

## EPSA

**Emergency Power System - Micro Inverter**  
**20 - 55 watts.**



### PRODUCT SPECIFICATIONS

#### DESCRIPTION

The EPSA Micro Inverter provides sinusoidal emergency power of 20 - 55 watts to any of our fixtures. Clean, sinusoidal AC power allows for the inverter to be remotely located up to 1,000 feet away from the controller fixtures. The EPSA Micro Inverter comes in recessed, surface, or ceiling mount variations, and are designed to install quick and easily. Our EPSA model supports Normally On, Normally Off, and switched operation, as well as the combination of any of these(see wiring diagram).

#### APPLICATIONS

The EPSA Micro inverter is the perfect for any application that requires emergency power, and requires full light output. Useful for hospitals, schools, prisons, restaurants, stores, warehouses, etc.

#### CONSTRUCTION

Constructed of heavy duty steel, and powder-coated white to provide scratch and corrosion resistance. Custom color finishes are available on request.

#### ELECTRICAL SPECIFICATIONS

120 - 277VAC input/output. 98% efficiency at full load. True Sinusoidal waveform emergency power, digitally controlled. Transfer time of power is under 1 second. Input/Output frequencies of 60Hz (±2%). Built in inverter fuse for output protection.

#### MOUNTING

The EPSA Micro Inverter is available in surface mounted, recessed, and T-Grid mounting options.

#### LISTINGS

UL and cUL Listed. Damp location rated.

#### WARRANTY

5-Year Limited Warranty. Complete warranty and terms located at [www.aelnow.com/](http://www.aelnow.com/)

### ORDERING INFORMATION

Example: EP5A2

Options Example: RTS

Models:

MODEL NUMBER	HOUSING SIZE	INPUT / OUTPUT VOLTS	90 min. CAPACITY (Watts/VA)	SYSTEM WEIGHT*		BATTERY TYPE	TEMP. RANGE (°C)	POWER CONSUM. (Max.)	BATTERY VOLTAGE (VDC)	DC INPUT CURRENT (A <sub>dc</sub> )	INPUT CURRENT		THERMAL OUTPUT in BTUs	
				Lbs.	Kg.						120VAC (max)	277VAC (max)	STANDBY	EMERGENCY
EP5A1	Small	120/277	32/32	14.0	6.4	Lead-Calc	20-30°	9W	12	3.4	0.34A	0.15A	7	32
EP5A2	Large	120/277	55/55	18.0	8.2	Lead-Calc	20-30°	9W	12	5.7	0.54A	0.23A	7	47
EP5A3	Small	120/277	20/20	11.0	5.0	NiCad	0-50°	9W	12	2.1	0.25A	0.11A	31	22
EP5A4	Large	120/277	35/35	12.0	5.4	NiCad	0-50°	9W	12	3.8	0.37A	0.16A	31	35

