

### N-90MD

#### Electrical Specifications (@25°C)

1. Maximum Power: 250 VA
2. Input Voltage: 115 V, 50 / 60 Hz
3. Output Voltage: 115V ± 5%
4. Full Secondary Load: 2.17 Amps RMS
5. Voltage Regulation: 5 % TYP @ full load to no load
6. Leakage Current: <math>< 50\mu\text{A}</math> between primary and secondary\*

#### Description:

The N-90MD is power transformer for isolating equipment from direct connection to the power line. It is designed and constructed to meet the low leakage current requirements for today's medical equipment. The primary and secondary are wound on separate arbors, then assembled on a laminate core side-by-side separated by insulation. This prevents electrical connection under normal or overload conditions between the primary and secondary windings. This hospital type unit is offered with a resettable circuit breaker, providing protection from overload or short circuit conditions.

#### Safety:

These units are designed with 1500V isolation between winding to winding and between winding and core. Materials and construction are rated for Class B insulation system.



UL 544 File: E10290

#### Dimensions:

Unit: In inches

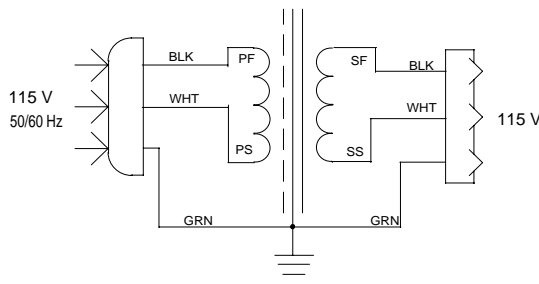
A	B	C	D	E
5.312	4.50	7.125	3.50	6.00

Weight: 11.9.0 lbs

Mounting Holes: .375 x .187

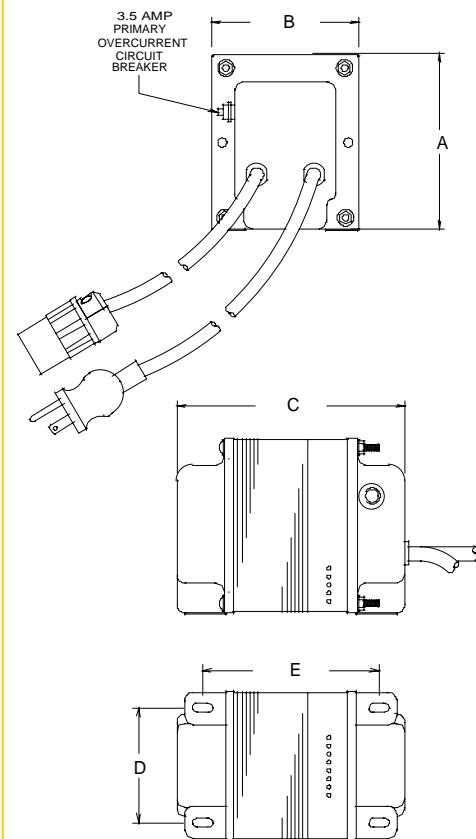
Connections: 6 ft. long cord, 5-15P NEMA Plug, 5-15R NEMA Receptacle

#### Schematic:



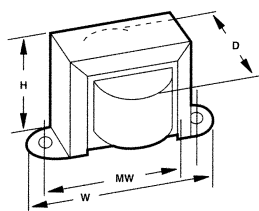
\* Leakage current between primary and secondary is typically measured at less than 10 $\mu\text{A}$ .

**RoHS Compliance:** As of manufacturing date February 2005, all standard products meet the requirements of 2002/95/EC, known as the RoHS initiative.

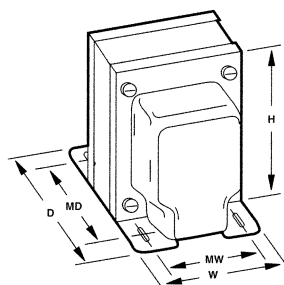


# Power Transformers

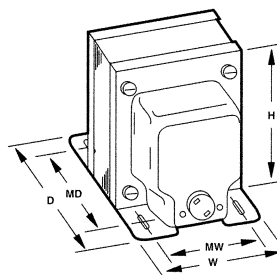
## Isolation / Medical



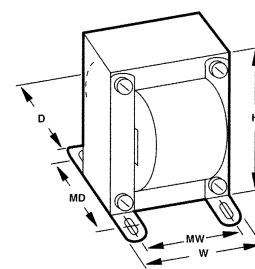
Case Type X



Case Type A



Case Type M



Case Type U

### :: Description

Triad isolation transformers are power transformers for isolating equipment from direct connection to the power line. They are offered in a variety of voltages and case types. Triad isolation transformers are also offered in hospital type (designed with an MD suffix) which are designed and constructed to meet the low leakage current requirements for today's medical equipment. The transformers are constructed with nonconcentrically wound coils. The primary and secondary are wound on separate arbors, then assembled on a laminate core side-by-side separated by insulation. This prevents

electrical connection, under normal or overload conditions, between the primary and secondary windings. These hospital type units are offered with a resettable circuit breaker, providing protection from overload and short circuit conditions.

