

# Linear Series

## AC-DC Power Supplies

The Bel Power Solutions produces the industry's broadest selection of Linear power supplies with output voltages from 5 to 48 volts. Rugged technology and proven design merge to create quiet, highly-regulated, dependable DC power.

The Linear power supplies are approved to domestic and international regulatory standards, and are CE Marked to the Low Voltage Directive (LVD).



### Key Features & Benefits

- RoHS compatible for all six substances
- Worldwide AC Input Capabilities:
  - 100/120/220/230/240 VAC
  - $\pm 0.05\%$  Output Regulation
  - Low Output Ripple
  - Mean Time Before Failure (MTBF) 300,000 Hours
  - CE marked to Low Voltage Directive
  - 100% Burn-In
  - 2 Year Warranty
- Overvoltage Protection (OVP) Standard on 5 V Single Outputs, Optional for other outputs under 48 V



### Applications

Used in industrial and medical applications needing low noise/ripple – amplifiers, acoustic, broadcast, ATE and control equipment.



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SOLUTIONS &  
PROTECTION

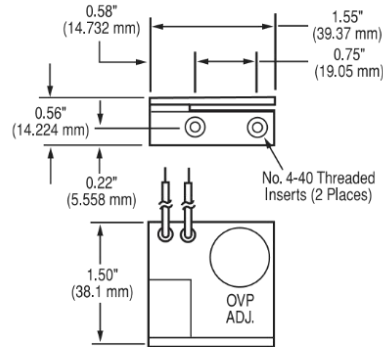
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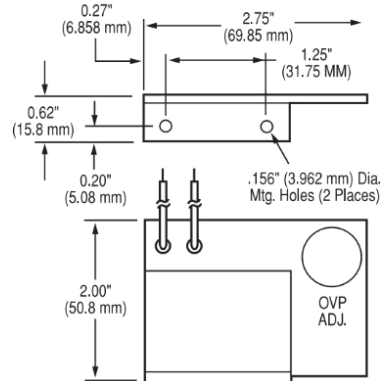
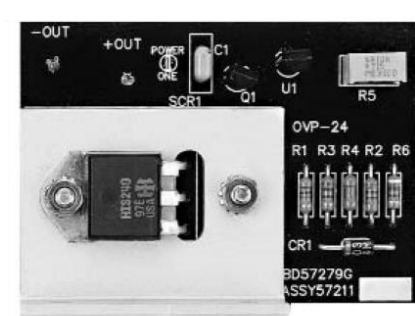
## 1. OVERVOLTAGE PROTECTION OPTIONS

These optional overvoltage protection modules are offered for use with Linear Power Supplies. Each is user adjustable from 6.4 V to 34 V.

### OVP-12G



### OVP-24G



## 2. OVP SELECTION GUIDE

| MODEL               | CASE SIZE                          | OVP MODULES REQUIRED *                                     |
|---------------------|------------------------------------|--|
| SINGLE OUTPUT       | B, C, N, D                         | OVP-12G  |
|                     | E, F                               | OVP-24G  |
| DUAL OUTPUT         | AA, B, BB, CC                      | OVP-12G protects both outputs                              |
|                     | E                                  | OVP-24G protects both outputs                              |
| TRIPLE OUTPUT       | AA, BAA, D<br>CBB, 131<br>DBB, DCC | OVP-12G protects both 12 V through 15 V outputs            |
| PEAK CURRENT MODELS | N, BAA, CBB<br>131                 | OVP-12G protects any output not provided with built-in OVP |

\* Outputs with factory built-in OVP are indicated in the Voltage/Current Rating Chart for each model. OVP is not available for 48 V models.

### 3. MODEL SELECTION – SINGLE OUTPUT

| Model Input<br>100 to 264 VAC | Nominal<br>Vout* | Max<br>Amps | Case<br>Type | Additional<br>Features |
|-------------------------------|------------------|-------------|--------------|------------------------|
| <b>5 Vout</b>                 |                  |             |              |                        |
| HA5-1.5/OVP-AG                | 5                | 1.5         | B            | A                      |
| HB5-3/OVP-AG                  | 5                | 3           | B            | A, C                   |
| HC5-6/OVP-AG                  | 5                | 6           | C            | A, C                   |
| HN5-9/OVP-AG                  | 5                | 9           | N            | A, C                   |
| HD5-12/OVP-AG                 | 5                | 12          | D            | A, C                   |
| HE5-18/OVP-AG                 | 5                | 18          | E            | A, C                   |
| F5-25/OVP-AG                  | 5                | 25          | F            | A, C, D, H             |
| G5-35/OVP-AG                  | 5                | 35          | F            | A, C, D, H             |
| CP197-AG                      | 5                | 50          | F            | A, C, D                |
| <b>12 to 15 Vout</b>          |                  |             |              |                        |
| HA15-0.9-AG                   | 12               | 0.9         | B            |                        |
| HB12-1.7-AG                   | 12               | 1.7         | B            | C                      |
| HC12-3.4-AG                   | 12               | 3.4         | C            | C                      |
| HN12-5.1-AG                   | 12               | 5.1         | N            | C                      |
| HD12-6.8-AG                   | 12               | 6.8         | D            | C                      |
| HE12-10.2-AG                  | 12               | 10.2        | E            | C                      |
| F15-15-AG                     | 12               | 16          | F            | C, D, H                |
| HA15-0.9-AG                   | 15*              | 0.9         | B            |                        |
| HB15-1.5-AG                   | 15               | 1.5         | B            | C                      |
| HC15-3-AG                     | 15               | 3           | C            | C                      |
| HN15-4.5-AG                   | 15               | 4.5         | N            | C                      |
| HD15-6-AG                     | 15               | 6           | D            | C                      |
| HE15-9-AG                     | 15               | 9           | E            | C                      |
| F15-15-AG                     | 15*              | 15          | F            | C, D, H                |

