

# 12VDC MAGNETIC DIMMABLE DRIVER

# SPECIFICATION SHEET



## OVERVIEW

12VDC Magnetic Dimmable Drivers are perfect for supplying low voltage power to dimmable 12V LED lights. These Dimmable LED Drivers are compatible with a variety of magnetic low voltage dimmer switches commonly used in home and commercial installations. All products have a NEMA 3R rated enclosure suitable for wet and outdoor locations.

## FEATURES

- Class 2 models available
- Multi-tap Class 2 models available
- 120VAC or 277VAC input
- NEMA 3R enclosure with built-in junction box
- Fanless design, cooling by free air convection
- Dimmable with compatible MLV dimmers
- Suitable indoor/outdoor wet locations
- ETL Listed US/CA power supply
- 5-Year warranty

Item #	
Project	

# SPECIFICATIONS - 120VAC Models (12VDC Output)

<b>Input Voltage / Frequency:</b>	120VAC / 60Hz
<b>Dimmability:</b>	Yes (with MLV dimmer). See the 'Magnetic Dimmable Driver Compatibility List' for a full list of compatible controls.
<b>Thermal Class:</b>	B130°C
<b>Ambient Temp<sup>1</sup>:</b>	-4 ~ +104°F (-20 ~ +40°C)
<b>Operating Temp<sup>2</sup>:</b>	-4 ~ +158°F (-20 ~ +70°C)
<b>Environment:</b>	Outdoor / wet location NEMA 3R enclosure
<b>Housing / Cooling:</b>	Black powder coated steel enclosure, cooling by free-air convection
<b>Coil Former:</b>	Double Section Bobbin
<b>Certifications:</b>	ETL Listed 4001928. Conforms to UL STD 1598 Certified to CSA STD C22.2 NO. 250

	DI-0920	DI-DM-12V40W	DI-0922	DI-0925	DI-DM-12V120W-MT	DI-DM-12V180W-MT	DI-0923	DI-DM-12V300W-MT
<b>Max Load</b>	20W / 1.7A	40W / 3.3A	60W / 5A	100W / 8.4A	<b>Multi-tap</b> 120W (2 x 60W)	<b>Multi-tap</b> 180W (3 x 60W)	200W / 16.7A	<b>Multi-tap</b> 300W (5 x 60W)
<b>Class 2</b>	Yes	Yes	Yes	No	Yes	Yes	No	Yes
<b>Minimum Load</b>	<b>No Dimmer:</b> Minimum 60% <b>With Dimmer:</b> Varies per dimmer. See the 'Magnetic Dimmable Driver Compatibility List' for minimum loads.							
<b>Input Current Full Load</b>	310mA	510mA	760mA	1.33A	1.5A	2.1A	2.13A	2.86A
<b>Output Full Load</b>	11VDC	11.1VDC	10.8VDC	11VDC	11.3VDC	11.3VDC	11VDC	11.3VDC
<b>Open Circuit Output Voltage</b>	12.4VDC	12.8VDC	12.5VDC	12.8VDC	12.8VDC	12.8VDC	12.9VDC	12.8VDC
<b>Primary Leads</b>	PVC 600V #20	PVC 600V #20	PVC 600V #20	PVC 600V #18	PVC 600V #20	PVC 600V #20	PVC 600V #18	PVC 600V #20
<b>Secondary Leads</b>	PVC 300V #16	PVC 300V #16	PVC 300V #16	PVC 300V #12	PVC 300V #14	PVC 300V #14	PVC 300V #12	PVC 300V #14
<b>Voltage Boost<sup>3</sup></b>	No	No	No	No	Yes (0.5~1VDC boost tap)	Yes (0.5~1VDC boost tap)	Yes (0.5~1VDC boost tap)	Yes (0.5~1VDC boost tap)
<b>Circuit Breakers</b>	Primary and secondary auto reset	Primary and secondary auto reset	Primary and secondary auto reset	Primary and secondary auto reset	Prim. push-to-reset, sec. auto reset	Prim. push-to-reset, sec. auto reset	Primary and sec. <b>manual</b> push-to-reset	Prim. push-to-reset, sec. auto reset
<b>Efficiency / Power Factor</b>	76% / 0.81	79% / 0.88	78.8% / 0.84	77.4% / 0.93	80% / 0.93	87% / 0.92	87% / 0.92	78.8% / 0.93
<b>Dimensions</b>	5.6 x 2 x 2.14 in.	5.6 x 2 x 2.14 in.	6.55 x 2.25 x 2.55 in.	9.8 x 3 x 3 in.	9.8 x 4.2 x 3.2 in.	9.8 x 4.2 x 3.2 in.	9.8 x 3 x 3 in.	9.8 x 4.2 x 3.2 in.
<b>Weight</b>	2.2 lbs (35 oz.)	2.2 lbs (35 oz.)	3.2 lbs. (50 oz.)	5.5 lbs. (87 oz.)	8.75 lbs. (140 oz.)	8.75 lbs. (140 oz.)	5.5 lbs. (87 oz.)	8.75 lbs. (140 oz.)

