# WDR480 Series

## 480 W AC/DC Switching Power Supply – DIN rail

CoolPower Solutions

- Single and two phase wide input range 180 ~ 550VAC
- Protections: Short circuit / Overload / Over voltage / Over temperature
- Built-in active PFC circuit compliance to EN61000-3-2
- High efficiency 93% and low power dissipation
- UL 508 (industrial control equipment) approved
- Built-in DC OK relay contact




### Electrical specifications

| Model No. | | WDR480-24 | WDR480-48 |
|---|---|---|---|
| Max Output Wattage (W) | | 480W | 480W |
| Input | Voltage | 180 ~ 550VAC or 254-780 VDC | |
| | Frequency (Hz) | 47-63 Hz | |
| | Power Factor | PF≥0,84/400VAC, PF≥0,84/230VAC | |
| | Current | 1,6 A (400 VAC) / 4 A (230 VAC) | |
| | Inrush Current | Cold start 50 A typ | |
| | Leakage Current | <3,5 mA /530 VAC | |
| Output | Voltage (V.DC.) | 24V | 48V |
| | Voltage Adjustable Range (Note 6) | 24 - 28V | 48 - 55V |
| | Voltage Tolerance (Note 3) | ±1% | ±1% |
| | Rated Current | 20 A | 10 A |
| | Line Regulation | ±0,5% | ±0,5% |
| | Load Regulation | ±1% | ±1% |
| | Ripple % Noise (max) (Note 2) | $100mV_{p-p}$ | $150mV_{p-p}$ |
| | Efficiency (typ) | 92% | 93% |
| | Hold-up Time | 18 ms / 400 VAC, 16 ms / 230 VAC | |
| | Setup, Rise Time | 800 ms, 150 ms / 400 VAC, 2000 ms, 150 ms / 230 VAC | |
| Protection | Over Load | 105 ~ 130% rated output power | |
| | | Constant current limiting, until will shut down after 3s. auto-recovery after 1min if the fault condition is removed | |
| | Over Voltage | 29 ~ 33V | 56 ~ 65V |
| | | Protection type : Shut down o/p voltage, auto-recovery after 1min if the fault condition is removed | |
| | Over Temperature | 95±5°C (TSW) detect on heatsink of power switch | |
| | | Protection type : Shut down o/p voltage, recovers automatically after temperature goes down | |
| Function | DC OK relay contact | 60Vdc/0,3A, 30Vdc/1A, 30Vac/0,5A resistive load | |
| Environment | Operating Temperature (Note 5) | -30°C…+70°C (with derating) | |
| | Storage Temperature | -40°C…+85°C, 10 – 95% RH | |
| | Temperature coefficient | ±0.03%/°C (0…50°C) | |
| | Humidity | 20 - 95% RH | |
| | MTBF | 112 800 h @ 25°C (MIL-HDBK-217F) | |
| Physical | Dimension (W x H x D) | 85,5 x 125,2 x 128,5 mm | |
| | Weight | 1,7 kg | |
| | Cooling Method | Free air convection | |
| Safety | Safety standards | UL508 approved, IEC60950-1 CB approved by SIQ, design refer to GL ;(meet EN60204-1) | |
| | Withstand Voltage | I/P-O/P:3KVAC I/P-FG:2KVAC O/P-FG:0.5KVAC O/P-DC OK:0.5KVAC | |
| | Isolation Resistance | I/P-O/P, I/P-FG, O/P-FG:>100M Ohms / 500VDC / 25°C / 70% RH | |
| | EMC Emission | Compliance to EN55032 (CISPR32), EN61204-3 Class B, EN61000-3-2, -3 | |
| | EMC Immunity | Compliance to EN61000-4-2, 3, 4, 5, 6, 8, 11, EN55024, EN61000-6-2 (EN50082-2), EN61204-3, heavy industry level, criteria A approved | |

