



PSH150 is an advanced DIN rail 1-phase input, 150W SMPS (Switched Mode Power Supply) with a distinctive feature: **10kV isolation between primary and secondary**.

This allows it to be used in energy management, telecom, renewable energy and other demanding applications.

■ Main Features

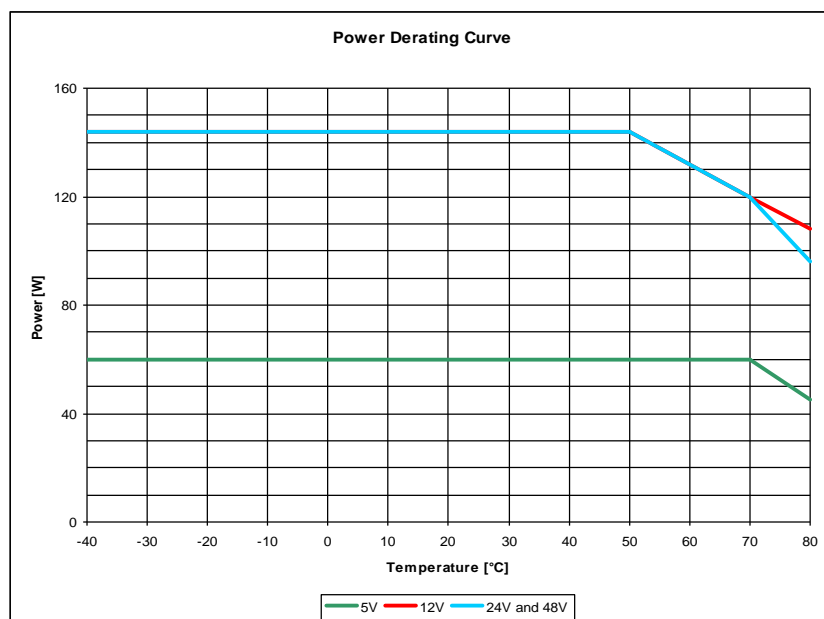
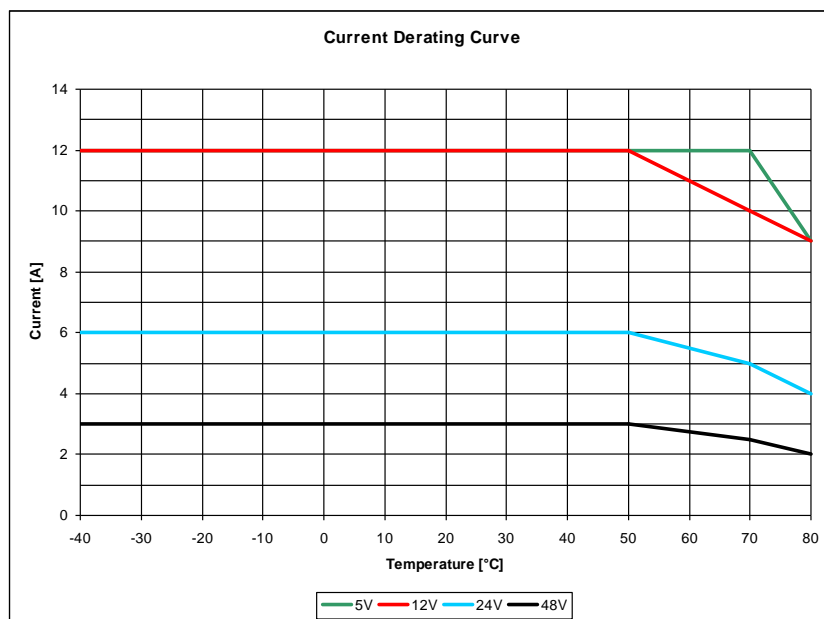
- J Class II wiring (PE connection not required)
- J 10kVac primary to secondary isolation (suitable for energy management applications)
- J Wide output voltage range 5...55Vdc, user settable
- J Auxiliary 12V/100mA power supply
- J High efficiency and compact size
- J Digital Power regulation
- J User settable current limitation threshold
- J Remote ON/OFF or other remote control functions possible through INHIBIT input
- J Modbus over USB and RS-485 interfaces for control and monitoring
- J Multiple protections
- J Can be paralleled for power or redundancy (integrated ORing circuitry)
- J Up to 50°C operating temperature with no derating
- J Wall mount fixing possible
- J Suitable for **POWERMASTER** software (available for Windows and Android OS)

