

# NDW240

DC/DC Converter 120W - 240W Din Rail Mount



## ■ 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 (4.2kVdc)
- Modbus over USB interface for control and monitoring
- Multiple protections integrated
- Parallelable for power or redundancy (integrated ORing circuitry)

### TECHNICAL DATA

| Model type   | NDW240   |  |
|--|--|--|
| <b>OUTPUT DATA</b>                                     |  |  |
| 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 <sup>1</sup>                            | ≤ 200mVpp  |  |
| Hold up time   | ≥ 5ms  |  |
| Protections  | <ul style="list-style-type: none"> <li>▪ Overload and short circuit: Constant current or Hiccup mode (user settable)</li> <li>▪ Thermal protection</li> <li>▪ Output overvoltage</li> </ul>                                  |  |
| Output overvoltage protection                          | 120% of Vout active self tracking  |  |
| User interface   | <ul style="list-style-type: none"> <li>▪ 7 segment, 2 digit display</li> <li>▪ 3 programming keys</li> <li>▪ <b>DC OK</b> - dry contact (NO, 24Vdc / 1A)</li> <li>▪ <b>Modbus over USB</b> interface</li> </ul>              |  |
| Measurement precision                                  | <ul style="list-style-type: none"> <li>▪ Output voltage : range: 5-55V +/- 1% +/- 1 digit</li> <li>▪ Output current : range: 0-16A +/- 3% +/- 1 digit</li> <li>▪ Input voltage : range: 10-52V +/- 3% +/- 1 digit</li> </ul> |  |
| Parallel connection <sup>2</sup>                       | Possible for power or redundancy with integrated ORing circuitry   |  |
| <b>INPUT DATA</b>                                      |  |  |
| Input DC rated voltage                                 | Nominal: 12...48Vdc<br>Range: 11...55Vdc   |  |
| Input DC rated current                                 | 12A  |  |
| Protections  | <ul style="list-style-type: none"> <li>▪ Input Overvoltage &gt; 60V active shutdown</li> <li>▪ Reverse polarity</li> <li>▪ Fuse 20A mini ATO blade (not user replaceable)</li> </ul>   |  |
| Recommended external protection (use DC rated devices) | 20A Fuse or MCB 20A C curve  |  |
| <b>GENERAL DATA</b>                                    |  |  |
| Efficiency   | 77% ... 92% (depending on Vin/Vout)  |  |
| Dissipated power                                       | < 28W (depending on Vin/Vout)  |  |
| Operating temperature <sup>3</sup>                     | - 40°C...+ 70°C  |  |
| Derating   | Depending on Vin and Vout over 60°C<br>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   |  |
| Overvoltage category                                   | ▪ EN50178  | I  |
| Pollution degree                                       | ▪ IEC60664-1   | 2  |
| Protection Class                                       | ▪ Class  | I  |
| Input / output isolation                               | 4.2kVdc  |  |
| Input / ground isolation                               | 2.2kVdc  |  |
| Output / ground isolation                              | 0.75kVdc   |  |
| Safety Standards                                       | <ul style="list-style-type: none"> <li>▪ UL508 (reference)</li> <li>▪ EN60950 (reference)</li> </ul>   |  |
| EMC Emission   | <ul style="list-style-type: none"> <li>▪ EN55011 (CISPR11) Class B</li> <li>▪ EN55022 (CISPR22) Class B</li> </ul>   |  |
| EMC Immunity   | <ul style="list-style-type: none"> <li>▪ EN61000-4-2 Level 3</li> <li>▪ EN61000-4-3 Level 3</li> <li>▪ EN61000-4-4 Level 2</li> <li>▪ EN61000-4-5 Level 1</li> </ul>   |  |
| Protection degree                                      | ▪ EN60529  | IP20   |
| Vibration sinusoidal                                   | ▪ 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                            | 2.5mm <sup>2</sup> , 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

