

- Compact metal case with screw terminal block
- Universal input 90-264 VAC
- I/O reinforced isolation 3000 VAC
- Active power factor correction >0.9
- Internal EN 55032 class B filter
- High efficiency up to 93%
- Operating temperature range -30°C to 70+°C
- Short circuit, overvoltage and overload protection  
Remote ON/OFF, Remote Sense function
- IEC/EN/UL 62368-1 safety approvals
- 3-year product warranty



UL 62368-1

The TXN 500 is a cost efficient, metal enclosed AC/DC power supplies series and is designed for industrial applications. With a low-profile metal case and screw terminal block connection, they are easy to install in any equipment. Active PFC (>0.9), internal EMC filter, high IO-isolation and wide temperature range qualify them for numerous industrial applications. All models within the TXN 500 series have universal input (90-264 VAC) and comply with the latest industrial standard IEC/EN/UL 62368-1, European EMC standards and the Low Voltage Directive (LVD).

### Models

| Order Code  | Output Power<br>max. | Output Voltage<br>nom. (adjustable) | Output Current<br>max. | Efficiency<br>typ. |
|-------------|----------------------|-------------------------------------|------------------------|--------------------|
| TXN 500-112 | 500 W                | 12 VDC (10.8 - 13.2 VDC)            | 41'700 mA              | 90 %               |
| TXN 500-115 |                      | 15 VDC (13.5 - 16.5 VDC)            | 33'400 mA              | 90 %               |
| TXN 500-124 |                      | 24 VDC (21.6 - 26.4 VDC)            | 21'000 mA              | 92 %               |
| TXN 500-148 |                      | 48 VDC (43.2 - 50.4 VDC)            | 10'500 mA              | 93 %               |

### Options

|                                                     |                                                                                                                  |
|-----------------------------------------------------|------------------------------------------------------------------------------------------------------------------|
| TXN-AUX2                                            | - Optional Cable: <a href="http://www.tracopower.com/overview/txn-aux2">www.tracopower.com/overview/txn-aux2</a> |
| on demand<br>(backorder with MOQ non stocking item) | - Optional model with 36 VDC and 13'800 mA                                                                       |

## 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>140 - 340 VDC</b> (Designed for, no certification)<br>Polarity: <b>+DC: L / -DC: N</b> |
| Input Frequency        |                             | Operational Range: <b>47 - 63 Hz</b><br>Certified: <b>50/60 Hz</b>                                           |
| Power Consumption      | - No load & Vin = 230 VAC   | <b>621 mW max.</b> (Ready to meet ErP directive)                                                             |
|                        | - No load & Vin = 115 VAC   | <b>655 mW max.</b>                                                                                           |
| Input Current          | - Full load & Vin = 230 VAC | <b>2'700 mA max.</b>                                                                                         |
|                        | - Full load & Vin = 115 VAC | <b>5'700 mA max.</b>                                                                                         |
| Input Inrush Current   | - At 230 VAC                | <b>50 A max.</b>                                                                                             |
|                        | - At 115 VAC                | <b>20 A max.</b>                                                                                             |
| Power Factor           | - At 230 VAC                | <b>0.9 min.</b> (Active Power Factor Correction)                                                             |
|                        | - At 115 VAC                | <b>0.9 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              |                                 | <b>-10% to +5%</b> (48 Vout model)<br><b>±10%</b> (other models)<br>(By trim potentiometer)<br>Output power must not exceed rated power! |
| Voltage Set Accuracy                   |                                 | <b>±1% max.</b>                                                                                                                          |
| Regulation                             | - Input Variation (Vmin - Vmax) | <b>0.5% max.</b>                                                                                                                         |
|                                        | - Load Variation (0 - 100%)     | <b>1% max.</b>                                                                                                                           |
| Ripple and Noise<br>(20 MHz Bandwidth) | 12 VDC model:                   | <b>200 mVp-p typ.</b> (w/ 0.1 µF    47 µF)                                                                                               |
|                                        | 15 VDC model:                   | <b>250 mVp-p typ.</b> (w/ 0.1 µF    47 µF)                                                                                               |
|                                        | 24 VDC model:                   | <b>200 mVp-p typ.</b> (w/ 0.1 µF    47 µF)                                                                                               |
|                                        | 36 VDC model:                   | <b>320 mVp-p typ.</b> (w/ 0.1 µF    47 µF)                                                                                               |
|                                        | 48 VDC model:                   | <b>320 mVp-p typ.</b> (w/ 0.1 µF    47 µF)                                                                                               |
| Capacitive Load                        | 12 VDC model:                   | <b>42'300 µF max.</b>                                                                                                                    |
|                                        | 15 VDC model:                   | <b>42'300 µF max.</b>                                                                                                                    |
|                                        | 24 VDC model:                   | <b>19'800 µF max.</b>                                                                                                                    |
|                                        | 36 VDC model:                   | <b>13'000 µF max.</b>                                                                                                                    |
|                                        | 48 VDC model:                   | <b>6'100 µF max.</b>                                                                                                                     |
| Minimum Load                           |                                 | <b>Not required</b>                                                                                                                      |
| Hold-up Time                           |                                 | <b>6 ms min.</b>                                                                                                                         |
| Start-up Time                          |                                 | <b>1'000 ms max.</b>                                                                                                                     |
| Short Circuit Protection               |                                 | <b>Continuous, Automatic recovery</b><br><b>110 - 150% of Iout nom.</b>                                                                  |
| Overvoltage Protection                 |                                 | <b>115% typ. of Vout nom.</b>                                                                                                            |

