

SPS-6B Series 12/24 Power Supply/Charger
 12VDC @ 5 Amps / 24VDC @ 3 Amps Life Time Warranty



SPS-6ED8

Features SP-6B & SPS-6B:

- Small – Light – Efficient – Clean Power
- Universal AC Input 90-250vac
- Extraordinary Brown Out Capability, Operational from 60-264vac
Not evaluated by UL
- 12vdc 5A/24vdc 3A Switch Selectable
- Smooth Linear Output Performance
- Input and Output Surge Protection
- Precise Battery Regulation for Wet, AGM, and sealed Lead Acid Battery(s)
- Power Limited Output with Thermal Protection
- Reverse Battery Protection
- AC , Trouble, and DC LED's
- Battery Online, No Drop or Switch Over with AC Power Fail
- Quality Manufactured in the USA

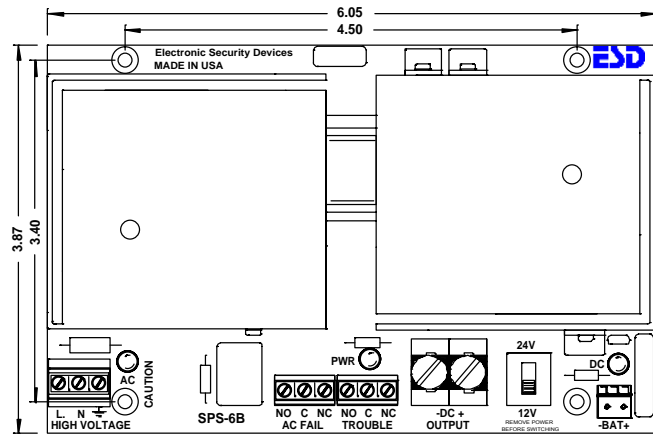


SPS-6B Supervised Features:

- UL Listed Access Control & Burglar Alarm systems
- Relay "C" Contacts Indicates AC Power Status
- Relay "C" Contacts Indicates Low Battery
- Amber LED Indicates Power Normal
- Battery Cut-Off Relay Disconnects Battery(s) when Depleted
- DC Output is Class II Power Limited

Partial list of ordering examples:

SP-6B	12v/24v Power supply/charger module
SPS-6B	Supervised Power supply/charger module
-E (PS-1485)	Mounted in 9"x14" Enclosure
-1ACI (PDD-8ACI)	With 1, 8 Output Access Control Interface
-1PCI (PDD-8PCI)	With 1, 8 Output Power Control Interface
-FT (PDD-FT)	With 1, EOL Fire Transfer Relay
SPS-6ED8	SPS-6E with 8 fused class II outputs
SPS-6EC8	SPS-6E with 8 PTC CB class II outputs



Description / Instructions

The SP & SPS-6B are heavy duty self contained, efficient, clean, linear performance off-line switching power supplies that are slide switch selectable between 12vdc at 5 Amps, and 24vdc at 3 Amps. Both have a precision lead acid battery(s) charger that obtains maximum battery life while providing a 12vdc or 24vdc uninterruptible power supply for access control security systems. The universal AC input allows these power supplies to be powered anywhere in the world without any alteration. The SP & SPS-6B have exceptional brown out capability with operation down to 60vac. The SP & SPS-6B have an extensive

filtering system that provides linear output performance. The SP & SPS-6B are electronically protected against Battery(s) reversal, shorting or overloading. The DC output is power limited, and thermally protected. Each of these protective features will self-restore.

Before connecting load and battery(s), slide 12v/24v selector switch to desired voltage. **Caution**, damage can occur when switched with DC output load. Confirm proper voltage before connecting devices.

The SPS-6B is UL Listed and has the additional supervisory features of a Battery disconnect relay



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03/01/05 © Technical Literature jdb SP/SPS-6B installation subject to change
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SPS-6B 12v/24v Series Power Supply continued

when battery(s) are depleted, a set of form "C" relay contacts that indicates AC power failure, a set of form "C" relay contacts to indicate low battery(s) and the DC Output is Class II power limited. Depending on load, low battery trouble indicates 50-75% battery capacity

remaining. Because the output of the SPS-6B is Class II Power Limited, all output devices connected to the SPS-6B would automatically become class II Power Limited.

