UNIVERSAL CENTRAL INVERTER

SPS - POWER INVERTER
55-220W, Universal Load Profile

Series SPS
REV #: SPS.07.25.02

PROJECT:

TYPE:

CATALOG #:

OVERVIEW

Compact electrical inverter systems for powering 55 to 220 watts of incandescent, fluorescent, induction or LED lighting loads. Pulse width modulated (PWM) output design provides clean, 60 Hz sinusoidal emergency power to fixtures up to 1000 feet away.

STANDARD | ***OPTIONAL***

UL LISTED, DAMP | CEC, SELF DIAGNOSTICS

- *Heavy-duty steel cabinet is finished in white baked-on powder coat paint, providing scratch and corrosion resistance*
- *Optional special color paint (-SP) finishes are available upon request*
- *Models are available for surface, recessed, or t-grid mounting*

FEATURES

- For powering incandescent, fluorescent, induction and LED fixtures*
- True sinusoidal output for maximum compatibility
- Universal 120/277VAC, 60Hz. Input/ Output
- Unit capacities up to 1150 watts
- Soft-start design reduces fixture in-rush current
- Unit may be installed up to 1,000 feet from controlled fixture(s)
- Lumen output from fixture is 100% of nominal
- Unique design eliminates compatibility problems with LED drivers as well as fluorescent and induction ballasts
- Compatible with dimming ballasts
- Normally-ON and/or Normally-OFF load output
- Provisions for local switching capability - Always on during emergency conditions regardless of local switch position
- Emergency fixtures can be ON, OFF or SWITCHED
- Solid-state, line latched low voltage disconnect provides protection against battery deep discharge
- Long life, maintenance-free lead-calcium battery
- Momentary test switch
- AC-ON, Charge-ON and Inverter-ON LED indicators

** Consult factory for compatibility for other lamp types*

ELECTRICAL SPECIFICATIONS

Input

- Input Voltages: 120 or 277VAC ±10%
- Input Frequencies: 60Hz ±2%
- Input Protection: AC line fuses

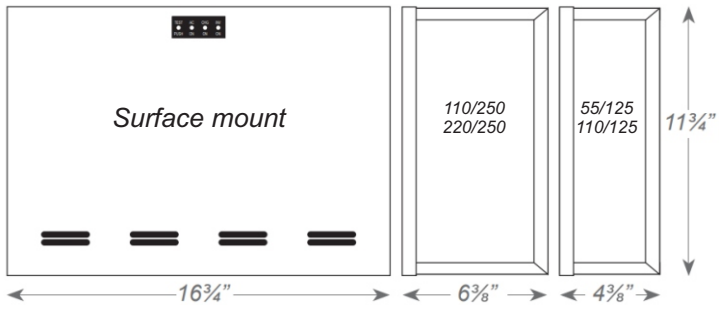
Output

- Output Voltages: 120 or 277VAC, 60Hz
- Efficiency: 98% at full rated load (line)
- Waveform: Digitally controlled sinusoidal
- Static Voltage: ±5% during battery discharge. 0-100% linear load
- Output Frequencies: 60Hz. ±0.3Hz during emergency cycle
- Output Distortion: Less than 3% THO (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: Line and inverter fuses

ORDERING INFORMATION *EXAMPLE:* SPS110/125-R-SDT

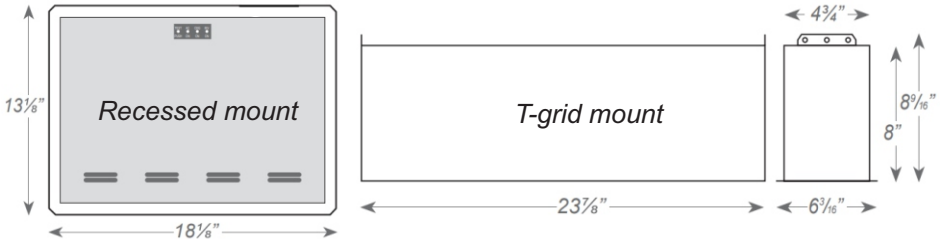
MODEL SERIES	WATTS / VA
SPS	55/125
	110/125
	110/250
	220/250

