4-in-1 PowerFactor™ Dimmable Driver with Junction Box

AL-98-10-XXXXX-4in1

4-in-1 PowerFactor™ Dimmable Drivers provide smooth, stable, efficient, and flicker-free dimming capability for LED lighting. They are compatible with many models of:

- MLV (forward phase dimming)
- ELV (reverse phase dimming)
- 0-10V dimming
- 1-10V dimming

This sophisticated power supply is rated for dry, damp and wet location use.

QUICK SPECIFICATIONS

Item Number	AL-98-10-12120-4in1 AL-98-10-24150-4in1 AL-98-10-24200-4in1 AL-98-10-24300-4in1	AL-98-10-12030-4in1 AL-98-10-24030-4in1 AL-98-10-12060-4in1 AL-98-10-24060-4in1 AL-98-10-24096-4in1	AL-98-10-24192-4in1-MT AL-98-10-24288-4in1-MT AL-98-10-24384-4in1-MT
Input	100V~ 277V 100-277V AC		
Features	99% POWER FACTOR, 100% Max. Load, 10% Min. Load 99% PowerFactor 100% maximum load 10% minimum load	99% POWER FACTOR, 100% Max. Load, 10% Min. Load, CLASS 2 99% PowerFactor 100% maximum load 10% minimum load Class 2	
Environment	DRY LOCATION, WET LOCATION Dry/damp/wet environment		
Certifications	c UL us LISTED, RoHS, NEMA 4X UL Listed RoHS NEMA 4X		
Warranty	WARRANTY 6 YEAR 6 year limited		

12V MODELS TECHNICAL INFORMATION

Item Number	AL-98-10-12030-4in1	AL-98-10-12060-4in1	AL-98-10-12120-4in1
DC Voltage	12V DC	12V DC	12V DC
Rated Current	2.5A	5A	10A
Rated Power	30W	60W	120W
Voltage Tolerance	±0.5V		
Voltage Regulation	±0.5%		
Load Regulation	±1%		
Voltage Range	100-277V AC		
Frequency Range	47~63Hz		
Power Factor (Avg.)	0.99@120V AC, 0.98@277V AC	0.98@120V AC, 0.95@277V AC	0.99@120V AC, 0.96@277V AC
THD (Avg.) Full Load	<20%		
Full Load Efficiency (Avg.)	79% @120V AC, 80%@277V AC	83% @120V AC, 85%@277V AC	82% @120V AC, 83%@277V AC
AC Current (Avg.)	0.5A@100V AC		1.7A@100V AC
Inrush Current	7A, 50%, 420us @120V AC; 12A, 50%, 480us @277V AC	14A, 50%, 780us @120V AC; 15A, 50%, 660us @277V AC	20A, 50%, 1.6ms @120V AC; 25A, 50%, 1.2ms @277V AC
Leakage Current	<0.50mA		<0.50mA
Short Circuit	Shut down o/p voltage, re-power on to recover after fault condition is removed		
Over Loading	≤120% shut down o/p voltage, re-power on to recover after fault condition is removed		
Over Temperature	100°C±10°C / 212°F±50°F shut down o/p voltage, automatically recover after cooling		
Working Temp. / Humidity	-40~+60°C / -40~+140°F / 20~90%RH, non-condensing		
Storage Temp., Humidity	-40~+80°C / -40~+176°F / 10~95%RH		
Temp. Coefficient	±0.03%/°C (0~50°C) / (32~122°F)		
Vibration	10~500Hz, 5G 10min. / 1 cycle, period for 60min. each along X,Y,Z axes		
Safety Standards	UL8750		
Withstand Voltage	I/P-O/P:1.88KV AC		
Isolation Resistance	I/P-O/P:100MΩ / 500V DC / 25°C / 70%RH		
EMC Emission	FCC 47 CFR Part 15, Subpart B		
Warranty	6 Year Limited		
Size (Junction Box) LxWxH	6.50 x 3.72 x 1.57 in. (LxWxH)	7.40 x 3.72 x 1.57 in. (LxWxH)	8.66 x 3.72 x 1.57 in. (LxWxH)