### :: Specifications

**Primary:** 115/230 VAC, 50/60 Hz

**Secondary:** 115/230 VAC

**Output Watts:** 15 to 1,000 VA

### :: Standard Applications

Section	Type No.	VA	Primary Voltage	Secondary		Case Type	Connections	Lead Holes Used	Dimensions			Mounting Dimensions		Wt. Lbs.
				Volts ±5%	Amps				H	W	D	MW	MD	
A	N-48X	15	115	115.0	0.13	X (1)	Leads	•	1 <sup>1</sup> / <sub>16</sub>	3 <sup>1</sup> / <sub>16</sub>	2	2 <sup>1</sup> / <sub>16</sub>	•	1.35
B	N-51X	35	115	115.0	0.3	X (1)	Leads	•	2 <sup>1</sup> / <sub>32</sub>	3 <sup>1</sup> / <sub>16</sub>	2 <sup>1</sup> / <sub>8</sub>	3 <sup>3</sup> / <sub>8</sub>	•	1.70
C	N-68X	50	115/230§	115.0	0.435	X (1)	Leads	•	2 <sup>1</sup> / <sub>32</sub>	3 <sup>1</sup> / <sub>16</sub>	2 <sup>1</sup> / <sub>8</sub>	3 <sup>3</sup> / <sub>8</sub>	•	1.70
D	N-53M	85	115	115.0	0.74	M (3)	6' Cord, Plug & Socket	•	3 <sup>3</sup> / <sub>32</sub>	2 <sup>3</sup> / <sub>32</sub>	3 <sup>3</sup> / <sub>4</sub>	2 <sup>1</sup> / <sub>4</sub>	2 <sup>3</sup> / <sub>8</sub>	4.70
	N-53MG√	85	115	115.0	0.74	M (3)	6' Cord, Plug & Socket	•	3 <sup>3</sup> / <sub>32</sub>	2 <sup>3</sup> / <sub>32</sub>	4 <sup>1</sup> / <sub>8</sub>	2 <sup>1</sup> / <sub>4</sub>	2 <sup>3</sup> / <sub>8</sub>	4.70
E	N-76U*	100	115	115.0	0.86	U (2)	Leads	•	3 <sup>7</sup> / <sub>16</sub>	2 <sup>3</sup> / <sub>16</sub>	3	2 <sup>1</sup> / <sub>4</sub>	2 <sup>1</sup> / <sub>2</sub>	4.00
	N-77U*	100	115/230	115.0	0.86	U (2)	Leads	•	3 <sup>7</sup> / <sub>16</sub>	2 <sup>3</sup> / <sub>16</sub>	3	2 <sup>1</sup> / <sub>4</sub>	2 <sup>1</sup> / <sub>2</sub>	4.00
F	N-54M	150	115	115.0	1.3	M (3)	6' Cord, Plug & Socket	•	3 <sup>7</sup> / <sub>8</sub>	3 <sup>3</sup> / <sub>32</sub>	4 <sup>1</sup> / <sub>4</sub>	2 <sup>1</sup> / <sub>2</sub>	3	7.00
	N-54MG√	150	115	115.0	1.3	M (3)	6' Cord, Plug & Socket	•	3 <sup>7</sup> / <sub>8</sub>	3 <sup>3</sup> / <sub>32</sub>	5 <sup>1</sup> / <sub>16</sub>	2 <sup>1</sup> / <sub>2</sub>	3 <sup>1</sup> / <sub>2</sub>	7.00
	N-73A N-67A	150 150	115 115/230§	115/230§ 115.0	0.65 1.3	A (3) A (3)	Leads Leads	1 2	3 <sup>7</sup> / <sub>8</sub> 3 <sup>7</sup> / <sub>8</sub>	3 <sup>3</sup> / <sub>32</sub> 3 <sup>3</sup> / <sub>32</sub>	3 <sup>3</sup> / <sub>8</sub> 3 <sup>3</sup> / <sub>8</sub>	2 <sup>1</sup> / <sub>2</sub> 2 <sup>1</sup> / <sub>2</sub>	2 <sup>3</sup> / <sub>4</sub> 3	7.00 7.00
G	N-55M	250	115	115.0	2.17	M (3)	6' Cord, Plug & Socket	•	4 <sup>1</sup> / <sub>8</sub>	3 <sup>1</sup> / <sub>16</sub>	5	3	3 <sup>1</sup> / <sub>16</sub>	11.00
	N-55MG√	250	115	115.0	2.17	M (3)	6' Cord, Plug & Socket	•	4 <sup>1</sup> / <sub>8</sub>	3 <sup>1</sup> / <sub>16</sub>	5	3	3 <sup>1</sup> / <sub>16</sub>	11.00
	N-255MG√	250	230	115.0	2.17	M (3)	6' Cord, Plug & Socket	•	4 <sup>1</sup> / <sub>8</sub>	3 <sup>1</sup> / <sub>16</sub>	5	3	3 <sup>1</sup> / <sub>16</sub>	11.00
	N-66A	250	115/230§	115.0	2.17	A (3)	Leads	2	4 <sup>1</sup> / <sub>8</sub>	3 <sup>1</sup> / <sub>16</sub>	4 <sup>1</sup> / <sub>8</sub>	3	3 <sup>3</sup> / <sub>8</sub>	11.00
H	N-57M	500	115	115.0	4.35	M (5)	6' Cord, Plug & Socket	•	5 <sup>1</sup> / <sub>16</sub>	4 <sup>1</sup> / <sub>2</sub>	6 <sup>1</sup> / <sub>4</sub>	3 <sup>1</sup> / <sub>2</sub>	5 <sup>3</sup> / <sub>8</sub>	23.75

