

## AC/DC Power Supply

## TXH 600 Series, 600 Watt

End of life

- **Universal input: 90–264 VAC or 120–370 VDC**
- **Active power factor correction (>0.95)**
- **High efficiency up to 93%**
- **Load share function for up to 3 units in parallel**
- **Adjustable output voltage**
- **EMI/EMC compliance with EN 61000-6-3 and EN 61000-6-1**
- **Remote control input, DC-OK signal and 5 VDC auxiliary output**
- **Rear side IEC-C13 line socket, including mains switch and fuse**
- **Protection against over-voltage, overtemperature, overload and short circuit**
- **3-year product warranty**



UL 60950-1 IEC 60950-1

The TXH 600 series models are very compact 600 Watt universal power supplies. Rear side IEC-C13 line socket including mains switch and fuse and the output screw terminal make the connection of these power supplies very easy. Sense line, auxiliary output, remote control, adjustable output voltage, and load share line for up to 3 units in parallel make the units all-purpose applicable. They come with an active power factor correction. The EMC characteristic is dedicated for applications in industry, IT and domestics. The protection against overvoltage, over-temperature, overload and short circuit and a high efficiency of up to 93% guarantees a reliable operation.

### Models

Order Code	Output Power max.	Output Voltage nom. (adjustable)	Output Current max.	Efficiency typ.
TXH 600-112 *	540 W	12 VDC (11.4 - 12.6 VDC)	45'000 mA	90 %
TXH 600-124 *	600 W	24 VDC (22.8 - 25.2 VDC)	25'000 mA	92 %
TXH 600-148 *		48 VDC (45.6 - 50.4 VDC)	12'500 mA	92 %
TXH 600-154 *		54 VDC (51.3 - 56.7 VDC)	11'100 mA	93 %

Note \* End of life

### Input Specifications

Input Voltage	- AC Range	Operational Range: <b>90 - 264 VAC</b> (Full Range)
	- DC Range	Operational Range: <b>120 - 370 VDC</b> (Designed for, no certification)
Input Frequency		Operational Range: <b>47 - 440 Hz</b> Certified: <b>50/60 Hz</b>
Power Consumption	- No load & Vin = 230 VAC	<b>3'300 mW max.</b>
Input Current	- Full load & Vin = 230 VAC	<b>3'500 mA max.</b>
	- Full load & Vin = 115 VAC	<b>8'000 mA max.</b>
Input Inrush Current	- At 230 VAC	<b>30 A max.</b>
	- At 115 VAC	<b>15 A max.</b>
Power Factor	- At 230 VAC	<b>0.95 min.</b> (Active Power Factor Correction)
	- At 115 VAC	<b>0.99 min.</b> (Active Power Factor Correction)
Input Protection		<b>T 16 A</b>
Recommended Input Fuse		(The need of an external fuse has to be assessed in the final application.)

### Output Specifications

Output Voltage Adjustment		<b>±5%</b> (By trim potentiometer) Output power must not exceed rated power!
Voltage Set Accuracy		<b>±2% max.</b>
Regulation	- Input Variation (Vmin - Vmax)	<b>1% max.</b>
	- Load Variation (0 - 100%)	<b>1% max.</b>
Ripple and Noise (20 MHz Bandwidth)	12 VDC model:	<b>120 mVp-p max.</b> (w/ 0.1 µF    47 µF)
	24 VDC model:	<b>240 mVp-p max.</b> (w/ 0.1 µF    47 µF)
	48 VDC model:	<b>480 mVp-p max.</b> (w/ 0.1 µF    47 µF)
	54 VDC model:	<b>540 mVp-p max.</b> (w/ 0.1 µF    47 µF)
Capacitive Load	12 VDC model:	<b>60'000 µF max.</b>
	24 VDC model:	<b>50'000 µF max.</b>
	48 VDC model:	<b>20'000 µF max.</b>
	54 VDC model:	<b>10'000 µF max.</b>
Minimum Load		<b>1 % of Iout max.</b>
Temperature Coefficient		<b>±0.03 %/K max.</b>
Hold-up Time	- At 230 VAC	<b>12 ms min.</b>
	- At 115 VAC	<b>12 ms min.</b>
Start-up Time	- At 230 VAC	<b>500 ms max.</b>
	- At 115 VAC	<b>500 ms max.</b>
Short Circuit Protection		<b>Latch Off, no automatic recovery</b>
Output Current Limitation		<b>110 - 160% of Iout max.</b>
Overvoltage Protection		<b>105 - 145% of Vout nom.</b> (By Zener diode)
Transient Response	- Response Deviation	<b>2% max.</b> (75% to 100% Load Step)
	- Response Time	<b>500 µs typ.</b> (75% to 100% Load Step)
Load Share Function	- Refer to application note	<a href="http://www.tracopower.com/overview/txh600">www.tracopower.com/overview/txh600</a>

