**POWER SUPPLY**
- NEC Class 2 Compliant
- 2AC 380-480V
- 2 Phase Input
- No Neutral Wire Required
- Input Fuse Included
- Efficiency up to 90.0%
- Full Output Power Between -10°C and +60°C
- Quick-connect Spring-clamp Terminals
- 3 Year Warranty

**GENERAL DESCRIPTION**

The ML90.200 is a simple and cost effective approach to convert the AC voltage of a typical three phase system into a regulated DC voltage. It only requires two phases and thereby saves terminal space, terminal cost, wires, fuses and installation time.

The ML90.200 is very compact, high efficient and easy to use. Furthermore, it fulfills the NEC Class 2 limitations. The input is internally protected, which makes external fuses unnecessary in many cases.

Weighing only 360g, it is a lightweight compared to the 50/60Hz control transformers, which are commonly used for low-power control voltages where a neutral wire is not available.

High immunity to transients and power surges as well as low electromagnetic emission makes usage in nearly every environment possible.

**SHORT-FORM DATA**

- **Output voltage**: DC 24V
- **Adjustment range**: 24-28V guaranteed
- **Output current**: 3.75-3.2A
- **Output power**: 90W
- **Output ripple**: < 50mVpp 20Hz to 20MHz
- **Input voltage**: 2AC 380-480V ±15%
- **Mains frequency**: 50-60Hz ±6%
- **AC Input current typ.**: 0.42 / 0.36A at 400 / 480Vac
- **Power factor typ.**: 0.6 / 0.55 at 400 / 480Vac
- **AC Inrush current typ.**: 36 / 45A at 400 / 480Vac
- **Hold-up time typ.**: 52 / 93ms at 400 / 480Vac
- **DC Input**: consult PULS
- **Efficiency**: 89.5 / 89.0% at 400 / 480Vac
- **Losses**: 10.5 / 11.1W at 400 / 480Vac
- **Temperature range**: -10°C to +70°C operational
- **Humidity**: < 95% r.H. IEC 60068-2-30
- **Vibration**: 2g (2 hours/axis) IEC 60068-2-6
- **Shock**: 30g 6ms, 20g 11ms IEC 60068-2-27
- **Dimensions**: 72.5x75x103mm WxHxD

**ORDER NUMBERS**

- **Power Supply**: ML90.200 24-28V Power Supply

**MARKINGS**

- UL 508
- UL 60950-1, NEC Class 2
- Marine

ML90.200 Rev 1.0-EN / All parameters are specified at 24V, 3.75A, 400Vac and 25°C ambient unless otherwise noted.

www.pulspower.com  Phone +49 89 9278 0  Germany
OUTPUT

Output voltage nom DC 24V
Adjustment range min 24V-28V
Factory set typ 24.5V
Output current nom 3.75A at 24V, 3.2A at 28V
Line regulation max 20mV 323...552Vac
Load regulation max 240mV static regulation
Serial use not allowed
Parallel use not allowed
Return voltage max 35V
OVP typ 34V
max 39V

Output voltage vs. output current, typ.

Output current vs. ambient temperature

TERMINALS AND WIRING

Type Bi-stable, quick-connect spring clamp terminals. Shipped in open position.
Solid wire 0.3-2.5mm²
Stranded wire 0.3-2.5mm²
AWG AWG 26-12
Stripping length 6mm / 0.25inch
Ferrules allowed, but not required

EMC

EMC Immunity EN 61000-6-1, EN 61000-6-2
EMC Emission EN61000-6-3, EN 61000-6-4
EN 55011, EN 55022, FCC-15
Harmonic input current EN61000-3-2 (PFC)
Flicker EN61000-3-3

APPROVALS

UL 508 Industrial Control Equipment
UL 60950-1 Information Technology Equipment
NEC Class 2 According to NEC (National Electrical Code) Article 725-41 (4).
Listed as Limited Power Source (LPS) in the UL 60950-1 UL report.

FULFILLED STANDARDS

EN 61558-2-17 Safety of Power Transformers
EN/IEC 60204-1 Safety of Electrical Equip. of Machines
EN/IEC 60950-1 Information Technology Equipment
EN/IEC 61131-2 Programmable Controllers
EN 50178 Electronic Equip. Power Installations

DIMENSIONS AND WEIGHT

Use 35mm DIN-rails according to EN 60715 or EN 50022 with a height of 7.5 or 15mm. The DIN-rail height must be added to the depth (103mm) to calculate the total required installation depth.

Weight max 360g 0.79lb

SAFETY AND PROTECTION

Input / output insulation SELV IEC/EN 60950-1
PELV EN 60204-1
3000Vac 2s type test
Degree of pollution 2 EN 50178
Degree of protection IP 20 EN/IEC 60529
Class of protection I PE required
Over-voltage category III EN 50178
Internal input fuse T3A15 in L1, not accessible
Temperature protection not included

The power supply shall only be installed and put into operation by qualified personnel. This power supply is designed for installation in an enclosure and is intended for the general use, such as in industrial control, office, communication, and instrumentation equipment. Do not use this device in aircraft, trains and nuclear equipment, where malfunctioning of the power supply may cause severe personal injury or threaten human life. The information presented in this document is believed to be accurate and reliable and may change without notice.

ML90.200 Rev 1.0-EN / All parameters are specified at 24V, 3.75A, 400Vac and 25°C ambient unless otherwise noted.

www.pulspower.com Phone +49 89 9278 0 Germany