



FEATURES:

- Super wide Input range
- Extremely High Input range up to 1500VDC
- Operating temperature of -40 to +70°C
- Over current and Over Voltage protection
- No minimum load required
- High efficiency of up to 80%
- I/O Isolation of 4000VAC
- Reversed connection protection



Models
Single output

| Model | Input Voltage (V) | Output Voltage (V) | Output Current max (A) | Isolation (VAC) | Max Capacitive Load(uF) | Efficiency (200VDC) (%) |
|--------------------|-------------------|--------------------|------------------------|-----------------|-------------------------|-------------------------|
| AM15W-60012S-NZ** | 100-1000 | 12 | 1.25 | 4000 | 2000 | 77 |
| AM15W-60015S-NZ** | 100-1000 | 15 | 1 | 4000 | 1200 | 78 |
| AM15W-60024S-NZ** | 100-1000 | 24 | 0.625 | 4000 | 470 | 80 |
| AM15W-80012S-NZ*** | 200-1500 | 12 | 1.25 | 4000 | 2000 | 71* |
| AM15W-80015S-NZ*** | 200-1500 | 15 | 1 | 4000 | 1200 | 72* |
| AM15W-80024S-NZ*** | 200-1500 | 24 | 0.625 | 4000 | 470 | 74* |

*Measured at 800VDC nominal input.

** For 600VDC input models add suffix “-ST” for optional screw terminal bottom plate or “-STD” for optional DIN Rail screw terminal bottom plate.

***For 800VDC input models add suffix “-ST” for optional DIN Rail screw terminal bottom plate with fuse and incorporated EMC filter or “-STS” for an optional DIN Rail screw terminal bottom plate only.

NOTE: All specifications in this datasheet are measured at an ambient temperature of 25°C, humidity<75%, nominal input voltage and at rated output load unless otherwise specified.

Input Specifications

| Parameters | Nominal | Typical | Maximum | Units |
|--------------------------------|--|---------|------------|-------|
| Voltage range | 600VDC | | 100-1000 | VDC |
| | 800VDC | | 200-1500 | VDC |
| Input Current | 600VDC input models, 200VDC | | 120 | mA |
| | 600VDC input models, 600VDC | | 40 | mA |
| | 600VDC input models, 1000VDC | | 22 | mA |
| | 800VDC input models, 200VDC | | 120 | mA |
| | 800VDC input models, 800VDC | | 30 | mA |
| | 800VDC input models, 1500VDC | | 16 | mA |
| Inrush current | 600VDC input models, 200VDC | 7 | | A |
| | 600VDC input models, 600VDC | 20 | | A |
| | 600VDC input models, 1000VDC | 30 | | A |
| | 800VDC input models, 200VDC | 50 | | A |
| | 800VDC input models, 1500VDC | 150 | | A |
| External fuse | 600VDC input models, Slow blow | | 2A/1500VDC | |
| | 800VDC input models, Slow blow | | 4A/1500VDC | |
| Startup time | 600VDC input models only | | 1 | s |
| | 800VDC input models only | | 3 | s |
| Input under voltage protection | 800VDC input models only, protection ON | | 170-185 | VDC |
| | 800VDC input models only, protection OFF | | 180-195 | VDC |

Isolation Specifications

| Parameters | Conditions | Typical | Maximum | Units |
|--------------------|------------|---------|---------|-------|
| Tested I/O voltage | 1 min | 4000 | | VAC |

Output Specifications

| Parameters | Conditions | Typical | Maximum | Units |
|--------------------------|--------------------------------------|---------|---------|-----------------------|
| Voltage accuracy | 600VDC input models | ±1 | ±2 | % |
| | 800VDC input models | ±2 | | % |
| Line voltage regulation | 600VDC input models | ±0.5 | ±1 | % |
| | 800VDC input models | ±1 | | % |
| Load voltage regulation | 600VDC input models | ±0.5 | ±1 | % |
| | 800VDC input models | ±1 | | % |
| Over voltage protection | AM15W-60012S-NZ | | 15 | VDC |
| | AM15W-60015S-NZ | | 19 | VDC |
| | AM15W-60024S-NZ | | 28 | VDC |
| | AM15W-80012S-NZ | | 20 | VDC |
| | AM15W-80015S-NZ | | 20 | VDC |
| | AM15W-80024S-NZ | | 30 | VDC |
| Over current protection | 600VDC input models | ≥110 | | % of I _{out} |
| | 800VDC input models | ≥120 | | % of I _{out} |
| Short Circuit protection | Continuous | | | |
| Short circuit restart | Auto recovery | | | |
| Temperature coefficient | | ±0.02 | | %/°C |
| Ripple & Noise | 20MHz Bandwidth, 600VDC input models | 100 | 200 | mV p-p |
| | 20MHz Bandwidth, 800VDC input models | 150 | 300 | mV p-p |

