

600 Watts

- Single and Dual Outputs
- Up to 900 W Peak Power on Single Output Versions
- Power Good, Remote On/Off and Remote Sense
- Connector Options
- Forced-cooled
- U-Channel & End-Fan Versions Fit 1U Applications
- 3 Year Warranty



The SMH600 series provide up to 600 W in a low profile (1.6") chassis mount format. Single outputs are available from 3.3 – 60 VDC and there are three dual output models offering combinations from 5V to 24 VDC. The full power rating is available from 90 – 264 VAC input in ambient temperatures up to 50 °C providing power solutions for global use without the need for de-rating. All models comply with level B for both conducted and radiated emissions.

Dimensions:

SMH:

8.00 x 5.00 x 1.60" (203.0 x 127.0 x 40.64 mm)

SMH-EF:

9.10 x 5.00 x 1.60" (231.1 x 127.0 x 40.64 mm)

SMH-TF:

8.00 x 5.00 x 2.20" (203.0 x 127.0 x 55.8 mm)

Models & Ratings

| Output | Output 1 ⁽³⁾ | | Output 2 | | Model Number ⁽²⁾ |
|--------|-------------------------|----------|----------|---------|-----------------------------|
| | Voltage | Current | Voltage | Current | |
| 330 W | 3.3 VDC | 100.00 A | | | SMH600PS03 |
| 500 W | 5.0 VDC | 100.00 A | | | SMH600PS05 |
| 600 W | 12.0 VDC | 50.00 A | | | SMH600PS12 |
| 600 W | 15.0 VDC | 40.00 A | | | SMH600PS15 |
| 600 W | 18.0 VDC | 33.33 A | | | SMH600PS18 |
| 600 W | 24.0 VDC | 25.00 A | | | SMH600PS24 |
| 600 W | 36.0 VDC | 16.60 A | | | SMH600PS36 |
| 600 W | 48.0 VDC | 12.50 A | | | SMH600PS48 |
| 600 W | 54.0 VDC | 11.10 A | | | SMH600PS54 |
| 600 W | 60.0 VDC | 10.00 A | | | SMH600PS60 |
| 500 W | +5.0 VDC | 50.00 A | +12.0 V | 33.33 A | SMH600PD0512 |
| 500 W | +5.0 VDC | 50.00 A | +24.0 V | 16.67 A | SMH600PD0524 |
| 600 W | +12.0 VDC | 33.33 A | +24.0 V | 16.67 A | SMH600PD1224 |

Notes

1. Add suffix '-EF' to model number for end fan type, '-TF' for top fan type.
2. Standard models have screw terminals.
For optional Molex input connector add suffix '-F-', for optional Molex output connector add suffix '-G' and for optional Molex input and output connectors add suffix '-FG'. Molex output terminals are not available on 3V3 and 5V single output versions or 0512 and 0524 dual output versions. For optional IEC320-C14 inlet on end fan types add suffix '-K'
3. Output peak power of 900 W for 500 μs is available on single output models.

Summary

| Characteristic | Minimum | Typical | Maximum | Units | Notes & Conditions |
|-----------------------|--|------------|---------|---------|--|
| Input Range | 90 | | 264 | VAC | |
| Signals | | | | | Power Good |
| Efficiency | | 90 / 89 | | % | Single output / Dual output at 230 V and full load |
| Operating Temperature | 0 | | +70 | °C | Derate at 2.5%/°C from +50 °C to +70 °C |
| Weight | | 3.53 (1.6) | | lb (kg) | End fan '-EF' version |
| EMC | EN55022 Level B Conducted & Radiated, EN61000-4, EN61000-3 | | | | |
| Safety Approvals | EN60950-1, UL60950-1, CSA22.2 No.60950-1 | | | | |

Input

| Characteristic | Minimum | Typical | Maximum | Units | Notes & Conditions |
|-----------------------|-------------------|---------|---------|-------|----------------------------|
| Input Voltage | 90 | | 264 | VAC | |
| Input Frequency | 47 | | 63 | Hz | |
| Input Current | | 6 | | A | 115 VAC (3.0 A at 230 VAC) |
| Inrush Current | | 70 | | A | 230 VAC (35 A at 115 VAC) |
| Power Factor | | >0.9 | | | EN61000-3-2 class A |
| Earth Leakage Current | | <1.0 | | mA | 264 VAC |
| Input Protection | T10.0 A/250V fuse | | | | |