## Safety Specifications

|                       |                             |                                                                                            |
|-----------------------|-----------------------------|--------------------------------------------------------------------------------------------|
| Standards             | - IT / Multimedia Equipment | <b>UL 62368-1</b>                                                                          |
|                       | - Certification Documents   | <a href="http://www.tracopower.com/overview/txn500">www.tracopower.com/overview/txn500</a> |
| Protection Class      |                             | <b>Class I (Prepared): Connection to PE</b>                                                |
| Pollution Degree      |                             | <b>PD 2</b>                                                                                |
| Over Voltage Category |                             | <b>OVC II</b>                                                                              |

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

## 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)                                                                                                                     |
| EMS (Immunity)      |                                | EN 61000-6-2 (Generic Industrial)                                                                                                                                                            |
|                     | - Electrostatic Discharge      | Air: EN 61000-4-2, $\pm 4$ kV, perf. criteria B<br>Contact: EN 61000-4-2, $\pm 8$ kV, perf. criteria B                                                                                       |
|                     | - RF Electromagnetic Field     | EN 61000-4-3, 10 V/m, perf. criteria B                                                                                                                                                       |
|                     | - EFT (Burst) / Surge          | EN 61000-4-4, $\pm 2$ kV, perf. criteria B                                                                                                                                                   |
|                     | - Conducted RF Disturbances    | L to L: EN 61000-4-5, $\pm 1$ kV, perf. criteria B<br>L to PE: EN 61000-4-5, $\pm 2$ kV, perf. criteria B                                                                                    |
|                     | - Voltage Dips & Interruptions | 230 VAC / 50 Hz: EN 61000-4-6, 10 Vrms, perf. criteria B<br>EN 61000-4-11<br>30%, 25 periods, perf. criteria C<br>>95%, 0.5 periods, perf. criteria B<br>>95%, 250 periods, perf. criteria C |
| EMC / Environmental | - Certification Documents      | <a href="http://www.tracopower.com/overview/txn500">www.tracopower.com/overview/txn500</a>                                                                                                   |

