

AC-DC Power Supply DIN Rail

multicomp PRO

**RoHS
Compliant**



Features

- Universal 90 - 264VAC or 127 - 370VDC Input voltage
- Accepts AC or DC input (dual-use of same terminal)
- Operating ambient temperature range: -20°C to +60°C
- High I/O isolation test voltage up to 4000V AC
- Low ripple & noise
- Output short circuit, over-current, over-voltage, over-temperature protection
- DIN rail TS-35/7.5 or 15 mountable
- Ultra slim design: suitable for small chassis and narrow space installation
- Safety according to UL508

MPL120-20BxxR2S is AC-DC converter series featuring a cost-effective, energy efficient green power supply solution for standard DIN-rail mounting. The products offer a high level of stability and immunity to noise for industrial control equipment, machinery, and other industrial equipment in a variety of harsh environments. These light weight AC-DC converters have an extremely compact design and the standard rail installation for space saving. With good EMC performance, compliant with international UL61010, UL508, EN/BS EN 62368 standards for EMC and safety.

Selection Guide

| Part Number | Output Power (W) | Nominal Output Voltage and Current (Vo/Io) | Output Voltage Adjustable Range (V) | Efficiency at 230V AC (%) Typ. | Max. Capacitive Load (µF) |
|-----------------|------------------|--|-------------------------------------|--------------------------------|---------------------------|
| MPI120-20B12R2S | 120 | 12V/10A | 12-14 | 85 | 3000 |
| MPI120-20B24R2S | | 24V/5A | 24-28 | 88 | 1200 |
| MPI120-20B48R2S | | 48V/2.5A | 48-55 | 89 | 800 |

Note: *Use suffix "QQ" for double-faced conformal coating.

Input Specifications

| Item | Operating Conditions | | Min. | Typ. | Max. | Unit |
|-------------------------|----------------------|------------|-------------|------|------|------|
| Input Voltage Range | AC input | | 90 | -- | 264 | V AC |
| | DC input | | 127 | | 370 | V DC |
| Input Voltage Frequency | | | 47 | -- | 63 | Hz |
| Input Current | 115V AC | | -- | -- | 3 | A |
| | 230V AC | | | | 1.6 | |
| Inrush Current | 115V AC | Cold start | -- | -- | 30 | A |
| | 230V AC | | | | 55 | |
| Leakage Current | 240V AC | | <1 mA | | | |
| Hot Plug | | | Unavailable | | | |

Newark.com/multicomp-pro
Farnell.com/multicomp-pro
sg.element14.com/b/multicomp-pro

multicomp PRO

AC-DC Power Supply DIN Rail

multicomp PRO

| Output Specifications | | | | | | |
|-----------------------------|---|--------------------------------------|--|-------|------|------|
| Item | Operating Conditions | | Min. | Typ. | Max. | Unit |
| Output Voltage Accuracy | Full load range | 12V | -- | ±2 | - | % |
| | | 24V/48V | | ±1 | | |
| Line Regulation | Rated load | | | ±0.5 | | |
| Load Regulation | 0%-100% load | | | ±1 | | |
| Ripple & Noise* | 20MHz bandwidth | 12V | | -- | | |
| | | 24V | 120 | | | |
| | (peak-to-peak value) | 48V | 150 | | | |
| Temperature Coefficient | | | | ±0.03 | | %/°C |
| Minimum Load | | | 0 | | | % |
| Hold-up Time | 115V AC | | 8 | -- | -- | ms |
| | 230V AC | | 16 | | | |
| Short Circuit Protection | Recovery time < 3s after the short circuit disappear. | | Constant current, continuous, self-recovery | | | |
| Over-current Protection | 230V AC, rated load | Normal temperature, high temperature | 105%-150% I _o , constant current mode, automatic recover after fault condition is removed | | | |
| | | Low temperature | ≥105%I _o , constant current mode, automatic recover after fault condition is removed | | | |
| Over-voltage Protection | 12V | | ≤16V (Output voltage turn off, re-power on for recover) | | | |
| | 24V | | ≤33V (Output voltage turn off, re-power on for recover) | | | |
| | 48V | | ≤60V (Output voltage turn off, re-power on for recover) | | | |
| Over-temperature Protection | | | Output voltage turn off, re-power on for recover | | | |

