



TRAC 12, TRAC 12/25

Miniature Low Voltage Trac System

24V REMOTE MOUNT MAGNETIC TRANSFORMERS

TL551N-24V, TL552N-24V
and TL553N-24V

Project: _____

Fixture Type: _____

Location: _____

Contact/Phone: _____

PRODUCT SPECIFICATIONS

Description

TL553N-BL-24V: 24V-250VA Magnetic Transformer • Rated for 100-250 watts for incandescent loads • 120VAC input.

TL553N-277-BL-24V: Same as above with 277VAC input.

TL551N-BL-24V: 24V-480VA Magnetic Transformer • Rated for 240-480 watts for incandescent loads • 120VAC input.

TL551N-277-BL-24V: Same as above with 277VAC input.

TL552N-BL-24V: 24V-960VA Dual Circuit Magnetic Transformer
• Contains two 480VA circuits, each rated for 240-480 watts for incandescent loads • 120VAC input.

Construction Potted core and coil • 25 volt boost tap • Thermally protected primary • Manually resettable, fast-acting magnetic circuit breaker on secondary • Primary and secondary circuits physically and electrically isolated.

Circuit Breaker Resettable magnetic circuit breaker • Provides faster short circuit protection than standard thermal circuit breakers • Provides overload protection which is unaffected by ambient operating conditions • Eliminates false overload failures due to elevated ambient temperatures which can occur with thermal circuit breakers • Enables transformer to be mounted in any position.

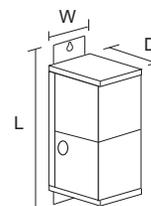
Dimming 120V installations only – consult factory for 277V dimming applications • Incandescent loads can be dimmed with high quality dimmers designed specifically for use with magnetic transformer.

Installation Easy access front located wiring compartment • Wire nut terminations for input and output circuits • Operate in accessible locations with ambient temperatures below 140° F.

Labels UL/CUL listed.

Product specifications subject to change without notice.

DIMENSIONS



TRANSFORMER DIMENSIONS			
Catalog Number	Length (L)	Width (W)	Depth (D)
TL553N-BL-24V	10 ³ / ₄ "	4 ³ / ₈ "	4 ¹ / ₈ "
TL553N-277-BL-24V	10 ³ / ₄ "	4 ³ / ₈ "	4 ¹ / ₈ "
TL551N-BL-24V	11 ³ / ₈ "	5 ³ / ₈ "	5 ¹ / ₈ "
TL551N-277-BL-24V	11 ³ / ₈ "	5 ³ / ₈ "	5 ¹ / ₈ "
TL552N-BL-24V	12 ¹ / ₂ "	6 ¹ / ₈ "	5 ⁷ / ₈ "
TL552N-277-BL-24V	12 ¹ / ₂ "	6 ¹ / ₈ "	5 ⁷ / ₈ "

PRODUCT CODES

Catalog Number	Finish	Input Voltage	Description
TL553N-BL-24V	Black	120VAC	250W Magnetic 24V Transformer
TL553N-277-BL-24V	Black	277VAC	250W Magnetic 24V Transformer
TL551N-BL-24V	Black	120VAC	480W Magnetic 24V Transformer
TL551N-277-BL-24V	Black	277VAC	480W Magnetic 24V Transformer
TL552N-BL-24V	Black	120VAC	960W Magnetic 24V Transformer (Dual Circuit)
TL552N-277-BL-24V	Black	277VAC	960W Magnetic 24V Transformer (Dual Circuit)

OPTIONS

(Add as suffix to catalog number)

Catalog Number	Description
-CP6	6ft. Cord & Plug (120VAC Only), factory installed

Ordering Example: TL553N-BL-24V-CP6

APPLICATION

Consideration

• Trac run length

• Dimming

• Transformer Location

12V Magnetic Transformer

• Use for medium to long and medium to higher wattage systems

• Use only dimmers specifically designed for use with magnetic transformers

• Install in well ventilated locations where ambient temperature will not exceed 140°F (60°C)
Transformers must be accessible.

