



TRAC 12/25

Project: _____

Fixture Type: _____

Location: _____

Contact/Phone: _____

Miniature 25-Amp Low Voltage Trac System

12V AC REMOTE MOUNT MAGNETIC TRANSFORMERS

TF5300 and TF5600

PRODUCT SPECIFICATIONS

Remote Mount Magnetic Transformers

Catalog Number TF5300BL, TF5600BL

Description

TF5300BL: 12V-300VA Remote Magnetic Transformer • Rated for 150-300 watts for incandescent or LED loads • 120VAC input.

TF5300BL-277: Same as above with 277VAC input.

TF5600BL: 12V-600VA Remote Magnetic Transformer • Contains two 300VA circuits, each rated for 150-300 watts for incandescent or LED loads • 120VAC input.

TF5600BL-277: Same as above with 277VAC input.

Construction Potted core and coil • 13 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.

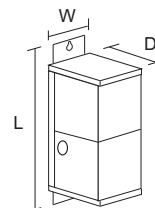
Dimming 120V installations only – consult factory for 277V dimming applications • Incandescent loads can be dimmed with high quality dimmers designed specifically for use with magnetic transformer • LED loads may be dimmed using only dimmers that have been tested and qualified by Juno for use with Juno LED fixtures including: Lutron Diva DVLV-600P, Lutron Nova NLV-600, Lutron Ceano CNLV-600P, Lutron Skylark SLV-600P – consult factory to confirm compatibility of other dimmers prior to installation with Juno LED fixtures.

Installation Easy access front located wiring compartment • Terminal block wiring connections for simpler, faster installation • Operate in accessible locations with ambient temperatures below 140° F.

Labels UL/CUL listed • Compatible only with systems rated for 25-Amp operation.

Product specifications subject to change without notice.

DIMENSIONS



TRANSFORMER DIMENSIONS			
Catalog Number	Length (L)	Width (W)	Depth (D)
TF5300BL	10 ³ / ₄ "	4 ³ / ₈ "	4 ¹ / ₈ "
TF5300BL-277	10 ³ / ₄ "	4 ³ / ₈ "	4 ¹ / ₈ "
TF5600BL	11 ³ / ₈ "	5 ³ / ₈ "	5 ¹ / ₈ "
TF5600BL-277	11 ³ / ₈ "	5 ³ / ₈ "	5 ¹ / ₈ "

PRODUCT CODES

Catalog Number	Finish	Input Voltage	Description
TF5300BL	Black	120VAC	300W Magnetic 12V Transformer
TF5300BL-277	Black	277VAC	300W Magnetic 12V Transformer
TF5600BL	Black	120VAC	600W Magnetic 12V Transformer (Dual Circuit)
TF5600BL-277	Black	277VAC	600W Magnetic 12V Transformer (Dual Circuit)

OPTIONS

(Add as suffix to catalog number)

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

Ordering Example: TF5300BL-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)

TRAC 12/25

Miniature 25-Amp Low Voltage Trac System

12V REMOTE MOUNT MAGNETIC TRANSFORMERS

TF5300 and TF5600

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 12 volt systems is 10 times greater than in 120 volt systems.

This is because a load of the same wattage has 10 times greater amperage in 12 volts as compared to 120 volts.

This is illustrated by the formula:

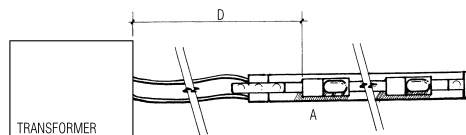
WATTS = VOLTS x AMPS

Assuming a 120 watt electrical load:

120 WATTS = 12 VOLTS x 10 AMPS

120 WATTS = 120 VOLTS x 1 AMP

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



VOLTAGE DROP = 2D x A x Ω

WHERE:

D = Distance in feet from transformer to 1st lamp

A = Total amperage load of all lampholders on the trac

$$(A = \frac{\text{WATTS}}{\text{VOLTS}} = \frac{\text{WATTS}}{12})$$

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 12/25 12V VOLTAGE DROP INFORMATION (for 300VA 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			
	12V, 25A, 300W		12V, 12.5A, 150W		12V, 25A, 300W		12V, 12.5A, 150W	
	#10	#8	#10	#8	#10	#8	#10	#8
5'	11.74	11.85	12.27	12.32	12.54	12.65	13.17	13.23
15'	11.22	11.56	12.01	12.18	12.20	12.36	12.91	13.08
20'	10.96	11.42	11.88	12.11	11.76	12.22	12.78	13.01
30'	10.44	11.13	11.62	11.96	11.24	11.93	12.52	12.86
40'	9.92	10.83	11.36	11.82	10.72	11.63	12.26	12.72
50'	9.40	10.54	11.10	11.67	10.20	11.34	12.00	12.57
60'	8.88	10.25	10.84	11.52	9.68	11.05	11.74	12.43
70'	8.36	9.96	10.58	11.37	9.16	10.76	11.48	12.28
80'	7.8	9.67	10.32	11.23	8.64	10.47	11.22	12.13
100'	6.80	9.09	9.80	10.94	7.60	9.89	10.70	11.80
150'	4.20	7.63	8.50	10.21	5.00	8.43	9.40	11.11

The shaded areas represent the suggested operating range of 11.0 to 12.0 volts at the first lamp on the trac. Juno suggests that the voltage measured at the first lamp be between 11.0 and 11.8 volts for 12V incandescent lamps and between 11.4 and 12.0 volts for 12V LED fixtures. Do not exceed 12 volts. A voltmeter should be used to confirm that the proper voltage is present.



1300 S. Wolf Road • Des Plaines, IL 60018 • Phone (847) 827-9880 • Fax (847) 827-2925
 220 Chrysler Drive • Brampton, Ontario • Canada L6S 6B6 • Phone (905) 792-7335 • Fax (905) 792-0064
 Visit us at www.junolightinggroup.com

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