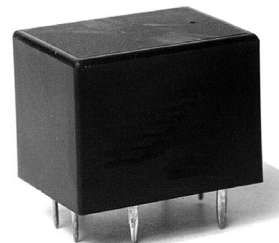


Greenwich Electronics, Inc.

LD1 Series

- Miniature DPDT relay
- 1 to 5A switching
- Silver alloy contacts
- Applications: automotive, lighting, light duty controls, general purpose



COIL DATA

Nominal Voltage (DC)	Nominal Coil Current (mA) ($\pm 10\%$ at 20°C)	Coil Resistance (Ω) ($\pm 10\%$ at 20°C)
3	150	20
6	75	80
9	50	180
12	38	320
24	20	1200

Pick-up Voltage	$\leq 75\%$ nominal
Drop-out Voltage	$\geq 10\%$ nominal
Max. Coil Voltage	130% nominal
Coil Consumption	Approx. 0.45W

Contact

Configuration	2C: 2 form C (DPDT)
Material	Silver (Ag) alloy
Rated Load	1: 1A@28VDC / 125VAC 3: 3A@28VDC / 125VAC 5: 5A@28VDC / 125VAC
Max. Carry Current	5A
Max. Switching Voltage	50VDC / 380VAC
Max. Switching Current	5A
Max. Switching Power	90W / 360VA

CHARACTERISTICS

Contact Resistance	Max. 100m Ω
Operate Time	$\leq 10\text{ms}$
Release Time	$\leq 5\text{ms}$
Insulation Resistance	100M Ω (@500VDC)

Greenwich Electronics, Inc.

Dielectric Strength:

- Between coil and contacts 1000VAC - one minute
- Between open contacts 750VAC - one minute
- Between contact sets 750VAC - one minute

Vibration Resistance

10-50Hz, double amplitude 1.5mm

Shock Resistance

Approx. 10g

Ambient Temperature

- Operate -40°C to 85°C
- Storage -40°C to 155°C

Relative Humidity

85%@40°F

Life Expectancy:

- Mechanical 1×10^7
- Electrical 1×10^5 (at rated load)

Weight

Approx. 12 grams

ORDERING INFORMATION

LD1 - 012 - 2C 3 D F
I II III IV V VI

I. Series

LD1

II. Coil Voltage (VDC)

003, 006, 009, 012, 024

III. Contact configuration

2C - 2 form C (DPDT)

IV. Contact Rating

1 - 1A, 3 - 3A, 5 - 5A

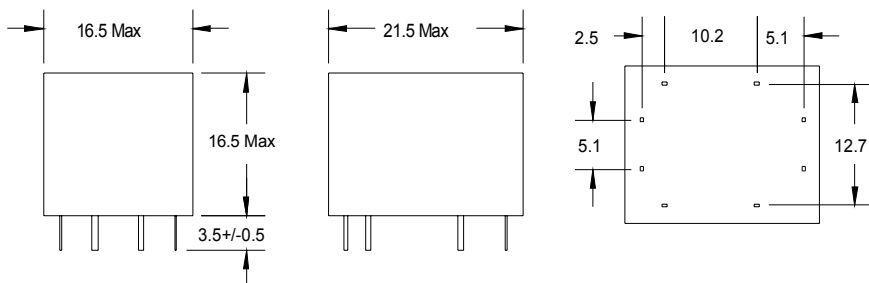
V. Package Type

D - dust cover, S - Sealed

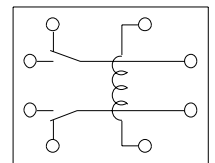
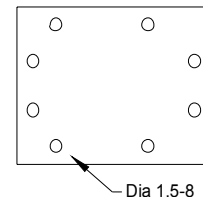
VI. Temperature rating

nil - Class "B", F - Class "F"

LD1 Series Dimensions and Schematics (in mm)



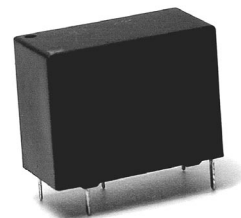
Terminal arrangement and wiring diagram



Greenwich Electronics, Inc.

