Industrial Power Supplies

TSP-Series

Innovative and Powerful Features!

- **Rugged metal case for harsh industrial environments**
- **Shock and vibration proof**
- **Worlwide Safety approval package.**
- **ATEX certification tested in accordance to IECEX (opt. EX)**
- **Model TSP 090-124N meets NEC class 2**
- **Industrial operating temperature range: –25°C to +70°C**
- **Adjustable output voltage**
- **Protection against short-circuit, overvoltage and over-temperature**
- **Power OK signal, Remote On/Off**
- **Wall mounting (opt.)**
- **3-year product warranty**

EMC LVD | IEC 60950-1 | UL 60950-1 UL 508 UL 60079-15 | ATEX II3G

The TSP series comprises high performance DIN-rail mount power supplies designed for reliable operation under difficult factory floor conditions. High immunity against electrical disturbances and rugged metal casing make these modules the best choice to power sensitive loads in industrial process control systems, machine tools or other demanding industrial applications. They provide a DC-OK signal and external shut down function. Detachable screw terminal blocks make the connection easy.

This power supply line is accompanied by a wide range of function modules for reliable system solutions:

Redundancy modules for true current sharing in parallel operation and for redundant systems.
Battery controller modules to configure high reliable UPS systems for 12, 24 and 48 VDC. Selection of battery packs available.
Buffer modules for protection against short time AC power loss. Maintenance free! No batteries required.

Function Modules (see page 5)

Models

Order Code	Output Power (Pmax)	**Output Voltage (Vnom)	***Output Current (Imax)
TSP 070–112*	72 W	12 VDC	6.0 A
TSP 090–124*	90 W	24 VDC	3.75 A
TSP 090–124N	90 W	24 VDC	3.75 A
TSP 090–148*	96 W	48 VDC	2.0 A
TSP 140–112*	144 W	12 VDC	12.0 A
TSP 180–124*	180 W	24 VDC	7.5 A
TSP 180–148*	192 W	48 VDC	4.0 A
TSP 360–124*	360 W	24 VDC	15.0 A
TSP 360–148*		48 VDC	7.5 A
TSP 600–124*	600 W	24 VDC	25.0 A
TSP 600–136		36 VDC	16.5 A
TSP 600–148*		48 VDC	12.5 A

* For ATEX compliant models add appendix -EX to order code.
** Output voltage adjustable 12–14 VDC, 24–28 VDC and 48–56VDC
*** Max. current at nominal output voltage and operating temperature up to +40°C max.

Input Specifications

Input voltage range		TSP 070/090	85 – 264 VAC universal input
		other models:	85 – 132 / 187 – 264 VAC autoselect
	output current derating at operation below 100 VAC		see graph B, page 4
Input voltage frequency			47 – 63 Hz
Harmonic limits			EN 61000-3-2, Class A (for limited output power)
Holdup time		230 VAC	20 ms
		115 VAC	10 ms at full load, 20 ms at 66% load

Inrush current	115 VAC	230 VAC
TSP 070/090	< 12 A	< 20 A
TSP 140/180	< 13 A	< 25 A
TSP 360	< 16 A	< 25 A
TSP 600	< 25 A	< 30 A

Recommended circuit breaker, characteristic B	TSP 070/090/140/180	6.0 – 16.0 A
	TSP 360	10.0 – 16.0 A
	TSP 600	16.0 – 25.0 A
Efficiency		87 % typ.

Output Specifications

Output voltage adj. range		12 VDC models:	12 – 14 VDC
		24 VDC models:	24 – 28 VDC
		36 VDC model:	36 – 42 VDC
		48 VDC models:	48 – 56 VDC
			At output voltage higher than nominal output voltage max. output current has to be reduced accordingly, in order not to exceed max. output power.
Regulation	– Input variation		0.5 % max.
	– Load variation (10–100 %)		0.5 % max.
Ripple and Noise (20MHz bandwidth)			100 mV pk-pk typ. (200 mV pk-pk max. at Imax)
Electronic short circuit protection			current limitation at Imax. constant current, automatic recovery
Output overvoltage protection		12 VDC models:	20 V
		24 VDC models:	35 V
		36 VDC model:	43 V
		48 VDC models:	60 V
Overload protection			electronic overload protection
Overtemperature protection			switch off at overtemperature, automatic restart
Power back immunity		12 VDC models:	16 V
		24 VDC models:	35 V
		36 VDC model:	48 V
		48 VDC models:	63 V
Status indicator			dual color LED (green: DC ok, red: DC off)
Power OK signal	– trigger threshold:	12 VDC models:	9 – 11 V
		24 VDC models:	18 – 22 V
		36 VDC model:	27 – 34 V
		48 VDC models:	36 – 46 V
	– active output signal: (reference to –Vout)	12 VDC models:	11.0 V ±1.0 V (20 mA max. for TSP 070, 40 mA max. for TSP 140)
		24 VDC models:	22.0 V ±2.0V / 20 mA max. (10 mA max. for TSP 090, 20mA max. for others)
		36 VDC model:	34.0 V ±2.0 V / 20 mA max.
		48 VDC models:	44.0 V ±4.0 V / 15 mA max.
	– relay output		DC OK = contact closed rated: 30 VDC/1.0 A for 12/24 VDC models rated: 30 VDC/2.0 A for 36 VDC model rated: 48 VDC/0.5 A for 48 VDC models