characteristics

Input voltage range:	176-264 Vac
Input frequency:	47-63 Hz

Output characteristics

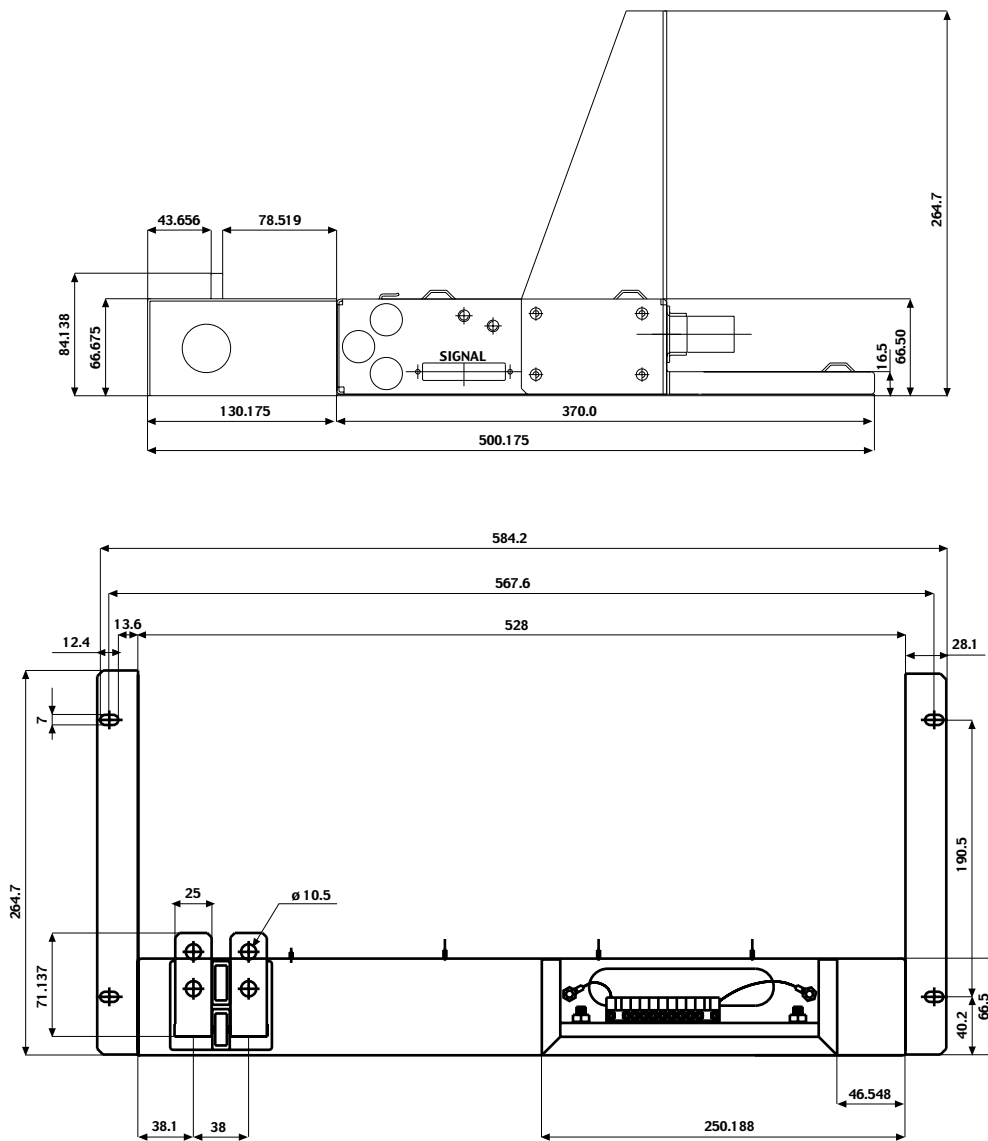
Output voltage range:	-48 or 24 Vdc programmable
Factory setting:	54.4 V (-48 V); 27.2 V (24 V)
Output current:	
• 19" version (4 slots):	200 A (-48 V); 400 A (24 V)
• 23" version (5 slots):	250 A (-48 V); 500 A (24 V)

General characteristics

Dimensions WxHxD:

- 19" version: 19" (482.60mm) x 10.42" (264.7mm) x 19.69" (500.175mm)
- 23" version: 23" (584.2mm) x 10.42" (264.7mm) x 19.69" (500.175mm)

Mechanical drawings



Millennium Series Subrack for 3000 W 3U Compact Rectifier



General specifications 19" or 23" Subrack for 3000 W 3U Compact Rectifier

This subrack is designed to house three 3000 W 3U Compact Rectifiers in the 19" version, or four rectifiers in the 23" version. The same model works for -48 Vdc and -60 Vdc rectifier modules. It allows easy mechanical insertion and retention of the rectifiers, and easy connections for the logic signals and the power.

The 19" version allows easy Ac input three-phase configuration of the three rectifiers. Customized versions are available. Please contact factory.

Key features of the Subrack include

- 3U high
- 19" or 23" versions
- Weight 6.8 kgs (14.99 lbs)
- cCSAus, IEC, CE certified
- Designed to meet NEBS Level 3 requirements

MODEL SUMMARY AND ORDERING CODE

Model Number	Version	Number of slots	Output voltage, nominal	Output Current
SH3-J0503U	19"	3	-48 Vdc or -60 Vdc	150 A
SH4-J0503U	23"	4	-48 Vdc or -60 Vdc	200 A

OPTION LIST

Model Number	Description
SH3-J0503U-23	Version with mounting ears to adapt 19" version to 23" racks

Millennium Series Subrack for 3000 W 3U Compact Rectifier

Input characteristics

Input voltage range:	176-264 Vac
Input frequency:	47-63 Hz

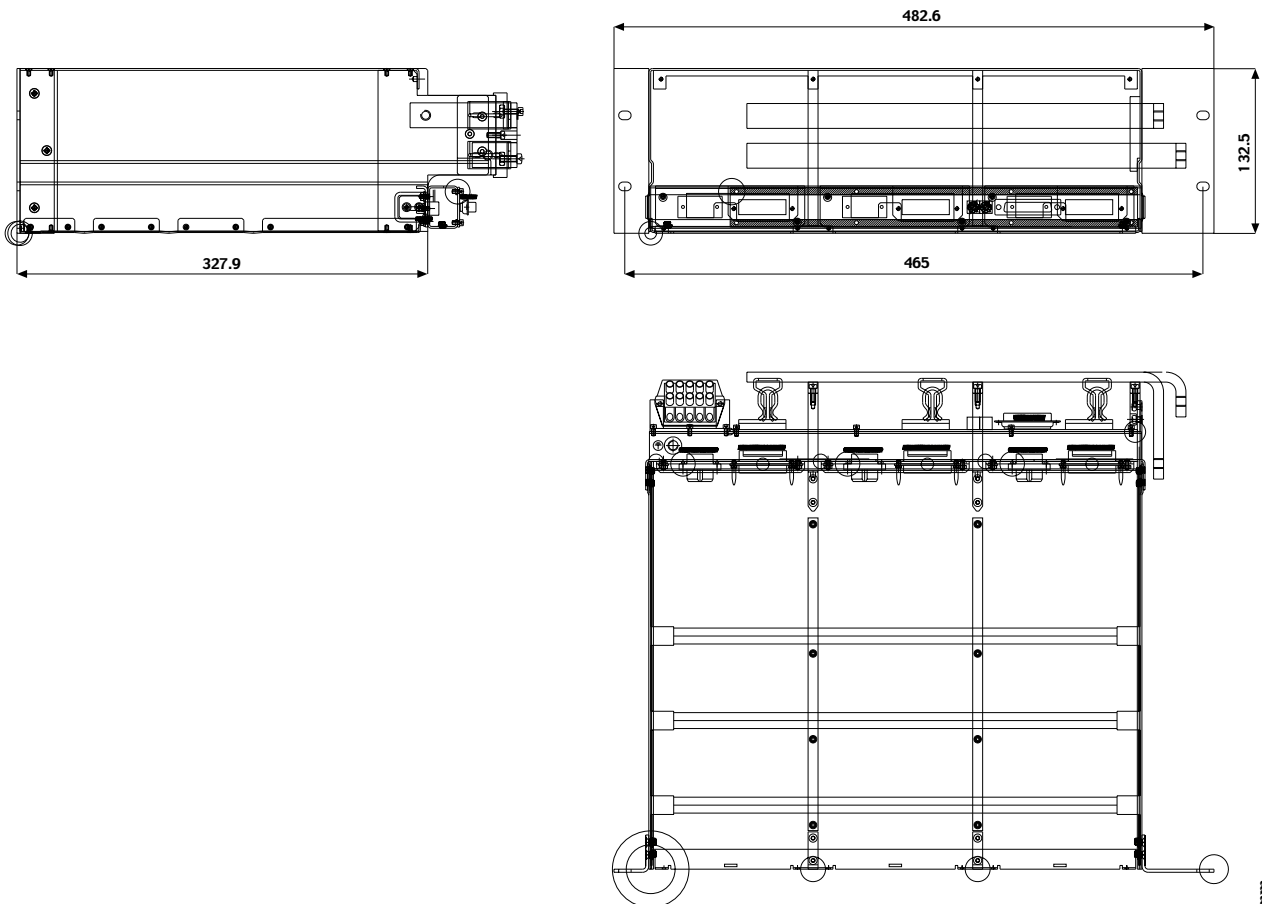
Output characteristics

Output voltage range:	40-60 Vdc programmable
Factory setting:	54.4 V
Output current:	
• 19" version (3 slots):	150 A
• 23" version (4 slots):	200 A

General characteristics

Dimensions WxHxD:	
• 19" version: 19" (482.60mm) x 5.21" (132.50mm) x 12.9" (327.90mm)	
• 23" version: 23" (584.2mm) x 5.21" (132.50mm) x 16.06" (408mm)	

Mechanical drawings



Millennium Series Subrack for 2000 W Enhanced Rectifier



General specifications

19" or 23" Subrack for 2000 W Enhanced Rectifier

This subrack is designed to house 6 2000 W Enhanced Rectifiers (5 for the 19" version). It provides mechanical retention of the rectifiers without obstructing their cooling. Customized versions are available. Please contact factory.

Key features of the Subrack include

- 6U high
- 19" or 23" versions

MODEL SUMMARY AND ORDERING CODE

Model Number	Version	Number of slots	Output voltage, nominal	Output Current
SH5-J037E	19"	5	-48 Vdc	185 A
SH6-J037E	23"	6	-48 Vdc	222 A

Millennium Series Subrack for 2000 W Enhanced Rectifier

Input characteristics

Input voltage range:	180-270 Vac
Input frequency:	47-63 Hz

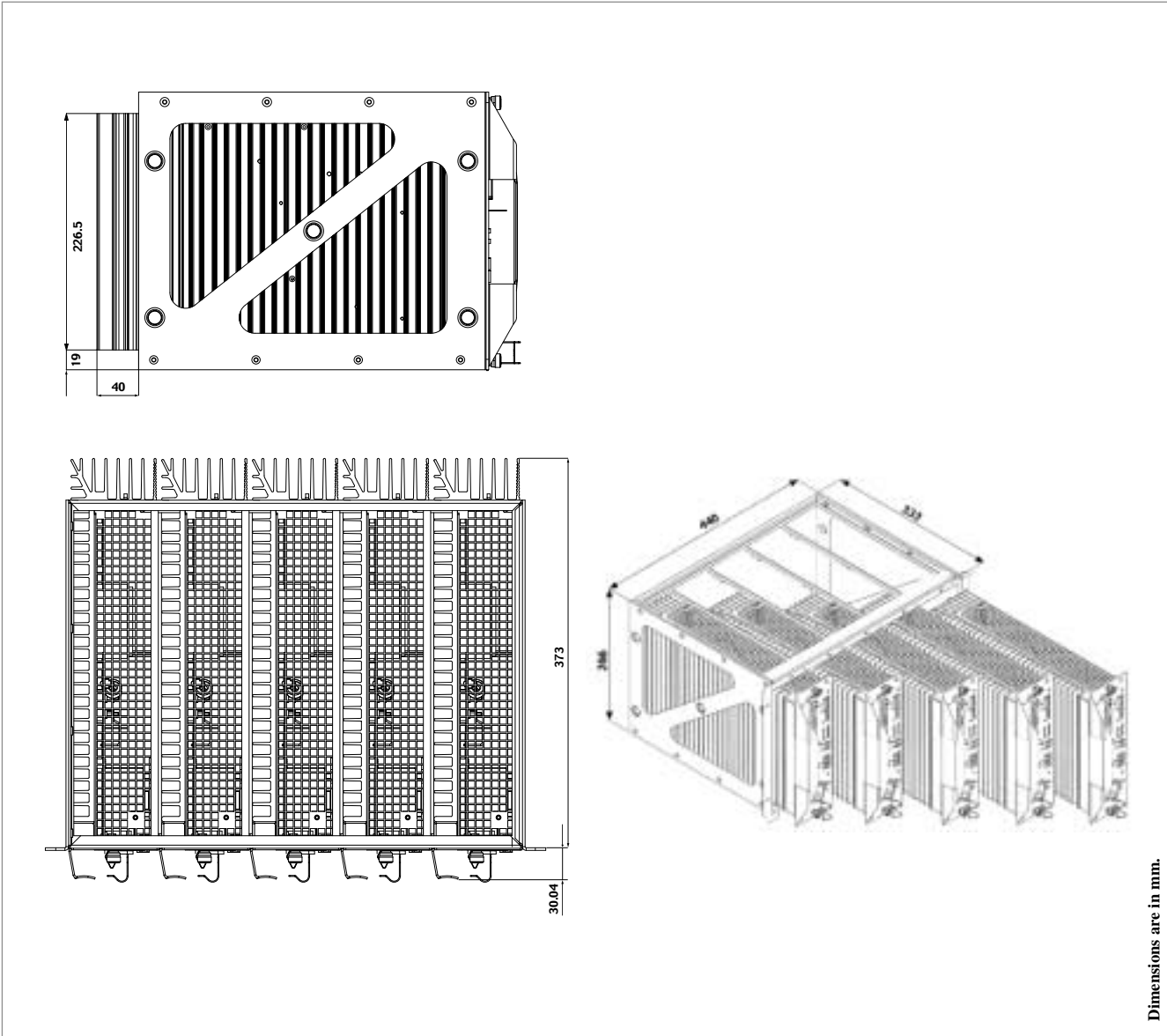
Output characteristics

Output voltage range:	40-60 Vdc programmable
Factory setting:	54.5 V programmable
Output current:	
• 19" version (5 slots):	185 A
• 23" version (6 slots):	222 A

General characteristics

Dimensions WxHxD:	
• 19" version: 19" (482.60mm) x 10.47" (266mm) x 13.11" (333mm)	
• 23" version: 23" (584.2mm) x 10.47" (266mm) x 13.11" (333mm)	

Mechanical drawings



Millennium Series Subrack for 1500 W Rectifier



General specifications 19" or 23" Subrack for 1500 W Rectifier

This subrack is designed to house 5 1500 W Rectifiers (4 for the 19" version). It provides additional EMC filtering for guardbanding, mechanical retention of the rectifiers and interconnection between the rectifiers to the output logic and power connections. Customized versions are available. Please contact factory.

Key features of the Subrack include:

- 3U high
- 19" or 23" versions
- cCSAus, IEC, CE certified
- Designed to meet NEBS Level 3 requirements

MODEL SUMMARY AND ORDERING CODE

Model Number	Version	Number of slots	Output voltage, nominal	Output Current
SH4-J025B	19"	4	48 Vdc	100 A
SH5-J025B	23"	5	48 Vdc	125 A
SH4-F050B	19"	4	24 Vdc	200 A
SH5-F050B	23"	5	24 Vdc	250 A

Millennium Series Subrack for 1500 W Rectifier

Input characteristics

Input voltage range: 85-264 Vac

Input frequency: 47-63 Hz

Output characteristics

Output voltage range: 42-60 Vdc (48 V) ;
21-30 Vdc (24 V) programmable

Factory setting: 54.5 V(48 V); 27.25 V(24 V) programmable

Output current:

• 19" version (4 slots): 100 A(48 V); 200 A(24 V)

• 23" version (5 slots): 125 A(48 V); 250 A(24 V)

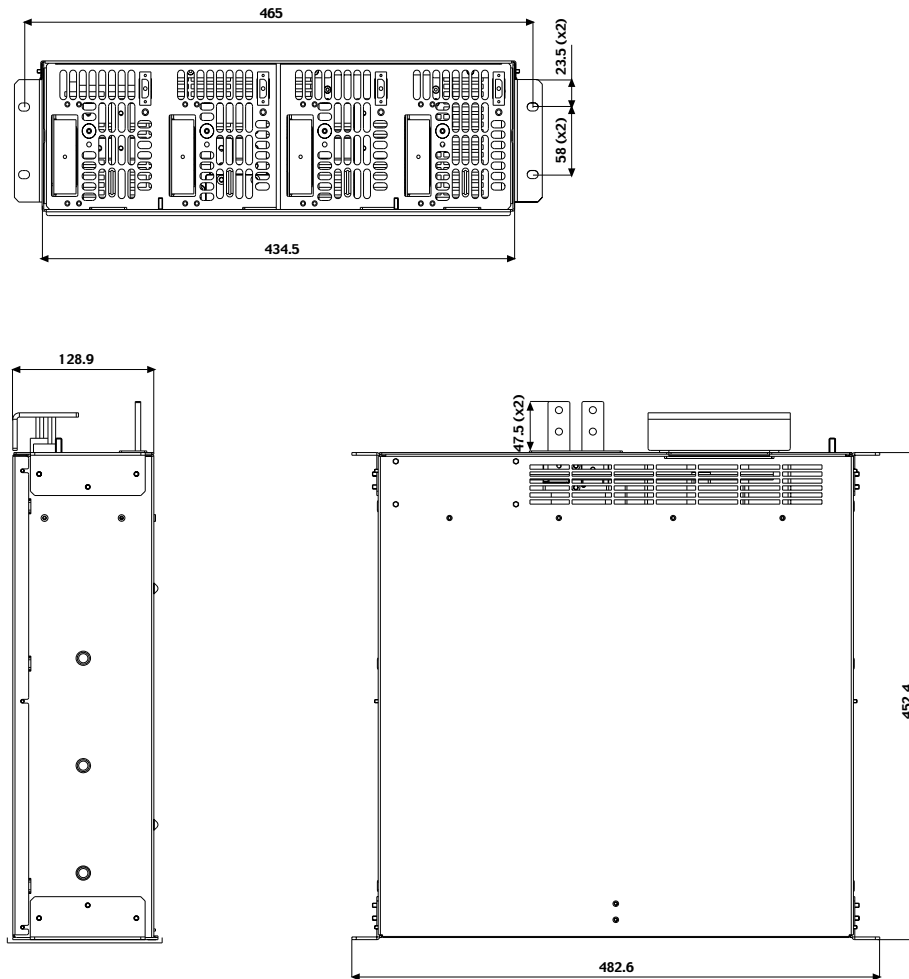
General characteristics

Dimensions WxHxD:

• 19" version: 19" (482.60mm) x 5.07" (128.9mm) x 17.81" (452.4mm)

• 23" version: 23" (584.2mm) x 5.07" (128.9mm) x 17.81" (452.4mm)

Mechanical drawings



Dimensions are in mm.

Visit our website for the most current technical data

SY Series

3000 W Compact Energy Station



General specifications

48 V 3000 W Compact Energy Station

The 3000 W Compact Energy Station is a flexible and complete system designed for – 48 V indoor or outdoor applications.

The mechanical design makes this subrack usable in any sort of standard: ETSI, 19" and 23". Very rugged design. The power elements of the Energy Station are hot pluggable and hot configurable with several offered options.