24V MODELS TECHNICAL INFORMATION

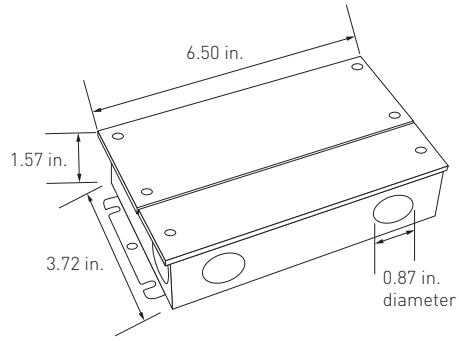
Item Number	AL-98-10-24030-4in1	AL-98-10-24060-4in1	AL-98-10-24096-4in1	AL-98-10-24150-4in1	AL-98-10-24200-4in1	AL-98-10-24300-4in1
DC Voltage	24V DC	24V DC	24V DC	24V DC	24V DC	24V DC
Rated Current	1.25A	2.5A	4A	6.25A	8.33A	12.5A
Rated Power	30W	60W	96W	150W	200W	300W
Voltage Tolerance	±0.5V					
Voltage Regulation	±0.5%					
Load Regulation	±1%					
Voltage Range	100-277V AC					
Frequency Range	47~63Hz					
Power Factor (Avg.)	0.99@120V AC, 0.95@277V AC	0.98@120V AC, 0.95@277V AC		0.99@120V AC, 0.94@277V AC	0.98@120V AC, 0.95@277V AC	0.99@120V AC, 0.95@277V AC
THD (Avg.) Full Load	<20%					
Full Load Efficiency (Avg.)	79% @120V AC, 80%@277V AC	83% @120V AC, 84%@277V AC	83% @120V AC, 86%@277V AC	85% @120V AC, 87%@277V AC	86% @120V AC, 88%@277V AC	88% @120V AC, 92%@277V AC
AC Current (Avg.)	0.5A@100V AC		1.3A@100V AC	1.8A@100V AC	2.3A@100V AC	3.4A@100V AC
Inrush Current	7A, 50%, 420us @120V AC; 12A, 50%, 480us @277V AC	14A, 50%, 780us @120V AC; 15A, 50%, 660us @277V AC	20A, 50%, 1.6ms	15A, 50%, 1.4ms @120V AC; 30A, 50%, 1.4ms @277V AC		20A, 50%, 1.8ms @120V AC; 35A, 50%, 1.9s @277V AC
Leakage Current	<0.50mA					
Short Circuit	Shut down o/p voltage, re-power on to recover after fault condition is removed					
Over Loading	≤120% shut down o/p voltage, re-power on to recover after fault condition is removed					
Over Temperature	100°C±10°C / 212°F±50°F shut down o/p voltage, automatically recover after cooling					
Working Temp. / Humidity	-40~+60°C / -40~+140°F / 20~90%RH, non-condensing					
Storage Temp., Humidity	-40~+80°C / -40~+176°F / 10~95%RH					
Temp. Coefficient	±0.03%/°C (0~50°C) / (32~122°F)					
Vibration	10~500Hz, 5G 10min. / 1 cycle, period for 60min. each along X,Y,Z axes					
Safety Standards	UL8750					
Withstand Voltage	I/P-O/P:1.88KV AC					
Isolation Resistance	I/P-O/P:100MΩ / 500V DC / 25°C / 70%RH					
EMC Emission	FCC 47 CFR Part 15, Subpart B					
Warranty	6 Year Limited					
Size (Junction Box) LxWxH	6.50 x 3.72 x 1.57 in. (LxWxH)	7.40 x 3.72 x 1.57 in. (LxWxH)	8.66 x 3.72 x 1.57 in. (LxWxH)	10.24 x 4.13 x 1.77 in. (LxWxH)	0.24 x 4.13 x 1.77 in. (LxWxH)	10.94 x 4.33 x 1.77 in. (LxWxH)

