First Choice Building Products

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PSEL3000-2
Wire Distance Chart

AWG Calculations: PSEL3000-2 Panic Device Power Controller

In determining what wire size will be required for your electric locking system, you must first refer to the manufacturer's technical literature for any load (device requiring power) on your system and notate the maximum power consumption for each device. When rounding amperage calculations, always round up for the amount to equal a greater number. Never round down to a lesser amount or the power supply may be overloaded by your power devices causing the devices to fail. Next, you must determine what voltage your electric lock requires. The standard device outputs of the SP-1000X is for use with 24VDC locks only. Additionally, the 12VDC or 24VDC auxiliary outputs may be used as a power source for locks or other auxiliary power devices not requiring switching control. The maximum amount of power available from the 12VDC auxiliary output is 0.5amps (500 milliamps). The maximum amount available from the 24VDC auxiliary output is 0.75 amps (750 milliamps). Conservatively estimate the distance away from the power supply that you intend to run the wire to each load. Reference the charts below for the American Wire Gauge requirements for your locking hardware.

Disclaimer**: **After installation, measure voltage at all electric locking devices to ensure that voltages do not fall below the manufacturer's specifications while in operation.

24VDC High In-rush Exit Devices for use on Output 1 & 2

In-rush Amps	Wire Gauge Required	Electric Butt or Pivot Max Distance from power supply to frame side of door	EPT Max Distance from power supply to frame side of door
10.0	14 awg	60 ft.	65 ft.
10.0	12 awg	95 ft.	100 ft.
14.0	14 awg	40 ft.	45 ft.
14.0	12 awg	70 ft.	75 ft.
16.0	14 awg	35 ft.	40 ft.
16.0	12 awg	55 ft.	60 ft.
16.0	10 awg	95 ft.	100 ft.

****NOTE: High in-rush exit devices tested with UL listed general purpose stranded conductor copper wire. Electric through wire hinges transferring power with 26awg-28awg wire not to exceed 12" overall length of wire. EPT's with 18awg – 24awg not to exceed 24" overall length of wire.****

24VDC loads for use on Output 1 & Output 2

Amps	100 ft.	150 ft.	200 ft.	250 ft.	300 ft.	400 ft.	500 ft.
.25	24 awg	22 awg	20 awg	18 awg	18 awg	18 awg	16 awg
.50	20 awg	18 awg	18 awg	16 awg	16 awg	14 awg	14 awg
.75	18 awg	16 awg	16 awg	14 awg	14 awg	12 awg	12 awg
1.0	18 awg	16 awg	14 awg	14 awg	12 awg	12 awg	10 awg
1.25	16 awg	14 awg	14 awg	12 awg	12 awg	10 awg	10 awg
1.50	16 awg	14 awg	12 awg	12 awg	12 awg	10 awg	n/a
2.0	14 awg	12 awg	12 awg	12 awg	10 awg	n/a	n/a
3.0	12 awg	10 awg	10 awg	10 awg	n/a	n/a	n/a

****NOTE: Above wire gauge / distance chart based on 2008 National Electrical Code (2008 NEC). 2008 NEC assumes 60 degrees Celsius (140 degrees Fahrenheit) rated wire, includes a 25% safety factor, and defines amperage ratings and associated distances resulting in a 5% voltage drop due to resistance in wire.****