## COMPATIBLE DIMMER NOTE\*

When using a dimmer, ONLY install a compatible Magnetic Low Voltage Dimmer Switch or damage to the driver and/or LED fixture may occur. These drivers are not compatible with Incandescent dimmers, ELV Dimmers, or Pulse Width Modulation (PWM) dimmers such as REIGN® Wall Mount LED Dimmers and Inline LED Dimmers.

## NOT USING A DIMMER?

ALWAYS load the driver a minimum of 60% the labeled load if not using a dimmer or damage to the driver and/or LED fixture may occur.

\* See the 'Magnetic Dimmable Driver Compatibility List' for a full list of compatible controls.

1. Do not install product in an environment outside the listed ambient temperature.
2. Operating temperature is measured according to the minimum and maximum ambient temperature environment.
3. The orange Boost-Tap wire is an optional 10% voltage boost, which can compensate for voltage drop between the driver and the fixture.

## SPECIFICATIONS - 277VAC Models (12VDC Output)

<b>Input Voltage / Frequency:</b>	277VAC / 60Hz
<b>Dimmability:</b>	Yes (with MLV dimmer). <i>See the 'Magnetic Dimmable Driver Compatibility List' for a full list of compatible controls.</i>
<b>Thermal Class:</b>	B130°C
<b>Ambient Temp<sup>1</sup>:</b>	-4 ~ +104°F (-20 ~ +40°C)
<b>Operating Temp<sup>2</sup>:</b>	-4 ~ +158°F (-20 ~ +70°C)
<b>Environment:</b>	Outdoor / wet location NEMA 3R enclosure
<b>Housing / Cooling:</b>	Black powder coated steel enclosure, cooling by free-air convection
<b>Coil Former:</b>	Double Section Bobbin
<b>Certifications:</b>	ETL Listed 4001928. Conforms to UL STD 1598 Certified to CSA STD C22.2 NO. 250

	DI-DM-12V20W-277	DI-DM-12V60W-277	DI-DM-12V100W-277	DI-DM-12V200W-277	DI-DM-12V300W-277
<b>Max Load</b>	20W / 1.7A	40W / 3.4A	100W / 8.4A	200W / 16.7A	300W / 25A
<b>Class 2</b>	Yes	Yes	Yes	No	Yes
<b>Minimum Load</b>	<b>No Dimmer:</b> Minimum 60% <b>With Dimmer:</b> Varies per dimmer. <i>See the 'Magnetic Dimmable Driver Compatibility List' for minimum loads.</i>				
<b>Input Current Full Load</b>	310mA	760mA	1.33A	2.13A	2.86A
<b>Output Full Load</b>	11.3VDC	11.3VDC	11.2VDC	11.3VDC	11.1VDC
<b>Open Circuit Output Voltage</b>	13.3VDC	12.8VDC	14.5VDC	12.9VDC	12.6VDC
<b>Primary Leads</b>	PVC 600V #20	PVC 600V #20	PVC 600V #20	PVC 600V #18	PVC 600V #18
<b>Secondary Leads</b>	PVC 300V #16	PVC 300V #16	PVC 300V #12	PVC 300V #12	PVC 300V #12
<b>Voltage Boost<sup>3</sup></b>	No				
<b>Circuit Breakers</b>	Secondary manual push-to-reset				
<b>Efficiency /Power Factor</b>	76% / 0.81	78.8% / 0.84	77.4% / 0.93	87% / 0.92	90% / 0.93
<b>Dimensions</b>	5.6 x 2 x 2.14 in.	6.55 x 2.25 x 2.55 in.	9.8 x 3 x 3 in.	9.8 x 4.2 x 3.5 in.	9.8 x 4.2 x 3.5 in.
<b>Weight</b>	2.2 lbs(35 oz.)	3.2 lbs. (50 oz.)	5.5 lbs. (87 oz.)	5.5 lbs. (87 oz.)	8.75 lbs. (140 oz.)

