

## GL Series: Single & Multi Output Switchers

The new GL series provides a broad range of AC/DC power supply solutions that covers power ratings from 25 watts to 250 watts for use in various industrial applications requiring standard footprint size and very high reliability.

These low-profile AC/DC switchers offer universal input voltage with no switches or jumpers, ideal for higher volume worldwide applications.






### All models feature:

- Industry standard footprints
- Universal input
- Full power to 50°C
- High demonstrated MTBF
- Automatic overvoltage protection
- Overload protection
- Built-in EMI Filtering
- Extensive safety approvals
- Derated operation to 70°C
- ±2% regulation on main output
- 250 VA size enclosed
- Two year limited warranty

### Many models feature:

- EN61000-3-2 Compliance
- Supervisory outputs (5 V/12 V)
- Wide-adjustable floating 4<sup>th</sup> output
- Single wire current share
- Remote Sense
- Adjustable main output
- Power Fail and DC Good signals
- Wide-adjustable on single output models

### Certifications and Compliances

-  Recognized Component, ITE
  - UL 60950-1
-  Certified, ITE
  - CSA C22.2 CSA 60950-1
- 
  - IEC60950-1

### Cover Options

- Cover options can be ordered separately. They are designed to simplify mechanical integration of the power supplies into systems and add an extra measure of electrical safety for service personnel.

| Cover and Bracket Options |  |
|---------------------------|--|
| Catalog Number            | Description                              |
| GLX40                     | Enclosure kit for the GL20 and GL40      |
| GLX250-CEF                | Cover end fan kit for the GL250          |
| GLX250-CF                 | Cover with top fan kit for the GL250/350 |

## Specifications

|  | GL20, GL40  | GL50  | GL60  | GL250  |
|--|---|---|---|--|
| <b>Input</b>                           |   |   |   |  |
| <b>Input Voltage <sup>1</sup></b>      | 85 - 264 Vac;<br>120 - 300 Vdc  | 90 - 264 Vac<br>127 - 300 Vdc                 | 85 - 264 Vac<br>120 - 300 Vdc   | 85 - 264 Vac; 120 - 300 Vdc  |
| <b>Frequency</b>                       | 47-63 Hz , 400± 40 Hz   |   | 47-63 Hz  |  |
| <b>Inrush Current</b>                  | GL20: <15A peak<br>@ 115 Vac; <30A peak @ 230 Vac, cold<br>start @ 25°C.<br><br>GL40: <18A peak<br>@ 115 Vac; <36A peak @ 230 Vac, cold<br>start @ 25°C | <60A peak<br>@ 230 Vac,<br>cold start @ 25°C  | <18A peak<br>@ 115 Vac,<br><36 A peak<br>@ 230 Vac,<br>cold start @ 25°C    | GL250:<br>20 A max.,<br>cold start @ 25°C.   |
| <b>Efficiency</b>                      | 70% typical<br>at full load   | 80% - 85%<br>typical<br>at full load          | 70% typical<br>at full load   | 75% typical at full load   |
| <b>EMI/RFI</b>                         | FCC Class B ; CISPR 22 Class B ;<br>EN55022 Class B   |   |   |  |
| <b>Output</b>                          |   |   |   |  |
| <b>Power</b>                           | Refer to the selection table  |   |   |  |
| <b>Adjustment Range on Main Output</b> | -5, +10%<br>minimum   | ±20% minimum for single output only<br>models | -5, +10% minimum  | 2:1 wide ratio   |
| <b>Hold-up Time</b>                    | 20 ms @ full load, 115 Vac nominal line   | 10/20 ms 115/230 Vac Input line               | 20 ms @ full load, 115 Vac nominal line                                     | 20 ms @ full load, 115 Vac nominal line  |
| <b>Overload</b>                        | Short circuit protection on all outputs.<br>Primary overload protection   |   |   |  |
| <b>Overvoltage Protection</b>          | 5 V output; 5.7 to<br>6.7 Vdc. Other<br>outputs 10% to<br>25% above<br>nominal output   | 30-50% above nominal output                   | 5 V output; 5.7 - 6.7 Vdc. Other outputs<br>10% to 25% above nominal output | 5 V output: 5.7<br>to 6.7 Vdc.<br>Other outputs 10% to 25% above<br>nominal output |
| <b>Remote Sense</b>                    | Compensates for 0.5 V lead drop<br>minimum; Will operate without remote<br>sense connected, Reverse connection<br>protected                             |   |   |  |
| <b>General</b>                         |   |   |   |  |
| <b>Temperature <sup>2</sup></b>        | <b>Storage:</b> -40°C to +85°C; <b>Operating:</b> 0° to 50°C ambient. Derate each output 2.5% per degree from 50° to 70°C, -20°C start up.              |   |   |  |
| <b>Electro-magnetic Susceptibility</b> | Designed to meet IEC 801, -2, -3, -4, -5, -6, Level 3 or EN61000-4; -2, -3, -4, -5, -6, -8, -11 Level 3   |   |   |  |
| <b>Humidity</b>                        | Operating: non-condensing up to 95% RH  |   |   |  |
| <b>Vibration</b>                       | Three orthogonal axes, sweep at 1 oct/min, 5 min. dwell at four major resonances 0.75G peak 5Hz to 500 Hz<br>(2 G peak 8 Hz to 500 Hz for GL500)        |   |   |  |
| <b>MTBF</b>                            | >550,000 hours demonstrated at full load and 25°C ambient conditions  |   |   |  |
| <b>Safety</b>                          | EN60950, cRUus: UL/CSA 60950 E132002, CE Mark (LVD)   |   |   |  |