General Specifications

| Parameters | Conditions | Typical | Maximum | Units |
|------------------------|---|--|---------|-------|
| Switching frequency | 600VDC input models, 100% load | | 75 | KHz |
| | 800VDC input models, 100% load | 65 | | KHz |
| Operating temperature | With derating | -40 to 70 | | °C |
| Derating | 600VDC input models, +50 to +70°C | 2 | | %/°C |
| | 800Vin, 12/15Vout, 200-300VDC, -40°C to 0°C | 0.75 | | %/°C |
| | 800Vin, 24Vout, 200-300VDC, -40°C to 0°C | 1.5 | | %/°C |
| | 800Vin, 1000-1500VDC, -40°C to -15°C | 1.2 | | %/°C |
| | 800VDC input models, +50°C to +70°C | 1.5 | | %/°C |
| | 800VDC input models, 2000m-5000m | 6.7 | | %/km |
| Storage temperature | 600VDC input models | -40 to 105 | | °C |
| | 800VDC input models | -40 to 85 | | °C |
| Cooling | Natural convection | | | |
| Humidity | | | 95 | % RH |
| Case material | Heat resistant, black plastic (UL94-V0) | | | |
| Weight | 600VDC input models, pin mountable | 95 | | g |
| | 600VDC input models, -ST mounting plate | 150 | | g |
| | 600VDC input models, -STD mounting plate | 190 | | g |
| | 800VDC input models, pin mountable | 400 | | g |
| | 800VDC input models, -ST mounting plate | 710 | | g |
| | 800VDC input models, -STS mounting plate | 460 | | g |
| Dimensions (L x W x H) | 600VDC input models, pin mountable | 2.76 x 1.89 x 0.93inches, 70.0 x 48.0 x 23.5mm | | |
| | 600VDC input models, -ST mounting plate | 3.78 x 2.13 x 1.26inches, 96.1 x 54.0 x 32.0mm | | |
| | 600VDC input models, -STD mounting plate | 3.78 x 2.13 x 1.26inches, 96.1 x 54.0 x 36.6mm | | |
| | 800VDC input models, pin mountable | 4.92 x 2.95 x 1.58inches, 125.0 x 75.0 x 40.0mm | | |
| | 800VDC input models, -ST mounting plate | 5.75 x 5.43 x 2.17inches, 146.0 x 138.0 x 55.0mm | | |
| | 800VDC input models, -STS mounting plate | 5.08 x 4.29 x 1.93inches, 129.0 x 109.0 x 49.0mm | | |
| MTBF | >300,000 hrs (MIL-HDBK -217F, Ground Benign, t=+25°C) | | | |
| Soldering temperature | Manual soldering, duration 3 to 5 sec | 360 | | °C |
| | Wave soldering, duration 5 to 10 sec | 260 | | °C |