12V Electronic Transformer

• Use for short to medium run lengths and low to medium wattage systems

• Compatible with most standard incandescent dimmers. For optimal results use dimmer designed for low voltage electronics

• Install surface mount units in well-ventilated location where ambient temperature will not exceed 120°F (50°C)

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TL551N-24V, TL552N-24V and TL553N-24V

VOLTAGE DROP CALCULATIONS (FOR MAGNETIC TRANSFORMERS)

Voltage drop is a function of the following factors:

Wire Length:

As the wire length from the supply to the fixture becomes longer, voltage drop increases.

Wire Diameter:

As the wire cross-sectional area becomes smaller, voltage drop increases (this is related to the resistance per foot of wire).

Amperage of the Electrical Load:

As the amperage of the electrical load increases, voltage drop also increases.

Voltage drop in 24 volt systems is 5 times greater than in 120 volt systems.

This is because a load of the same wattage has 5 times greater amperage in 24 volts as compared to 120 volts.

This is illustrated by the formula:

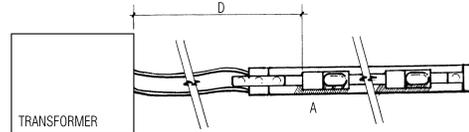
$$\text{WATTS} = \text{VOLTS} \times \text{AMPS}$$

Assuming a 120 watt electrical load:

$$120 \text{ WATTS} = 24 \text{ VOLTS} \times \underline{5 \text{ AMPS}}$$

$$120 \text{ WATTS} = 120 \text{ VOLTS} \times \underline{1 \text{ AMP}}$$

Voltage drop from a magnetic transformer to the first lampholder on 12V Trac 12 can be calculated as follows:



$$\text{VOLTAGE DROP} = 2D \times A \times \Omega$$

WHERE:

D = Distance in feet from transformer to 1st lamp

A = Total amperage load of all lampholders on the trac

$$\left(A = \frac{\text{WATTS}}{\text{VOLTS}} = \frac{\text{WATTS}}{24} \right)$$

Ω = Resistance per foot of wire per the following chart:

Wire Gauge	Resistance Per Foot of Wire (OHMS)
#8	.00065
#10	.00104
#12	.00166

TRAC 12 12V VOLTAGE DROP INFORMATION (for 480VA Remote Mount Magnetic Transformers)

Table predicting voltage at first lamp for various wire lengths, gauges, inputs and loads

Distance from Transformer to 1st Lamp	Standard Tap				Boost Tap			
	24V, 20A, 480W		24V, 10A, 240W		24V, 20A, 480W		24V, 10A, 240W	
	#12	#10	#12	#10	#12	#10	#12	#10
5'	23.66	23.79	24.63	24.69	25.26	25.39	26.43	26.49
10'	23.33	23.58	24.46	24.59	24.93	25.18	26.26	26.39
30'	22.00	22.75	23.80	24.17	23.60	24.35	25.60	25.97
35'	21.67	22.54	23.63	24.07	23.27	24.14	25.43	25.87
40'	21.34	22.33	23.47	23.96	22.94	23.93	25.27	25.76
45'	21.01	22.12	23.30	23.86	22.61	23.72	25.10	25.66
50'	20.68	21.92	23.14	23.76	22.28	23.52	24.94	25.56
55'	20.34	21.71	22.97	23.65	21.94	23.31	24.77	25.45
80'	18.68	20.67	22.14	23.13	20.28	22.27	23.94	24.93
85'	18.35	20.46	21.97	23.03	19.95	22.06	23.77	24.83
90'	18.02	20.25	21.81	22.92	19.62	21.85	23.61	24.72
130'	15.36	18.59	20.48	22.09	16.96	20.19	22.28	23.89
140'	14.70	18.17	20.15	21.88	16.30	19.77	21.95	23.68
220'	9.39	14.84	17.49	20.22	10.99	16.44	19.29	22.02

The shaded areas represent the suggested operating range of 22.0 to 23.6 volts at the first lamp on the trac. A voltmeter should be used to confirm that the proper voltage is present at the first lamp after installation is complete.