### Safety Specifications

Standards	- IT / Multimedia Equipment	<b>EN 60950-1</b> <b>IEC 60950-1</b> <b>UL 60950-1</b>
	- Certification Documents	<a href="http://www.tracopower.com/overview/txh600">www.tracopower.com/overview/txh600</a>
Protection Class		<b>Class I</b> (Prepared): <b>Connection to PE</b>
Pollution Degree		<b>PD 2</b>
Over Voltage Category		<b>OVC II</b>

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

### EMC Specifications

EMI Emissions	- Conducted Emissions	EN 55032 class B (internal filter)
	- Radiated Emissions	EN 55032 class A (internal filter)
	- Harmonic Current Emissions	EN 61000-3-2, class D
	- Voltage Fluctuations & Flicker	EN 61000-3-3
EMS Immunity		EN 55024 (IT Equipment)
	- Electrostatic Discharge	Air: EN 61000-4-2, $\pm 4$ kV, perf. criteria A Contact: EN 61000-4-2, $\pm 2$ kV, perf. criteria A
	- 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 A
		L to L: EN 61000-4-5, $\pm 1$ kV, perf. criteria A
		L to PE: EN 61000-4-5, $\pm 2$ kV, perf. criteria A
	- 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 A >95%, 0.5 periods, perf. criteria A >95%, 250 periods, perf. criteria B

### General Specifications

Relative Humidity		95% max. (non condensing)
Temperature Ranges	- Operating Temperature	-25°C to +70°C
	- Storage Temperature	-25°C to +85°C
Power Derating	- High Temperature	Depending on model
	- Low Input Voltage	1 %/V below 110 VAC
		See application note: <a href="http://www.tracopower.com/overview/txh600">www.tracopower.com/overview/txh600</a>
Over Temperature Protection Switch Off	- Protection Mode	Automatic recovery
Cooling System		Forced air cooling (with internal fan)
Fan Power Source	- Characteristic	Variable fan speed (temperature regulated)
Standby Power Source	- Output Voltage	5 VDC
	- Output Current	600 mA max.
Remote Control	- Voltage Controlled Remote (passive = on)	On: open circuit Off: short circuit Refers to 'Remote' and 'GND' Pin
Altitude During Operation		2'000 m max.
Switching Frequency		90 - 200 kHz (PWM)
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
Creepage	- Input to Output	4.8 mm min.
Clearance	- Input to Output	4 mm min.
Leakage Current	- Earth Leakage Current	600 $\mu$ A max.
	- Touch Current	3500 $\mu$ A max.
Reliability	- Calculated MTBF	100'000 h (MIL-HDBK-217F, ground benign)
Environment	- Vibration	2 g, 3 axis, 60 min, 10-500 Hz, 10 min/cycle
Housing Type		Metal Case
Mounting Type		Chassis Mount
Connection Type		Screw Terminal
Weight		1'030 g

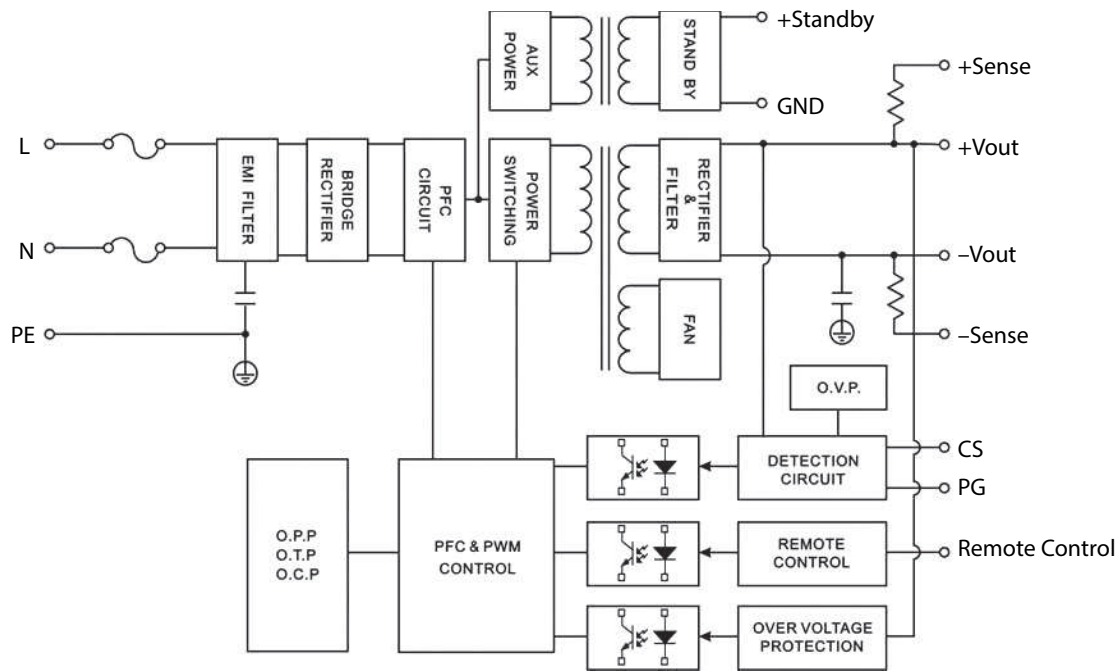
All specifications valid at nominal voltage, resistive full load and +25°C after warm-up time, unless otherwise stated.

