SYNCHRON Central Lighting Inverters

Provides emergency AC power for luminaires and critical equipment during interruption of the normal AC power supply

Equipment Type: DLS _____

Features

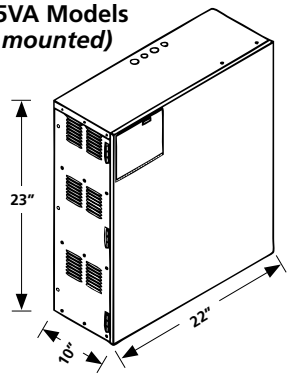
- Uninterruptible emergency AC power system
- 400 through 2100VA/Watts
- NEMA 1 painted steel enclosures for indoor applications
- Compact enclosure size
- Front accessible servicing
- UL Listed to Standard 924, Emergency Lighting and Power Equipment (90-minute run time)
- Made in America
- Offline design increases efficiency to 98%
- 115% momentary overload capacity
- 18KAIC RMS symmetrical short-circuit rating
- 1.0 Unity power factor (VA = Watts)
- True sine wave output and "no break" switching for reliable operation
- Automatic restart upon utility return
- Temperature rating: 20°C to 30°C (68°F to 86°F)
- Compatible with all lamp types, including incandescent, fluorescent, LED and HID
- Compatible with magnetic and electronic ballasts
- Factory startup included
- Input/output: 120/120VAC or 277/277VAC
- AC output circuit breaker factory installed in 400 and 525VA/Watts models
- Test Switch provided

Unit Specifications

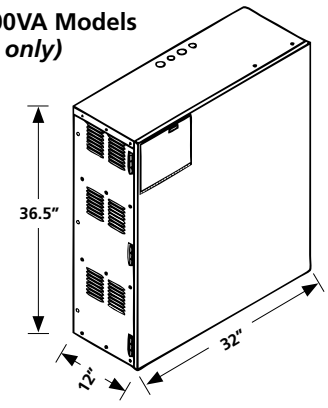
VA/Watts	400	525	750	1000	1500	2100
Power Factor Range	.8 lead to .75 lag					
Input/Output Voltage	120/120 or 277/277VAC					
AC Input Circuit Breaker Rating 120/277V	10/15 Amps			15/15A	20/15A	25/15A
Charger Size	2 Amps					
System DC Voltage	36	36	72	72	72	96
Cabinet Size	22"W x 23"H x 10"D (55.9cmW x 58.4cmH x 25.4cmD)		32"W x 36.5"H x 12"D (81.3cmW x 92.7cmH x 30.5cmD)			
BTU/Hour - Line/Inverter	70/260	92/341	131/382	175/510	263/765	368/886
Weight [lbs. (kg) - including batteries]	143 (65.1)	173 (78.8)	281 (128)	346 (157.6)	400 (182.2)	480 (218.7)

Dimensions

400VA to 525VA Models
(can be wall mounted)



750VA to 2100VA Models
(floor mount only)



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Application

Designed for indoor installation in commercial or industrial applications, including, but not limited to:

Retail establishments
Restaurants
Sports facilities
Shopping malls
Municipal office buildings
Schools
Colleges
Auditoriums
Libraries
Building management systems
Fire detection systems
Emergency egress systems
Security systems
Communications systems
Hotels, Motels
Patient care facilities
Catering, banquet facilities
Military installations

Cabinet Specifications

Material: Painted steel
Dimensions: See "Dimensions" section
Input Power Entry Point: Cabinet top
Interior Relative Humidity: 95% non-condensing
Anchoring Provision: Wall brackets
Servicing: Front accessible
Venting: Louvers on opposite sides of cabinet

