

MOD-Box Grid Tie

System

Overview



Features

- ❖ **Low Solar Loading**
 - High gloss polyurethane finish reflects 86% of solar radiation.
 - Absorbs only 25% of the solar load of a typical ANSI 61 (Grey) NEMA enclosure.
 - Results in internal enclosure temperatures up to 30°F (17°C) cooler.
- ❖ **Heavy Duty Construction**
 - 300lbs. (136kg.) internal load capacity ea.
- ❖ **Vandal Resistant**
 - Tamper resistant door & lock standard.
 - Universal Mount requires Box access to “un-mount” the enclosure.
 - Optional High-security locking.
- ❖ **Inherent Weather-Proof Design**
 - Design does not rely upon seals to protect against water intrusion.
 - Non-ferrous 5052-H32 aluminum alloy body.
 - 304 stainless steel hardware and hinges.
- ❖ **Extreme Environments**
 - Optional extreme environment capabilities: -130°F (-90°C) to 140°F (60°C)
 - Cooling options include: digitally controlled fans & air conditioners.
 - Heating options include: insulation and digitally controlled air and surface heaters.
- ❖ **Modular & Scalable Design**
 - Multiple MOD-Boxes can be joined to provide larger enclosures.
 - Existing installations can be easily expanded to meet changing requirements.
 - One scalable design reduces spares and upgrade (add-on) engineering cost.
 - Managed penetration facilitates integration without cutting and ensures proper weatherization is always maintained.
- ❖ **Robust Natural Airflow**
 - Accommodates substantial convective cooling and battery venting.
- ❖ **Comprehensive Filtration Options**
 - Sealed, Vented, MERV 5, MERV 11 or washable Electrostatic.
- ❖ **Mounting Flexibility & Security**
 - Floor – (bolt-down or free-standing).
 - Wall – MOD-Box Universal Mounts ensure airflow between wall and MOD-Box.
 - Pole – Square & Round Pole utilizing stainless straps or high-security U-bolts.
 - Unistrut™.

MOD-Box Series

...From Patronus Labs



- ❖ **Multiple Standard Built-in Power Systems**
(Custom requests are welcome)
 - IN – 110VAC/220VAC/Solar/Wind/Gen.
 - OUT - 12V, 24V, 48V (AC or DC) Regulated or unregulated power supply UPS.
 - OUT – 110VAC/220VAC UPS.
 - Virtually unlimited UPS battery back-up capacities from 22Ah and up.
- ❖ **Easy Long-term Maintenance**
 - All seals are removable and replaceable.
 - Vandalized enclosures can be repaired using MOD-Box polyurethane “touch-up” finish.
 - Replaceable MERV 5/11 filters.
 - Washable Electrostatic filters.
- ❖ **Customization Is Welcome**
 - Custom finishes (colors and textures).
 - Custom logos (city, state, military, OEM).
 - Pre-wired & tested MOD-Box assemblies.



Most cost effective outdoor electronics enclosure solution!

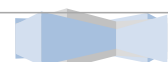
- ❖ The versatility and expandability of the MOD-Box allows most outdoor projects to be accommodated by a combination of MOD-Boxes and modular accessories. The MOD-Box is uniquely able to provide a clean environment appropriate to accommodate today's multitude of environmentally sensitive electronics.
 - **Exceptional engineering** ensures year over year reliability.
 - **A single box design:**
 - reduces design time up to 90%;
 - standardizes installation and integration reducing labor costs;
 - standardizes and reduces on-site and off-site spares;
 - guarantees reproducible excellence from job to job.
 - **Non-ferrous** design dramatically increases lifespan reducing failures due to environmental deterioration.
 - **Mechanical design** spaces door properly every time, minimizing the potential for over or under compressed seals over time.
 - **Inherently weather resistant design** mitigates environmental incursion if weather seals become worn or damaged.
 - **Weather seals are removable** and replaceable eliminating the need to replace the entire enclosure if damaged.
 - **Managed penetrations** for all wiring eliminates the need for onsite drilling and cutting, reducing installation time and the potential for left-over debris, poor seals or enclosure damage.
 - **Easy Addition of enclosure space** to legacy installations is fast and simple by mating additional Mod-Box/es, mitigating the need to completely redesign and re-install.
 - **Virtually any power solution** can be accommodated by the MOD-Box including Grid, Solar, Wind and Generator – and combinations thereof, facilitating seamless integrations and reduced cost to design and implement outdoor UPS solutions.
 - **Virtually unlimited and expandable battery back-up for Mission Critical applications** from 22Ah affords upgradability if power usage is underestimated or if system requirements are increased over time.