OPTIONS[1, 2]	
S	Surface mount
R	Recessed mount [3]
T	Plenum-rated T-grid mount [3]
SP	Special housing color (specify)
4C	4 Output circuit switching
RTS	Remote test panel switch
AO	Adjustable output/dimmer bypass
SDT	Self-testing/diagnostics
CEC	Title 20 Compliant



UL LISTED

[1] *Other options available. Consult factory.*
[2] *Some options may impact product UL listing. Consult factory.*
[3] *Available with 55/125 and 110/125 models only.*



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GENERAL SPECIFICATIONS

EL	INPUT/ OUTPUT VOLTAGE	90 MIN CAPACITY WATTS/VA	TOTAL WEIGHT		EFFICIENCY (FULL LOAD)	TOTAL BATTERIES	BATT VOLTS (VDC)	BATT CURRENT	AC INPUT CURRENT (MAX)		THERMAL OUTPUT (BTU)	
			LBS.	KG					120V	277V	ONLINE	EMERGENCY
SPS-55/125	120/277 VAC	55/125	30	14	98%	2	24	3.4	1.2	0.52	9	90
SPS-110/125	120/277 VAC	110/125	42	17	98%	2	24	5.7	1.2	0.52	9	95
SPS-110/250	120/277 VAC	110/250	45	21	98%	4	48	3.3	2.4	1.1	18	163
SPS-220/250	120/277 VAC	220/250	60	27	98%	4	48	5.6	2.4	1.1	18	167

WARRANTY & LISTINGS

- Unit: (excluding lamps) Full coverage against defects in materials and workmanship for 3 years from date of shipment
- Battery: 3 years 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
- UL Listed for damp locations (20 ° - 30 °C)
- FCC Part 15 Class A Compliant

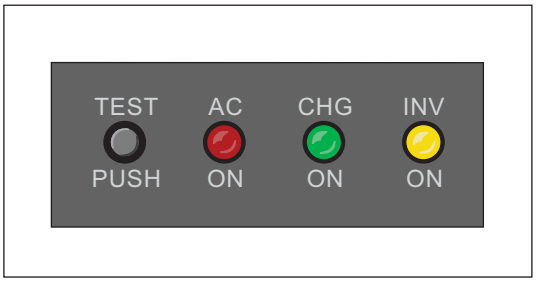
BATTERIES & CHARGER

BATTERIES

- **Battery:** Sealed Lead Calcium (10 year life)
- **Battery Voltages:** (55/125 & 110/125) 24VDC, (110/250 & 220/250) 48VDC
- **Runtime:** 90-minutes standard - based on battery performance at 25°C. *Consult factory for other runtime options*
- **Battery Protection:** Standard low-voltage disconnect protects the battery from damage during prolonged power failures. Reverse polarity, DC overload, and short circuit protection via DC input breaker and fuse.

CHARGER

- **Charger Type:** Fully automatic, temperature compensated, dual-mode charger
- **Power Consumption (charger only):** (55/125 & 110/125) 2.5W Standby, 15W Max; (110/250 & 220/250) 5W standby, 30W Max
- **Recharge duty cycle:** Meets UL924 standard
- **Battery Circuit Breaker:** Battery isolator
- **Controls:** Momentary test switch, AC-ON, Charge-ON and Inverter-ON LEDs
- **Safety:** AC lockout prevents battery discharge prior to initial power up. Brownout protection automatically activates emergency mode upon utility voltage reduction



All SPS systems provide a monitoring panel on the front of the unit to show operating status. This panel provides a test switch for user initiated system tests, and a three-LED array that provides an intuitive visual indication of unit readiness.

ENVIRONMENTAL

- **Altitude:** <10,000ft (3,000m) above sea level without derating
- **Operating Temp:** 20°C to 30°C **(Note:** temperatures outside this range will affect battery performance and life)
- **Relative Humidity:** 95% non-condensing

SPS ADVANTAGE

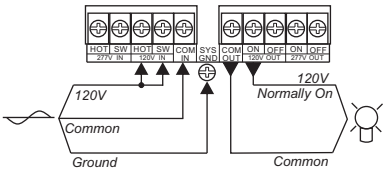
Compared to traditional, discrete emergency lighting units, the SPS Series provides emergency illumination from a single power source - resulting in less maintenance overhead and routine testing expenses. LPS units lower installation costs by powering existing light fixtures during an emergency. Connected fixtures are powered at full brilliancy for maximum egress lighting and occupant safety.

