

## AC/DC Power Supply

## TXM 200 Series, 200 Watt

Not recommended for new designs

- Compact 200 Watt metal cased power supplies
- Fully convection cooled power supplies
- Cost efficient design
- High operating temperature up to 65°C
- Universal AC input 90 - 264 VAC
- Active power factor correction >0.95
- Withstand 300 VAC surge input for 5 s
- Adjustable output voltage
- Over current limitation and short circuit protection
- 3-year product warranty



The TXM 200 series is a family of 200 Watt encased AC/DC power supplies designed for cost critical applications. It extends the existing TXM series which ranged from 15 to 150 Watt with an additional 200 Watt series. With a compact metal case and screw terminal block connections, they are easy to install in any equipment. There are three models of single output voltages from 12 VDC to 48 VDC. They also feature an universal input and comply with EN 55032 class B and the latest IEC/UL 60950-1 edition to cover a wide range of applications.

| Models        |                      |                                     |                        |                    |
|---------------|----------------------|-------------------------------------|------------------------|--------------------|
| Order Code    | Output Power<br>max. | Output Voltage<br>nom. (adjustable) | Output Current<br>max. | Efficiency<br>typ. |
| TXM 200-112 * | 200 W                | 12 VDC (10.0 - 15.5 VDC)            | 16'700 mA              | 87 %               |
| TXM 200-124 * | 202 W                | 24 VDC (20.0 - 27.2 VDC)            | 8'400 mA               | 88 %               |
| TXM 200-148 * |                      | 48 VDC (42.0 - 53.0 VDC)            | 4'200 mA               | 89 %               |

Note \* Not recommended for new designs

## Input Specifications

|                        |                             |                                                                                                                                                     |
|------------------------|-----------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------|
| Input Voltage          | - AC Range                  | Operational Range: <b>90 - 264 VAC</b> (Full Range)<br>Rated Range: <b>100 - 240 VAC</b> (Full Range)                                               |
|                        | - DC Range                  | Operational Range: <b>120 - 375 VDC</b> (Designed for, no certification)<br>Polarity: <b>irrelevant</b><br>(Surge voltage (5 s max.): 300 VAC max.) |
| Input Frequency        |                             | Operational Range: <b>47 - 63 Hz</b><br>Certified: <b>50/60 Hz</b>                                                                                  |
| Power Consumption      | - No load & Vin = 230 VAC   | <b>3'000 mW max.</b>                                                                                                                                |
|                        | - No load & Vin = 115 VAC   | <b>2'500 mW max.</b>                                                                                                                                |
| Input Current          | - Full load & Vin = 115 VAC | <b>3'000 mA max.</b>                                                                                                                                |
| Input Inrush Current   | - At 230 VAC                | <b>50 A max.</b>                                                                                                                                    |
|                        | - At 115 VAC                | <b>30 A max.</b>                                                                                                                                    |
| Power Factor           | - At 230 VAC                | <b>0.95 min.</b> (Active Power Factor Correction)                                                                                                   |
|                        | - At 115 VAC                | <b>0.98 min.</b> (Active Power Factor Correction)                                                                                                   |
| Recommended Input Fuse |                             | (The need of an external fuse has to be assessed in the final application.)                                                                         |

## Output Specifications

|                                        |                                 |                                                                                                                                                                                              |
|----------------------------------------|---------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Output Voltage Adjustment              |                                 | 12 VDC model: <b>10.0 - 15.5 VDC</b><br>24 VDC model: <b>20.0 - 27.2 VDC</b><br>48 VDC model: <b>42.0 - 53.0 VDC</b><br>(By trim potentiometer)<br>Output power must not exceed rated power! |
| Voltage Set Accuracy                   |                                 | <b>±1% max.</b> (24 & 48 VDC models)<br><b>±2 % max.</b> (12 VDC models)                                                                                                                     |
| Regulation                             | - Input Variation (Vmin - Vmax) | <b>0.5% max.</b>                                                                                                                                                                             |
|                                        | - Load Variation (0 - 100%)     | <b>1% max.</b> (24 & 48 VDC models)<br><b>2% max.</b> (12 VDC model)                                                                                                                         |
| Ripple and Noise<br>(20 MHz Bandwidth) | 12 VDC model:                   | <b>150 mVp-p max.</b> (w/ 0.1 µF    10 µF)                                                                                                                                                   |
|                                        | 24 VDC model:                   | <b>200 mVp-p max.</b> (w/ 0.1 µF    10 µF)                                                                                                                                                   |
|                                        | 48 VDC model:                   | <b>150 mVp-p max.</b> (w/ 0.1 µF    10 µF)                                                                                                                                                   |
| Minimum Load                           |                                 | <b>Not required</b>                                                                                                                                                                          |
| Temperature Coefficient                |                                 | <b>±0.03 %/K max.</b>                                                                                                                                                                        |
| Hold-up Time                           | - At 230 VAC                    | <b>16 ms min.</b>                                                                                                                                                                            |
|                                        | - At 115 VAC                    | <b>16 ms min.</b>                                                                                                                                                                            |
| Start-up Time                          | - At 230 VAC                    | <b>2'000 ms max.</b>                                                                                                                                                                         |
|                                        | - At 115 VAC                    | <b>4'000 ms max.</b>                                                                                                                                                                         |
| Start-up Overshoot Voltage             |                                 | <b>5% max.</b>                                                                                                                                                                               |
| Short Circuit Protection               |                                 | <b>Continuous, Automatic recovery</b>                                                                                                                                                        |
| Output Current Limitation              |                                 | <b>105 - 150% of Iout max.</b>                                                                                                                                                               |
| Transient Response                     | - Response Deviation            | <b>5% max.</b> (75% to 100% Load Step)                                                                                                                                                       |
|                                        | - Response Time                 | <b>400 µs typ.</b> (75% to 100% Load Step)                                                                                                                                                   |