Key features of the 3000 W Compact Energy Station include:

- ETSI, 19" or 23" subrack mountable
- 3U high
- Up to four 13.7 A rectifier (mod. 19")
- Up to five (4+1) 13.7 A rectifier (mod. 23")
- Control and communication module with advanced battery management capability (battery capacity, battery symmetry)
- Internal 80 A LVD
- Comprehensive alarm set provided through potential free contacts, RS232 or RS485
- Capability of sensing and report external auxiliary alarms
- Windows based software for remote control
- Fan cooling
- Certified according to UL, CSA, IEC950 and CE standards
- Weight: mod. 19" 17.90 Kgs (8.12 lbs.); mod. 23" 20.90 Kgs (9.48 lbs.)
- In both models the right end side rectifiers bay can house either a rectifier or the following option modules: output distribution module with 6 breakers and terminal block

MODEL SUMMARY AND ORDERING CODE

Model Number	Version	Output voltage, nominal	Output Current
SY4-J014B	19"	-48 Vdc	54.8 A
SY5-J014B	23"	-48 Vdc	68.5 A

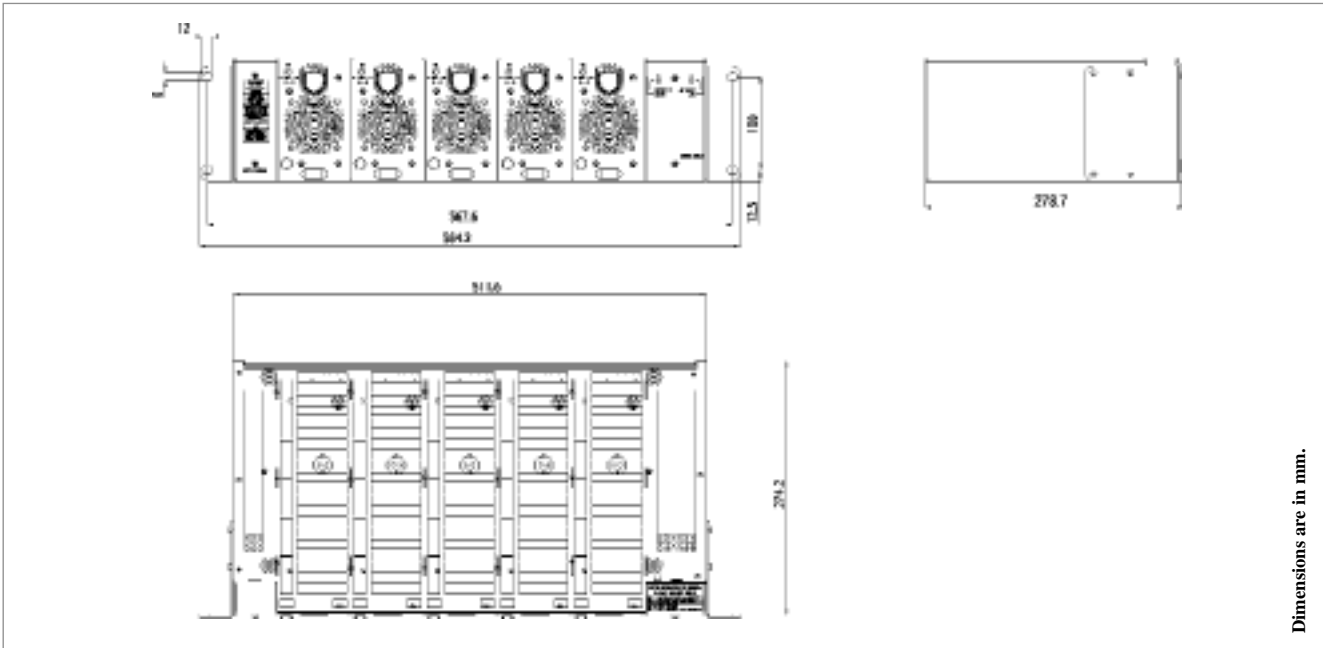
OPTION LIST

Option suffix	Description
-DIS	Output Distribution Module

SY Series
3000 W Compact Energy Station

System Configuration	1 rectifier	2 rectifiers	3 rectifiers	4 rectifiers
Input characteristics				
Input voltage ratings: 90-264 Vac				
Ac current absorption:	8.7 A at 120 Vac 4 A at 240 Vac	17.4 A at 120 Vac 8 A at 240 Vac	26.2 A at 120 Vac 12 A at 240 Vac	35 A at 120 Vac 16 A at 240 Vac
Earth leakage current (@254 Vac, 60 Hz):	2.4 mA	3.6 mA	4.8 mA	6.0 mA
Frequency: 47-63 Hz				
Power factor: >0.98 (at 60% of maximum load and above)				
Output characteristics				
Nominal voltage: 54.20 V (Vadj 2.5 V or high impedance)				
Highest voltage (Vadj 0 V) : 58.20 V				
Lowest voltage (Vadj 10 V): 42.20 V				
Output voltage regulation: +/- 0.9%				
Output PARD (bw 100 MHz): 200 mVpk-pk				
Output current (@54.5 V):	13.7 A	27.40 A	41.10 A	54.80 A
Max Output power:	750 W	1500 W	2250 W	3000 W
General characteristics				
Efficiency (full load):				
• 85% @ 100 Vac				
• 90% @ 230 Vac				
Harmonic distortion: < 5%				
Oper. Temperature range :-40°C to 55°C				
Storage temperature: -40°C to 85°C				
Audible noise: <52 dBA				
EMC:				
• Rectifier EN55022 class B				
• System EN55022 class B				
Safety standards:				
• Rectifier UL1950 compliant				
• System UL1950 compliant EN60959				
Dimensions WxHxD:				
• 19" version: 19"(482.6mm) x 5.19"(132mm) x 10.80"(274.2mm)				
• 23" version: 23"(584.2mm) x 5.19"(132mm) x 10.80"(274.2mm)				
The 5 rectifier configuration should be used as 4+1 with maximum load 72 A.				
In the 5 rectifier configuration earth leakage current is < 7.2 mA. All other parameters are the same as 4 rectifier configuration.				

Mechanical drawings



Visit our website for the most current technical data

SY Series

2000 W Compact Energy Station



General specifications

-48 V 2000 W Compact Energy Station

The 2000 W Compact Energy Station is a flexible and complete system designed for – 48 V indoor or outdoor applications.

The mechanical design makes this subrack usable in any sort of standard: ETSI, 19”.

Very rugged design.

The power elements of the Energy Station are hot pluggable and hot configurable with several offered options.

Key features of the 2000 W Compact Energy Station include:

- ETSI, 19” subrack mountable
- 2U high
- Up to four 11 A rectifier
- Control and communication module with advanced battery management capability (battery capacity, battery symmetry)
- Internal LVD
- Current limited battery charger
- 6 X 10 A distribution module
- Comprehensive alarm set provided through potential free contacts, RS232 or RS485
- Capability of sensing and report external auxiliary alarms
- Windows based software for remote control
- Certifications pending
- Weight: 13.50 Kgs (29.76 lbs)

MODEL SUMMARY AND ORDERING CODE

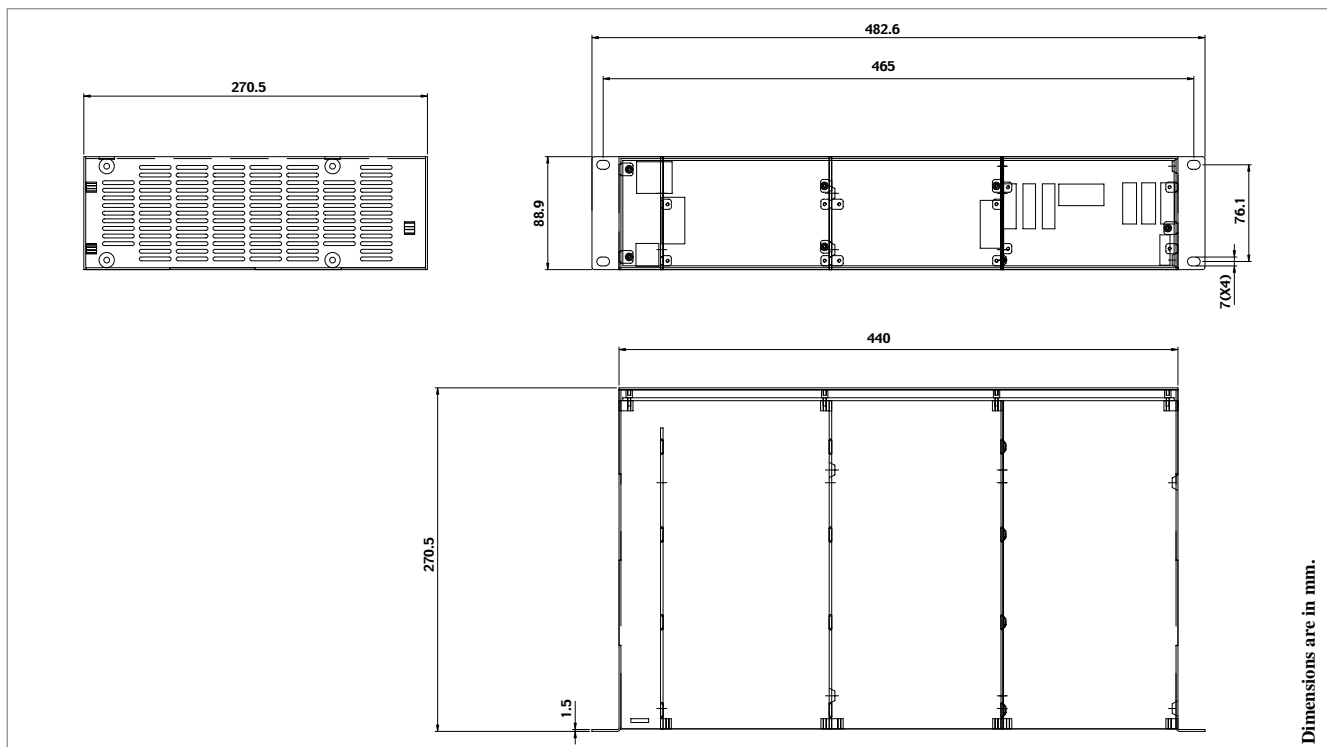
Model Numbe	Output voltage, nominal	Output Current
SY4-J011B	-48 Vdc	36 A

SY Series

2000 W Compact Energy Station

System Configuration	1 rectifier	2 rectifiers	3 rectifiers	4 rectifiers
Input characteristics				
Input voltage ratings: 90-264 Vac				
Ac current absorption:	5 A at 120 Vac 2.5 A at 240 Vac	10 A at 120 Vac 5 A at 240 Vac	15 A at 120 Vac 7.5 A at 240 Vac	20 A at 120 Vac 10 A at 240 Vac
Earth leakage current (@254 Vac, 60 Hz):	1 mA	2 mA	3 mA	4 mA
Frequency: 47-63 Hz				
Power factor: >0.98 (at 60% of maximum load and above)				
Output characteristics				
Nominal voltage: 54.20 V (Vadj 2.5 V or high impedance)				
Highest voltage (Vadj 0 V) : 58.20 V				
Lowest voltage (Vadj 10 V): 42.20 V				
Output voltage regulation: +/- 0.9%				
Output PARD (bw 100 MHz): 250 mVpk-pk				
Output current (@54.5 V):	11 A	22 A	29 A	36 A
Max Output power:	500 W	1000 W	1500 W	2000 W
General characteristics:				
Efficiency (full load):				
• 82% @ 100 Vac				
• 87% @ 230 Vac				
Harmonic distortion: < 5%				
Oper. Temperature range : -20°C to 55°C				
Storage temperature: -40°C to 85°C				
Audible noise: <52 dBA				
EMC:				
• Rectifier EN55022 class B				
• System EN55022 class B				
Safety standards:				
• Rectifier UL1950 compliant				
• System UL1950 compliant EN60959				
Dimensions WxHxD: 19" (482.6mm) x 3.5" (88.9mm) x 10.65" (270.5mm)				

Mechanical drawings



Visit our website for the most current technical data

SY Series

1600 W Compact Energy Station



General specifications

-48 V 1600 W Compact Energy Station

The 1600 W Compact Energy Station is a flexible and complete system designed for – 48 V indoor or outdoor applications.

The mechanical design makes this subrack usable in any sort of standard: ETSI, 19" and 23".

Very rugged design. The power elements of the Energy Station are hot pluggable and hot configurable with several offered options.

Key features of the 1600 W Compact Energy Station include:

- ETSI, 19" or 23" subrack mountable
- 3U high
- Up to four 7.5 A rectifier (mod. 19")
- Up to five (4+1) 7.5 A rectifier (mod. 23")
- Control and communication module with advanced battery management capability (battery capacity, battery symmetry)
- Internal LVD
- Comprehensive alarm set provided through potential free contacts, RS232 or RS485
- Capability of sensing and report external auxiliary alarms
- Windows based software for remote control
- UL, CSA and IEC950 and CE Safety marks
- Weight: mod. 19" 16.70 Kgs (7.58 lbs); mod. 23" 19.70 Kgs (8.94 lbs)
- In both models the right end side rectifiers bay can house either a rectifier or one of the following option models:
 - output distribution module with 6X10 A breakers and terminal block
 - output distribution module with 2X30 A breakers and terminal block
 - output distribution module with 1X30 A breaker and terminal block

MODEL SUMMARY AND ORDERING CODE

Model Number	Version	Output voltage, nominal	Output Current
SY4-J007B	19"	-48 Vdc	30 A
SY5-J007B	23"	-48 Vdc	37.5 A

OPTION LIST

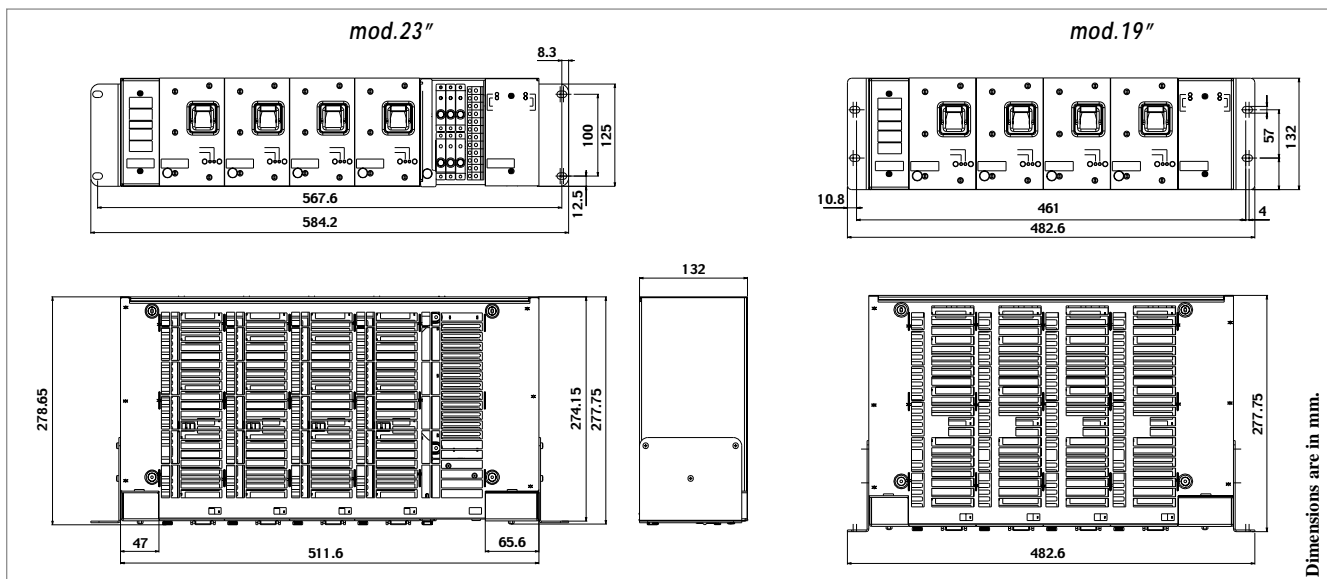
Option suffix	Description
-DIS610	Distribution Module 6x10 A
-DIS230	Distribution Module 2x30 A
-DIS130	Distribution Module 1x30 A

SY Series

1600 W Compact Energy Station

System Configuration	1 rectifier	2 rectifiers	3 rectifiers	4 rectifiers
Input characteristics				
Input voltage ratings: 90-264 Vac				
Ac current absorption:	4.2 A at 120 Vac 2 A at 240 Vac	8.4 A at 120 Vac 4 A at 240 Vac	12.6 A at 120 Vac 6 A at 240 Vac	16.8 A at 120 Vac 8 A at 240 Vac
Earth leakage current (@254 Vac, 60 Hz):	2.4 mA	3.6 mA	4.8 mA	6.0 mA
Frequency: 47-63 Hz				
Power factor: >0.98 (at 60% of maximum load and above)				
Output characteristics				
Nominal voltage: 54.20 V (Vadj 2.5 V or high impedance)				
Highest voltage (Vadj 0 V) : 58.20 V				
Lowest voltage (Vadj 10 V): 42.20 V				
Output voltage regulation: +/- 0.9%				
Output PARD (bw 100 MHz): 250 mVpk-pk				
Output current (@54.5 V):	7.5 A	15 A	27.5 A	30 A
Max Output power:	400 W	800 W	1200 W	1600 W
General characteristics				
Efficiency (full load):				
• 82% @ 100 Vac				
• 87% @ 230 Vac				
Harmonic distortion: < 5%				
Oper. Temperature range :				
• Natural convection -40°C to 50°C @ 230 Vac -40°C to 40°C @ 110 Vac				
• Fan assisted (40CFM) -40°C to 75°C				
Storage temperature: -40°C to 85°C				
Audible noise: <40 dBA				
EMC:				
• Rectifier EN55022 class B				
• System EN55022 class B				
Safety standards:				
• Rectifier UL1950 compliant				
• System UL1950 compliant EN60959				
Dimensions WxHxD:				
• 19" version: 19"(482.6mm) x 5.20"(132mm) x 10.79"(274.15mm)				
• 23" version: 23"(584.2mm) x 5.20"(132mm) x 10.79"(274.15mm)				
The 5 rectifier configuration should be used as 4+1 with maximum load 30 A. In the 5 rectifier configuration earth leakage current is < 7.2 mA.				
All other parameters are the same as 4 rectifier configuration.				

Mechanical drawings



Visit our website for the most current technical data

CTR Series

1U Slim Line Controller



General specifications

1U Slim Line Controller

Magnetek's 1U Slim Line Controller has been designed for use with Magnetek series of Switch-mode Rectifiers and Shelf Assemblies. The unit controls and monitors up to 99 rectifiers via RS485 as long as others peripheral functionality of the entire power system.

The controller monitors power system alarms with remote supervision capabilities via modem and / or Ethernet TCP/IP communication.

A keypad, a LCD and a set of 10 LED's are featured by the controller for its setting, local parameter readings and at-a-glance indication of the system status.

Key features of the 1U Slim Line Controller include:

- 2x16 LCD Readout, RS232 Port and 10 Status/Alarm LED's on front panel
- RS485 communication link
- Monitor 19 to 72 Vdc voltage range systems of up to 99 rectifiers
- 1U high with reversible brackets for 19"
- 15" depth
- Two external auxiliary alarms
- Major and Minor alarms
- Front removable for field servicing
- All Input/Output interconnection cables accessible from the front (rear or side entry)
- Equalize, Float, Trimming and Battery Test working mode

MODEL SUMMARY AND ORDERING CODE

Model Number	Compatibility* Rect. Model #
CTR-S-PSC	REC-J050E
	REC-J100E
	REC-J200EH
	REC-J200ST
	REC-J025B-S
	REC-F050B-S

* When ordering please specify Rectifier model number

CTR Series

1U Slim Line Controller

Input

19 to 72 Vdc any polarity

Functions: measure of

Phase to phase input Ac voltage

Input Ac current (for each phase)

Output voltage/Current before output sectionalization

Two independent battery string Voltages/Currents

Two set battery temperature

Rectifier temperature

Total current flowing from the rectifier bank

Available battery capacity and time to full discharge

Status of two external auxiliary parts

Others Functionalities:

Two LVD contactors activation

Battery Test (programmed to run automatically every 60 days)

Threshold setting

Default password

Working mode (1):

EQU – Equalize mode

FLT – Float mode

BMT – Battery Test mode

Trimming

Alarms (*):

- Rectifier status (failure, fan failure)
- Ac distribution failure (**)
- Rectifier OT
- Ac voltage loss (**)
- Rectifier disabled (**)
- Up to 4 input breakers or switches status
- Rectifier overload (**)
- Output distribution failure (**)
- Major and Minor alarms (**) (1)
- Up to 16 output breakers or switches (**)
- Alarm disabled (**)
- Energy station set-up incorrect
- Modem failure
- RS485 communications error
- Two external auxiliary alarms

Battery Alarms (*):

Fuse failure

Voltage low

Capacity test failure (**)

Battery asymmetry

History Log:

Event Log of 512 most recent alarms

Monitoring/Display:

Battery temperature

Controller temperature

Individual rectifier output current

Individual rectifier temperature

Current limit "ON"

Date and Time

Battery discharge mode MLV

Model and serial number

Alarm States (Individual rectifiers and system)

PROM version

Float current limit

Communications:

Local LCD display & RS232 link to PC or customer network

Size WxHxD:

19" (482.6mm) x 1.71" (43.5mm) x 15" (380.5mm)

Operating conditions:

Working temperature range: -10°C to 60°C shutdown with auto-recovery

Storage temperature: -40°C to 85°C

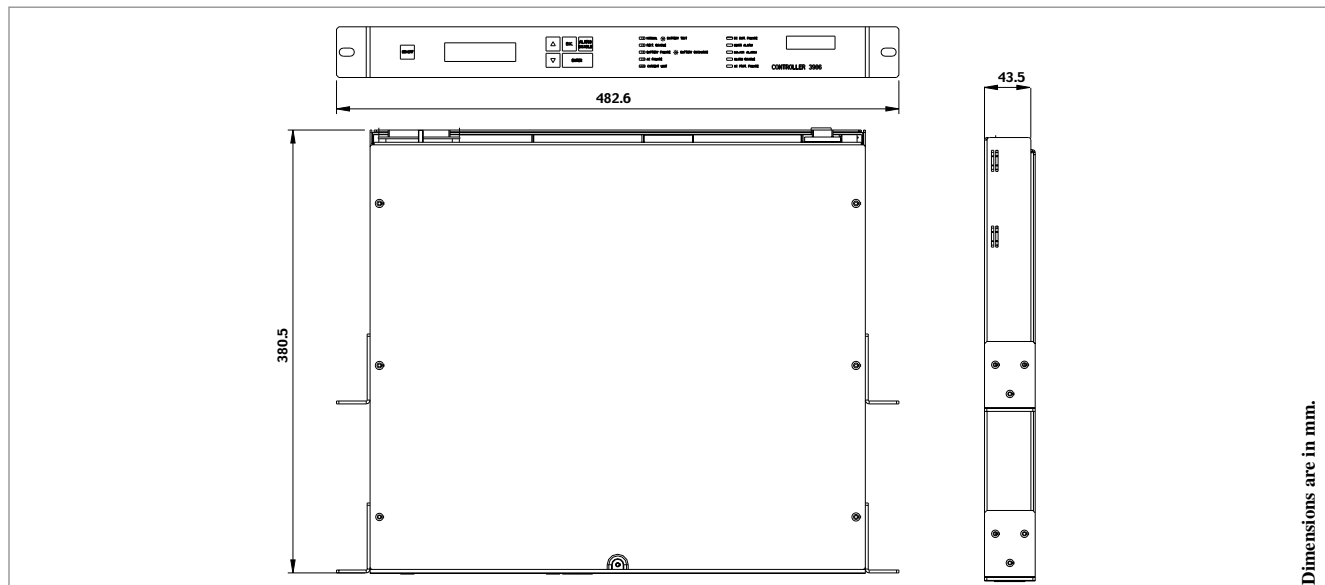
Operating humidity: 90% non condensing

(*) These alarms are provided to a remote site through either serial port or telephone connection by modem internal to the controller (optional)

(**) Alarms also reported by a LED on the front panel

(1) Programmable parameters

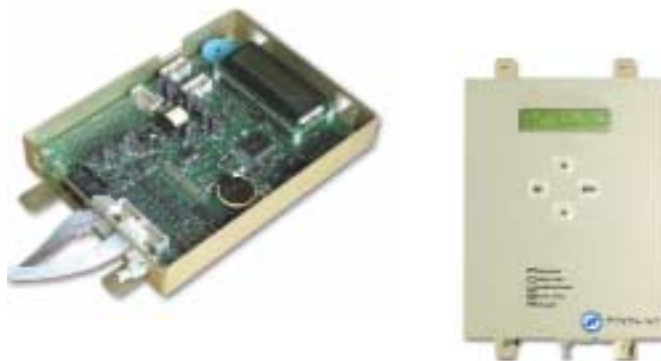
Mechanical drawings



Dimensions are in mm.