SPS-6B Specifications / Instructions

AC Input: L, N, G - 3P Terminal block

Safety block with recessed hardware insulation that will accept up to 12AWG

L= Line, N= Neutral, and G = Ground

AC Input 90-250vac/240W

AC Input Operational 60-264vac

Optional 3 wire line cord P/N: HA-LC3SZIP

AC LED Indicator (Panel mounted on the door of PS-1485 Enclosure)

The AC indicator is a bi-color green and red led. This LED off with AC at the terminals would indicate a blown fuse link. A blown AC fuse link would indicate catastrophic failure and must be returned to the factory for repair.

DC VOLTAGE SELECTOR SWITCH

The selector switch is on the right side of DC Output Terminal Block. As marked on board, up is 24vdc and down is 12vdc. **CAUTION** To prevent damage, remove DC load and battery(s) connections before switching selector switch up or down.

DC OUTPUTS: 2P Terminal block

Note: There is up to a 10 second delay for initial turn on

Output voltage Nominal 12vdc/24vdc
Output voltage Typical AC on 13.70/27.40
Output range with rated load 10.4–13.7/22.7–25.2vdc
Output continuous current (UL rating) 5A/3A
Load regulation no load to max25%Typ
AC Line regulation 85-264vac03%Typ
Output ripple & noise at full load . 180/25mv pp/rms Typ
Current Overload Short Circuit Protection Yes
Thermal runaway Protection Yes
Current Overload and Thermal shutdown will auto-restart without removing load.

Ambient operating temperature range ... 32°F to +120°F

Product was not evaluated at UL for outdoor use

Storage Temperature -60°F to 190°F

Switching Frequency 132KHz

DC LED Indicator (Adjacent to battery Header) Red

Battery Charging: (Header plug marked [-Bat+])

Caution – To avoid spark, apply AC before connecting battery cable to battery.

The battery charger is precision set to float charge 12V or 24V sealed or wet lead acid batteries. Two 12V batteries are connected in series for 24V. A 12" battery cable assembly is provided that plugs from module to

battery. Red (+) 12vdc, Black (-) Neg.

Optional 36" battery cable (1) P/N: WA-36IBAT

Battery(s), any type of lead acid 12v 4AH-40AH

UL evaluated 7AH

Battery(s) recharge 400ma max
Battery(s) average recharging current 250ma
Battery(s) PTC self resetting Circuit Breaker 6A PTC
Battery(s) Reverse hookup protection Yes .4A PTC
To estimate the recharge time in hours for depleted battery(s), multiply the AH rating times 4 (AH x 4). As an example, a 24v system with two depleted 12v 7AH batteries would take about 28 hours to re-charge. See battery standby selection table on page 3. We also have a more elaborate battery standby table on our website at <http://www.securitypower.com/an3batby.pdf>.

SPS-6B Supervised added features:

UL Listed

DC Output Class II Power Limited Yes

AC Status Output Relay: 3P Terminal block

AC Fail "C" contacts rating 2A/120vac
Three position AC fail terminal block marked "NO, C, NC" are shown in the Normal, energized, AC ON condition.

Trouble Output: 3P Terminal block - annunciates

low battery "C" contacts rating 2A/120vac
Three position trouble terminal block is marked "NO, C, NC" are shown in the Normal, energized, no trouble condition.

Trouble battery voltage (low) 12.1vdc/24.2vdc

Trouble LED Indicator On Green Normal

Battery Cutoff

Battery Cutoff Voltage 9.8vdc/19.6vdc

Battery Cutoff internal relay contacts 15A
Battery Cutoff Relay is normally energized for fail-safe operation.

Physical

SP/SPS-6B Module Dimensions 6.05"Lx3.87"Wx2.28"H
Height includes 7/16" standoffs, not provided with module only.

Mounting Holes Center to Center 4.50"W x 3.41"H

SPS-6B module only Weight 12.4oz

SPS-6E (SPS-6B in enclosure) 14" x 9" x 3.50"

SPS-6E (with enclosure) Weight 6.85Lbs

UL Approvals for SPS-6B

UL 294 – Access Control System Unit

UL 603 – Power supplies for Use with Burglar-Alarm Systems

ULC S318-96 – Power supplies for Burglar Alarm Systems

ULC S533-02 – Standard for Egress Door Securing and Releasing Devices

Safety

SP-6B & SPS-6B meets safety UL1950 & EN60950

Note: evaluation to these standards was not conducted by UL.