Electrical Specifications

System Short Circuit Rating: 18K AIC, RMS symmetrical
Surge Voltage Test: Per UL 924
Input Power Connection: Terminal block
Input Circuit Breaker: Sized to system rating
Power Factor: Unity 1.0 (VA = KVA)
Power Consumption: Offline, 98% efficient
Inverter Design: Pulse width modulation via IGBT circuitry
IGBT Frequency Switching Rate: 16K Hz per second
Input Voltage: 120 or 277VAC
Input Voltage Range: ±10%
Input Frequency: 60 Hz, ±3%
Synchronizing Slew Rate: 1 Hz per second, nominal
Transfer Time: "No break" switching; instantaneous
Output Wave Shape: True AC sine wave
Output Frequency: Normal: synchronized to utility; Inverter: +0.05 Hz
Output Voltage: Matches input voltage supplied
Main Output Overcurrent Protection: Circuit breaker
Output Circuit Breakers, Single Pole:
400 and 525VA/Watts Models:
Standard: One 15 amp "normally-on" circuit breaker
750 through 2100VA/Watts Models:
Optional: "Normally-on" or "normally-off", monitored or unmonitored, per customer requirements. See "Product Selector/Model Number Guide".
Output Regulation: (static) +10%, -5%, based on a 5% to 100% resistive load
Output Distortion: Less than 5% THD (linear load)
Load Power Factor Range: .75 lag to .80 lead
Battery Circuit Breaker: Sized to system rating
Overload Rating: 115% momentary
Overload/Short Circuit Protection: Circuit breakers, output fuse
AC Lockout: Prevents battery discharge following installation when AC power is not present
Low Voltage Battery Disconnect: Protects the batteries from damaging "deep discharge" conditions during prolonged power outages
Time Delay Retransfer: Supplied with "normally off" optional circuit breakers. Holds the unit in emergency mode for 15 minutes after normal AC power is restored, allowing utility power to stabilize and voltage sensitive lighting to resume normal operation.
Test Means: "Push-to-test" button provided
Indicators: Visual LED indicators, audible alarm system. See "System Status Indicator" section.

Battery/Charging System Specifications

Standard Run Time: 90 minutes per UL 924
Charger: Automatic, temperature compensated with internal diagnostic indicators
Bus Voltage: 36, 72 or 96VDC. See "Unit Specifications" chart.
Battery Charging System: Monitored

Recharge Cycle: Within UL requirements
Battery Type: Type S – Sealed Lead Calcium
Expected Normal Life: 10 years at 25°C (77°F)
Construction: Lead calcium grid alloy with electrolyte trapped in absorbant glass mat (AGM) separators. Completely sealed and requires no addition of water over its life expectancy. Polypropylene case and cover includes UL recognized low pressure safety release vents. No gassing will occur in normal use.
Optimum System Performance Range: 20°C to 30°C (68°F to 86°F)
DC Switch: Provides isolation and back-feed protection

Compliances

UL Standard 924, Emergency Lighting and Power Equipment (standard 90 minute run time)
National Electrical Code (NFPA 70)
Life Safety Code (NFPA 101)
OSHA, state and local codes

Warranty

2 Years full on all components. Batteries must be installed in the system within 90 days of receipt to preserve the warranty. Extended preventive maintenance plans available.