LD2 Series

- Subminiature package switching 10A
- High sensitivity version available
- High dielectric (4kV)
- Approvals:  pending
- Applications: light duty controls, small appliances, general purpose



COIL DATA

Nominal Voltage (DC)	Nominal Coil Current (mA) (± 10% at 20°C)		Coil Resistance (Ω) (± 10% at 20°C)	
	Std coil	Sensitive coil (H)	Std coil	Sensitive coil (H)
3	150	67	20	45
5	91	40	55	125
6	75	33	80	180
9	50	23	180	400
12	38	17	320	700
18	25	11	720	1600
24	19	9	1280	2800

Pick-up Voltage	≤75% nominal
Drop-out Voltage	≥5% nominal
Max. Coil Voltage	130% nominal
Coil Consumption	Std: Approx. 0.45W, H: Approx. 0.2W (SPST-NO only)

Contact

Configuration	A: 1 form A (SPST-NO), C: 1 form C (SPDT)
Material	Silver (Ag) alloy
Rated Load	NO: 10A@125VAC, 5A 250VAC / 30VAC NC: 3A@30VDC / 250VAC
Max. Carry Current	10A
Max. Switching Voltage	110VDC / 250VAC
Max. Switching Current	10A
Max. Switching Power	150W / 1250VA

Greenwich Electronics, Inc.

CHARACTERISTICS

Contact Resistance	Max. 100m Ω (measured at 1A@240VAC)
Operate Time	≤ 8 ms
Release Time	≤ 5 ms
Insulation Resistance	1000M Ω min. (@500VDC)
Dielectric Strength:	
• Between coil and contacts	4000VAC - 50Hz / one minute
• Between open contacts	1000VAC - 50Hz / one minute
Vibration Resistance	10-55Hz, 1.6mm, double amplitude
Shock Resistance	Min. 10g
Ambient Temperature	
• Operate	-40°C to +70°C
• Storage	-40°C to +125°C
Relative Humidity	95%@35°C
Life Expectancy:	
• Mechanical	1 x 10 ⁷
• Electrical	1 x 10 ⁵ (at rated load)
Weight	Approx. 7 grams

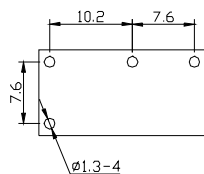
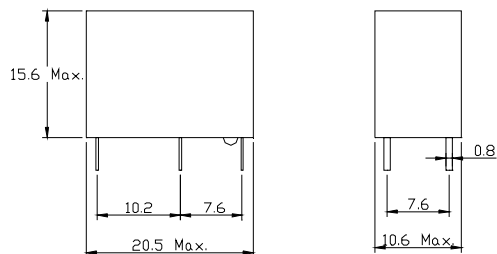
ORDERING INFORMATION

	<u>LD2</u>	-	<u>XXX</u>	-	<u>A</u>	<u>H</u>	<u>S</u>
	I		II		III	IV	V
I.	Series		LD2				
II.	Coil Voltage (VDC)		003, 005, 006, 009, 012, 018, 024				
III.	Contact Configuration		A - 1 form A (SPST-NO), C - 1 form C (SPDT)				
IV.	Coil Sensitivity		nil - Standard, H - High Sensitivity				
V.	Package Type		D - Dust Cover, S - Sealed				

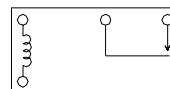
Greenwich Electronics, Inc.

LD2 Series Dimensions and Schematics (in mm)

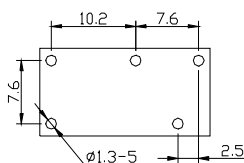
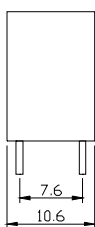
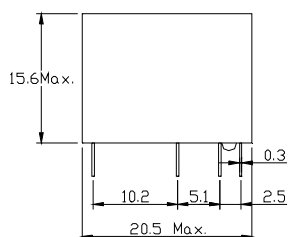
SPST-NO – 1 form A



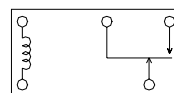
Terminal arrangement
and wiring diagram



SPDT – 1 form C



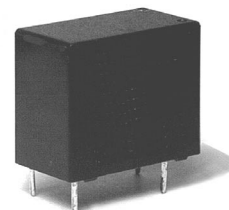
Terminal arrangement
and wiring diagram



Greenwich Electronics, Inc.