§ Split winding √With ground wire \*Unit does not include static shield  
Mounting hole sizes: (1) = 3<sup>1</sup>/<sub>16</sub>" (2) = 1<sup>3</sup>/<sub>64</sub>" x 3<sup>1</sup>/<sub>8</sub>" (3) = 7<sup>1</sup>/<sub>8</sub>" x 3<sup>1</sup>/<sub>16</sub>" (5) = 1<sup>1</sup>/<sub>2</sub>" x 1<sup>1</sup>/<sub>4</sub>"

**:: Standard Applications continued**

Section	Type No.	VA	Primary Voltage	Secondary		Case Type	Connections	Lead Holes Used	Dimensions			Mounting Dimensions		Wt. Lbs.
				Volts ±5%	Amps				H	W	D	MW	MD	
A	N-57MG√	500	115	115.0	4.35	M (5)	6' Cord, Plug & Socket	•	5 <sup>1</sup> / <sub>16</sub>	4 <sup>1</sup> / <sub>2</sub>	6 <sup>1</sup> / <sub>4</sub>	3 <sup>1</sup> / <sub>2</sub>	5 <sup>1</sup> / <sub>8</sub>	23.75
	N-257MG√	500	230	115.0	4.35	M (5)	6' Cord, Plug & Socket	•	5 <sup>1</sup> / <sub>16</sub>	4 <sup>1</sup> / <sub>2</sub>	6 <sup>1</sup> / <sub>4</sub>	3 <sup>1</sup> / <sub>2</sub>	5 <sup>1</sup> / <sub>8</sub>	23.75
B	N-59M	1,000	115	115.0	8.70	M (5)	6' Cord, Plug & Socket	•	5 <sup>1</sup> / <sub>16</sub>	4 <sup>1</sup> / <sub>2</sub>	7 <sup>7</sup> / <sub>8</sub>	3 <sup>1</sup> / <sub>2</sub>	6	31.0
	N-59MG√	1,000	115	115.0	8.70	M (5)	6' Cord, Plug & Socket	•	5 <sup>1</sup> / <sub>16</sub>	4 <sup>1</sup> / <sub>2</sub>	7 <sup>7</sup> / <sub>8</sub>	3 <sup>1</sup> / <sub>2</sub>	6	31.0
	N-259MG√	1,000	230	115.0	8.70	M (5)	6' Cord, Plug & Socket	•	5 <sup>1</sup> / <sub>16</sub>	4 <sup>1</sup> / <sub>2</sub>	7 <sup>7</sup> / <sub>8</sub>	3 <sup>1</sup> / <sub>2</sub>	6	31.0

√With ground wire Mounting hole sizes: (5) = 1/2 x 3/4"

**Technical Notes**

1. Line cord, plug and receptacle are U.L. listed and verified to meet federal specifications.
2. Connections are by leads, plugs and sockets.
3. Hi-pot tested at 1,500 VRMS.
4. All units have static shields, except those marked with an asterisk.



**:: Medical/Dental Applications**

UL 544 File E102910

Section	Type No.	VA	Primary Voltage	Secondary		Case Type	Connections	Lead Holes Used	Dimensions			Mounting Dimensions		Wt. Lbs.
				Volts ±5%	RMS Amps				H	W	D	MW	MD	
C	N-90MD	250	115	115.0	2.17	M (3)	6' Cord, Plug & Socket	•	4 <sup>3</sup> / <sub>8</sub>	3 <sup>3</sup> / <sub>8</sub>	6 <sup>1</sup> / <sub>8</sub>	3	4 <sup>1</sup> / <sub>16</sub>	11.9
D	N-92MD	500	115	115.0	4.35	M (4)	6' Cord, Plug & Socket Circuit Breaker	•	5 <sup>1</sup> / <sub>32</sub>	4 <sup>1</sup> / <sub>2</sub>	7	3 <sup>1</sup> / <sub>2</sub>	5 <sup>1</sup> / <sub>8</sub>	17.6

Mounting hole sizes: (3) = 3/8 x 3/16" (4) = 2<sup>1</sup>/<sub>32</sub> x 9/32"

Leakage current from primary to secondary is rated at less than 50 micro-amps and is typically measured at less than 10 micro-amps.