

Model 206LE

High Efficiency Power Supply



Plug-in Replacement for Caltrans Model 206 Power Supply

Meets CALTRANSTEEES 2009 Standards

- AC Line Input Voltage – 80 VAC to 135 VAC, 43/65 Hz
- $\pm 0.1\%$ Line Regulation
- 24 VDC Output – 10 Amps
- $\pm 1\%$ Load Regulation
- AC Input and DC Output are fuse protected
- Transient Voltage Protection on AC and DC bus
- High efficiency design for low or high power cabinets
- Power Factor > 0.99 @ 10 Amps
- Low conducted and radiated emissions
- Operating Temperature: -40° C to $+85^{\circ}$ C
- Back Connector mates with Beau S-5406 or equivalent

Enhanced Features

- OLED Display for an easy to use interface
- Real-time display of all AC and DC voltages and currents
- No setup required - plug in and run
- 10/100 Ethernet Port for remote communications over internet or LANs
- Self-contained web server for monitoring real-time status
- Automatically logs all AC and DC voltages and currents
- Logs are stored on a removable standard MicroSD disk for easy access

Model 206LE Specifications

General: The 206LE is a plug-in replacement for Caltrans PDA #2 and PDA #3 found in 332 and 336 type cabinets using a model 206 cabinet power supply. The model 206LE incorporates an advanced switch mode design to achieve a small, light-weight, rugged power supply capable of supporting an output of 24VDC at 10 Amps. As the load increases from 0 to 10 Amps, the efficiency of the 206LE also rises from 75% to greater than 85% and the power factor becomes one. The 206LE is designed to operate for long periods of time with low and poor quality AC Line Voltages (<70VAC).

Environmental: Complies with or surpasses CALTRANS TEES 2009 Standards.

Operating Ambient Temperature: -40° C to +85° C

Power Factor: ≥ 0.99 @ 10 Amps

Efficiency: ≥75%

Hold-up Time: 50 millisecond for 10 Amp load

Back Connector: Mates with Beau S-5406 or equivalent.

Input voltage Indication: When AC Line Voltage is present (≥70 VAC) the front panel LED illuminates green. The LED extinguishes when AC voltage is absent or low.

Input Line Frequency: 43 Hz to 65 Hz

Input Line Voltage: 80 VAC to 135 VAC

Line Regulation: ±0.1%

Fuse Protection: The AC line is protected with a 4 Amp slow blow 3AG fuse.

Transient Voltage Protection: AC lines are furthermore protected with 4500 Amp rated metal oxide varistors.

Over current protection: The AC input and DC output are fused with front panel accessible 3AG slow blow fuses. If the D.C. load exceeds 14 Amps for longer than 100 milliseconds the DC output is shut down. Once the excessive load is removed the power supply recovers.

Output voltage indication: When the DC output voltage exceeds more than +/- 1 VDC from the nominal output voltage the front panel LED changes from green to red. The LED remains red until output voltage returns to within +/- 1 VDC of the nominal output voltage. If the power supply shuts down due to a fault, the front panel LED turns off.

DC Outputs: 24 VDC ±1% @ 10 Amps max.

Load Regulation: ±1%

Output Ripple: Less than 400 mV Peak to Peak

Fuse Protection: The DC output is protected with a 10 Amp 3AG fast blow fuse.

Transient Voltage Protection: DC Output protected with 1500W Suppressor.

Initial start-up: A soft start feature is provided for starting up under heavy loads. Power draw from the A.C. line is ramped up over a 4 millisecond period.

In-rush current: In-rush current is limited to less than 3 Amps AC

Self-checking: Self-monitoring features insure shut-down of the DC output in the event of a critical component failure or excessive load.

Emissions: Radiated and conductive emissions are in compliance with FCC part 15, Class A. An aluminum enclosure and EMI filter minimize radiated and conducted emissions.

Circuit Board: The printed circuit board is 0.062 inch thick FR4 material with 2 Oz. Copper. All holes are plated through. Circuit boards and components are conformal coated with a polyurethane coating

Size: 5.5 inches wide x 6.0 inches high x 7.5 inches deep (not including back connector pins, front handles, or bottom slide rails).

Weight: 2.71 pounds.

Enhanced Features

Real-time Measurements:

- AC Line Voltage: Root Mean Square (RMS) voltage displayed is composed of at least 40 measurements (samples) across each line cycle of AC line voltage waveform.
- AC current draw: RMS current is composed of at least 40 samples across each line cycle of the AC current waveform.
- Voltage and current of 24 VDC output: each is sampled at least 40 times during a 100 µsec interval and then averaged together.

Logging: (Provides detailed, time-stamped records of the following)

- Faults: High and Low DC Voltages
High DC currents
High and Low AC Voltages and Frequencies
High AC Currents
- All AC inputs and DC outputs are continuously logged at 0.5 second intervals for up-to 6 months (with a standard 2GB MicroSD card installed).

Fault Setpoints High Trip Point Low Trip Point

AC Line Input Voltage	135VAC	85 VAC
AC Line Input Frequency	63 Hz	57 Hz
24VDC Output Voltage	26VDC	22 VDC
24VDC Output Current	>5.0 ADC	—

Data Storage: Standard removable MicroSD card. The power supply comes with a 2GB capacity card which the user can replace with any larger capacity card for greater data storage capability. Logs are stored on the MicroSD card. Data is saved every 1/2 second is stored as comma separated value text file with a date and time stamp. Faults are logged in a separate text file with a date and time stamp.

Communications: 10/100 Ethernet port connectivity. Provides remote access to the power supply self-contained Web server over the internet and/or LANS. A unique MAC and IP address is set at the factory. The sub-net mask and IP address can be changed by the user.

Web Server: By accessing the IP address of the power supply through a standard internet browser, a web page is displays the real-time voltages and currents (inputs and outputs) as well as any previous (unacknowledged), latched, or in progress faults. A user web site can take advantage of this web page and provide for example automatic e-mail notification of a faulted power supply or continuous collection of run-time data.

Pin Assignments: Back Connector	
Position	Function
7	+24 VDC
8	DC GND
9	Earth Ground
10	Not Connected
11	AC- (AC Neut)
12	AC+ (AC Hot)

