

# POWERPATH NAC Power Supply



## Description

The Wheelock POWERPATH (PS-8-LP) by Eaton is a supervised remote power supply/battery charger in a low profile cabinet that is used for supervision and expanded power driving capability of fire alarm Notification Appliance Circuits (NAC). The PS-8-LP is filtered and regulated and provides 8 amps of power distributed across 4 outputs.

The power supplies may be connected to any 12V or 24V (FWR or DC) Fire Alarm Control Panel (FACP) by using a NAC or a "Dry Contact." Primary applications include NAC expansion (supports ADA requirements) and auxiliary power to support system accessories. This unit provides filtered and regulated 24VDC, up to four (4) Class "B" two (2) Class "A" or two (2) Class "B" and one (1) Class "A" Notification Appliance Circuits. With the optional plug-in PS-EXP module the unit supports (8) Class "B" or (4) Class "A" Notification Appliance Circuits. Additionally, an auxiliary power output of 2.5 Amps (disconnected upon AC power loss or an alarm condition) or up to 0.240 A of constant power on the PS-8-LP.

The Wheelock power supplies can accommodate 7 AH batteries inside its lockable chassis. Using an external battery cabinet it can charge up to 33 AH batteries (pending UL testing). Two FACP NAC circuits or two "Dry" contact initiating circuits can be connected to the inputs. These inputs can then be directed to control supervision and power delivery to any combination of the four (4) outputs. Each output is rated at 3.0 Amps (Class "B") or (Class "A") and can be programmed to generate a steady or Code 3 temporal horn sound and a strobe output under alarm condition. Total load for PS-8-LP NAC circuits must not exceed the power supplies rated output.

The power supplies under non-alarm condition provide independent supervision for Class "A" and Class "B" FACP NAC circuits. In the event of circuit trouble, the FACP will be notified via the POWERPATH steered input (IN1 or IN2). In addition there are two sets of trouble reporting terminals, one used for AC power loss reporting and the other for all troubles. The AC power loss reporting, on the common trouble terminals and on IN1 or IN2, can be delayed for either 30 seconds or 170 minutes. The AC power loss terminals will always report the trouble within 1 second after loss of AC power.


The PS-8-LP power supplies are UL listed under UL Standard 864, 9th Edition to be used with any 24 volt listed regulated notification appliances. They include the capability to synchronize Wheelock strobes and horns and to silence the horn signal when horn/strobes are operating on two wires.