STANDARD WIRING DIAGRAMS

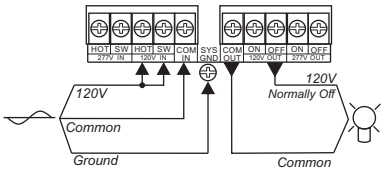
COMBINED NORMALLY ON AND OFF LOADS NOT TO EXCEED LOAD RATING OF SYSTEM

120V

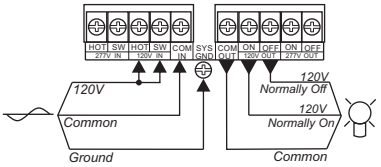
NORMALLY ON



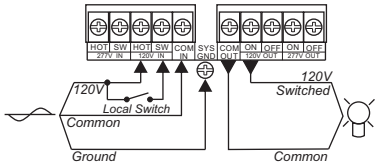
NORMALLY OFF



NORMALLY ON & OFF

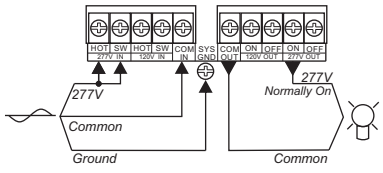


SWITCHED LOADS

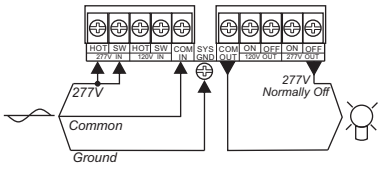


277V

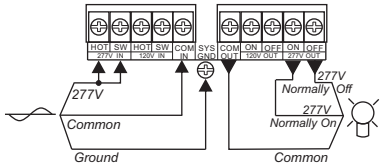
NORMALLY ON



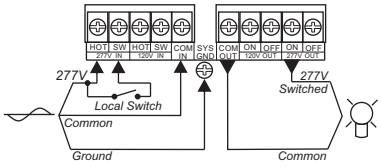
NORMALLY OFF



NORMALLY ON & OFF



SWITCHED LOADS



UNSWITCHED UTILITY INPUT (20A MAXIMUM)