<b>Power OK Signal</b> - Power OK - Power Off - Active Output Signal	12 VDC model: <b>5 VDC ±1 VDC</b> 24 VDC model: <b>5 VDC ±1 VDC</b> 48 VDC model: <b>5 VDC ±1 VDC</b> 54 VDC model: <b>5 VDC ±1 VDC</b>	<b>Voltage source output</b> <b>High level</b> <b>Low level</b> (Refers to 'PG' and 'GND' Pin) Low output signal: 0 - 1 VDC
<b>Environmental Compliance</b> - REACH Declaration - RoHS Declaration - SCIP Reference Number		<a href="http://www.tracopower.com/info/reach-declaration.pdf">www.tracopower.com/info/reach-declaration.pdf</a> <b>REACH SVHC list compliant</b> <b>REACH Annex XVII compliant</b> <b>Exemptions: 7c-I</b> (RoHS exemptions refer to the component concentration only, not to the overall concentration in the product (O5A rule.)) <b>cbee4e68-6c7f-4c7f-82e3-782449eb1e33</b>

### Supporting Documents

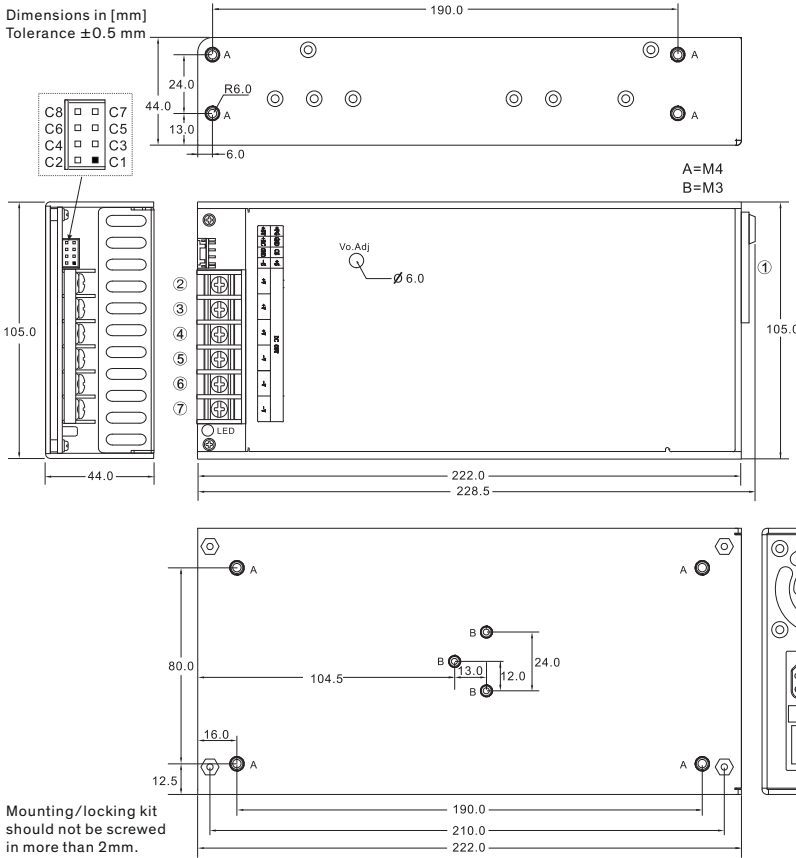
Overview Link (for additional Documents) [www.tracopower.com/overview/tXH600](http://www.tracopower.com/overview/tXH600)

### Blockdiagram



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

### Outline Dimensions



Auxillary	
Pin	Function
C1	+Sense
C2	-Sense
C3	Load share (CS)
C4	GND
C5	(internal connection to -Vout)
C6	Remote
C7	PG
C8	Standby

Mating connector:  
Housing: JST PHDR-08VS  
Crimp: JST SPHD-002T-P0.5

Connection cable with 500mm flying leads included!

Connection	
Pin	Function
1	AC in IEC-C13 line socket
2-4	+Vout
5-7	-Vout

Vout terminals are rated for 25 A max.  
At higher current connection has to be splitted.