Notes:

1. Proper circuit protection required when operating with a DC input voltage. 2. Regulation and ripple may deviate from the spec at -20°C start up.

Selection Table

|  | Catalog Number     | Output 1                        | Output 2                        | Output 3              | Output 4                     | Case <sup>3</sup> | Pin Assignments <sup>3</sup> | Mating Connectors <sup>3</sup> |
|--|--------------------|---------------------------------|---------------------------------|-----------------------|------------------------------|-------------------|------------------------------|--------------------------------|
| GL20<br>[40 W] 25 W  | GLS22              | 5 V @ 5 A [8 A] <sup>4</sup>    | -                               | -                     | -                            | 1                 | 1A                           | 1B                             |
|  | GLT22              | 5 V @ 3 A [4 A] <sup>5</sup>    | 12 V @ 1.5 A [2 A] <sup>5</sup> | -12 V @ 0.5 A [0.7 A] | -                            |                   | 2A                           |                                |
| GL40<br>[55 W] 40 W <sup>1</sup><br>[40 W] 25 W <sup>2</sup> | GLS42 <sup>4</sup> | 5 V @ 8 A [11 A] <sup>4</sup>   | -                               | -                     | -                            | 1                 | 3A                           | 1B                             |
|  | GLS43 <sup>4</sup> | 12 V @ 3.3 A [4.5] <sup>4</sup> | -                               | -                     | -                            |                   | 4A                           |                                |
|  | GLT42 <sup>4</sup> | 5 V @ 4 A [5 A] <sup>5</sup>    | 12 V @ 2 A [2.5 A] <sup>5</sup> | -12 V @ 0.5 A [0.7 A] | -                            |                   |                              |                                |
|  | GLT45 <sup>4</sup> | 5 V @ 4 A [5 A] <sup>5</sup>    | 15 V @ 2 A [2.5 A] <sup>5</sup> | -15 V @ 0.5 A [0.7 A] | -                            |                   |                              |                                |
| GL50<br>[50 W] 50 W  | GLT54 <sup>4</sup> | 5 V @ 8 A <sup>5</sup>          | 24 V @ 1.5 A <sup>5</sup>       | 12 V @ 0.5 A          | -                            | 2                 | 5A                           | 2B                             |
| GL50<br>[60 W] 60 W  | GLS55 <sup>4</sup> | 24 V @ 2.5 A <sup>4</sup>       | -                               | -                     | -                            | 3                 | 6A                           | 2B                             |
| GL60<br>[80 W] 60 W <sup>1</sup><br>[60 W] 40 W <sup>2</sup> | GLS63 <sup>4</sup> | 12 V @ 5 A [6.7 A] <sup>4</sup> | -                               | -                     | -                            | 4                 | 7A                           | 3B                             |
|  | GLS64 <sup>4</sup> | 15 V @ 4 A [5.3 A] <sup>4</sup> | -                               | -                     | -                            |                   |                              |                                |
| GL250<br>[250 W] <sup>6 7</sup>                              | GLS253-C           | 12 V (6-12 V) @ [21 A]          | -                               | -                     | -                            | 5                 | 8A                           | 4B                             |
|  | GLS255-C           | 24 V (24-48) @ [10.4 A]         | -                               | -                     | -                            |                   |                              |                                |
|  | GLQ252-C           | 5 V @ [35 A] <sup>7</sup>       | 12 V @ [10 A]                   | -12 V @ [6 A]         | ±5-25 V @ [6 A] <sup>4</sup> | 6                 | 9A                           |                                |
|  | GLQ253-C           | 5 V @ [35 A] <sup>7</sup>       | 15 V @ [10 A]                   | -15 V @ [6A]          | ±5-25 V @ [6 A] <sup>4</sup> |                   |                              |                                |

