Universal Power Supplies

TXH 600 Series, 600 Watt

CE CB Scheme cULus UL 60950-1

Features

- 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
- Rear side IEC-C13 line socket, including mains switch and fuse
- DC-OK signal and 5 VDC auxiliary output
- Protection against over-voltage, over-temperature, overload and short circuit
- 3-year product warranty



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 over-voltage, over-temperature, overload and short circuit and a high efficiency of up to 93% guaranties a reliable operation.

Models

Order code	Output power max.	Output voltage nom.	Output current max.	Efficiency typ.
TXH 120/240/360/480	120 – 480 Watt	Other power models see separate datasheets: www.tracopower.com		
TXH 600-112	540 Watt	12 VDC	45 A	90 %
TXH 600-124	600 Watt	24 VDC	25 A	92 %
TXH 600-148	600 Watt	48 VDC	12.5 A	92 %
TXH 600-154	600 Watt	54 VDC	11.1 A	93 %

Input Specifications

Input voltage	– nominal	100 – 240 VAC
	– AC range (universal input)	90 – 264 VAC
	– DC range	120 – 370 VDC
	– Output power derating at operation below 110 VAC	1%/V (110 - Vin)
Input frequency		47 – 63 Hz
Earth leakage current (240 VAC / 63 Hz)		3.5 mA max.
Harmonic limits		EN 61000-3-2, Class A & D
	– Power factor	>0.99 at 115 VAC, >0.95 at 230 VAC
Input current at full load	– at 115 VAC / 230 VAC	rated 8.0 A / 3.5 A typical: 6.0 A / 2.9 A
Circuit breaker (slow blow fuse)		16 A internal

Output Specifications

Voltage set accuracy		±2 % max.
Output voltage adjustment range		±5 % with internal potentiometer
Regulation	– Input variation	±1 % max.
	– Load variation (5–100%)	±1 % max.
Minimum load		1%
Ripple and noise (20 MHz bandwidth)		<1% Vout [mVp-p]
Hold-up time		12 ms min.
Current limitation		auto recovery
Short circuit protection		no auto recovery (power disconnect required)
Overvoltage protection		by zener diode
Overtemperature protection		auto recovery
Capacitive load	12 VDC models:	60'000 µF max.
	24 VDC models:	50'000 µF max.
	48 VDC models:	20'000 µF max.
	54 VDC models:	10'000 µF max.