CTR Series

Wall Mountable Controller



General specifications

Wall Mountable Controller

The Magnetek's Wall Mountable Controller has been designed for use with Magnetek series of Switch-mode Rectifiers and Shelf Assemblies. This unit controls and monitors up to 99 rectifiers via RS485 as long as others peripheral functionality of the entire power system.

A keypad, a LCD and a set of 5 LED's are featured by the controller for its setting, local parameter readings and at-a-glance indication of the system status.

Its reduced size and wall-mountability allow significant saving in occupied space.

Key features of the Wall Mountable Controller Series include:

- 2x16 LCD Readout, RS232 Port and 5 Status/Alarm LED's on front panel
- RS485 communication link
- Monitor 19 to 72 Vdc voltage range systems of up to 99 rectifiers
- Two external auxiliary alarms
- Major and Minor alarms
- All Input/Output interconnection cables accessible from the bottom
- Equalize, Float, Trimming and Battery Test working mode

MODEL SUMMARY AND ORDERING CODE

Model Number	Compatibility Rect. Model #
CTR-W	REC-J037E

CTR Series

Wall Mountable Controller

Functions: measure of

Phase to phase Ac voltage (*)
Input Ac current (for each phase) (*)
Output voltage/Current before output sectionalization
Two independent battery string Voltages/Currents (*)
Two set battery temperature (*)
Rectifier temperature
Total current flowing from the rectifier bank
Available battery capacity and time to full discharge (*)
Status of two external auxiliary parts

Others Functionalities:

Two LVD contactors activation
Battery Test (every 60 days)
Threshold setting

Working mode (1):

EQU – Equalize mode
FLT – Float mode
BMT – Battery Test mode
Trimming

Alarms (**):

- Rectifier status (failure, fan failure)
- Ac distribution failure (***)
- Rectifier OT
- Ac voltage loss (***)
- Rectifier disabled (***)
- Up to 4 input breakers or switches status
- Rectifier overload (***)
- Output distribution failure (***)
- Major and Minor alarms (***) (1)
- Up to 24 output breakers or switches (***)
- Alarm disabled (***)
- Energy station set-up incorrect
- RS485 communications error
- Two external auxiliary alarms

Battery Alarms (**):

Fuse failure
Voltage low
Capacity test failure (***)
Battery asymmetry

History Log:

Event Log of 512 most recent alarms

Monitoring/Display:

Battery temperature
Controller temperature
Individual rectifier output current
Individual rectifier temperature
Current limit "ON"
Date and Time
Battery discharge mode MLV
Model and serial number
Alarm States (Individual rectifiers and system)
PROM version
Float current limit

Communications:

Local LCD display & RS232 link to PC or customer network

Size WxHxD:

5.43" (138mm) x 7.36" (187mm) x 1.16" (29.5mm)

Operating conditions:

Working temperature range: -10°C to 60°C
Storage temperature: -40°C to 85°C
Operating humidity: 90% non condensing

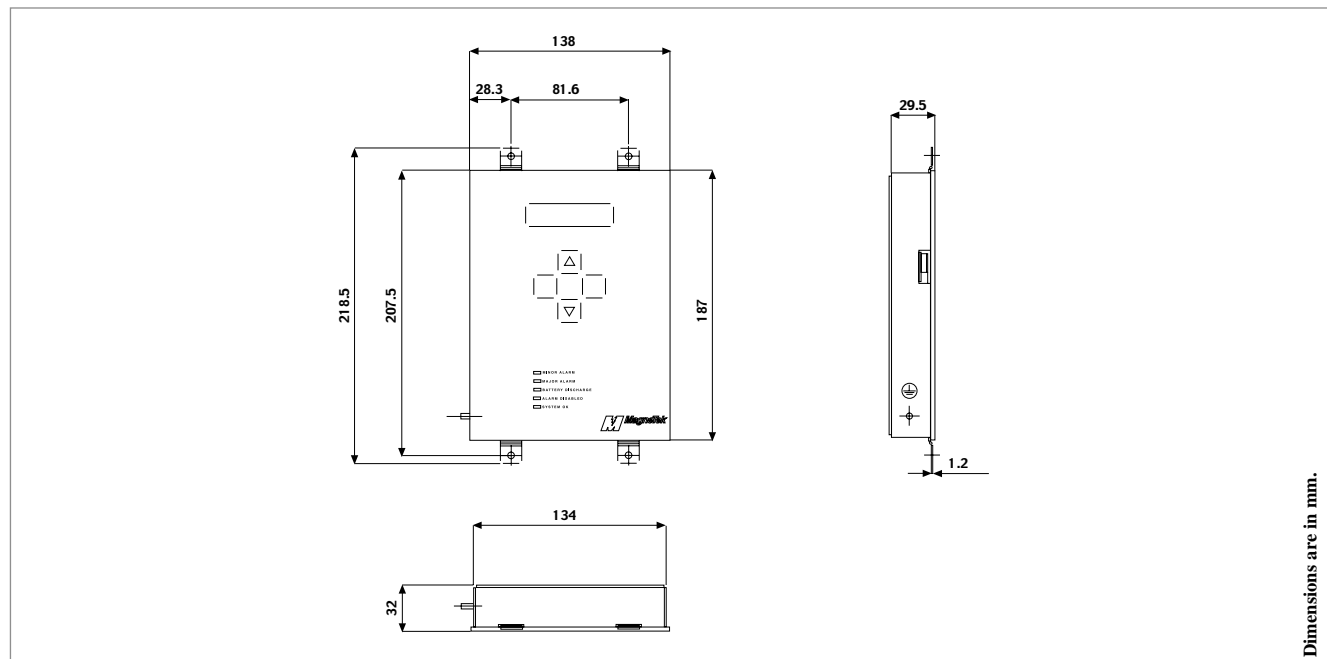
(*) with optional module

(**) These alarms are provided to a remote site through either serial port or telephone connection by modem internal to the controller (optional)

(***) Alarms also reported by a LED on the front panel

(1) Programmable parameters

Mechanical drawings



Visit our website for the most current technical data

CTR Series Display Unit



General specifications Display Unit

The Magnetek's Display Unit has been design for being used with Magnetek's 1600 W and 3000 W energy stations.

The Display Unit offers the possibility of displaying all the relevant system parameters without need of additional remote computer.

Connected to the output and control module of the energy station the Display Unit acquires via RS232 link all the system and battery parameters and provides their readout by recalling a user friendly status menu. By entering to the adjust menu the unit gives the possibility of setting the value of OV threshold, battery capacity alarm threshold, equalize voltage value and timing, LVD disconnect and warning relevant to the system diagnostic.

Furthermore to allow a connection to an additional remote unit such as a computer or site supervisor the Display Unit features two 15-pin, sub-D connectors that are replicas of the energy system's output and control module connectors.

The reduced size of the Display Unit and its two back thread holes allow its mounting either on the front of the output and control module of the energy station or on detached position.

Key features of the Display Unit include:

- 2x12 LCD Readout and 4 Status/Alarm LED's on front panel
- RS232 communication link to the energy station and RS232 or RS485 (factory settable) to remote unit
- Monitor 36 to 72 Vdc voltage range systems
- Digital and analog alarms (see PIN-OUT table)
- Output interconnection cables accessible from the bottom; input interconnections side located
- Equalize, Float, Trimming and Battery Test working mode

MODEL SUMMARY AND ORDERING CODE

Model Number	Compatibility Energy Station Model #
CTR-D	SY4-J014B
	SY5-J014B
	SY4-J007B
	SY5-J007B

Input:

36 to 72 Vdc any polarity
Input current < 300 mAdc

Functions:

Readings

- Battery voltages
- Rectifier currents
- Battery temperature
- Battery capacity (estimated nominal and actual)

Settings

- LVD disconnect and warning thresholds
- OV threshold
- Equalize (boost) voltage value
- Equalize (boost) time-out
- Equalize (boost) inception delay
- Battery residual capacity threshold

Rectifier Alarms (*):

- Rectifier status (failure)
- Ac distribution failure (**)
- Ac voltage loss (**)
- Rectifier disabled (**)
- Major and Minor alarms (**)

Battery Alarms (*):

Fuse failure
Voltage low
Capacity test failure (**)
Battery asymmetry

Communications:

Local LCD and alarm LED's
RS232 to the energy system's output an control unit
RS232 or RS485 to remote PC or customer network

Size WxHxD:

2.56" (65 mm) x 0.98" (25 mm) x 3.35" (85 mm)

Operating conditions:

Working temperature range: -40°C to 60°C
Storage temperature: -40°C to 85°C
Operating humidity: 90% non condensing

(*)These alarms are provided to a remote site through
either serial port or dry contact

(**) Alarms also reported by a LED on the front panel

PIN-OUT OF THE CONNECTORS "BATTERY SENSES" AND "TO BATTERY SENSES CONNECTOR"

15: Temp sensor +	10: Battery 2 -	5: Battery alarm no
14: Temp sensor -	9: Battery 3 +	4: Battery alarm rtn
13: Battery 1 +	8: Battery 3 -	3: Battery alarm nc
12: Battery 1 -	7: Battery 4 +	2: auxiliary alarm input
11: Battery 2 +	6: Battery 4 -	1: auxiliary alarm input

PIN-OUT OF THE CONNECTORS "ALARMS" AND "TO ALARMS CONNECTOR"

15: Signal return	10: OV nc	5: General Alarm no
14: LVD nc	9: OV no	4: Data rtn (optional)
13: LVD no	8: Ac Loss nc	3: DIO + (optional)
12: Battery Fuse Open nc	7: Ac loss no	2: DIO - (optional)
11: Battery Fuse Open no	6: General Alarm nc	1: Lamp test

FE Series

1200 W Compact Dc-Dc Converter



General specifications

1200 W 24 Vdc to 48 Vdc Compact Dc-Dc Converter

The FE1D Dc-Dc converter module provides 48 Vdc regulated output from a 24 Vdc power source. This is the ideal solution for base stations which require some 48 Vdc power for upgraded equipment without requiring replacement of existing 24 Vdc power systems. The output is galvanically isolated from the source and chassis and, therefore, may be connected either as a positive or negative output. The unit is 1U high and can be mounted in 19" and 23" subracks available from Magnetek.

The unit is hot-pluggable with electronic current share. It is ideal for N + 1 redundant systems that require high efficiency and high reliability. Applications include powering radio transceivers and telecommunications equipment in cell sites and microwave repeater sites.

Key Features of the FE1D Power Converter:

- 1U high (when mounted horizontally)
- 9 units can be mounted in a 19" subrack (when mounted vertically)
- High power density >5.3 W/inch³
- High efficiency: 88% typical
- Electronic current share
- Hot pluggable
- Output ORing diode included
- UL 1950, CSA 22.2 #950, EN 60950/IEC 950 certified
- Designed to meet NEBS Level 3 requirements
- 5 V @ 250 mA standby output

MODEL SUMMARY AND ORDERING CODE

Model Number	Output voltage, nominal	Output Current
FE1D-1J	-48 Vdc	25 A

FE Series

1200 W Compact Dc-Dc Converter

Input characteristics

Input Voltage Range:	19-32 Vdc
Input Power:	1370 W
Input Current:	42.81 – 65.24 Amps
Inrush Current:	10 Amps
Input Voltage Ripple:	0.50 Vp-p
Turn On Inrush Current:	10 Amps

Output Specifications

Output Power:	1200 W maximum
Efficiency:	88% typical measured at full load
Output Voltage:	48 Vdc
Output Current:	25 Amps
Output Current Limit:	25.1 – 29 Amps
Overshoot:	0.48 Vpeak
Over Voltage Latch:	58 V
RMS Ripple and Noise:	0.12 Vrms (20 Mhz)
Pk-to-Pk Ripple and Noise:	0.16 Vp-p (20 Mhz)
Peak Deviation Output Transient Response:	0.96 Vpeak
Settling Time:	500 μ S
Output Load Capacitance:	2500 μ F
Standby output:	5 Vdc @ 250 mA isolated ground

Signal and Controls

LED Indicator:	Power OK
Enable:	Signal normally High, drive Low to Enable
Power Good:	Signal normally Low, goes High when output is out of regulation
Present:	Ground pin that can be used by the system to detect the presence of the power supply

Safety & Environmental

Temperature Range:	<ul style="list-style-type: none"> Operating: 0 to 50°C Storage: -40°C to +85°C
Operating Humidity:	Maximum 95% non-condensing
Altitude:	<ul style="list-style-type: none"> Operating: 10,000 feet Non-operating: 40,000 feet
Temperature Coefficient:	0.02% per °C within rated load
Safety Agency Compliance:	UL-1950, CSA 22.2 #950, EN 60950/IEC 950
Cooling:	Assumes external airflow 400 LFM (FE9D subrack provides adequate ventilation)
EMI (conducted):	FCC Class A, VDE Class A
Dielectric Withstand:	Input-to-ground: 750 Vdc Input-to-output: 1500 Vdc

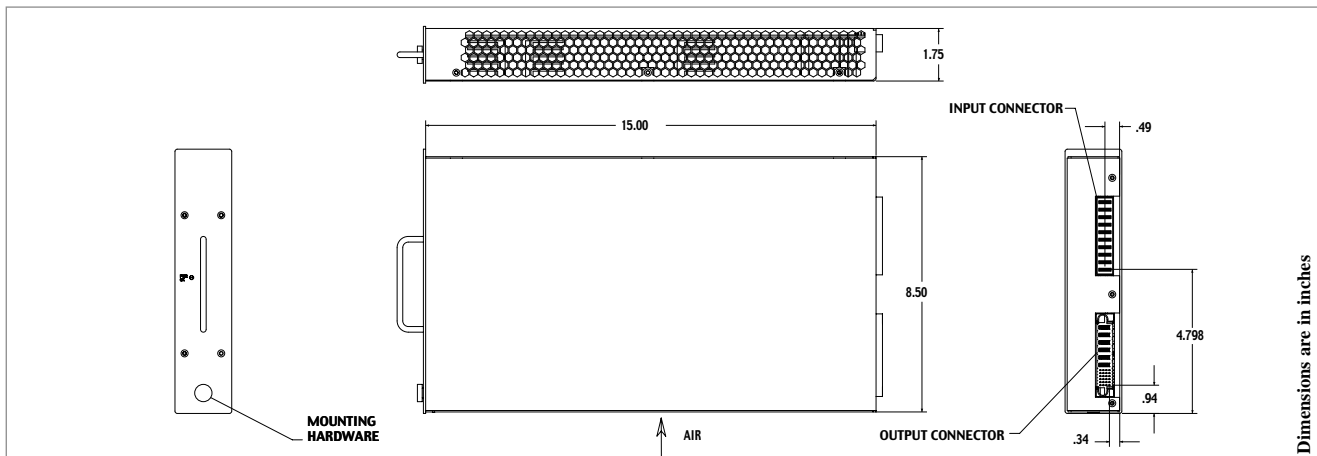
Mechanical Specifications

Dimensions WxHxD:	1.75" x 8.5" x 15.0" (106.1 mm x 222 mm x 379mm)
Weight:	8 lbs (3.63 kgs)
Connector:	FCI Berg Power Blade
MTBF:	300,000 hours at 25°C with MIL-HDBK-217 or BELCORE
Warranty:	Two years from date of shipment, standard product only

Mechanical drawings

J1 Pin #	Signal Name	Max Current (Amps)	Description
1,2,3,4	VBulk	70	VBulk
5,6,7,8	VBulkrtn	70	V Bulk return
9,10	Chassis	70	Chassis

J2 Pin #	Signal Name	Max Current (Amps)	Description
1,2,3	-48 V RTN	25	-48 V return
4,5,6	-48 V	25	-48 V output
8	+Fan (24 V only)	0.50	
9	-Fan (24 V only)	0.50	
12	Module Present		
18	5 V @ 0.25 A Logic	0.25	
19	PWR_OK		
24	Logic Return	0.25	
25	Enable		
26	Current Share Return		
27	Current Share		
29	-Sense		
30	+Sense		



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FE Series

Subrack for 1200 W Compact Dc-Dc Converter



General specifications

19" Subrack for Compact Dc-Dc Converter

The 19" Subrack can support up to nine 1200 W Dc-Dc Converters 24 Vdc to 48 Vdc in a standard telecom rack. It is available for flush or central mounting on the rack. Input and output connections are made by lugs. Applications include powering radio transceivers and telecommunications equipment in cell sites and microwave repeater sites.

Key Features of the Subrack for 1200 W Compact Dc-Dc Converter:

- 7U high
- Suited for standard telecom racks
- Internal paralleling of outputs
- Available for flush or central mounting
- UL 1950, CSA 22.2 #950, EN 60950/IEC 950 certified
- Designed to meet NEBS Level 3 requirements

MODEL SUMMARY AND ORDERING CODE

Model Number	Output voltage, nominal	Output Current
FE9D-RACK-19	-48 Vdc	25 A per module

FE Series

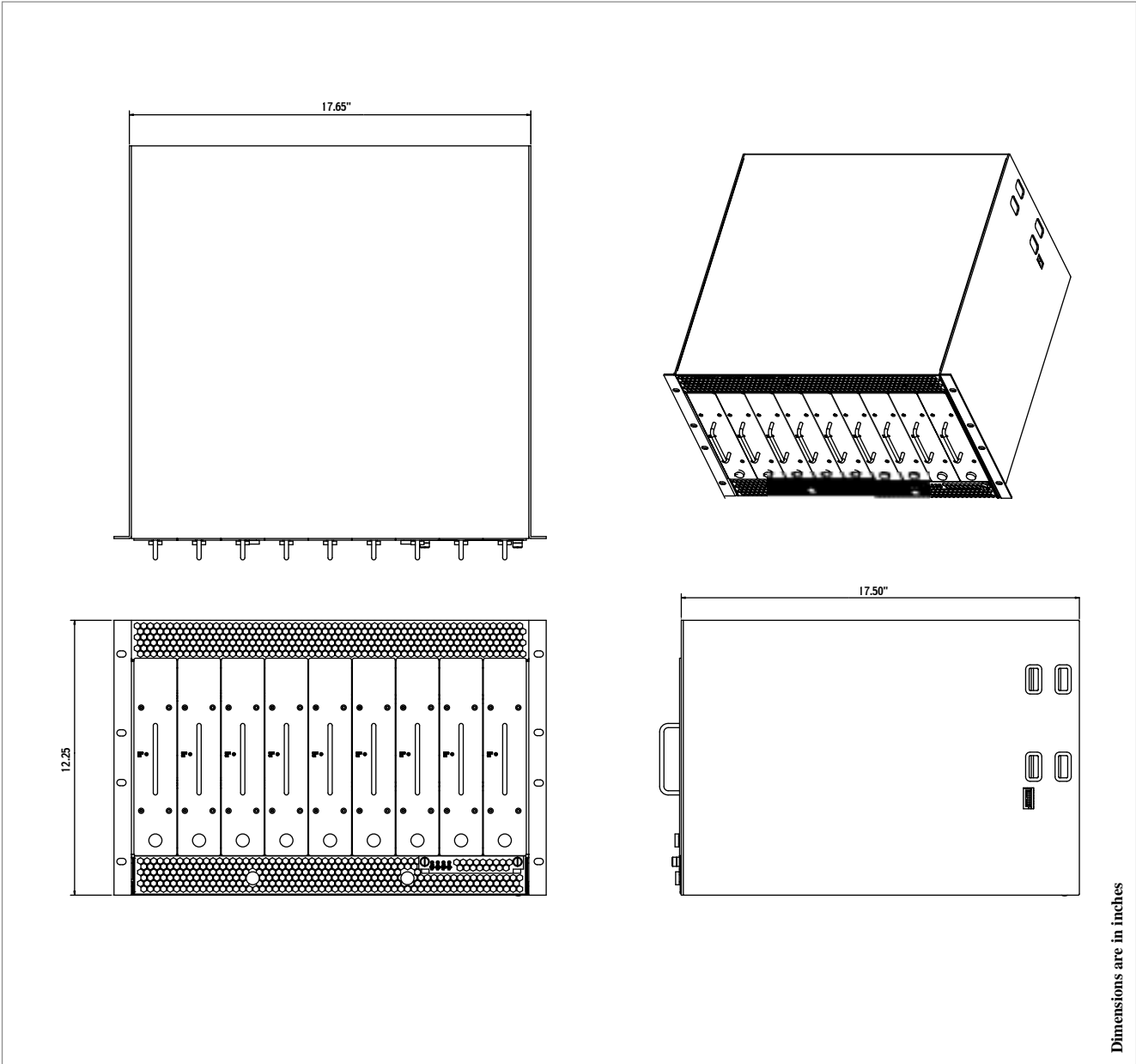
Subrack for 1200 W

Compact Dc-Dc Converter

Mechanical Specifications

Dimensions WxHxD:	19" (482.6mm) x 12.25" (311.15mm) x 17.5" (444.5mm)
Weight:	15 lbs (6.8 kgs)
Cooling:	Fans included in the Subrack
Warranty:	Two years from date of shipment, standard product only

Mechanical drawings



SLI Series

1500 W 1U Compact Inverter



General specifications

SLI Series - 1500 W 1U Compact Inverter

The SLI Series of “Slim Line” inverters provides the ideal solution for telecom, IT and industrial applications. Due to innovative technology solutions like the patent-pending “Compact coil” the SLI Series inverters pack 1500VA of power into a light (5.6 Kg) and compact package that is 19” rack mountable and only one rack unit high. There are four models for different input (24Vdc and 48Vdc) and output (115Vac and 230Vac) voltage combinations. The integrated controller along with the optional internal Static Transfer Switch (STS) enable flexible and scalable systems that are truly “plug and play” with no external subsystems needed - just stack the inverters up to the power level required by the application. Optional hot swap models are also available.