Output

| Characteristic | Minimum | Typical | Maximum | Units | Notes & Conditions |
|-------------------------------|--|--------------|---------|---------|--|
| Output Voltage | 3.3 | | 60 | VDC | See Models and Ratings table |
| Output Voltage Trim | | ±5 | | % | V1 (V2 of dual output models will track by same % of adjustment) |
| Initial Set Accuracy | | ±1 | | % | |
| Minimum Load | 1 / 10 | | | % | Single / Dual (for regulation) |
| Start Up Delay | | | 2.0 | s | 115 VAC |
| Start Up Rise Time | | 40 | | ms | PD1224 model typically 50 ms |
| Hold Up Time | 10 | 13 | | ms | 115 VAC |
| Drift | | | ±0.5 | % | After 20 min warm up |
| Line Regulation | | | ±0.5 | % | |
| Load Regulation | | ±1 / ±3 / ±5 | | % | Single / Dual V1 / Dual V2 outputs |
| Over/Undershoot | | 1.5 | 5 | % | |
| Transient Response | | | ±5 | % | Deviation, recovery to within 1% in 500 µs for a 50% load change |
| Ripple & Noise | | | 1 | % pk-pk | Measured at 20 MHz BW and 10 µF electrolytic and 0.1 µF ceramic at terminals |
| Overvoltage Protection | | | 130 | % | V1 recycle AC input to reset |
| Overload Protection | 110 | | 140 | % | |
| Short Circuit Protection - V1 | | | | | Trip and restart, auto recovery |
| Remote On/Off | Applying short circuit between Remote On/Off pin and signal return turns output off. | | | | |
| Remote Sense | Compensates for 0.5 V max. voltage drop on single output models only. | | | | |

General

| Characteristic | Minimum | Typical | Maximum | Units | Notes & Conditions |
|---|---------|------------|---------|-------------------|--|
| Efficiency | | 90 / 89 | | % | Single output / Dual output at 230 V and full load |
| Isolation: Input to Output Input to Ground Output to Ground | | | 3000 | VAC | |
| | | | 1500 | VAC | |
| | | | 250 | VDC | |
| Switching Frequency | | 60 / 28 | | kHz | PFC / PWM |
| Power Density | 9.37 | | | W/in ³ | For U Channel Versions |
| Signals | | | | | Power Good |
| Mean Time Between Failure | 115 | | | kHrs | MIL-HDBK-217F at 25 °C GB |
| Weight | | 3.53 (1.6) | | lb (kg) | End fan '-EF' version |

Environmental

| Characteristic | Minimum | Typical | Maximum | Units | Notes & Conditions |
|-----------------------|---------|---------|---------|-------|--|
| Operating Temperature | 0 | | +70 | °C | Derate at 2.5%/°C from +50 °C to +70 °C |
| Storage Temperature | -20 | | +85 | °C | |
| Cooling | | | | | Forced-cooled. -EF and -EF versions have inbuilt two speed fan. Speed increases when output exceeds 2 A approx |
| Operating Altitude | | | 3000 | m | |
| Vibration | 5 | | 50 | Hz | Acceleration 7.35 ms ² on 3 axes |

EMC: Emissions

| Phenomenon | Standard | Test Level | Notes & Conditions |
|------------------|-------------|------------|------------------------|
| Conducted | EN55022 | Level B | |
| Radiated | EN55022 | Level B | |
| Harmonic Current | EN61000-3-2 | Class A | Class C for loads ≥70% |
| Voltage Flicker | EN61000-3-3 | | |

