



Low Voltage Systems

Project: _____

Fixture Type: _____

Location: _____

Contact/Phone: _____

12V AC LED-COMPATIBLE REMOTE MOUNT CLASS 2 MAGNETIC TRANSFORMER

TL576

PRODUCT SPECIFICATIONS

Description

TL576-10-BL: 12V-10VA remote magnetic transformer Class 2

- Rated for 0.5-10 watts total load • 120VAC input
- Ideally suited for driving Juno Mini LED Downlight/Gimbal and Solo-Task fixtures • May also be used to operate other low wattage LED or incandescent loads.

TL576-25-BL: 12V-25VA remote magnetic transformer Class 2

- Rated for 0.5-25 watts total load • 120VAC input • Ideally suited for driving Juno Mini LED Downlight/Gimbal and Solo-Task fixtures • May also be used to operate other low wattage LED or incandescent loads.

TL576-60-BL: 12V-60VA remote magnetic transformer Class 2

- Rated for 0.5-60 watts total load • 120VAC input • Ideally suited for driving Juno Mini LED Downlight/Gimbal and Solo-Task fixtures • May also be used to operate other low wattage LED or incandescent loads.

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.

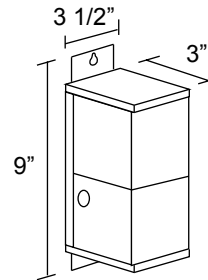
Dimming Incandescent loads can be dimmed with high quality dimmers designed specifically for use with magnetic transformer • LED loads may be dimmed using only dimmers that have been tested and qualified by Juno for use with Juno LED fixtures referenced on the following pages – consult factory to confirm compatibility of other dimmers prior to installation with Juno LED fixtures.

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



PRODUCT CODES

Catalog Number	Finish	Description
TL576-10-BL	Black	10W 12V AC Magnetic Transformer
TL576-25-BL	Black	25W 12V AC Magnetic Transformer
TL576-60-BL	Black	60W 12V AC Magnetic Transformer

ENGINEERING DATA

	TL576-10	TL576-25	TL576-60
Input Voltage	120V	120V	120V
Input Current Typ.	0.21A	0.31A	0.51A
Nominal Output	11.9V	11.6V	11.2V
Max. Load	10W	25W	60W
Operating Frequency	60Hz	60Hz	60Hz
Power Factor	0.70	0.85	0.92
T.H.D.I.	37%	30%	27%

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APPLICATION

Consideration	12V Electronic Driver/Transformer	12V Magnetic Transformer
• Length	• Use for short to medium fixture run lengths and low to medium wattage systems	• Use for medium to long run lengths and medium to higher wattage systems
• Dimming	• For optimal results, use dimmers specifically designed for use with electronic transformers; transformers used with Juno LED fixtures should only be operated with dimmers pre-qualified for suitability by Juno Lighting Group	• For optimal results, use dimmers specifically designed for use with magnetic transformers; transformers used with Juno LED fixtures should only be operated with dimmers pre-qualified for suitability by Juno Lighting Group
• Transformer Location	• For best performance, transformer should be located close to fixture run. • Can be surface mounted or installed in insulation. • Install where ambient temperature will not exceed 120°F (50°C); transformer must be accessible	• Install in well ventilated locations where ambient temperature will not exceed 140°F (60°C); transformer must be accessible
• Distance to First Fixture	• For best results, should be mounted within 4' to first fixture in run.	• Suitable for remote mounting at long distances

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:

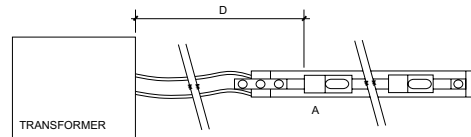
$$\text{WATTS} = \text{VOLTS} \times \text{AMPS}$$

Assuming a 120 watt electrical load:

$$120 \text{ WATTS} = 12 \text{ VOLTS} \times \underline{10 \text{ AMPS}}$$

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

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

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

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

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

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MINI DOWNLIGHT/GIMBAL-TABLE PREDICTING VOLTAGE AT FIXTURE FOR VARIOUS WIRE LENGTHS, GAUGES AND LOADS

TL576 60W, 12V AC Magnetic Transformer, 120V Input, when used with 5W Mini Downlight/Gimbal fixtures

STANDARD TAP

Distance from Transformer to First Fixture	#12 Gauge				#14 Gauge				#18 Gauge			
	Number of Fixtures				Number of Fixtures				Number of Fixtures			
	1	4	7	10	1	4	7	10	1	4	7	10
5'	11.9	11.6	11.3	11.0	11.9	11.6	11.3	10.9	11.9	11.5	11.0	10.5
10'	11.9	11.6	11.3	10.9	11.9	11.6	11.2	10.8	11.9	11.4	10.8	10.2
15'	11.9	11.6	11.2	10.8	11.9	11.5	11.1	10.7	11.8	11.3	10.4	9.9
20'	11.9	11.5	11.2	10.7	11.9	11.5	11.0	10.5	11.8	11.2	10.4	9.6
25'	11.9	11.5	11.1	10.7	11.9	11.4	10.9	10.4	11.8	11.0	10.2	9.3
30'	11.9	11.4	11.1	10.6	11.8	11.4	10.9	10.3	11.7	10.9	10.0	9.0
40'	11.9	11.4	11.0	10.5	11.8	11.3	10.7	10.1	11.7	10.7	9.6	8.5
50'	11.8	11.4	10.9	10.3	11.8	11.2	10.5	9.9	11.6	10.5	9.2	7.9
60'	11.8	11.3	10.8	10.2	11.8	11.1	10.4	9.6	11.6	10.2	8.8	7.3
80'	11.8	11.2	10.6	9.9	11.7	10.9	10.1	9.2	11.5	9.8	8.0	6.2
100'	11.8	11.1	10.4	9.6	11.7	10.7	9.7	8.7	11.3	9.3	7.2	5.0