Maintenance

The power supply and stand by battery(s) should be tested at least once a year as follows:

1. Check LED's for normal state. AC ON Green, Trouble Normal ON Green, DC ON Red.
2. Check output voltage with normal load. For 12v setting, voltage should read between 13.60 and 13.80vdc and 27.1 and 27.6vdc on the 24v setting. This assures proper voltage to float charge batteries.
3. Disconnect AC input. AC LED should be off, all other LED's should remain normal.
4. Check DC Output to be above 12.0vdc for 12v setting and 24.0vdc for 24v setting. This checks standby batteries to be operational. Sealed lead acid batteries have a typical life of 3 to 5 years.
5. Re Apply AC and verify AC LED ON.

Battery Selection

The table below shows typical standby time in hours for various loads and batteries. The table works for either 12vdc or 24vdc. The SPS-6B was evaluated at UL with a 7AH sealed lead acid battery with a 1 hour stand by.

Approximate Battery Standby Time Table with a reserve of 3 Amps for 5 minutes for Alarm



Total Output Amps	4Ah Battery Standby	7Ah Battery Standby	12Ah Battery Standby	24Ah Standby	40Ah Standby
.5A	5.5 Hrs	12 Hrs	20 Hrs	40 Hrs	65 Hrs
1A	2.5 Hrs	5 Hrs	9 Hrs	19 Hrs	32 Hrs
1.3A	2 Hrs	4 Hrs	7.2 Hrs	15.5 Hrs	24 Hrs
2A	1 Hrs	2 Hrs	5 Hrs	10 Hrs	15 Hrs
3A	.5 Hrs	1 Hrs	3 Hrs	6 Hrs	9.5 Hrs
4A	.5 Hrs	.8 Hrs	2 Hrs	4 Hrs	8 Hrs
5A	NA	.6 Hrs	1.4 Hrs	3 Hrs	7 Hrs
6A	NA	.4 Hrs	1 Hrs	2 Hrs	4 Hrs

The recharge table below gives approximate recharge times for different loads and battery sizes. The table is based on batteries depleted to battery cut-off and recharged back to approximately 90% capacity.

SPS-6B 12v/24v Series Power Supply continued

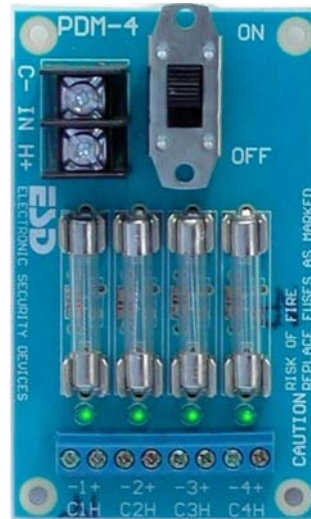
PDM-4 / PDM-8 / PDM-9 Multi Output Low Voltage Power Distribution Modules Life Time Warranty

Features/Specifications:

- Converts a single AC or DC (12 or 24v) Input to 4, 8, or 9 protected outputs with fuses or circuit breakers
- 1500 Watt surge protection on PDM-8 Input rated 22 Amps @ 32 volts AC or DC
- All PTC circuit breaker ratings are holding current at 130°F per UL Standards
- Main Power Green/Red LED Indicates AC, DC or Reversed DC Input on PDM-8 and PDM-9
- Each output has a green status LED indicator
- Main Fuse / Power Pull is standard ATO Automotive size on PDM-8 and PDM-9
- ON / OFF Power Switch on PDM-4
- Circuit Breaker Models with Rated Output 1.42 Amps or below are Class II Power Limited
- PDM-8 & PDM-8C are   LISTED
- PDM-4, PDM-4C, PDM-8, & PDM-8C are UL listed Sub Assemblies suitable for Access Control and Burglar alarm systems
- All Input Terminal blocks and output terminal blocks on the PDM-8 module are rated 40A with a wire range of 10 – 18AWG
- Output Terminal blocks on the PDM-4 and PDM-9 are rated 10A with wire range 16-30AWG
- Size: PDM 4 3.75"H x 2.22"W x 1"D Mounting: 3.41"H x 1.87"W
Size: PDM-8 3.87"H x 4.84"W x 1"D Mounting: 3.41"H x 4.49"W
Size: PDM-9 2.20"H x 4.85"W x 1"D Mounting: 1.31"H "C" x 4.49"W
- Quality Manufactured in the USA

