

## 200-800W Programmable Power Supplies

### Features

- ◆ 2U high
- ◆ Built-in USB, RS-232 & RS-485 Interface
- ◆ Optional LAN, GPIB & Isolated Analog Programming
- ◆ Bench or Rack Mount
- ◆ Constant Current or Voltage Modes
- ◆ Five Year Warranty

### Key Market Segments & Applications



### Model Selector

| Model       | Voltage Adjust Range | Current Adjust Range | Max Power (W) | Ripple 5Hz-1MHz (mV) | Noise 20MHz BW (mV) | Ripple 5Hz-1MHz (mA) | Efficiency % (100-200VAC) |
|-------------|----------------------|----------------------|---------------|----------------------|---------------------|----------------------|---------------------------|
| Z160-1.3-U  | 0 - 160              | 0 - 1.3              | 208           | 10                   | 100                 | 1.2                  | 79 / 81                   |
| Z160-2.6-U  | 0 - 160              | 0 - 2.6              | 416           | 10                   | 100                 | 1.5                  | 84 / 86                   |
| Z160-4-U    | 0 - 160              | 0 - 4                | 640           | 10                   | 100                 | 2.0                  | 86.5 / 88.5               |
| Z160-5-U    | 0 - 160              | 0 - 5                | 800           | 10                   | 100                 | 2.0                  | 86.5 / 88.5               |
| Z320-0.65-U | 0 - 320              | 0 - 0.65             | 208           | 25                   | 150                 | 0.8                  | 79 / 81                   |
| Z320-1.3-U  | 0 - 320              | 0 - 1.3              | 416           | 25                   | 150                 | 1.0                  | 84 / 86                   |
| Z320-2-U    | 0 - 320              | 0 - 2                | 640           | 30                   | 150                 | 1.5                  | 87 / 88.5                 |
| Z320-2.5-U  | 0 - 320              | 0 - 2.5              | 800           | 30                   | 150                 | 1.5                  | 86.5 / 89                 |
| Z650-0.32-U | 0 - 650              | 0 - 0.32             | 208           | 60                   | 250                 | 0.5                  | 79 / 81                   |
| Z650-0.64-U | 0 - 650              | 0 - 0.64             | 416           | 60                   | 250                 | 0.6                  | 84 / 86                   |
| Z650-1-U    | 0 - 650              | 0 - 1                | 650           | 60                   | 250                 | 1.0                  | 86.5 / 88.5               |
| Z650-1.25-U | 0 - 650              | 0 - 1.25             | 812           | 60                   | 250                 | 1.0                  | 87 / 89                   |

### Factory Installed Options

|                                                        | Option Code |
|--------------------------------------------------------|-------------|
| IEC320 cable USA plug (Included in model number above) | -U          |
| <b>Only one of the options below can be included:</b>  |             |
| GPIB Interface*                                        | -IEEE       |
| Voltage Programming Isolated Analog Interface*         | -IS510      |
| Current Programming Isolated Analog Interface*         | -IS420      |
| LAN Interface                                          | -LAN        |

### Part Number Example

Z160-1.3-LAN-U

\*Requires wide body (105mm) case style

### Accessories

|                                                            | Part Number |
|------------------------------------------------------------|-------------|
| 19" Rack Housing                                           |             |
| (Accepts four 105mm width units or six 70mm width units)   | Z-NL100     |
| Blanking Panel for 19" Rack (70mm)                         | Z-BP        |
| Blanking Panel for 19" Rack (105mm)                        | Z-WBP       |
| Dual/Triple Housing                                        |             |
| (Accepts two 105mm case units or three 70mm case units)    | Z-NL200     |
| Serial Link Cable (One is included with each power supply) | Z-RJ45      |
| Communication Cable RS485                                  | Z-485-9     |
| Communication Cable RS232                                  | Z-232-9     |
| North American Line Cord (One included with -U suffix)     | Z-U         |