## Notes:

[ ] Rating with 30 CFM of air

1. Power rating when no cover option is used

2. Power rating when the cover/enclosure option is used

3. Refer to GL Series Dimensions and the sections that follow

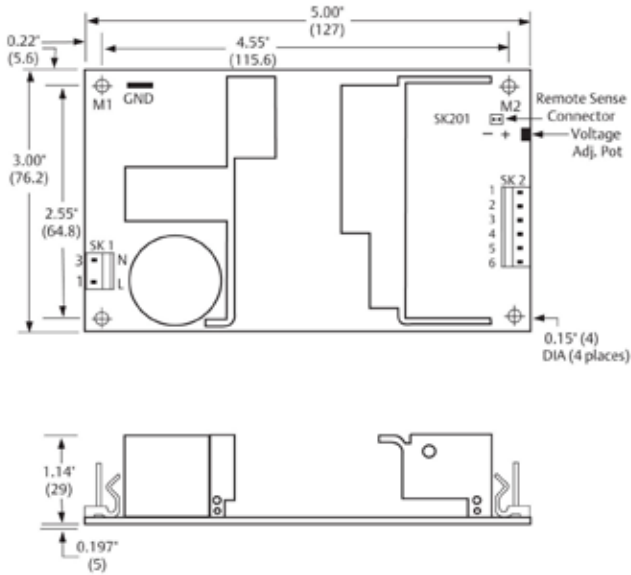
4. Floating output

5. Approximate minimum loading: 10%

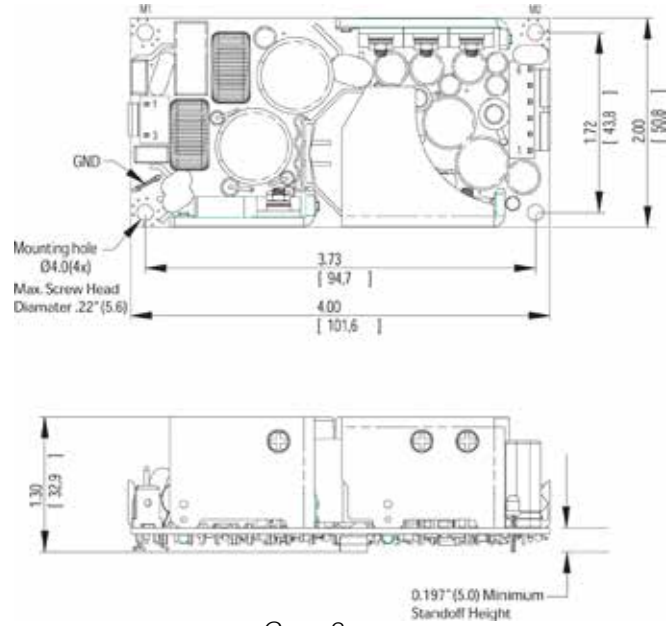
6. Optional fan cover, See Table 1

7. Optional end fan cover, See Table 1

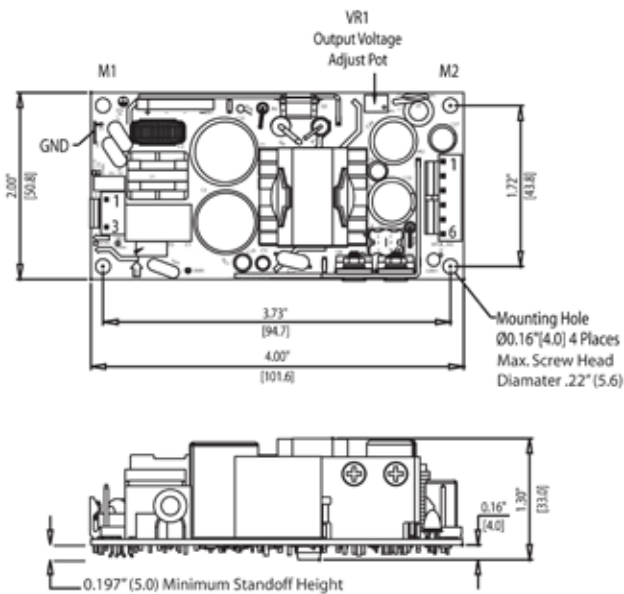
## GL Series Dimensions



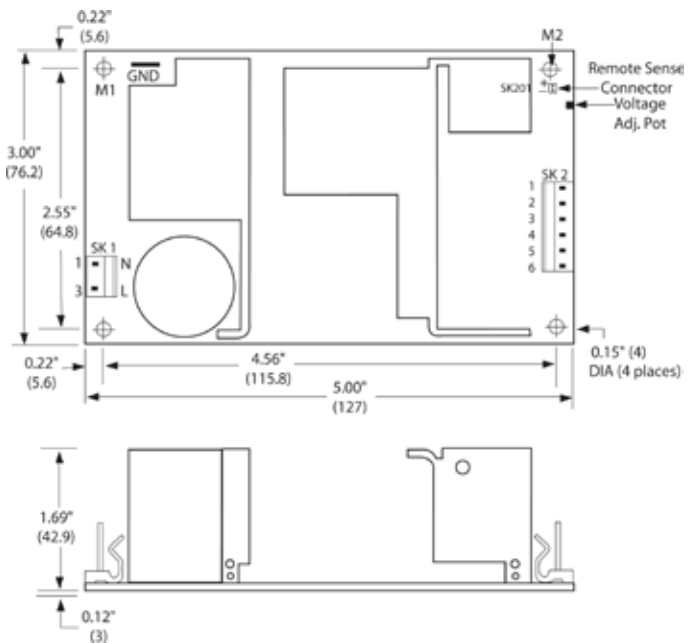
Case 1  
(Weight: 0.5 lbs/0.23 kg approx.)



Case 2  
(Weight: 0.45 lbs/0.20 kg approx.)



Case 3  
(Weight: 0.41 lbs/0.18 kg approx.)

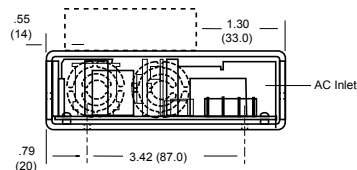
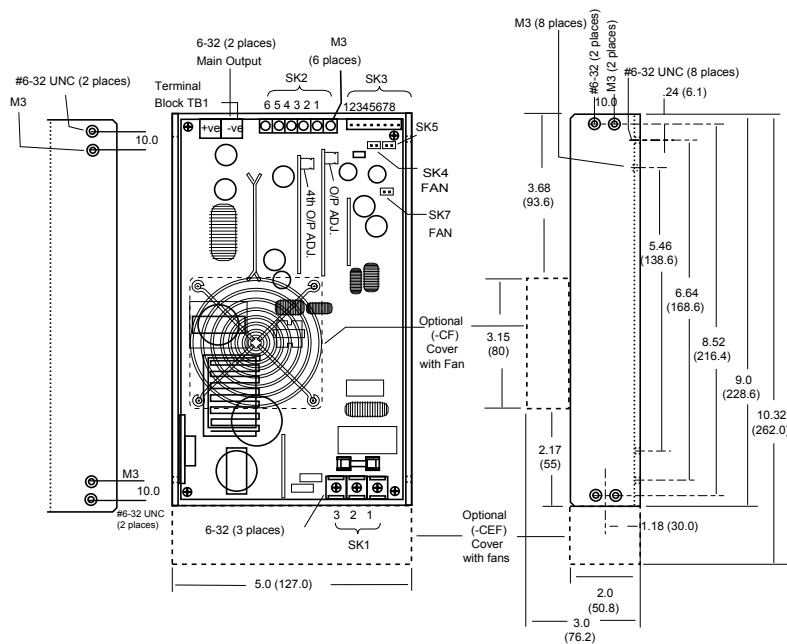


Case 4  
(Weight: 0.75 lbs/0.34 kg approx.)

### Notes:

1. Specifications subject to change without notice.
2. All dimensions in inches (mm), tolerance is  $\pm 0.02"$  ( $\pm 0.5$  mm)
3. Mounting holes M1 and M2 should be grounded for EMI purposes.
4. Mounting hole M1 is safety ground connection.
5. Specifications are for convection rating at factory settings at 115 Vac input, 25°C unless otherwise stated.

Figure 1: Dimensions of the device. The diagram shows three views of a rectangular electronic device with various components and dimensions. The top view shows a width of 5.0 (127.0) and a height of 3.68 (93.6). The side view shows a depth of 2.0 (50.8) and a total height of 10.32 (262.0). The front view shows a width of 5.0 (127.0) and a height of 10.32 (262.0). Dimensions are given in inches and millimeters.