BOOST TAP

Distance from Transformer to First Fixture	#12 Gauge				#14 Gauge				#18 Gauge			
	Number of Fixtures				Number of Fixtures				Number of Fixtures			
	1	4	7	10	1	4	7	10	1	4	7	10
5'	13.1	12.8	12.4	11.9	13.1	12.8	12.3	11.9	13.1	12.7	12.2	11.7
10'	13.1	12.8	12.3	11.8	13.1	12.7	12.3	11.7	13.1	12.6	12.0	11.4
15'	13.1	12.7	12.3	11.8	13.1	12.7	12.2	11.6	13.0	12.5	11.8	11.1
20'	13.1	12.7	12.2	11.7	13.1	12.6	12.1	11.5	13.0	12.4	11.6	10.8
25'	13.1	12.7	12.2	11.6	13.1	12.6	12.0	11.4	13.0	12.2	11.4	10.5
30'	13.1	12.6	12.1	11.5	13.0	12.5	11.9	11.3	12.9	12.1	11.2	10.2
40'	13.1	12.6	12.0	11.4	13.0	12.4	11.8	11.1	12.9	11.9	10.8	9.7
50'	13.0	12.5	11.9	11.3	13.0	12.4	11.6	10.8	12.8	11.7	10.4	9.1
60'	13.0	12.5	11.8	11.1	13.0	12.3	11.4	10.6	12.8	11.4	10.0	8.5
80'	13.0	12.4	11.6	10.8	12.9	12.1	11.2	10.1	12.7	11.0	9.2	7.4
100'	13.0	12.2	11.4	10.5	12.9	11.9	10.8	9.7	12.3	10.5	8.4	6.2

Notes:

1. Max 10 fixtures
2. For this analysis, 18" of wire was used between fixtures

The shaded areas represent the suggested operating range of 10.0 to 12.0 volts at the fixture using the TL576 transformer. Do not exceed 12 volts. To ensure less than a 20% drop in light output between the first and last fixture in a run, make sure the fixture voltage at the last fixture is at least 10 volts. A voltmeter with high frequency response (such as a Fluke 187 multimeter) should be used to confirm that the proper voltage is present.

MINI DOWNLIGHT/GIMBAL DIMMER COMPATIBILITY

May be dimmed using the following Juno qualified dimmers: Schneider Electric C-Bus, Lutron® Glyder GLV-600, Lutron® Nova T² NTLV-600, Lutron® Skylark SLV-600P, Lutron® Diva DVLV-600P, Lutron® Homeworks QS HQRD-6NA, Lutron® Radio RA2 RRD-10ND.



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SOLO-TASK-TABLE PREDICTING FIXTURE VOLTAGE FOR VARIOUS WIRE LENGTHS, GAUGES AND LOADS

TL576 60W, 12V AC Magnetic Transformer, 120V Input, when used with 4.2W Solo-Task fixtures

STANDARD TAP

Distance from Transformer to First Fixture	#14 Gauge				#18 Gauge			
	Number of Fixtures				Number of Fixtures			
	1	4	8	12	1	4	8	12
5'	11.9	11.7	11.3	10.9	11.9	11.6	11.0	10.4
10'	11.9	11.7	11.2	10.8	11.9	11.5	10.8	10.1
15'	11.9	11.6	11.1	10.7	11.9	11.4	10.5	9.8
20'	11.9	11.6	11.1	10.5	11.9	11.3	10.5	9.5
25'	11.9	11.5	11.0	10.4	11.8	11.2	10.3	9.2
30'	11.9	11.4	10.9	10.3	11.8	11.1	10.1	8.9
40'	11.9	11.4	10.8	10.1	11.8	10.9	9.7	8.4
50'	11.9	11.3	10.6	9.6	11.7	10.7	9.3	7.8
60'	11.8	11.2	10.5	9.6	11.7	10.5	8.9	7.2
80'	11.8	11.1	10.2	9.1	11.6	10.1	8.1	6.0
100'	11.8	10.9	9.8	8.7	11.4	9.7	7.3	4.9

BOOST TAP

Distance from Transformer to First Fixture	#14 Gauge				#18 Gauge			
	Number of Fixtures				Number of Fixtures			
	1	4	8	12	1	4	8	12
5'	13.1	12.9	12.3	11.8	13.1	12.8	12.2	11.6
10'	13.1	12.8	12.3	11.6	13.1	12.7	12.0	11.3
15'	13.1	12.8	12.2	11.5	13.1	12.6	11.8	11.0
20'	13.1	12.7	12.1	11.4	13.1	12.5	11.7	10.7
25'	13.1	12.7	12.0	11.3	13.0	12.4	11.5	10.4
30'	13.1	12.6	12.0	11.2	13.0	12.3	11.3	10.1
40'	13.1	12.5	11.8	11.0	13.0	12.1	10.9	9.6
50'	13.1	12.5	11.7	10.7	12.9	11.9	10.5	9.0
60'	13.0	12.4	11.5	10.5	12.9	11.7	10.1	8.4
80'	13.0	12.3	11.2	10.0	12.8	11.3	9.3	7.2
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