MULTI-TAP MODELS TECHNICAL INFORMATION

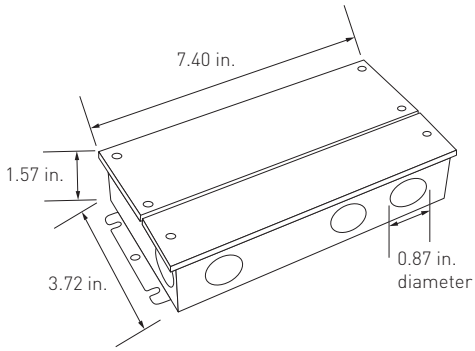
Item Number	AL-98-10-24192-4in1-MT	AL-98-10-24288-4in1-MT	AL-98-10-24384-4in1-MT
DC Voltage	24V DC	24V DC	24V DC
Rated Current	2*4A	3*4A	4*4A
Rated Power	192W (2*96)	288W (3*96)	384W (4*96)
Voltage Tolerance	±0.5V		
Voltage Regulation	±0.5%		±0.3%
Load Regulation	±1%		
Voltage Range	100-277V AC		
Frequency Range	47~63Hz		
Power Factor (Avg.)	0.99@120V AC, 0.94@277V AC	0.99@120V AC, 0.95@277V AC	0.98@120V AC, 0.96@277V AC
THD (Avg.) Full Load	<20%		
Full Load Efficiency (Avg.)	87% @120V AC, 89%@277V AC	87% @120V AC, 91%@277V AC	87% @120V AC, 90%@277V AC
AC Current (Avg.)	2.3A@100V AC, 0.85A@277V AC	3.4A@100V AC	4.6A@100V AC
Inrush Current	19A,1.3ms@50%120VAC, 38A,960us@50%277VAC	35A,960us@50%120VAC, 43A,1ms@50%277VAC	22.8A, 50%, 960us @120V AC
Leakage Current	<0.50mA		
Short Circuit	Shut down o/p voltage, re-power on to recover after fault condition is removed		
Over Loading	≤120% shut down o/p voltage, re-power on to recover after fault condition is removed		
Over Temperature	100°C±10°C / 212°F±50°F shut down o/p voltage, automatically recover after cooling		
Working Temp. / Humidity	-40~+60°C / -40~+140°F / 20~90%RH, non-condensing		
Storage Temp., Humidity	-40~+80°C / -40~+176°F / 10~95%RH		
Temp. Coefficient	±0.03%/°C (0~50°C) / (32~122°F)		
Vibration	10~500Hz, 5G 12min. / 1 cycle, period for 72min. each along X,Y,Z axes		10~500Hz, 5G 10min. / 1 cycle, period for 60min. each along X,Y,Z axes
Safety Standards	UL8750, CAN/CSA-C22.2 No.250.13(US)		UL8750
Withstand Voltage	I/P-O/P:1.8KVAC, I/P-FG:1.8KVAC, O/P-FG:1.8KVAC (US)		I/P-O/P:1.8KVAC, I/P-FG:1.8KVAC, O/P-FG:1.8KVAC (US)
Isolation Resistance	I/P-O/P:100MΩ / 500V DC / 25°C / 70%RH		
EMC Emission	FCC 47 CFR Part 15, Subpart B		
Warranty	6 Year Limited		
Size (Junction Box) LxWxH	10.94 x 4.33 x 1.91 in. (LxWxH)	11.92 x 4.33 x 1.92 in. (LxWxH)	12.80 x 5.51 x 1.89 in. (LxWxH)