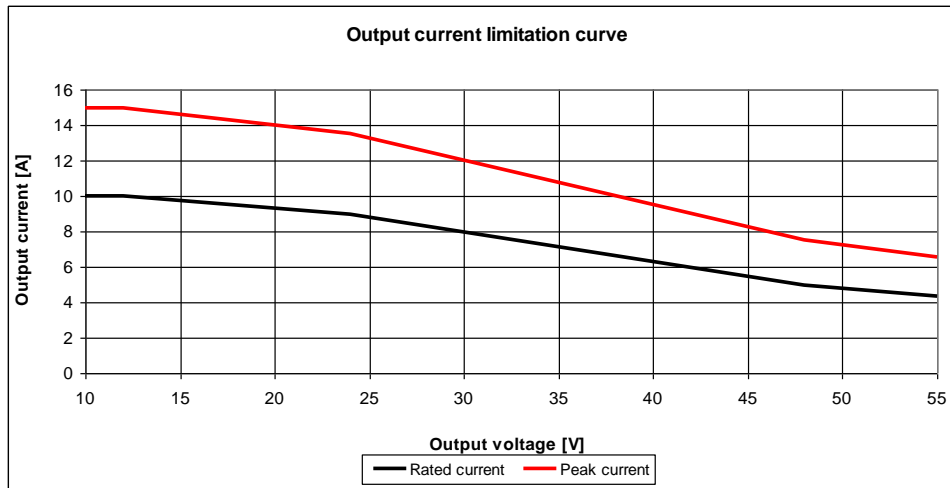
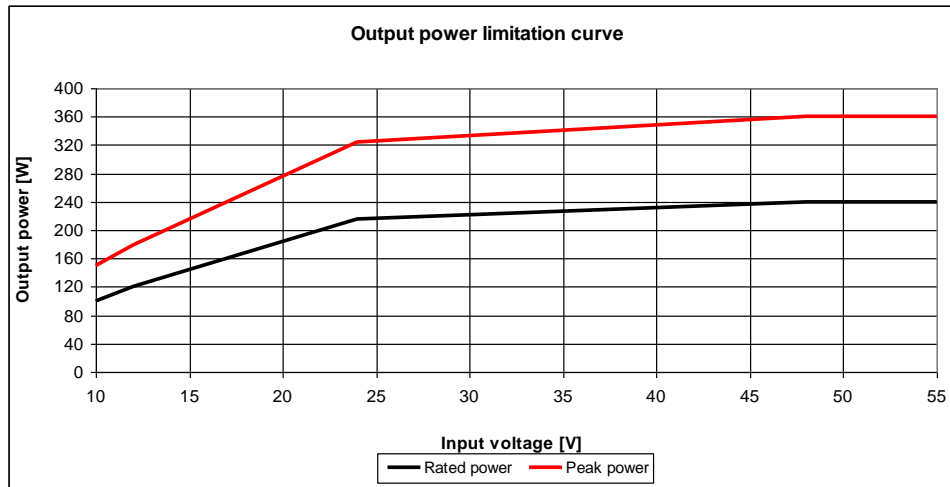
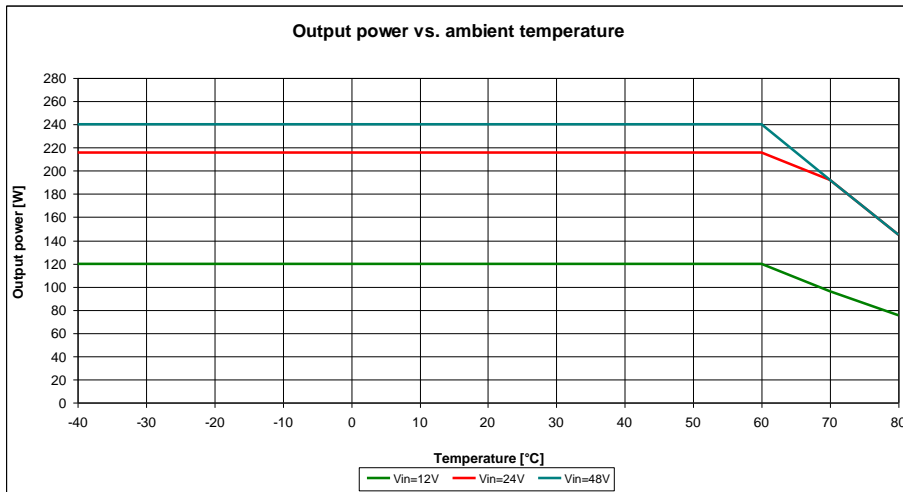
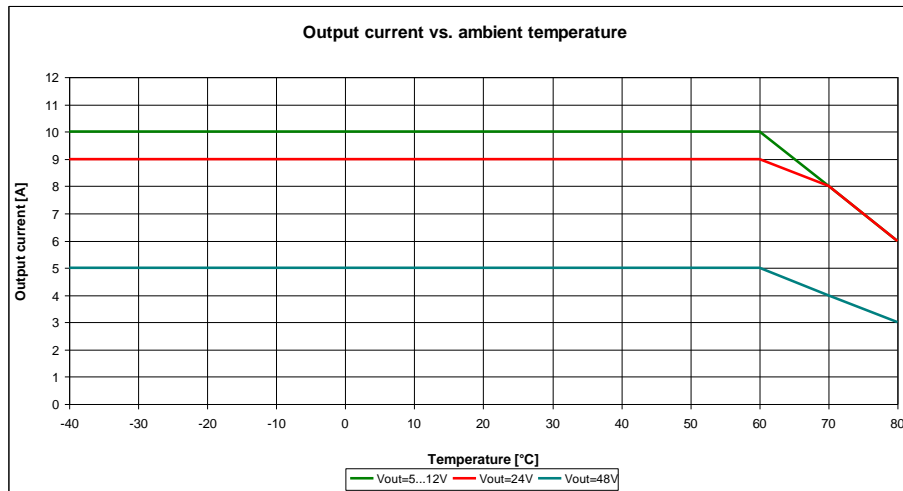


