

DLM Series

3000-4000 WATTS PROGRAMMABLE DC SUPPLY

Features

- High power density
- Preview push button
- Remote voltage sense & remote operation
- Calibration without removing covers
- Regulatory compliance
- Parallel or series operation
- IEEE-488.2 and RS-232 interface options



Specifications

INPUT

| | |
|---------------|---|
| Input Voltage | 3KW:180-264VAC, single or three phase (<200VAC range limited to 40°C maximum) 4KW:180-264VAC, three phase (<200VAC range limited to 40°C maximum) |
| Frequency | 47-63Hz for both single and three phase input |
| Power Factor | 0.95 typical with three phase input 0.98 typical with single phase input |

ENVIRONMENTAL

| | |
|-----------------------|---|
| Operating temperature | 0°C to 50° (No De-rating) |
| Storage temperature | -40°C to 65°C |
| Cooling | Internal fan with over-temperature protection |

OUTPUT

| | |
|---------------------------|--|
| Voltage adjustment | Zero to rated output |
| Current adjustment | Zero to rated output |
| Ripple & Noise | See table |
| Regulation (Line or Load) | Voltage: 0.05% of maximum rated output +2mV Current: 0.1% of maximum rated output |
| Transient response | Typically recovers in 1ms to within 1% of steady-state output voltage (greater than 50% Vmax) for a 70-100% or 100-70% load change |
| Stability | +/-0.05% of maximum voltage or current over 8 hours after 15 minute warm-up time at fixed line, load and temperature |
| Temperature coefficient | 0.02%/°C of maximum output voltage 0.03%/°C of maximum output current |

OPERATING

| | |
|-------------------------|---|
| Efficiency | 5-8V Models: 82% typical 16-80V Models: 87% typical 150-600V Models: 85% typical |
| Remote sense | The maximum allowed sense line drop is 2V for 5V, 8V and 16V models and 5V for all other models |
| Remote sense protection | Unit will not be damaged due to misconnection of the remote sense leads |
| Remote programming | Voltage, current (0-100%) and OVP (5-110%) of full scale can be programmed by selectable 0-5VDC, 0-10VDC, or 0-5kΩ |
| Remote monitoring | Voltage or current can be monitored with user-selectable ranges, 0-5VDC or 0-10VDC |
| Over-voltage protection | Crowbar type adjustable from 5-110% rated output using front panel control (local or remote program selectable) |
| Displays and indicators | Two 3.5 digital LED displays indicate output voltage, output current and over-voltage setting. LED indication for power on, shut-down, remote, overvoltage, over-temperature and front panel lockout, constant voltage and constant current modes. IEEE-488.2 indicators include error, SRQ and address |
| Software | LabVIEW® driver for M9E/M85 (Contact Powerbox) |
| Built-in protection | Over-voltage (resets by cycling the Enable/standby switch), over-temperature (will automatically reset) |
| Operational features | Master/slave parallel operation, up to 2 units can be connected in parallel with active current sharing control to within 10% of each supply. Series operation, up to 3 units of the same model type can be connected in series (consult manual). Negative terminal rated at 150Vmax Above ground |
| Regulatory compliance | CE Mark on all models |

DLM Series

3000-4000 WATTS PROGRAMMABLE DC SUPPLY

Selection Tables

| MODEL | OUTPUT RATING | | REGULATION LINE AND LOAD | | METER ACCURACY | |
|--------------|---------------|---------------|------------------------------|------------------------|---------------------------------|----------------------------------|
| | VOLTAGE (VDC) | CURRENT (ADC) | VOLTAGE (0.05% OF VMAX +2mV) | CURRENT (0.1% OF IMAX) | VOLTAGE (0.5% OF VMAX +1 COUNT) | CURRENT (0.75% OF IMAX +1 COUNT) |
| DLM 5-350E | 0-5 | 0-350 | 5mV | 350mA | 0.04V | 4A |
| DLM 5-450E | 0-5 | 0-450 | 5mV | 450mA | 0.04V | 5A |
| DLM 8-350E | 0-8 | 0-350 | 6mV | 350mA | 0.05V | 4A |
| DLM 8-450E | 0-8 | 0-450 | 6mV | 450mA | 0.05V | 5A |
| DLM 16-185E | 0-16 | 0-185 | 10mV | 185mA | 0.09V | 3A |
| DLM 16-250E | 0-16 | 0-250 | 10mV | 250mA | 0.09V | 3A |
| DLM 32-95E | 0-32 | 0-95 | 18mV | 95mA | 0.3V | 0.8A |
| DLM 32-125E | 0-32 | 0-125 | 18mV | 125mA | 0.3V | 1A |
| DLM 40-75E | 0-40 | 0-75 | 22mV | 75mA | 0.3V | 0.7A |
| DLM 40-100E | 0-40 | 0-100 | 22mV | 100mA | 0.3V | 0.9A |
| DLM 60-50E | 0-60 | 0-50 | 32mV | 50mA | 0.4V | 0.5A |
| DLM 60-66E | 0-60 | 0-66 | 32mV | 66mA | 0.4V | 0.6A |
| DLM 80-37E | 0-80 | 0-37 | 42mV | 37mA | 0.5V | 0.4A |
| DLM 80-50E | 0-80 | 0-50 | 42mV | 50mA | 0.5V | 0.5A |
| DLM 150-20E | 0-150 | 0-20 | 77mV | 20mA | 0.9V | 0.3A |
| DLM 150-26E | 0-150 | 0-26 | 77mV | 26mA | 0.9V | 0.3A |
| DLM 300-10E | 0-300 | 0-10 | 152mV | 10mA | 1.6V | 0.09A |
| DLM 300-13E | 0-300 | 0-13 | 152mV | 13mA | 1.6V | 0.11A |
| DLM 600-5E | 0-600 | 0-5 | 302mV | 5mA | 3.1V | 0.05A |
| DLM 600-6.6E | 0-600 | 0-6.6 | 302mV | 7mA | 3.1V | 0.06A |