EMC: Immunity

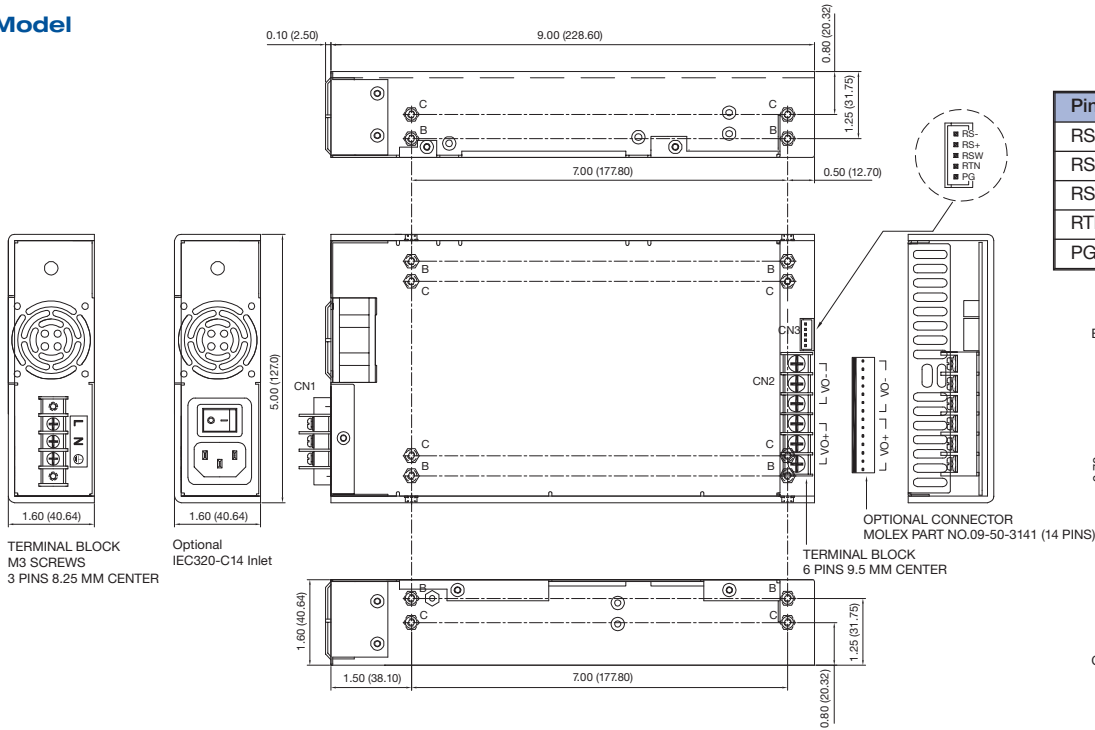
| Phenomenon | Standard | Test Level | Criteria | Notes & Conditions |
|------------------------|--------------|--|---------------|-----------------------------|
| ESD | EN61000-4-2 | Level 3 | A | |
| Radiated | EN61000-4-3 | Level 2 | A | |
| EFT | EN61000-4-4 | Level 2 | A | |
| Surges | EN61000-4-5 | Installation class 3 | A | |
| Conducted | EN61000-4-6 | Level 2 | A | |
| Dips and Interruptions | EN61000-4-11 | DIP: 30% 10 ms DIP: 60% 100 ms INT: 100% 5000 ms | A A/B B | Highline (<420 W) / Lowline |

Safety Approvals

| Safety Agency | Safety Standard | Notes & Conditions |
|---------------|--|--------------------|
| UL | UL60950-1 (2007), CSA 22.2 No.60950-1-1:08 | |
| CSA | C22.2 No.60950-1 | |
| TUV | EN60950-1 | |

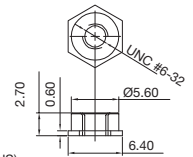
Mechanical Details - End Fan (-EF)

Single Model

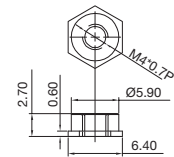


| Pin | Description |
|-----|-----------------------|
| RS- | Negative remote sense |
| RS+ | Positive remote sense |
| RSW | Remote On/Off |
| RTN | Signal Return |
| PG | Power Good |