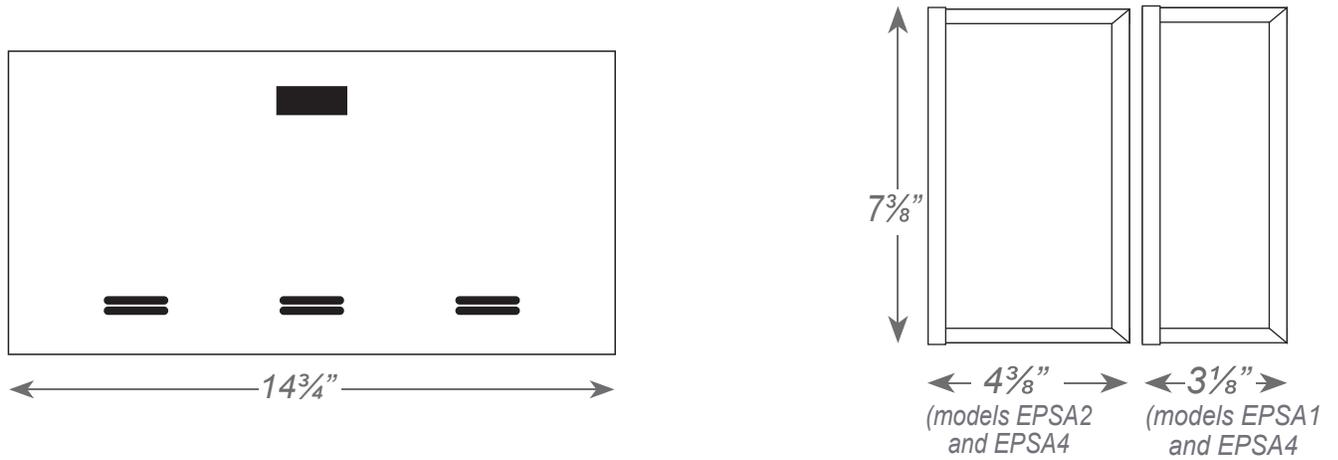
\* System weights includes batteries

Options:

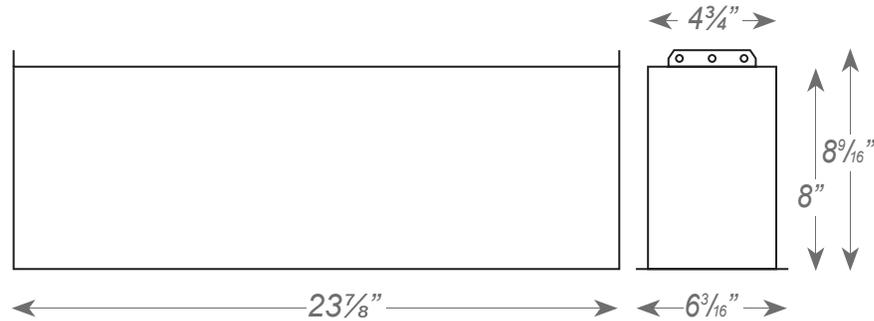
OPTIONS	
S	Surface Mount Housing
R	Recess Mount Housing
T	Plenum Rated Ceiling T-Grid Mount Housing
SP	Special Color Housing
RTS	Remote Test Switch Panel
SDT	Self-Testing / Self-Diagnostics
CEC	Title 20 Compliant

## DIMENSIONS

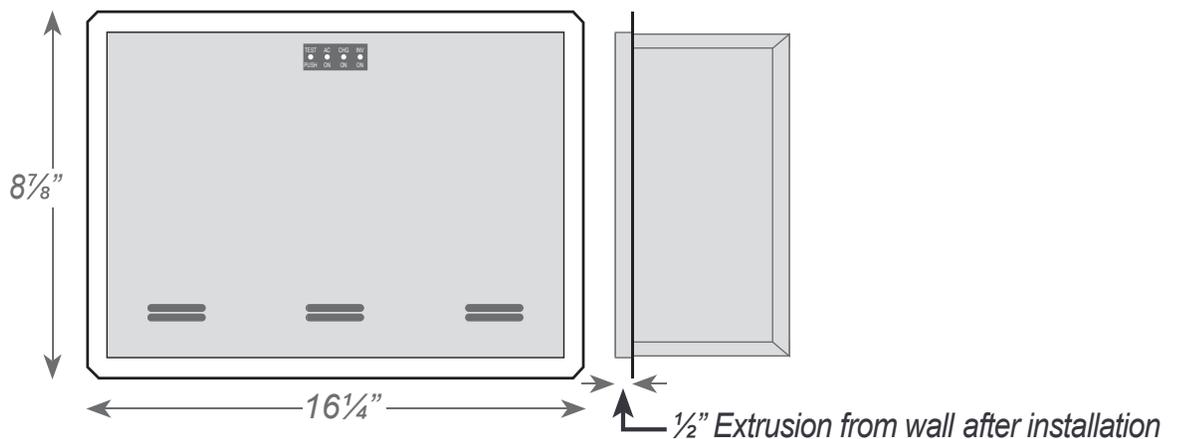
### Standard Surface Mount Housings



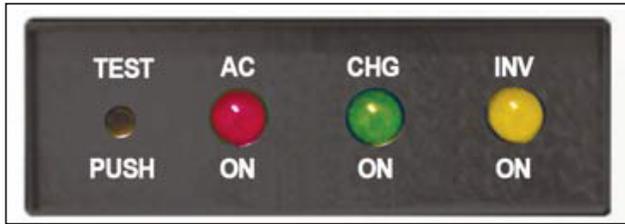
### Optional Ceiling T-grid Mount Housing



### Recessed Mount Housings



## SYSTEM STATUS MONITORING PANEL



All of our Emergency Power Inverter systems provide a monitoring panel on the front of the unit to show operating status at all times. The panel provides a test switch for user initiated system tests and a 3-LED array that provides an intuitive visual indication of unit readiness.