Case 6  
(Weight: 3.1 lbs/1.41 kg approx.)

1. Specifications subject to change without notice.
2. All dimensions in inches (mm), tolerance is  $\pm 0.02$ ".
3. Specifications are at factory settings.
4. To enable normally closed remote inhibit, cut jumper J1.
5. Mounting maximum insertion depth is 0.12".

## GL Series Pin Assignments

### 1A

| Connector |       | GLS22   |
|-----------|-------|---------|
| SK1       | PIN 1 | Line    |
|           | PIN 3 | Neutral |
| SK2       | PIN 1 | +5 V    |
|           | PIN 2 | +5 V    |
|           | PIN 3 | +5 V    |
|           | PIN 4 | Common  |
|           | PIN 5 | Common  |
|           | PIN 6 | Common  |
| SK201     | PIN 1 | +Sense  |
|           | PIN 2 | -Sense  |

### 5A

| Connector |       | GLT54   |
|-----------|-------|---------|
| SK1       | PIN 1 | Neutral |
|           | PIN 3 | Line    |
| SK2       | PIN 1 | +5 V    |
|           | PIN 2 | +5 V    |
|           | PIN 3 | Common  |
|           | PIN 4 | Common  |
|           | PIN 5 | +12 V   |
|           | PIN 6 | +24 V   |

### 2A

| Connector |       | GLT22   |
|-----------|-------|---------|
| SK1       | PIN 1 | Line    |
|           | PIN 3 | Neutral |
| SK2       | PIN 1 | +12 V   |
|           | PIN 2 | +5 V    |
|           | PIN 3 | +5 V    |
|           | PIN 4 | Common  |
|           | PIN 5 | Common  |
|           | PIN 6 | -12 V   |
| SK201     | PIN 1 | +Sense  |
|           | PIN 2 | -Sense  |

### 6A

| Connector |       | GLS55   |
|-----------|-------|---------|
| SK1       | PIN 1 | Line    |
|           | PIN 3 | Neutral |
| SK2       | PIN 1 | +24 V   |
|           | PIN 2 | +24 V   |
|           | PIN 3 | Common  |
|           | PIN 4 | Common  |
|           | PIN 5 | -Sense  |
|           | PIN 6 | +Sense  |

### 3A

| Connector |       | GLS42   | GLS43 |
|-----------|-------|---------|-------|
| SK1       | PIN 1 | Line    |       |
|           | PIN 3 | Neutral |       |
| SK2       | PIN 1 | +5 V    | +12 V |
|           | PIN 2 | +5 V    | +12 V |
|           | PIN 3 | +5 V    | +12 V |
|           | PIN 4 | Common  |       |
|           | PIN 5 | Common  |       |
|           | PIN 6 | Common  |       |
| SK201     | PIN 1 | +Sense  |       |
|           | PIN 2 | -Sense  |       |

### 7A

| Connector |       | GLS63   | GLS64 |
|-----------|-------|---------|-------|
| SK1       | PIN 1 | Neutral |       |
|           | PIN 3 | Line    |       |
| SK2       | PIN 1 | +12 V   | +15 V |
|           | PIN 2 | +12 V   | +15 V |
|           | PIN 3 | +12 V   | +15 V |
|           | PIN 4 | Common  |       |
|           | PIN 5 | Common  |       |
|           | PIN 6 | Common  |       |
| SK201     | PIN 1 | +Sense  |       |
|           | PIN 2 | -Sense  |       |

### 4A

| Connector |       | GLT42   |
|-----------|-------|---------|
| SK1       | PIN 1 | Line    |
|           | PIN 3 | Neutral |
| SK2       | PIN 1 | +12 V   |
|           | PIN 2 | +5 V    |
|           | PIN 3 | +5 V    |
|           | PIN 4 | Common  |
|           | PIN 5 | Common  |
|           | PIN 6 | -12 V   |
| SK201     | PIN 1 | +Sense  |
|           | PIN 2 | -Sense  |