The electrical performance of the SLI Series inverter products is at the top of the market with efficiency that peaks at 93% and patent-pending control algorithm that compensates current harmonics on the Dc side without using bulky and expensive filters. The inverter includes an on-board powerful DSP (Digital Signal Processor) that allows easy programmability of the main parameters on the LCD display and keypad on the front panel.

The SLI Series inverters can be interfaced with RS485 or optional CAN bus to an external controller.

Key features of the 1500 W 1U Compact Inverter include:

- New compact design: 1U height x 19” width x 14.94” depth, 19” rack mountable
- High efficiency: up to 93%
- True Sine Wave Output
- Parallelable output, with current share and synchronization of multiple inverters working in parallel
- LCD Display on the front panel to monitor and set the main parameters
- RS485 serial link and optional CAN bus
- Optional Hot - Swappable configuration
- Optional Internal Static Transfer Switch

MODEL SUMMARY AND ORDERING CODE

Model Number	Input voltage	Output voltage, nominal	Output voltage range	Frequency range
SLI-48-230	48 Vdc	230 Vac	200-240 Vac	47-63 Hz
SLI-48-115	48 Vdc	115 Vac	100-120 Vac	47-63 Hz
SLI-24-230	24 Vdc	230 Vac	200-240 Vac	47-63 Hz
SLI-24-115	24 Vdc	115 Vac	100-120 Vac	47-63 Hz

OPTION LIST

Option suffix	Description
-STS	Internal Static Transfer Switch
-HS	Hot Swap version
-SC	AC terminal blocks
-CAN	CAN bus

SLI Series

1500 W 1U Compact Inverter

Input characteristics

Operating Input voltage range:

- 48 Vdc models: 40-72 Vdc
- 24 Vdc models: 20-36 Vdc

Input Safety overcurrent protection: Internal fuse, 70 A (48 Vdc); 140 A (24 Vdc)

Input current:

- 48 Vdc models: 48 A at 36 Vdc
- 24 Vdc models: 100 A at 18 Vdc

Inrush current: <10 A

Input Overvoltage: 74 V (48 Vdc); 37 V (24 Vdc)

Input Undervoltage: 36 V (48 Vdc); 18 V (24 Vdc)

Output characteristics

Output voltage range:

- 230 Vac models: 200 to 240 Vac
- 115 Vac models: 110 to 120 Vac

Output power: 1500 VA

Overload:

- 230 Vac models: 1800 VA
- 115 Vac models: 1650 VA

Surge:

- 230 Vac models: 2300 VA for 200 ms
- 115 Vac models: 1750 VA for 200 ms

Load power factor: 0.4 ÷ 1 lagging or leading

Load crest factor: 4

Ripple and Noise: 2% pk-pk (20 Hz / 20 MHz)

Line Regulation: ±0.1% over full operating range

Load regulation: ±2% over full operating range

Distortion: <2% on resistive load

Protections:

- Overvoltage Protection: All outputs set at 115% ± 2% of Nominal
- Undervoltage Protection: All outputs set at 85% ± 2% of Nominal
- Short-circuit Protection: Yes, I_{pk}; 30 A (230 Vac); 60 A (115 Vac)
- Overcurrent Protection: Yes, 1 A to 8 A (230 Vac); 2 A to 15 A (115 Vac)
- Safety overcurrent protection: 10 A (230 Vac); 15 A (115 Vac) by safety circuit breaker
- Overtemperature Protection (visual and acoustic indication 5°C before shutdown): at T_{amb} > 65°C and at T_{int} > 100°C
- Protection Restore Modes: the restore mode of each protection can be individually selected to "latch" or "autorestart"
- General alarm signal: by a photo-relay (open if in fault mode)
- LCD Panel: 2 line LCD panel with keypad for menu navigation
- LED Indicator: 4; Green (power ON), Red (generic fault, OT, fan fail)

General characteristics

Frequency: 50 or 60 Hz

Efficiency: up to 93%

Operating temperature:

- Full load: -25°C to 55°C
- Power derating: 75 W/°C: +55°C to 65°C
- Storage: -40°C to 85°C

Operating Humidity: 0-90% non-condensing

Operating altitude: 13000 feet (3900 meters)

Safety Agency Compliance: cCSAus, Kema, CB report, CE mark

Isolation:

- PRI-SEC: 3000 Vrms
- SEC-GND: 1500 Vrms
- PRI-GND: 1000 Vrms
- Signal-GND: 0 Vrms

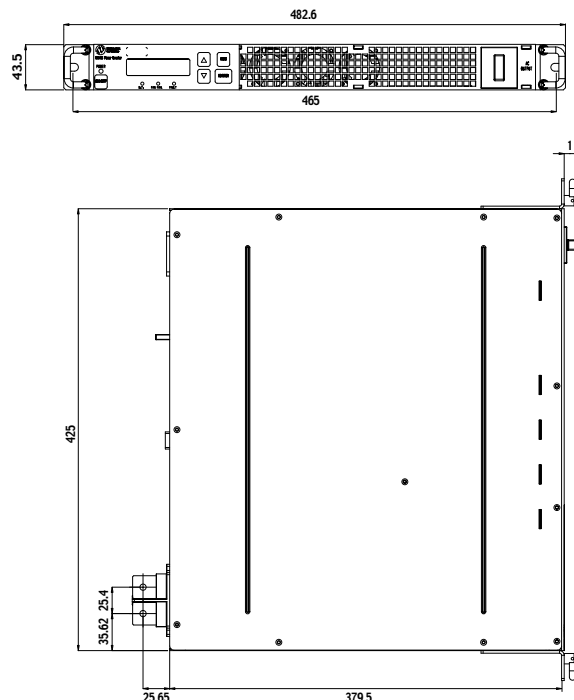
MTBF: > 200000 hours at 40°C

Weight: 5.6 Kgs (12.34 lbs)

Dimensions WxHxD: 19"x1.71"x14.94"
(482.6mm x 43.5mm x 379.5mm)

Warranty: Two years from date of shipment, standard product only

Mechanical drawings



Dimensions are in mm.

Visit our website for the most current technical data

iBreaker Series

IB Family for Intelligent Distribution



General specifications

IB Family for Intelligent Distribution

Magnetek's revolutionary iBreaker introduces on the market a totally innovative product to increase performance and facilitate the design of power systems, while reducing the time to market and the cost of ownership.

Magnetek's iBreaker is a better interrupting device than a regular electromechanical breaker to be used for telecom and ITE distribution panels because:

- Delivers a higher level of reliability, consistency and durability in the field.
- Disconnects the load in a clean way with current limited to a preset value within 300 microseconds avoiding transients on the dc input bus.
- Measures current, voltage and energy consumption and transmits the information via serial link, allowing precise monitoring of the system.
- Allows total control of tripping conditions and to implement Low Voltage Disconnect functionality for load shedding strategies to preserve critical loads, with software adjustable configurations that maximize system flexibility.

Key features of the IB Family for Intelligent Distribution include:

- Designed for standard telecom -48 V systems
- Ratings from 5 A to 60 A
- Constant current delay before tripping (no bus voltage drop)
- Serial communication link with programmability of most relevant parameters and remote reading of status and working values
- Height, Width and mounting holes compatible with commercial electromechanical breakers
- Optional board controller to easily connect to up to 22 breakers
- CE and Kema marks according to EN/UL/CSA 60950 for ITE and Telecommunication Equipment.

MODEL SUMMARY AND ORDERING CODE

Model Number	Current Rating
IB-48V-5A	5 A
IB-48V-10A	10 A
IB-48V-20A	20 A
IB-48V-30A	30 A
IB-48V-40A	40 A
IB-48V-50A	50 A
IB-48V-60A	60 A

iBreaker Series

IB Family for Intelligent Distribution

ACCESSORIES LIST AND ORDERING CODES

Model Number	Description
IB-CTR	Controller. Controls up to 22 iBreakers
IB-BS	Serial Bus strip, allows easy connection of the serial link to the individual iBreakers, connects up to 10 breakers to one controller.
IB-WI	Serial Bus wire to connect the iBreaker to the Serial Bus strip.

Input characteristics

Input voltage range:	-60 to -36 Vdc
Isolation:	1100 Vrms live circuits to frame. Frame heatsink is floating and can be connected to Earth
Input Undervoltage protection:	programmable -48 V to -36 V. Factory setting -35.8 V +/- 0.2 V
Input Overvoltage protection:	programmable. Factory setting -65 V +/- 0.2 V

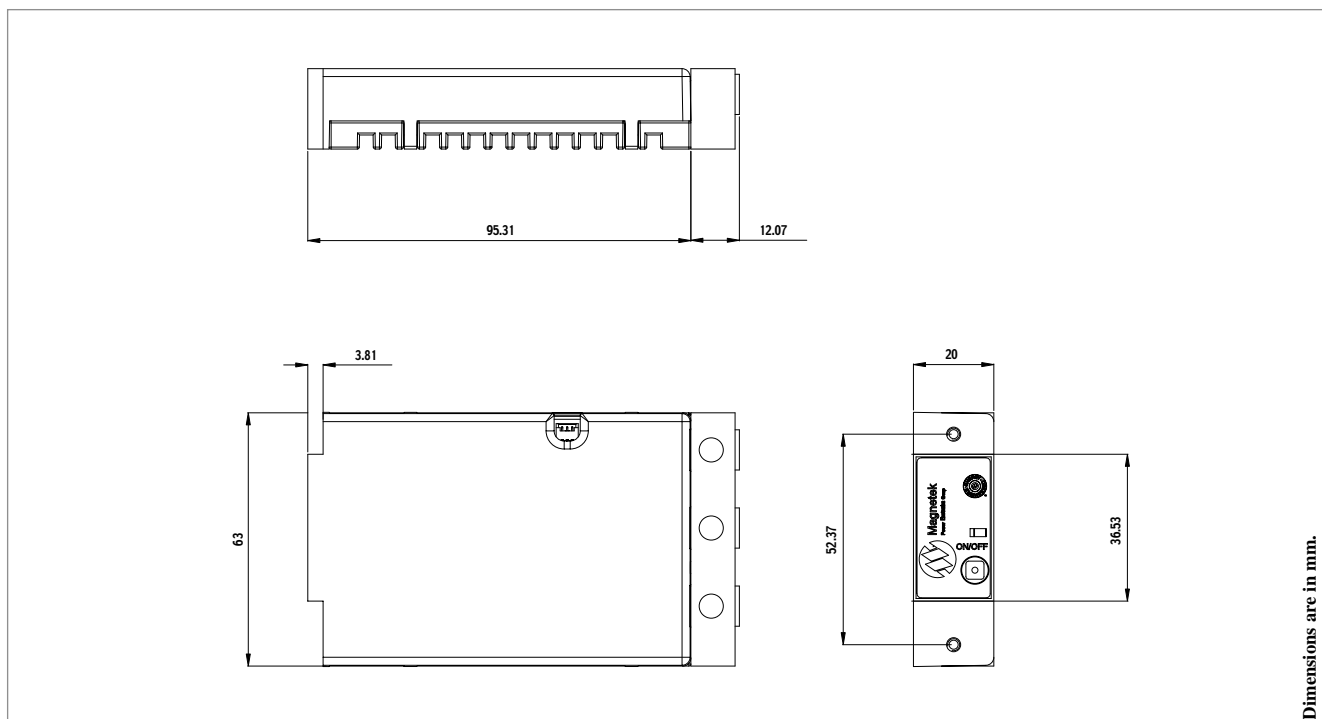
Output characteristics

Tripping conditions:	
• Time to trip: 10 ms max	
• Overload, automatic with current limitation, programmable	
• Short Circuit, automatic with current limitation	
• Input Undervoltage, automatic, programmable	
• Input Overvoltage, automatic, programmable	
• Manual ON/OFF, push button, protected against accidental activation	
• Remote ON/OFF, serial link	
• Overtemperature (auto-recovery on request)	

General characteristics

Display:	Status bicolor LED and ON/OFF push button
Operating temperature:	-5°C to 55°C convection cooling
Operating Humidity:	0 to 95% non-condensing
EMI:	<ul style="list-style-type: none"> • Immunity EN61000-6-2 • Emissions EN50081-1
MTBF:	1,500,000 hours at 30°C min according to Bellcore TR-NWT-000332
Expected operational life:	35 years min
Safety Approvals:	CE and EN60950 for ITE and Telecommunications Equipment.
Dimensions WxHxD:	0.79" x 2.48" x 4.22" (20mm x 63mm x 107.38mm)

Mechanical drawings



iBreaker Series

Modular Power Distribution Unit



General specifications

Modular electronic Power Distribution Unit (e-PDU)

Magnetek's Modular electronic Power Distribution Unit (e-PDU) is a configurable distribution unit 19" x 2U based on basic electronic circuit breaker.

The standard configuration distributes -36 Vdc / -60 Vdc to 10 users.

Custom configurations are available. The electronic circuit breaker assures no bus voltage drop, remote controllability, durability, reliability and a faster response to short-circuit versus electromagnetic breakers.

Key features of the Modular electronic Power Distribution Unit include:

- Compact dimensions: 19"(482.6mm) x 3.46"(88mm) x 4.76"(121mm)
- Up to 10 power users (-48 Vdc input) in 10 A current range
- Fast response: 300 μ s short circuit-to-current limit time
- Overtemperature, overvoltage, overcurrent protection
- Latching overcurrent and short circuit protection
- "Catastrophic" fuse mounted in series with electronic switches
- Manual reset with no-lock push button switch: accidental tripping avoided
- Easy connections: with male inlet 3Pins FM3W3
- Easy to replace
- 10 outputs power connectors AMP p/n 350825-1
- One signal connector D-15Pins type and remote connector D-9Pins
- Bicolor LED's, red indicator for each tripped breaker, green indicator for E-breaker closed
- Serial RS232 bus for remote control

MODEL SUMMARY AND ORDERING CODE

Model Number	Description
3B350010000	10 breaker positions 19" rack

iBreaker Series

Modular Power Distribution Unit

e-Distribution Unit Specifications- Standard version

Input voltage:	36 / 60 Vdc (-48 Vdc nominal)
Input current rating:	50 A line A; 50 A line B
Double separated input source line available	
Filter for each source line	
Number of electronic switches:	10
Number of electro-magnetic circuit breakers:	2
Power source / Breaking capacity:	5 kA
Reverse polarity protection	
Electronic switch:	10 A
Max Current rating (Imax):	10 A
Max inrush current (Ilimit):	17 A x 10 msec
Max Current after tripping (Istand-by):	<0.1 A
Voltage drop (typ) :	0.15 V
Short circuit sense time:	300 μ s (followed by 10msec pre-programmed current limit interval)
Current limit delay time:	5 msec (custom time available)
Output Connector types:	AMP p/n 350825-1, series D-15Pin male, Series D-9Pin female, Amphenol FM3W3 series

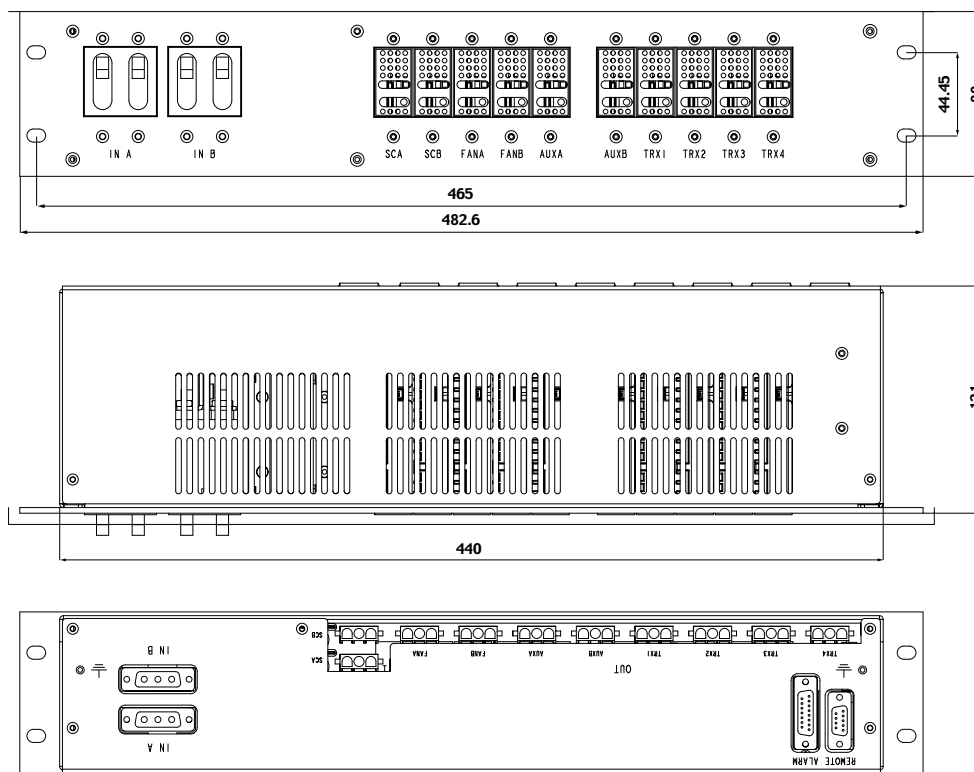
Protection: Latched overcurrent and short circuit protection
Overtemperature protection
System "catastrophic" fuse present

General

Dimensions WxHxD:	19" x 3.46" x 4.76" (482.6mm x 88mm x 121mm)
Weight :	4.5 Kg. (12.05 lbs)
Operating temperature:	-5°C to +55°C
Durability (number of on/off switch operations):	20,000 operations
MTBF:	1,000,000 hours
Cooling:	natural convection
Safety Approvals & Marks:	EMC, CE marked
Front Panel:	10bicolor LED's

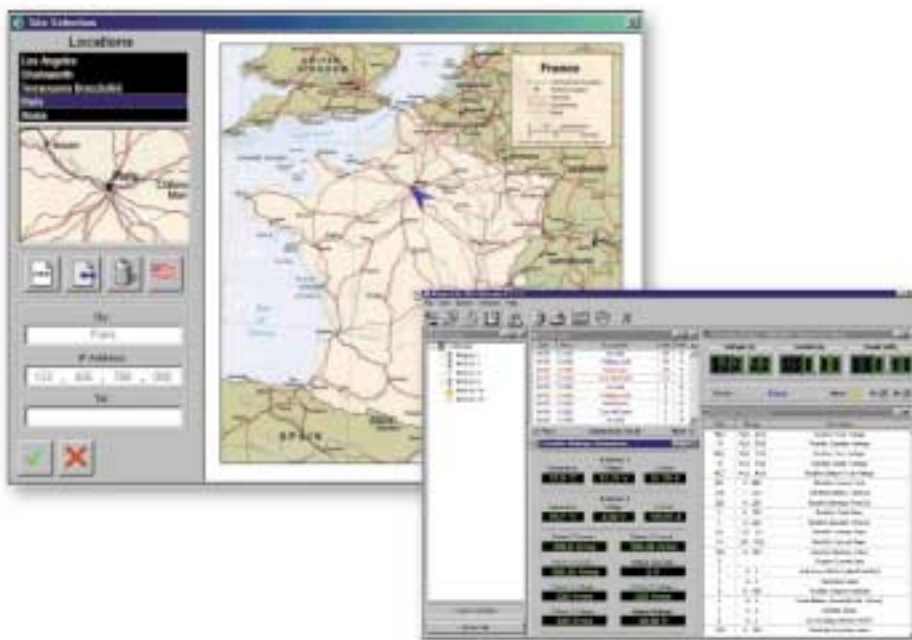
- Red lit when switches are opened/tripped
- Green lit when switches are closed

Mechanical drawings



Dimensions are in mm.