| Case Type | Dimensions          |                          |
|-----------|---------------------|--------------------------|
|           | inches              | millimeters              |
| AA        | 6.50 x 4.00 x 2.10  | 165.10 x 101.60 x 53.34  |
| B         | 4.87 x 4.00 x 2.10  | 123.70 x 101.60 x 53.34  |
| BAA       | 10.25 x 4.00 x 2.95 | 260.35 x 101.60 x 74.93  |
| BB        | 7.00 x 4.87 x 2.95  | 177.80 x 123.70 x 74.93  |
| C         | 5.62 x 4.87 x 2.95  | 142.75 x 123.70 x 74.93  |
| CBB       | 11.00 x 4.87 x 3.28 | 279.40 x 123.70 x 83.31  |
| CC        | 9.38 x 4.87 x 3.28  | 238.25 x 123.70 x 83.31  |
| CP131     | 11.00 x 4.87 x 3.28 | 279.40 x 123.70 x 83.31  |
| D         | 9.00 x 4.87 x 3.28  | 228.60 x 123.70 x 83.31  |
| DBB       | 14.25 x 4.87 x 3.38 | 361.95 x 123.70 x 85.85  |
| DCC       | 15.00 x 4.88 x 4.55 | 381.00 x 123.95 x 115.57 |
| E         | 14.00 x 4.87 x 3.53 | 355.60 x 123.70 x 89.66  |
| F         | 16.75 x 4.88 x 5.00 | 425.50 x 123.95 x 127.00 |
| N         | 7.00 x 4.87 x 3.28  | 177.80 x 123.70 x 83.31  |

| Model Input<br>100 to 264 VAC | Nominal<br>Vout* | Max<br>Amps | Case<br>Type | Additional<br>Features |
|-------------------------------|------------------|-------------|--------------|------------------------|
| <b>24 to 28 Vout</b>          |                  |             |              |                        |
| HA24-0.5-AG                   | 24               | 0.5         | B            |                        |
| HB24-1.2-AG                   | 24               | 1.2         | B            | C                      |
| HC24-2.4-AG                   | 24               | 2.4         | C            | C                      |
| HN24-3.6-AG                   | 24               | 3.6         | N            | C                      |
| HD24-4.8-AG                   | 24               | 4.8         | D            | C                      |
| HE24-7.2-AG                   | 24               | 7.2         | E            | C                      |
| F24-12-AG                     | 24               | 12          | F            | C, D, H                |
| HA24-0.5-AG                   | 28*              | 0.5         | B            |                        |
| HB28-1-AG                     | 28               | 1           | B            | C                      |
| HC28-2-AG                     | 28               | 2           | C            |                        |
| HN28-3-AG                     | 28               | 3           | N            | C                      |
| HD28-4-AG                     | 28               | 4           | D            | C                      |
| HE28-6-AG                     | 28               | 6           | E            | C                      |
| F24-12-AG                     | 28*              | 10          | F            | C, D, H                |
| <b>48 Vout</b>                |                  |             |              |                        |
| HB48-0.5-AG                   | 48               | 0.5         | B            |                        |
| HC48-1-AG                     | 48               | 1           | C            |                        |
| HD48-3-AG                     | 48               | 3           | D            | C                      |
| HE48-4-AG                     | 48               | 4           | E            | C                      |

\* May require jumpering or potentiometer adjustment.

Model numbers highlighted in yellow are not recommended for new designs.

#### Additional Features:

- A Overvoltage protection, set at 6.2 V ±0.4 V.
- B Non-adjustable 3-terminal regulator.
- C Remote sense provided.
- D With output inhibit & parallel operation master/slave capability.
- E With output inhibit.
- F Adjustable 3-terminal regulator.
- G Can be made into an isolated output by removing jumper W1.
- H Model requires 100 LFM forced-air cooling above 75% of rated output power at 50°C.