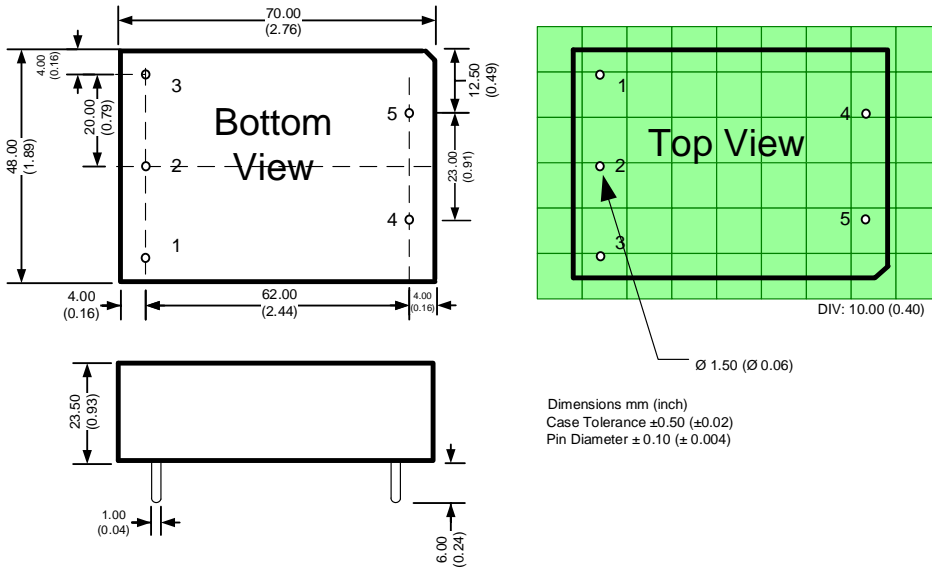
Safety Specifications

| Parameters | | |
|------------|---|---|
| Approvals | CE (for 800Vin models only) | |
| Standards | Design to meet CSA-C22.2 No.107.1-01, UL 1741, EN62109 (for 800Vin models only) | |
| | EMI - Conducted and radiated emission | EN55022, class A (with the recommended EMC circuit) |
| | Electrostatic Discharge Immunity | IEC 61000-4-2: Contact $\pm 6\text{KV}$ /Air $\pm 8\text{KV}$, Criteria B |
| | RF, Electromagnetic Field Immunity | IEC 61000-4-3: 10V/m, Criteria A |
| | Electrical Fast Transient/Burst Immunity (600Vin) | IEC 61000-4-4: $\pm 4\text{KV}$, Criteria B (with the recommended EMC circuit) |
| | Electrical Fast Transient/Burst Immunity (800Vin) | IEC 61000-4-4: $\pm 2\text{KV}$, Criteria B (with the recommended EMC circuit) |
| | Surge Immunity (600VDC Vin) | IEC 61000-4-5: $\pm 2\text{KV}$, Criteria B (with the recommended EMC circuit) |
| | Surge Immunity (800VDC Vin) | IEC 61000-4-5: $\pm 1\text{KV}$, Criteria B (with the recommended EMC circuit) |
| | RF, Conducted Disturbance Immunity | IEC 61000-4-6: 10Vrms, Criteria A |
| | Power frequency Magnetic Field Immunity (800Vin) | IEC 61000-4-8: 10A/m, Criteria A |

*800VDC input models with -ST option do not require additional circuit to meet above standards.

Dimensions

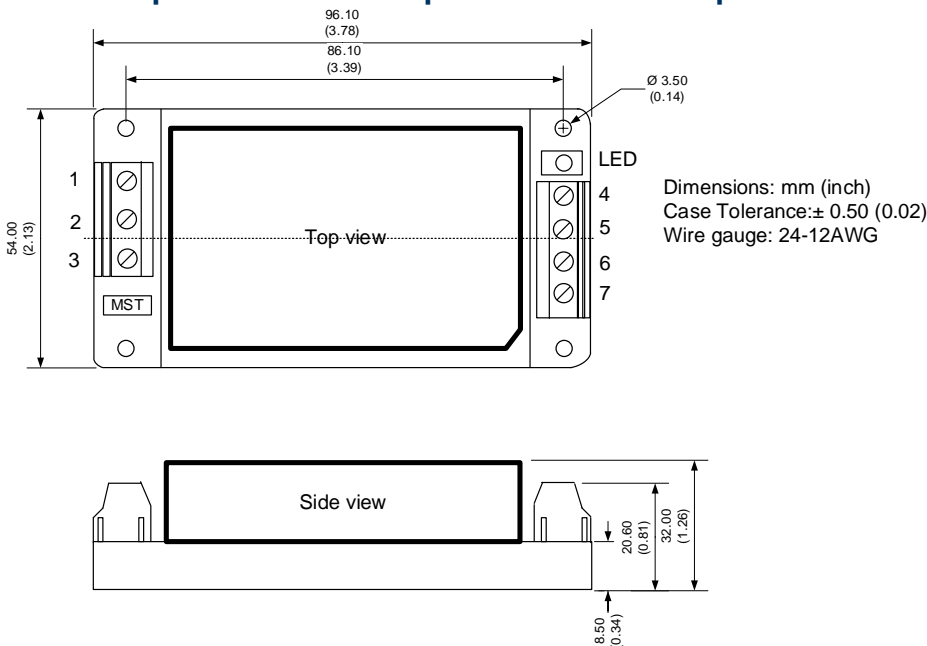
600VDC input models



Pin Out Specifications

| Pin | 600VDC Input |
|-----|--------------|
| 1 | N.C. |
| 2 | -Vin |
| 3 | +Vin |
| 4 | -Vout |
| 5 | +Vout |