General Specifications

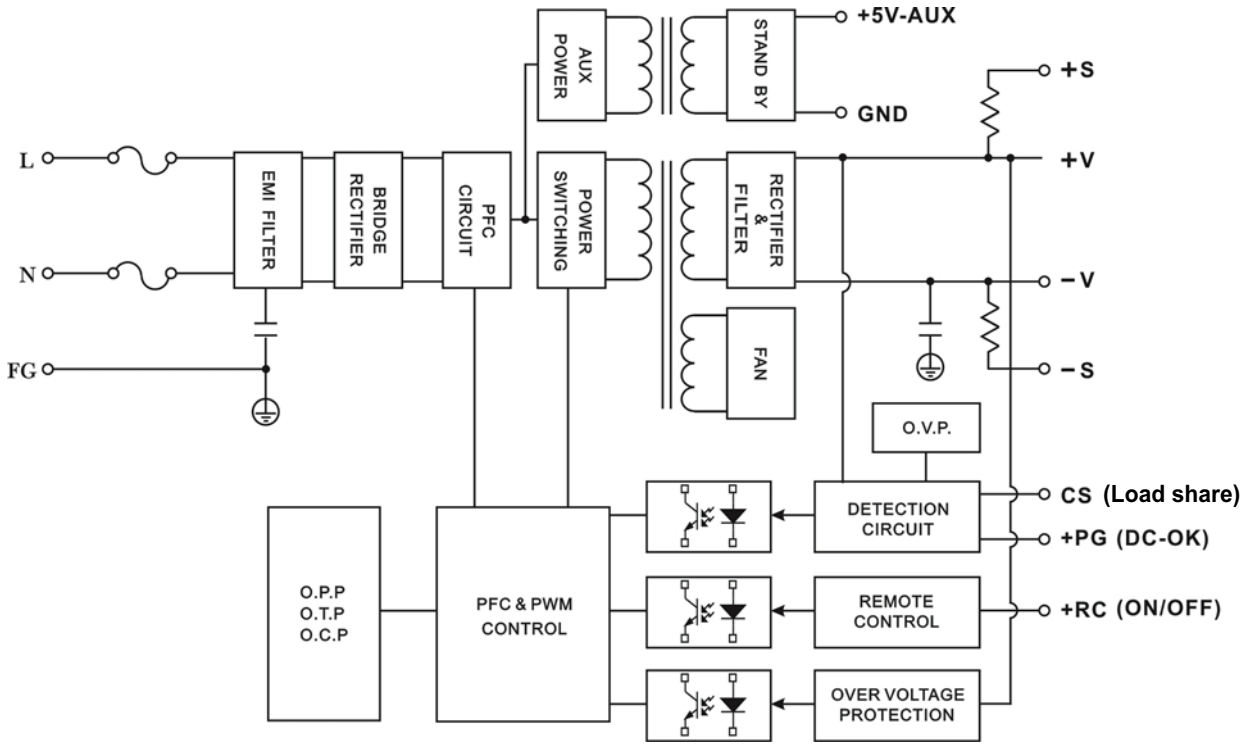
Temperature ranges	– Operating	–25°C to +70°C
	– Storage (non operating)	–25°C to +85°C
Cooling		internal fan (variable fan speed, temperature regulated)
Derating	+50°C to +65°C:	2.2 %/K
	+65°C to +70°C:	3.3 %/K
Temperature coefficient		0.03 %/K
Humidity (non condensing)		95 % rel max.
Switching frequency (pulse width modulation PWM)		110 kHz typ. ±10%
Isolation voltage (60 s)	– Input/Output	3'000 VAC
	– Input/Case	1'500 VAC
	– Output/Case	500 VAC
Reliability /calculated MTBF (MIL-HDBK-217F, at +25°C, ground benign)		>100'000 h

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

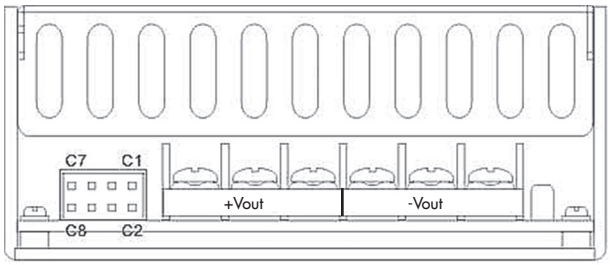
General Specifications

Electromagnetic compatibility (EMC), Emissions		EN 61000-3-2:2006+A1:2009+A2:2009 EN 61000-3-3:2008 EN 55022, class B
Electromagnetic compatibility (EMC), Immunity		EN 55024
	– Electrostatic discharge ESD	EN 61000-4-2 ±2 kV / ±4 kV, criteria A
	– RF field susceptibility	EN 61000-4-3 3 V/m, criteria A
	– Electrical fast transient / burst immunity input	EN 61000-4-4 ±1 kV, criteria A
	– Surge immunity line – neutral	EN 61000-4-5, ±1 kV, criteria A
	– Surge immunity line – PE, neutral – PE	EN 61000-4-5 ±2 kV, criteria A
	– Immunity to conducted RF disturbances	EN 61000-4-6 3 V, criteria A
	– Power frequency magnetic field immunity	EN 61000-4-8 1 A/m, criteria A
	– Mains voltage dips and interruptions	EN 61000-4-11 30 % 500 ms, criteria A 95 % 10 ms, criteria A 95 % 2500 ms, criteria B
EMC test report		www.tracopower.com/overview/txh600
Degree of protection		class I
Safety standards		UL 60950-1 IEC 60950-1 2nd: Am 1, Am 2 EN 60950-1:2006/A11:2009/A1:2010/A12:2011/A2:2013
	– Certification documents	www.tracopower.com/overview/txh600
Environment	– Vibration	3 axes, sine sweep, 10–500Hz, 2g, 0.1 oct/min
Altitude during operation		up to 2000 m (6560 ft)
Environmental compliance	– Reach	www.tracopower.com/info/reach-declaration.pdf
	– RoHS	RoHS directive 2011/65/EU