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+353 61 225 977

North America  
+1 408 785 5200

## 4. MODEL SELECTION – DUAL OUTPUT

| Model Input<br>100 to 264 VAC | Nominal<br>Vout* | Max<br>Amps | Case<br>Type | Additional<br>Features |
|-------------------------------|------------------|-------------|--------------|------------------------|
| <b>5 to 15 Vout</b>           |                  |             |              |                        |
| HAA5-1.5/OVP-AG               | +5, -5           | 1.5, 1.5    | AA           | A                      |
| HBB5-3/OVP-AG                 | +5, -5           | 3, 3        | BB           | A                      |
| HCC5-6/OVP-AG                 | +5, -5           | 6, 6        | CC           | A, C                   |
| HAA512-AG                     | 5, 12 to 15      | 2, 0.5      | AA           | A                      |
| HBB512-AG                     | 5, 12 to 15      | 3, 1.25     | BB           | A, C                   |
| HCC512-AG                     | 5, 12 to 15      | 6, 2.5      | CC           | A, C                   |
| HAA15-0.8-AG                  | +12, -5*         | 1, 0.4      | AA           | C                      |
| HBB15-1.5-AG                  | +12, -5*         | 1.7, 0.7    | BB           | C                      |
| HAD12-0.4-AG                  | +12, -12         | 0.4, 0.4    | B            | B                      |
| HAA15-0.8-AG                  | +12, -12         | 1, 1        | AA           | C                      |
| HBB15-1.5-AG                  | +12, -12         | 1.7, 1.7    | BB           | C                      |
| HCC15-3-AG                    | +12, -12         | 3.4, 3.4    | CC           | C                      |
| HDD15-5-AG                    | +12, -12*        | 5, 5        | E            | C                      |
| HAA15-0.8-AG                  | +12, -15*        | 1, 0.8      | AA           | C                      |
| HBB15-1.5-AG                  | +12, -15*        | 1.7, 1.5    | BB           | C                      |
| HCC15-3-AG                    | +12, -15*        | 3.4, 3      | CC           | C                      |
| HDD15-5-AG                    | +12, -15*        | 5, 5        | E            | C                      |
| HAA15-0.8-AG                  | +15, -5*         | 0.8, 0.4    | AA           | C                      |
| HBB15-1.5-AG                  | +15, -5*         | 1.5, 0.7    | BB           | C                      |
| HAA15-0.8-AG                  | +15, -12*        | 0.8, 1      | AA           | C                      |
| HBB15-1.5-AG                  | +15, -12*        | 1.5, 1.7    | BB           | C                      |
| HCC15-3-AG                    | +15, -12*        | 3, 3.4      | CC           | C                      |
| HDD15-5-AG                    | 15, -12*         | 5, 5        | E            | C                      |
| <b>15 to 24 Vout</b>          |                  |             |              |                        |
| HAD15-0.4-AG                  | +15, -15         | 0.4, 0.4    | B            | B                      |
| HAA15-0.8-AG                  | +15, -15         | 0.8, 0.8    | AA           | C                      |
| HBB15-1.5-AG                  | +15, -15*        | 1.5, 1.5    | BB           | C                      |
| HCC15-3-AG                    | +15, -15*        | 3, 3        | CC           | C                      |
| HDD15-5-AG                    | +15, -15         | 5, 5        | E            | C                      |
| HAA24-0.6-AG                  | +24, -24         | 0.6, 0.6    | AA           |                        |
| HBB24-1.2-AG                  | +24, -24         | 1.2, 1.2    | BB           |                        |
| HCC24-2.4-AG                  | +24, -24         | 2.4, 2.4    | CC           | C                      |

\* May require jumpering or potentiometer adjustment.

Model numbers highlighted in yellow are not recommended for new designs.

| Case Type | Dimensions          |                          |
|-----------|---------------------|--------------------------|
|           | inches              | millimeters              |
| AA        | 6.50 x 4.00 x 2.10  | 165.10 x 101.60 x 53.34  |
| B         | 4.87 x 4.00 x 2.10  | 123.70 x 101.60 x 53.34  |
| BAA       | 10.25 x 4.00 x 2.95 | 260.35 x 101.60 x 74.93  |
| BB        | 7.00 x 4.87 x 2.95  | 177.80 x 123.70 x 74.93  |
| C         | 5.62 x 4.87 x 2.95  | 142.75 x 123.70 x 74.93  |
| CBB       | 11.00 x 4.87 x 3.28 | 279.40 x 123.70 x 83.31  |
| CC        | 9.38 x 4.87 x 3.28  | 238.25 x 123.70 x 83.31  |
| CP131     | 11.00 x 4.87 x 3.28 | 279.40 x 123.70 x 83.31  |
| D         | 9.00 x 4.87 x 3.28  | 228.60 x 123.70 x 83.31  |
| DBB       | 14.25 x 4.87 x 3.38 | 361.95 x 123.70 x 85.85  |
| DCC       | 15.00 x 4.88 x 4.55 | 381.00 x 123.95 x 115.57 |
| E         | 14.00 x 4.87 x 3.53 | 355.60 x 123.70 x 89.66  |
| F         | 16.75 x 4.88 x 5.00 | 425.50 x 123.95 x 127.00 |
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### Additional Features:

- A Overvoltage protection, set at 6.2 V ±0.4 V.
- B Non-adjustable 3-terminal regulator.
- C Remote sense provided.
- D With output inhibit and parallel operation master/slave capability.
- E With output inhibit.
- F Adjustable 3-terminal regulator.
- G Can be made into an isolated output by removing jumper W1.
- H Model requires 100 LFM forced-air cooling above 75% of rated output power at 50°C.

## 5. MODEL SELECTION – TRIPLE OUTPUT

Unsigned output voltages are isolated and can be used as either + or - polarities.