Advanced Remote Control of Energy Stations



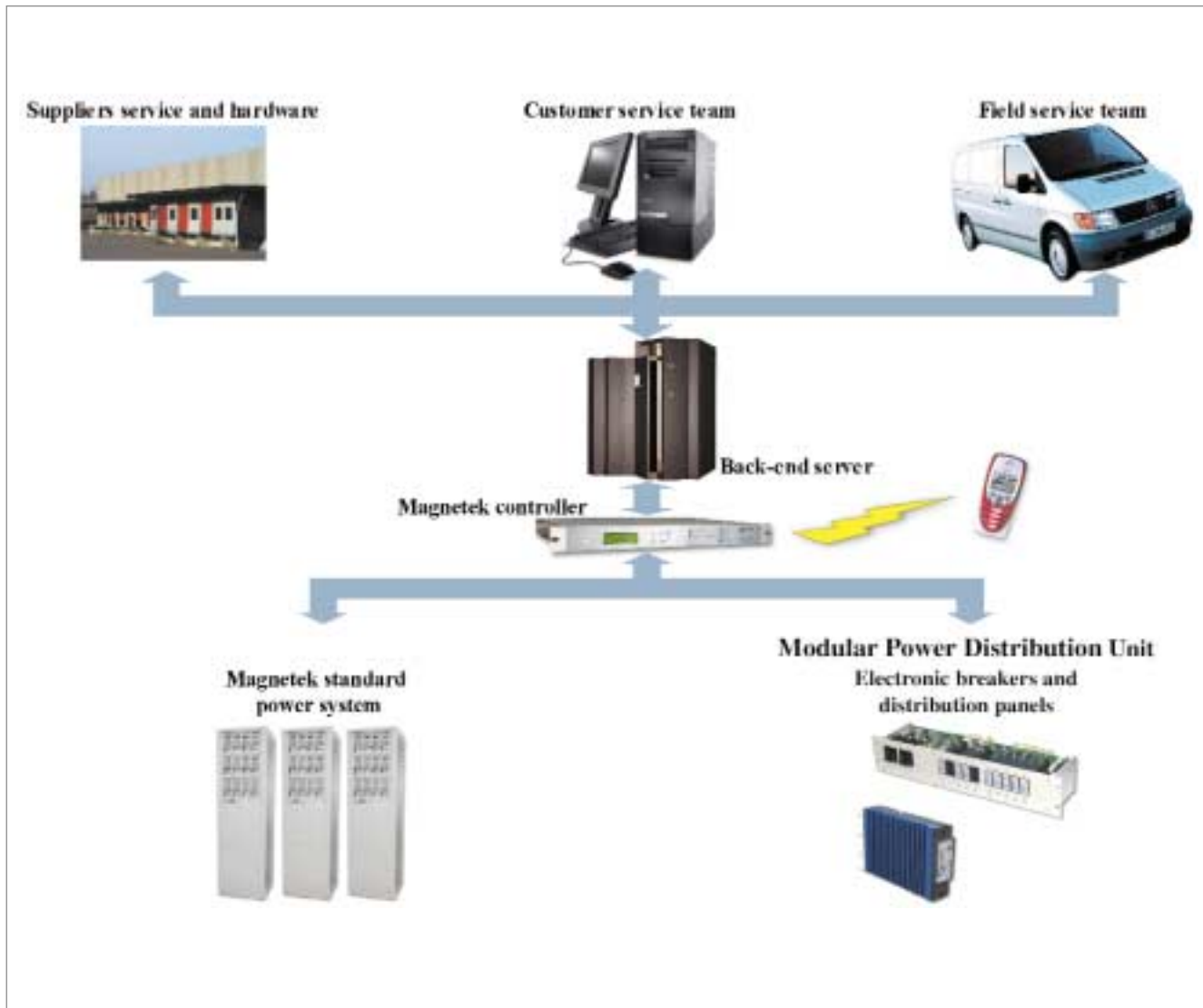
Advanced remote control of energy stations

Magnetek is leading the market in the development of advanced control of energy stations. By using Magnetek's Magnum and Millennium rectifiers and SY systems, and CTR controllers our engineering team creates the best software solutions for the remote control of your system to achieve superior flexibility, performance and profitability.

Key features of Magnetek's advanced remote control solutions include:

- Powerful visualization software for remote control stations
- Mobile device remote control by means of WAP protocols
- Database interfaces
- Automatic crew alert and dispatching
- Full remote operating control (mode selection)
- Voltage level, reading and changing
- Current level, reading and changing
- Load connection and disconnection, including load shedding
- Energy metering
- System shutdowns and rearm

Advanced Remote Control of Energy Stations



Our engineering team will easily implement additional functions to personalize the control system according to your needs.



Configurable Power Supplies

Hot Plug Group Series

HP 3/4 Series 500 W Single-Output	> 60
HP 3 Series 400 W Multiple-Output	> 62
HP 4/5 Series 500 W Dual-Output	> 64
HP 6 Series 600 W Multiple-Output	> 67
Rack-M3™ 1 kW & Rack-M6™ 2.5 kW	> 70

Modular Group Series

MD Series Dc-Dc Power Supplies	> 72
MG Series Ac-Dc Power Supplies	> 77

400/585 W Front-End Module	> 82
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HP3/4 Series 500 W Single-Output Power Supplies



General specifications

HP3/4 Series Single-Output Power Supplies

The HP3/4 Series Single-Output Power Supplies are designed to operate as the front-end for a distributed power system in telecommunications networks, data storage systems, high-end servers, medical and industrial products. Available for either Ac (HP Series) or Dc (HD Series) inputs with hot-plug capability for critical systems. They provide up to 500 Watts total output power with output ratings from 12 to 48 Volts.

Key features of the HP 3/4 Series Single-Output Power Supplies include:

- N + 1 Hot Swap with ORing Diode
- 12, 24, 28, 36, 48 & 54 Volt Output Models Available
- Power Factor Corrected Wide-range Ac Input
- 48 Vdc Input Model available, 12 Vdc Output
- 5 Volt Standby Output
- Single-wire Current Sharing
- No Minimum Load Requirement

MODEL SUMMARY AND ORDERING CODE

Model Number	Output Rating	Input
HP3-1F	24 V/20 A	Ac
HP3-1G	28 V/18 A	Ac
HP3-1H	36 V/14 A	Ac
HP3-1J	48 V/10 A	Ac
HP4-1D	12 V/40 A	Ac
HD4-1D	12 V/40 A	48 Vdc

Options (add to end of model number, e.g., HP3-1F-R):

Q=54 volt battery charger (HP3-1J only)

R=Reverse airflow

T=Non-hot swap panel

V=Delete mounting handle

Y=Delete enable switch

HP3/4 Series 500 W Single-Output Power Supplies

Input Specifications

Input voltage range:	
HP3/4:	90 to 264 Vac, 47 to 63 Hz, single-phase
HD4:	36 to 75 Vdc
Power Factor:	
0.99 at full load and nominal line	
Inrush Current:	
HP3/4:	100/40 A Peak hot and cold start
HD4:	40 A maximum at 72 Vdc
Input Protection:	
Internal line fuse provided	

Output Specifications

Output Power:	
500 W maximum	
Output Voltage & Current Ratings:	
HP 3:	24 V at 20 A; 28 V at 18 A; 36 V at 14 A; 48 V at 10 A
HP/HD4:	+12 V at 40 A
Auxiliary Output:	
HP3:	5 Vdc at 200 mA
HP/HD4:	5 Vdc at 250 mA
Overshoot/Undershoot:	
Less than 1.0% at turn-on or turn-off.	
Less than 3.0% for 50% to 100% load step.	
Start-Up Time:	
Less than 4 seconds.	
Efficiency:	
75% typical measured at full load, nominal input	
Regulation:	
HP3:	Load: $\pm 1\%$ at the output connector, 0%-100% load 5 V standby output $+3\%$ Line: $\pm 1\%$ over full operating range Load: 0.2% with remote sense, 4% without remote sense Line: 0.1% over entire operating range Cross: Less than 0.5%
HP4/HD4:	
Minimum Load:	
No minimum load required	
Overcurrent Protection:	
HP3:	Foldback current limit
HP/HD 4:	All outputs set to 105%-125% of full rated load with automatic recovery
Overtemperature Protection:	
Automatic shutdown with automatic recovery	
Remote Sense:HP/HD4:	
Compensates for voltage drop of up to 0.5 V to the load. Shorted sense lead protection	
Reverse Voltage Protection:HP3:	
Inherently protected from damage due to reverse polarity at output connection up to 100% of nominal load	
Overvoltage Protection:	
All outputs set at 115%-130% of nominal. Reset by cycling input power.	
Output Noise and Ripple:	
1% pk-pk measured at 20 MHz bandwidth.	

Signals and Controls

LED Indicator:	
Front panel green LED indicates power supply is good. Front panel yellow LED indicates power supply fault.	
Output Good Signal:	
TTL compatible signal, normally low. Goes high when power supply is out of specified range. Reverse logic available.	
Enable:	
Normally TTL High, drive low to enable.	
Power Fail Warning:	
TTL compatible signal, normally low. High signal prior to any output going out of regulation, 5 ms (10 ms on HP4) after input power goes to less than 95% of rating. Reverse logic available.	
Hold-Up Time:	
HP3:	20 ms minimum at full load and low line
HP4:	16 ms minimum at full load and low line

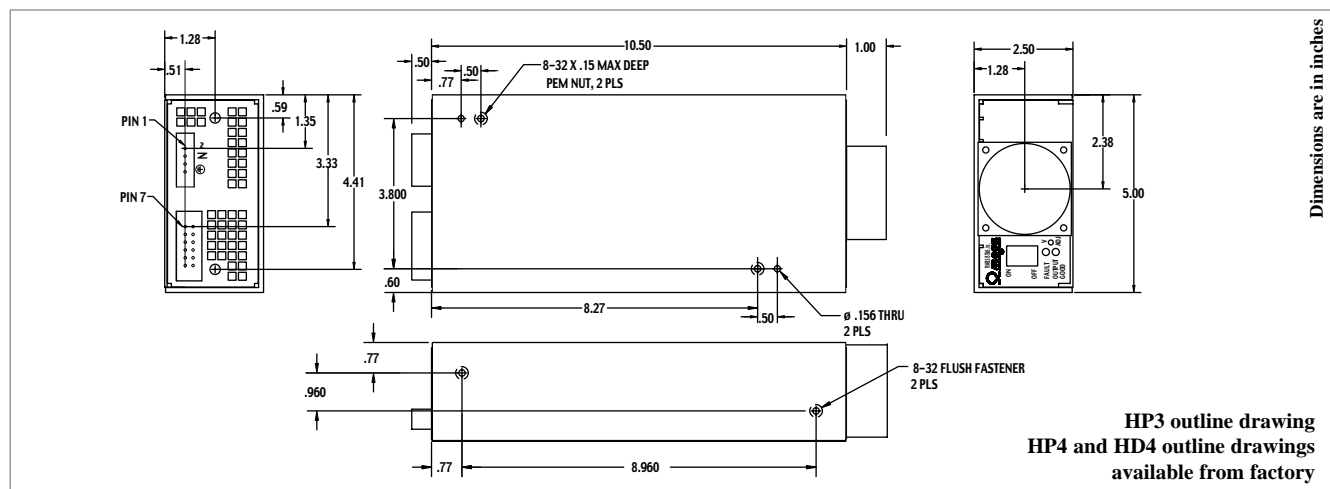
Safety & Environmental

Temperature Range:	
• Operating: 0 to 50°C • Storage: -40°C to +85°C	
Operating Humidity:	
Maximum 95% non-condensing	
Altitude:	
• Operating: 10,000 feet • Non-operating: 40,000 feet	
Temperature Coefficient:	
0.02% per °C within rated load	
Safety Agency Compliance:	
UL, cUL, TUV & CE	
EMI (conducted):	
Meets VDE/CISPR22, Class B	
Dielectric Withstand:	
HP3/4:	Input-to-ground: 2200 Vdc / Input-to-output: 4300 Vdc Output-to-case: 100 Vdc
HD4:	Input-to-ground: 1000 Vdc / Input-to-output: 1700 Vdc
Ac leakage Current:	
HP3:	1.2 mA maximum at 240 Vac, 50 Hz
HP4:	0.75 mA at 240 Vac with rear Ac input 1.3 mA at 240 Vac with front Ac input
Immunity:	
Meets EN61000 sections 3-2, 3-3, 4-2, 4-3, 4-4, 4-5, 4-6, and 4-11	

Mechanical Specifications

Size W x H x D:	
HP3:	5.0" x 2.5" x 10.5" (127 mm x 63.5 mm x 266.7 mm)
HP/HD4:	5.0" x 2.5" x 12.0" (127 mm x 63.5 mm x 304.8 mm)
I/O Connector:	
HP3 & 4:	Input - J1 Positronic PLA04F000 Output - J2 Positronic PLB12F000 A1
HD4:	Input - Front entry Bussman Terminal Block A2000 Family Output - Positronic part number PLC24F0000
MTBF:	
250,000 hours calculated at 25°C, Bellcore Standard	
Warranty:	
Two years from date of shipment, standard product only	

Mechanical drawings



HP3 Series 400 W

Multiple-Output Power Supplies



General specifications

HP3 Series Multiple-Output Power Supplies

These power supplies provide multiple-output regulated power for either Ac (HP Series) or Dc (HD series) inputs with hot-plug capability for critical systems. The HP3 and HD3 provide up to 400 Watts total output power. Two to four outputs are available with outputs ranging from 2 to 48 Volts.

Key Features of the HP3 & HD3 Multiple-Output Power Supplies:

- Power Factor Corrected (Ac models)
- Over-voltage protection
- No minimum load required
- 5 V @ 200 mA standby output
- Single-wire current sharing
- Self-contained ORing Diodes
- Current limit protection
- UL, cUL & TUV
- N+1 redundancy

OUTPUT VOLTAGES AND MAXIMUM RATED CURRENTS

Output Voltage (VOLTS)	Output V1 (AMPS)	Output V2 (AMPS)	Output V3 (AMPS)	Output V4 (AMPS)
2.0	50	27	8.5	-1.0
3.3	50	27	8.5	-1.0
5.0	50	27	8.5	-1.0
12.0	22	15/20 PK 30sec	8.5	-1.0
15.0	18	12	6	-1.0
24.0	12	8	5	-1.0
36.0	9	N/A	N/A	N/A
48.0	9	N/A	N/A	N/A

ORDERING INFORMATION

HX	3	-	XBCCX	-	X
Type of Input: P = AC D = DC	No. of Outputs 2 = Dual 3 = Triple 4 = Quad		Output Voltage: A = 2 B = 3.3 C = 5 D = 12 E = 15 F = 24 H = 36 J = 48		Options: R = Reverse airflow T = Non-hot swap panel V = Delete mounting handle Y = Delete Enable Switch
Example: HP3 - 4BCDE - R					

CONFIGURABLE POWER SUPPLIES

www.magnetekpower.com

HP4/5 Series 500 W Dual-Output Power Supplies



General specifications

HP4/5 Series Dual-Output Power Supplies

These power supplies provide dual-output regulated power with either Ac (HP Series) or Dc (HD series) inputs and have hot plug capability for critical systems. The HP4/5 and HD4/5 provide up to 500 Watts of total output power. Two outputs are available with main outputs of 3.3 or 5 and 12 Volts.

Key Features of the HP4/5 & HD4/5 Dual-Output Power Supplies:

- Power Factor Corrected (Ac models)
- Over-voltage protection
- No minimum load required
- 5 V standby output
- Single-wire current sharing
- Self-contained ORing Diodes
- Current limit protection
- UL, cUL & TUV approved
- N+1 redundancy with hot plug capability
- EEPROM (HP5/HD5 only)

MODEL SUMMARY AND ORDERING CODE

Model Number	Input	V1		V2		Max Combined Power	Standby Output	Options
HP4-2CD	Ac	5 V	70 A	12 V	30 A	500 W	5 V @ 0.25 A	
HP4-2CD-R	Ac	5 V	35 A	12 V	30 A	430 W	5 V @ 0.25 A	R-reverse air flow
HD4-2CD	Dc	5 V	70 A	12 V	30 A	500 W	5 V @ 0.25 A	
HD4-2CD-R	Dc	5 V	35 A	12 V	30 A	430 W	5 V @ 0.25 A	R-reverse air flow
HP5-2CD	Ac	5 V	100 A	12 V	3 A	500 W	5 V @ 0.2 A	
HP5-2BD	Ac	3.3 V	110 A	12 V	3 A	500 W	5 V @ 0.2 A	
HD5-2CD	Dc	5 V	100 A	12 V	3 A	500 W	5 V @ 0.2 A	
HD5-2BD	Dc	3.3 V	110 A	12 V	3 A	500 W	5 V @ 0.2 A	

HP4/5 Series 500 W Dual-Output Power Supplies

Input Specifications

Input voltage range:	
HP4/5:	90 to 264 Vac, 47 to 63 Hz
HD4/5:	36 to 75 Vdc
Power Factor:	0.99 at full load and nominal line
Inrush Current:	
HP4/5:	100/40 A peak hot and cold start
HD4:	40 A maximum at 72 Vdc cold start
HD5:	30 A maximum at 72 Vdc cold start
Input Protection:	
	Internal 20 A line fuse
	Internal 15 A line fuse (HP4)

Output Specifications

Output Power:	
	500 W maximum
	430 W with reverse airflow option
Output Voltage & Current Ratings:	See chart on first page
Overshoot/Undershoot:	
	Less than 1% at turn on and turn off
	Less than 3% for 50% to 100% load step
Start-Up Time:	Less than 4 seconds
Hold-up time:	
	16 ms minimum at full load and low line (HP4/5)
	12 ms minimum measured from 52 Vdc after complete Dc line loss (HD4/5)

Efficiency:	
HP4:	75% typical measured at full load, 110 Vac line
HD4:	75% typical at full load, nominal input
HP5:	67% typical measured at full load, 110 Vac line
HD5:	70% typical at full load, nominal input

Regulation:	
Load:	0.2% with remote sense, 4% without remote sense
Line:	0.1% over entire operating range
Cross:	Less than 0.5%

Minimum Load:	Minimum loading not required
Overcurrent Protection:	All outputs set to 105-125% of full-rated load with automatic recovery
Overtemperature Protection:	Automatic shutdown with automatic recovery. High temperature warning signal (HP5/HD5)
Remote Sense:	Compensates for voltage drop of up to 0.5 V to the load (V1 and V2; HP5/HD5 V1 only). Shorted sense lead protection.
Overvoltage Protection:	All outputs set at 115%-130% of nominal. Reset by cycling input power
Output Noise and Ripple:	1% Pk-Pk maximum on all outputs, except 3.3 V outputs 50 mV, measured at 20 MHz bandwidth.

Signals and Controls

LED Indicator:	Front panel green LED indicates power supply good. Front panel yellow LED indicates power supply fault.
Ac Power Fail warning:	TTL compatible signal, normally low. High signal prior to any output going out of regulation, 10 ms after Ac input power goes to less than 95% of rating. Reverse logic available.(HP4/5)
Dc Power Fail warning:	TTL compatible signal, normally low. High signal prior to any output going out of regulation, 5 ms after Dc input power goes to less than 95% of rating. Reverse logic available.(HD4/5)
Output Good Signal:	TTL compatible signal, normally low. Goes high when power supply out of specified range. Reverse logic available.
Enable:	Normally TTL high, drive low to enable.
Custom Information:	EEPROM containing serial number, revision, and customer data using I ² C interface (HP5/HD5 only).

