



# DLS Series

SINGLE PHASE CENTRAL LIGHTING INVERTER

DATE: \_\_\_\_\_ LOCATION: \_\_\_\_\_

TYPE: \_\_\_\_\_ PROJECT: \_\_\_\_\_

CATALOG #: \_\_\_\_\_

## SYNCHRON



### FEATURES

- Uninterruptible emergency AC power system
- "No break" design transfers the load instantaneously when normal power is interrupted
- 90 minute emergency operation
- Single-phase
- Input/Output Voltage: 120VAC, 277VAC
- 60 Hz operation
- Sizes available from 750 VA/Watts to 2100 VA/Watts
- For normally-on and normally-off loads
- For switched loads using BCCR20 transfer switches
- 100% load compatible with any lighting source, including HID
- Off line design for high efficiency up to 98%
- Microprocessor controlled pulse width modulation (PWM) using IGBT technology



### SPECIFICATIONS

#### APPLICATION

- Designed for indoor installation in commercial or industrial applications.

#### 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 UL time standards

#### CONSTRUCTION

- The Synchron cabinet is constructed of NEMA 1 rated, painted steel.

#### INSTALLATION

- Input power entry point is from the cabinet top. Unit supplied with wall brackets for anchoring and features front service entry.

#### COMPLIANCES

- UL 924 Listed, 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

#### FACTORY STARTUP

- Use accessory number FSS when ordering

#### WARRANTY

- Two years full on all components from date of shipment when a Factory Start-Up is ordered; one year full when a Factory Start-Up is not ordered.
- One year full, 9 years pro-rata for batteries.

*Batteries must be connected to an energized charging circuit within 90 days from date of shipment or warranty is void.*

*Factory Start-Up is non-cancellable / non-returnable and must be performed within 6 months of inverter shipment to maintain 2 yr. full warranty. Order a quantity of 1 per system. Systems powered up by others are done so at their own risk.*

KEY DATA	
Wattage Range	750 - 2100 W/VA
Input/Output (VAC)	120/120 or 277/277
Power Factor Range	0.8 Lead to 0.75 Lag
Power Efficiency (offline)	98%



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## ORDERING GUIDE

Example: DLS-750-120

CATALOG #

DLS	Capacity Rating (VA/Watts)	Input/Output Voltage (VAC)	Output Circuit Breaker Type	Output Circuit Breaker Voltage Rating	Output Circuit Breaker Ampere Rating	Output Circuit Breaker Quantity <sup>1,5,6</sup>	Output Circuit Breaker Supervision <sup>1</sup>
DLS Single Phase Central Lighting Inverter	750	120	Blank Normally On	A 120VAC	15	01 to 10	Blank Monitored
	1000	277	N Normally Off <sup>2,3,4</sup>	B 277VAC	20		U Unmonitored
	1500				25		
	2100				30		

### Notes:

- 1 A maximum of 6 monitored or 10 unmonitored normally-on circuit breakers may be specified
- 2 A maximum of 4 normally-off circuit breakers may be specified
- 3 Maximum rating of normally-off circuit breakers is 20 amperes
- 4 Normally-off output circuit breakers include a built-in, 15 minute retransfer delay to accommodate HID lighting loads
- 5 Total quantity of monitored normally-off and normally-on breakers cannot exceed 6
- 6 Total quantity of unmonitored normally-off and normally-on breakers cannot exceed 10

## SPECIFICATIONS

VA/Watts	750	1000	1500	2100
Power Factor Range	.8 lead to .75 lag			
Input/Output Voltage	120/120 or 277/277VAC ±10%			
AC Input Circuit Breaker Rating 120/277V	10/5 A	13/6A	20/8A	25/10A
Charger Size	2 Amps			
System DC Voltage	72	72	72	96
Cabinet Size	32"W x 36.5"H x 12"D (81.3cmW x 92.7cmH x 30.5cmD)			
BTU/Hour - Line/Inverter	131/382	175/510	263/765	368/886
Weight [lbs. (kg) - including batteries]	281 (128)	346 (157.6)	400 (182.2)	480 (218.7)

## ELECTRONICS

**SYSTEM SHORT CIRCUIT RATING:** 18K AIC, RMS symmetrical

**INPUT POWER CONNECTION:** Terminal block

**INPUT CIRCUIT BREAKER:** Sized to system rating

**POWER FACTOR:** Unity 1.0 (VA = W)

**POWER CONSUMPTION:** Offline, 98% efficient

**INVERTER DESIGN:** Pulse width modulation via IGBT circuitry

**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 CIRCUIT BREAKERS:** Single Pole; See "Ordering Guide"

**OUTPUT REGULATION:** (static) +10%, -5%, based on a 5% to 100% resistive load

**OUTPUT DISTORTION:** Less than 5% THD (linear load)

**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

**COMPATIBILITY:** Magnetic and electronic ballasts; incandescent, LED, fluorescent, compact fluorescent and HID lamps

**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.

**LOW VOLTAGE BATTERY DISCONNECT:** Protects the batteries from damaging "deep discharge" conditions during prolonged power outages

**TEST MEANS:** "Push-to-test" button provided

**INDICATORS:** Visual LED indicators, audible alarm system

**INTERIOR RELATIVE HUMIDITY:** 95% non-condensing

## BATTERY/CHARGING SYSTEM

**CHARGING SYSTEM:** Monitored – 3-step temperature compensated float

**BATTERY CIRCUIT BREAKER:** Sized to system rating

**BATTERY:** Type S – VRLA Lead Calcium

**EXPECTED NORMAL LIFE:** 10 years at 25°C (77°F)

**OPERATING TEMPERATURE RANGE:** 20°C to 30°C (68°F to 86°F)



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## DIMENSIONS