Options

- ❖ Forced air ambient cooling options.
- ❖ Low temperature insulation.
- ❖ Ultra-Low temperature heating systems.
- ❖ Ultra-High temperature cooling systems.
- ❖ Multiple levels of filtration.
- ❖ Multiple input/output power solutions.
- ❖ Interior lighting.
- ❖ Interior 19" rack-mount.
- ❖ Slide-out backplane assembly.
- ❖ Intrusion detection.
- ❖ High security locking solutions.
- ❖ Weather station augmentation.
- ❖ Multiple mounting solutions.
- ❖ Custom finishes.
- ❖ Custom logos.
- ❖ Custom designed and fabricated backplanes.
- ❖ Integrated WiFi & Cellular backup.
- ❖ Lightning mitigation components & methodologies.
- ❖ Touch-up PLC coating (aerosol).
- ❖ Prewired and tested MOD-Box assemblies.
- ❖ 2D & 3D As-builts.
- ❖ OEM & ODM services.

...and much more - Contact Patronus for more details.



Sample Configurations

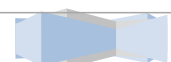


Specifications

	MOD-Box 1.5
Ext. Height (Incremental per MOD-Box without Lid)	16.1" (41cm)
Ext. Height (Overall without Lid)	17.6" (45cm)
Ext. Height (Overall with Lid)	19.75" (50cm)
Ext. Width	23.5" (60cm)
Ext Depth (Overall MOD-Box Only)	18.2" (46cm)
Ext. Depth (Overall with Universal Mount)	20.3" (52cm)
Weight (MOD-Box, Door, Lid, Lock Only)	30lbs. (13.6kg)
Superstructure Material	Aluminum – 5052-H32
Fastener Material	Stainless Steel - 304
Finish (Color)	High Gloss, True White (standard)
Finish (Material)	Polyurethane
Finish (Application)	Electro-statically applied .004" (1mm) Typical

PRODUCT IDENTIFICATION CHART

Division	Category	
Access Control	Application/Modular	Emb PC/Server Comp.
Computer Components	Access Control	PC/Server
Fixed Platform	Analytic Encoder	PC/Server Comp.
Housings/Mnts/Enclosures	Antenna	Power Supply
Mobile Platform	Battery	Radio
Power Gen/Storage	Camera	Sensor
Tools/Equipment	Camera Component	Sensor Component
Video Surveillance	Electrical	Video Encoder
Wire/Cables/Connectors	Electrical Component	
Wireless Equipment	Embedded PC/Server	