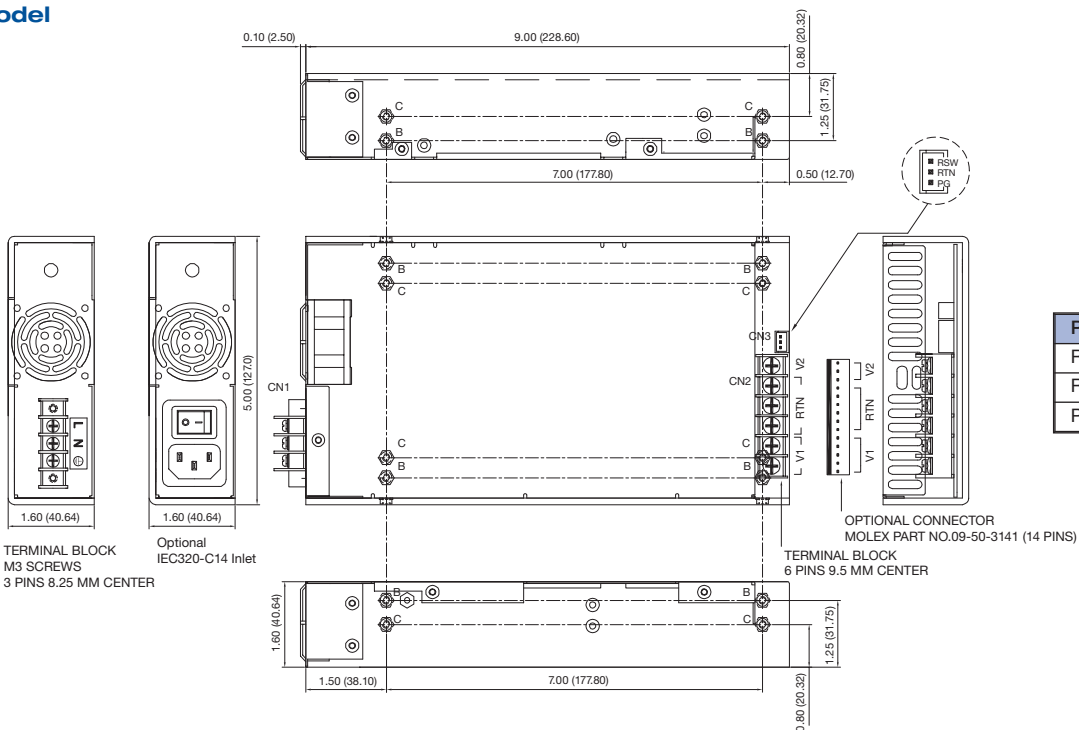
B: MOUNTING HOLE 8 PLACE
6-32 UNC(ZN-PLATED)



C: MOUNTING HOLE 8 PLACE
M4X0.7 (BRASS)



Dual Model



| Pin | Description |
|-----|---------------|
| RSW | Remote On/Off |
| RTN | Signal Return |
| PG | Power Good |

