

VPSO-20

Doc. EC-0102

800W DC/DC Isolation Module



■ Main Features

- J High efficiency and compact size
- J Provides 3kVAC isolation for DC/DC applications
- J Provides more than 800W output power
- J Wide voltage range 10...55Vdc
- J Output tracks the input voltage as in a standard AC transformer
- J Easy parallelable for power increase with natural current sharing (external ORing module needed)
- J Hiccup mode current limitation with auto restart
- J Up to 70°C operating temperature (with power derating)



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TECHNICAL DATA

Model type	NISO-20	
OUTPUT DATA		
Rated voltage	10...55Vdc	
Continuous current	20A @ 12...24Vdc 17A @ 48Vdc	
Overload limit	21A	
Short circuit peak current	60A	
Load regulation	Not regulated see charts on Fig.1	
Ripple & Noise ¹	≤ 80mVpp	
Output equivalent resistance	125mΩ	
Protections	<ul style="list-style-type: none"> ▪ Overload, short circuit: Hiccup mode ▪ Thermal protection ▪ Input undervoltage lockout ▪ Input overvoltage protection ▪ Input transient overvoltage protection 	
Output overvoltage protection	≥ 62Vdc	
Status Signals	<ul style="list-style-type: none"> ▪ INPUT OK - green LED ▪ OUTPUT OK - green LED ▪ OVERLOAD - red LED ▪ LOAD - bargraph indicating the load current by 4 amber LEDs ▪ DC OK - dry contact (NO, 24Vdc / 1A) 	
Parallel connection	Possible for power or redundancy (with external ORing module)	
INPUT DATA		
Input DC rated voltage	Nominal: 12...48Vdc Range: 10...55Vdc	
Input DC rated current	20A	
Standby power	< 6W	
Internal protection fuse	Fuse 30A ATO blade (not user replaceable)	
Recommended external protection (use DC rated devices)	30A Fuse or MCB 25A C curve	
GENERAL DATA		
Efficiency	> 85% ... > 96% Depending on Vout and Vin see chart on Fig.2	
Dissipated power	< 35W	
Operating temperature ³	- 40°C...+ 70°C	
Derating	See charts on Fig.3	
Storage temperature	- 40°C...+ 80°C	
Humidity	5...95% r.H. non condensing	
Life time expectation	123'361h (14.1 years) at 25°C ambient full load	
MTBF	<ul style="list-style-type: none"> ▪ MIL-HDBK-217F > 600'000h at 25°C ambient full load 	
Overvoltage category	EN50178	I
Pollution degree	IEC60664-1	2
Protection Class	Class	II
Input / output isolation	4.2kVdc	
Input / ground isolation	2.2kVdc	
Output / ground isolation	0.75kVdc	
Safety Standards	<ul style="list-style-type: none"> ▪ UL508 (reference) ▪ EN60950 (reference) 	
EMC Emission	<ul style="list-style-type: none"> ▪ EN55011 (CISPR11) Class A ▪ EN55022 (CISPR22) Class A 	
EMC Immunity	<ul style="list-style-type: none"> ▪ EN61000-4-2 Level 3 ▪ EN61000-4-3 Level 3 ▪ EN61000-4-4 Level 3 ▪ EN61000-4-5 Level 3 	
Protection degree	EN60529	IP20
Vibration sinusoidal	<ul style="list-style-type: none"> ▪ IEC 60068-2-6 (5-17.8Hz: ±1.6mm; 17.8-500Hz: 2g 2hours / axis (X,Y,Z) 	
Shock	<ul style="list-style-type: none"> ▪ IEC 60068-2-27 (30g 6ms, 20g 11ms; 3 bumps / direction, 18 bumps total) 	
Connection terminals	2.5mm ² , screw type pluggable (24...12AWG)	
Case material	Aluminum	
Weight	0.50kg	
Size (W x H x D)	54.0 x 115.0 x 110.0mm	
<p>1) Ripple and Noise are measured with 20MHz bandwidth, probe terminated with a 0.1µF MKP parallel capacitor. 2) Start-up type tested: - 40°C, possible at nominal voltage with load deration.</p> <p>Notes: - Technical parameters are typical, measured in laboratory environment at 25°C and 24Vdc, 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>		



