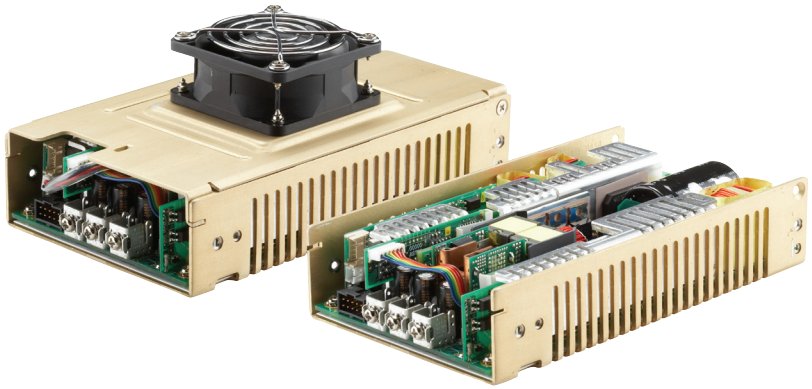
# NTS500-M Series

## 500 Watts

## Medical

**Total Power:** 200 - 500 Watts
**Input Voltage:** 85 - 264 Vac
120 - 300 Vdc
**# of Outputs:** Single



RoHS 2002/95/EC

PMBus

## Special Features

- Active power factor correction
- IEC EN61000-3-2 compliance
- Remote sense
- Power fail and remote inhibit
- Single wire current sharing
- Built-in EMI filter
- Low output ripple
- 5V standby
- 12V fan output
- Overvoltage protection
- Overload protection
- Thermal overload protection
- DC power good
- Built in OR-ing diode / FET
- Optional fan cover (-CF suffix)
- PM Bus compliant
- Digital $I^2C$ interface
- 2 year warranty

## Safety

- **TUV:** 60601-1
- **cCSAus:** 60601-1
- **CB:** Certificate & report
- **CE:** Mark (LVD)

# Electrical Specifications

| Input | |
|---|---|
| Input range: | 85 - 264 Vac (wide range) |
| Frequency: | 47 - 63 Hz |
| Inrush current: | 50 A max., cold start @ 25 °C |
| Efficiency: | 85% typical at full load, nominal line |
| EMI filter: | FCC Class B conducted and radiated; CISPR22 Class B conducted and radiated; EN55022 Class B conducted and radiated; VDE0878PT3 Class B conducted and radiated. |
| Safety ground leakage current: | < 0.3 mA @ 50/60 Hz, 264 Vac input |
| **Output** | |
| Maximum power: | 200 W for convection; 500 W with 30 CFM forced air |
| Adjustment range: | ± 5% |
| Standby output: | 5 V @ 1 A convection, 2 A forced air, regulated, ±5% |
| Fan output: | 12 V @ 1 A, -5 %, +7%, 0.5 A for -CF version |
| Hold-up time: | 20 ms @ 500 W load, 115 VAC nominal line at factory voltage setting |
| Overload protection: | Short circuit protection on all outputs. Case overload protected @ 115 - 130% above peak rating |
| Overvoltage protection: | 20 - 35% above nominal output |

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| Logic Control | |
|---|---|
| Power failure: | TTL logic signal goes high 100 - 500 msec after main output. It goes low at least 4 msec before loss of regulation |
| Remote on/off: | Requires an external contact closure to inhibit outputs |
| DC OK: | TTL logic goes high after the output is in regulation. It goes low when there is loss of regulation. |
| Remote sense: | Compensates for 0.5 V lead drop min. Will operate without remote sense connected. Reverse connection protected. |

# Environmental Specifications

| | |
|---|---|
| Operating temperature: | 0° to 50 °C ambient derate each output as 2.5% per degree from 50° to 70 °C. |
| Storage temperature: | -40 °C to +85 °C |
| Electromagnetic susceptibility: | designed to meetEN61000-4;<br>-2, -3, -4, -5, -6, -8, -11 Level 3 |
| Humidity: | Operating; non-condensing 10% to 90% RH |
| Vibration: | Three orthogonal axes, sweep at<br>1 oct/min, 5 min. dwell at four major resonances<br>2 G peak 8 Hz to 500 Hz, operational |

## Ordering Information

| Model Number | Output Voltage | Minimum Load | Maximum Load with Convection Cooling | Maximum Load with 30CFM Forced Air | Peak Load[1] | Regulation[2] | Ripple P/P (PARD)[3] |
|---|---|---|---|---|---|---|---|
| NTS503-M | 12 V | 0 A | 16.6 A | 41.7 A | 47 A | ±2% | 120 mV |
| NTS505-M | 24 V | 0 A | 8.3 A | 20.8 A | 23.4 A | ±2% | 240 mV |
| NTS508-M | 48 V | 0 A | 4.2 A | 10.4 A | 11.7 A | ±2% | 480 mV |

1. Peak current lasting < 30 seconds with a maximum 10% duty cycle.
2. At 25 °C including initial tolerance, line voltage, load currents and output voltages adjusted to factory settings.
3. Peak-to-peak with 20 MHz bandwidth and 10 µF (tantalum capacitor) in parallel with a 0.1 µF capacitor at rated line voltage and load ranges.
4. 12 V fan output cannot be used above 50 °C with convection cooling.

