

LD-Series

ELECTRONIC DIMMER CONTROLS

The LD-Series represents a dynamic breakthrough in dashboard technology, with its programmable circuitry, superior design, and unparalleled performance that affords seamless integration into most any dash panel. A variety of options, along with superior performance, functionality, and aesthetics assure compliance with the most stringent customer requirements. Key features include: robust design package with all components encased in switch housing, eliminating wire chafing and providing cost-savings as well with minimized electrical connections; sealing which prevents PCB degradation and eliminates short circuit potential. Superior heat dissipation is achieved with a heat sink mass which is over 50% larger than competitive products. Fully programmable circuitry lets the designer decide illumination levels and detent positions. EMC eliminates electrical “noise” and provides interference-free radio signals. Ease of assembly is accommodated with polarized integral connectors and an industry standard mounting hole.



Resources:

[Configure a Complete Part](#)

[Download CAD & Sales Drawing >](#)

Product Highlights:

- 3 Choices for incremental dimming rates
- 12 or 24 Volts
- Laser Etched or Lens Illumination

Typical Applications:

- On/Off-Highway Equipment
- Agricultural Equipment
- Construction Equipment



Carling Technologies®
Innovative Designs. Powerful Solutions.

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Electrical

Contact Rating	9-16VDC, 2-10Amp.
Terminals	6.3mm (0.250" TAB)
Contacts	solid-state load switching
Output	PWM 200 Hz.
EMI/EMC	SAE J1113 and SAE J1455 Conducted Transient Emissions RF Conducted Emissions Conducted Susceptibility: Test pulse #1 Test pulse #2 Test pulse #3a, #3b Load Dump: Test Pulse #5 Power lead Disturbance (Power Dips) AF Conducted Immunity Direct RF Injection (DRFI) Abnormal Vehicle Operating Conditions RF Radiated Emissions Radiated Immunity-Absorber Lined Chamber Electrostatic Discharge: Shipping / handling Electrostatic Discharge: Human Static Discharge
Dielectric Strength	1000V @ 60 Hz was applied for each unit for 1 minute
Reverse Polarity	24VDC for 5 minutes

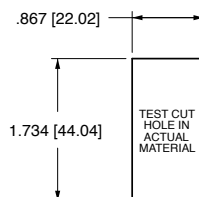
Environmental

Operating Temperature	-40°C to + 85°C												
Vibration	Resonance Search Individual resonance searches were conducted with vibration applied along each of the three mutually perpendicular axes. 24-50 Hz 0.40DA 50-2000 Hz $\pm$ 10 G's peak Random Vibration The random vibration endurance test conditions were sequentially conducted in each of the three mutually perpendicular axes, 1hr/axis <table> <tr> <th>Freq. (Hz)</th><th>PSD (G²/Hz)</th></tr> <tr> <td>24 Hz</td><td>0.06</td></tr> <tr> <td>60 Hz</td><td>0.50</td></tr> <tr> <td>100 Hz</td><td>0.025</td></tr> <tr> <td>1000 Hz</td><td>0.025</td></tr> <tr> <td>2000 Hz</td><td>0.025</td></tr> </table> During the test, all units were operated at a load current of 2A with 12.5VDC.	Freq. (Hz)	PSD (G ² /Hz)	24 Hz	0.06	60 Hz	0.50	100 Hz	0.025	1000 Hz	0.025	2000 Hz	0.025
Freq. (Hz)	PSD (G ² /Hz)												
24 Hz	0.06												
60 Hz	0.50												
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1000 Hz	0.025												
2000 Hz	0.025												
Salt Spray	Per Mil-Std 202F, Method 101D, Test Condition A. Duration 96 hrs.												
Dust	Per Mil-Std 810C, Method 510.2. Air velocity 300 $\pm$ 200 Feet/Min., Test Duration 16 Hr.												
Moisture Resistance	Per Mil-Std 202F, Method 106E. Test Criteria-pre and post test operation of switch.												

Physical

Function	Incremental for continuous dimming
Operation	Momentary
Lighted	LED's internally dimmed
Base	PBT Polyester V-0 flammability
Rocker	Polycarbonate or Nylon 6/6 Glass filled
Bracket	PBT Polyester V-0 flammability
Connector	Nylon 6/6 toughened
Actuation Force	300 gm $\pm$ 50 gm
Weight	52 grams

Mounting Specifications



Panel Thickness Range
Acceptable Panel Thickness
.030 to .156 (.76mm to 3.96mm)
Recommended:
.030, .062, .093, .125 and .156

*Manufacturer reserves the right to change product specification without prior notice.