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## Features

- Low Profile
- Inputs
  - 120VAC, 50/60Hz, 4.25 Amps and 5.32 Amps Operating Power in Alarm
  - 240VAC, 60Hz, 3.22 Amps Operating Power in Alarm
  - 24VDC Battery Backup Connection
  - Two (2), 12V or 24V NAC Initiating Circuits (8-33V at 5mA)
  - FWR or DC
  - Two (2) "Dry" Contact initiating Circuits
  - Accepts two (2) Class "A" or two (2) Class "B" circuit inputs
  - Built in battery charger for sealed lead acid or gel type batteries
- Outputs
  - NAC outputs are 24VDC, 3.0 Amps each, power limited
  - 8 Amps on PS-8-LP total alarm current
  - Capable of four (4), Class "B" circuits
  - Capable of two (2) Class "A" circuits
  - Capable of one (1) Class "A" circuit and two (2) Class "B" circuits
  - Capable of (8) Class "B" or four (4) Class "A" circuits with optional PS-EXP module
  - Temporal (Code 3), constant voltage output, Wheelock Sync output or True input to output follower mode
  - Built-in Wheelock synchronization mode that can be fed to any or all of the output circuits
  - Input and output can be synchronized with "IN>OUT SYNC" mode (DSM, 2nd POWERPATH or FACP with synchronization protocol is required)
  - Audible silence capability
  - Filtered and electronically regulated output
  - 2.5 Amp auxiliary power limited output with reset capability. (Removed upon AC loss or alarm. Automatic reset 30 seconds after AC power returns or the alarm condition is over) or 0.240 Amps PS-8-LP of auxiliary power limited output which remains on during AC loss or an alarm condition when configured for 24 hour battery backup
- Supervision
  - Compatible with 12V or 24V (FWR or DC) FACP
  - Signaling appliance circuits are supervised and steered to either IN1 or IN2
  - 10K Ohm, 1 Watt (Wheelock Model #MPEOL) End of Line Resistor (EOLR) for supervision of all outputs
  - 37 distinguishable trouble diagnostics
  - AC loss trouble reported over a separate set of contacts (delay of 1 second)
  - All troubles are reported over the common trouble contacts (AC loss can have a delay of 30 seconds or 170 minutes)
  - Automatic switchover to standby battery when AC fails
  - Thermal and short circuit protection with auto reset
  - Input and output status LED indicators
  - AC fail supervision
  - Battery presence and low battery supervision
  - Ground Fault Detection, with diagnostics to indicate which circuit fault is on
  - Latching LEDs for NAC trouble annunciation and Diagnostic trouble LEDs (latching can be disabled)
- Power
  - Not battery dependent
- Automatic switch over to standby batteries when AC fails
- Supports sealed lead acid or gel type batteries
- Fused battery protection
- Thermal and short circuit protection with auto reset
- Supports 7AH batteries
- Compliance
  - Approvals Include: UL Standard 864, UL 1481
  - Compliant with NFPA 72
  - Factory Mutual (FM)
- Operating Modes (refer to Installation Manual):
  - Normal Mode: Provides constant 24 VDC output upon initiation by a voltage to input IN1 or IN2 or by a contact opening on DRY1 or DRY2. The unit returns to standby mode when the input is deactivated.
  - Wheelock Sync Mode: Provides signals for synchronization of patented Wheelock audible and strobe notification appliances. Audibles can also be silenced in this mode while the strobes continue to flash.
  - In>Out Sync Mode: Accepts a synchronization signal on the input to provide a coded output or synchronized output. This signal may come from a FACP, another POWERPATH or a Wheelock DSM synchronization module. Caution: Do not use strobes on coded output circuits.
  - True Input Follower Mode: Accepts a coded signal on the input to provide a coded output with the same timing as the input. The signal may come from a FACP, another POWERPATH or other coded source. Caution: Do not use strobes on coded output circuits.
  - Temporal Mode: Codes the output voltage in a code-3 temporal pattern to drive audible appliances such as horns, bells or chimes. Caution: Do not use strobes on coded output circuits.

**Note:** All CAUTIONS and WARNINGS are identified by the symbol . All warnings are printed in bold capital letters.

## WARNING

**PLEASE READ THESE SPECIFICATIONS AND ASSOCIATED INSTALLATION INSTRUCTIONS CAREFULLY BEFORE USING, SPECIFYING OR APPLYING THIS PRODUCT. VISIT [WWW.COOPERNOTIFICATION.COM](http://WWW.COOPERNOTIFICATION.COM) OR CONTACT EATON FOR THE CURRENT INSTALLATION INSTRUCTIONS. FAILURE TO COMPLY WITH ANY OF THESE INSTRUCTIONS, CAUTIONS OR WARNINGS COULD RESULT IN IMPROPER APPLICATION, INSTALLATION AND/OR OPERATION OF THESE PRODUCTS IN AN EMERGENCY SITUATION, WHICH COULD RESULT IN PROPERTY DAMAGE, AND SERIOUS INJURY OR DEATH TO YOU AND/OR OTHERS.**

Table 1. Specification &amp; Ordering Information

Model	Description
PS-8-LP	8 amp power supply, red enclosure, 120V
PS-8E-LP	8 amp power supply, red enclosure, 220V
PS-8-B-LP	8 amp power supply, black enclosure, 120V
PS-8E-B-LP	8 amp power supply, black enclosure, 240V
PS-8-EXP-LP	8 amp power supply with preinstalled expansion module, red enclosure, 120V
PS-8E-EXP-LP	8 amp power supply with preinstalled expansion module, red enclosure, 240V
PS-EXP	4 class B or 2 class A expansion module