Ordering details for Distribution Modules

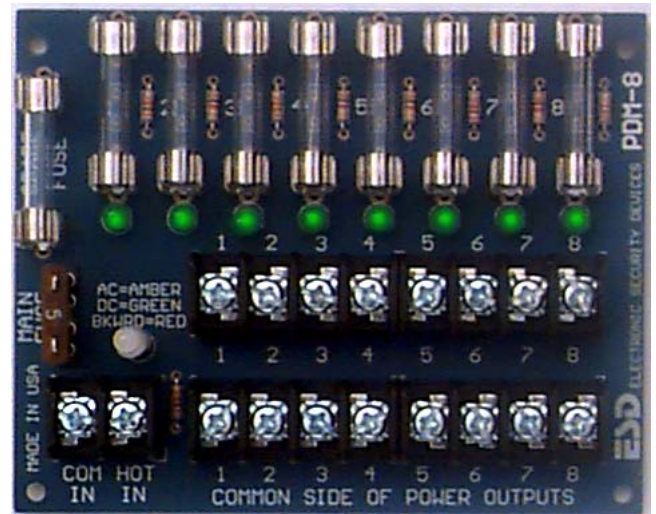
PDM-4-FFF	4 Fused Outputs with power switch and status LED's.
PDM-4C-CCC	4 PTC Circuit Breaker Outputs with power switch and status LED's
PDM-8-MMM-FFF	8 Fused Outputs with ATO Main/power pull fuse, status LED's and 1500 watt surge protector.
PDM-8C-MMM-CCC	8 PTC Circuit Breaker Outputs with ATO Main/power pull fuse, status LED's and 1500 watt surge protector.
PDM-9-MMM-FFF	9 Fused Outputs with ATO Main/power pull fuse and status LED's.
PDM-9C-MMM-CCC	9 PTC Circuit Breaker Outputs with ATO Main/power pull fuse and status LED's
FFF Fuse Options	FFF = Fuse Rating in Amps (x.xx) standard 3agc Size: (050 = 500ma); (100 = 1A); (200 = 2A); (300 = 3A); (400 = 4A); (500 = 5A)
CCC Circuit Breaker options	CCC = PTC part number equaling the holding current in Amps at UL rating 50C: (090 = .7A); (135 = 1.04A); (160 = 1.23A); (185 = 1.42A); (250 = 1.93A); (400 = 3.08A); (500 = 3.85A); (600 = 4.62A)
MMM Main Fuse options	MMM = Main Fuse Rating in Amps (xx.x) – Standard Automotive ATO Size: (050 = 5A); (075 = 7.5A); (100 = 10A); (150 = 15A); (200 = 20A); (250 = 25A)



PDM-4
PDM-4C
PDM-8
PDM-8C



UL 294 – Access Control System Unit
UL 603 – Power Supplies for Use with Burglar-Alarm Systems
ULC S318-96 – Power supplies for Burglar Alarm Systems
ULC S533-02 – Standard for Egress Door Securing and Releasing Devices



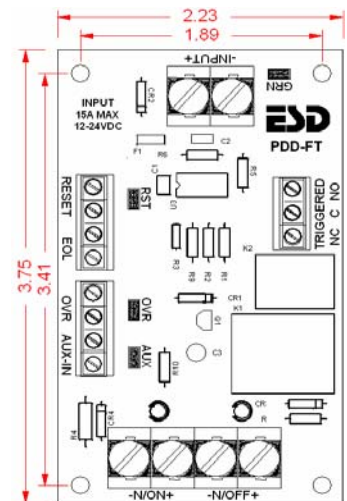
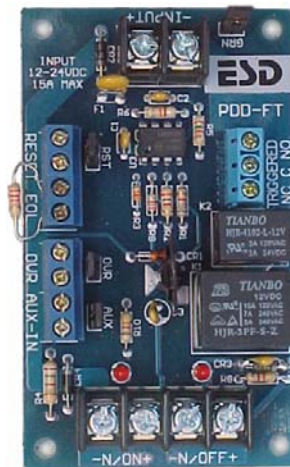
PDM-9
PDM-9C
Below
NOT EVALUATED
BY UL



PDD-FT DC Fire Transfer Relay with EOL Trigger

Features:

- Non Latching or Latching mode
- 12 or 24VDC Operation
- Reverse polarity protected
- Normally ON & Normally OFF Output
- Output LED's indicate condition
- Outputs can be Triggered with:
 1. N/O or N/C Switch with Supervised (EOL)
 2. N/C Switch with (OVR) over ride
 3. N/C Switch with AUX-IN auxiliary
 4. Ground on any trigger input when (GRN Jumper is enabled
- Form C Contacts Indicates Trigger Status
- 12 Amp Transfer Relay Contacts
- Lifetime Warranty - Made in the USA
- UL Listed Sub Assembly for Access Control and Burglar Alarm Systems



Description

The PDD-FT transfers the input power from the normally ON output pair “-N/ON+” to the normally OFF output pair “-N/OFF+” when triggered. The unit is triggered when the supervised (EOL), end of line resistor is opened or shorted. The triggered form C user contacts indicate the state of the trigger. A typical application of the PDD-FT is to place a distribution board on one or both of the outputs, one of our power supplies on the Input, then connecting the EOL at a fire alarm panel to transfer the power from one distribution board to another when the Fire alarm panel is in the alarm condition. The transferred power would be used to unlock doors, shut down air systems, or return elevators to an exit floor.

Specifications / Instructions

Input Power “-INPUT+”: 2 Pos. Terminal block with self clamping screws will accept multiple 12awg wires – Operates with 12 or 24vdc input. The input current is 70ma to control relays plus whatever output load is. The positive side of the power is connected to the swing arm of the transfer relay which directs the power to the proper output.

Output Power: 4 Pos. Terminal block Self clamping screws will accept multiple 12awg wires. “-N/ON+” are normally ON output power. This output is ON when the PDD-FT is not triggered. “-N/OFF+” is normally OFF. This output is ON when this unit is triggered. The transfer relay is rated at 15A@12v and 12A@24vdc.

Power LED’s: A red led above each output indicates which output is ON.

Input Trigger EOL: 2 Pos. Terminal block – Will accept 14-28awg wire. This input must see the 2.2K ohm end of line resistor to be in the normal set condition. A change in resistance of + or – 60% will cause the trigger relays to drop out in the Triggered mode. This change in resistance is caused by the supervised wire between the EOL at the fire panel and the PDD-FT being shorted or opened. The EOL supervises the pair of wires.

Input Trigger OVR: 2 Pos. Terminal block - Will accept 14-28awg wire. This pair is normally closed, can be connected to an override switch. When OVR is open, unit will trigger.

Input Trigger AUX-IN: 2 Pos. Terminal block - Will accept 14-28awg wire. This pair is normally closed and can be connected to an auxiliary device. When AUX-IN is open, unit will trigger.

RESET 2 Pos. Terminal block – Will accept 14-28awg wire. When this pair is shorted, input triggers do not latch. If pair is open, the input triggers will latch until alarm is corrected and RESET is momentarily closed to reset trigger.

Jumpers RST – OVR – AUX are jumpers with handles to short adjacent terminal blocks that are not used. You may move the jumper to one header to open short to enable adjacent terminals.

Jumper GRN – This jumper is used to enable ground supervision in the inputs. If the jumper is connected to both headers, and the mounting hole adjacent to jumper is connected to ground with a star washer, a ground on any of the input triggers will cause a trigger.

Trigger Status Terminal block - Will accept 14-28awg wire. Form C Contact with a 3 Amp rating will indicate the condition of trigger. C and NO are normally open in the normal energize not triggered state. C and NC are normally closed in the normal energized not triggered state. These contacts may be used to provide feedback to the FACP or other annunciating devices.

The PDD-FT is available as a module or mounted in an enclosure with any of our DC Power Supplies.

Module dimensions 2.23”W x 3.75”L x .8”H

Mounting holes dimensions 1.89” x 3.41”

Weight: 2.2oz

UL Approvals for PDD-FT

- UL 294 – Access Control System Unit
- UL 603 – Power supplies for Use with Burglar-Alarm Systems
- ULC S318-96 – Power supplies for Burglar Alarm Systems
- ULC S533-02 – Standard for Egress Door Securing and Releasing Devices