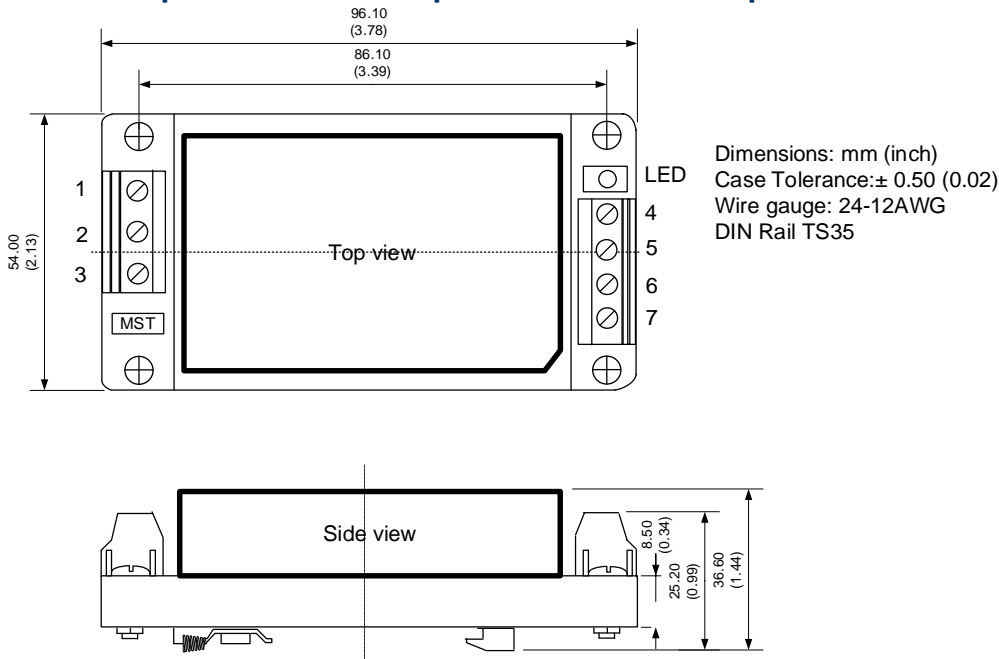
600VDC input models with optional -ST bottom plate



Pin Out Specifications

| Pin | Single |
|-----|--------|
| 1 | -Vin |
| 2 | N.C. |
| 3 | +Vin |
| 4 | -Vout |
| 5 | N.C. |
| 6 | N.C. |
| 7 | N.C. |
| 8 | +Vout |

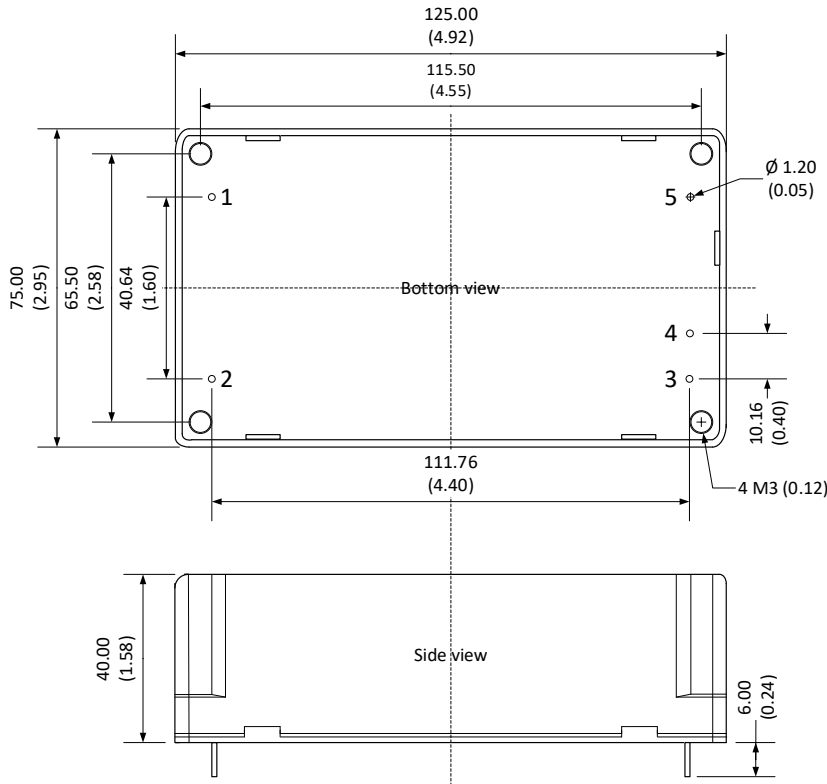
600VDC input models with optional -STD bottom plate



Pin Out Specifications

| Pin | Single |
|-----|--------|
| 1 | -Vin |
| 2 | N.C. |
| 3 | +Vin |
| 4 | -Vout |
| 5 | N.C. |
| 6 | N.C. |
| 7 | +Vout |