| Model Input<br>100 to 264 VAC | Nominal<br>Vout* | Max<br>Amps  | Case Type | Additional<br>Features |
|-------------------------------|------------------|--------------|-----------|------------------------|
| <b>5 to 24 Vout</b>           |                  |              |           |                        |
| HTAA-16W-AG                   | +5, +12, -5*     | 2, 0.4, 0.4  | AA        | A                      |
| HBAA-40W-AG                   | 5, +12, -5*      | 3, 1, 0.4    | BAA       | A, C                   |
| HCAA-60W-AG                   | +5, +12, -5*     | 6, 1, 0.4    | D         | A, C                   |
| HCBB-75W-AG                   | 5, +12, -5*      | 6, 1.7, 0.7  | CBB       | C                      |
| CP131-AG                      | 5, +12, -5*      | 8, 1.7, 0.7  | CP131     | A, C                   |
| <b>HDBB-105W-AG</b>           | 5, +12, -5*      | 12, 1.7, 0.7 | DBB       | A, C                   |
| HTAA-16W-AG                   | 5, +12, -12      | 2, 0.4, 0.4  | AA        | A                      |
| HBAA-40W-AG                   | 5, +12, -12      | 3, 1, 1      | BAA       | A, C                   |
| HCAA-60W-AG                   | +5, +12, -12     | 6, 1, 1      | D         | A, C                   |
| HCBB-75W-AG                   | 5, +12, -12      | 6, 1.7, 1.7  | CBB       | C                      |
| CP131-AG                      | 5, +12, -12      | 8, 1.7, 1.7  | CP131     | A, C                   |
| <b>HDBB-105W-AG</b>           | 5, +12, -12      | 12, 1.7, 1.7 | DBB       | C                      |
| HDCC-150W-AG                  | 5, +12, -12      | 12, 3.4, 3.4 | DCC       | A, C                   |
| HTAA-16W-AG                   | 5, +12, -15*     | 2, 0.4, 0.4  | AA        | A                      |
| HBAA-40W-AG                   | 5, +12, -15*     | 3, 1, 0.8    | BAA       | A, C                   |
| HCAA-60W-AG                   | +5, +12, -15*    | 6, 1, 1      | D         | A, C                   |
| HCBB-75W-AG                   | 5, +12, -15      | 6, 1.7, 1.5  | CBB       | C                      |
| CP131-AG                      | 5, +12, -15      | 8, 1.7, 1.5  | CP131     | A, C                   |
| <b>HDBB-105W-AG</b>           | 5, +12, -15*     | 12, 1.7, 1.5 | DBB       | C                      |
| HDCC-150W-AG                  | 5, +12, -15      | 12, 3.4, 3   | DCC       | A, C                   |
| HTAA-16W-AG                   | 5, +15, -5*      | 2, 0.4, 0.4  | AA        | A                      |
| HBAA-40W-AG                   | 5, +15, -5*      | 3, 0.8, 0.4  | BAA       | A, C                   |
| HCAA-60W-AG                   | +5, +15, -5*     | 6, 1, 0.4    | D         | A, C                   |
| HCBB-75W-AG                   | 5, +15, -5*      | 6, 1.5, 0.7  | CBB       | C                      |
| CP131-AG                      | 5, +15, -5*      | 8, 1.5, 0.7  | CP131     | A,                     |
| <b>HDBB-105W-AG</b>           | 5, +15, -5*      | 12, 1.5, 0.7 | DBB       | C                      |
| HTAA-16W-AG                   | 5, +15, -12*     | 2, 0.4, 0.4  | AA        | A                      |
| HBAA-40W-AG                   | 5, +15, -12*     | 3, 0.8, 1    | BAA       | A, C                   |
| HCAA-60W-AG                   | +5, +15, -12*    | 6, 1, 1      | D         | A, C                   |
| HCBB-75W-AG                   | 5, +15, -12      | 6, 1.5, 1.7  | CBB       | C                      |
| CP131-AG                      | 5, +15, -12      | 8, 1.5, 1.7  | CP131     | A, C                   |
| <b>HDBB-105W-AG</b>           | 5, +15, -12*     | 12, 1.5, 1.7 | DBB       | C                      |
| HDCC-150W-AG                  | 5, +15, -12      | 12, 3, 3.4   | DCC       | A, C                   |
| HTAA-16W-AG                   | 5, +15, -15*     | 2, 0.4, 0.4  | AA        | A                      |
| HBAA-40W-AG                   | 5, +15, -15*     | 3, 0.8, 0.8  | BAA       | A, C                   |
| HCAA-60W-AG                   | +5, +15, -15*    | 6, 1, 1      | D         | A, C                   |
| HCBB-75W-AG                   | 5, +15, -15      | 6, 1.5, 1.5  | CBB       | C                      |
| CP131-AG                      | 5, +15, -15      | 8, 1.5, 1.5  | CP131     | A, C                   |
| <b>HDBB-105W-AG</b>           | 5, +15, -15*     | 12, 1.5, 1.5 | DBB       | C                      |
| HDCC-150W-AG                  | 5, +15, -15      | 12, 3, 3     | DCC       | A, C                   |

| Case Type | Dimensions          |                          |
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- C Remote sense provided.
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- E With output inhibit.
- F Adjustable 3-terminal regulator.
- G Can be made into an isolated output by removing jumper W1.
- H Model requires 100 LFM forced-air cooling above 75% of rated output power at 50°C.

\* May require jumpering or potentiometer adjustment.