Block Diagram



Functions



7	5	3	1
OK	GND	CS	+S
Aux	RC	GND	- S
8	6	4	2

Control connector	
C1	+ Sense
C2	– Sense
C3	Load share (CS)
C4	GND (internal connection to –Vout)
C5	
C6	Remote Control: open = On, short to GND = Off
C7	DC-OK signal: 4-6 VDC = On, 0-1 VDC = Off
C8	+5 VDC aux. ±10%, 0.6 A max.

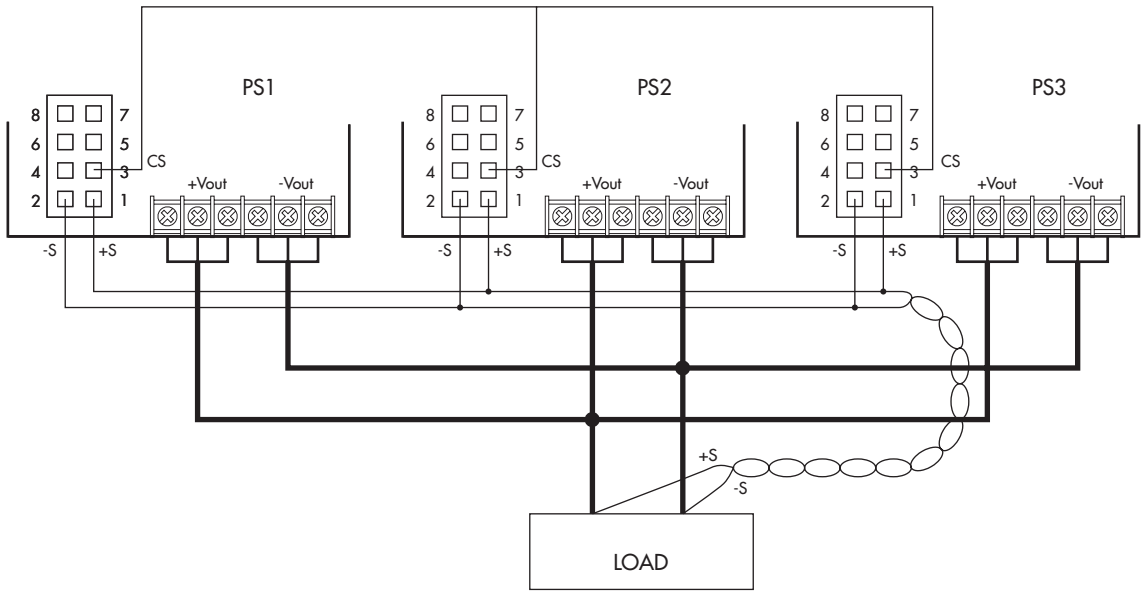
Vout terminals are rated for 25 A max.
At higher current connection has to be splitted.

