

DN500M-24T | DC-DC Boost Converter

500W Tactical DC-DC Boost Converter

MODEL: DN500M-24T | CATEGORY: DC-DC | RATED POWER: 500W | FORM: Vehicle Integration

PRODUCT OVERVIEW



Key Product Features

- Wide 11Vdc to 20Vdc input range
- Regulated 24Vdc output
- 500W output power
- Up to 96% efficiency
- Over-current protection
- Short circuit protection
- Reverse polarity protection
- Over/under voltage protection
- 100V transient input spike protection
- Short/overload LED indicator
- Single-line current sharing for 1+1 parallel operation
- Rugged, low-profile sealed construction
- IP67 fully sealed enclosure

PRODUCT DESCRIPTION






The DN500M-24T provides reliable 24Vdc regulated output from an 11Vdc to 20Vdc input range, making it ideal for systems that require 12Vdc to 24Vdc boost conversion. The unit is fully protected against over-voltage, under-voltage, over-current, short circuit, and reverse polarity conditions, and is designed to withstand input transient spikes up to 100V. With efficiency up to 96%, IP67 sealing, and compliance with key MIL standards, it is well suited for demanding mobile and tactical environments.

SAFETY CERTIFICATES



- Compliant with MIL-STD-461G for electromagnetic emissions and susceptibility
- Designed to meet MIL-STD-810G environmental standards for shock and vibration
- Supports MIL-STD-419 grounding, bonding, and shielding requirements

Applications

- | | |
|--|---|
|  Military tactical vehicles |  Recreational vehicles |
|  Type 1, 2, and 3 ambulances |  Mobile communications systems |
|  Fire and ladder trucks |  In-city transit and airport shuttle systems |

ELECTRICAL SPECIFICATIONS

Input Specifications

| Parameter | Conditions | Value | Comment |
|--------------------------------|-----------------------------|---|-----------|
| Nominal Input Voltage | Full Temperature range | 12 Vdc | Nominal |
| Permanent Input Range | Full Temperature range | 11 – 20 Vdc | Min.-Max. |
| Under/Over Voltage Lock-Out | | 10 / 22 Vd | Typical |
| Recovery Over Voltage Lock-Out | | 21 Vdc | Typical |
| Input Current | | 50 A | Maximum |
| Line and Load Regulation | Input Wire | 1% | Maximum |
| Protection | Reverse Polarity | -30V | Maximum |
| Protection | Voltage Transitional Spikes | 100V | Maximum |
| No Load Input Current | Nominal With No load | 180 mA | Maximum |
| Compliance with MIL-STD 461G | | CE101, CE102, CS101, CS106, RE101, RE102, Sub-Section 7 | |

Output Specifications

| Parameter | Conditions | Value | Comment |
|---------------------------------|-------------------|-------------------|----------------------|
| Output Voltage | | 24 Vdc | Regulated |
| Output Power | | 500 W | Nominal |
| Ripple Output Voltage | Nominal full load | 50 mVpp | Typical 20MHz BWL |
| Efficiency | With no Line Loss | 94%, 96% | @ 11V, 14V |
| Line and Load Regulation | Output Wire | 1.5% | Maximum |
| Protection | Over Current | 120% | Auto Recovery |
| Protection | Short | Shutdown | Auto Recovery |
| LED Indicator | Short/Overload | Blue Illumination | Chassis Mounted |
| 1 + 1 Single Line Current Share | ±2.5 Maximum Load | 20A Max Per Unit | 40A Max. Total |
| Current Share Control Line | 1 foot max. | | SMA Connector |

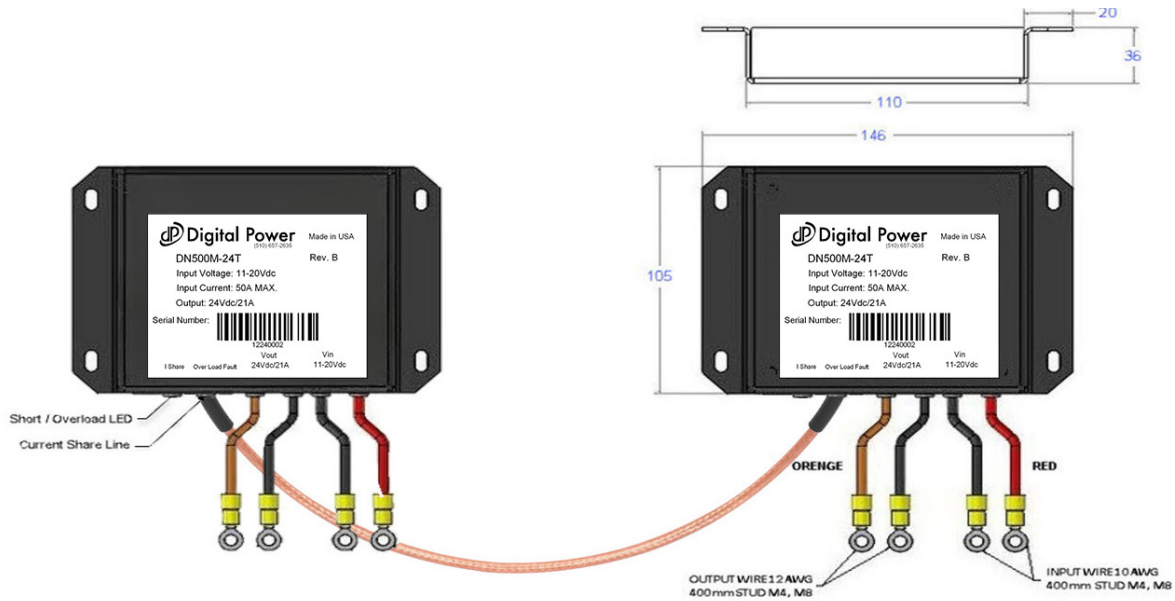
For quotes and customization requests, contact Digital Power sales at (877) 634-0982 or sales@digipwr.com.

PRODUCT OVERVIEW

Military Relevant Standards

| Standard | Description |
|-----------------------------------|--|
| MIL-STD-461G | Electromagnetic emission environments test methods |
| MIL-STD-810 | Environmental durability for vibration and shock |
| MIL-STD-419 | Grounding, bonding, and shielding |
| MIL-STD-1275A | Vehicle electrical characteristics (input limited to 20Vdc with 100V maximum input transients) |
| CE-101 | Conducted emission, 30Hz to 15KHz |
| CE-102 | Conducted emission up to 10MHz |
| CS-101 | Conducted susceptibility, 30Hz to 150KHz |
| CS-106 | Conducted susceptibility transients, power leads |
| RE-101 | Radiated emission, magnetic field, 30Hz to 100KHz |
| RE-102 | Radiated emission, electric field, 10KHz to 18GHz |
| RE-102 Signal Corps Sub-Section 7 | Radiated emission, electric field, 20MHz to 100MHz |

DN500M-24R Outline Drawing



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