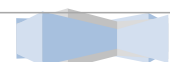
Power System Features

MOD-BOX Power Options	
PGPS0780	110-220VAC Power Supply/Battery Charger, 150W@12VDC
PGPS0781	110-220VAC Power Supply/Battery Charger, 150W@24VDC
PGPS0780*2	2 x 110-220VAC Power Supply/Battery Charger, 150W@12VDC
PGPS0781*2	2 x 110-220VAC Power Supply/Battery Charger, 150W@24VDC
PGPS0780/1	110-220VAC Power Supply/Battery Charger, 150W@12VDC and 110-220VAC Power Supply/Battery Charger, 150W@24VDC
PGCI0806	110VAC Battery Charger/Inverter, 1500VA output, 12VDC Battery Bank
PGCI0807	110VAC Battery Charger/Inverter, 1500VA output, 24VDC Battery Bank
PGCI0808	110VAC Battery Charger/Inverter, 1500VA output, 48VDC Battery Bank
PGCI0809	220VAC Battery Charger/Inverter, 1500VA output, 12VDC Battery Bank
PGCI0810	220VAC Battery Charger/Inverter, 1500VA output, 24VDC Battery Bank
PGCI0811	220VAC Battery Charger/Inverter, 1500VA output, 48VDC Battery Bank
Voltage Converters	
PGCV0812	5-32VDC Input, 1-30VDC Output, Adjustable Step-down (input voltage higher than output voltage), 120W
PGCV0813	8-32VDC Input, 9-46VDC Output, Adjustable Step-up (input voltage lower than output voltage), 150W
PGCV0814	11-15VDC to 48VDC, Step-up, 150W
PGCV0815	20-30VDC to 48VDC, Step-up, 240W
PGIN0816	10-15VDC to 24VAC Pure Sine Wave Inverter, 60Hz, 40VA
PGIN0817	10-15VDC to 24VAC Pure Sine Wave Inverter, 60Hz, 40VA
PGIN0818	10-15VDC to 24VAC Pure Sine Wave Inverter, 60Hz, 100VA
PGIN0819	10-15VDC to 24VAC Pure Sine Wave Inverter, 50Hz, 100VA
PGIN0820	20-30VDC to 18VAC Pure Sine Wave Inverter, 60Hz, 40AV (for Bosch MIC Series Cameras)
PGIN0821	20-30VDC to 18VAC Pure Sine Wave Inverter, 50Hz, 40AV (for Bosch MIC Series Cameras)
Battery Options	
PGBA0822	22aH Battery (1-4 per MOD-Box Backplane)
HMBM0823	Backplane mounted Battery Tray for 22aH battery with Hold down bracket (1-4 per MOD-Box Backplane)
PGBA0438	105aH Battery (1-3 per MOD-Box)
HMBM0824	Shelf Tie down strap for 104aH battery (1-3 per MOD-Box)
Input Power	
PGAC0825	Streetlight power Tap 105-135VAC input, 105-135VAC output , 24 hour power, 10amp auto-reset breaker
CUSTOM	Streetlight power Tap 105-480VAC input, 120VAC/60Hz or 220VAC/50Hz output, 24 hour power, 10amp auto-reset breaker

System Configuration

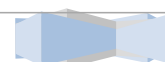
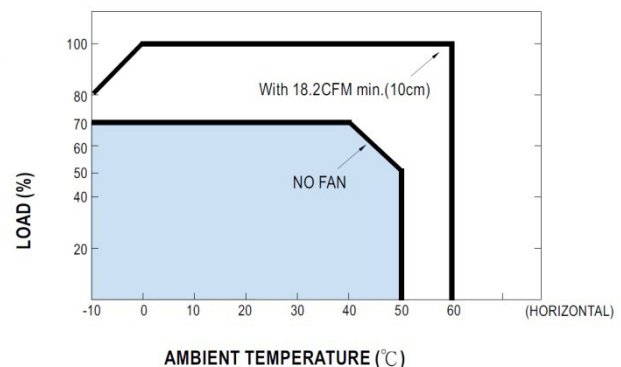
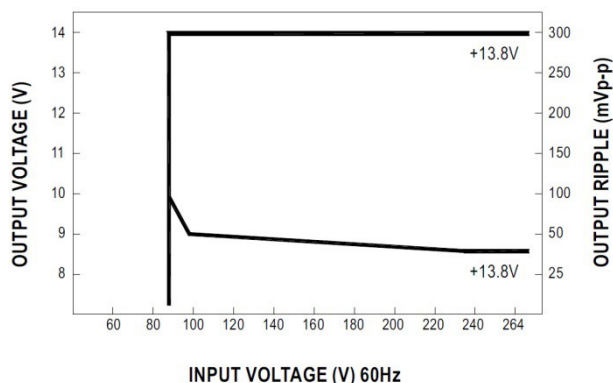
The diversity of MOD-Box Grid Power Systems enables Patronus Laboratories to configuration a virtually unlimited number of systems; therefore it is required that customers contact the in-house design team to assemble the desired options into a MOD-Box Grid Powered Solution to ensure all technical aspects are properly addressed in the configuration and design. MOD-Box solutions are designed at no charge and within 48 hours of configuration requirements being provided. Required information is, but not limited to: Geographical Location, Mounting Structure type and height, Electrical equipment models, data sheets and quantities.