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Fig.1

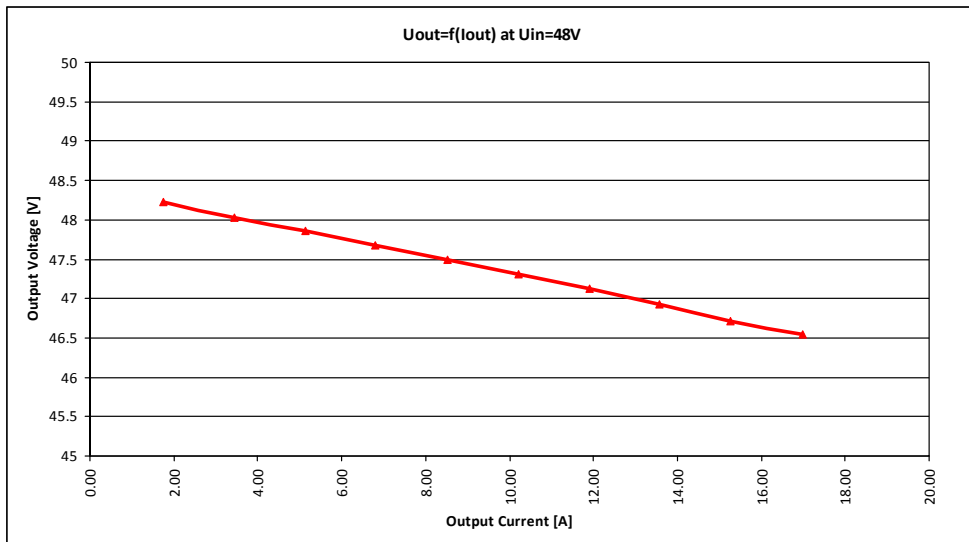
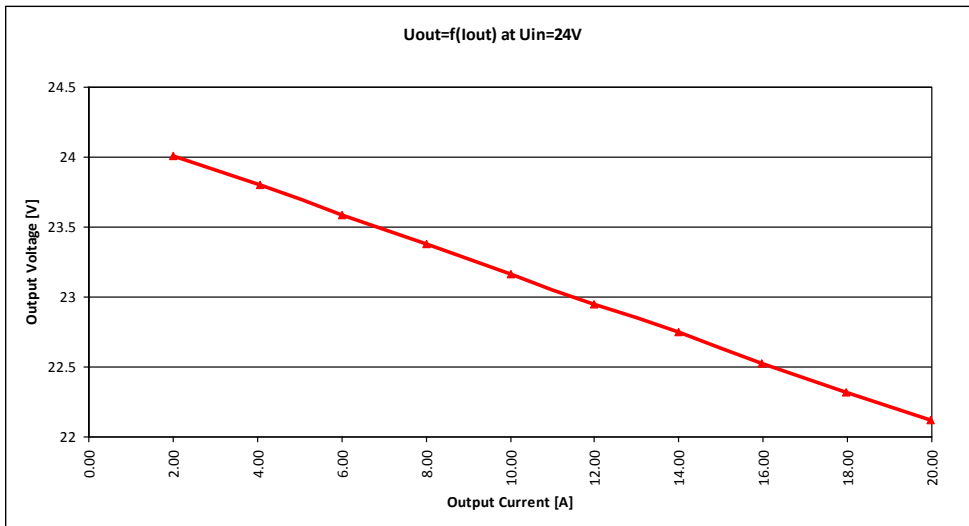
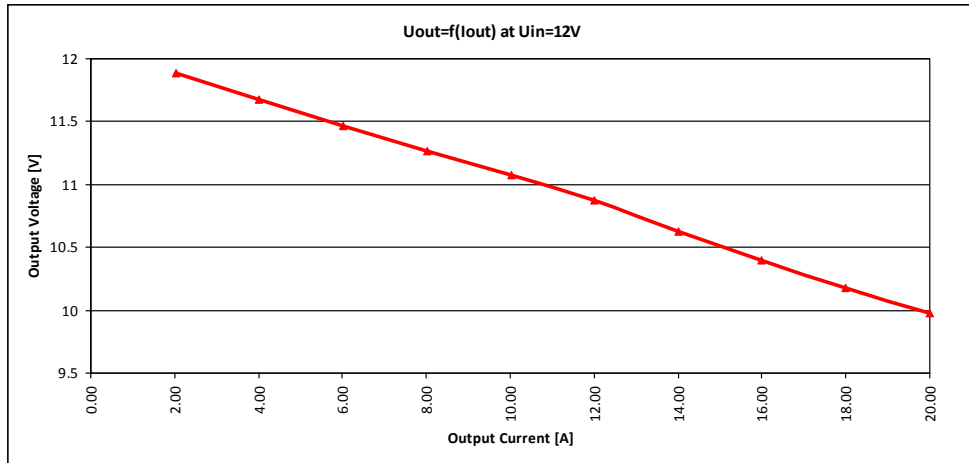