### COMPATIBLE DIMMER NOTE\*

When using a dimmer, ONLY install a compatible Magnetic Low Voltage Dimmer Switch or damage to the driver and/or LED fixture may occur. These drivers are not compatible with Incandescent dimmers, ELV Dimmers, or Pulse Width Modulation (PWM) dimmers such as REIGN® Wall Mount LED Dimmers and Inline LED Dimmers.

### NOT USING A DIMMER?

ALWAYS load the driver a minimum of 60% the labeled load if not using a dimmer or damage to the driver and/or LED fixture may occur.

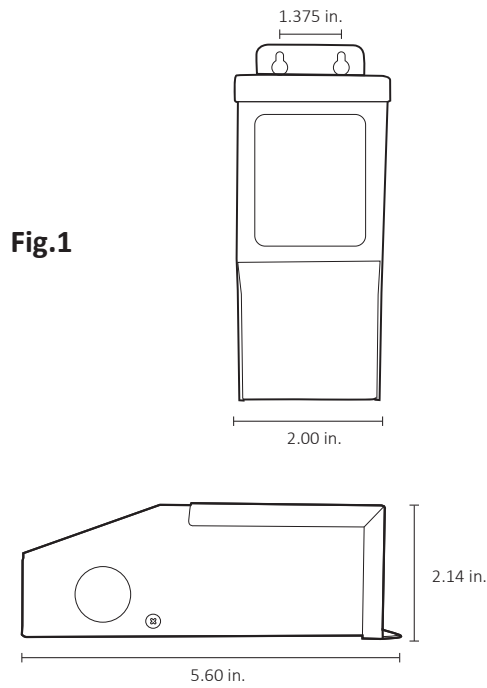
\* See the 'Magnetic Dimmable Driver Compatibility List' for a full list of compatible controls.

1. Do not install product in an environment outside the listed ambient temperature.
2. Operating temperature is measured according to the minimum and maximum ambient temperature environment.
3. The orange Boost-Tap wire is an optional 10% voltage boost, which can compensate for voltage drop between the driver and the fixture.