Safety & Environmental

Temperature Range:	
	• Operating: 0 to 50°C
	• Storage: -40°C to +85°C
Operating Humidity:	Maximum 95% non-condensing
Altitude:	• Operating: 10,000 feet
	• Non-operating: 40,000 feet
Temperature Coefficient:	0.02% per °C within rated load
Safety Agency Compliance:	UL, cUL, TUV & CE
EMI (conducted):	
HP4/5:	Meets VDE/CISPR22, Class B
HD4/5:	Meets VDE/CISPR22, Class A
Dielectric Withstand:	
HP4/5:	Input-to-ground: 2200 Vdc
	Input-to-output: 4300 Vdc
	Output-to-case: 100 Vdc
HD4/5:	Input-to-ground: 1000 Vdc
	Input-to-output: 1700 Vdc
Immunity:	Meets EN61000 sections 3-2, 3-3, 4-2, 4-3, 4-4, 4-5, 4-6, and 4-11
Ac leakage Current:	
	1.3 mA max. at 240 Vac with front Ac input (HP)
	0.75 mA max. at 240 Vac with rear Ac input (HP4 option only)

Mechanical Specifications

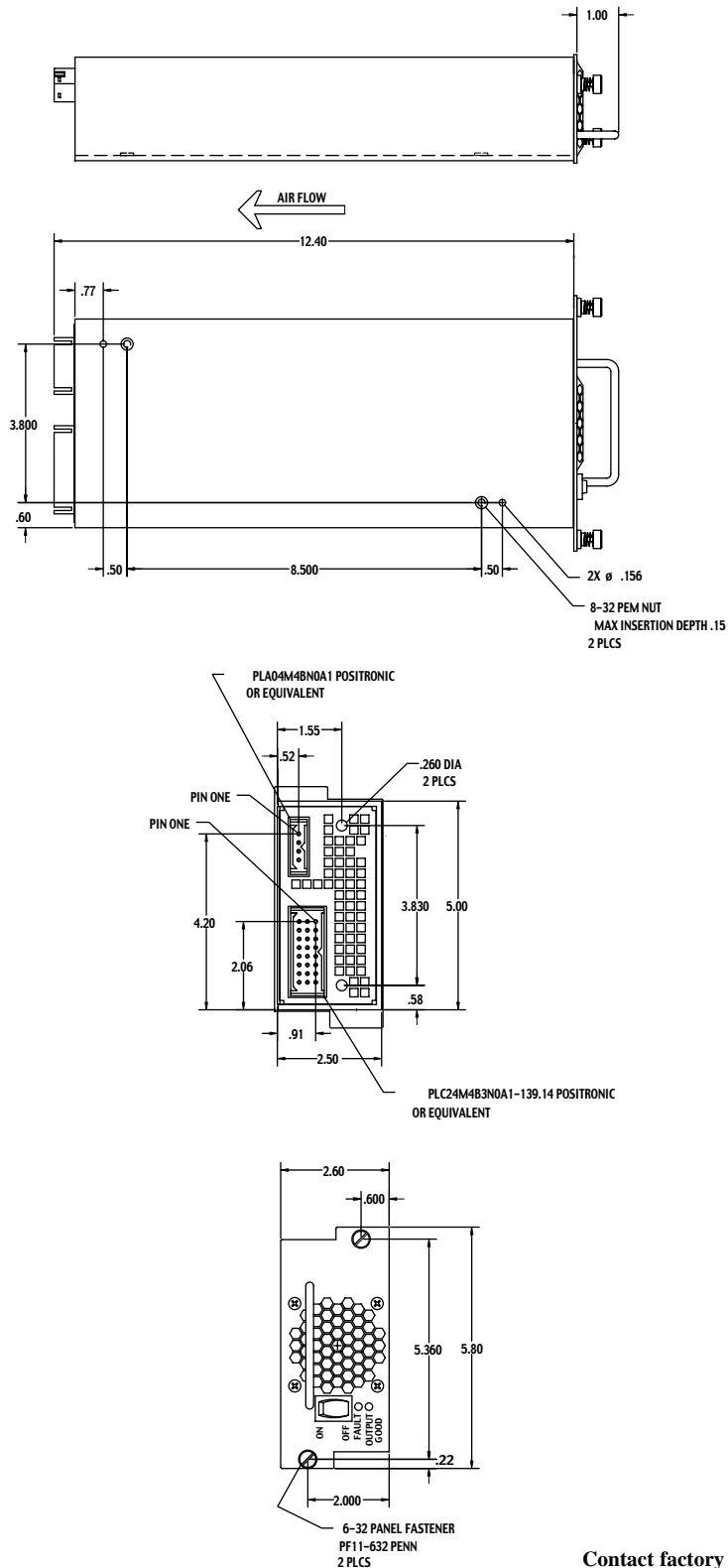
Size W x H x D:	
	5.0" x 2.5" x 12.4"
	(127 mm x 63.5 mm x 314.9 mm)
Input Connector:	
	Positronic PLA04F000 (HP4)
	IEC320 front-entry (HP5; optional HP4)
	Bussman Terminal Block A2000 Family (HD4)
	Front-entry 3 position barrier strip (HD5)
Mating Connector:	
	Positronic PLC24F0000 (HP4/HD4)
	Busbars for 5 V; DB15 for 12 V and other signals (HP5/HD5)
MTBF:	250,000 hours calculated at 25°C, Bellcore Standard
Warranty:	Two years from date of shipment, standard product only

HP4/5 Series 500 W Dual-Output Power Supplies



MAGNETEK
UNCOMMON POWER

Mechanical drawings



HP4 outline drawing shown.
Contact factory for drawings of other models

HP6 Series 600 W Multiple-Output Power Supplies



General specifications

HP6 Series Multiple-Output Power Supplies

These power supplies provide multiple-output regulated power for Ac input with hot-plug capability for critical systems. The HP6 provides up to 600 Watts total output power. One to four outputs are available with outputs ranging from 0.8 to 12 Volts.

Key Features of the HP6 Series Multiple-Output Power Supplies:

- Compact 1U design
- N+1 redundancy with hot plug capability
- Up to four individually regulated outputs
- 6.52 Watts/cubic inch power density
- I2C interface with interrupt capability
- Hot swap with low insertion/extraction force connector
- Power factor corrected
- No minimum load required
- 5 V @ 1 A standby output
- Single-wire current sharing
- Self-contained ORing Diodes
- Current limit and over-voltage protection
- Full power up to 50° C
- TUV, cTUVus & CB report

MODEL SUMMARY AND ORDERING CODE

Model Number	Input	Output V1		Output V2		Output V3		Output V4	
		Vdc	Amps	Vdc	Amps	Vdc	Amps	Vdc	Amps
HP6-X8X8D2D-O	Ac	X	80	X	80	12	20	-12	3
HP6-X4X8D4D-O	Ac	X	40	X	80	12	40	-12	3
HP6-X8X4D4D-O	Ac	X	80	X	40	12	40	-12	3
HP6-X8X4D2D-O	Ac	X	80	X	40	12	20	-12	3
HP6-X4X8D2D-O	Ac	X	40	X	80	12	20	-12	3
HP6-X4X4D4D-O	Ac	X	40	X	40	12	40	-12	3

Output Voltage X: A (2.0 V); B (3.3 V); C (5 V); T (2.5 V); V (1.8 V); W (1.5 V); X (1.2 V); Y (1 V); Z (0.8 V)

Options O: M (Output power good - TTL high); N (Power fail - TTL high); R (Reverse airflow)

For other model combinations, contact factory.

Visit our website for the most current technical data

HP6 Series 600 W

Multiple-Output Power Supplies



MAGNETEK
UNCOMMON POWER

Input Specifications

Input voltage range:	85 to 264 Vac, 47 to 63 Hz
Power Factor:	0.99 at full load and nominal line
Inrush Current:	40 A peak hot and cold start
Input Protection:	Internal 15 A line fuse

Output Specifications

Output Power:	600 W maximum
Output Voltage & Current Ratings:	See chart shown above
Overshoot/Undershoot:	Less than 1% at turn-on or turn-off. Less than 3% for 50% to 100% load step.
Start-Up Time:	Less than 2 seconds
Efficiency:	78% typical measured at full load, nominal input
Hold-up Time:	20 ms minimum at full load and low line
Single Wire Current Share (V1, V2 and +12V):	10% full load rating

Regulation:

Load: 0.5% with remote sense, 2% without

Line: 0.1% over entire operating range

Cross: Less than 0.5%

Minimum Load:	No minimum load required
Overcurrent Protection:	All outputs set to 115-135% of full rated load with automatic recovery
Overtemperature Protection:	Automatic shutdown with auto recovery
Remote Sense:	Compensates for voltage drop of up to 0.5 V to the load (V1, V2, and +12V). Shorted sense lead protection.
Overvoltage Protection:	All outputs set at 115%-135% of nominal. Reset by cycling input power.
Output Noise and Ripple:	PAR: 1% or 50 mV p-p, whichever is greater, measured at 20 Mhz bandwidth.

Signals and Controls

LED Power Good Indicator:	Front panel green LED indicates power supply is good; amber indicates fault.
LED AC Good Indicator:	Front panel green LED indicates Ac input voltage is present and above minimum level.
Output Good Signal*:	TTL compatible signal, normally low. Goes high when power supply is out of specified range.
Power Fail Signal*:	TTL compatible signal, normally low (indicating Ac input voltage is present and above minimum level)
Enable*:	Normally TTL High, drive low to enable. *All interface signals are TTL compatible

I2C Interface:

Highly integrated error monitoring and analysis, includes the following features:

Event Driven Messages:

- Notification of fan speed abnormality
- Output voltage under specified 'good' range
- Output voltage over specified 'good' range (software OVP)
- Temperature abnormalities

Sensor Device Commands:

- Get voltage readings
- Get temperature readings
- Get fan speed readings

FRU (Field Replaceable Unit) Information Storage:

- Manufacturer's name
- Product name
- Product part/model number
- Product version/revision
- Product serial number

Safety & Environmental

Temperature Range:

- Operating: 0 to 50°C
- Storage: -40°C to +85°C

Operating Humidity: Maximum 95% RH non-condensating

Altitude:

- Operating: 10,000 feet
- Non-operating: 40,000 feet

Temperature Coefficient: 0.02% per °C within rated load

Safety Agency Compliance: TUV, eTUVus & CB report

EMI: Meets EN55022, Class B

Harmonic Suppression: Meets EN6100-3-2

Input Transient Protection:

Electrostatic Discharge: EN61000-4-2, Criteria B

Radiated, Radio-Frequency, Electromagnetic Field: EN61000-4-3, Criteria A

Electrical Fast Transients/Burst: EN61000-4-4, Criteria B

Voltage Fluctuations and Flickers: EN61000-3-3, Criteria B

Surge Test: EN61000-4-5, Criteria B

Conducted Immunity: EN61000-4-6, Criteria A

Dielectric Withstand:

Input-to-ground: 2200 Vdc

Input-to-output: 4300 Vdc

Output-to-case: 25 Vdc

Ac Leakage Current: 1.2 mA maximum at 240 Vac, 50 Hz

Mechanical Specifications

Size W x H x D: 5.0" x 1.6" x 11.5"
(127mm x 40.64mm x 292.1mm)

Input Connector: Front panel IEC

Output Connector: FCI power blade

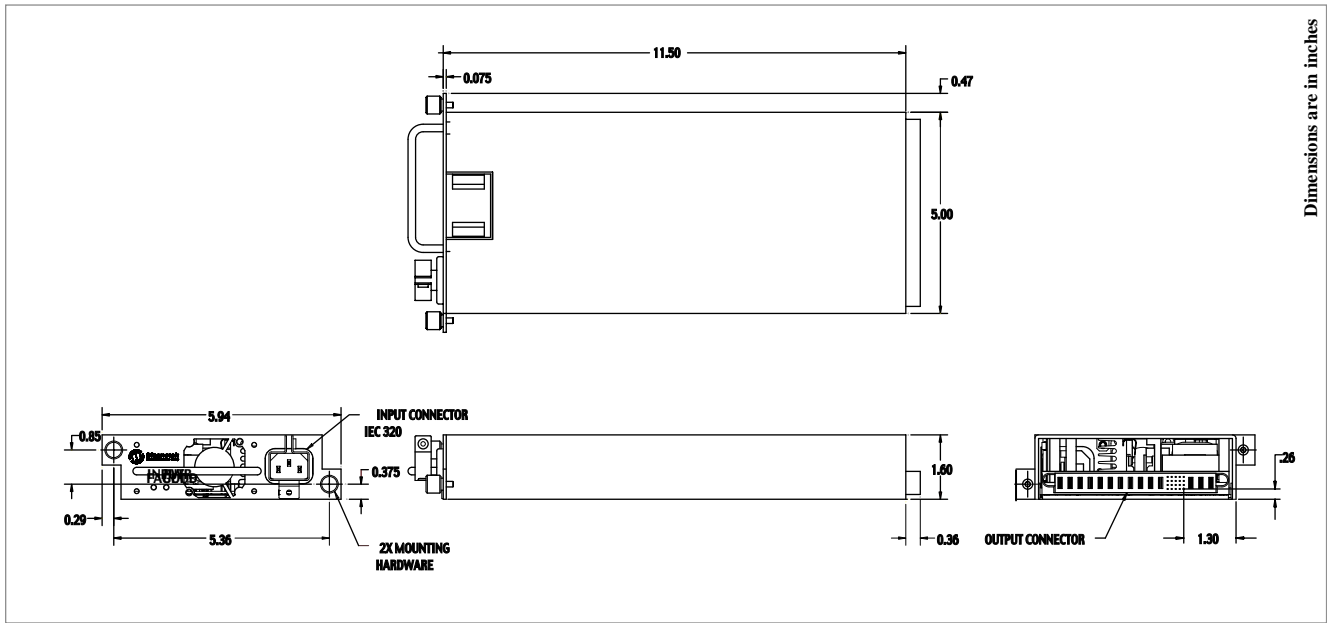
MTBF: 250,000 hours calculated at 25°C, Bellcore Standard

Warranty: Two years from date of shipment, standard product only

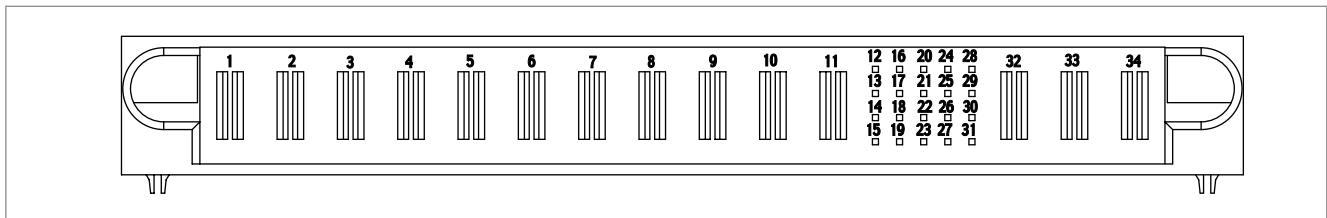
HP6 Series 600 W Multiple-Output Power Supplies

CONFIGURABLE POWER SUPPLIES

Mechanical drawings



Connector Pin Configurations



Pin NO.	SIGNAL NAME	Pin NO.	SIGNAL NAME
1	Ground	18	Share V2
2	Ground	19	+ Sense V2
3	V2 Output	20	SDA
4	V2 Output	21	SCL
5	V2 Output	22	Share V3
6	Ground	23	Power Fail OK
7	Ground	24	5V Standby
8	Ground	25	5V Standby
9	V1 Output	26	+ Sense V3
10	V1 Output	27	Power OK
11	V1 Output	28	Present
12	Dc Enable	29	A0
13	A1	30	Interrupt
14	- Sense	31	Share V1
15	+ Sense V1	32	Ground
16	V4 Output (-12 V)	33	V3 Output (+12V)
17	V4 Output (-12 V)	34	V3 Output (+12V)

Visit our website for the most current technical data



General specifications

1 kW RACK-M3™ & 2.5 kW RACK-M6™ Hot Plug Power Racks

The M3 & M6 RACKS offer high power hot plug capability for critical systems. The RACK-M3 Hot Plug Rack provides up to 960 Watts total while the RACK-M6 provides up to 2500 Watts total. Three (M3) or six (M6) separate 500 Watts HP3 single output power supplies are internally paralleled and will automatically current share for load distribution. The system is to be used in an N+1 configuration, where “N” is the actual number of power supplies required plus an additional unit. This system is designed for easy installation and maintenance. Modules can be swapped with no system downtime.

Key Features of the RACK-M3 & M6 Hot Plug Power Racks:

- Fault tolerant system
- No system downtime
- Internal paralleling of outputs
- Automatic current sharing
- Internal isolation diodes
- Front panel status LED's
- Easy connect / disconnect
- 500 watts per module
- Ac input with PFC

MODEL SUMMARY AND ORDERING CODE

Model Number 1KW M3	Model Number 2.5KW M6	Voltage
RACK-M3-HP3F-X*	RACK-M6-HP3F-X*	24 V
RACK-M3-HP3G-X*	RACK-M6-HP3G-X*	28 V
RACK-M3-HP3H-X*	RACK-M6-HP3H-X*	36 V
RACK-M3-HP3J-X*	RACK-M6-HP3J-X*	48 V
RACK-M3-HP3Q-X*	RACK-M6-HP3Q-X*	54 V

*Options Available: P=Blank Front Panel

L=Extend Width to 23”(e.g. RACK-M3-HP3F-L)

Specifications

Ac Input/Output Power

M3:	100-240 Vac: Output Power: 910 W 108-240 Vac: Output Power: 960 W
M6:	90-264 Vac: Output Power: 2500 W maximum

Frequency

M3:	47-63 Hz
M6:	47-63 Hz

Power Factor

0.99 typical

Ripple & Noise

1% pk-pk @ 20 MHz bandwidth

Hold Up Time

20 ms at full load nominal input

Safety and Environmental

Temperature Range: 0 to 50°C

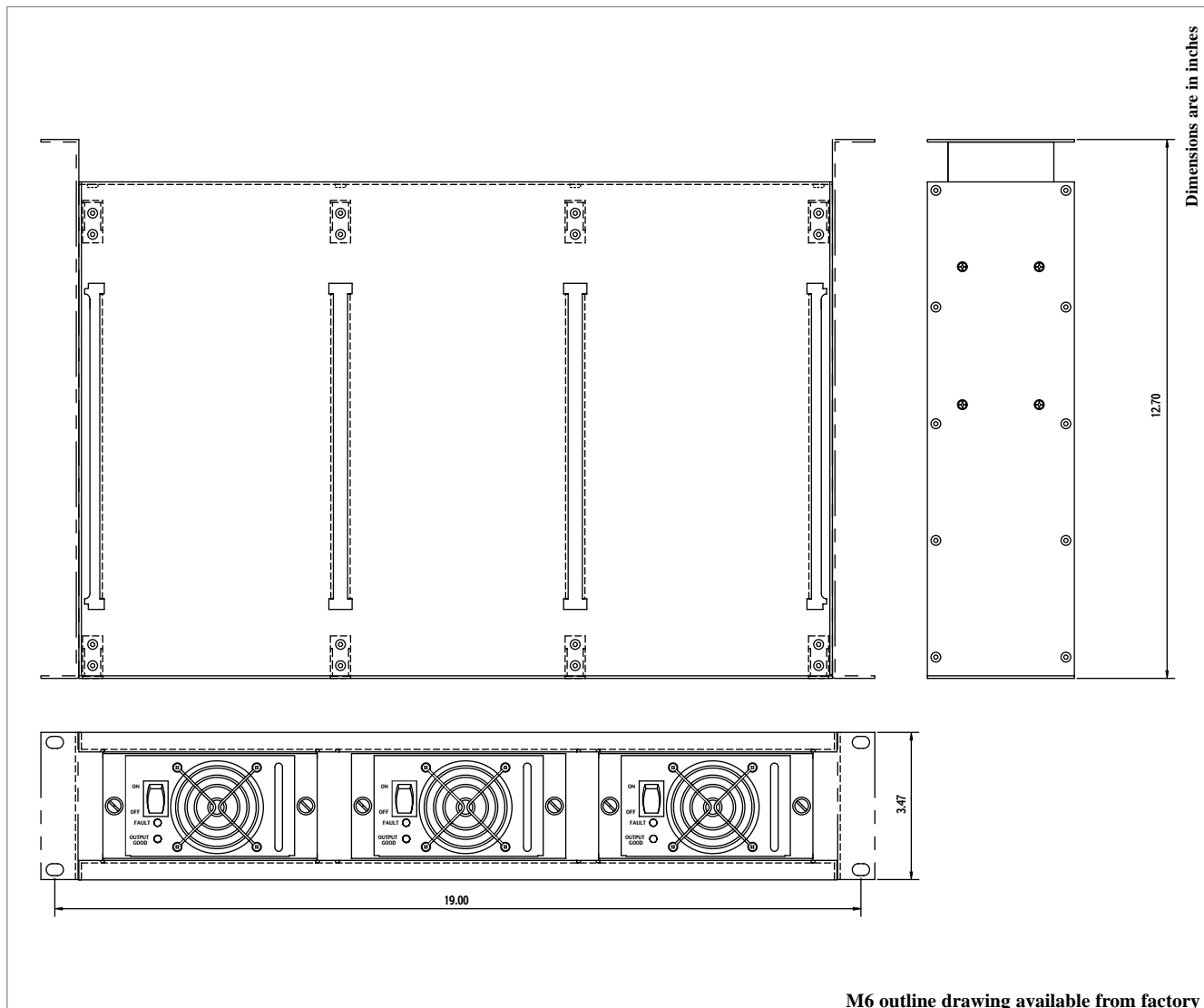
Storage Temperature: -40°C to 85°C

Mechanical Specifications

M3: Size W x H x D: 19" x 3.47" x 12.70" (482.6 mm x 88.14 mm x 322.58 mm)

M6: Size W x H x D: 19" x 5.25" x 12.70" (482.6 mm, 133.35 mm x 322.58 mm)

Mechanical drawings



MD Series

Dc-Dc Power Supplies



MD1 Modular Power Supplies



MD2 Modular Power Supplies



MD3 Modular Power Supplies

General specifications

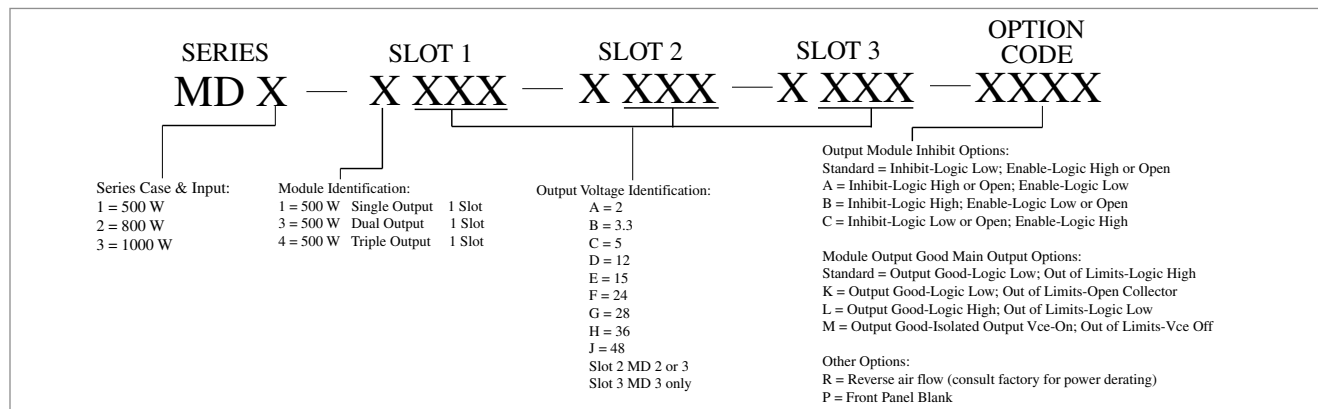
Modular Multiple-Output Dc-Dc Power Supplies

The MD1, 2 & 3 switch mode modular power supplies offer fully enclosed power solutions that optimize flexibility and space allocation through common modular assemblies. Interface signals enhance system intelligence, making these power supplies ideally suited for meeting today's complex power requirements in telecommunications, computer and industrial applications. The MD series Dc Power Supplies provide power from 500 W to 1000 W depending on the model.