DIMENSIONS

AL-98-10-12030-4in1
AL-98-10-24030-4in1



AL-98-10-12060-4in1
AL-98-10-24060-4in1



AL-98-10-12120-4in1
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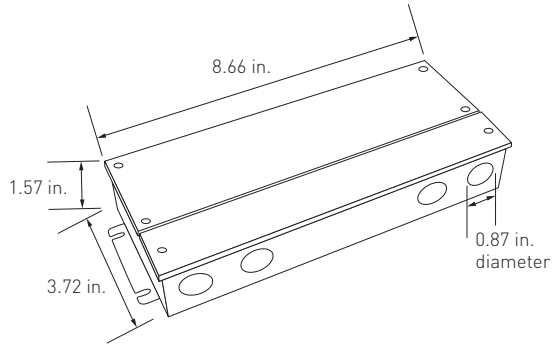

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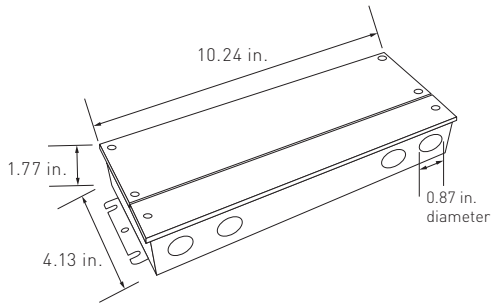

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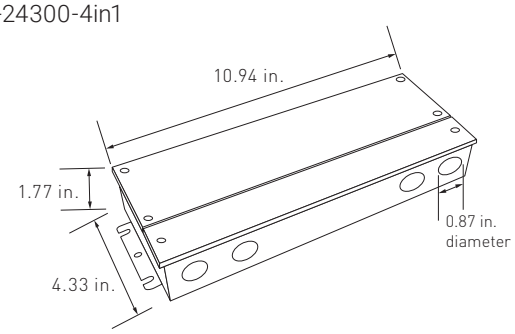
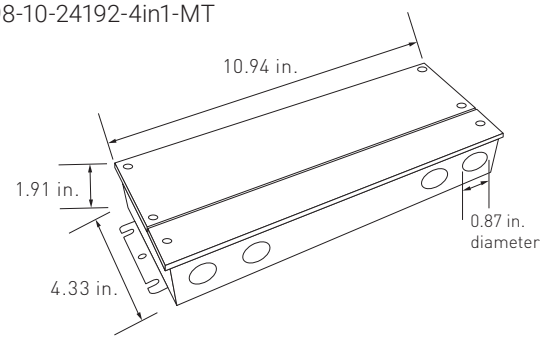


AL-98-10-24192-4in1-MT



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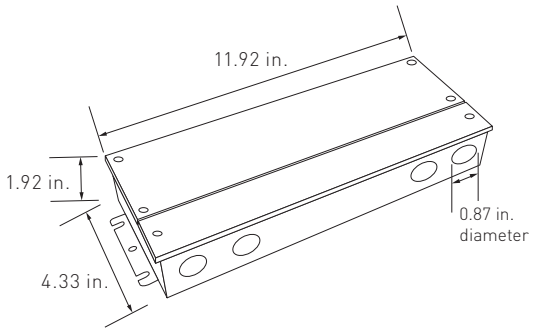
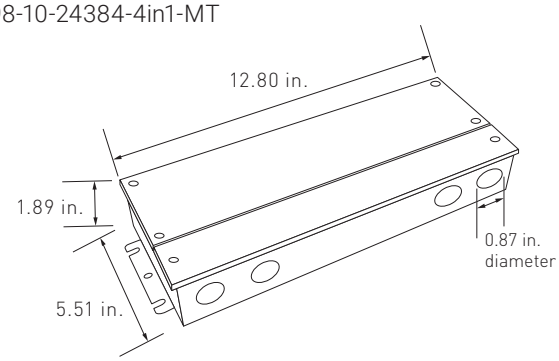