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## 6. INPUT SPECIFICATIONS

| PARAMETER                       | CONDITIONS / DESCRIPTION   | MIN         | NOM | MAX   | UNITS |     |
|---------------------------------|--|-------------|-----|-------|-------|-----|
| AC Input Voltage <sup>1,2</sup> | Jumper selectable, shipped factory configured for 120 VAC operation. All models must be externally fused for proper operation. | 100 VAC Tap | 87  | 100   | 110   | VAC |
|                                 | Fuse ratings are marked on each unit. Consult factory for each unit's fuse requirements.                                       | 120 VAC Tap | 104 | 120   | 132   |     |
|                                 |  | 220 VAC Tap | 191 | 220   | 242   |     |
|                                 |  | 240 VAC Tap | 209 | 240   | 264   |     |
| Input Frequency                 | AC input.  | 47          |     | 63    | Hz    |     |
| Line Regulation                 | Output voltage change for a 10% line change: F case models.  | -0.01       |     | +0.01 | %     |     |
|                                 | HAD12, HAD15.  | -1.0        |     | +1.0  |       |     |
|                                 | Outputs with adjustable three terminal regulators.   | -0.5        |     | +0.5  |       |     |
|                                 | All other models.  | -0.05       |     | +0.05 |       |     |

## 7. OUTPUT SPECIFICATIONS

| PARAMETER                     | CONDITIONS / DESCRIPTION   | MIN   | NOM | MAX   | UNITS               |
|-------------------------------|--|-------|-----|---|---------------------|
| Output Adjustment             | Minimum output adjustment range <sup>3</sup>                               | -5    |     | +5  | %                   |
| Efficiency                    | 5 volt outputs.  |       | 45  |   | %                   |
|                               | 12 volt and 15 volt outputs.   |       | 55  |   |                     |
|                               | 24 volt and higher outputs.  |       | 60  |   |                     |
| Ripple and Noise <sup>4</sup> | F case models.   |       |     | 3.0   | mV <sub>PK-PK</sub> |
|                               | 5 volt, 12 volt, and 15 volt models.                                       |       |     | 5.0   | mV <sub>PK-PK</sub> |
|                               | All three terminal regulator outputs.                                      |       |     | 0.2   | % <sub>PK-PK</sub>  |
|                               | 24 volt through 48 volt models.  |       |     | 3.0 mV <sub>PK-PK</sub> plus 0.02% of output voltage, max |                     |
| Load Regulation               | Output change for a 50% load change: F case models.                        | -0.02 |     | +0.02   | %                   |
|                               | HAD12, HAD15.  | -1    |     | +1  |                     |
|                               | Outputs with adjustable three terminal regulators.                         | -0.5  |     | +0.5  |                     |
|                               | All other models.  | -0.05 |     | +0.05   |                     |
| Transient Response            | Recovery time, to within 1% of initial set point due to a 50% load change. |       |     | 50  | μs                  |

<sup>1</sup> Derate output current 10% for 50Hz operation.

<sup>2</sup> Input voltage tolerance for 230 VAC operation is +15%, -10%.

<sup>3</sup> Output voltage adjustments can be made to within ±5% of factory setting of nominal output voltage. Locate the "Vadj" potentiometer on the power supply PCB and use a screwdriver to adjust the output pot. The HAD12 and HAD15 3 terminal regulator outputs are not adjustable.

<sup>4</sup> Full load, 20 MHz bandwidth.



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## 8. SAFETY, REGULATORY AND EMI SPECIFICATIONS

| PARAMETER                    | CONDITIONS / DESCRIPTION  | MIN   | NOM | MAX | UNITS |
|------------------------------|---|---|-----|-----|-------|
| Agency Approvals             | Approved to the latest edition of the following standards; UL/CSA60950-1 2nd, IEC60950-1 2nd and EN60950-1 2nd. |   |     |     |       |
| Dielectric Withstand Voltage | Input to case   | 2121  |     |     | VDC   |
|                              | Input to output (tested by manufacturer only)   | 4242  |     |     |       |
| Electromagnetic              | FCC CFR title 47 Part 15 Sub-Part B - conducted.  |   |     |     |       |
| Interference                 | EN55022 / CISPR 22 conducted. EN55022 / CISPR 22 radiated.  | Compatible with system compliance to Level B. |     |     |       |
| Leakage Current              | Per EN60950 (264 VAC)   |   | 23  | 50  | µA    |

## 9. SIGNALS AND INTERNAL PROTECTION

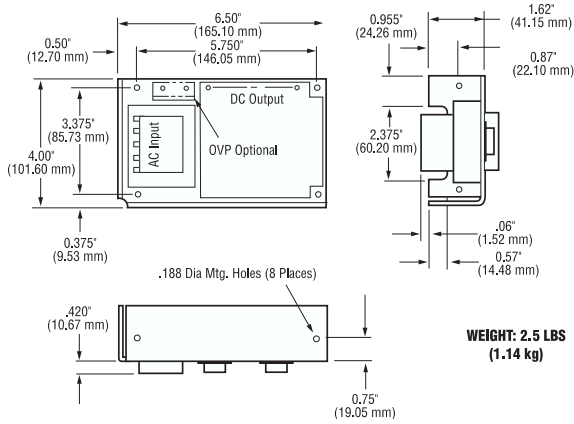
| PARAMETER                            | CONDITIONS / DESCRIPTION   | MIN | NOM | MAX | UNITS |
|--------------------------------------|--|-----|-----|-----|-------|
| Overvoltage Protection               | Provided on 5 volt output units where indicated. Other outputs may use optional overvoltage protectors OVP-12 and OVP-24.        | 5.8 |     | 6.6 | V     |
| Remote Sense                         | Total voltage compensation for cable losses with respect to the main output. Provided on models where indicated.                 |     |     | 250 | mV    |
| Overcurrent/Short Circuit Protection | Automatic current limit/foldback. Rated as a percentage of output power.   | 115 | 120 | 140 | %     |
| Master/Slave Operation               | For parallel operation of up to 6 units. Master/slave pin provided on F case models only. Contact factory for application notes. |     |     |     |       |