| MODEL | PREVIEW ACCURACY | | OVP ADJUSTMENT RANGE (5% TO 110% OF VMAX) | RIPPLE AND NOISE | | STABILITY | | TEMP. COEFF. | | MAXIMUM TOTAL REMOTE SENSE DROP |
|--------------|---------------------------------|---------------------------------|---|------------------|-------------|-------------------------|-------------------------|----------------------------|----------------------------|---------------------------------|
| | VOLTAGE (0.5% OF VMAX +1 COUNT) | CURRENT (1.0% OF IMAX +1 COUNT) | | RIPPLE (RMS)* | NOISE (P-P) | VOLTAGE (0.05% OF VMAX) | CURRENT (0.05% OF IMAX) | VOLTAGE (0.02%/°C OF VMAX) | CURRENT (0.03%/°C OF IMAX) | |
| DLM 5-350E | 0.04V | 5A | 0.3-5.5V | 12mV | 100mV | 3mV | 175mA | 1mV | 105mA | 2V |
| DLM 5-450E | 0.04V | 6A | 0.3-5.5V | 12mV | 100mV | 3mV | 225mA | 1mV | 135mA | 2V |
| DLM 8-350E | 0.05V | 5A | 0.4-8.8V | 12mV | 100mV | 4mV | 175mA | 1.6mV | 105mA | 2V |
| DLM 8-450E | 0.05V | 6A | 0.4-8.8V | 12mV | 100mV | 4mV | 225mA | 1.6mV | 135mA | 2V |
| DLM 16-185E | 0.09V | 3A | 0.8-17.6V | 10mV | 100mV | 8mV | 93mA | 3.2mV | 55mA | 2V |
| DLM 16-250E | 0.09V | 4A | 0.8-17.6V | 10mV | 100mV | 8mV | 125mA | 3.2mV | 75mA | 2V |
| DLM 32-95E | 0.3V | 1.1A | 1.6-35V | 10mV | 100mV | 16mV | 48mA | 6mV | 30mA | 5V |
| DLM 32-125E | 0.3V | 1.4A | 1.6-35V | 10mV | 100mV | 16mV | 63mA | 6mV | 38mA | 5V |
| DLM 40-75E | 0.3V | 0.9A | 2-44V | 10mV | 100mV | 20mV | 38mA | 8mV | 23mA | 5V |
| DLM 40-100E | 0.3V | 1.1A | 2-44V | 10mV | 100mV | 20mV | 50mA | 8mV | 30mA | 5V |
| DLM 60-50E | 0.4V | 0.6A | 3-66V | 15mV | 100mV | 30mV | 25mA | 12mV | 15mA | 5V |
| DLM 60-66E | 0.4V | 0.8A | 3-66V | 15mV | 100mV | 30mV | 33mA | 12mV | 19.8mA | 5V |
| DLM 80-37E | 0.5V | 0.5A | 4-88V | 15mV | 120mV | 40mV | 19mA | 16mV | 12mA | 5V |
| DLM 80-50E | 0.5V | 0.6A | 4-88V | 15mV | 120mV | 40mV | 25mA | 16mV | 15mA | 5V |
| DLM 150-20E | 0.9V | 0.3A | 7.5-165V | 30mV | 200mV | 75mV | 10mA | 30mV | 6mA | 5V |
| DLM 150-26E | 0.9V | 0.4A | 7.5-165V | 30mV | 200mV | 75mV | 13mA | 30mV | 7.8mA | 5V |
| DLM 300-10E | 1.6V | 0.11A | 15-330V | 60mV | 300mV | 150mV | 5mA | 60mV | 3mA | 5V |
| DLM 300-13E | 1.6V | 0.14A | 15-330V | 60mV | 300mV | 150mV | 6.5mA | 60mV | 3.9mA | 5V |
| DLM 600-5E | 3.1V | 0.06A | 30-660V | 100mV | 500mV | 300mV | 2.5mA | 120mV | 1.5mA | 5V |
| DLM 600-6.6E | 3.1V | 0.08A | 30-660V | 100mV | 500mV | 300mV | 3.3mA | 120mV | 2mA | 5V |