AL-98-10-24384-4in1-MT

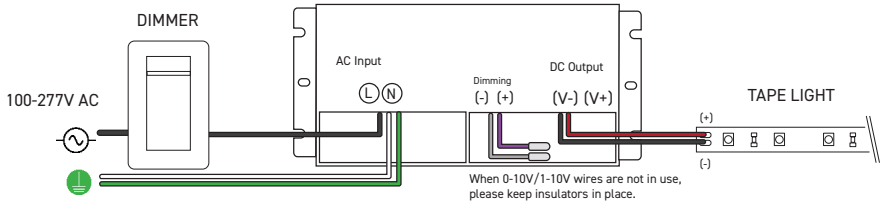


WIRING DIAGRAMS

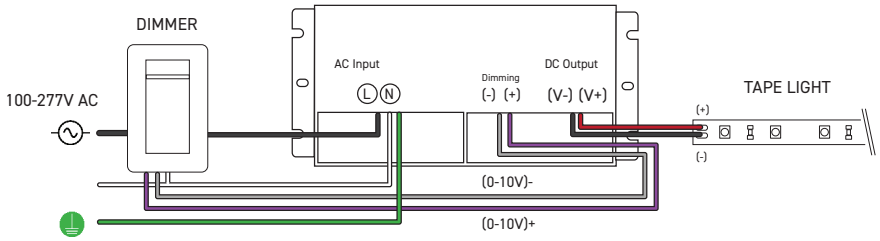
Using a Standard Wall Dimmer

AL-98-10-12030-4in1
AL-98-10-24030-4in1
AL-98-10-12060-4in1
AL-98-10-24060-4in1
AL-98-10-24096-4in1
AL-98-10-12120-4in1
AL-98-10-24150-4in1
AL-98-10-24200-4in1
AL-98-10-24300-4in1

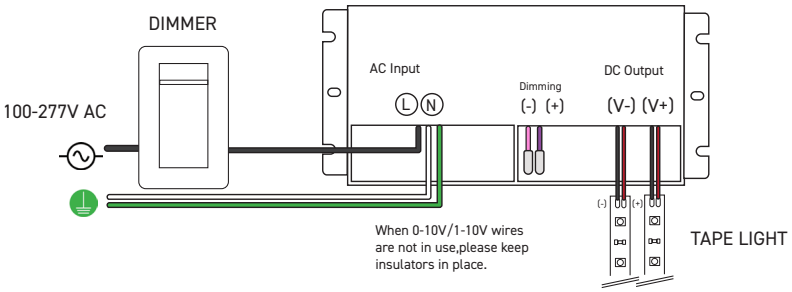
TRIAC dimming



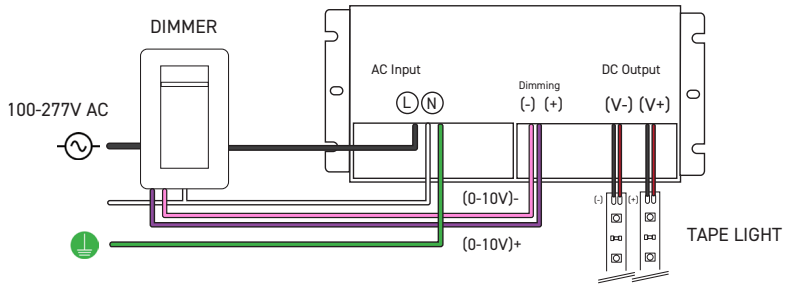
0-10/1-10V dimming



AL-98-10-24192-4in1-MT



0-10/1-10V dimming

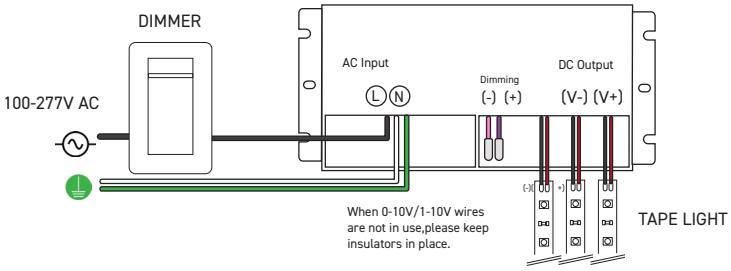


Note: Dimmer switch wiring for reference use only. Please follow wiring instructions provided with the dimmer switch.