# MECHANICAL DIAGRAMS

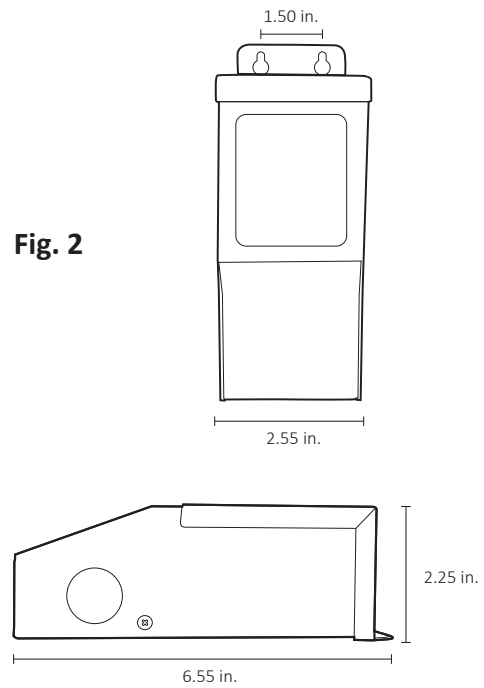
**Figure 1**

DI-0920  
DI-DM-12V40W  
DI-DM-24V40W  
DI-DM-12V20W-277



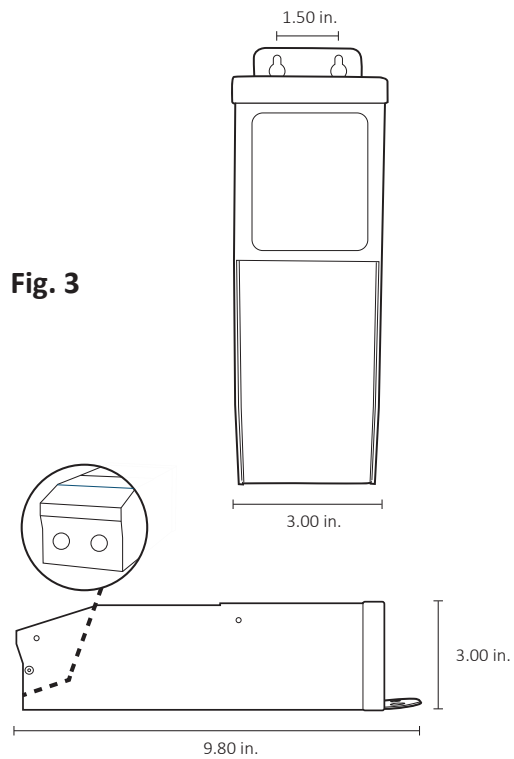
**Figure 2**

DI-0922  
DI-DM-12V60W-277



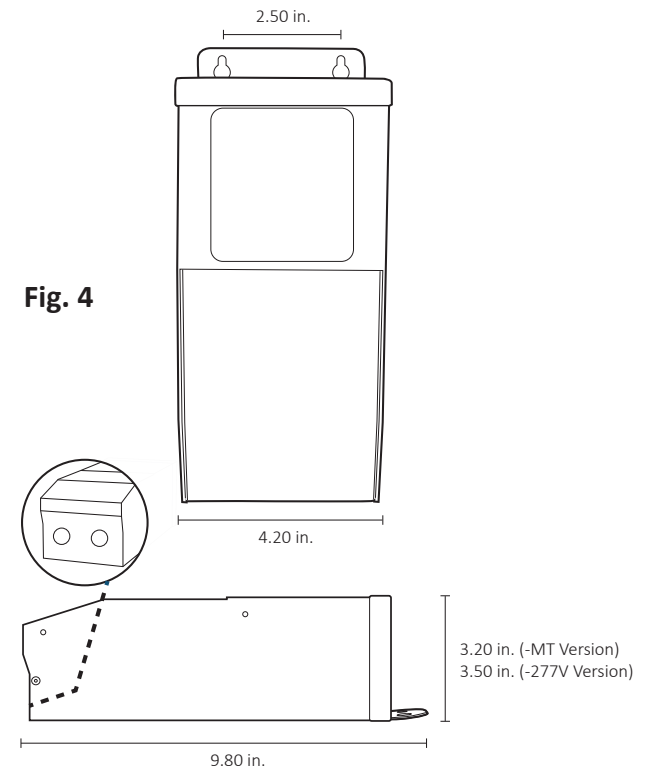
**Figure 3**

DI-0925  
DI-0923  
DI-DM-12V100W-277



**Figure 4**

DI-DM-12V120W-MT  
DI-DM-12V180W-MT  
DI-DM-12V300W-MT  
DI-DM-12V200W-277  
DI-DM-12V300W-277



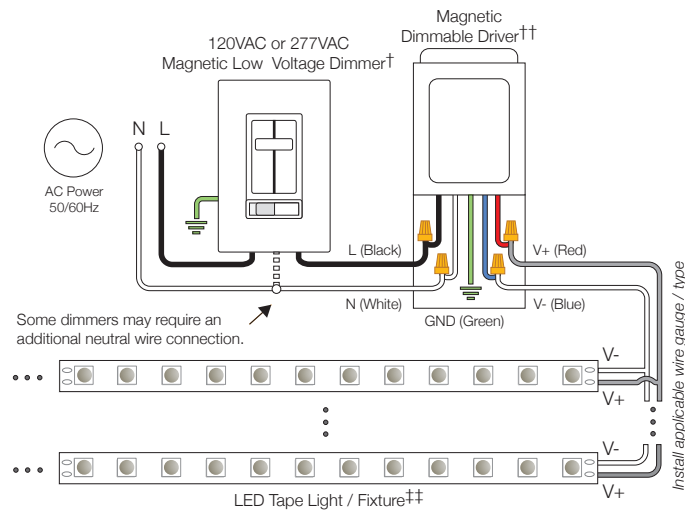
# SYSTEM DIAGRAMS

The following diagrams are provided as example system designs. Install in accordance with national and local electrical code regulations.