## OPERATION

Upon failure of the normal utility power the EPSA unit is automatically turned on by a solid-state switching circuit and provides a minimum of 90-minutes of emergency power to the connected load. Lumen output will be maintained at 100% of the lamp's rating throughout the entire duration.

A solid-state low voltage disconnect circuit is used to protect the battery from being severely damaged by a deep discharge. When normal utility power is restored, the unit switches the load back to normal utility operation and the fully automatic, temperature compensated, dual mode charger begins to restore the battery; bringing it to full charge within UL924 specified parameters. A brownout sensing circuit insures proper operation during "low line" conditions.

## THE ADVANTAGES

Compared to traditional discrete emergency lighting units, the EPSA Series provides emergency illumination from a single power source resulting in lower maintenance overhead and routine testing expenses.

EPSA units lower installation costs by powering existing lighting fixtures during emergencies. And because connected fixtures are driven at full brilliancy, they provide far superior egress lighting and deliver improved occupant safety.

## BATTERIES AND CHARGER

### Battery

**Battery:** Sealed Lead Calcium (10 year life) or Sealed Nickel-Cadmium (15 year life)

**Battery Voltage:** 12VDC for all EPSA 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

**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.

### Environmental

**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

## 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. EPSA 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.

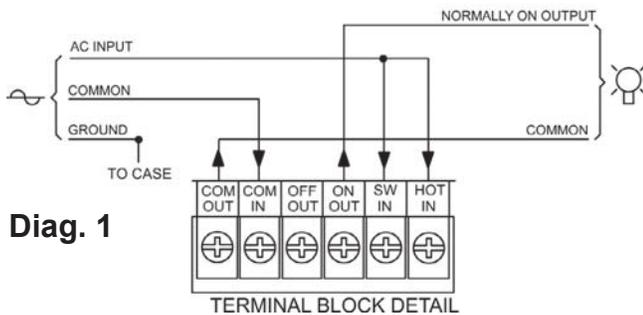
Protective devices shall include DC input fuse, AC input over-current protection for live circuits to be provided by service panel rated 20A maximum. AC lockout, reverse battery connection, low voltage battery disconnect (LVD), short circuit and overload protection shall be provided standard on all models. The entire EPSA 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.

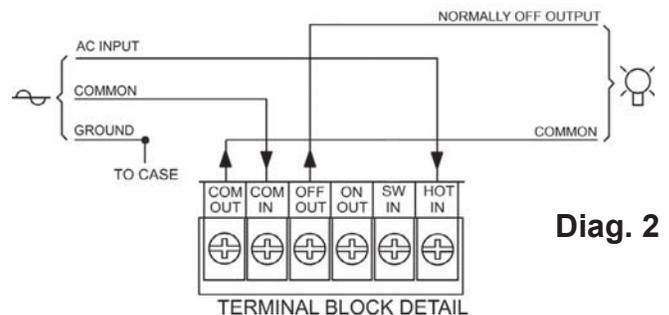
System shall utilize a sealed lead calcium battery with a 10 year design life or a sealed Nickel-Cadmium battery with a 15 year design life. The charger shall be temperature compensated, dual mode type, and recharge the batteries as per UL924 guidelines. Entire system shall be tested, approved, and labeled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