LD3 Series

- Subminiature package switching 10A
- High sensitivity version available
- High surge resistance (5kV), 3kV dielectric
- Approvals:  pending
- Applications: light duty controls, small appliances, general purpose



COIL DATA

Nominal Voltage (DC)	Nominal Coil Current (mA) (± 10% at 20°C)		Coil Resistance (Ω) (± 10% at 20°C)	
	Std coil	Sensitive coil (H)	Std coil	Sensitive coil (H)
3	150	67	20	45
5	91	40	55	125
6	75	33	80	180
9	50	23	180	400
12	38	17	320	720
24	19	9	1280	2800
48	9	---	5100	----

Pick-up Voltage	≤75% nominal
Drop-out Voltage	≥5% nominal
Max. Coil Voltage	130% nominal
Coil Consumption	Std: Approx. 0.45W, H: Approx. 0.2W (SPST-NO only)

Contact

Configuration	A: 1 form A (SPST-NO), C: 1 form C (SPDT)
Material	Silver (Ag) alloy
Rated Load	A10: 10A@120VAC, 5A@28VDC / 250VAC Lamp load: 5A@240VAC, 80A inrush AH5/C5: 5A@120VAC, 3A@28VDC / 250VAC
Max. Carry Current	10A
Max. Switching Voltage	30VDC / 277VAC
Max. Switching Current	10A
Max. Switching Power	150W / 1200VA

Greenwich Electronics, Inc.

CHARACTERISTICS

Contact Resistance	Max. 100mΩ
Operate Time	≤8ms
Release Time	≤5ms
Insulation Resistance	100MΩ (@500VDC)
Dielectric Strength:	
• Between coil and contacts	3000VAC - one minute
• Between open contacts	750VAC - one minute
Vibration Resistance	10-55Hz, 1.5mm, double amplitude
Shock Resistance	Min. 10g
Ambient Temperature	
• Operate	-40°C to +70°C
• Storage	-40°C to +125°C
Relative Humidity	45% - 85%
Life Expectancy:	
• Mechanical	1 x 10 ⁷
• Electrical	1 x 10 ⁵ (at rated load)
Weight	Approx. 9 grams

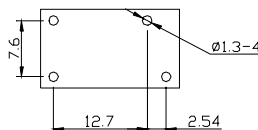
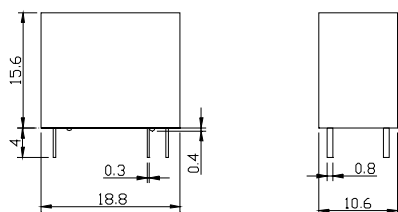
ORDERING INFORMATION

<u>LD3</u>	-	<u>XXX</u>	-	<u>A</u>	<u>H</u>	<u>10</u>	<u>S</u>
I		II		III	IV	V	VI
I.	Series			LD3			
II.	Coil Voltage (VDC)			003, 005, 006, 009, 012, 018, 024			
III.	Contact Configuration			A - 1 form A (SPST-NO), 1 - 1 form C (SPDT)			
IV.	Coil Sensitivity			nil - Standard, H - High Sensitivity			
V.	Contact Rating			5 - 5A, 10 - 10A (SPST-NO std coil only)			
VI.	Package Type			D - Dust Cover, S - Sealed			

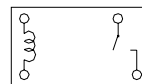
Greenwich Electronics, Inc.

LD3 Series Dimensions and Schematics (in mm)

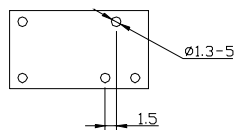
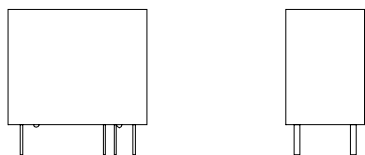
SPST-NO – 1 form A



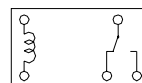
Terminal arrangement
and wiring diagram



SPDT – 1 form C



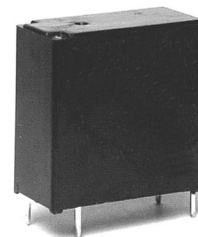
Terminal arrangement
and wiring diagram



Greenwich Electronics, Inc.

LD4 Series

- High inrush capacity
- Excellent surge resistance (4kV)
- High sensitivity coil available
- Approvals: us (E197070)
- Applications: light duty controls, small appliances, office equipment, general purpose



COIL DATA

Nominal Voltage (DC)	Nominal Coil Current (mA) (± 10% at 20°C)		Coil Resistance (Ω) (± 10% at 20°C)	
	Std coil	Sensitive coil (H)	Std coil	Sensitive coil (H)
5	72	50	69	100
6	60	41	100	145
9	40	28	225	325
12	30	21	400	575
14	26	18	544	790
18	20	14	900	1300
24	15	10	1600	2310
48	8	5	6400	9220