## DIAGRAM KEY

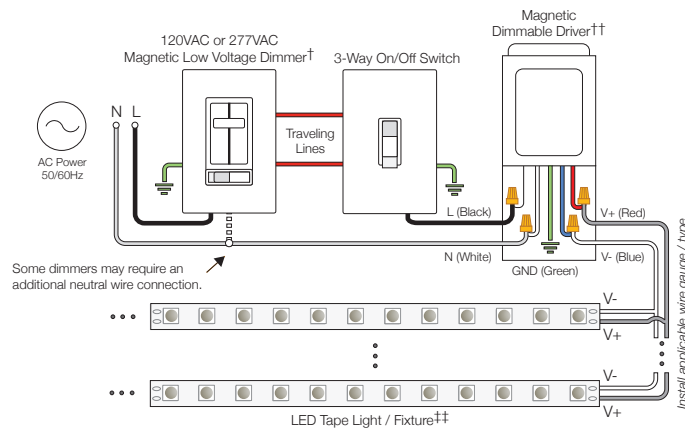
- L = Line (Black). (Orange for 277VAC models)
- B = Line Boost Tap (Orange)
- N = Neutral (White)
- GND = Ground (Green)
- V+ = Low Voltage Positive (Red)
- V- = Low Voltage Negative (Blue)

## STANDARD DIMMER/DRIVER DIAGRAM



## 3-WAY DIMMER/DRIVER DIAGRAM

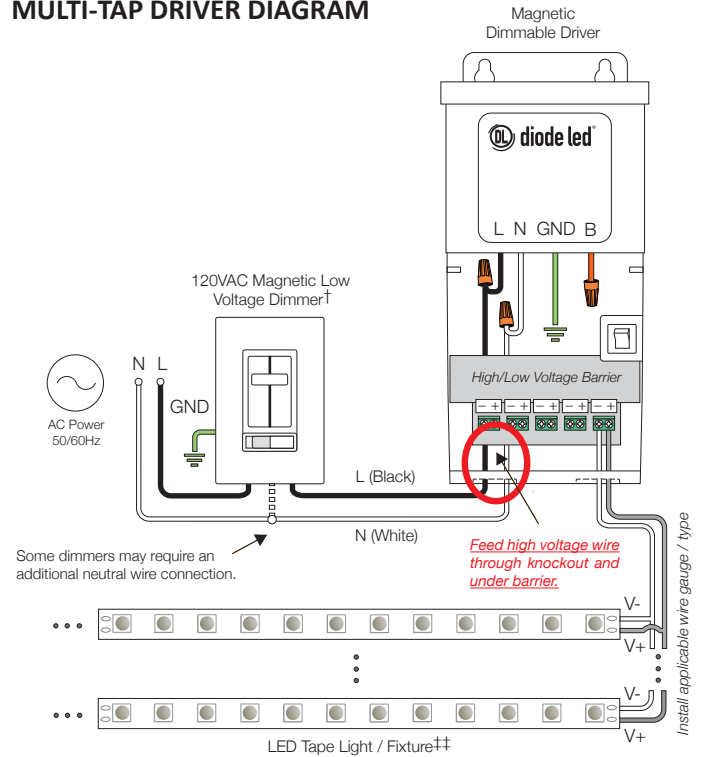
Also applies to Multi-Tap Models.



† Install a compatible magnetic low voltage dimmer switch. See dimmer switch manufacturer installation guide for complete wiring instructions.