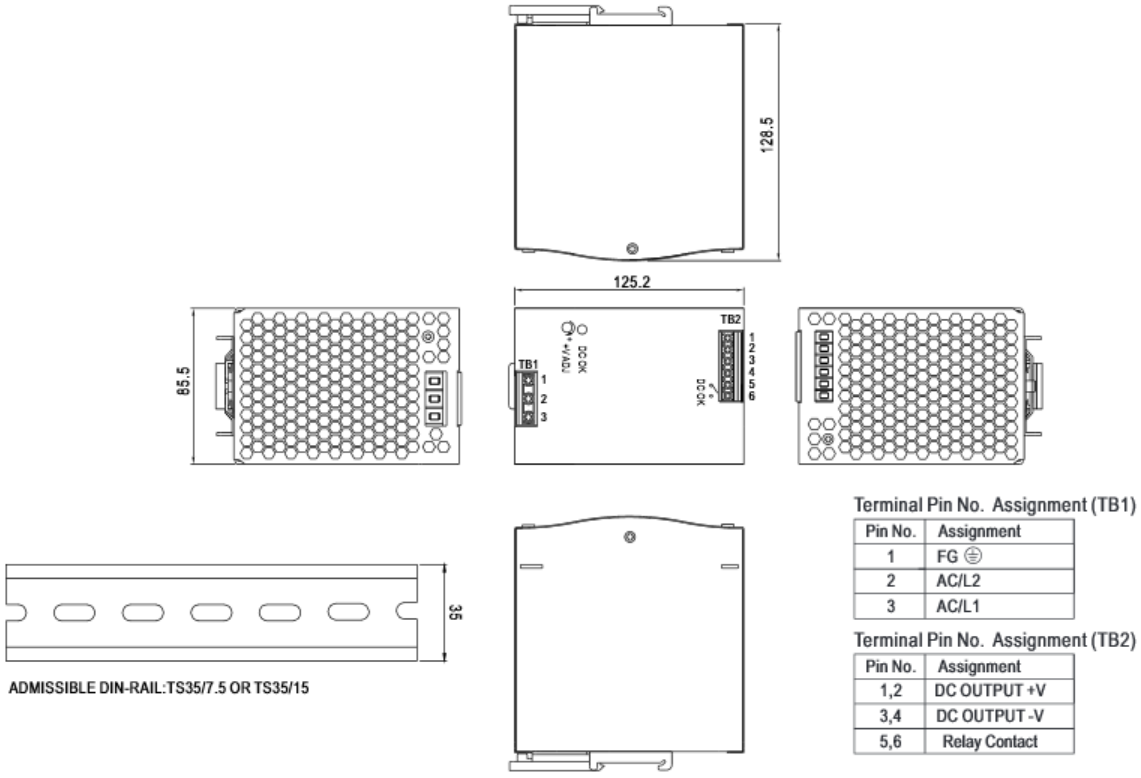
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## Mechanical Specifications




Terminal Pin No. Assignment (TB1)

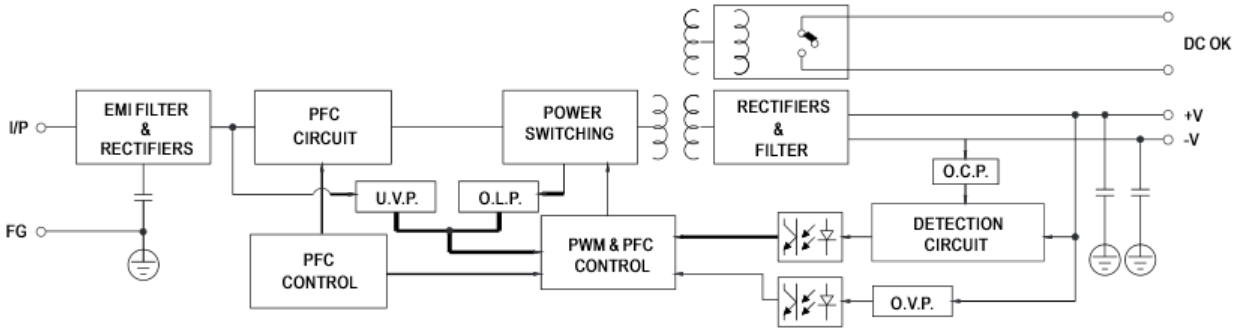
| Pin No. | Assignment |
|---|---|
| 1 | FG ⏚ |
| 2 | AC/L2 |
| 3 | AC/L1 |

Terminal Pin No. Assignment (TB2)

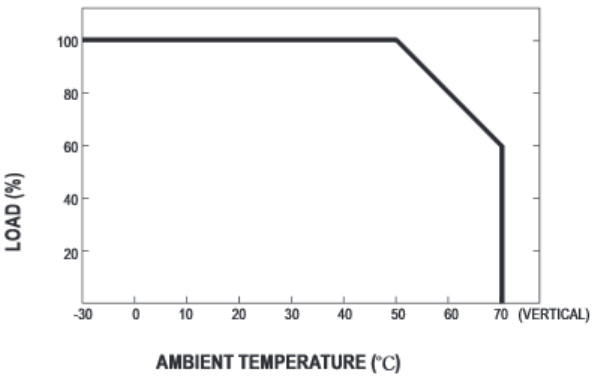
| Pin No. | Assignment |
|---|---|
| 1,2 | DC OUTPUT +V |
| 3,4 | DC OUTPUT -V |
| 5,6 | Relay Contact |

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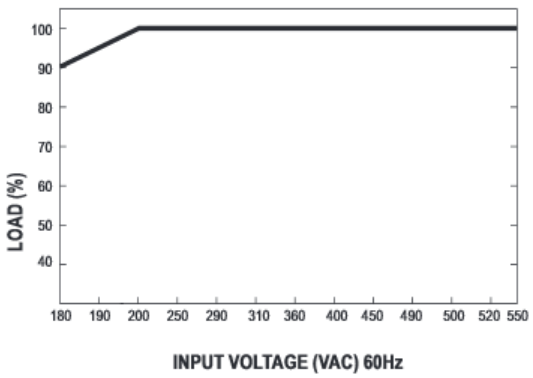
## Block Diagramm




## Derating Curve




## Output derating vs input voltage





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