Main Features

- Up to 240W output power (voltage dependent)
- Converts any voltage between 11V and 55V to any voltage between 5V and 55V
- High efficiency and compact size
- Constant current or hiccup mode limitation, user settable
- Digital Power regulation
- Isolated topology (2.2kVdc)
- Modbus over USB interface for control and monitoring
- Multiple integrated protections
- Parallelable for power or redundancy (integrated ORing circuitry)
- Suitable for POWERMASTER software (available for Windows and Android OS)

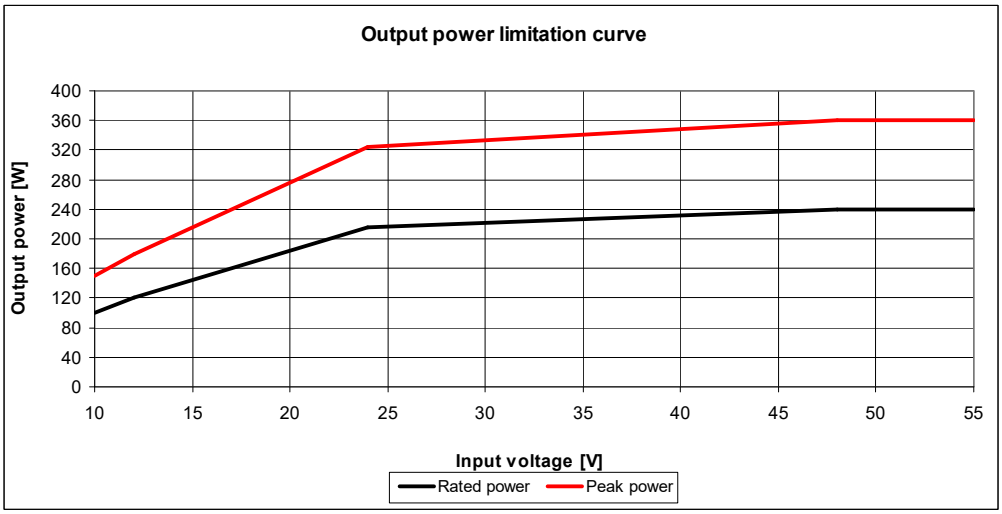
TECHNICAL DATA

Model type	NDW240		
OUTPUT DATA			
Rated voltage	5…55Vdc		
Adj. output voltage range	5…55Vdc		
Continuous current / power	10A / 240W (see charts on Fig.1)		
Overload limit in constant current mode	11A / 264W (see charts on Fig.1)		
Overload limit in hiccup mode (max. 5s)	15A / 360W (see charts on Fig.1)		
Short circuit peak current	18A		
Load regulation	≤ 4% @ 5Vdc, ≤ 2% @ 12Vdc, ≤ 1.5% @ ≥ 24Vdc		
Ripple & Noise[1]	≤ 200mVpp		
Hold up time	≥ 5ms		
Protections	▪ Overload and short circuit: Constant current or Hiccup mode (user settable) ▪ Thermal protection ▪ Output overvoltage		
Output overvoltage protection	120% of Vout active self tracking		
User interface	▪ 7 segment, 2 digit display ▪ 3 programming keys ▪ **DC OK** - dry contact (NO, 24Vdc / 1A) ▪ **Modbus** over **USB** interface		
Measurement precision	▪ Output voltage : range: 5-55V +/- 1% +/- 1 digit ▪ Output current : range: 0-16A +/- 3% +/- 1 digit ▪ Input voltage : range: 10-52V +/- 3% +/- 1 digit		
Parallel connection[2]	Possible for power or redundancy with integrated ORing circuitry		
INPUT DATA			
Input DC rated voltage	Nominal: 12…48Vdc Range: 11…55Vdc (UL certified)		
Input DC rated current	12A		
Protections	▪ Input Overvoltage > 60V active shutdown ▪ Reverse polarity ▪ Fuse 20A mini ATO blade (not user replaceable)		
Recommended external protection (use DC rated devices)	20A Fuse or MCB 20A C curve		
GENERAL DATA			
Efficiency	77% … 92% (depending on Vin/Vout)		
Dissipated power	< 28W (depending on Vin/Vout)		
Operating temperature[3]	- 40°C…+ 70°C UL certified up to 60°C		
Derating	Depending on Vin and Vout over 60°C See charts on Fig.2		
Storage temperature	- 40°C...+ 80°C		
Humidity	5…95% r.H. non condensing		
Life time expectation	180'542h (20.61 years) at 25°C ambient full load		
MTBF	▪ MIL-HDBK-217F	> 600'000h at 25°C ambient full load	
Overvoltage category Pollution degree	▪ EN50178 ▪ IEC60664-1	I 2	
Protection Class	▪ Class	I	
Input / output isolation	2.2kVdc		
Input / ground isolation	2.2kVdc		
Output / ground isolation	0.75kVdc		
Safety Standards	▪ UL508 ▪ IEC/EN61010-1 ▪ IEC/EN61010-2-201 ▪ IEC/EN60950	(certified E356563)	
EMC Emission	▪ EN 61000-6-4		
EMC Immunity	▪ EN 61000-6-2		
Protection degree	▪ EN60529	IP20	
Vibration sinuosoidal	▪ IEC 60068-2-6	(5-17.8Hz: ±1.6mm; 17.8-500Hz: 2g 2hours / axis (X,Y,Z)	
Shock	▪ IEC 60068-2-27	(30g 6ms, 20g 11ms; 3 bumps / direction, 18 bumps total)	
IN/OUT Connection terminals	2.5mm², screw type pluggable (24...12AWG)		
Communication interface connector	Mini USB-B Type (virtual Com Port)		
Case material	Aluminum		
Weight	0.400kg		
Size (W x H x D)	40.0 x 115.0 x 110.0mm		