## Safety Specifications

|                  |                             |                                                                                                                                                                                            |
|------------------|-----------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Standards        | - IT / Multimedia Equipment | <b>EN 60950-1</b><br><b>EN 62368-1</b><br><b>IEC 60950-1</b><br><b>IEC 62368-1</b><br><b>UL 60950-1</b><br><b>UL 62368-1</b>                                                               |
|                  | - Certification Documents   | <a href="http://www.tracopower.com/txm200-safety-cert/">www.tracopower.com/txm200-safety-cert/</a>                                                                                         |
| Protection Class |                             | <b>Class I</b> (Prepared): <b>Connection to PE</b><br>See application note: <a href="http://www.tracopower.com/info/protection-class.pdf">www.tracopower.com/info/protection-class.pdf</a> |
| Energy Source    |                             | - Output, acc. to 62368-1<br><b>ES1</b>                                                                                                                                                    |

All specifications valid at 230 VAC, resistive full load and +25°C after warm-up time, unless otherwise stated.

|                       |                           |        |
|-----------------------|---------------------------|--------|
| Power Source          | - Output, acc. to 62368-1 | PS3    |
| Pollution Degree      |                           | PD 2   |
| Over Voltage Category |                           | OVC II |

## EMC Specifications

|                 |                                  |                                                                                                        |
|-----------------|----------------------------------|--------------------------------------------------------------------------------------------------------|
| EMI (Emissions) | - Conducted Emissions            | EN 55032 class A (internal filter)<br>EN 55032 class B (internal filter)                               |
|                 | - Radiated Emissions             | EN 55032 class A (internal filter)<br>EN 55032 class B (internal filter)                               |
|                 | - Harmonic Current Emissions     | EN 61000-3-2, class A                                                                                  |
|                 | - Voltage Fluctuations & Flicker | EN 61000-3-3                                                                                           |
| EMS (Immunity)  |                                  | EN 55024 (IT Equipment)<br>EN 55035 (Multimedia)                                                       |
|                 | - Electrostatic Discharge        | Air: EN 61000-4-2, $\pm 8$ kV, perf. criteria B<br>Contact: EN 61000-4-2, $\pm 4$ kV, perf. criteria B |
|                 | - RF Electromagnetic Field       | EN 61000-4-3, 3 V/m, perf. criteria A                                                                  |
|                 | - EFT (Burst) / Surge            | EN 61000-4-4, $\pm 1$ kV, perf. criteria B                                                             |
|                 |                                  | L to L: EN 61000-4-5, $\pm 1$ kV, perf. criteria B                                                     |
|                 |                                  | L to PE: EN 61000-4-5, $\pm 2$ kV, perf. criteria B                                                    |
|                 | - Conducted RF Disturbances      | EN 61000-4-6, 3 Vrms, perf. criteria A                                                                 |
|                 | - PF Magnetic Field              | Continuous: EN 61000-4-8, 1 A/m, perf. criteria A                                                      |
|                 | - Voltage Dips & Interruptions   | 230 VAC / 50 Hz: EN 61000-4-11                                                                         |
|                 |                                  | 30%, 25 periods, perf. criteria C                                                                      |
|                 |                                  | >95%, 0.5 periods, perf. criteria B                                                                    |
|                 |                                  | >95%, 250 periods, perf. criteria C                                                                    |