## WIRING DIAGRAMS

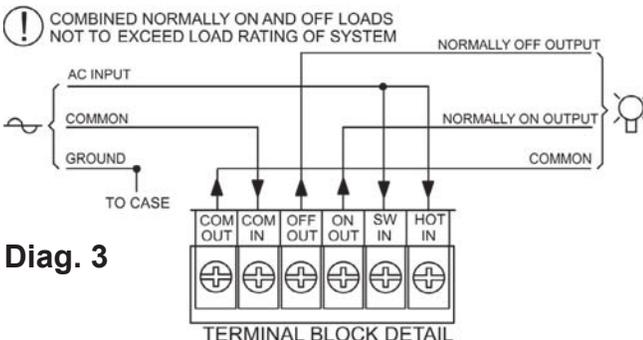
### NORMALLY ON LOADS



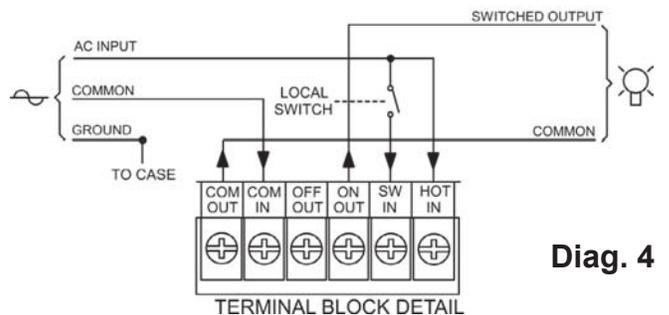
### NORMALLY OFF LOADS



### NORMALLY ON & OFF LOADS



### SWITCHED LOADS



⚡ INPUT SUPPLY FROM UNSWITCHED UTILITY RATED 20 AMPS MAXIMUM.  
💡 OUTPUT(S) TO LIGHTING LOADS

## Option: SDT

### Self-Testing/Self-Diagnostic

### DESCRIPTION



Advantage Environmental Lighting offers the self-testing and self-diagnostic (SDT) options in our EPSA series of inverters. This feature is becoming increasingly more important to architects, engineers and building owners as they become more aware of its tremendous value-added functions and safety-assuring technology. UL Listed to meet NFPA 101 for self-testing and self-diagnostic requirements.

#### The self-diagnostic function is factory preset and performs the following:

- Monitoring of battery, battery charger and connected loads.
- Self-testing and a 30-second battery discharge once every 30 days after normal utility power has been supplied for a minimum of 48 hours.
- Self-testing and a 30-minute battery discharge once every 180 days after normal utility power has been supplied for a minimum of 48 hours.
- Self-testing and a 90-minute battery discharge once every 365 days after normal utility power has been supplied for a minimum of 48 hours.

### SERVICE INDICATION

LED INDICATOR	STATUS
GREEN Steady	Normal Service
RED/GREEN Blinking	High Charge Enabled
GREEN Blinking	Test mode Enabled
One Blink RED / Pause	Battery Charger Fault
Two Blinks RED / Pause	Battery Fault
Four Blinks RED / Pause	Lamp / Load Fault

### MANUAL TESTING

ACTION	REACTION & LED INDICATION
Push test switch once (within 2 seconds)	30 Second test: One blink GREEN / Pause
Push test switch twice (within 2 seconds)	30 Minute test: Two blinks GREEN / Pause
Push test switch thrice (within 2 seconds)	90 Minute test: Three blinks GREEN / Pause
Push test switch and hold for 3 seconds	Cancels test
Push test switch and hold for 6 seconds	System reset

## Option: RTS

### Remote Test Switch



#### DESCRIPTION

The RTS Option for the EPSA Emergency Power System Micro Inverter provides remote testing capability. It is compatible with the EPSA, other optional equipment, and LED Exit signs.

#### ELECTRICAL

Field selectable 120 voltage or 277 voltage.  
Power "ON" LED indicator light and push-to-test switch for mandated code compliance testing.

#### MOUNTING

Remote Test Switch can be mounted to any standard switch box. Suitable for wall or ceiling mount.

#### CONSTRUCTION

Constructed with an Injection-molded, engineering grade, V-0 flame retardant mounting plate, and finished in white.

#### LISTINGS

Meets UL924, NFPA 101 Life Safety Code, NEC, OSHA, Local and State Codes.

#### WARRANTY

5-Year Limited Warranty. Complete warranty and terms located at [www.aelnow.com/](http://www.aelnow.com/)