TECHNICAL DATA

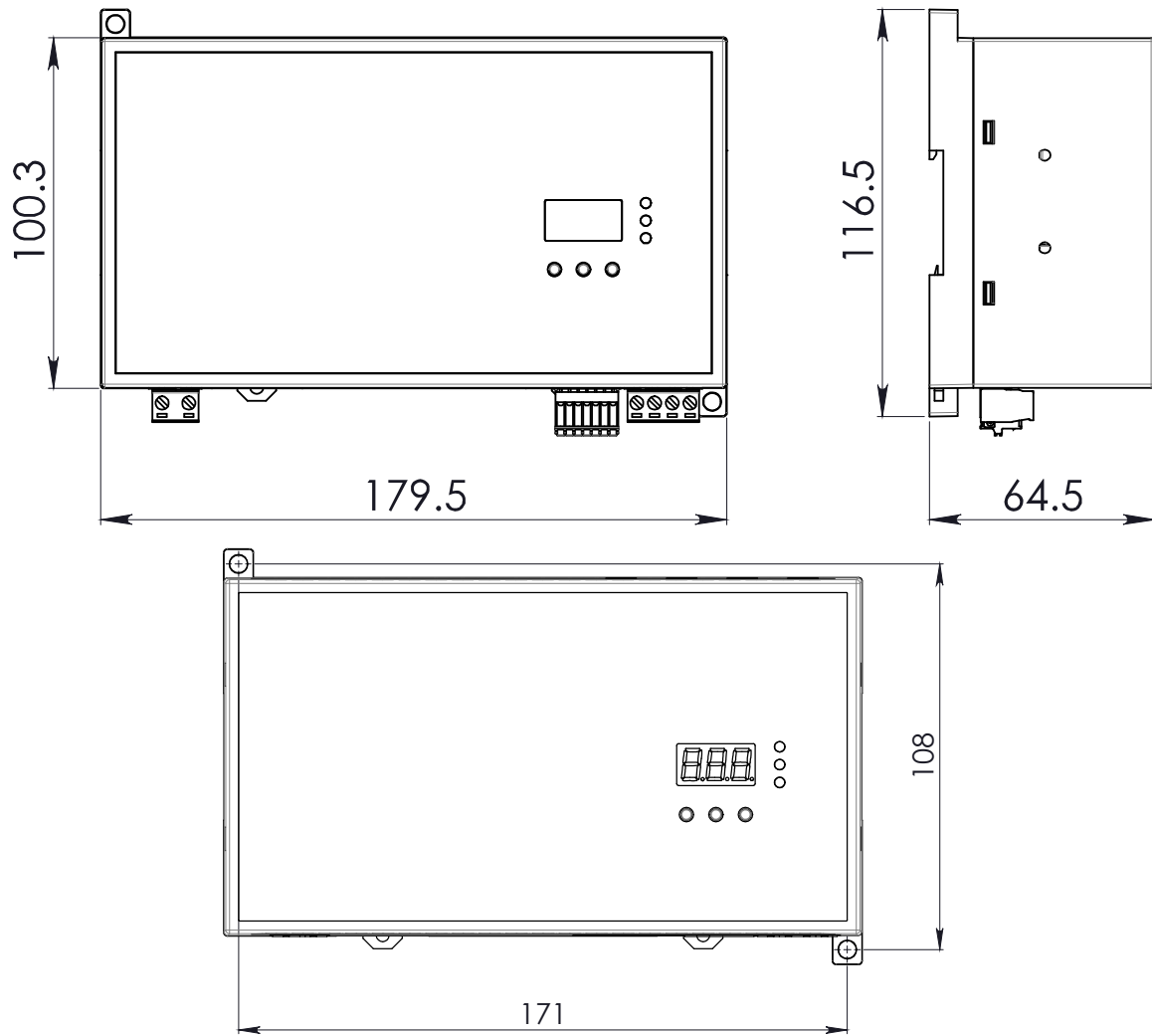
Model type	PSH150	
OUTPUT DATA		
Rated voltage	5...55Vdc	
Adj. output voltage range	5...55Vdc (1V resolution programmable)	
Continuous current	12.0A @ 5...12Vdc, 6.0A @ 24Vdc, 3.0A @ 48Vdc or $V_{out} \times I_{out} = 150W$ Max. for $V_{out} > 48Vdc$	
Overload limit	12.5A to 3.0A (depending on V_{out})	
Short circuit peak current	12.5A to 3.1A (depending on V_{out})	
Load regulation	$\leq 2\%$ @ 5Vdc, $\leq 1\%$ @ 12Vdc, $\leq 0.5\%$ @ $\geq 24Vdc$	
Ripple & Noise ¹	$\leq 120mVpp$	
Hold up time	$\geq 30ms$	
Battery charger function	C.C. / C.V. (setup via front panel or POWERMASTER application)	
Battery chemistries	<ul style="list-style-type: none"> ▪ Lead Acid ▪ Lithium 	
Protections	<ul style="list-style-type: none"> ▪ Overload and short circuit protection ▪ Thermal protection ▪ Input undervoltage lockout (UVLO) ▪ Input overvoltage protection (VDR) 	
Output overvoltage protection	$\geq 62Vdc$	
Status Signals User Interface	<ul style="list-style-type: none"> ▪ 7 segment, 3 digits display ▪ 3 Status LEDs ▪ 3 programming keys ▪ INHIBIT - Isolated remote ON/OFF input, active for 5...30Vdc ▪ 12V AUX - Auxiliary 12Vdc / 100mA ▪ DC OK - dry contact (SPDT, 24Vdc / 1A) ▪ Modbus over USB and RS-485 interfaces 	
Parallel connection	Possible for power and redundancy (integrated ORing circuitry)	
INPUT DATA		
Input AC rated voltage	Nominal: 120...240Vac	
Frequency	Range: 90...277Vac 47...63Hz	
Input DC rated voltage	110...400Vdc	
Input AC rated current	2.2A	
$V_{in} = 120Vac$ $V_{in} = 240Vac$	1.0A	
Input DC rated current	1.1A	
$V_{in} = 110Vdc$ $V_{in} = 400Vdc$	0.6A	
Standby power	$< 4W$	
Power Factor Correction	Active > 0.9	
Inrush peak current ² / I^2t	$\leq 34A / 0.88A^2s$	
Touch (leakage) current	$\leq 0.1mA$	
Internal Protection fuse	Fuse 8AT (not user replaceable)	