LD 3 5 1 C C 1 - 3 A A FE - 1 FC

1 Series 2 Rating 3 Dimming Rate 4 Termination 5 Illumination 6 Illumination 7 Bracket Color 8 Actuator Style/ Color 9 Lens Color 10 Lens Color 11 Legend 1 12 Legend Orientation 13 Legend 2

1 SERIES

LD Electronic Dimmer Control

2 RATING

1 4A, 12 volts A 2A, 24 volts
2 10A, 12 volts C 5A, 24 volts

3 DIMMING RATE

1 30 - 100% 8 positions A 0 - 100% 11 positions
5 10 - 100% 10 positions

4 TERMINATION

1 .230 TABS (5.84 mm)

5 & 6 ILLUMINATION

No lamp S
12V LED C Red N Amber H Green
24V LED D P J

7 BRACKET COLOR ¹

1 Black 2 White 3 Gray

8 ACTUATOR STYLE / COLOR ¹

Rocker Laser Etched Black A White B Gray C Red D
Paddle 4 J K M N

9 & 10 LENS COLOR

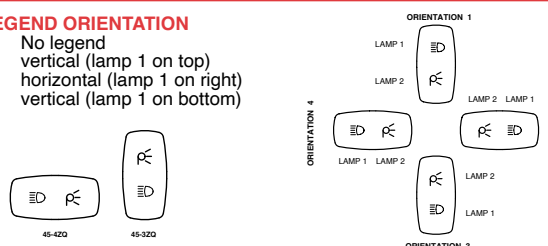
Z No Lens
1 Clear White Amber Green Red Blue Lens Style
2 - 7 B C H M T Large Transparent
3 - 9 D E J K P R U Large Translucent
5 A - - - W V Bar Transparent
Laser Etch

11 LEGEND #1

00 No legend FC Dim FE Bright
For legend options, visit us at carlingtech.com

12 LEGEND ORIENTATION

0 No legend
1 vertical (lamp 1 on top)
2 horizontal (lamp 1 on right)
3 vertical (lamp 1 on bottom)

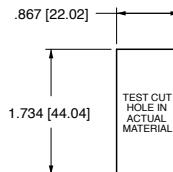
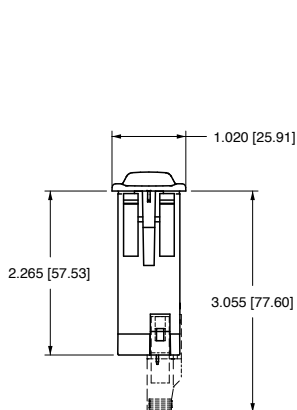
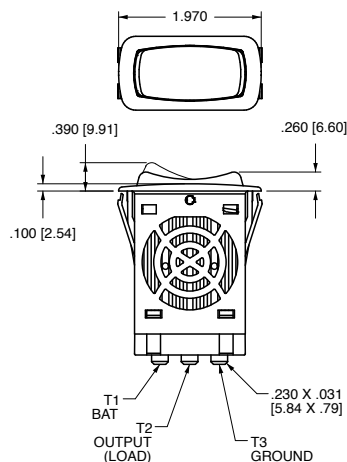


13 LEGEND #2

00 No legend FC Dim FE Bright
For legend options, visit us at carlingtech.com

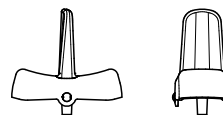
Notes:

¹ Custom colors are available. Consult factory.

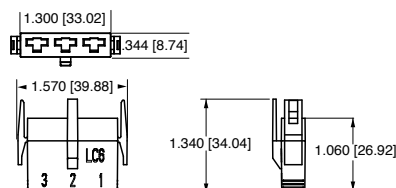


MOUNTING HOLE

Panel Thickness Range
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.030 to .156 (.76mm to 3.96mm)
Recommended:
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PADDLE STYLE ACTUATOR



Q.C. SELECTION GUIDE			
COMPANY SERIES	PACKARD PART NO.	WIRE GAGE	
		AWG	MM ²
PACKARD METRI-PACK 630 SERIES TIN PLATED BRASS	12084590	12	3.0
	12052224	12	3.0
	12015870	16-14	2.0-1.0
	12015869	20-18	1.0-.80
	12020035	22-18 (2 REQ'D)	.80-.50 (2 REQ'D)
	12052222	20-22	.50-.35

Authorized Sales Representatives and Distributors

Click on a region of the map below to find your local representatives and distributors or visit www.carlingtech.com/findarep.



About Carling

Founded in 1920, Carling Technologies is a leading manufacturer of electrical and electronic switches and assemblies, circuit breakers, electronic controls, power distribution units, and multiplexed power distribution systems. With four ISO9001 and IATF16949 registered manufacturing facilities and technical sales offices worldwide, Carling Technologies Sales, Service and Engineering teams do much more than manufacture electrical components, they engineer powerful solutions! To learn more about Carling please visit www.carlingtech.com/company-profile.

To view all of Carling's environmental, quality, health & safety certifications please visit www.carlingtech.com/environmental-certifications

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