1) Ripple and Noise are measured with 20MHz bandwidth, probe terminated with a 0.1µF MKP parallel capacitor.
2) Pay attention, set the operating mode to "parallel" when connecting more units in parallel, see Instruction Manual for details.
3) Start-up type tested: - 40°C, possible at nominal voltage with load deration.

Notes:
- Technical parameters are typical, measured in laboratory environment at 25°C and 24Vdc input and output voltage, 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.

Fig.1


Output power limitation curve
Output power [W]
400
360
320
280
240
200
160
120
80
40
0
10
15
20
25
30
35
40
45
50
55
Input voltage [V]
Rated power
Peak power

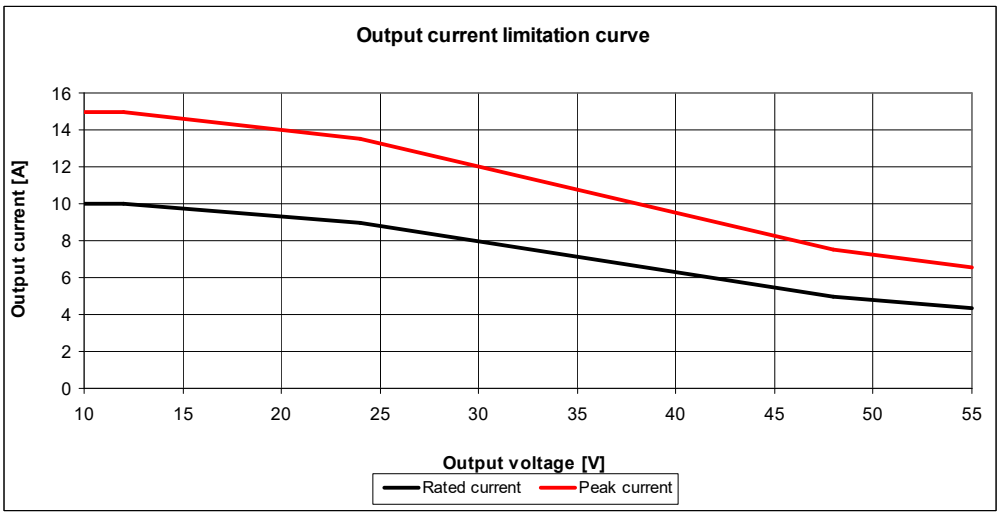
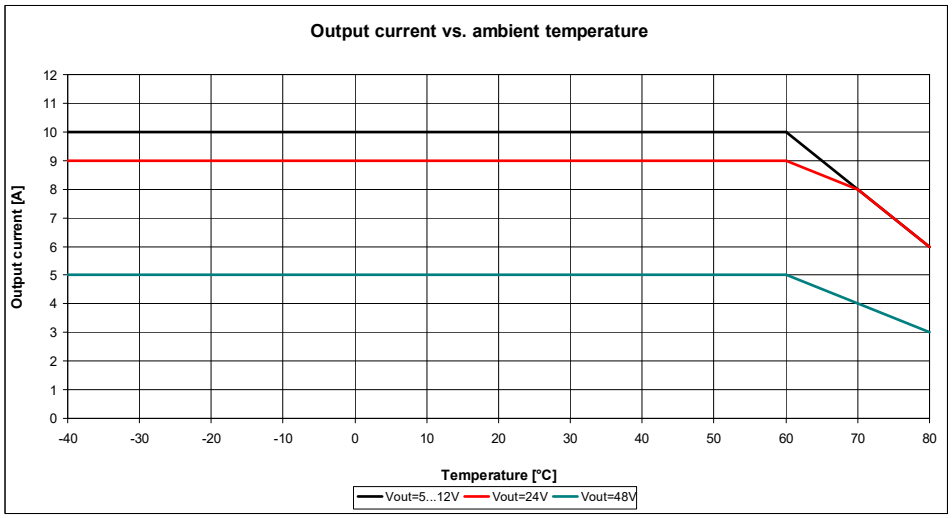
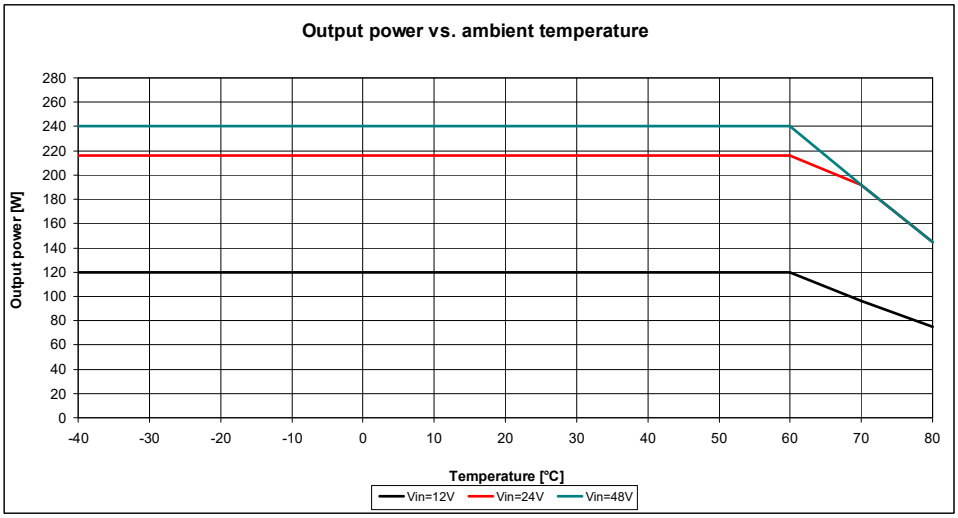
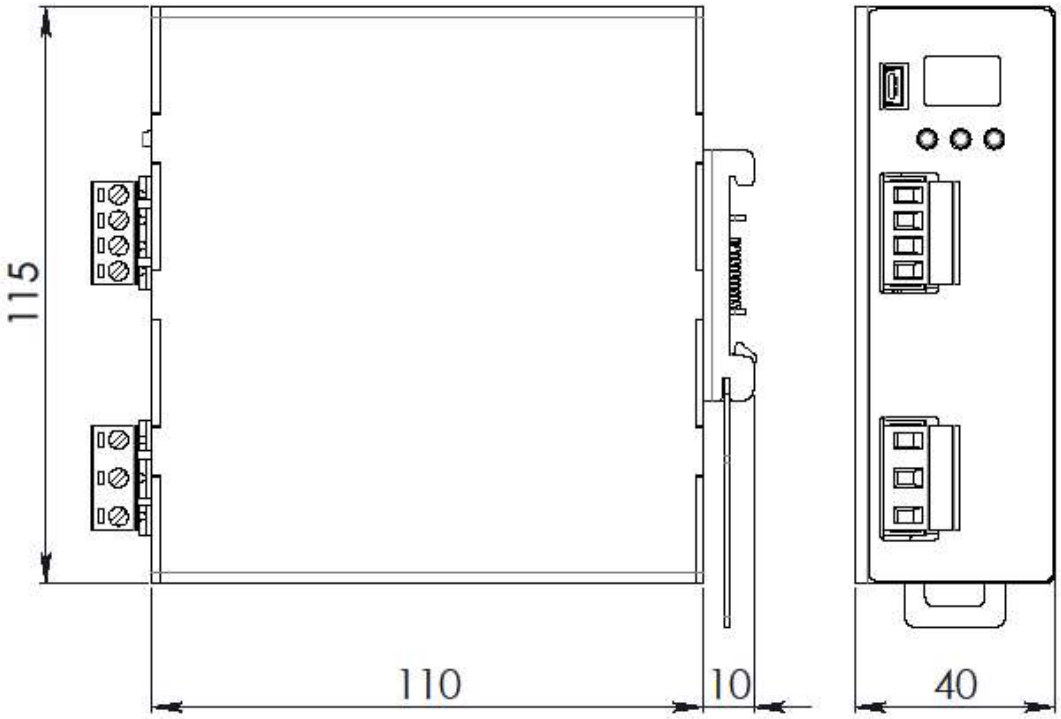

Output current limitation curve
Output current [A]
16
14
12
10
8
6
4
2
0
10
15
20
25
30
35
40
45
50
55
Output voltage [V]
Rated current
Peak current

Fig.2


Output current vs. ambient temperature
Output current [A]
0
1
2
3
4
5
6
7
8
9
10
11
12
-40
-30
-20
-10
0
10
20
30
40
50
60
70
80
Temperature [°C]
Vout=5...12V
Vout=24V
Vout=48V


Output power vs. ambient temperature
Output power [W]
0
20
40
60
80
100
120
140
160
180
200
220
240
260
280
-40
-30
-20
-10
0
10
20
30
40
50
60
70
80
Temperature [°C]
Vin=12V
Vin=24V
Vin=48V

DIMENSIONS



CONNECTION

Input Connection:

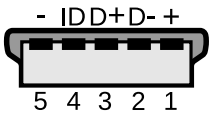
- + = Positive DC
- - = Negative DC
- ⏚ = Earth ground

Output Connection:

- + = Positive DC
- - = Negative DC

Signalling:
DC OK: Dry contact
- NO
- COM

Mini USB-B Type



- 1 = VBUS (+5V)
- 2 = Data (D-)
- 3 = Data (D+)
- 4 = Not connected (ID)
- 5 = GND