Recommended external protection	MCB 6A C curve It is strongly recommended to provide external surge arresters (SPD) according to local regulations.	
GENERAL DATA		
Efficiency	$> 78\% \dots > 86\%$ (depending V_{out} and V_{in})	
Dissipated power	$< 16W \dots < 24W$ (depending V_{out} and V_{in})	
Operating temperature ³	$-40^{\circ}C \dots +70^{\circ}C$	
Derating	Depending on V_{out} and V_{in} over $50^{\circ}C$ See charts on Fig.1	
Storage temperature	$-40^{\circ}C \dots +80^{\circ}C$	
Humidity	5...95% r.H. non condensing	
Life time expectation	351'777h (40.1 years) at $25^{\circ}C$ ambient full load	
MTBF	<ul style="list-style-type: none"> ▪ MIL-HDBK-217F $> 700'000h$ at $25^{\circ}C$ ambient full load 	
Overvoltage category	<ul style="list-style-type: none"> ▪ EN60255-27 IV 	
Pollution degree	<ul style="list-style-type: none"> ▪ IEC60664-1 2 	
Input / output isolation	10kVac	
Safety Standards	<ul style="list-style-type: none"> ▪ UL508 (reference) ▪ EN60255-27 (reference) 	
EMC Emission	<ul style="list-style-type: none"> ▪ EN55011 (CISPR11) Class A ▪ EN55022 (CISPR22) Class A ▪ EN61000-3-2 Class A 	
EMC Immunity	<ul style="list-style-type: none"> ▪ EN61000-4-2 Level 4 ▪ EN61000-4-3 Level 4 ▪ EN61000-4-4 Level 4 ▪ EN61000-4-5 Level 4 ▪ EN61000-4-11 Level 2 Tested up to 6kV	
Protection degree	<ul style="list-style-type: none"> ▪ EN60529 IP20 	
Vibration sinusoidal	<ul style="list-style-type: none"> ▪ IEC60068-2-6 (5-17.8Hz: $\pm 1.6mm$; 17.8-500Hz: 2g 2hours / axis (X,Y,Z) 	
Shock	<ul style="list-style-type: none"> ▪ IEC60068-2-27 (30g 6ms, 20g 11ms; 3 bumps / direction, 18 bumps total) 	
IN/OUT Connection terminals	2.5mm ² , screw type pluggable (24...12AWG)	
Auxiliary connection terminals	Up to 0.5mm ² , Fast pluggable type (20AWG)	
Communication interface connector	RS-485 through RJ45 Female USB-B Type (virtual Com Port)	