## Pin Assignments

**Connector**

**CN1**
PIN 1 Line
PIN 3 Neutral
PIN 5 Ground

**SK7**


PIN 1 V1 swp
PIN 2 - Remote Sense
PIN 3 + Remote Sense
PIN 4 5 VSB (standby)
PIN 5 5 VSB return
PIN 6 +12 V
PIN 7 Common
PIN 8 Inhibit
PIN 9 DC power good (DC OK)
PIN 10 Power Fail (POK)

**SK8**


PIN 1 +12 V Fan
PIN 2 Common

**CN403**


PIN 1 5 V_I²C
PIN 2 Ground
PIN 3 A2
PIN 4 A0
PIN 5 SVCC2_OR
PIN 6 I²C_SDA
PIN 7 I²C_SLC
PIN 8 A1
PIN 9 N/C
PIN 10 +12 V_RTN_CTRL

**Adjustment Potentiometers**
**P1** +V1 Output adjust

**Mating Connectors**
**SK4,5,6** Molex 19141-0058

**SK7 Control signals** Molex 90142-0010
PINS: 90119-2110
or
Amp: 87977-3
PINS: 87309-8

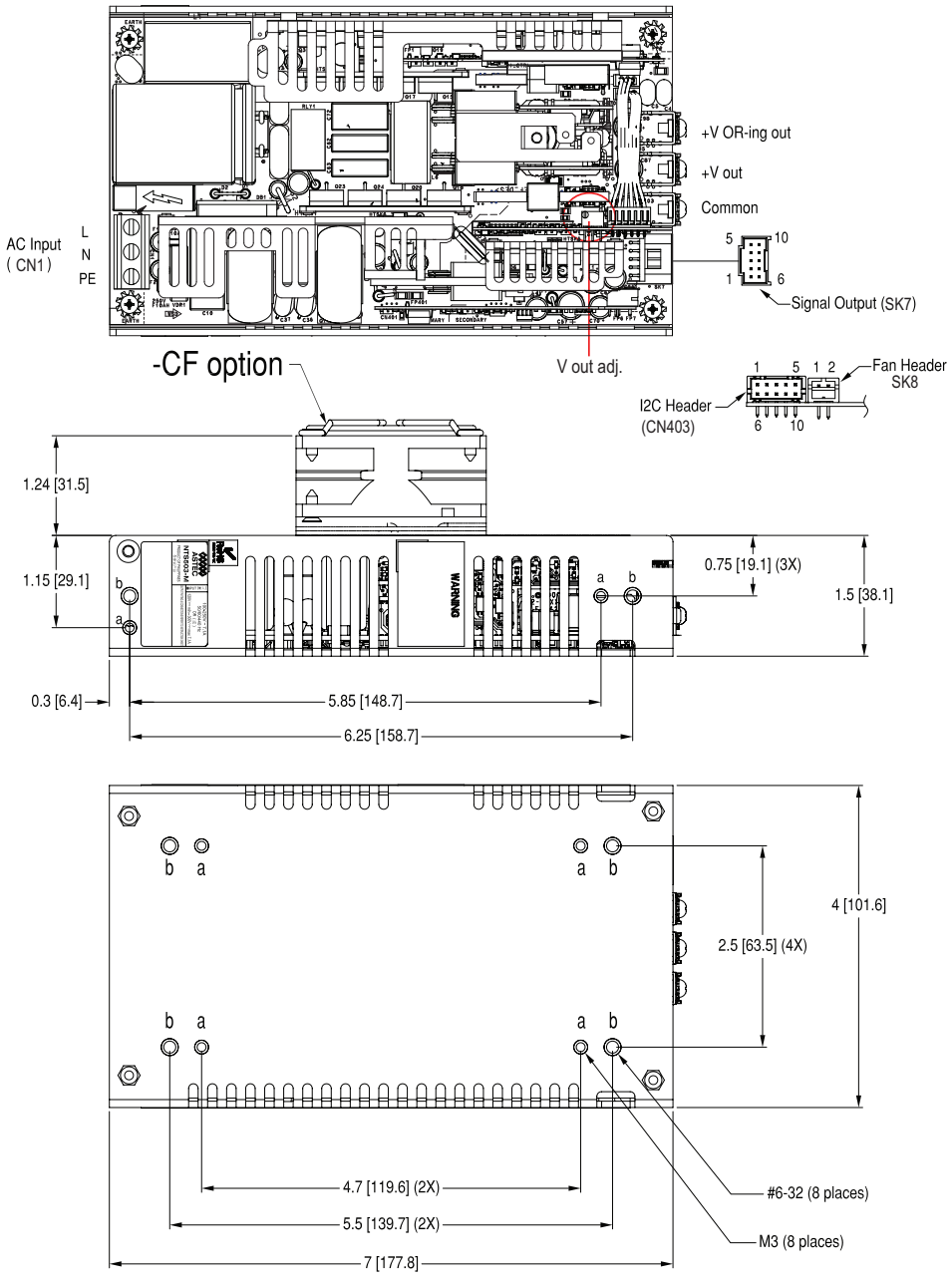
**SK8** JST PHR-2
Pins: SPH-002T-PO.5S

CN403 JST PHDR-10VS
Pins: JST 5PHD-002T-PO.5-L/P or
Landwin 2050 S1000
Pins: 2053T011P

Emerson Connector Kit #70-841-024 includes all of the above

**Notes:**
1. Specifications subject to change without notice.
2. All dimensions in inches (mm), tolerance is ±.02".
3. Specifications are at factory settings
4. Mounting maximum insertion depth is 0.12".
5. Warranty: 2 year
6. Weight: 3.016 lb. / 1.18 kg.

## Mechanical Drawing

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