800VDC input models



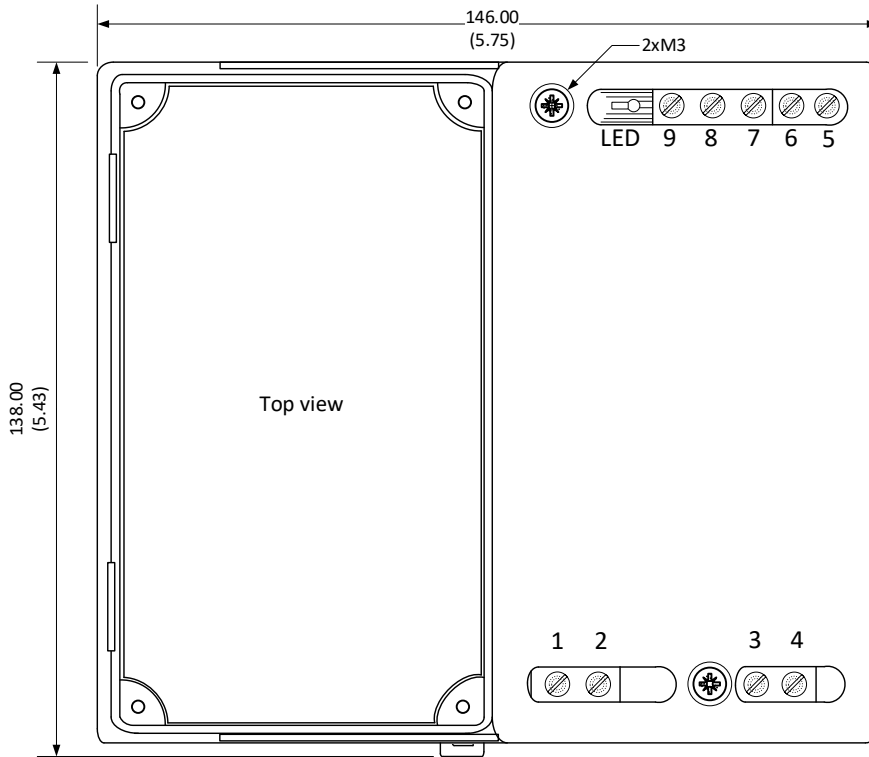
Pin Out Specifications

| Pin | 800VDC Input |
|-----|--------------|
| 1 | +Vin |
| 2 | -Vin |
| 3 | +Vout |
| 4 | -Vout |
| 5 | N.C. |

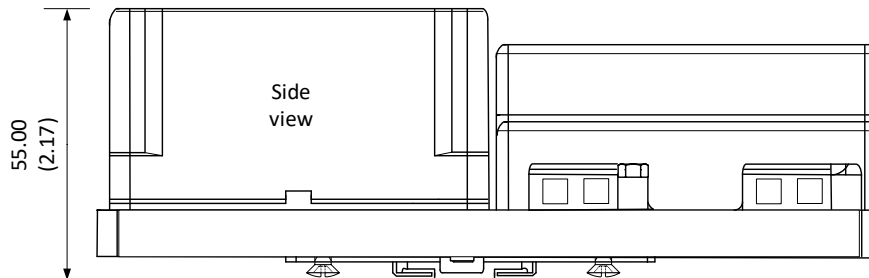
Dimensions mm (inch)
Case Tolerance ± 0.50 (± 0.02)
Pin Diameter Tolerance ± 0.10 (± 0.004)
Pin Length Tolerance ± 1.50 (± 0.06)

800VDC input models with optional -ST bottom plate

Pin Out Specifications



| Pin | Single |
|-----|--------|
| 1 | -Vin |
| 2 | -Vin |
| 3 | +Vin |
| 4 | +Vin |
| 5 | +Vout |
| 6 | -Vout |
| 7 | N.C. |
| 8 | N.C. |
| 9 | N.C. |

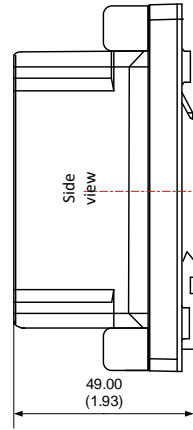
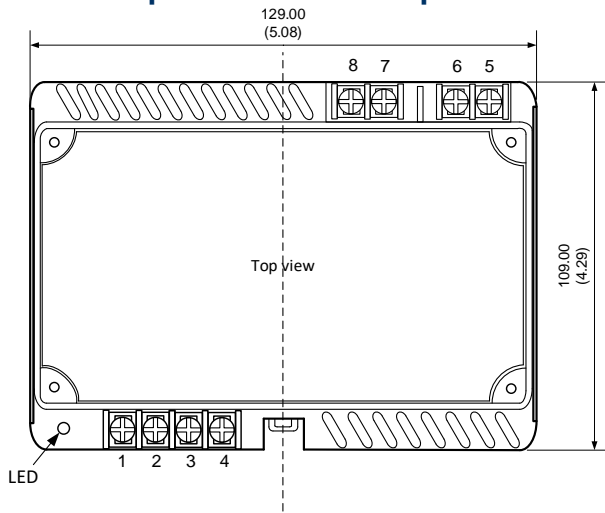


Dimensions mm (inch)
 Installed on DIN rail type TS35
 Wire: 24-12AWG
 Case Tolerance ± 0.50 (± 0.02)
 General Tolerance ± 1.00 (± 0.04)

NOTES:

1. To replace the internal fuse in the models with suffix "-ST", unscrew the 2 screws on the top side of the plate.
2. DIN rail metal holder needs to be grounded.
3. Horizontal mounting recommended.

