PIERBORNE

EMERGENCY POWER VAULT

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UL924 | DAMP LOCATION | UL LISTED E545138

Project: | **Type:**

EM Power Vault Mini Series - 20W to 55W

- **UL924 Listed**
- **120/277V - Field Selectable**
- **Rated for Extreme Temperatures**

EM POWER VAULT MINI SERIES

Pierborne offers the EMPV Mini Series to back up any 120V/277V device or fixture that needs to operate during a power failure. The Mini Series can provide 20 to 55 watts of power for 90 minutes, meeting UL924 requirements. Each unit is equipped with one (1) line voltage bypass, which can be turned on or off during normal power. Upon failure of the normal power, the fixture will automatically return to full output regardless of the position of the switch, dimmer, time clock, or line voltage device.

MINI SERIES OPTIONS

The EMPV Mini Series is available in recessed, surface or T-Grid housings. The Mini 20W & 35W come with NiCad batteries to meet applications where extreme temperatures apply (0-50 degrees Celsius). This system's sinusoidal AC output design eliminates voltage drops and proximity concerns., therefore allowing the Mini to be installed up to 1,000 feet from the units that they power.

Let us help identify the proper amount of power needed to illuminate the selected luminaires for emergency code compliance.

UL924

UL's Standard for LIFE SAVING Emergency Lighting and Power Equipment. Easily standardize on-site UL mandatory code compliant testing.

Integrate your specified downlights to provide an emergency path of egress. Enhance the aesthetic appeal of your area by getting rid of unsightly "bug-eyes".

inverter by pierborne

info@pierborne.com pierborne.com

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Project: | **Type:**

EMPV - Mini Series

Ordering Guide

EMPV-MINI – [ ] – [ ] – [ ]

Watts

20
32
35
55

Housing Options

S- Surface Mount
R- Recess Mount
T- Plenum Rated T-Grid Mount
SP- Special Housing Color

System Options

RTS- Remote Test Switch Panel
SDT- Self-Testing/Self Diagnostics
CEC- Title 20 Compliant
FCC- Part 15 Class A Compliance

MODEL #	90 MIN. CAPACITY (Watts/VA)	WEIGHT (lbs)	BATTERY TYPE	TEMP. RANGE (Celcius)	POWER CONSUM (Max)	BATTERY VOLTAGE (VCD)	DC INPUT CURRENT (ADC)	INPUT CURRENT		THERMAL OUTPUT (BTUs)	
								120VAC (Max)	277VAC (Max)	STANDBY	EMERGENCY
EMPV-MINI-20	20/20	11	NiCad	0-50°	9W	12	2.1	0.25A	0.11A	31	22
EMPV-MINI-32	32/32	14	Lead-Calc	20-30°	9W	12	3.4	0.34A	0.15A	7	32
EMPV-MINI-35	35/35	12	NiCad	0-50°	9W	12	3.8	0.37A	0.16A	31	35
EMPV-MINI-55	55/55	18	Lead-Calc	20-30°	9W	12	5.7	0.54A	0.23A	7	47

WIRING

Connection to an unswitched AC circuit is required by the NEC. Wiring access is provided for by conduit knockouts in the unit housing. EMPV Mini Series models also provide knockouts in the back of the housing for rear wiring from standard electrical boxes when surface mounting.

LOAD COMPATIBILITY

EM Power Vault's Mini model is clean, sinusoidal AC output will operate incandescent lamps as well as all common fluorescent and LED lamp types. Consult factory for compatibility with all other lamp types. Lighting loads are driven at 100% output for the entire emergency power cycle. This outstanding feature translates into greater occupant egress vision and safety.

WARRANTY & UL LISTING

- Unit: (excluding lamps) Full coverage against defects in materials and workmanship for 3 years from date of shipment.
- Battery: 3 years Lead-Acid, 5 yrs NiCd full warranty plus an additional 7 years of pro-rata coverage.
- All models are UL924 Listed and meet NFPA 101 Life Safety Code, NEC, OSHA, Local and State Codes. Optional T-Grid models are plenum rated, to UL2043 and meets city of Chicago CCEA Requirements.
- UL Listed for damp locations (0°- 50°C for NiCad models and 20°- 30°C for lead-calcium models).
- Optional -CEC models are Certified to CEC Under Title 20 regulations
- FCC Part 15 Class B Compliant