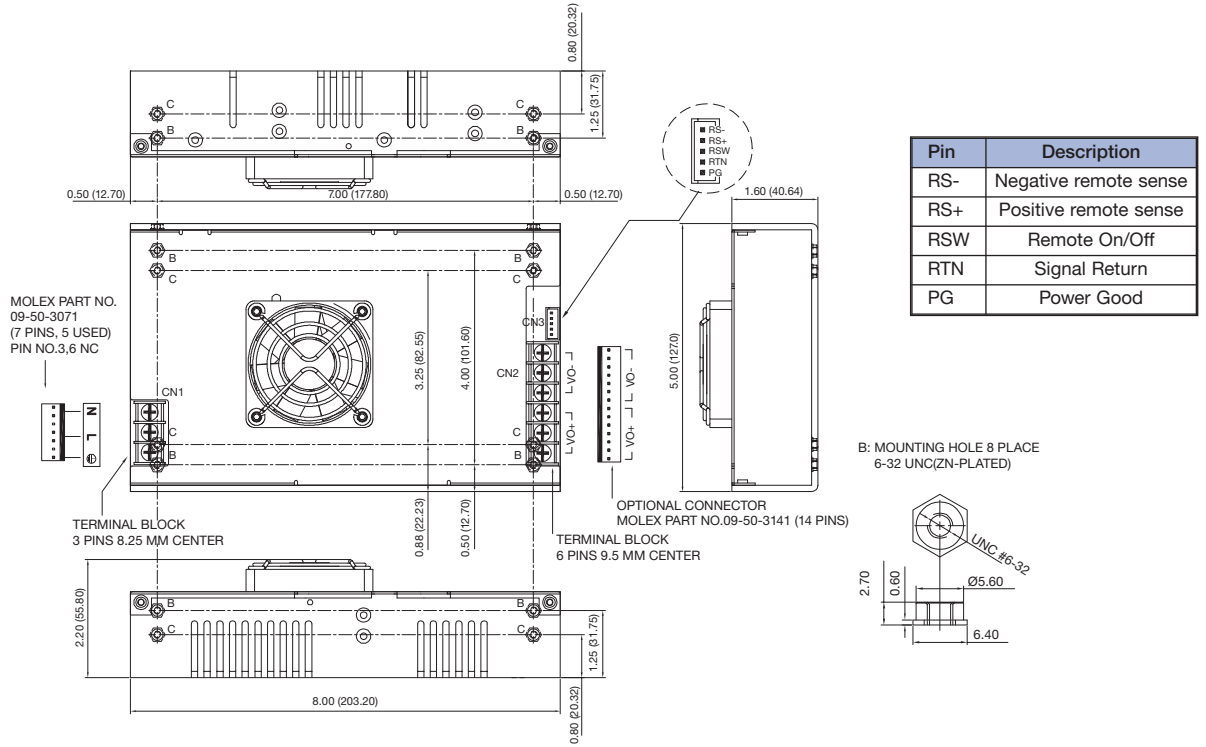
Notes

1. All dimensions in inches (mm).
2. Tolerance .xx = ±0.02 (0.50); .xxx = ±0.01 (0.25)

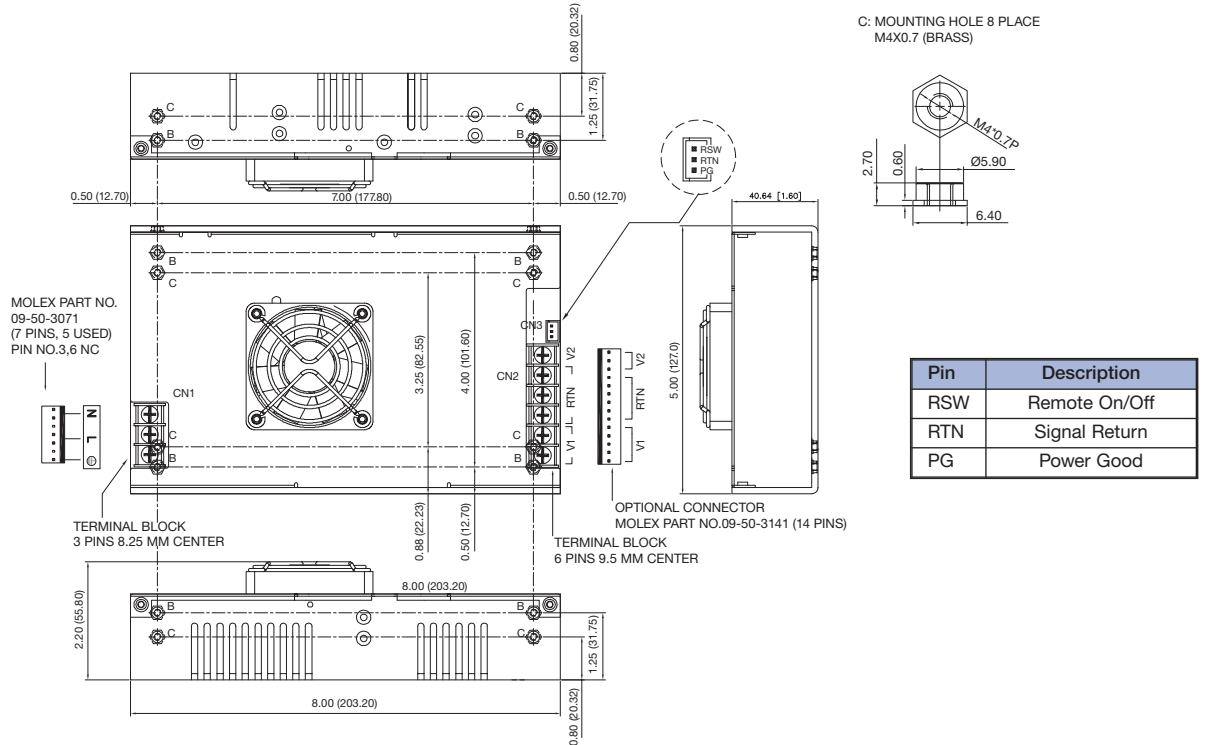
3. Weight: 3.53 lbs (1.6 kg)
4. Fan output not available

Mechanical Details - Top Fan (-TF)

