

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.



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



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

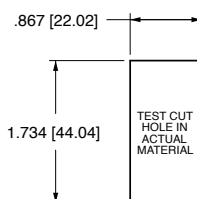
Environmental

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 ± 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 Freq. (Hz) PSD (G ² /Hz) 9.36 grms 24 Hz 0.06 60 Hz 0.50 100 Hz 0.025 1000 Hz 0.025 2000 Hz 0.025 During the test, all units were operated at a load current of 2A with 12.5VDC.
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 ± 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 ± 50 gm
Weight	52 grams

Mounting Specifications



MOUNTING HOLE

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 1 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**
Red **N** Amber **H** Green **J**
12V LED **C** **N** **H**
24V LED **D** **P** **J**

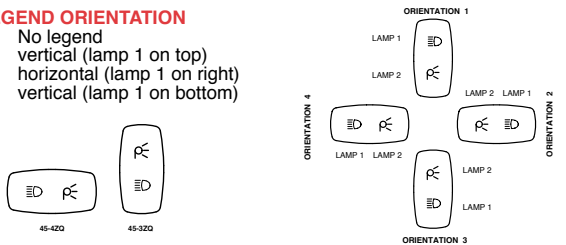
7 BRACKET COLOR ¹
1 Black 2 White 3 Gray

8 ACTUATOR STYLE / COLOR ¹
Rocker **3** Laser Etched **A** Black **B** White **C** Gray **D** Red
Paddle **4** **J** **K** **M** **N**

9 & 10 LENS COLOR
Z No Lens
Clear **W** White **B** Amber **G** Green **M** Red **T** Blue **Lens Style**
1 - **7** **C** **H** **N** **U** Large Transparent
3 - **9** **D** **J** **P** **V** Large Translucent
5 **A** - - - - **W** Bar Transparent
- - - - - **E** Bar Translucent
- - - - - **K** Laser Etch

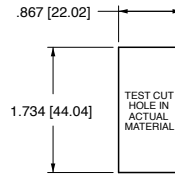
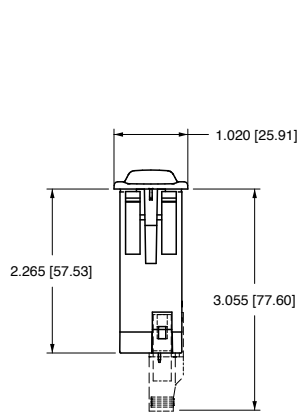
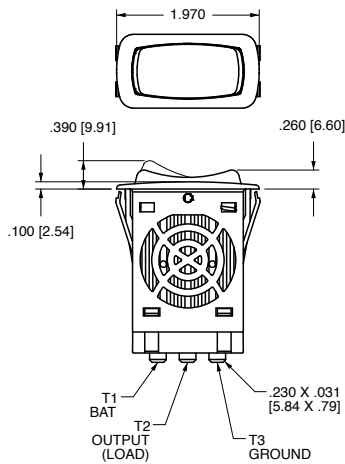
11 LEGEND #1
00 No legend **FC** Dim **FE** Bright
For legend options, visit us at carlingtech.com

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

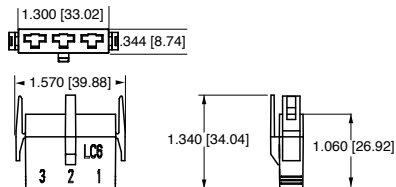
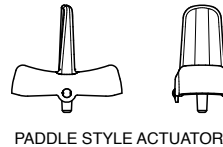


13 LEGEND #2
00 No legend **FC** Dim **FE** Bright
For legend options, visit us at carlingtech.com

Notes:
1 Custom colors are available. Consult factory.



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



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