Key Features of the Modular Multiple-Output DC-DC Power Supplies include:

- Modular design
- 40-60 Vdc input
- Up to nine fully isolated outputs
- Overvoltage and overcurrent protection
- Current sharing on all outputs (N + 1 redundancy)
- All outputs are fully regulated
- Margining on all outputs
- 5 V 100 mA standby output
- No minimum load required

ORDERING INFORMATION



MD Series

Dc-Dc Power Supplies

Input Specifications

Input voltage range:	40-60 Vdc
Input Protection:	Dc line fuse provided

Output Specifications

Output Power:	
MD1:	500 W maximum
MD2:	800 W maximum
MD3:	1000 W maximum
Auxilliary Standby Output:	5 Vdc @ 100 mA
Current Share:	Single wire connection
Overshoot/Undershoot:	Less than 1% at turn on or turn off. Less than 3% load step 50% to 100%
Start-Up Time:	Less than 1 second with Dc power on to regulated outputs @ full load
Efficiency:	80% typical measured at full load, 40 Vdc nominal input
Regulation:	
Load:	± 0.2% with sense lines connected
Line:	±0.1% over full operating range
Cross:	±0.05% over full operating range
Minimum Load:	Minimum loading not required
Overcurrent Protection:	Fold back current limit.Total power limit.
Overtemperature Protection:	Shuts down in the event of an over temperature condition and automatically restarts
Remote Sense:	Compensates for voltage drop of up to 0.5 V to the load.
Overvoltage Protection:	All outputs set at 115-125% of nominal. Recycle power to restart.
48 V Output Protection:	All outputs set at 110-125% of nominal. Recycle power to restart.
Output Noise and Ripple:	50 mV or 1% pk-pk maximum on all outputs measured at 20 MHz bandwidth
Voltage Adjustment:	-10% to +10% of nominal
Long Term Drift:	.02% of nominal per thousand hours
Current Limit:	
Single Output Module:	105-125% of nominal
Multiple Output Module:	105-130% of nominal
Current Share:	1% typical, 5% maximum at 20-100% of full load
Reverse Voltage Protection:	100% of nominal

Signal and Controls

LED Indicator:	Front panel green LED indicates power supply is good. Front panel yellow LED indicates power supply fault.
Output Good Signal:	TTL compatible signal, normally low. Goes high when power supply is 5-8% over nominal.
Module Inhibit/Enable:	Normally TTL High or Open, drive low to inhibit
Global Inhibit/Enable:	Normally TTL High or Open, drive low to inhibit
Hold-Up Time:	3.5 ms minimum at 48 Vdc
Supply Power Fail:	Signal goes low after Dc input failure and 0.5 ms before any output goes out of regulation.
Margining/Remote Voltage Adjustment:	-10% to +10% of nominal

Safety & Environmental

Temperature Range:	
• Operating:	0 to 50°C
• Storage:	-40°C to +85°C
Operating Humidity:	Maximum 95% non-condensing
Altitude:	
• Operating:	10,000 feet
• Non-operating:	40,000 feet
Temperature Coefficient:	0.02% per °C within rated load
Safety Agency Compliance:	UL1950, CE, cUL, IEC950 – Class SELV, TUV, EN60950
Immunity:	Meets EN61000 sections 4-4, 4-5, and 4-6
Dielectric Withstand:	
Input-to-case:	700 Vdc
Input-to-output:	700 Vdc
Output-to-case:	100 Vdc
EMI (conducted):	Meets VDE/CISPR22, FCC Part 15, Class A

Mechanical Specifications

Size W x H x D:	
MD1:	2.77" x 5.0" x 11.0" (70.36 mm x 127 mm x 279.40 mm)
MD2:	4.0" x 5.0" x 11.0" (101.6 mm x 127 mm x 279.40 mm)
MD3:	5.2" x 5.0" x 11.0" (132.8 mm x 127 mm x 279.40 mm)
I/O Connector:	See drawings for details
MTBF:	250,000 hours calculated at 25°C, Bellcore Standard
Warranty:	Two years from date of shipment, standard product only

VOLTAGE/CURRENT CHARACTERISTICS

SINGLE OUTPUT MODULE	
500 W Single Slot	
Output Voltage (Volts)	Output Current (Amps)
2	100
3.3	100
5	100
12	42
15	34
24	21
28	18
36	14
48	11

DUAL OUTPUT MODULE		
500 W Single Slot		
Output Voltage (Volts)	Output V1 (Amps)	Output V2 (Amps)
2	60	16
3.3	60	16
5	60	16
12	25	16
15	20	16
24.4	12	12

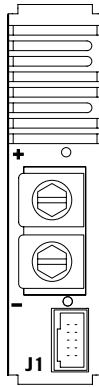
TRIPLE OUTPUT MODULE			
500 W Single Slot			
Output Voltage (Volts)	Output V1 (Amps)	Output V2 (Amps)	Output V3 (Amps)
2	60	10	10
3.3	60	10	10
5	60	10	10
12	25	10	10
15	20	8	8
24.4	12	6	6

MD Series

Dc-Dc Power Supplies



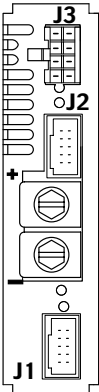
OUTPUT MODULE - SINGLE OUTPUT - SINGLE SLOT



J1 - Single Output - Single Slot	
PIN NO.	Functions
1	V1 + SENSE
2	V1 + SENSE
3	INHIBIT HIGH
4	INHIBIT LOW
5	OUTPUT GOOD HIGH
6	OUTPUT GOOD LOW
7	V1 MARGIN/REMOTE VOLTAGE ADJ
10	V1 CURRENT SHARE

MOLEX SERIES 8724, #15-29-7210 MATING SERIES 70013, #15-04-5101 AND SERIES 70450, #22-55-2101 PINS 16-02-0086

OUTPUT MODULE - DUAL/TRIPLE OUTPUT - SINGLE SLOT



J1 - Dual/Triple Output - Single Slot	
PIN NO.	Functions
1	V1 + SENSE
2	V1 + SENSE
3	INHIBIT HIGH
4	INHIBIT LOW
5	OUTPUT GOOD HIGH
6	OUTPUT GOOD LOW
7	V1 MARGIN/REMOTE VOLTAGE ADJ
10	V1 CURRENT SHARE

MOLEX SERIES 8724, #15-29-7210 MATING SERIES 70013, #15-04-5101 AND SERIES 70450, #22-55-2101 PINS 16-02-0086

J3 - Dual Output	
PIN NO.	Functions
1,2,7,8	+OUT V2
3-6	-OUT V2

MOLEX SERIES 5569N, #39-30-1080 MATING SERIES 5557-NR #39-01-2080 PINS 39-00-0078

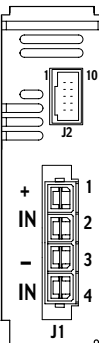
J2	
PIN NO.	Functions
1	V2 + SENSE
2	V2 CURRENT SHARE
3	V2 - SENSE
5	V3 CURRENT SHARE
6	V3 + SENSE
7	V3 - SENSE
8	V3 MARGIN/REMOTE VOLTAGE ADJ
10	V2 MARGIN/REMOTE VOLTAGE ADJ

MOLEX SERIES 8724, #15-29-7210 MATING SERIES 70013, #15-04-5101 AND SERIES 70450, #22-55-2101 PINS 16-02-0086

J3 - Triple Output	
PIN NO.	Functions
1,8	-OUT V2
2,7	+OUT V2
3,6	+OUT V3
4,5	-OUT V3

MOLEX SERIES 5569N, #39-30-1080 MATING SERIES 5557-NR #39-01-2080 PINS 39-00-0078

INPUT MODULE - SINGLE/DOUBLE/TRIPLE SLOT



J1	
PIN NO.	Functions
1	+V INPUT
2	NC
3	-V INPUT
4	NC

AMP SERIES 556882-4 MATING SERIES 556879-4; PINS 556883-2, 18-14 AWG; PINS 556880-2, 10-12 AWG

J2	
PIN NO.	Functions
1	Dc POWER FAIL
8	GLOBAL INHIBIT HIGH
9	GLOBAL INHIBIT LOW
10	Dc POWER FAIL RETURN

MOLEX SERIES 8074, #15-29-7210 MATING SERIES 70013, #15-04-5101 AND SERIES 70450, #22-55-2101 PINS 16-02-0086

CONFIGURABLE POWER SUPPLIES

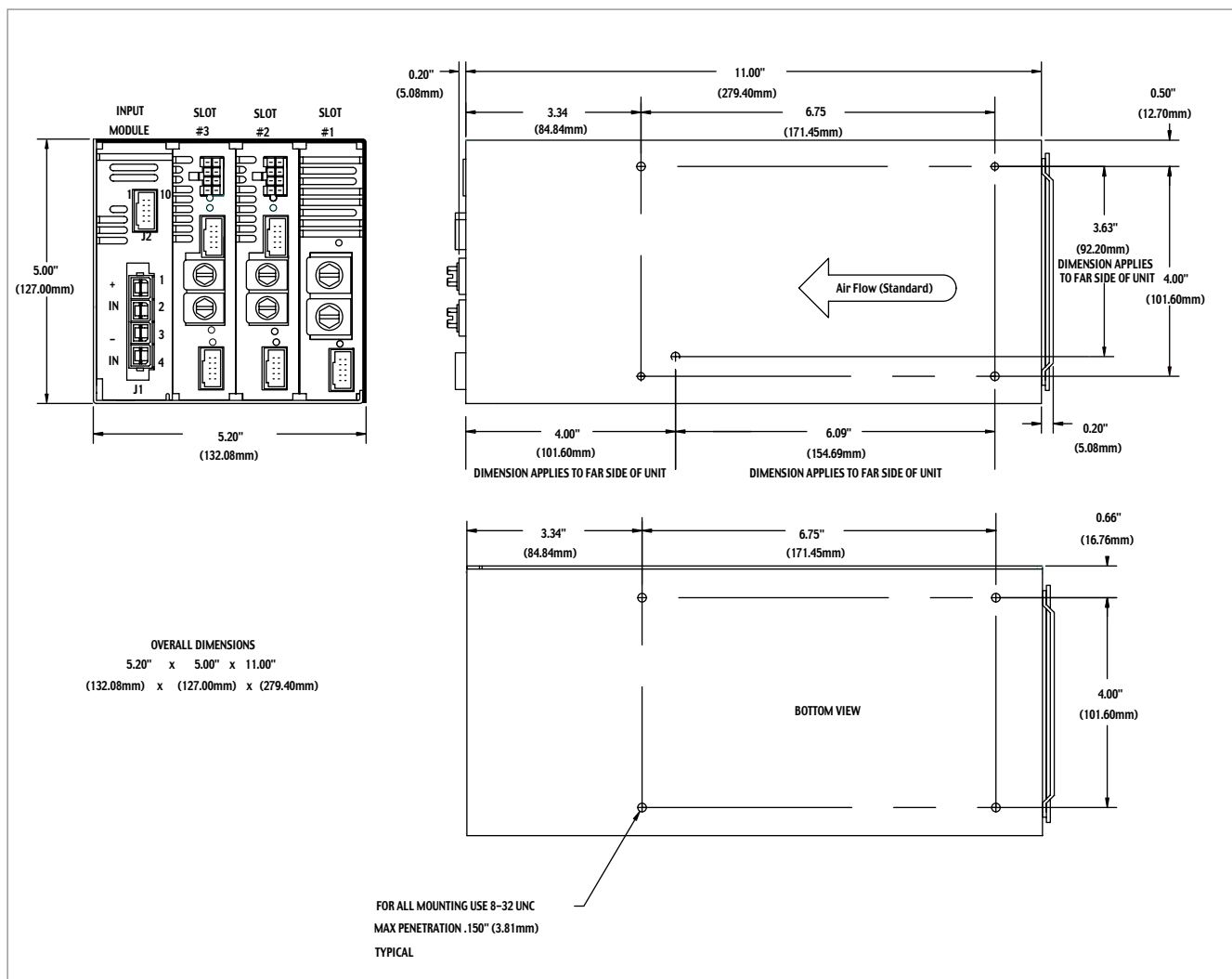
www.magnetekpower.com

MD Series

Dc-Dc Power Supplies



MD3 Mechanical drawings



MG Series Ac-Dc Power Supplies



MG1 Modular Power Supplies



MG2 Modular Power Supplies



MG3 Modular Power Supplies

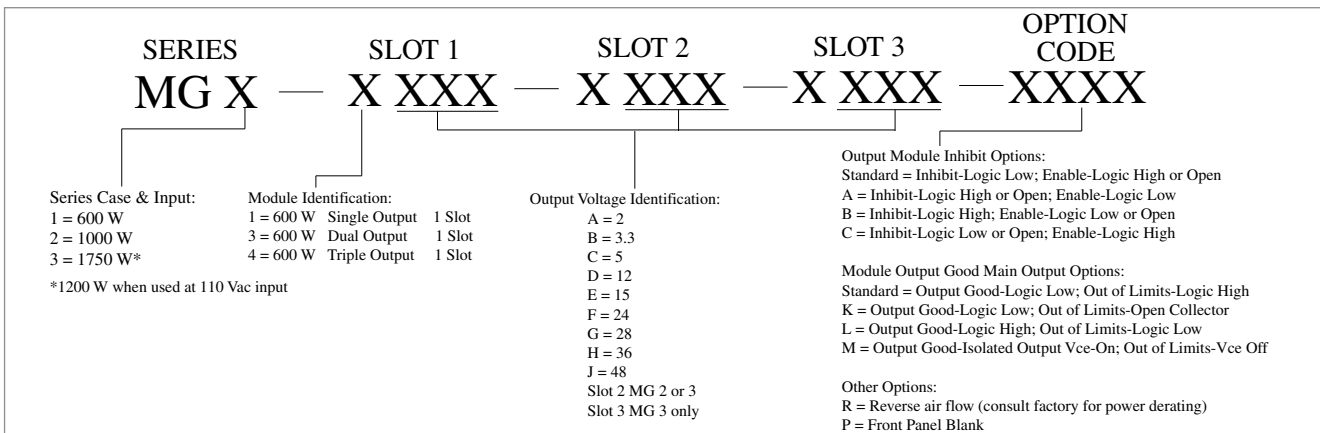
General specifications Modular Multiple-Output Ac-Dc Power Supplies

The MG1, 2 & 3 switch-mode modular power supplies offer fully enclosed power solutions that optimize flexibility and space allocation through common modular assemblies. Interface signals enhance system intelligence, making these power supplies ideally suited for meeting today's complex power requirements in telecommunications, computer and industrial applications. The MG series Ac-Dc Power Supplies provide power from 600 W to 1750 W depending on the model.

Key Features of the Modular Multiple-Output AC-DC Power Supplies include:

- Modular design
- Zero switching losses
- 0.99 active power factor correction
- IEC 555-2 compliant
- Modern SMT design
- Current sharing on all outputs (N + 1 redundancy)
- Up to nine fully-isolated outputs
- All outputs are fully regulated
- No minimum load required

ORDERING INFORMATION



Visit our website for the most current technical data

MG Series

Ac-Dc Power Supplies



MAGNETEK
UNCOMMON POWER

Input Specifications

Input voltage range:	90 to 264 Vac, 47 to 63 Hz
Power Factor:	0.99 at full load and nominal line
Inrush Current:	40 A peak hot and cold start
Input Protection:	Ac line fuse provided

Output Specifications

Output Power:	
MG1:	600 W maximum at 90–264 Vac
MG2:	1000 W maximum at 100–264 Vac
	900 W maximum at 90–100 Vac
MG3:	1750 W maximum at 180–264 Vac
	1200 W maximum at 100–180 Vac
	1000 W maximum at 90–100 Vac
Overshoot/Undershoot:	Less than 1% at turn on or turn off. Less than 3% load step
Start-Up Time:	Less than 1 second with Ac power on to regulated outputs @ full load
Efficiency:	81% typical measured at 230 Vac, full load 78% typical measured at 115 Vac, full load
Regulation:	
Load:	.05% typical, .2% maximum, 0-100% load, 85–264 Vac
Line:	.05% typical
Cross:	0-100% load change
Minimum Load:	Minimum loading not required
Overtemperature Protection:	Automatic restart
Remote Sense:	Compensates for voltage drop of up to 0.5 V to the load.
Overvoltage Protection:	All outputs set at 115-125% of nominal. Recycle power to restart.
48V Output Protection:	All outputs set at 110-125% of nominal. Recycle power to restart.
Output Noise and Ripple:	50 mV or 1% pk-pk maximum on all outputs measured at 20 MHz bandwidth
Voltage Adjustment:	-10% to +10% of nominal
Long Term Drift:	.02% of nominal per thousand hours
Current Limit:	
Single Output Module:	105-125% of nominal
Multiple Output Module:	105-130% of nominal
Current Share:	1% typical, 5% maximum at 20-100% of full load
Reverse Voltage Protection:	100% of nominal

VOLTAGE/CURRENT CHARACTERISTICS

SINGLE OUTPUT MODULE	
600 W Single Slot	
Output Voltage (Volts)	Output Current (Amps)
2	120
3.3	120
5	120
12	50
15	40
24	25
28	21
36	18
48	13

DUAL OUTPUT MODULE		
600 W Single Slot		
Output Voltage (Volts)	Output V1 (Amps)	Output V2 (Amps)
2	60	16
3.3	60	16
5	60	16
12	25	16
15	20	13
24	13	8
36	8	N/A
48	6	N/A

TRIPLE OUTPUT MODULE			
600 W Single Slot			
Output Voltage (Volts)	Output V1 (Amps)	Output V2 (Amps)	Output V3 (Amps)
2	60	10	10
3.3	60	10	10
5	60	10	10
12	25	10	10
15	20	8	8
24	13	5	5

Signal and Controls

LED Indicator:	Front panel green LED indicates power supply is good. Front panel yellow LED indicates power supply fault.
Output Good Signal:	TTL compatible signal, normally low. Goes high when power supply is 5-8% over nominal.
Module Inhibit/Enable:	Normally TTL High or Open, drive low to inhibit
Global Inhibit/Enable:	Normally TTL High or Open, drive low to inhibit
Hold-Up Time:	20 ms minimum at full load, 90-264 Vac
Supply Power Fail:	Signal goes low after Ac input failure and 5 ms before any output goes out of regulation.
Margining/Remote Voltage Adjustment:	-10% to +10% of nominal

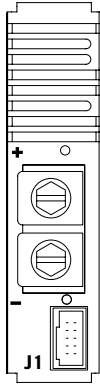
Safety & Environmental

Temperature Range:	<ul style="list-style-type: none"> Operating: 0 to 50°C Storage: -40°C to +85°C
Operating Humidity:	Maximum 95% non-condensing
Altitude:	<ul style="list-style-type: none"> Operating: 10,000 feet Non-operating: 40,000 feet
Temperature Coefficient:	0.01% per °C within rated load
Safety Agency Compliance:	UL1950, CE, cUL, IEC950 Class SELV, TUV, EN60950
EMI (conducted):	Meets VDE/CISPR22, FCC Part 15, Class A
Immunity:	Meets EN61000 sections 3-2, 3-3, 4-2, 4-3, 4-4, 4-5, 4-6, and 4-11
Dielectric Withstand:	Input-to-ground: 2200 Vdc Input-to-output: 4300 Vdc Output-to-case: 100 Vdc
AC leakage Current:	2.0 mA maximum at 250 Vac, 60 Hz