## 10. ENVIRONMENTAL SPECIFICATIONS

| PARAMETER               | CONDITIONS/DESCRIPTION                                | MIN         | NOM | MAX  | UNITS |
|-------------------------|---|-------------|-----|------|-------|
| Operating Temperature   | Derate output power linearly above 50°C by 3% per °C. | @ 100% load | 0   | 50   | °C    |
|                         |   | @ 40% load  |     | 70   | °C    |
| Storage Temperature     |   | -40         |     | 85   | °C    |
| Temperature Coefficient | 0°C to 50°C (after 15 minute warm-up).                |             | 0.1 | 0.3  | %/°C  |
|                         | 24 hours after warm-up.                               | -0.3        |     | +0.3 | %     |
| Shock                   | Operating.  |             |     | 20   | GPK   |
| Vibration               | Random vibration from 10 Hz to 2 kHz, 3 axis.         |             |     | 6.15 | GRMS  |
| Relative Humidity       | Non-Condensing.                                       | 5           |     | 95   | %RH   |

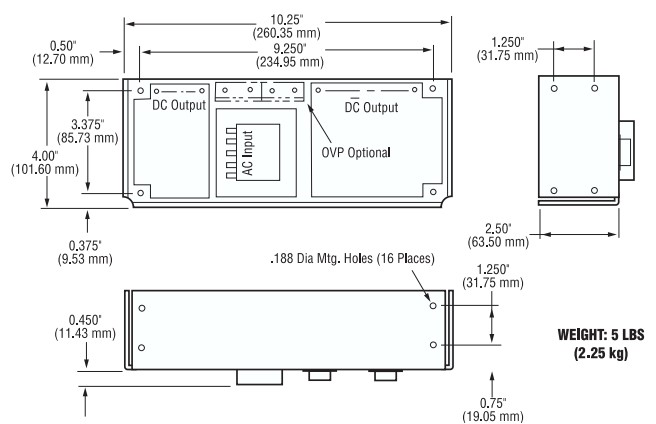
## AA CASE

**OVERALL SIZE**  
6.50" x 4.00" x 2.10"  
(165.10 mm) x (101.60 mm) x (53.34 mm)



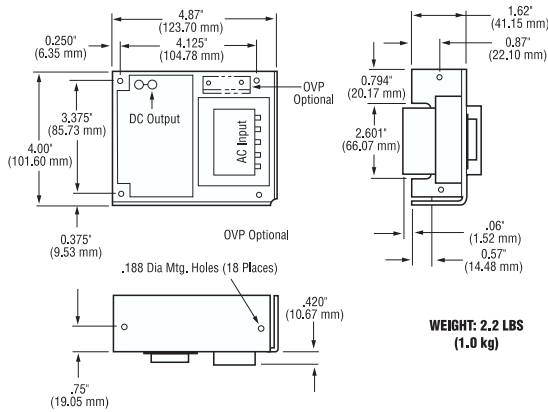
## BAA CASE

**OVERALL SIZE**  
10.25" x 4.00" x 2.95"  
(260.35 mm) x (101.60 mm) x (74.93 mm)



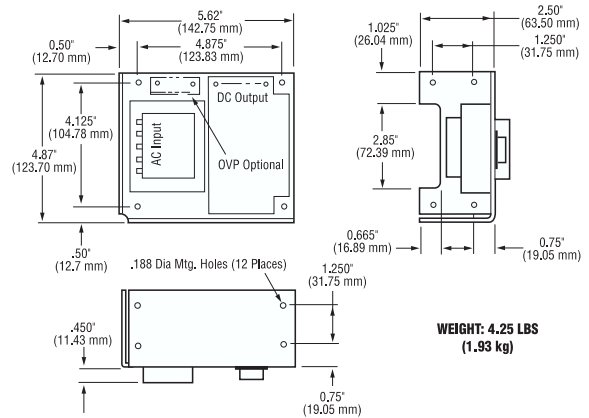
## B CASE

**OVERALL SIZE**  
4.87" x 4.00" x 2.10"  
(123.70 mm) x (101.60 mm) x (53.34 mm)



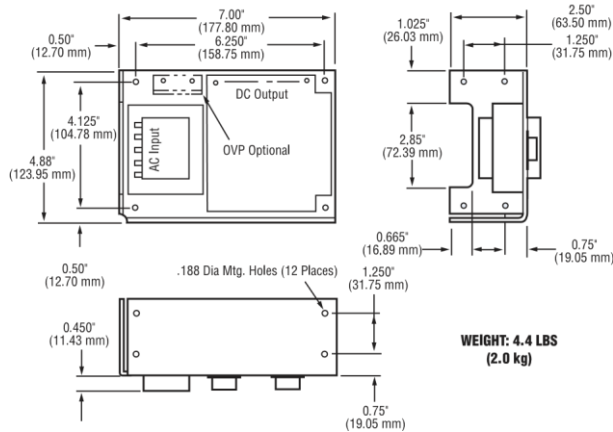
## C CASE

**OVERALL SIZE**  
5.62" x 4.87" x 2.95"  
(142.75 mm) x (123.70 mm) x (74.93 mm)



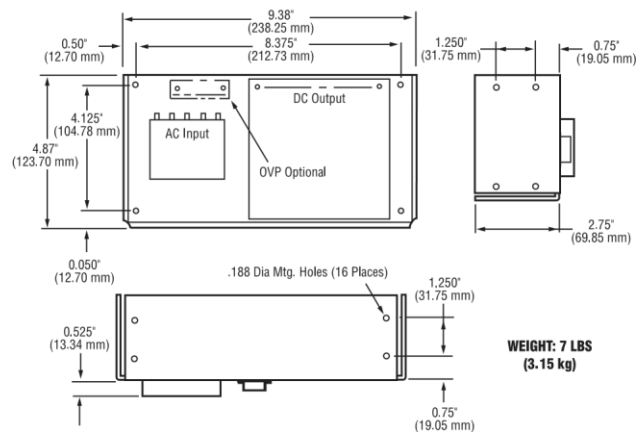
## BB CASE

**OVERALL SIZE**  
7.00" x 4.87" x 2.95"  
(177.80 mm) x (123.70 mm) x (74.93 mm)



## CC CASE

**OVERALL SIZE**  
9.38" x 4.87" x 3.28"  
(238.25 mm) x (123.70 mm) x (83.31 mm)



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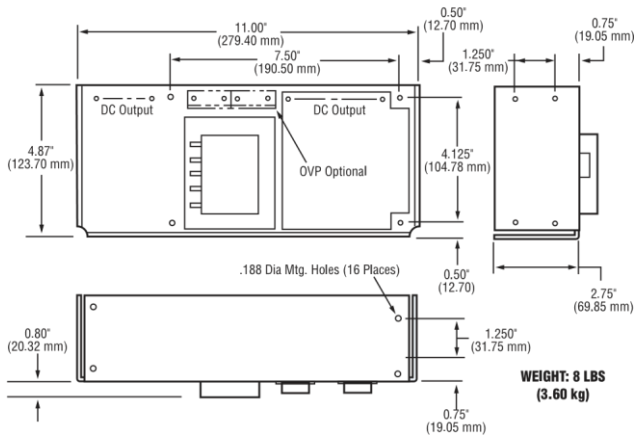
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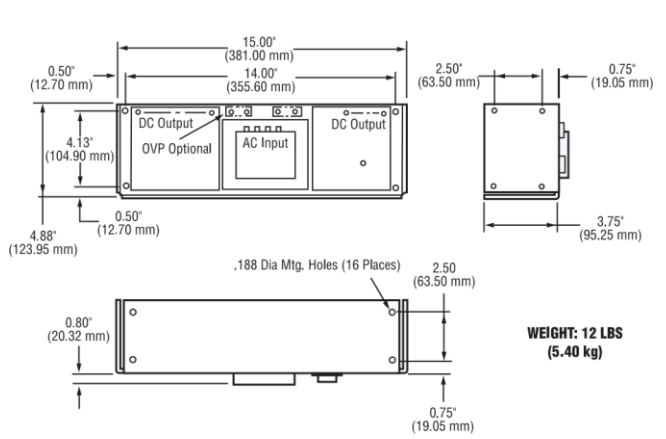
## CBB CASE

