

## NTS500-M Series

500 Watts

Medical

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



### 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<sup>2</sup>C 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

### 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 meet EN61000-4; -2, -3, -4, -5, -6, -8, -11 Level 3
Humidity:	Operating; non-condensing 10% to 90% RH
Vibration:	Three orthogonal axes, sweep at 1 oct/min, 5 min. dwell at four major resonances 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 <sup>1</sup>	Regulation <sup>2</sup>	Ripple P/P (PARD) <sup>3</sup>
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_I <sup>2</sup> C
PIN 2	Ground
PIN 3	A2
PIN 4	A0
PIN 5	SVCC2_OR
PIN 6	I <sup>2</sup> C_SDA
PIN 7	I <sup>2</sup> C_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

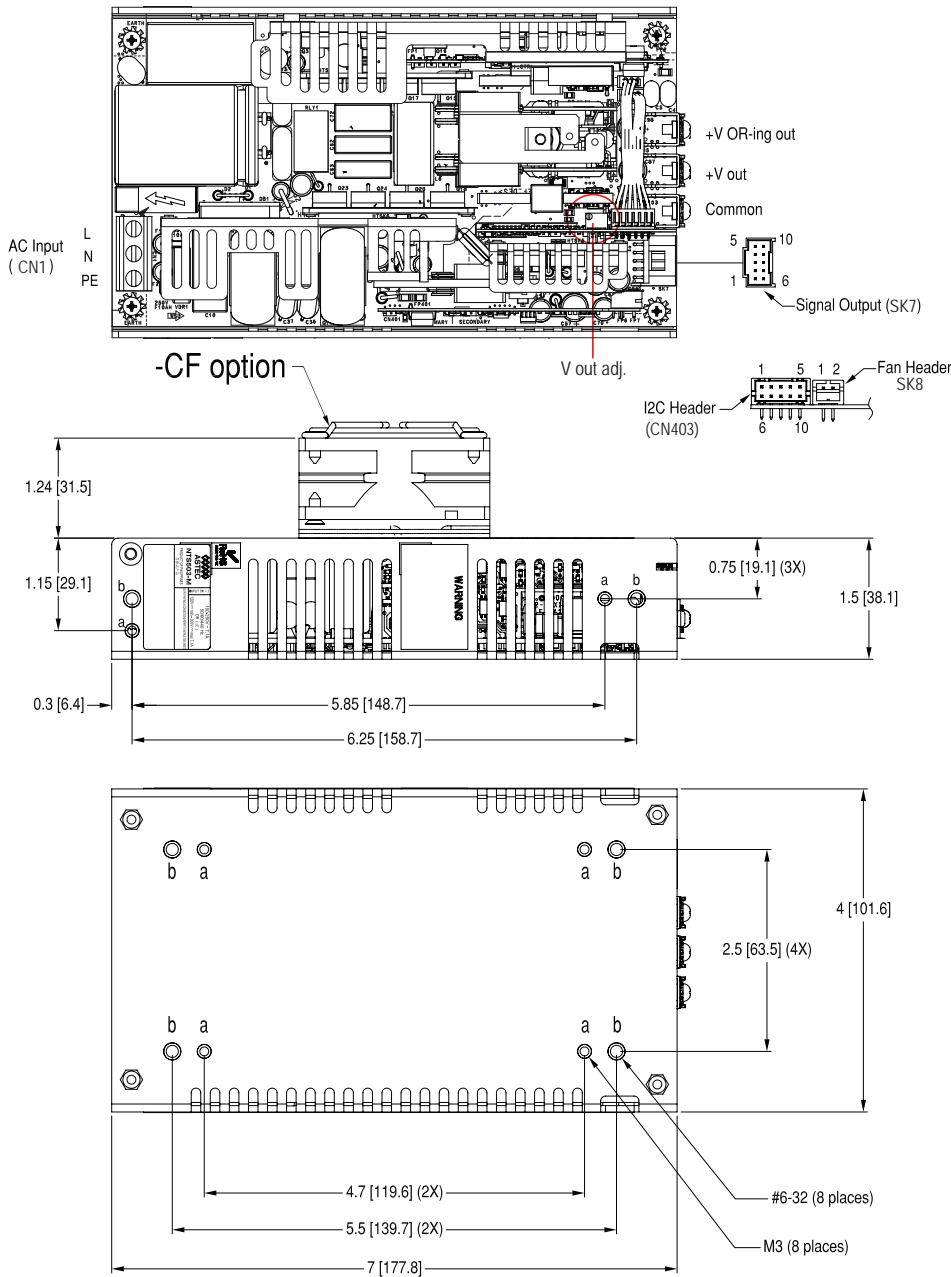
**CN403** JST PHDR-10VS  
Pins: JST 5PHD-002T-PO.5-L/P or  
Landwin 2050 S1000  
Pins: 2053T011P

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



**Americas**

5810 Van Allen Way  
Carlsbad, CA 92008  
USA  
Telephone: +1 760 930 4600  
Facsimile: +1 760 930 0698

**Europe (UK)**

Waterfront Business Park  
Merry Hill, Dudley  
West Midlands, DY5 1LX  
United Kingdom  
Telephone: +44 (0) 1384 842 211  
Facsimile: +44 (0) 1384 843 355

**Asia (HK)**

14/F, Lu Plaza  
2 Wing Yip Street  
Kwun Tong, Kowloon  
Hong Kong  
Telephone: +852 2176 3333  
Facsimile: +852 2176 3888

For global contact, visit:

[www.PowerConversion.com](http://www.PowerConversion.com)  
[techsupport.embeddedpower@emerson.com](mailto:techsupport.embeddedpower@emerson.com)

While every precaution has been taken to ensure accuracy and completeness in this literature, Emerson Network Power assumes no responsibility, and disclaims all liability for damages resulting from use of this information or for any errors or omissions.

**Emerson Network Power.**  
The global leader in enabling business-critical continuity.

- AC Power
- Connectivity
- DC Power
- Embedded Computing
- **Embedded Power**
- Monitoring
- Outside Plant
- Power Switching & Controls
- Precision Cooling
- Racks & Integrated Cabinets
- Services
- Surge Protection

**EmersonNetworkPower.com**

Emerson Network Power and the Emerson Network Power logo are trademarks and service marks of Emerson Electric Co.  
©2009 Emerson Electric Co.