AC-DC Power Supply

DIN Rail

multicomp PRO

General Specifications

| Item | | Operating Conditions | | | Min. | Typ. | Max. | Unit |
|------------------------|--------------------------------|---|----------------|---------|---|------|-------|------|
| Isolation Test | Input - ⊕ | Electric strength test for 1min., leakage current <10mA | | | 2000 | | | V AC |
| | Input - output | | | | 4000 | | | |
| | Output - ⊕ | | | | 500 | | | |
| Insulation Resistance | Input - ⊕ | At 500V DC | | | 100 | -- | -- | MΩ |
| | Input - output | | | | | | | |
| | Output - ⊕ | | | | | | | |
| Operating Temperature | | | | | -20 | | +60 | °C |
| Storage Temperature | | | | | -40 | | +85 | |
| Storage Humidity | | Non-condensing | | | 10 | | 95 | %RH |
| Operating Humidity | | | | | 20 | | 90 | |
| Switching Frequency | | | | | -- | 65 | | kHz |
| Power Derating | Operating temperature derating | All series | -20°C to -10°C | 115V AC | 3.34 | 2.0 | -- | %°C |
| | | | -20°C to -10°C | 230V AC | | | | |
| | | | +40°C to +60°C | 115V AC | 3 | 2.5 | | |
| | | 12V | +45°C to +60°C | 230V AC | | 3.33 | | |
| | | 24V/48V | +50°C to +60°C | 230V AC | 3.34 | 5 | | |
| Input voltage derating | | 90V AC - 115V AC | | 1 | 1 | | %V AC | |
| Safety Standard | | | | | UL61010-1, UL61010-2-201, IS13252 (Part1) safety approved & EN62368-1, BS EN 62368-1 (Report) Design refer to UL508 | | | |
| Safety Class | | | | | CLASS I | | | |
| MTBF | | MIL-HDBK-217F@25°C | | | >3009,000h | | | |

Mechanical Specifications

| | |
|----------------|----------------------|
| Case Material | Metal (AL1100, SGCC) |
| Dimensions | 36mm × 125mm × 100mm |
| Weight | 410g (Typ.) |
| Cooling Method | Free air convection |

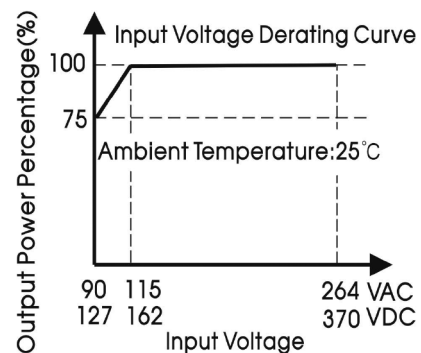
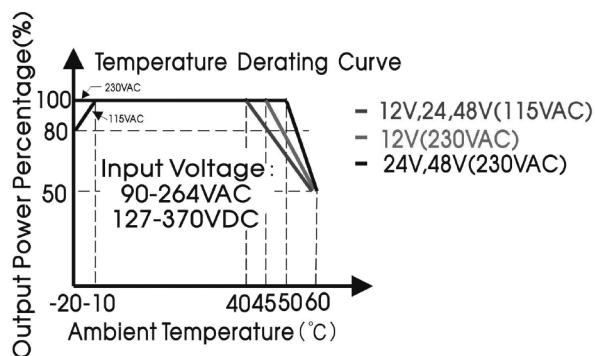
Newark.com/multicomp-pro
 Farnell.com/multicomp-pro
 sg.element14.com/b/multicomp-pro

multicomp PRO

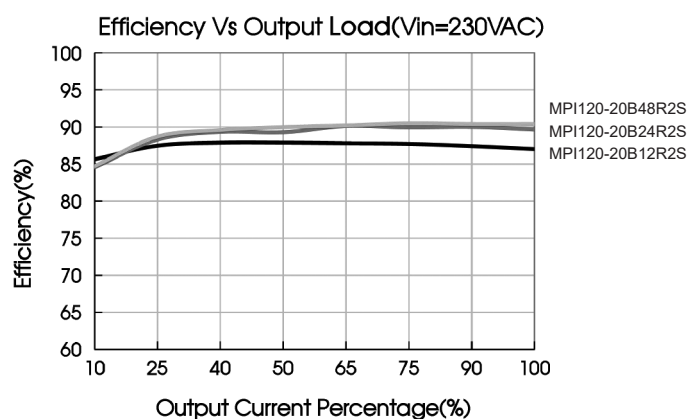
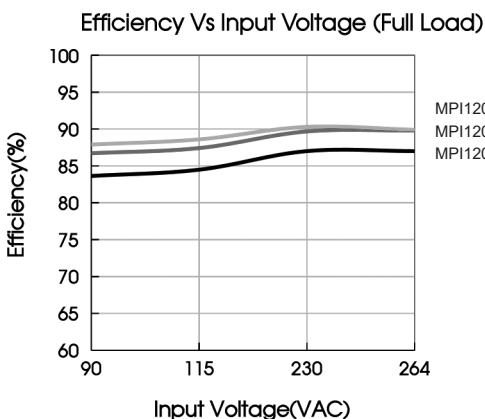
Electromagnetic Compatibility (EMC)

| | | | | |
|-----------|---|------------------|--|------------------|
| Emissions | CE | CISPR32/EN55032 | CLASS A | |
| | RE | CISPR32/EN55032 | CLASS A | |
| | THD | IEC/EN61000-3-2 | CLASS A | |
| Immunity | ESD | IEC/EN 61000-4-2 | Contact $\pm 6\text{KV}$ /Air $\pm 8\text{KV}$ | perf. Criteria B |
| | RS | IEC/EN 61000-4-3 | 10V/m | perf. Criteria A |
| | EFT | IEC/EN 61000-4-4 | $\pm 4\text{KV}$ | perf. Criteria B |
| | Surge | IEC/EN 61000-4-5 | line to line $\pm 2\text{KV}$ /line to ground $\pm 4\text{KV}$ | perf. Criteria B |
| | CS | IEC/EN61000-4-6 | 10 Vr.m.s | perf. Criteria A |
| | Voltage dips, short interruptions and voltage variations immunity | IEC/EN61000-4-11 | 0%, 70% | perf. Criteria B |