**OVERALL SIZE**  
**11.00" x 4.87" x 3.28"**  
**(279.40 mm) x (123.70 mm) x (83.31 mm)**



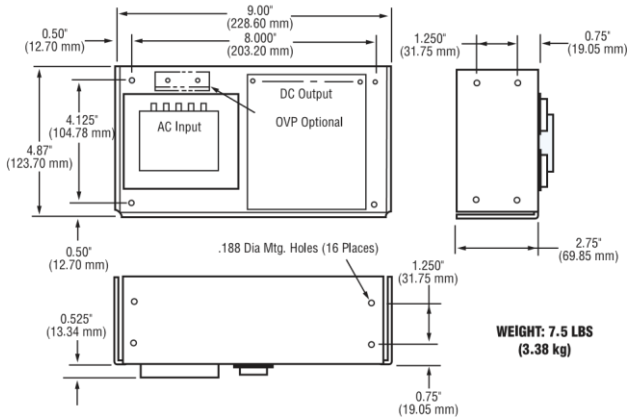
## DCC CASE

**OVERALL SIZE**  
**15.00" x 4.88" x 4.55"**  
**(381.00 mm) x (123.95 mm) x (115.57 mm)**



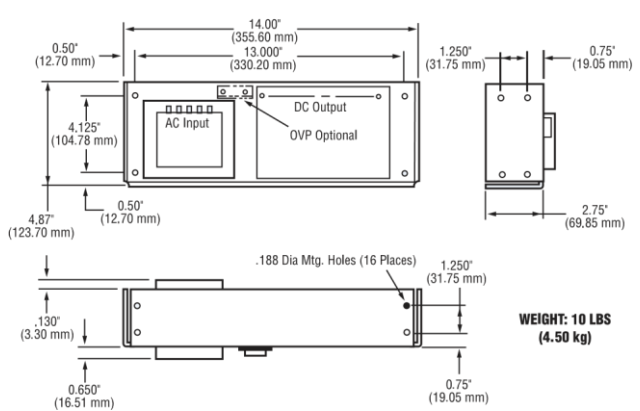
## D CASE

**OVERALL SIZE**  
**9.00" x 4.87" x 3.28"**  
**(228.60 mm) x (123.70 mm) x (83.31 mm)**



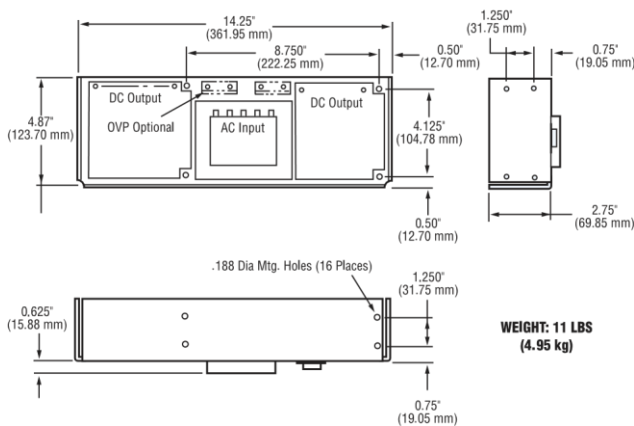
## E CASE

**OVERALL SIZE**  
**14.00" x 4.87" x 3.53"**  
**(355.60 mm) x (123.70 mm) x (89.66 mm)**



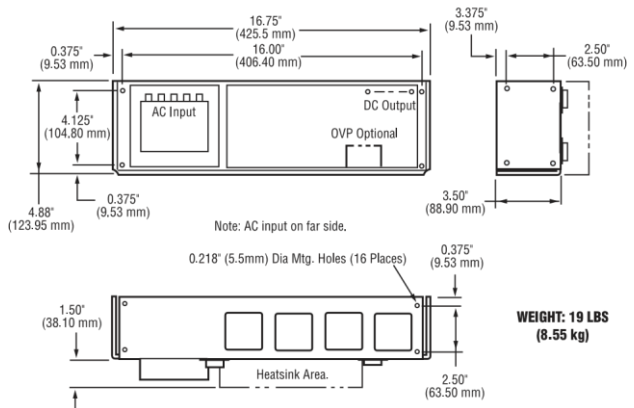
## DBB CASE

**OVERALL SIZE**  
**14.25" x 4.87" x 3.38"**  
**(361.95 mm) x (123.70 mm) x (85.85 mm)**



## F CASE

**OVERALL SIZE**  
**16.75" x 4.88" x 5.00"**  
**(425.5 mm) x (123.95 mm) x (127.00 mm)**



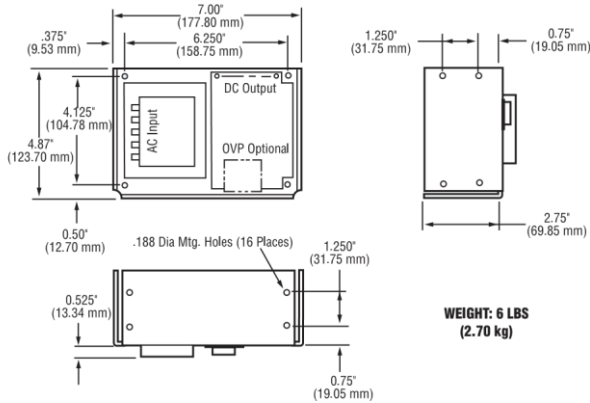
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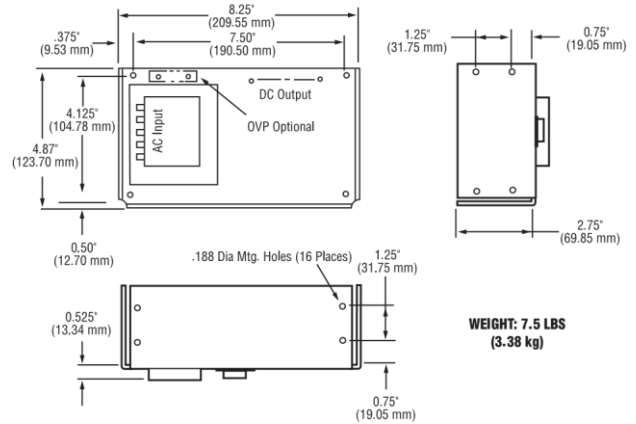
## N CASE

**OVERALL SIZE**  
7.00" x 4.87" x 3.28"  
(177.80 mm) x (123.70 mm) x (83.31 mm)



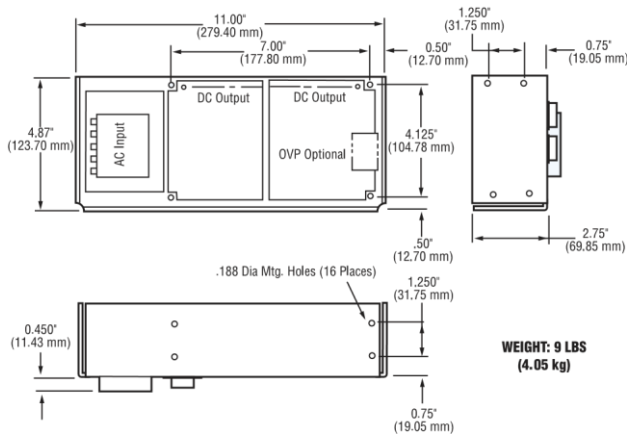
## CP510-A CASE

**OVERALL SIZE**  
8.25" x 4.87" x 3.28"  
(209.55 mm) x (123.70 mm) x (83.31 mm)



## CP131 CASE

**OVERALL SIZE**  
11.00" x 4.87" x 3.28"  
(279.40 mm) x (123.70 mm) x (83.31 mm)



Mechanical Dimensions of Case Types

For more information on these products consult: [tech.support@psbel.com](mailto:tech.support@psbel.com)

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