Patronus Laboratories will provide systems tailored to the customers' needs up to and including customization of MOD-Box internal and external mounting assemblies to support the customers' equipment. Patronus Laboratories will mount, wire, configure and test any customer provided hardware on request or can provide a broad range of high quality products engineered for low power consumption, broad temperature ranges and harsh environments. The Patronus Laboratories available equipment is, but not limited to: Fixed or PTZ CCTV Cameras, Perimeter Intrusion Detection equipment, Access Control equipment, SCADA equipment, Copper or Fiber Communications equipment, Wireless Communications equipment, Public Address equipment, etc.



Power Supply Specifications

Model	PGPS0780	PGPS0781
Battery Backup Size (max)	44aH	22aH
Charging Current	0.5A	
Charging Voltage	13.3VDC	27.1VDC
DC Output 1 Current	9.5A	4.5A
DC Output 1 Voltage	13.8VDC	27.6VDC
DC Output 1 Voltage Adjustment Range	12-14.5VDC	24-29VDC
DC Output 2 Current	3A	
DC Output 2 Voltage	5VDC	
Efficiency	78%	81%
EMI Conduction and Radiation	Compliance to EN55022 (CISPR22) Class B	
EMS Immunity	Compliance to EN61000-4-2, -3, -4, -5, -6, -8, -11; ENV50204, EN55024, Light Industrial Level Criteria A	
Harmonic Current	Compliance to EN61000-3-2, -3	
Hold up Time	24ms/230VAC - 20ms/115VAC at Full load	
Input AC Current	2.5A@115VAC - 1.5A@230VAC	
Input Frequency	47-63Hz	
Input Voltage Range	88-264VAC	
Inrush Current	Cold Start 20A@115VAC ~ 40A@230VAC	
Leakage Current	<1ma@240VAC	
Line Regulation	`+/-1%	
Load Regulation	`+/-1%	
Low Battery Disconnect	NA - Provided externally	
MTBF	164,200 hours (MIL-HDBK-217F (25C)	
Overload Protection activated at+A62	105% - 135%	
Overload Protection, AC Charging Mode	Constant current limiting, recovers automatically after fault condition is removed	
Overload Protection, UPS Mode	Protected by internal fuse	
Operating Humidity	20-90%	
Operating Temperature	`-10~60C (refer to Output load derating curve)	
Overvoltage Protection	15.87~18.63VDC	31.74~37.26VDC
Power Factor	PF>0.92 at full load	
Ripple and Noise (Max)	150mVp-p	200mVp-p
Risetime	90ms	
Safety Standards	UL60950-1, TUV EN60950-1 approved	
Setup	1000ms/230VAC - 2000ms/115VAC at full load	
Storage Temperature	`-20-85C	
Storage Humidity	`10-95%	
Vibration	10-500Hz, 2G 10 minutes/1 cycle, 60 minutes each along X, Y, Z Axis	
Voltage Tolerance	`+/-2%	`+/-1%
Warranty	1 Year	