Table 2. Specifications

Physical	
Weight	PS-8-LP: 11.5lbs. (Ship) 9.4lbs (Unit); PS-EXP: 1lb. (Ship & Unit)
Dimensions	PS-8-LP: 17"H x 13"W x 3.5"D; PS-EXP: 4.3"H x 3.7"W x 1"D
Enclosure can house up to two 7 AH batteries	
Input Circuit	
Input voltage range	8 to 33 VDC
Input Current @ 12 VDC	0.005 amps
Input Current @ 24 VDC	0.005 amps
Output Circuit	
Four (4) Class B or Two (2) Class A or One (1) Class A and Two (2) Class "B" or 8 Class B or 4 Class A (optional PS-EXP module necessary)	24 VDC @ up to 3 amps per circuit
Continuous duty up to 3 Amps per circuit, up to 4 Amps maximum per panel	
Standby Current	0.129 Amps
Alarm Current	0.129 Amps
Primary PS-8-LP (120VAC models)	105 to 130 VAC 50/60 Hz @ 5.32 Amps
Primary PS-8-EXP-LP (240 VAC models)	210 to 260 VAC 50/60 Hz @ 3.22 Amps
Secondary Power Charging Capacity	32 Amp hours @ 0.750 Amps per hour
Aux Output	
CP Mode	PS-8-LP up to 250 mA
MP Mode	2.5A during non alarm

## Architects and Engineers Specifications

The power supply shall be Wheelock POWERPATH PS-8-LP, or equivalent. The unit shall be stand alone power supply intended for powering fire alarm notification appliances via its own Notification Appliance Circuit(s) (NAC). The unit shall be UL 864 Listed for power limited operation of outputs and comply with NFPA 70 (NEC), article 760.

The power supply shall support a full 8A of notification power even if the battery is in a degraded mode and only AC power is connected.

The power supply shall be activated by a standard Notification Appliance Circuit (NAC) from any Fire Alarm Control Panel (FACP) or a "Dry contact" opening. The units shall be 8 ampere, 24 VDC, regulated and filtered, supervised remote power supply/charger. It shall operate over the voltage range of 8 to 33 VDC or FWR. The primary application of the unit shall be able to expand fire alarm system capabilities for additional NAC circuits to support ADA requirements and to provide auxiliary power to support system accessories or functions. The power supply shall provide four Class "B", two Class "A", or two Class "B" and one Class "A" NAC circuit(s). Eight Class "B" or Four Class "A" circuits shall be available with an optional PS-EXP module. The PS-8-LP unit shall supply up to 240 mA of auxiliary power that is available during both non-alarm and alarm or auxiliary power of not less than 2.5A at 24 VDC during non-alarm. The power supply shall be capable of charging batteries of up to 33 ampere hours per NFPA 72 at maximum rate of 0.750 Amps per hour.

Input activation options shall be from not less than two NAC circuits or Dry Contact closures. These inputs shall have the capability of being directed to any combination of the four NAC circuit outputs. Each NAC circuit output shall be rated at 3 amperes for Class "B" applications or 3 amperes each for Class "A". The outputs shall be programmable to generate a steady or Temporal (Code 3) output and or a synchronized strobe or horn output. The power supply shall provide independent loop supervision for either Class "A" or Class "B" FACP NAC circuits and shall have the capability to "steer" all alarm or trouble conditions to either incoming NAC circuit. The units shall have common trouble terminals. The power supply shall be powered from a 120 VAC source with a current consumption of 5.32 amperes max. The unit shall incorporate short circuit protection with auto reset. The power supply shall incorporate a built in battery charger for lead acid or gel type batteries with automatic switchover to battery back up in the event of AC power failure. The charger shall incorporate fused protection for the batteries and have the ability to report low battery and/or no battery condition(s). Standby current for battery back up shall be 0.129 Amps max. The power supply shall have the ability to latch trouble LEDs so the circuit in trouble can be identified. The cabinet dimensions shall be 17" H x 13" W x 3.5" D.

UL 864, UL 1481, FM

**Note:** Due to continuous development of our products, specifications and offerings are subject to change without notice in accordance with Cooper Wheelock Inc., dba Eaton standard terms and conditions.



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