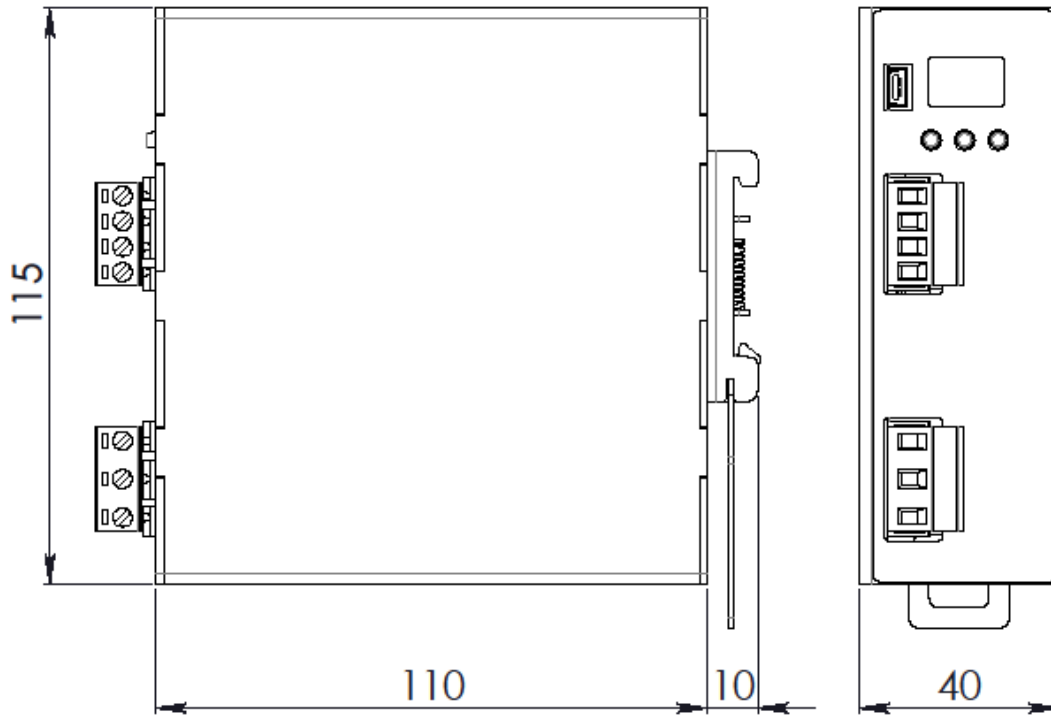
Fig.2



# NDW240

DC/DC Converter 120W - 240W Din Rail Mount

## DIMENSIONS



## CONNECTION



### Input Connection:

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

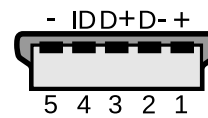
### Output Connection:

- + = 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