## General Specifications

|                                        |                                                                                                                  |                                                           |
|----------------------------------------|------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------|
| Relative Humidity                      |                                                                                                                  | 95% max. (non condensing)                                 |
| Temperature Ranges                     | - Operating Temperature                                                                                          | -30°C to +70°C                                            |
|                                        | - Storage Temperature                                                                                            | -40°C to +80°C                                            |
| Power Derating                         | - High Temperature                                                                                               | 2.5 %/K above 50°C                                        |
|                                        | See application note: <a href="http://www.tracopower.com/overview/txn500">www.tracopower.com/overview/txn500</a> |                                                           |
| Over Temperature Protection Switch Off | - Protection Mode                                                                                                | Automatic recovery                                        |
| Cooling System                         |                                                                                                                  | Forced air cooling (with internal fan)                    |
| Remote Control                         | - Voltage Controlled Remote (passive = on)                                                                       | On: < 0.6 VDC or open circuit                             |
|                                        |                                                                                                                  | Off: 4 to 10 VDC<br>Refers to '+Remote' and '-Remote' Pin |
| Altitude During Operation              |                                                                                                                  | 2'000 m max.                                              |
| Regulator Topology                     |                                                                                                                  | LLC Converter                                             |
| Switching Frequency                    |                                                                                                                  | 55 - 250 kHz (PFM)                                        |
| Insulation System                      |                                                                                                                  | Reinforced Insulation                                     |
| Isolation Test Voltage                 | - Input to Output, 60 s                                                                                          | 3'000 VAC                                                 |
|                                        | - Input to Case or PE, 60 s                                                                                      | 1'500 VAC                                                 |
|                                        | - Output to Case or PE, 60 s                                                                                     | 500 VAC                                                   |
| Isolation Resistance                   | - Input to Output, 500 VDC                                                                                       | 100 M $\Omega$ min.                                       |
| Leakage Current (at 240 VAC)           | - Earth Leakage Current                                                                                          | 3.5 mA max.                                               |
|                                        | - Touch Current                                                                                                  | 250 $\mu$ A max.                                          |
| Reliability                            | - Calculated MTBF                                                                                                | 142'600 h (MIL-HDBK-217F, ground benign)                  |
| Environment                            | - Vibration                                                                                                      | 2 g, 3 axis, 60 min, 10-500 Hz, 10 min/cycle              |
|                                        | - Mechanical Shock                                                                                               | 20 g, 3 axis, 3 shocks                                    |
| Housing Type                           |                                                                                                                  | Metal Case                                                |
| Mounting Type                          |                                                                                                                  | Chassis Mount                                             |
| Connection Type                        |                                                                                                                  | Screw Terminal                                            |
| Weight                                 |                                                                                                                  | 970 g                                                     |
| Status Indicator                       |                                                                                                                  | Indicated by green LED                                    |
| Sense Function                         |                                                                                                                  | (0.2 V max.)                                              |

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

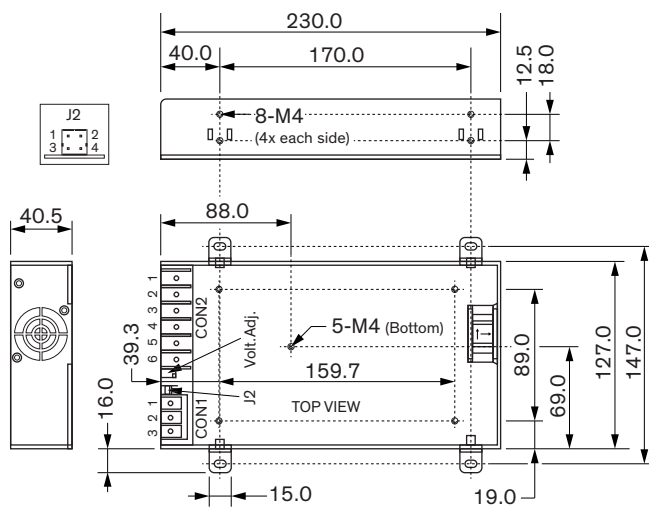
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## Supporting Documents

Overview Link (for additional Documents)

[www.tracopower.com/overview/txn500](http://www.tracopower.com/overview/txn500)

## Outline Dimensions

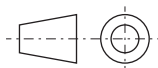


Dimensions in mm

Terminals screw tightening torque: Max. 1.2 Nm

Mounting screw tightening torque: Max. 0.8 Nm

Mounting screw penetration depth: Max. 3 mm



### Pin connectors

| Input (CON1) |          | Output (CON2) |          |
|--------------|----------|---------------|----------|
| Pin          | Function | Pin           | Function |
| 1            | PE       | 1             | +Vout    |
| 2            | AC (N)   | 2             |          |
| 3            | AC (L)   | 3             |          |
| AUX (J2)     |          | 4             | -Vout    |
| 1            | -Sense   | 5             |          |
| 2            | +Sense   | 6             |          |
| 3            | -Remote  |               |          |
| 4            | +Remote  |               |          |

**Input:** Screw terminal, M4×7

Wire gauge range: 22-12 AWG ( $\pm 0.32-3.3\text{mm}^2$ )

**Output:** Screw terminal, M4×7

Wire gauge range: 22-12 AWG ( $\pm 0.32-3.3\text{mm}^2$ )