Case material	Plastic, Flame retardant UL94 V-0
Weight	0.75kg
Size (W x H x D)	179.5 x 100.3 x 64.5mm
<p>1) Ripple and Noise are measured with 20MHz bandwidth, probe terminated with a 0.1µF MKP parallel capacitor. 2) Peak current measured after 0.2ms from main connection; 240Vac/50Hz; Ambient temperature at 25°C; Cold Start. 3) Start-up type tested: - 40°C, possible at nominal voltage with load deration.</p> <p>Notes: - For more details, performance and descriptions regarding all parameters not indicated in the above table, please refer to the user manual downloadable from www.nextys.com - Technical parameters are typical, measured in laboratory environment at 25°C and 240Vac / 50Hz, at nominal values, after minimum 5 minutes of operation. - Power rating, losses, efficiency, ripple, thermal behaviour and start-up may change outside of the nominal rated input range. Contact factory for details. - Data may change without prior notice in order to improve the product.</p>	

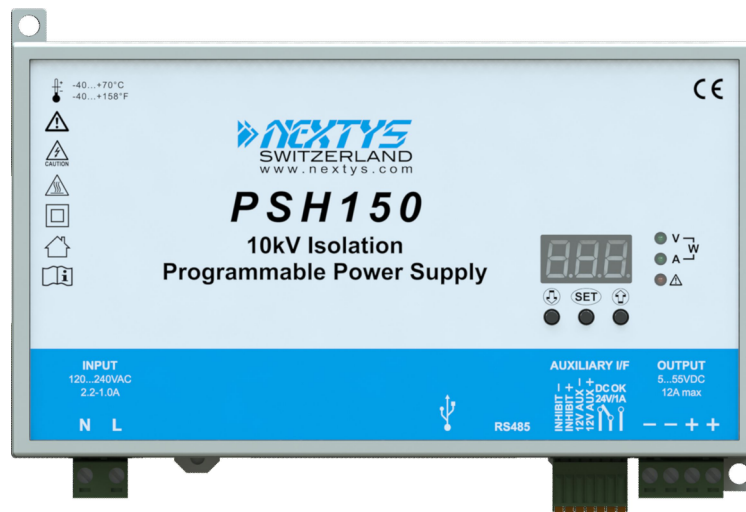
Fig.1



DIMENSIONS



CONNECTION



Input Connection:

Single phase:

- L = Line
- N = Neutral

DC:

- L = + Positive DC
- N = - Negative DC

Output Connection:

- += Positive DC
- -= Negative DC

Auxiliary Connections:

INHIBIT: (5...30Vdc)

- += Positive DC
- -= Negative DC

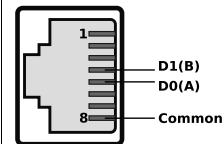
12V AUX: (12Vdc / 100mA)

- 12V+ = Positive DC
- 12V- = Negative DC

DC OK:

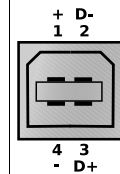
- NO
- NC
- COM

RS-485



- PIN4 = TX/RX D1
- PIN5 = TX/RX D0
- PIN8 = GND

USB-B Type



- 1 = VBUS (+5V)
- 2 = Data (D-)
- 3 = Data (D+)
- 4 = GND