## General Specifications

|                           |                             |                                          |
|---------------------------|-----------------------------|------------------------------------------|
| Relative Humidity         |                             | 90% max. (non condensing)                |
| Temperature Ranges        | - Operating Temperature     | -20°C to +65°C                           |
|                           | - Storage Temperature       | -40°C to +65°C                           |
| Power Derating            | - High Temperature          | 3.3 %/K above 50°C                       |
|                           | - Low Input Voltage         | 0.8 %/V below 115 VAC                    |
| Cooling System            |                             | Natural convection (20 LFM)              |
| Altitude During Operation |                             | 5'000 m max.                             |
| Regulator Topology        |                             | Forward Converter                        |
| Switching Frequency       |                             | 80 - 85 kHz (PWM)                        |
| Insulation System         |                             | Reinforced Insulation                    |
| Working Voltage (rated)   |                             | 494 VAC                                  |
| Isolation Test Voltage    | - Input to Output, 60 s     | 4'000 VDC                                |
|                           | - Input to Case or PE, 60 s | 2'500 VDC                                |
| Creepage                  | - Input to Output           | 8 mm min.                                |
| Clearance                 | - Input to Output           | 8 mm min.                                |
| Isolation Resistance      | - Input to Output, 500 VDC  | 100 M $\Omega$ min.                      |
| Leakage Current           | - Earth Leakage Current     | 3500 $\mu$ A max.                        |
|                           | - Touch Current             | 250 $\mu$ A max.                         |
| Reliability               | - Calculated MTBF           | 100'000 h (MIL-HDBK-217F, ground benign) |
| Housing Material          |                             | Aluminum                                 |
| Housing Type              |                             | Metal Case                               |
| Mounting Type             |                             | Chassis Mount                            |
| Connection Type           |                             | Screw Terminal                           |
| Weight                    |                             | 700 g                                    |

All specifications valid at 230 VAC, resistive full load and +25°C after warm-up time, unless otherwise stated.

Environmental Compliance - REACH Declaration

[www.tracopower.com/info/reach-declaration.pdf](http://www.tracopower.com/info/reach-declaration.pdf)

- RoHS Declaration

REACH SVHC list compliant

REACH Annex XVII compliant

[www.tracopower.com/info/rohs-declaration.pdf](http://www.tracopower.com/info/rohs-declaration.pdf)

Exemptions: 7(a), 7(c)-I

(RoHS exemptions refer to the component concentration only, not to the overall concentration in the product (O5A rule).)

- SCIP Reference Number

4915a9f2-2871-4bcc-8787-54903610e627

### Additional Information

Supporting Documents

[www.tracopower.com/overview/txm200](http://www.tracopower.com/overview/txm200)

Frequently Asked Questions

[www.tracopower.com/glossary-faq](http://www.tracopower.com/glossary-faq)

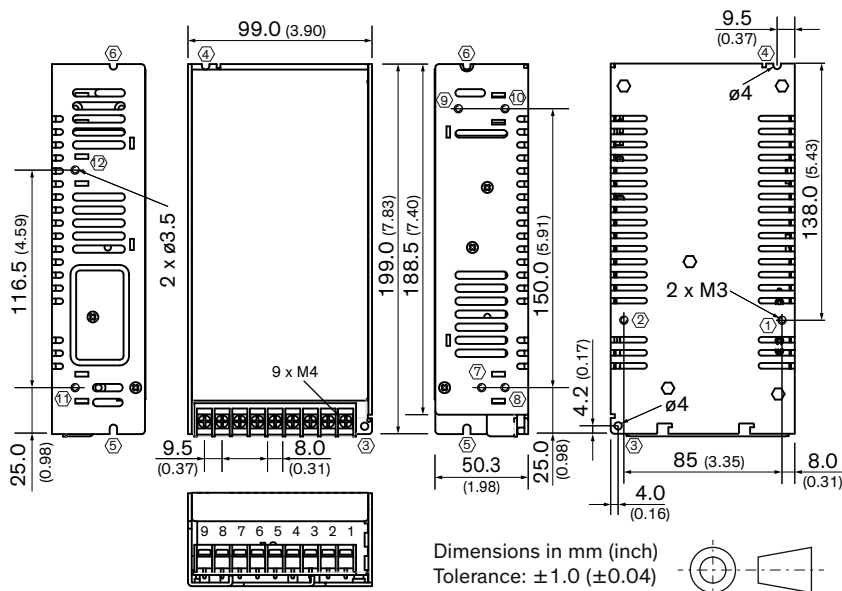
Glossary

[www.tracopower.com/info/glossary.pdf](http://www.tracopower.com/info/glossary.pdf)

Service Portal

[www.tracoserviceportal.com](http://www.tracoserviceportal.com)

### Outline Dimensions



#### Pin-Out

| Pin | Function |
|-----|----------|
| 1   | AC (N)   |
| 2   | AC (L)   |
| 3   | GND      |
| 4   | - Vout   |
| 5   | - Vout   |
| 6   | - Vout   |
| 7   | + Vout   |
| 8   | + Vout   |
| 9   | + Vout   |

Screw locked torque:  
12.0 kgfcm (1.18 Nm) max.

#### Screw Definition

| Installation Method | Position No. | Screw Size | L max.     | Torque max. |
|---------------------|--------------|------------|------------|-------------|
| Bottom Installation | 1 / 2        | M3         | 3.5 (0.17) | 6.5 kgfcm   |
|                     | 3 / 4        | M3         | 4.0 (0.16) | 6.5 kgfcm   |
| Side Installation   | 5 / 6        | M3         | 4.0 (0.16) | 6.5 kgfcm   |
|                     | 7 - 12       | M4         | 4.0 (0.16) | 12.0 kgfcm  |