LIGHTING LOAD

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OPTIONAL ACCESSORIES

ADJUSTABLE OUTPUT — *OPTION -AO*

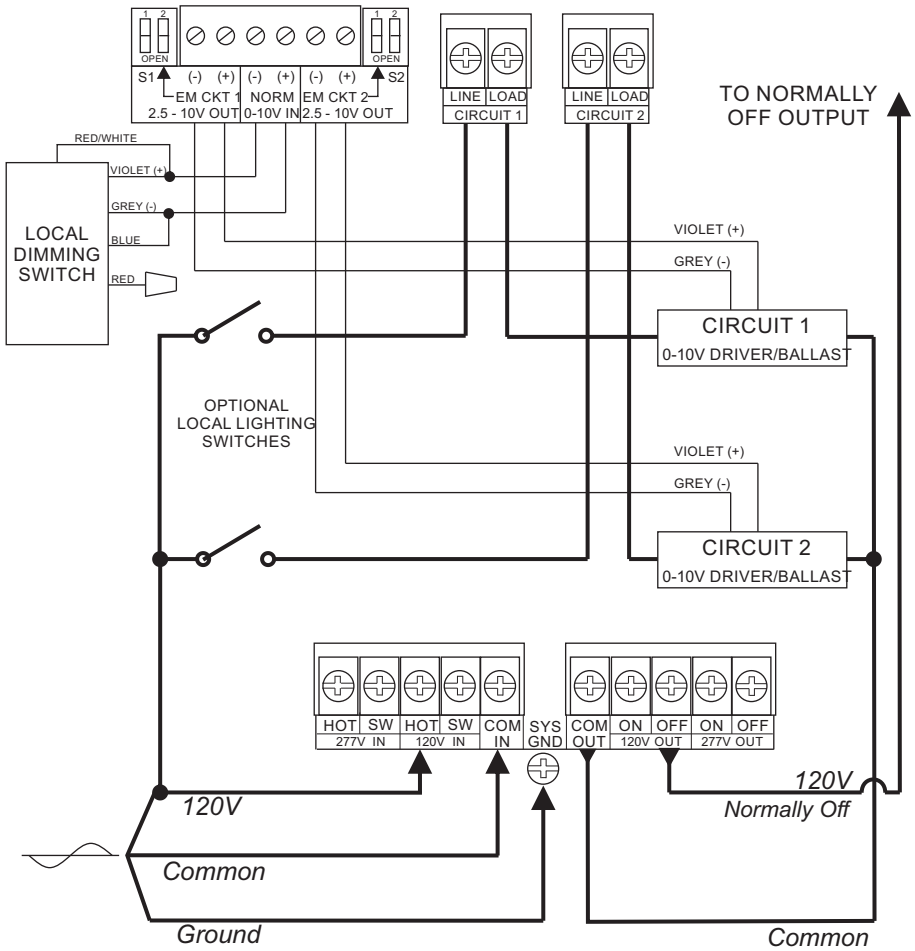
FEATURES

- For use with 0 to 10 volt dimmable LED Lighting circuits
- Provides two user-adjustable emergency output circuits to deliver 25%, 50%, 75% or 100% of full illumination levels to selected LED fixtures during emergency mode operation - regardless of local dimmer control switch position
- Works with all standard 0 to 10 volt dimmer controls
- Reduced emergency illumination levels means fewer total emergency inverter units required on jobs
- Eliminates the need for bypass devices on 0 to 10 volt dimmer controlled fixtures
- All wiring is done within the inverter housing, no need for additional j-boxes
- Allows normally-on, normally-off, combination and switched wiring of connected loads
- System may be remotely mounted up to 1,000 feet
- The AO Option is available on all SPS inverter models

OPERATION

The AO Option is designed for use with the SPS Series of inverter power systems. The option will bypass one 0 to 10 volt local dimmer switch as well as allow user-programmable setting of emergency output lighting levels. Two load terminals as well as two dip-switch sets for independent output settings are provided to allow 25%, 50%, 75% or 100% of nominal illumination output during power outages. This outstanding level of control allows for fewer SPS power systems to be required in typical applications.

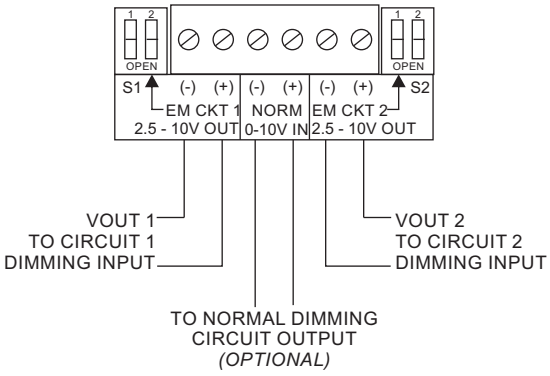
DIMMING OPTION WIRING - 120V OPERATION



DIMMING OPTION PROGRAMMING TABLE

POSITION 1	POSITION 2	VOUT
OPEN (OFF)	OPEN (OFF)	10.0 V
OPEN (OFF)	CLOSED (ON)	7.5 V
CLOSED (ON)	OPEN (OFF)	5.0 V
CLOSED (ON)	CLOSED (ON)	2.5 V