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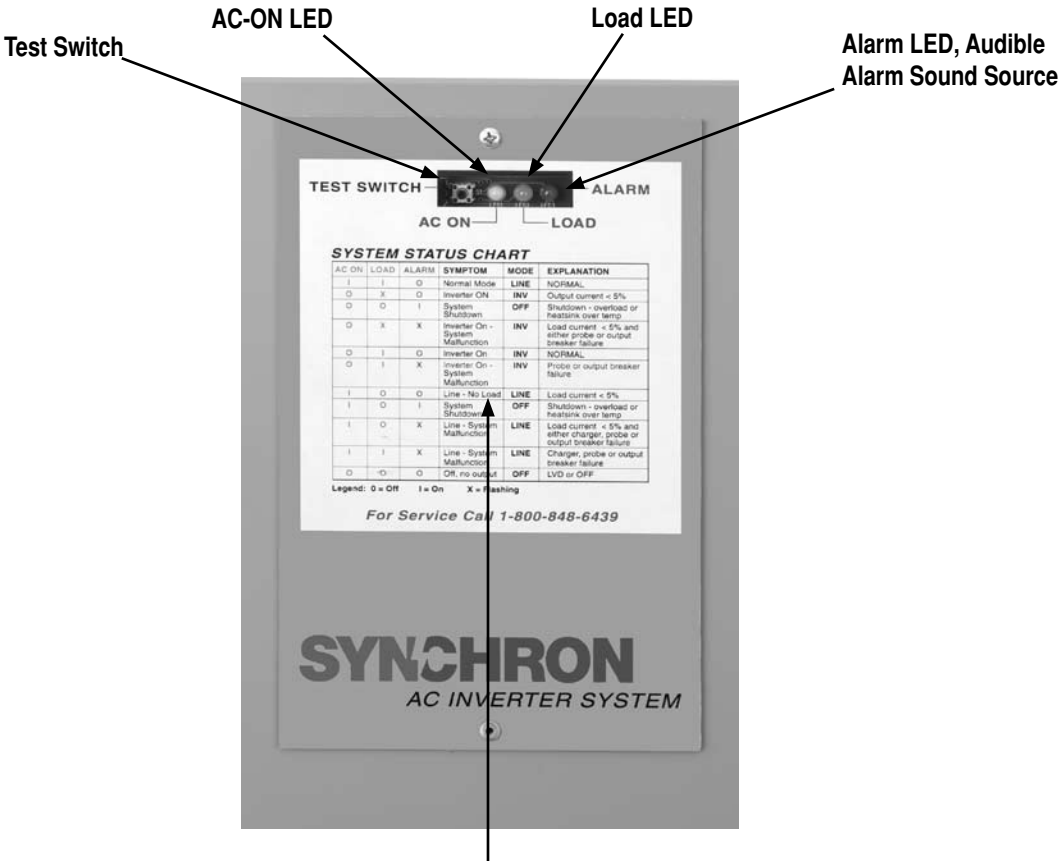
System Operation and Status Indicator Panel



Audible Alarm	AC Input/ Charging	Load On	Alarm	Symptom	Mode	Possible Cause
○	○	○	○	Off	OFF	1. LVD 2. Off
○	○	**X**	○	Inverter ON	INV	Output current < 5%
I	○	○	**I**	System Shutdown	OFF	Shutdown – overload or heatsink over temp.
X	○	**X**	**X**	Inverter On – System Malfunction	INV	Load current < 5% and either probe or output breaker fail
○	○	**I**	○	Inverter On	INV	Normal
X	○	**I**	**X**	Inverter On – System Malfunction	INV	Probe or output breaker fail
○	**I**	○	○	Line – No Load	LINE	Load current < 5%
I	**I**	○	**I**	System Shutdown	OFF	Shutdown – overload or heatsink over temp.
X	**I**	○	**X**	Line – System Malfunction	LINE	Load current < 5% and either charger, probe or output breaker has failed
○	**I**	**I**	○	Normal Mode	LINE	NORMAL
X	**I**	**I**	**X**	Line – System Malfunction	LINE	Charger, probe or output breaker has failed

I = Active, **X** = Flashing, ○ = Off

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Operation

When normal utility supplied power is present, the Synchron central lighting inverter allows utility power to pass through to the connected load, and charges the system batteries as required. When utility supplied power is interrupted, the system will automatically and instantaneously transfer to emergency mode without interruption to connected loads. DC battery-derived emergency power is inverted to AC power and supplied in a pure sine wave output form for 90 minutes (standard run time). A low voltage battery disconnect circuit prevents "deep discharge" damage to the batteries during prolonged power outages. When normal power is restored, the system will automatically restart, providing power to connected loads and recharging the batteries. The charging circuit will bring the batteries to full recharge within normal UL time standards.