800VDC input models with optional -STS bottom plate

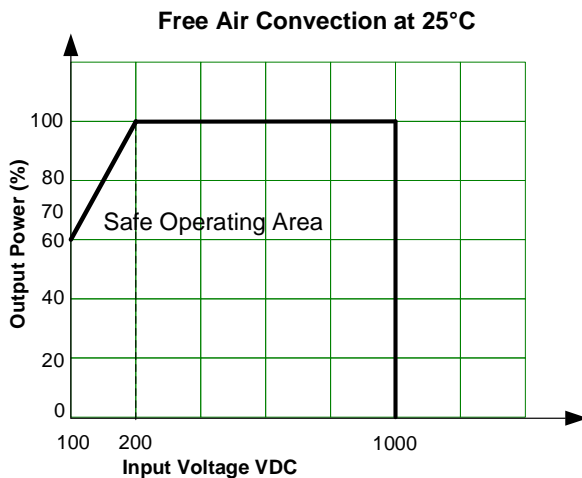
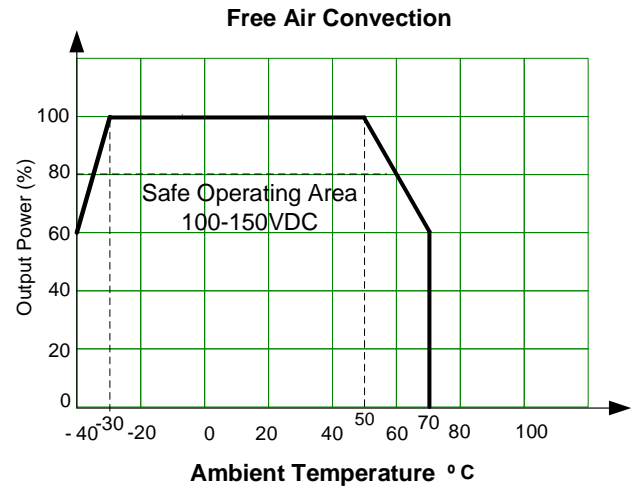
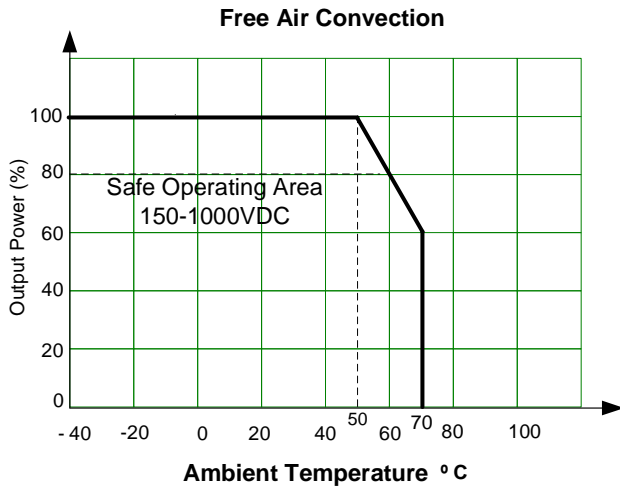


Dimensions mm (inch)
Installed on DIN rail type TS35
Wire: 24-12AWG
Tightening torque 0.4N-m max.
General Tolerance ± 1.00 (± 0.04)