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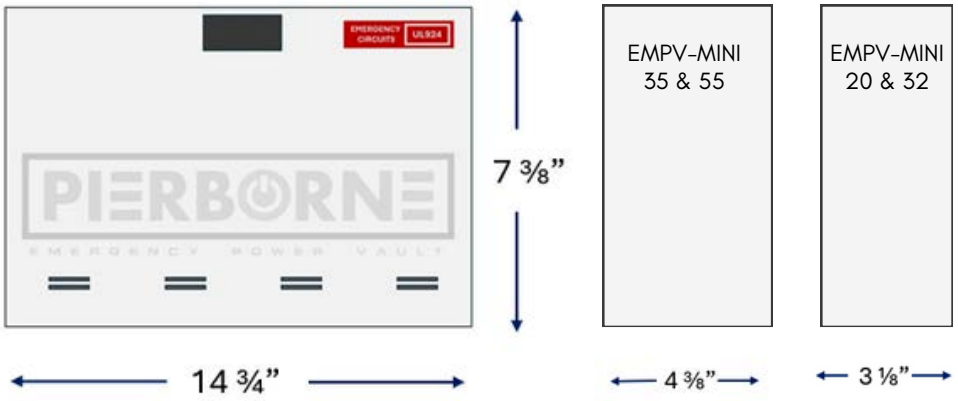
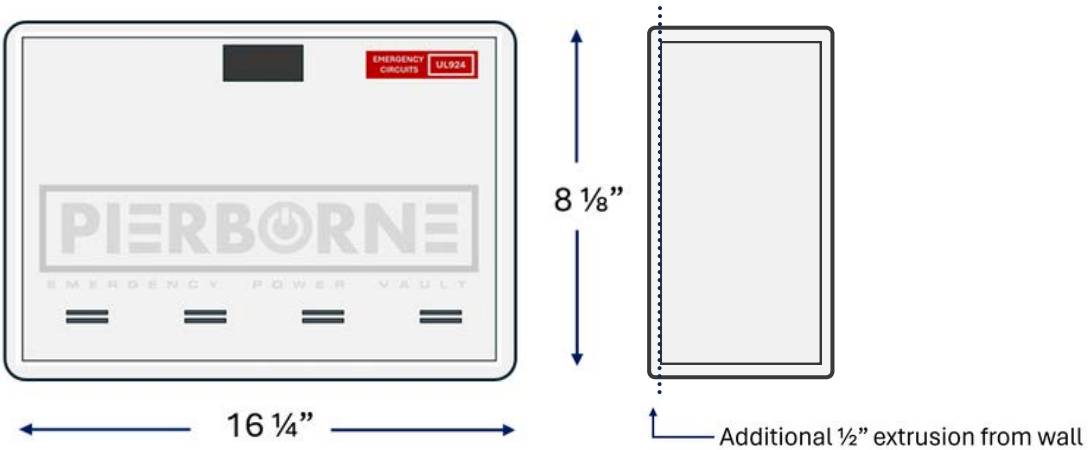
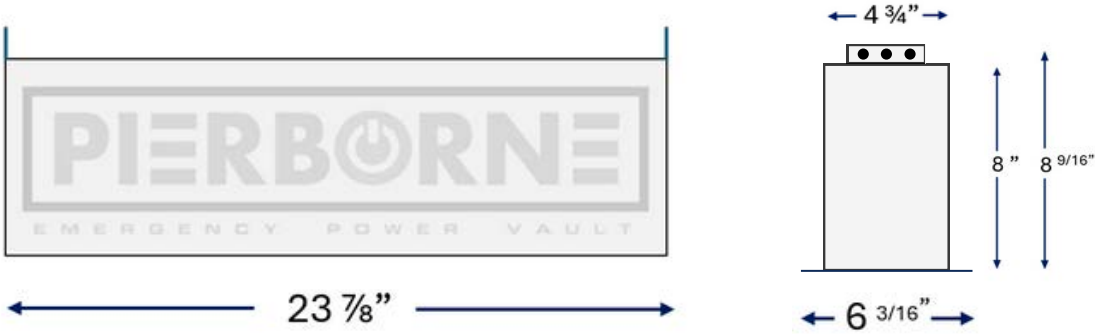
Standard Surface Mount