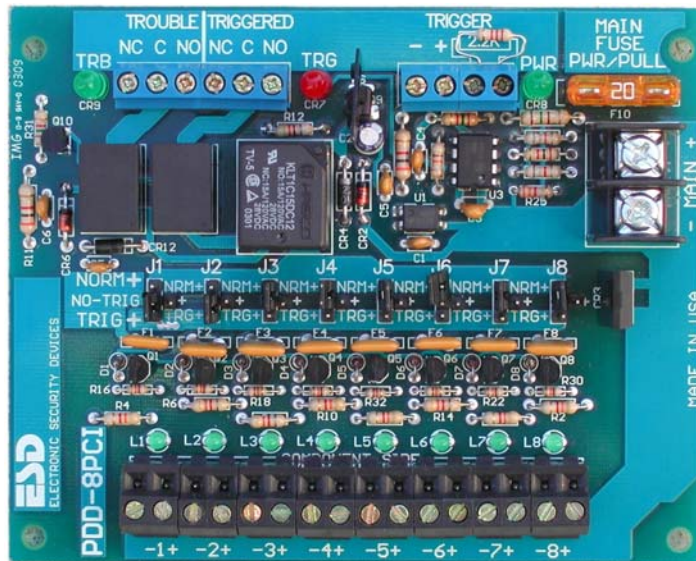
PDD-8PCI DC Power Distribution with Supervised Interface module

Distributed Power Control Interface for Fire, Access, HVAC, Elevator, and Security



Features:

- **8 class II Power Limited Outputs with Auto-Resetting Circuit Breakers**
- **Each Output is Individually Selectable to Turn On, Turn Off, or always ON when Triggered**
- **Outputs can be triggered with:**
 1. **Voltage or Reverse polarity (opto isolated)**
 2. **N/O or N/C switch with supervised EOL**
- **Form C Contacts (TRIGGERED) and Red LED (TRG) Indicate Trigger Status**
- **Form C Contacts (TROUBLE) and Green LED (TRB) Indicate:**
 1. **One of the output circuit breakers is tripped**
 2. **Main Fuse Blown or no power on input**
- **Operates with 12 or 24VDC**
- **Each Output pair has a Removable Terminal Block**
- **Each Output has a Green Status LED**
- **Main Power has Green Status LED**
- **Main Power Pull and Fuse**
- **Lifetime Warranty**
- **UL Listed Sub Assembly for Access Control and Burglar Alarm Systems**



Description

The PDD-8PCI power distribution control interface converts a main non-power limited DC power source to 8 class II power-limited outputs that can be controled by a (FACP) Fire Alarm Control Panel. Each output can be selectively set (J1-J8) to turn ON or to Turn OFF when triggered by the panel. The FACP or other control system can interface to the PDD-8PCI with either of two or both supervised trigger inputs. One trigger is activated with a reverse polarity voltage from a FACP. This trigger is fully isolated with an optical isolator. The other trigger is an (EOL) 2.2K End Line Resister input which will accept a (N/O) Normally Open switch or a (N/C) Normally Closed switch.

When triggered, the Trigger Transfer Relay removes power from the NORM + buss and transfers it to the TRIG + buss. Jumpers J1-J8 determines which buss each output is connected to. The triggered form C contacts also drop off normal when triggered and the Red (TRG) LED turns on. These contacts can be used to daisy chain other PDD-8PCI, latch, or provide feedback to a system.

The Trouble Form C Relay drops off Normal if any one of the PTC circuit breakers is tripped, or main power/fuse is lost. The Green (TRB) LED is ON during normal operation, It goes off with trouble. All three relays are Fail-Safe, energized in the normal condition.

Each output has a Green LED that is on when the associated output is ON.

Typical applications for a Fire Alarm System would include adding remote Bells and annunciators, closing dampers, turning off HVAC fans, unlocking fail secure and fail safe doors, and or returning elevators to first floor. The installation instructions illustrate these applications.

The PDD-8PCI is available as a module or mounted in an enclosure with any of our DC Power Supplies.

Specifications

- Input Voltage 10.5 to 12.4vdc or 22.7 to 25.2vdc
- Output Voltage virtually the same as Input
- Current, Typical, with No Output Load 90-160mA
- Outputs 1-8 continuous duty each 1.23 Amps
- Voltage Trigger 20% < Input min. 30vdc max.
- Voltage Trigger isolation Optical
- EOL (End of Line) Trigger Trip +50% of 2.2K Ω
- Transfer Relay Contacts 15Amps
- Trouble Form C Contacts 2A 120vac/1A 220vac
- Triggered Form C Contacts 2A 120vac/1A 220vac

UL Approvals

- UL 294 – Access Control System Unit
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