Mechanical Specifications

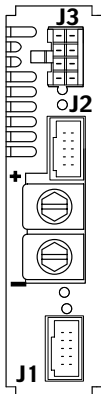
Size W x H x D :	
MG1:	2.77" x 5.0" x 11.0" (70.36 mm x 127 mm x 279.40 mm)
MG2:	4.0" x 5.0" x 11.0" (101.6 mm x 127 mm x 279.40 mm)
MG3:	5.2" x 5.0" x 11.0" (132.8 mm x 127 mm x 279.40 mm)
I/O Connector:	See drawings for details
MTBF:	250,000 hours calculated at 25°C, Belcore Standard
Warranty:	Two years from date of shipment, standard product only

OUTPUT MODULE - SINGLE OUTPUT - SINGLE SLOT



J1 - Single Output - Single Slot	
PIN NO.	Functions
1	V1 + SENSE
2	V1 + SENSE
3	INHIBIT HIGH
4	INHIBIT LOW
5	OUTPUT GOOD HIGH
6	OUTPUT GOOD LOW
7	V1 MARGIN/REMOTE VOLTAGE ADJ
10	V1 CURRENT SHARE
MOLEX SERIES 8724, #15-29-7210 MATING SERIES 70013, #15-04-5101 AND SERIES 70450, #22-55-2101 PINS 16-02-0086	

OUTPUT MODULE - DUAL/TRIPLE OUTPUT - SINGLE SLOT



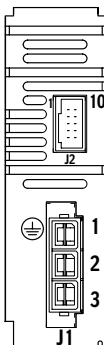
J1 - Dual/Triple Output - Single Slot	
PIN NO.	Functions
1	V1 + SENSE
2	V1 + SENSE
3	INHIBIT HIGH
4	INHIBIT LOW
5	OUTPUT GOOD HIGH
6	OUTPUT GOOD LOW
7	V1 MARGIN/REMOTE VOLTAGE ADJ
10	V1 CURRENT SHARE
MOLEX SERIES 8724, #15-29-7210 MATING SERIES 70013, #15-04-5101 AND SERIES 70450, #22-55-2101 PINS 16-02-0086	

J3 - Dual Output	
PIN NO.	Functions
1,2,7,8	+OUT V2
3-6	-OUT V2
MOLEX SERIES 5569N, #39-30-1080 MATING SERIES 5557-NR #39-01-2080 PINS 39-00-0078	

J2	
PIN NO.	Functions
1	V2 + SENSE
2	V2 CURRENT SHARE
3	V2 - SENSE
5	V3 CURRENT SHARE
6	V3 + SENSE
7	V3 - SENSE
8	V3 MARGIN/REMOTE VOLTAGE ADJ
10	V2 MARGIN/REMOTE VOLTAGE ADJ
MOLEX SERIES 8724, #15-29-7210 MATING SERIES 70013, #15-04-5101 AND SERIES 70450, #22-55-2101 PINS 16-02-0086	

J3 - Triple Output	
PIN NO.	Functions
1,8	-OUT V2
2,7	+OUT V2
3,6	+OUT V3
4,5	-OUT V3
MOLEX SERIES 5569N, #39-30-1080 MATING SERIES 5557-NR #39-01-2080 PINS 39-00-0078	

INPUT MODULE - SINGLE/DOUBLE/TRIPLE SLOT



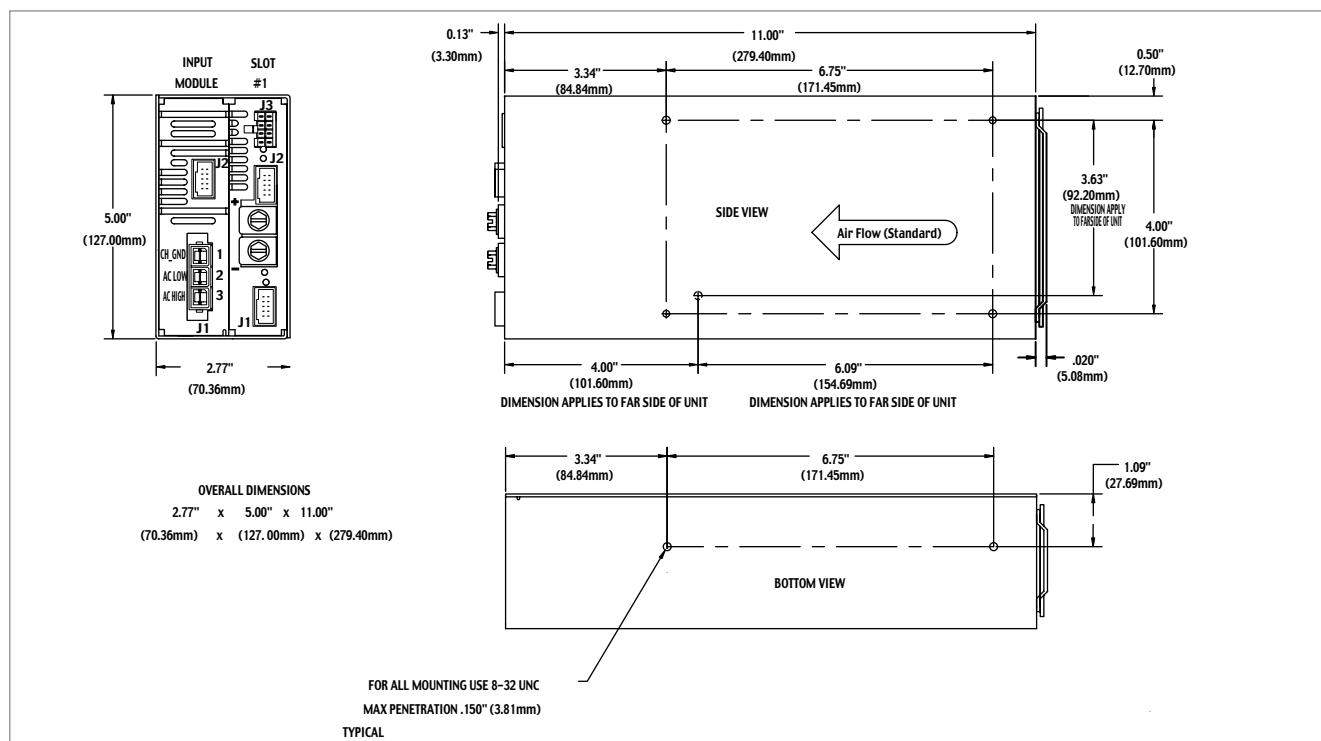
J1	
PIN NO.	Functions
1	CHASSIS GND
2	Ac LOW
3	Ac HIGH
AMP SERIES 556882-3 MATING SERIES 556879-3; PINS 556883-2, 18-14 AWG; PINS 556880-2, 10-12 AWG	

J2	
PIN NO.	Functions
1	Ac POWER FAIL
8	GLOBAL INHIBIT HIGH
9	GLOBAL INHIBIT LOW
10	Ac POWER FAIL RETURN
MOLEX SERIES 8074, #15-29-7210 MATING SERIES 70013, #15-04-5101 AND SERIES 70450, #22-55-2101 PINS 16-02-0086	

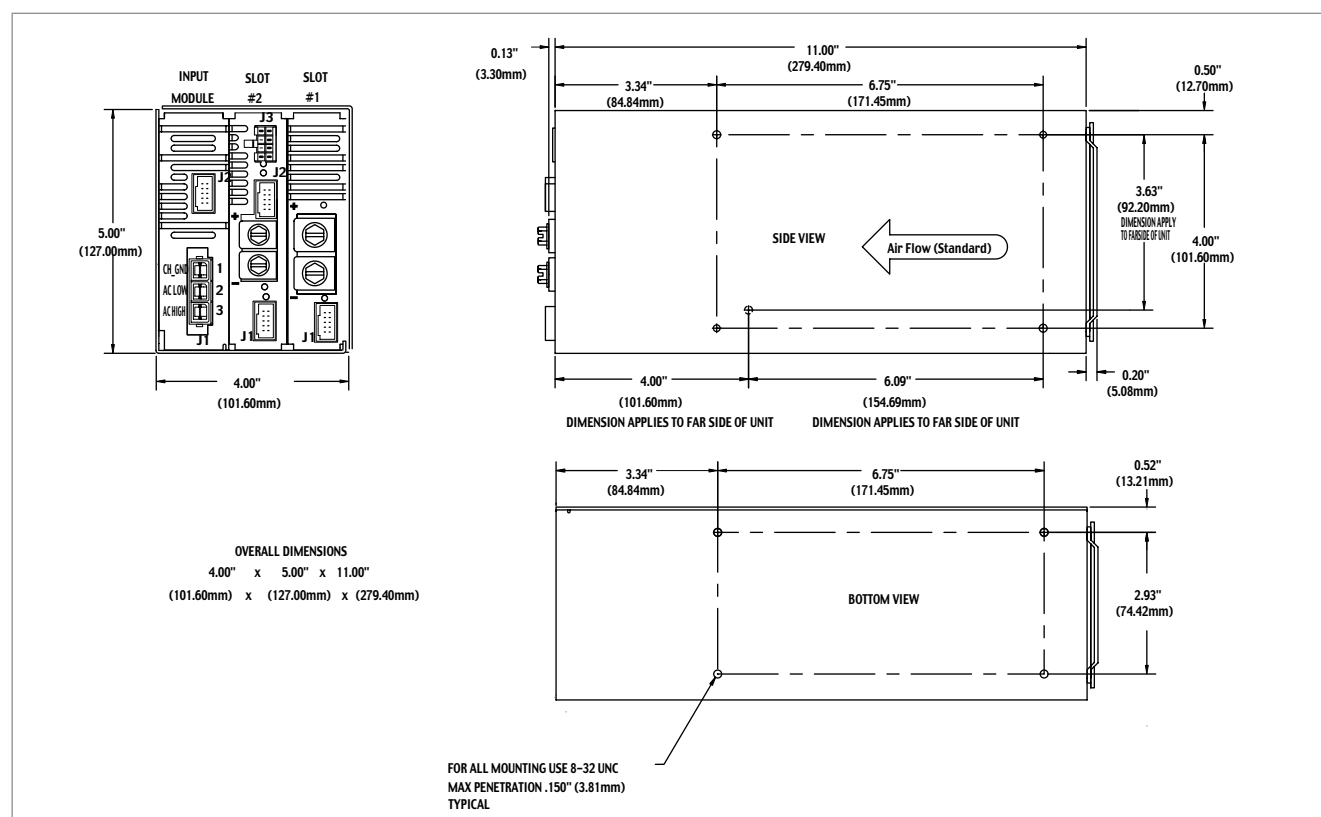
MG Series Ac-Dc Power Supplies



MG1 Mechanical drawings

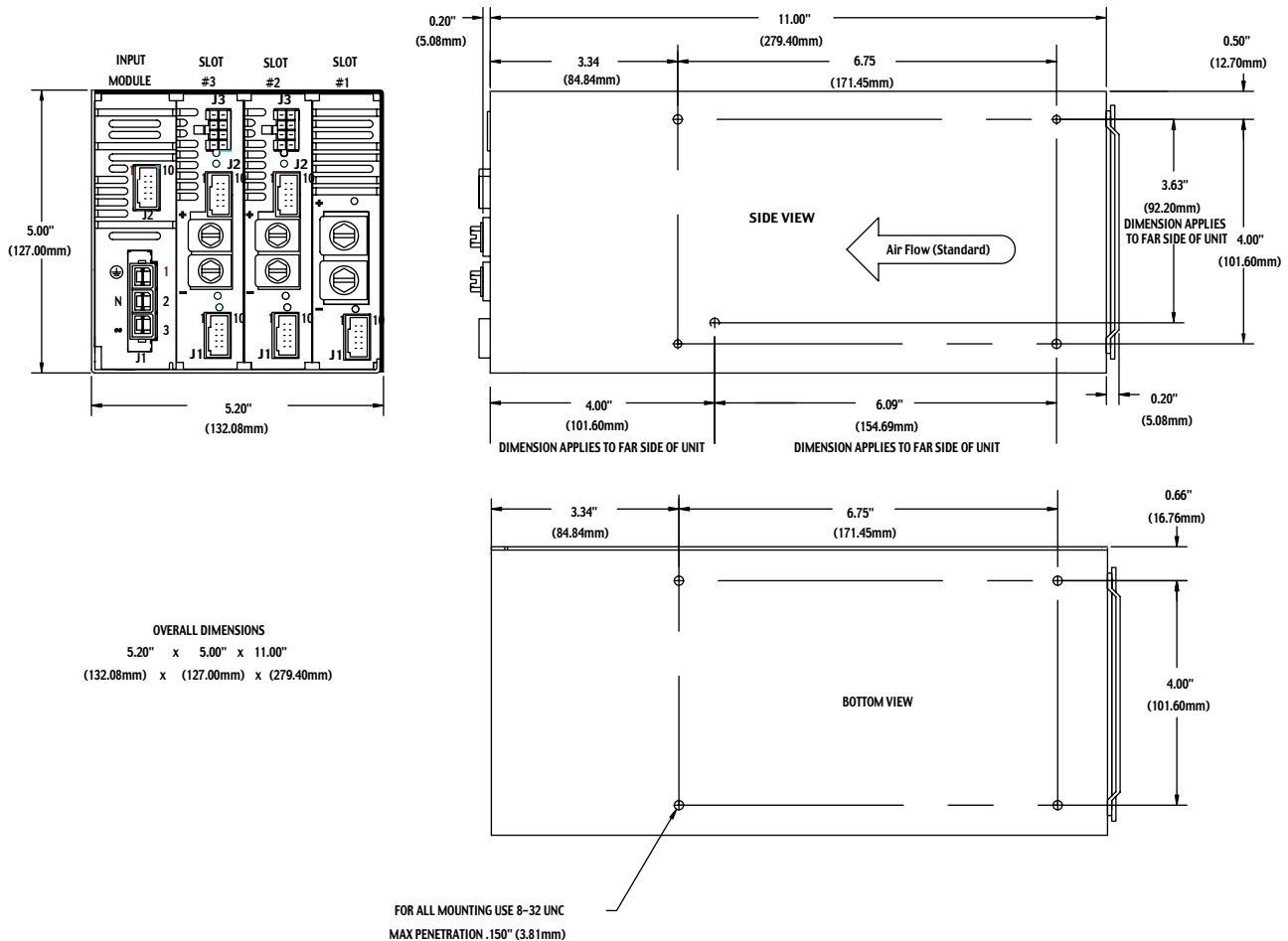


MG2 Mechanical drawings



MG Series Ac-Dc Power Supplies

MG3 Mechanical drawings



CONFIGURABLE POWER SUPPLIES

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400/585 W Front-End Module



General specifications

Ac-Dc 400/585 W Front-End Module

Magnetek's 400/585 W Front-End Module is the ideal building block to create flexible solutions in Distributed Power Architecture (DPA) applications. The extreme compact size and high efficiency allow to fit the module in 1U designs, with N+1 configurations when needed.

The unit requires a minimum size heatsink and is wave solderable on PCB for easy integration in the system.

Key features of the 400/585 W Front-End include:

- Power factor corrected
- Very high power density: 17 W/inch³
- High efficiency: 90%
- Output adjustable by external voltage
- No minimum load required
- Accurate current sharing
- Auxiliary voltage available at output termination
- Weight 0.80 kgs (1.76 lbs)
- UL, CSA and IEC certified

MODEL SUMMARY AND ORDERING CODE

Model Number (USA)	Model Number (Europe)	Output voltage, nominal	Output Current
FE-J012	38386010100	48 Vdc	12 A

400/585 W Front-End Module

Input characteristics

Input voltage range:	88-265 Vac
Input frequency:	47-63 Hz
Input current:	<20 Arms
Inrush current:	25 Apk
Power factor:	0.98 (above half load, 230 Vac)
Turn on delay:	400 msec

Output characteristics

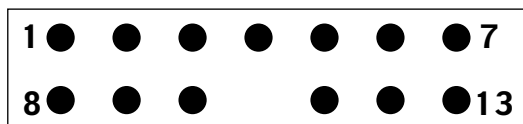
Output voltage range:	40.5-58 Vdc programmable
Factory setting:	50.5 V
Output current:	11.58 A @ 190-265 Vin; 7.92 A @ 100-155 Vin
Output power:	585 W maximum continuous
Hold-up time:	5 msec @ 190Vac full load Provision for additional external bulk capacitors
Output voltage regulation:	+/-1%
Output PARD:	300 mVpk-pk; bandwidth 100 MHz
Output voltage rise time:	135 msec
Overcurrent protection type:	constant current – constant power limitation

Overcurrent and shortcircuit limitation:	14.62 A
Overvoltage protection:	61 V Latch up mode
Overtemperature protection:	shutdown with self-recovery
Overtemperature threshold:	<ul style="list-style-type: none"> • 100°C on switch Off state • 85°C on switch On state
Current sharing precision:	10%

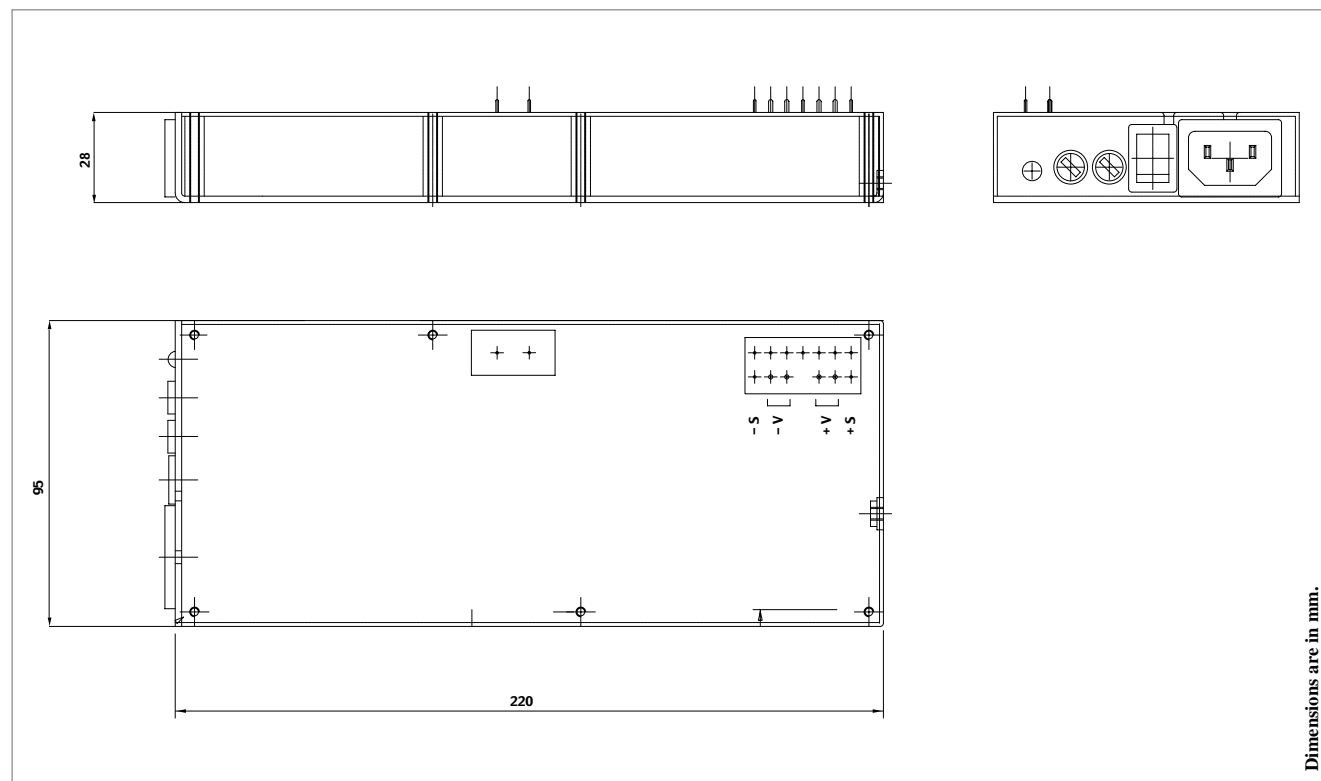
General characteristics

Efficiency:	90% @ 230 Vac; 86.5% @ 115 Vac
EMI:	EN55022 class "B"
Operating temperature:	-10°C to 45°C fully operational
Alarms and auxiliares:	12Vaux. Inverter good signal
Cooling:	external heatsink or fan to be provided
Size WxHxD:	3.74" x 1.10" x 8.66" (95mm x 28mm x 220mm)

Mechanical drawings



1 IMAX	max.output current adjust	8 -sense
2 PC	loadshare (current share)	9 -Vout
3 IOG	inverter good signal	10 -Vout
4 CNT	remote ON-OFF	11 +sense
5 AUX	auxiliary supply	12 +Vout
6 SG	auxiliary ground (this pin is connected to "+V" by a 47 resistor)	13 +Vout
7 TRM	voltage output adjust	



Dimensions are in mm.