Product Selector/Model Number Guide

EXAMPLE: DLS-400-120-NA1503U-PMP-A2-FS

DLS	Capacity Rating (VA/Watts)	Input/Output Voltage (VAC)	Output Circuit Breakers [1]	Preventive Maintenance Program	FS
Dual-Lite Synchron Central Lighting Inverter	400 525 750 1000 1500 2100	120 VAC or 277VAC			*Factory Startup*

[1] Output Circuit Breakers

- *400VA and 525VA models: Supplied standard with one 15 amp normally-on output circuit breaker.*
- *750VA through 2100VA models: Output circuit breakers are optional.*

Type	*Voltage Rating*	*Ampere Rating*	*Quantity*	*Supervision*
Blank = Normally "On"[2]	A = 120VAC	15	01 to 10	BLANK = Monitored
N = Normally "Off"[2] [3] [4] [5]	B = 277VAC	20		U = Unmonitored
		30		

[2] A maximum of 6 monitored or 10 unmonitored normally-on single-pole circuit breakers may be specified.

[3] A maximum of 4 normally-off single-pole circuit breakers may be specified.

[4] Maximum rating of normally-off circuit breakers is 20 amperes.

[5] Normally-off output circuit breakers include a built-in, 15-minute retransfer delay to accommodate HID lighting loads.

PMP-A1: Additional 1-year warranty and 1-year service coverage, weekdays, Monday-Friday, 8AM to 5PM EST.	**PMP-A2:** Additional 2-year warranty and 2-year service coverage, weekdays, Monday-Friday, 8AM to 5PM EST.	**PMP-A3:** Additional 3-year warranty and 3-year service coverage, weekdays, Monday-Friday, 8AM to 5PM EST.
PMP-B1: Additional 1-year warranty and 1-year service coverage, 24 hours/day, 7 days/week, no holidays.	**PMP-B2:** Additional 2-year warranty and 2-year service coverage, 24 hours/day, 7 days/week, no holidays.	**PMP-B3:** Additional 3-year warranty and 3-year service coverage, 24 hours/day, 7 days/week, no holidays.
PMP-C1: Additional 1-year warranty and 1-year service coverage, 24 hours/day, 7 days/week, including holidays.	**PMP-C2:** Additional 2-year warranty and 2-year service coverage, 24 hours/day, 7 days/week, including holidays.	**PMP-C3:** Additional 3-year warranty and 3-year service coverage, 24 hours/day, 7 days/week, including holidays.

IMPORTANT: Features and specifications are subject to change without notice. Contact factory for most recent product information.

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Suggested Specifications

Furnish and install an indoor mounted central lighting inverter with a pure sine wave output design capable of providing 100% rated VA/Watts output to connected loads for 90 minutes. The system will transfer from normal power to emergency power with no interruption to the connected load. The system shall be capable of powering any combination of electronic, power factor corrected, incandescent, fluorescent, HID or LED lighting.

Other connected loads shall include but not be limited to: building management systems, motors, security systems and other critical voltage or frequency-sensitive electronic loads.

The system shall operate from 0-100% loading. System operation shall be fully automatic.

When normal utility power is present, the Synchron series central lighting inverter shall allow utility supplied power to pass through to the connected load, and charge the system batteries as required. The charging system will maintain the batteries at full capacity at all times. The battery charging system will be continuously monitored.

When utility power is interrupted, the system will automatically and instantaneously transfer to emergency mode without interruption to the connected load. DC battery-derived emergency power will be inverted to AC power and supplied in a pure sine wave output form. A low voltage battery disconnect circuit shall prevent “deep discharge” damage to the batteries during prolonged power interruptions.

When normal power is restored, the system will automatically restart, providing power to connected loads and recharging the batteries. The charging circuit will bring the batteries to full recharge within acceptable UL time standards.

System overload capability shall be 115% momentary. Overload and short circuit protection shall be provided by circuit breakers and fuses.

Visual and audible alarms shall be provided and shall be readily displayed via the system operation and status indicator panel.

Input/output voltages and VA/Watts rating shall be as specified by the system model number.

The system must allow a user-initiated manual test at any time utility supplied power is present.

The system shall be installed in accordance with all appropriate manufacturers’ instructions and in compliance with all appropriate codes. Factory startup shall be included as a standard feature.

The Synchron series central lighting inverter shall be Dual-Lite number:

DLS _____

DUAL LITE

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