## Specifications (See brochure on website for full detailed specifications)

| Model                                                      |           | Z160                                                                 | Z320    | Z650    |
|------------------------------------------------------------|-----------|----------------------------------------------------------------------|---------|---------|
| Load Regulation                                            | CV        | 0.01% of rated voltage over 0 - 100% load change                     |         |         |
| Line Regulation                                            | CV        | 0.01% of rated voltage over 0 - 100% input change                    |         |         |
| Recovery Time (1)                                          | CV        | 2ms                                                                  |         |         |
| Temperature Coefficient                                    | CV        | 30ppm/°C following 30 minute warm up                                 |         |         |
| Temperature Stability                                      | CV        | 0.02% of rated voltage over 8 hours following 30 minute warm up time |         |         |
| Warm up Drift (2)                                          | CV        | <0.05% of rated voltage of rated output voltage                      |         |         |
| Up programming response time (10-90% or 90-10% of Vmax)    | CV        | 80ms                                                                 | 150ms   | 150ms   |
| Down programming resp time (CV) (10-90% or 90-10% of Vmax) | Full load | 100ms                                                                | 150ms   | 150ms   |
| Down programming resp time (CV) (90-10% of Vmax)           | Zero load | 2ms                                                                  | 2.5ms   | 3ms     |
| Load Regulation                                            | CC        | 0.09% of rated current over 0 - 100% Vout change                     |         |         |
| Load Regulation thermal drift                              | CC        | < 0.05% of rated current over 30 minutes after load change           |         |         |
| Line Regulation                                            | CC        | 0.02% of rated current over a 85 - 132 or 170 - 265VAC line change   |         |         |
| Temperature Coefficient                                    | CC        | 100ppm/°C of rated current after 30 minute warm up time              |         |         |
| Temperature Stability                                      | CC        | 0.05% of rated current over 8 hours following 30 minute warm up time |         |         |
| Warm up Drift(2)                                           | CC        | <±0.1% of rated current                                              |         |         |
| Vout & Iout programming & readback resolution              | Digitally | < 0.012% of rated voltage/current                                    |         |         |
| Vout & Iout programming & readback accuracy                | Digitally | 0.05% of rated voltage + 0.05% of actual, 0.2% of rated current      |         |         |
| Voltage & Current Programming                              | Analog    | By either Voltage (0-5V or 0-10V) or Resistance (0-5k or 0-10k)      |         |         |
| Voltage & Current Monitoring                               | Analog    | 0-5V or 0-10V Voltage (user selectable), ±1% accuracy                |         |         |
| Overvoltage Shutdown (user programmable)                   | V         | 5 - 176                                                              | 5 - 353 | 5 - 717 |
| Overtemperature Protection                                 | -         | User selectable - latched or non-latching                            |         |         |
| Display - Voltage                                          | -         | 4 digits. Accuracy 0.5% of rated voltage or current ± 1 count        |         |         |
| Remote On/Off                                              | -         | By applied voltage or dry contact relay (user selectable logic)      |         |         |
| Output Good                                                | -         | Open Collector, Low on fail                                          |         |         |
| Remote Sense Compensation (per wire)                       | V         | 5                                                                    | 5       | 5       |
| Communication Interface                                    | -         | RS232, RS485 & USB standard, IEEE488 (GPIB) & LAN optional           |         |         |
| Series Operation                                           | -         | Up to two identical units (with external diodes)                     |         |         |
| Parallel Operation                                         | -         | Up to six units in master-slave configuration                        |         |         |
| Input Voltage / Frequency                                  | -         | 85-265VAC, 47-63Hz                                                   |         |         |
| Inrush Current                                             | -         | < 25A                                                                |         |         |
| Hold Up Time (Typical)                                     | ms        | 16ms                                                                 |         |         |
| Power Factor Correction                                    | -         | Complies with EN61000-3-2 Class A (0.99 typ)                         |         |         |
| Operating Temperature                                      | °C        | 0 - 50°C                                                             |         |         |
| Storage Temperature                                        | °C        | -20 to +85°C                                                         |         |         |
| Humidity (non condensing)                                  | %RH       | Operating: 20 - 90%RH, Storage 10 - 95%RH                            |         |         |
| Cooling                                                    | -         | Internal temperature controlled fan                                  |         |         |
| Withstand Voltage                                          | -         | I/P to GND 2kVAC, I/P to O/P 3kVAC, O/P to GND 1380VDC 1 min         |         |         |
| Insulation Resistance                                      | -         | >100M at 25°C & 70%RH                                                |         |         |
| Vibration (non operating)                                  | -         | IEC60068-2-64                                                        |         |         |
| Shock                                                      | -         | <20G, half sine, 11ms. IEC60068-2-27                                 |         |         |
| Safety Agency Certifications                               | -         | UL61010-1, EN61010-1, IEC61010 (Designed to meet UL/EN60950-1)       |         |         |
| Immunity                                                   | -         | IEC61326 (Designed to meet EN55022 / EN55024)                        |         |         |
| Conducted EMI                                              | -         | IEC/EN61326-1 Industrial location B, FCC part 15-B, VCCI-B           |         |         |
| Radiated EMI                                               | -         | IEC/EN61326-1 Industrial location A, FCC part 15-A, VCCI-A           |         |         |
| Size (H x W x D) (Excluding handles and busbars)           | mm        | Standard body 83 x 70 x 350mm; Wide Body 83 x 105 x 350mm            |         |         |
| Weight                                                     | kg        | Standard body 1.9kg; Wide Body 2.4kg                                 |         |         |
| Warranty                                                   | yrs       | Five Years                                                           |         |         |

### Notes:

- (1) Recovery to within 0.5% of rated voltage after a load change of 10-90% (Output current 10-100% of I<sub>max</sub>)
- (2) Over 30 minute warm up time after power on

For Additional Information, please visit  
[us.tdk-lambda.com/lp/products/zplus-series.htm](http://us.tdk-lambda.com/lp/products/zplus-series.htm)