Pin Out Specifications

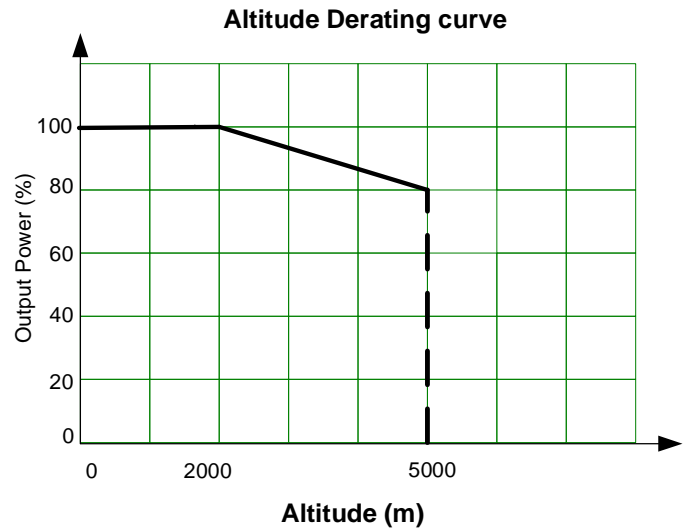
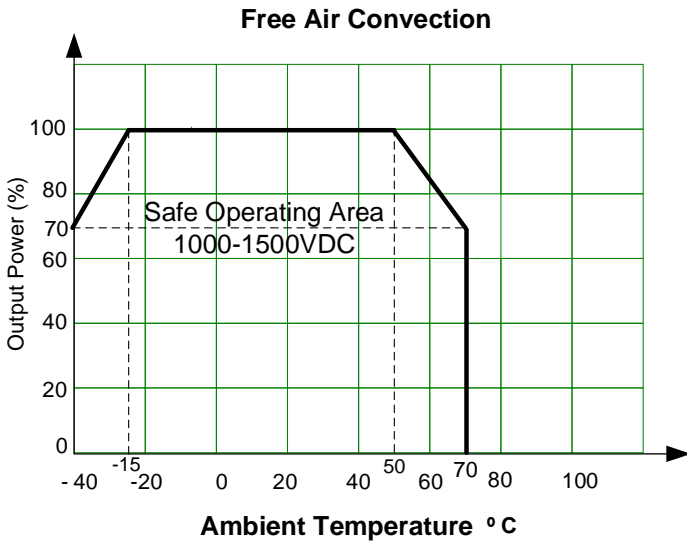
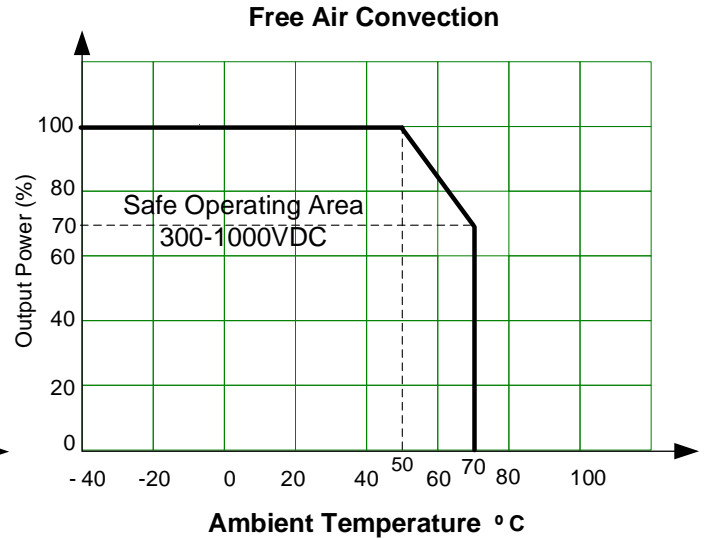
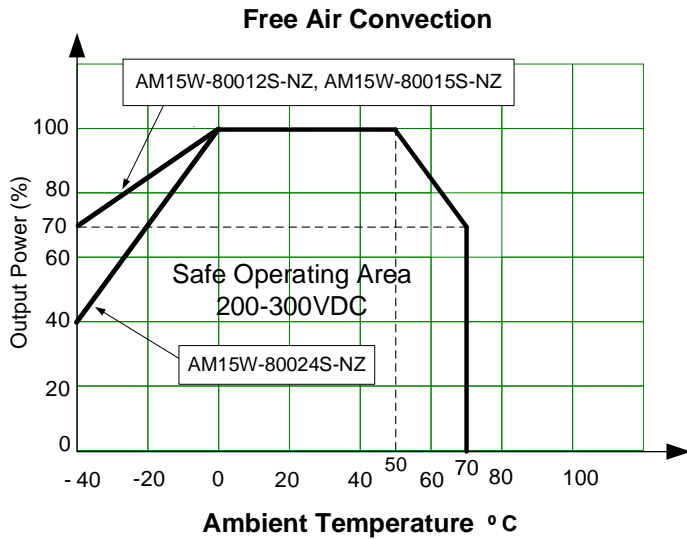
| Pin | Single |
|-----|--------|
| 1 | +V out |
| 2 | +V out |
| 3 | -V out |
| 4 | -V out |
| 5 | +V in |
| 6 | +V in |
| 7 | -V in |
| 8 | -V in |

**Derating
600VDC input models**

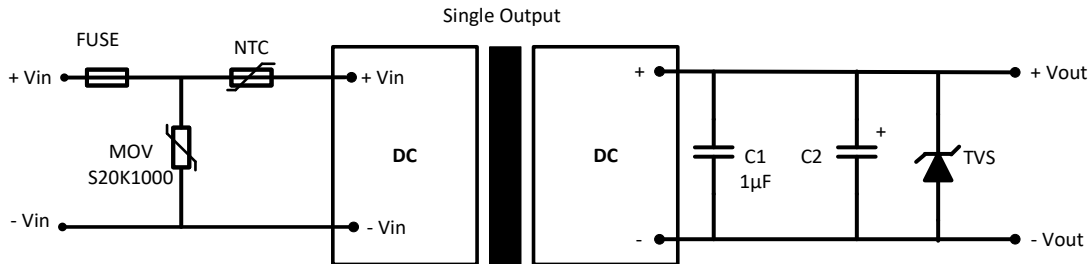


NOTE: 1. Derated Pout = Pout * temp. derating * Vin derating.
2. Sufficient air space for natural air flow around must be considered.