Recessed Mount



Ceiling T-Grid Mount



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Project:		Type:	

EMPV - Mini Series

FEATURES

- Powers incandescent, fluorescent, and LED fixtures *
- Surface, recessed or T-Grid mount models
- Normally-ON and/or Normally-OFF load output
- True sinusoidal AC pulse width modulated (PWM) design provides clean 60Hz. emergency output
- Universal 120/277VAC, 60Hz. input/output
- Unit capacities of 20W to 55W
- "Soft Start" design reduces fixture inrush current
- Lumen output from fixture is 100% of nominal
- Unique design eliminates compatibility problems with LED drivers as well as fluorescent ballasts
- Provisions for local switching capability - Always-ON during emergency conditions regardless of local switch position
- Temperature compensated, dual-mode charger includes low voltage disconnect feature to provide protection against battery deep discharge
- Maintenance-free Lead-Calcium and premium grade Nickel-Cadmium battery models offered
- Control panel with momentary test switch, AC-ON, Charge-ON and Inverter-ON LED indicators
- Battery circuit fuse protected
- Reverse battery and AC lockout protection

*Consult factory for compatibility on other lamp types

SPECIFICATIONS

- Input Voltages: 120 or 277VAC ±10% - Field Selectable
- Input Frequencies: 60Hz ±2%
- Input Protection: Provided by Service Panel, Rated 20AMP breaker max
- Output Voltages: 120 or 277VAC (60Hz)
- Efficiency Rating: 98% at full rated load (line)
- Waveform: Sinusoidal (digitally controlled, PWM design)
- Static Voltage: ±5% during battery discharge. 0-100% linear load.
- Output Frequencies: 60Hz. ±0.3Hz during emergency cycle
- Output Distortion: Less than 3% THD (linear load)
- Transfer Time: Less than 1.0 second
- Load Power Factor Range: 0.44 Lead to 0.44 Lag
- Minimum Loading: 0% of rated system capacity
- Output Protection: Inverter fuse

BATTERIES & CHARGER

- Battery: Sealed Lead Calcium (10 year life) or Sealed Nickel-Cadmium (15 year life)
- Battery Voltage: 12VDC for all EMPV Mini models
- Runtime: 90-minutes standard. Other runtimes available, consult factory.
- Battery Protection: Low Voltage Battery Disconnect protects the battery from being severely damaged by deep discharge during prolonged power failures.
- DC Overload and Short Circuit Protection provided by a DC input fuse.
- Charger Type: Fully automatic, temperature compensated, dual-mode charger
- Power Consumption: 9W max. (All models)
- Recharge Duty Cycle: Meets UL924 requirements
- Controls: Momentary test switch, AC-ON, Charge-ON and Inverter-ON LED indicator lights
- Safety Circuitry: AC Lockout prevents battery discharge prior to initial unit power-up.
- Brownout Protection automatically switches the unit to emergency mode when utility voltage is significantly reduced.
- Altitude: < 10,000 feet (3,000m) above sea level without derating.

Operating Temperature Range:

- Lead-Calcium Models: 20°C to 30°C
- Nickel-Cadmium Models: 0°C to 50°C
- NOTE: Optimum system performance between 20°C and 30°C; temperatures outside of this range will affect battery performance and life.
- Relative Humidity: 95% non-condensing

HOUSING & MOUNTING

- Heavy duty steel cabinet is finished in white baked-on powder paint providing scratch and corrosion resistance.
- Optional paint color (-SP) finishes available, consult factory.
- Surface Mount: Surface mount models are designed for mounting to walls by means of keyhole slots provided in the back of the unit housing.
- Recess Mount: Recess models provide recess mounting holes on both sides of the enclosure.
- T-Grid Mount: Housing design allows simple drop-in installation between t-grid runs. Safety wires (supplied by others) are required for attachment to building structure.

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Suggested Specifications

An inverter system with sinusoidal output shall be supplied capable of powering any combination of lighting fixtures, including incandescent, fluorescent, induction and/or LED light sources without compatibility problems.

The system shall transfer in less than 1.0 second to reliably back up lighting fixtures without loss of illumination and operate any and all connected lighting fixtures at full lumen output during the complete 90-minute discharge cycle.