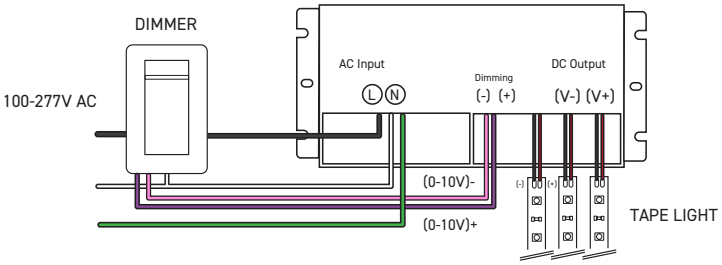
WIRING DIAGRAMS

Using a Standard Wall Dimmer

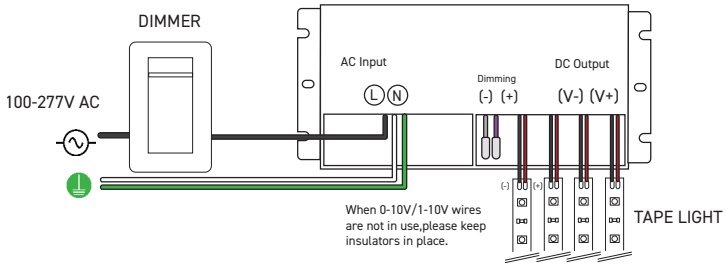
AL-98-10-24288-4in1-MT



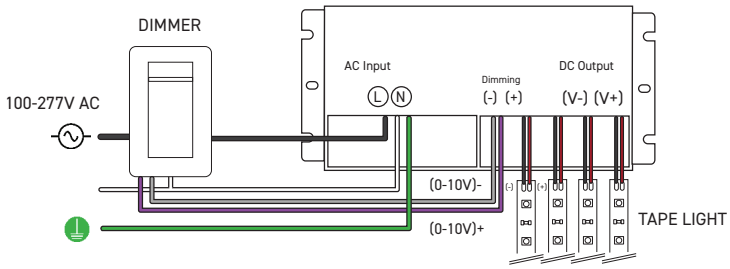
0-10/1-10V dimming



AL-98-10-24384-4in1-MT



0-10/1-10V dimming



Note: Dimmer switch wiring for reference use only. Please follow wiring instructions provided with the dimmer switch.

SAFETY & TIPS

- Before commencing any installation or maintenance work, disconnect the driver from AC power entirely.
- Maintain 4-6 inches clearance around the driver and make sure that it is exposed to open airflow. Do not mount the driver near a heat source.
- Installing this driver in a high ambient temperature environment may increase the internal component temperature and will require a derating in output current.
- The current rating of the high-voltage supply wire should be greater than that of the driver's current requirement.
- When using wet location models of this driver to power LED lighting with wet location connectors, verify that the connection between the driver and the lighting fixture is watertight.

TROUBLESHOOTING

Q: Why are the lights connected to the driver blinking roughly once a second?
A: The driver may be overloaded. Check to make sure the maximum wattage is not being exceeded. There could also be a possibility of incompatible voltage. Confirm that the driver and tape light voltage match.

Q: How do I determine the compatibility?
A: Check the voltage, wattage, load capacity of both the tape light and driver.

Q: Is it possible to have multiple runs of tape light that are daisy-chained together connect to a driver with 1 lead wire?
A: Yes, but only if the total length of consecutive runs do not exceed the tape light's maximum run and also does not exceed the driver's maximum wattage.