Single Model



Dual Model

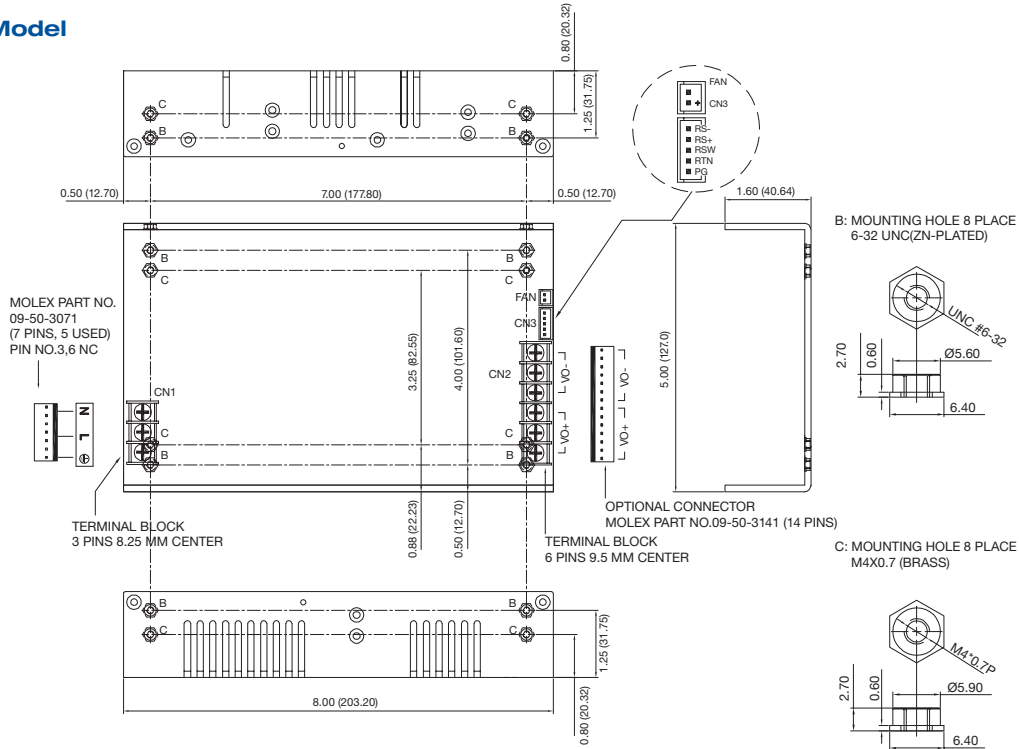


Notes

1. All dimensions in inches (mm).
2. Tolerance .xx = ±0.02 (0.50); .xxx = ±0.01 (0.25)
3. Weight: 2.87 lbs (1.3 kg)
4. Fan output not available

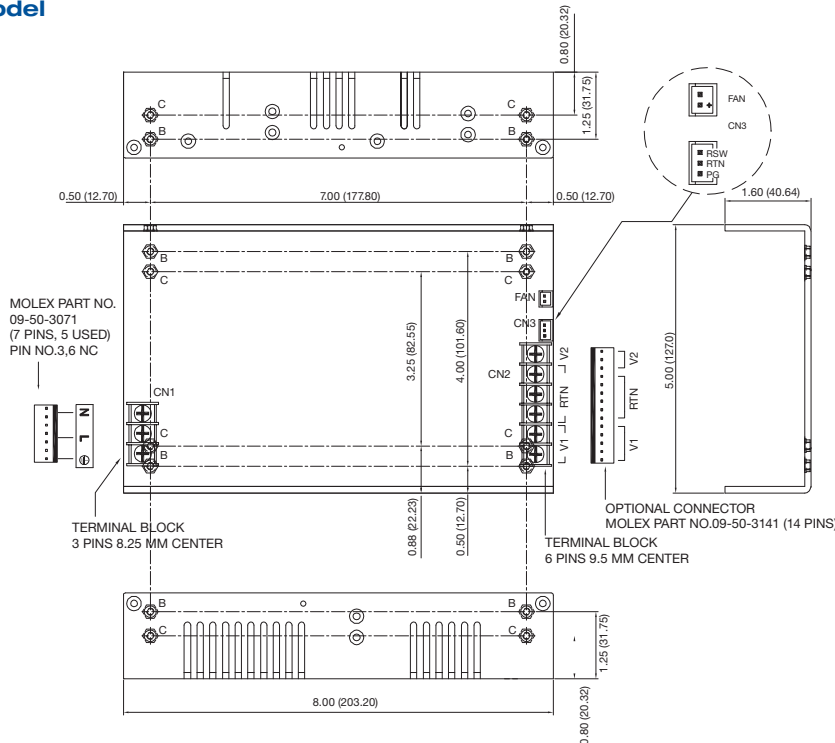
Mechanical Details - U-Channel

Single Model



| Pin | Description |
|-----|-----------------------|
| RS- | Negative remote sense |
| RS+ | Positive remote sense |
| RSW | Remote On/Off |
| RTN | Signal Return |
| PG | Power Good |

Dual Model



| Pin | Description |
|-----|---------------|
| RSW | Remote On/Off |
| RTN | Signal Return |
| PG | Power Good |

Notes

1. All dimensions in inches (mm).
2. Tolerance .xx = ±0.02 (0.50); .xxx = ±0.01 (0.25)

3. Weight: 2.65 lbs (1.2 kg)