DIMMING OPTION CONTROL WIRING



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OPTIONAL ACCESSORIES

FOUR-CIRCUIT LOCAL SWITCH OVERRIDE — *OPTION -4C*

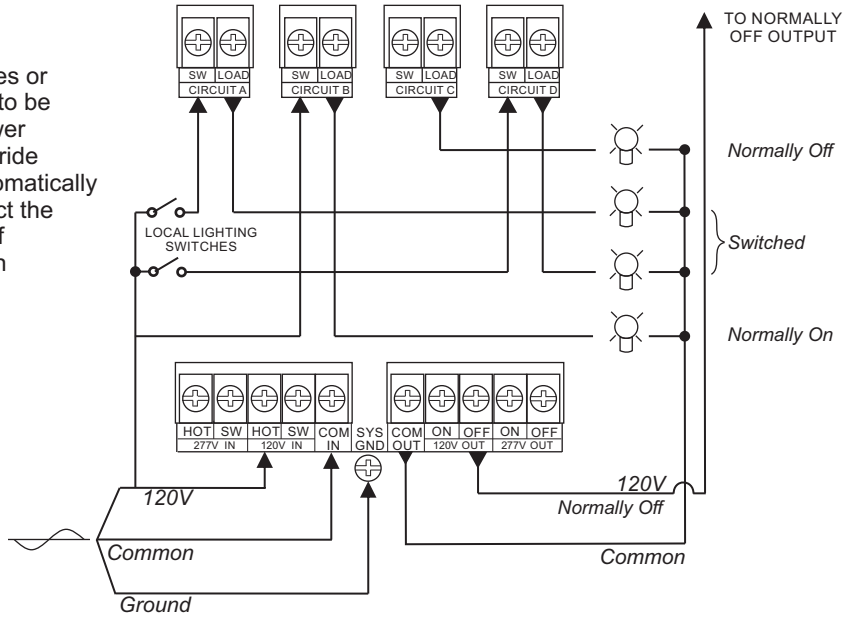
FEATURES

- Provides capacity for four override control circuits
- Provides full power emergency output to connected loads regardless of local control switch position or operating status
- Works with most standard local control devices including wall switches, dimmers, timers, occupancy sensors and ambient light sensors
- Ideal for use with incandescent, fluorescent or LED lighting fixtures
- Eliminates the need for bypass devices or separate inverters for each switched load providing cost efficiency
- All wiring is done within the SPS inverter housing, no need for additional j-boxes
- Allows normally-on, normally-off, combination and switched wiring of connected loads
- System may be remotely mounted up to 1,000 feet
- Compatible with all SPS models

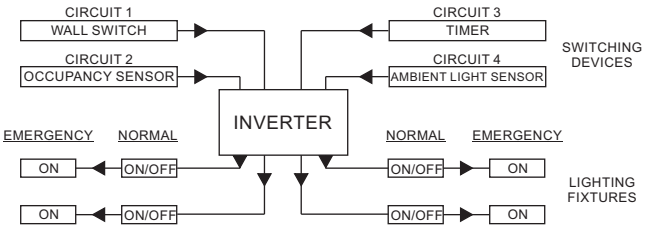
OPERATION

The SPS inverter power system's 4C option allows lighting fixtures or other load types on circuits controlled by local switching devices to be easily connected to and powered by the system during utility power outages. The 4C option provides four local switching device override circuits which, under emergency mode operating conditions, automatically disconnect the load side of the local control device(s) and connect the selected loads to the inverter output assuring normal operation of connected loads regardless of local control device switch position operating status.