The input voltage shall be the same as the output voltage and shall be single phase 120/277 volts, 60Hz. Output capacity will be (20 Watts/32 Watts) / (35 Watts/55 Watts) for a minimum duration of 90-minutes.

The design shall be a standby, off-line inverter with on-line efficiency of 98%; on-line double conversion UPS systems shall not be considered acceptable alternatives. EMPV Mini system output shall be a PWM generated sine wave with less than 3% total harmonic distortion with "Soft-Start" design reducing fixture inrush current. The system shall also provide short circuit and overload protection as standard.

An intuitive three LED display shall provide system operational information at a glance and alert user to any malfunction in system performance. Authorized maintenance personnel shall have access to the system's controls while being protected from any live exposed connections.

Protective devices shall include DC input fuse, AC input overcurrent protection for live circuits to be provided by service panel rated 20A maximum. AC lockout, reverse battery connection, low voltage battery disconnect (LVD), short circuit and overload protection shall be provided standard on all models. The entire EMPV Mini system, including batteries, shall be provided in compact cabinetry which shall have provisions for surface, recessed, T-Grid mounting.

System shall be capable of providing, remote test switch, and self-test/self-diagnostics, were necessary.

System shall utilize a sealed lead calcium battery with a 10 year design life or a sealed Nickel-Cadmium battery with a 15 year design life. The charger shall be temperature compensated, dual mode type, and recharge the batteries as per UL924 guidelines. Entire system shall be tested, approved, and labeled to UL924 Emergency Lighting and Power Systems standards. T-Grid models will be plenum rated.

Diagram 1. NORMALLY ON LOADS

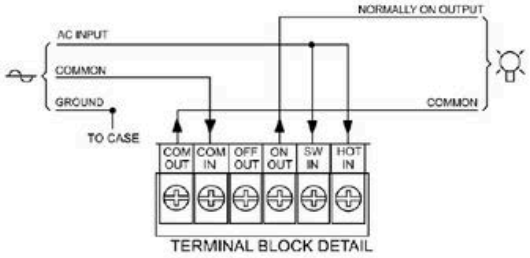


Diagram 2. NORMALLY OFF LOADS

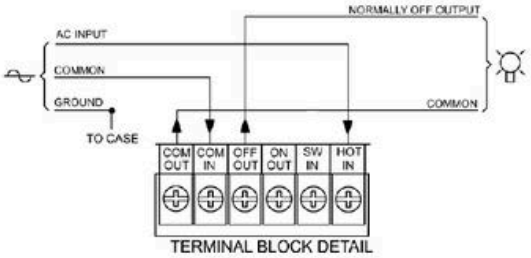


Diagram 3. NORMALLY ON & OFF LOADS

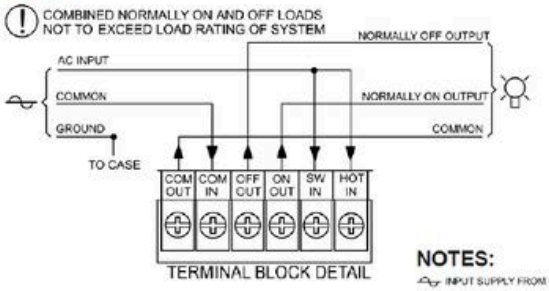
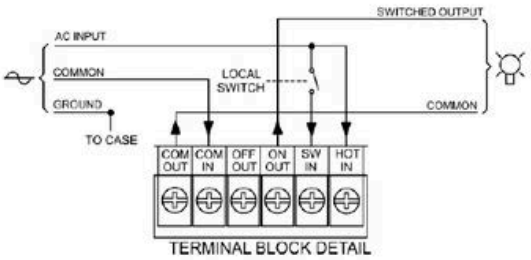


Diagram 4. SWITCHED LOADS

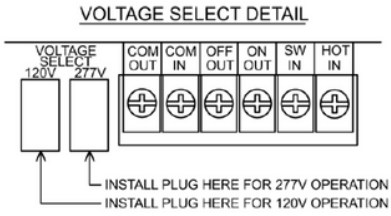


NOTES:

INPUT SUPPLY FROM UNSWITCHED UTILITY RATED 20 AMPS MAXIMUM

OUTPUT(S) TO LIGHTING LOADS

AC Input Connection



Voltage selection plug is shipped loose from factory. User installation is required.