800VDC input models



Typical Application circuit *

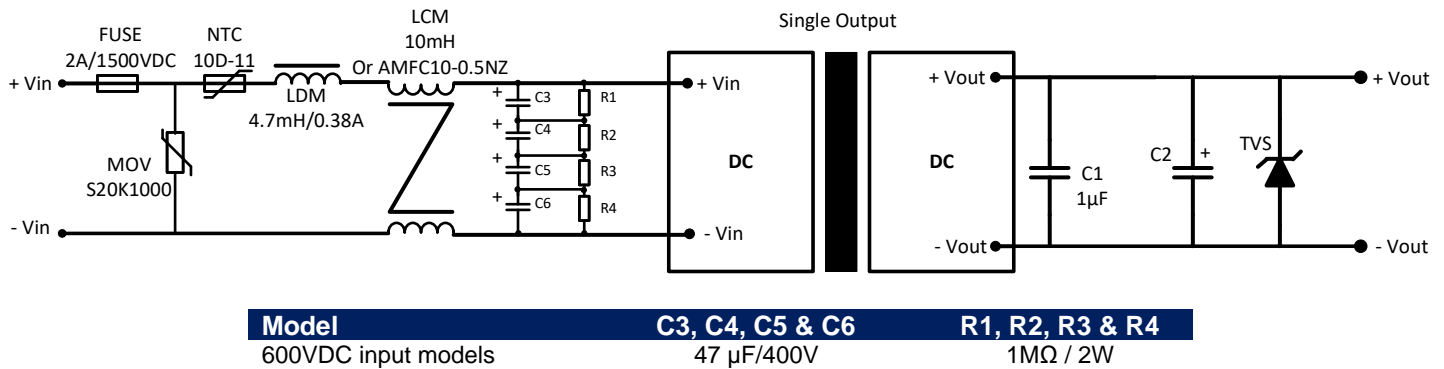


| Model | C2 | TVS |
|-----------------------------------|-------|-----|
| 600VDC input models, 12 & 15 Vout | 120µF | 20V |
| 600VDC input models, 24 Vout | 68µF | 33V |
| 800VDC input models, 12 & 15 Vout | 120µF | 20V |
| 800VDC input models, 24 Vout | 68µF | 30V |

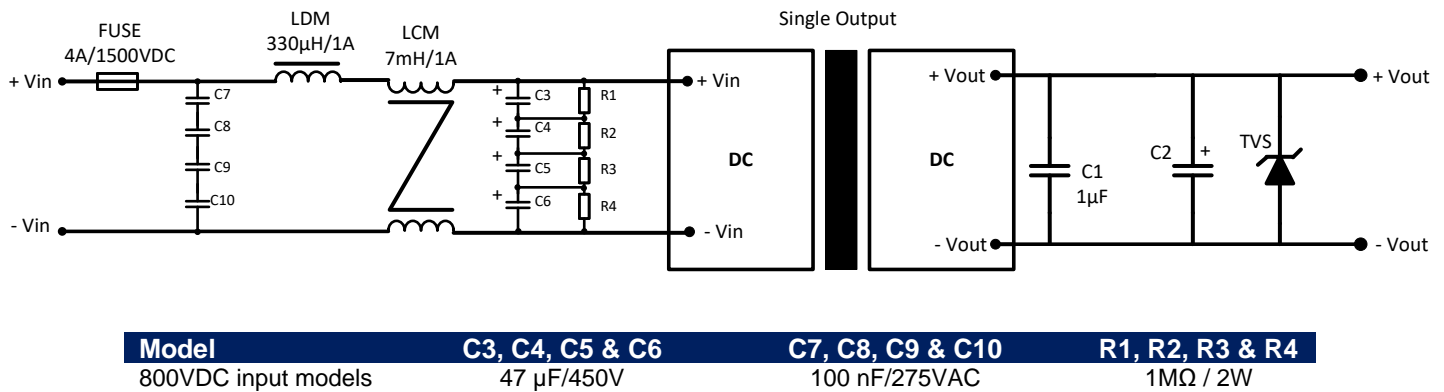
***NOTE:**
For 800VDC Input models NTC and MOV are not needed.
For 800VDC input models with suffix "-ST" this external circuit is not needed.
Choose capacitors with at least 20% voltage rating margin.

Recommended EMC Circuit

600VDC input models



800VDC input models



***NOTE:** For 800VDC input models with suffix “-ST” this external EMC circuit is not needed.

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