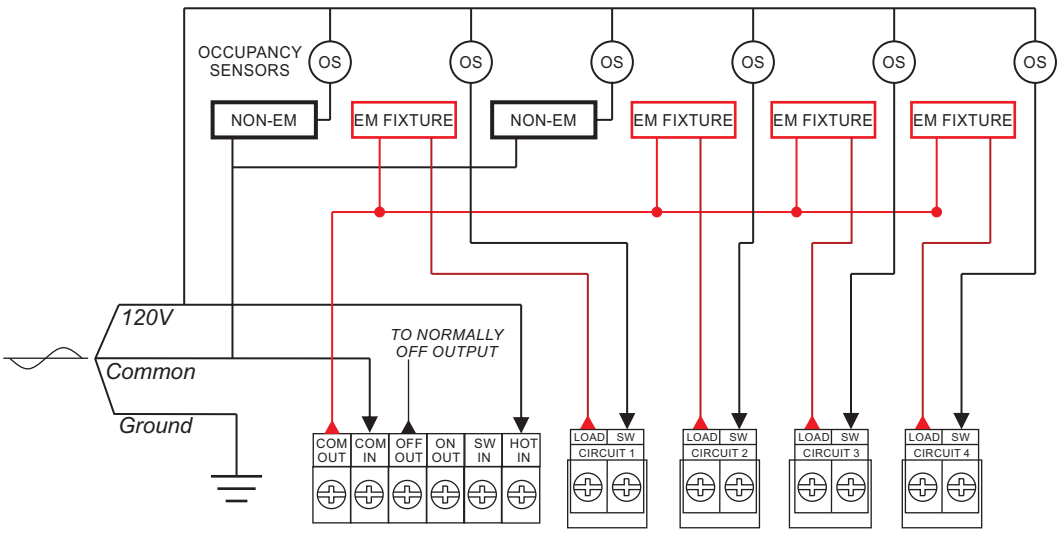
4C OPTION WIRING - 120V OPERATION



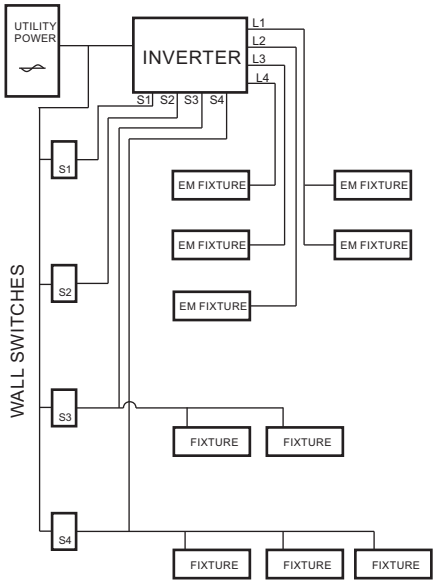
TYPICAL APPLICATIONS FOR 4C OPTION



4C OPTION LINE VOLTAGE SWITCHING



4C OPTION SCHEMATIC



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OPTIONAL ACCESSORIES

SELF TESTING & SELF DIAGNOSTICS — *OPTION -SDT*

FUNCTIONS

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

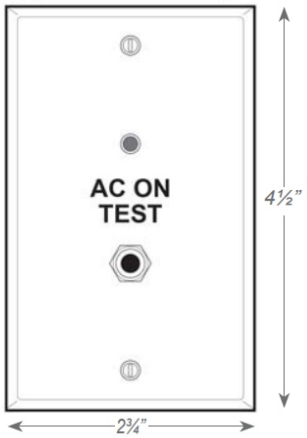
LED INDICATOR	STATUS
Steady GREEN	Normal Service
Blinking RED/GREEN	High Charge Mode
Blinking GREEN	Test Mode
One RED blink	Battery Charger Fault
Two RED blinks	Battery Fault
Four RED blinks	Load Fault

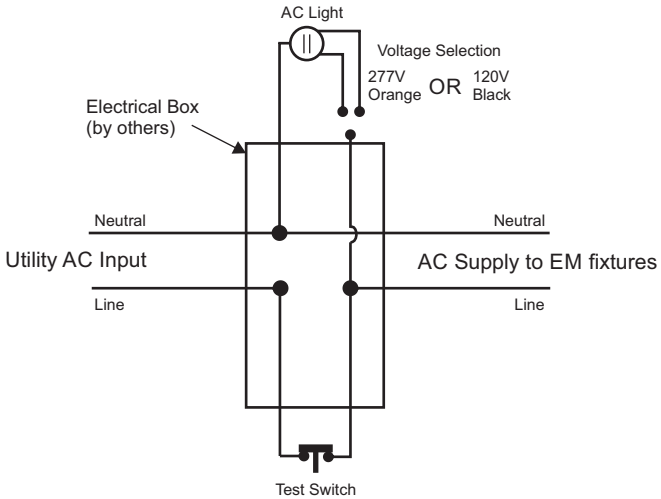
MANUAL TESTING

ACTION	FUNCTION
Push test switch once	30 second Test – One GREEN blink
Double push test switch	30-minute Test – Two GREEN blinks
Triple push test switch	90-minute Test – Three GREEN blinks
Push and hold for 3 sec.	Cancel Test
Push and hold for 6 sec.	System Reset

REMOTE TEST PANEL SWITCH — *OPTION -RTS*

- Remote test switch can be mounted to any standard switch box.
- Suitable for wall or ceiling mount
- Injection-molded, V-0 flame retardant mounting plate in white finish.
- Meets UL924, NFPA 101 Life Safety Code, NEC, OSHA, Local and State Codes.
- Five year warranty





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