



TRAC 12, TRAC 12/25, FLEX 12

Low Voltage Systems

24V AC 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.

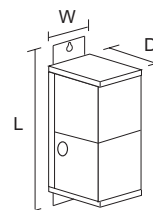
Dimming 120V installations only – consult factory for 277V dimming applications • Incandescent loads can be dimmed with high quality dimmers designed specifically for use with magnetic transformer.

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 • New York City Approved.

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) |

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)

TRAC 12, TRAC 12/25, FLEX 12

Low Voltage Systems

24V AC REMOTE MOUNT MAGNETIC TRANSFORMERS

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:

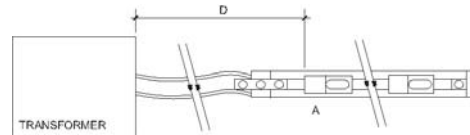
$$\text{WATTS} = \text{VOLTS} \times \text{AMPS}$$

Assuming a 120 watt electrical load:

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

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

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 |

24V 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.