## GL Series Pin Assignments (continued)

## 8A

| Connector |       | GLS250                                       |
|-----------|-------|--|
| SK1       | PIN 1 | Neutral                                      |
|           | PIN 2 | Line   |
|           | PIN 3 | Ground                                       |
| SK3       | PIN 1 | +Remote Sense                                |
|           | PIN 2 | -Remote Sense                                |
|           | PIN 3 | Remote Inhibit (N.O.)                        |
|           | PIN 4 | Remote Inhibit (N.C.)                        |
|           | PIN 5 | Common                                       |
|           | PIN 6 | Current Share                                |
|           | PIN 7 | Power Fail                                   |
|           | PIN 8 | DC Power Good                                |
| SK4       | PIN 1 | +Fan's power source<br>(12 V @ 500 mA)       |
|           | PIN 2 | -Fan's power source<br>(12 V @ 500 mA)       |
| SK5       | PIN 1 | +Supervisory output supply<br>(5 V @ 100 mA) |
|           | PIN 2 | -Supervisory output supply<br>(5 V @ 100 mA) |
| SK7       | PIN 1 | +Fan's power source<br>(12 V @ 500 mA)       |
|           | PIN 2 | +Fan's power source<br>(12 V @ 500 mA)       |

## 9A

| Connector |       | GLQ250                                       |
|-----------|-------|--|
| SK1       | PIN 1 | Neutral                                      |
|           | PIN 2 | Line   |
|           | PIN 3 | Ground                                       |
| SK2       | PIN 1 | +12 / 15 V                                   |
|           | PIN 2 | Common                                       |
|           | PIN 3 | Common                                       |
|           | PIN 4 | -12 / 15 V                                   |
|           | PIN 5 | 5-25 V RET Float                             |
|           | PIN 6 | 5-25 V Float                                 |
| SK3       | PIN 1 | +Remote Sense                                |
|           | PIN 2 | -Remote Sense                                |
|           | PIN 3 | Remote Inhibit (N.O.)                        |
|           | PIN 4 | Remote Inhibit (N.C.)                        |
|           | PIN 5 | Common                                       |
|           | PIN 6 | Current Share                                |
|           | PIN 7 | Power Fail                                   |
|           | PIN 8 | DC Power Good                                |
| SK4       | PIN 1 | +Fan's power source<br>(12 V @ 500 mA)       |
|           | PIN 2 | +Fan's power source<br>(12 V @ 500 mA)       |
| SK5       | PIN 1 | +Supervisory output supply<br>(5 V @ 100 mA) |
|           | PIN 2 | -Supervisory output supply<br>(5 V @ 100 mA) |
| SK7       | PIN 1 | +Fan's power source<br>(12 V @ 500 mA)       |
|           | PIN 2 | +Fan's power source<br>(12 V @ 500 mA)       |

GL Series Mating Connectors

1B

|   |  |
|---|--|
| Connector Kit #70-841-006 includes the following: |  |
| AC Input:   | Molex 09-50-8031 (USA)<br>Not required for (-T) option<br>09-91-0300 (UK)<br>PINS: 08-52-0113<br>(-0111 for medical) |
| DC Outputs:                                       | Molex 09-50-8061 (USA)<br>Not required for (-T) option<br>09-91-0600 (UK)<br>PINS: 08-52-0113<br>(-0111 for medical) |
| Remote Sense:                                     | Molex 22-01-2025<br>PINS: 08-52-0123<br>(-0114 for medical)  |

2B

|   |   |
|---|---|
| Connector Kit #70-841-006 includes the following: |   |
| AC Input:   | Molex 09-50-8031 (USA)<br>09-91-0300 (UK)<br>PINS: 08-52-0113 |
| DC Outputs:                                       | Molex 09-50-8061 (USA)<br>09-91-0600 (UK)<br>PINS: 08-52-0113 |

3B

|   |  |
|---|--|
| Connector Kit #70-841-006 includes the following: |  |
| AC Input:   | Molex 09-50-8031 (USA)<br>Not required for (-T) option<br>09-91-0300 (UK)<br>PINS: 08-58-0111<br>(-0113 for medical) |
| DC Outputs:                                       | Molex 09-50-8061 (USA)<br>Not required for (-T) option<br>09-91-0600 (UK)<br>PINS: 08-58-0113                        |
| Remote Sense:                                     | Molex 22-01-2025<br>PINS: 08-52-0113   |

4B

|   |                                    |
|---|------------------------------------|
| Connector Kit #70-841-005 includes the following: |                                    |
| SK3   | Molex 22-01-1084; PINS: 08-70-0057 |
| SK4   | Molex 22-01-3027; PINS: 08-50-0114 |
| SK5   | Molex 22-01-3027; PINS:08-50-0114  |
| SK7   | Molex: 22-01-3027 PINS: 08-50-0114 |