*RMS ripple typical from 20Hz to 300kHz

Dimensions: 2RU or 88mm(H)x482mm(W)x508mm(D) ; Weight: 18.2kg

DLM Series

3000-4000 WATTS PROGRAMMABLE DC SUPPLY

OPTIONS & ACCESSORIES

INPUT VOLTAGE OPTIONS

| | |
|----|---------------------------|
| M1 | 400 VAC input (4 kW only) |
| M2 | 480 VAC input (4 kW only) |

REMOTE INTERFACE OPTIONS

| | |
|------|---|
| M9E | IEEE-488.2 and RS 232 Interfaces |
| M13 | Locking shafts (front panel potentiometers) |
| M51A | Optically Isolated analog programming |
| M85 | Multichannel Slave Interface |

PARALLEL CABLE

| | |
|------------|---|
| 5361969-01 | Paralleling Cable, one cable per slave unit |
|------------|---|

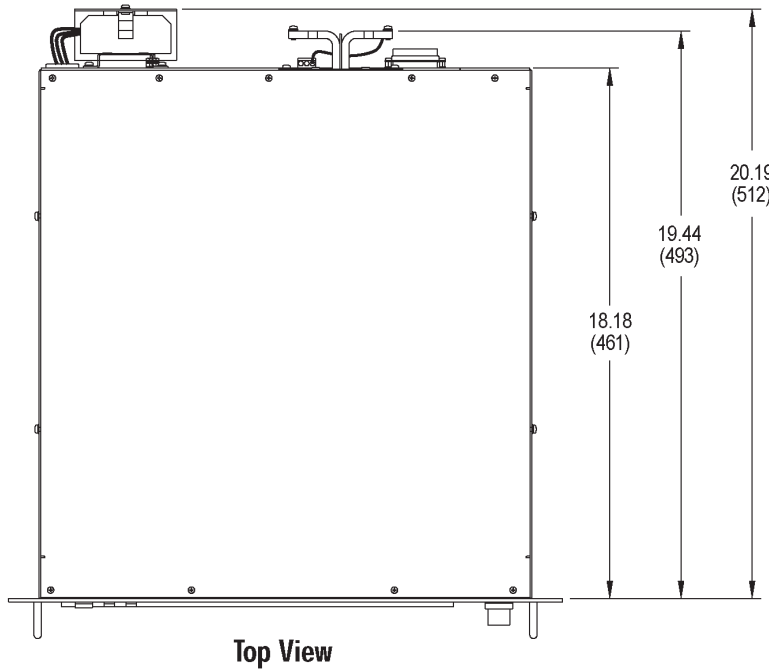
RACK SLIDE KIT

| | |
|------------|----------------|
| 105-330-26 | Rack slide kit |
|------------|----------------|

J3 PROGRAM AND SENSE

| | | | |
|----|------------------------------|----|--|
| 1 | Remote Output Enable | 14 | Remote Shutdown Input (+), Pos or Neg true logic selection with S1 |
| 2 | Remote Shutdown Return(-) | 15 | +5 VDC Auxillary Output |
| 3 | Remote OVP Programing Input | 16 | 1 mA Current Source for OVP Programming |
| 4 | Remote Programming Indicator | 17 | OVP Status Indicator |
| 5 | Operating Mode Indicator | 18 | Overtemperature Shutdown Indicator |
| 6 | Status Indicator Return (-) | 19 | DC Voltage Monitor Output |
| 7 | Current Monitor Output | 20 | Remote/Local Voltage Control Select |
| 8 | N/C | 21 | 1 mA Current Source for Voltage Programming |
| 9 | Voltage Programing Input | 22 | 1 mA Current Source for Current Programming |
| 10 | Current Programing Unit | 23 | Remote/Local Current Control Select |
| 11 | N/C | 24 | N/C |
| 12 | Programming/Monitor Return | 25 | N/C |
| 13 | N/C | | |

Technical Illustration



Input Connections

Compression lug terminals
#6 AWG max wire size

Chassis Ground Connection

#10-32 threaded stud

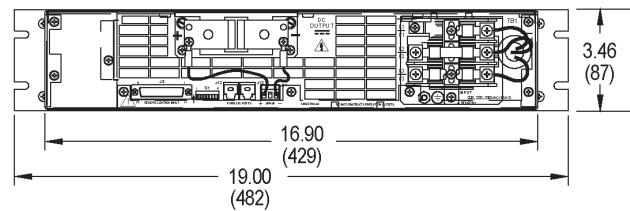
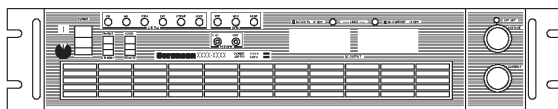
Output Connections

5V to 80V

Copper bus bars, nickel plated
Holes in bus bar 0.312 (7.92)

150V to 600V

Terminal block with #8-32 screws



Dimensions in inches (millimeters)