Product Characteristic Curve



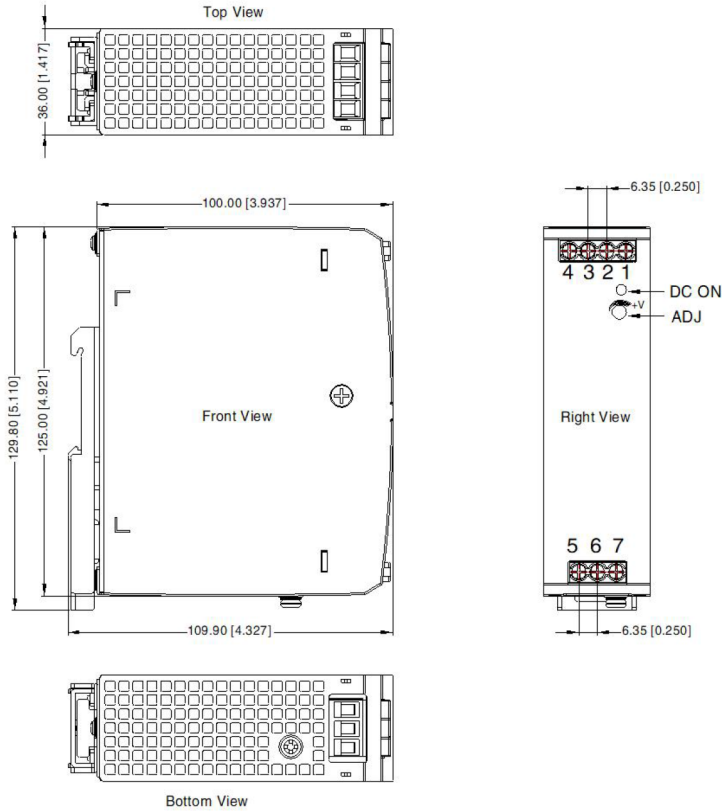
- Note: 1. With an AC input voltage between 90 -115VAC and a DC input between 127-162V DC the output power must be derated as per the temperature derating curves;
2. This product is suitable for applications using natural air cooling



AC-DC Power Supply DIN Rail

multicomp PRO

Dimensions and Recommended Layout



| Pin-Out | |
|---------|-------|
| Pin | Mark |
| 1 | -Vo |
| 2 | -Vo |
| 3 | +Vo |
| 4 | +Vo |
| 5 | AC(N) |
| 6 | AC(L) |
| 7 | ⊕ |

Note:

Unit: mm[inch]

DC ON: Output status indicator LED

ADJ: Output adjustable resistor

Wire range: Input: 26–10AWG(12–10AWG for pin7)

Output: 12V: 12–10AWG

24V: 16–10AWG

48V: 18–10AWG

Tightening torque: Max 0.79N · m

Mounting rail: TS35, rail needs to connect safety ground

General tolerances: ± 1.00[± 0.039]

Notes:

1. Unless otherwise specified, parameters in this datasheet were measured under the conditions of Ta=25°C, humidity<75%RH with nominal input voltage and rated output load
2. In order to improve the efficiency at high input voltage, there will be audible noise generated, but it does not affect product performance and reliability
3. The out case needs to be connected to PE (⊕) of system when the terminal equipment in operating

Part Number Table

| Description | Part Number |
|--|-----------------|
| AC-DC DIN Rail Mount Power Supply, 120W, 12V, 10A | MPI120-20B12R2S |
| AC-DC DIN Rail Mount Power Supply, 120W, 24V, 5A | MPI120-20B24R2S |
| AC-DC DIN Rail Mount Power Supply, 120W, 48V, 2.5A | MPI120-20B48R2S |

Dimensions : Inches (Millimetres)

Important Notice : This data sheet and its contents (the "Information") belong to the members of the AVNET group of companies (the "Group") or are licensed to it. No licence is granted for the use of it other than for information purposes in connection with the products to which it relates. No licence of any intellectual property rights is granted. The Information is subject to change without notice and replaces all data sheets previously supplied. The Information supplied is believed to be accurate but the Group assumes no responsibility for its accuracy or completeness, any error in or omission from it or for any use made of it. Users of this data sheet should check for themselves the Information and the suitability of the products for their purpose and not make any assumptions based on information included or omitted. Liability for loss or damage resulting from any reliance on the Information or use of it (including liability resulting from negligence or where the Group was aware of the possibility of such loss or damage arising) is excluded. This will not operate to limit or restrict the Group's liability for death or personal injury resulting from its negligence. Multicomp Pro is the registered trademark of Premier Farnell Limited 2019.

Newark.com/multicomp-pro
Farnell.com/multicomp-pro
sg.element14.com/b/multicomp-pro

multicomp PRO