DATA SHEET

Housings/Mounts/Enclosures

Application/Modular

Model	PGCI0806	PGCI0807	PGCI0808	PGCI0809	PGCI0810	PGCI0811
AC Input Battery Charging Current	5.5A	2.7A	1.35A	5.5A	2.7A	1.35A
AC Input Battery Charging Voltage	14.3V+/-4%	28.5V+/-4%	57V+/-4%	14.3V+/-4%	28.5V+/-4%	57V+/-4%
AC Output Voltage	Factory set - 110VAC, 100/110/115/120VAC Selectable			Factory Set 230CAC, 200/220/230/240VAC Selectable		
AC Regulation	±3%					
Battery Backup Size (max)	400aH	200aH	100aH	400aH	200aH	100aH
Battery Input protection	40A * 5	30A * 3	40A * 5	30A * 3	40A * 5	30A * 3
Battery Reverse Polarity	Internal Fuse					
Battery Type	Sealed Lead Acid					
Battery Voltage	12VDC	24VDC	48VDC	12VDC	24VDC	48VDC
Battery Voltage Range	10.5-15VDC	21-30VDC	42-60VDC	10.5-15VDC	21-30VDC	42-60VDC
DC Current in UPS Mode (Max)	150A	75A	37.5A	150A	75A	37.5A
Efficiency	87%	89%	90%	88%	90%	91%
EMI Conduction and Radiation	Compliance with FCC Class A			Compliance to EN55022 Class B, 72/ 245/ CEE, 95/ 54/ CE, E-Mark		
EMS Immunity	None			Compliance to EN61000-4-2, 3, 4, 5, 6, 8, 11 ENV50204		
Frequency	60Hz ±0.1Hz			50Hz ±0.1Hz		
GFCI Protection	YES			NA		
Indicators	Battery Voltage level, Output Load level, Saving Mode, Fault and Operation status					
Input AC Circuit Breaker	20A			10A		
Isolation Voltages	Battery Input to AC Input - 3000VAC, Battery Input to AC Output - 3000VAC, AC Output to Frame Ground - 1500VAC					
Low Battery Alarm	11.3+/-4%	22.5+/-4%	45+/-4%	11.3+/-4%	22.5+/-4%	45+/-4%
Low Battery Disconnect	10.5+/-4%	21+/-4%	42+/-4%	10.5+/-4%	21+/-4%	42+/-4%
Maximum Power Output	1725W for 180 Sec., 2250W for 10 Sec., 3000W for 30 cycles surge power					
No Load Dissipation	≤ 18W@ standby saving mode					
Operating Humidity	20%-90% non-condensing					
Operating Temperature	0-40C @100% Load, 0-60C @ 50% Load					
Output Short Circuit Protection	Protection type: Shutdown output voltage, manually cycle power switch to recover					
Overload Protection	Protection type: Shutdown output voltage, manually cycle power switch to recover					
Over Temperature	82C+/-5C	96C+/-5C	68C+/-5C	82C+/-5C	96C+/-5C	68C+/-5C
Rated Power	1500W					
Safety Standards	UL458 (With GFCI)			None		
Storage Humidity	10-95% RH Non-condensing					
Storage Temperature	-30-70C					
Solar Panel Charging voltage	14.3V+/-4%	28.5V+/-4%	57V+/-4%	14.3V+/-4%	28.5V+/-4%	57V+/-4%
Solar Panel Max Current from Panels/Charge Current	30A					
Solar Panel Max Open Circuit Voltage	25V	45V	75V	25V	45V	75V
Transfer Time	10ms inverter <----> by pass					
Vibration	10-500Hz, 3G 10 min./ 1cycle, 60min. Each along X, Y, Z axis					
Warranty	1 Year					
Wave Form	True Sine Wave (THD <3%) at rated input voltage					

© 2011 Patronus Laboratories Corporation. As primarily a Research & Development company, Patronus Laboratories reserves the right to change product specifications without notice. For the latest product specifications, visit Patronus Laboratories online at www.PatronusLabs.com or contact your Patronus Labs sales representative.