Fig.2

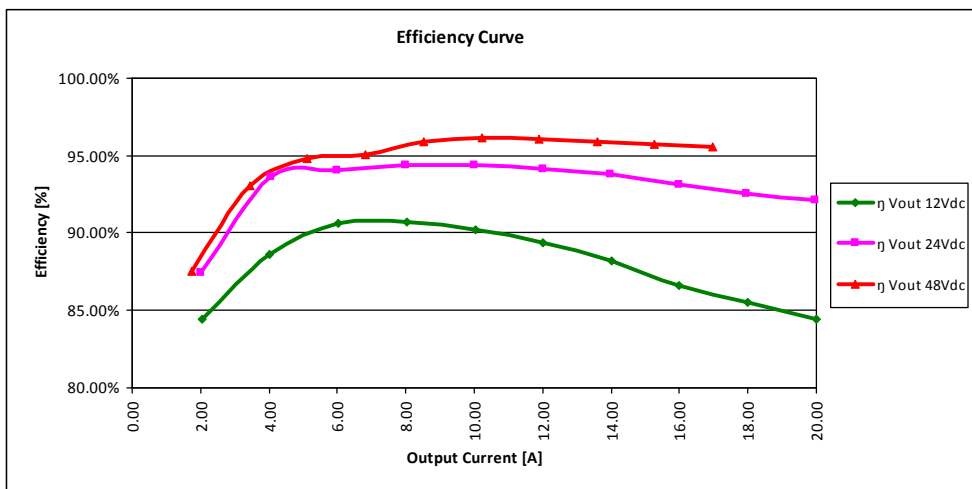
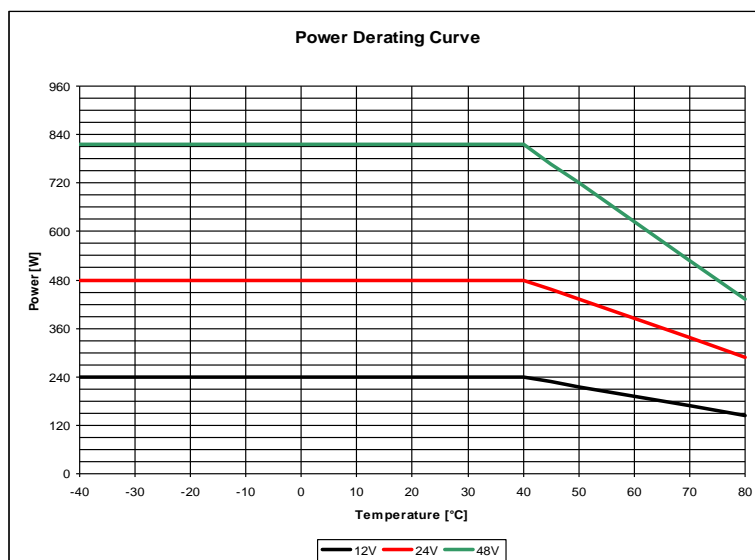
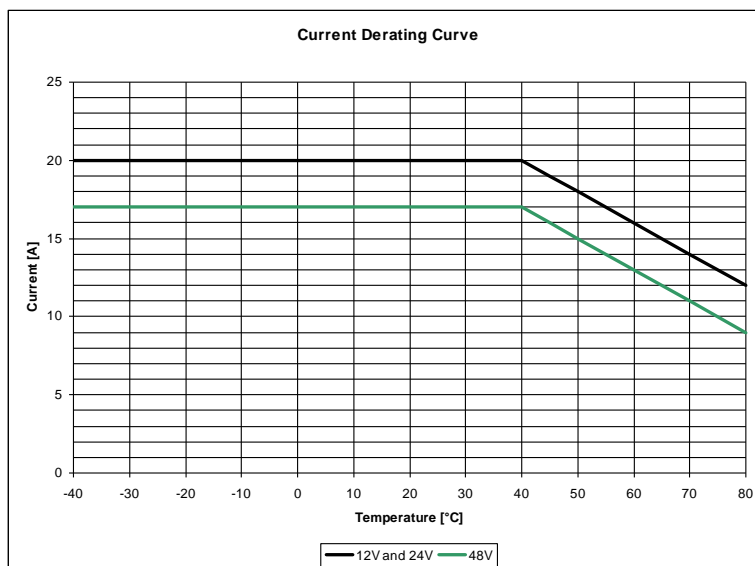
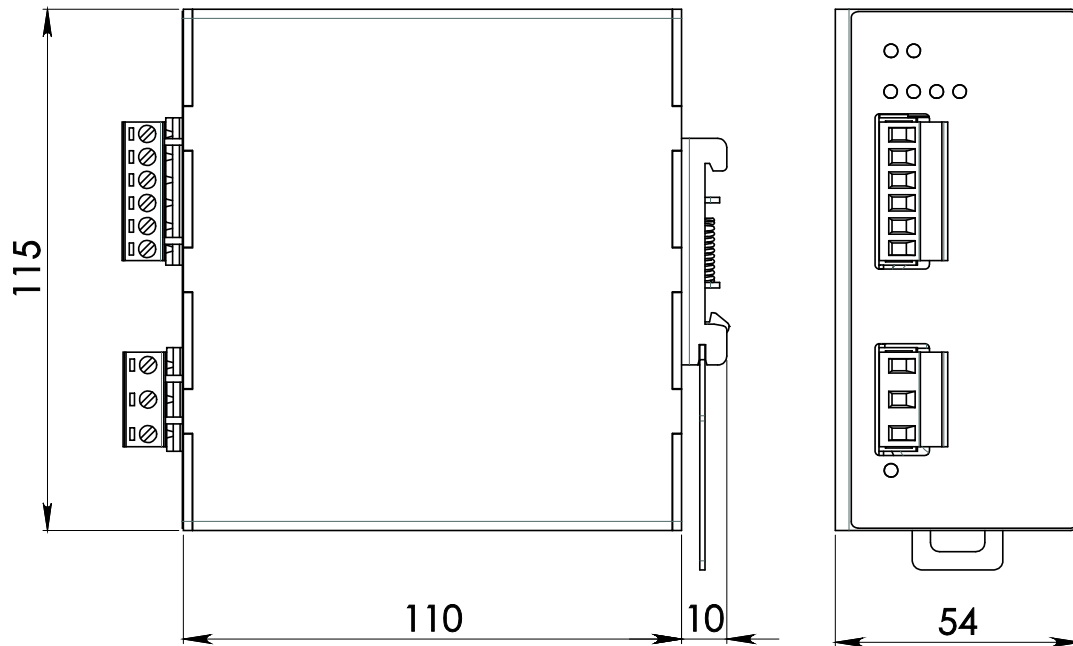


Fig.3

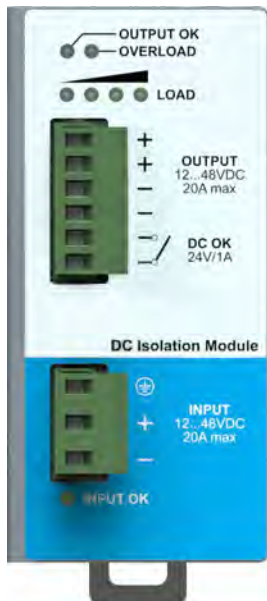


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DIMENSIONS



CONNECTION



Input Connection:

- DC:
- + = Positive DC
 - - = Negative DC
 - | = Earth ground

Output Connection:

- + = Positive DC
- - = Negative DC

Signalling:

- DC OK: dry contact
- NO
 - COM