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

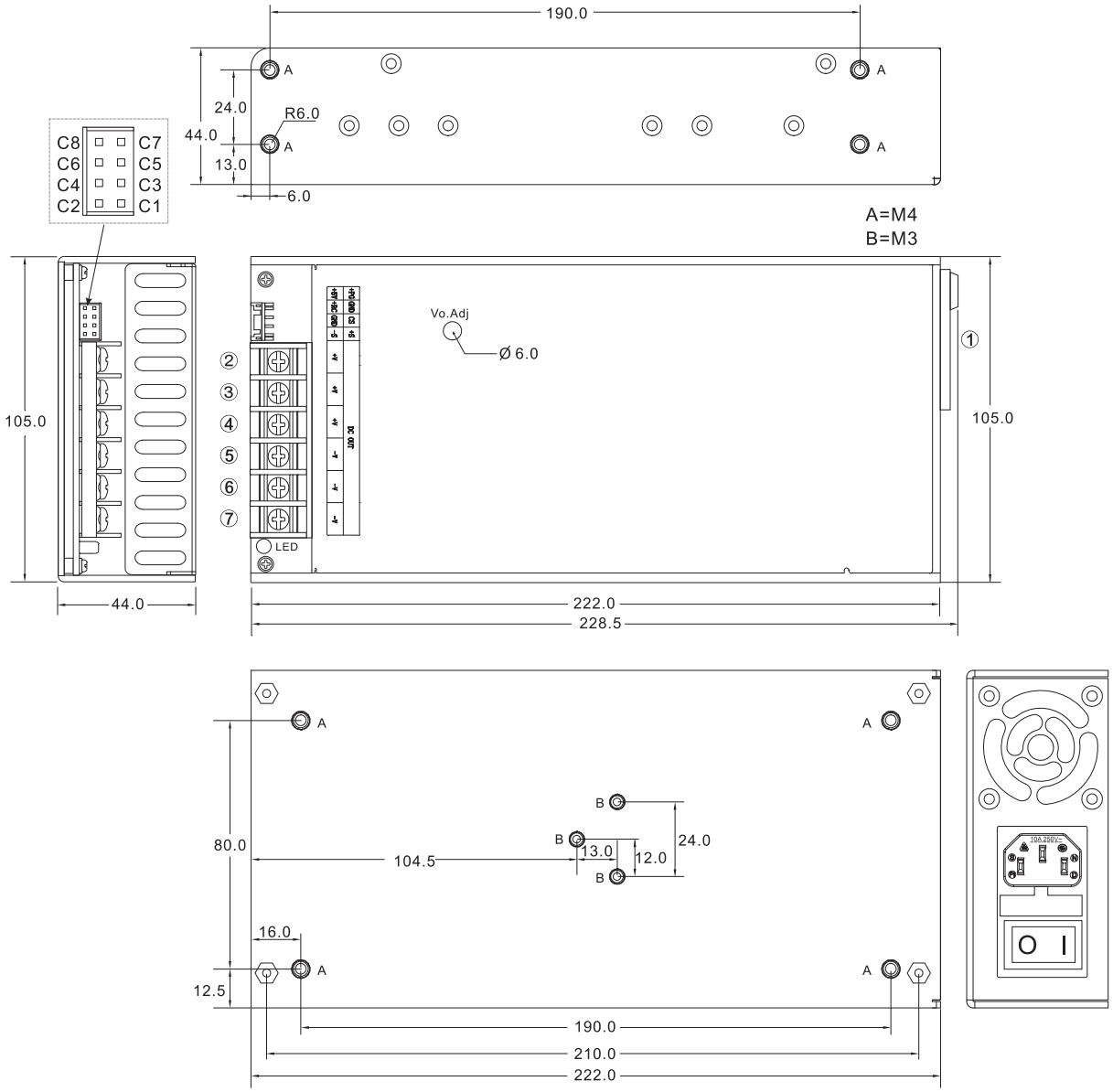
Connection cable with 500mm
flying leads included!

Load sharing:

- Difference in Vout among paralleled units should be less than ±1%
- Output power at load share = rated power per unit x number of unit x 80%
- Shorter wiring to each unit is recommended, as well as twisting +S and -S in pairs, as shown.



Outline Dimensions



Weight: 1030 g

Max. mounting screw penetration: 2.0 mm

Dimensions in [mm]
Tolerance ±0.5 mm

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