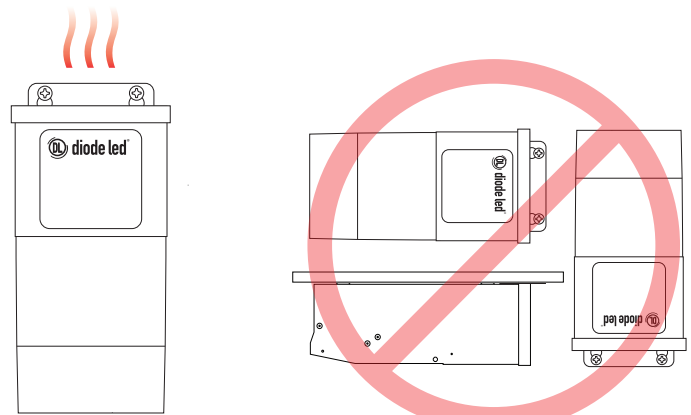
‡ See fixture specifications for maximum series run limits.

## MULTI-TAP DRIVER DIAGRAM



## MOUNTING

For proper heat dissipation, mount vertically to a sturdy surface with mounting tab at top and wiring compartment at bottom. For wet location installations, ensure to mount driver vertically in a location where water cannot pool or collect. When mounting multiple drivers, allow a minimum of 5 in. between drivers.



YES

NO

## ADDITIONAL RESOURCES

MAGNETIC DIMMABLE DRIVER Installation Guide  
MAGNETIC DIMMABLE DRIVER Compatibility List

## SAFETY / WARNINGS / DISCLOSURES

1. This LED Driver is to be installed in accordance with Article 450 of the National Electrical Code or local code.
2. This product is intended to be installed and serviced by a qualified, licensed electrician.
3. Install in a well-ventilated area free from explosive gases and vapors.
4. This LED Driver must be grounded in accordance with the NEC or local codes. This driver must be grounded to the green grounding wire.
5. Only install compatible dimmable LED fixtures.
6. Ensure applicable wire is installed between driver and fixture. When choosing wire, factor in voltage drop, amperage rating, and type (in-wall rated, wet location rated, etc.). Inadequate wire installation could overheat wires, and cause a fire.
7. When installing a dimmer, always install a compatible Magnetic Low Voltage dimmer or damage to the driver and/or LED fixture may occur.
8. If not using a dimmer, always load the driver a minimum of 60% the labeled load or damage to the driver and/or LED fixture may occur.
9. For wet location installations, ensure to mount driver vertically and in a location where water cannot pool or collect.
10. 'Voltage drop' is a gradual decrease in voltage along a conductor through which current is flowing. When specifying an LED system, ensure to calculate voltage drop appropriately. Voltage drop calculators will suggest the proper gauge wire and distance to install the driver from the fixture. To meet maximum performance, the beginning of the tape light should be receiving no less than 3% of input power rating.
11. Do not install if product has any visible damage.
12. Do not modify or disassemble this product beyond instructions or the warranty will be void.

## WARRANTY

### Limited Warranty

This product has a five (5) year limited warranty from the date of shipment. This warranty does not include the additional accessories referenced in this specification sheet. Complete warranty details for fixtures and additional accessories are available at [www.diodeled.com/limited-warranty/](http://www.diodeled.com/limited-warranty/) within the Policies section. For warranty related questions please contact product support.

### Consumer's Acknowledgment

Diode LED stands behind its products when they are used properly and according to our specifications. By purchasing our products, the purchaser agrees and acknowledges that lighting design, configuration and installation is a complex process, wherein seemingly minor factors or changes in layout and infield adjustments can have a significant impact on an entire system. Choosing the correct components is essential. Diode LED is able to work with the original purchaser to make an appropriate product selection to the extent of the limited information that the customer can provide, but it is virtually impossible for Diode LED to design a system that foresees every unknown factor. For this reason, this Warranty does not cover problems caused by improper design, configuration or installation issues. Any statement from a Diode LED employee or agent regarding a customer's bill of goods and/or purchase order is NOT an acknowledgment that the products purchased are designed and configured correctly. The purchase agrees and acknowledges that it is the customer's responsibility to adhere strictly to all information contained in the Product Specification Sheets.

There is often more than one way to design, configure and layout an LED lighting application properly to achieve the same lighting effect. Diode LED strongly recommends that licensed professionals be used in the design and installation of lighting systems that include Diode LED products. The specifications include important information that a designer and installer should carefully review and strictly follow. Qualified designers and certified and/or licensed installers, with access to the final installation environment, customer goals, and Diode LED product specifications can make the requisite decisions appropriate for a successful finished lighting application.



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