Pick-up Voltage	≤70% nominal
Drop-out Voltage	≤5% nominal
Max. Coil Voltage	130% nominal
Coil Consumption	Std: Approx. 0.36W, H: Approx. 0.25W

Contact

Configuration	A: 1 form A (SPST-NO), C: 1 form C (SPDT),
Material	Silver (Ag) alloy
Rated Load	5A@30VDC / 250VAC (resistive) 2.5A@30VDC / 250VAC (inductive)
Max. Carry Current	5A
Max. Switching Voltage	30VDC / 250VAC
Max. Switching Current	5A (resistive), 2.5A (inductive)
Max. Switching Power	150W / 1250VA (resistive), 75W / 625VA (inductive)

Greenwich Electronics, Inc.

CHARACTERISTICS

Contact Resistance	Max. 100m Ω
Operate Time	≤ 10 ms
Release Time	≤ 5 ms
Insulation Resistance	1000M Ω (@500VDC)
Dielectric Strength:	
• Between coil and contacts	2000VAC - 50Hz / one minute
• Between open contacts	750VAC - 50Hz / one minute
Vibration Resistance	10-55Hz, 3.3mm, double amplitude (functional)
Shock Resistance	Min. 10g (functional)
Ambient Temperature	
• Operate	-40 ⁰ C to 70 ⁰ C
• Storage	-40 ⁰ C to 70 ⁰ C
Relative Humidity	45 to 85%
Life Expectancy:	
• Mechanical	1 x 10 ⁷
• Electrical	1 x 10 ⁵ (at rated load)
Weight	Approx. 8 grams

ORDERING INFORMATION

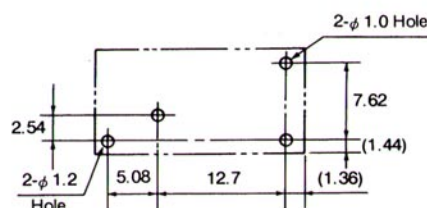
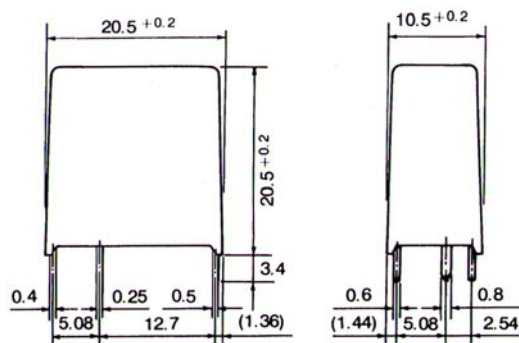
	<u>LD4</u>	-	<u>012</u>	-	<u>C</u>	<u>H</u>	<u>S</u>
	I		II		III	IV	V
I.	Series					LD4	
II.	Coil Voltage (VDC)					005, 006, 009, 012, 014, 018, 024, 048	
III.	Contact Configuration					A - 1 form A (SPST-NO), C - 1 form C (SPDT)	
IV.	Coil Sensitivity					nil - Standard, H - High Sensitivity	
V.	Package Type					S - Sealed	

Greenwich Electronics, Inc.

LD4 Series Dimensions and Schematics (in mm)

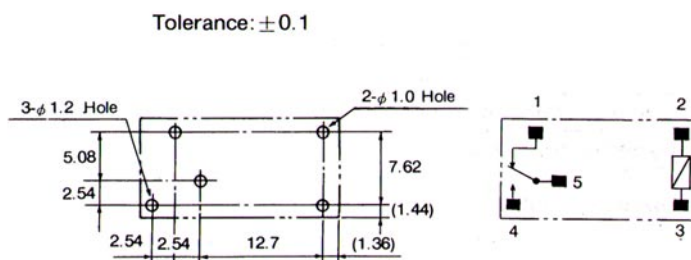
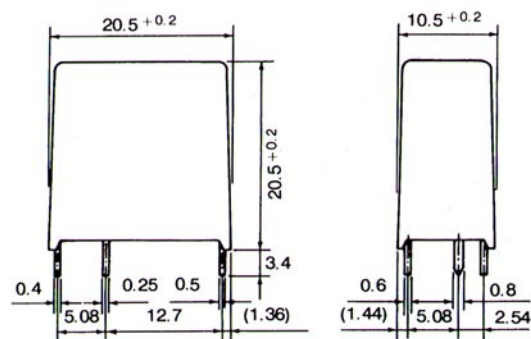
SPST-NO – 1 form A

Terminal arrangement and wiring diagram



Tolerance : ± 0.3

SPDT – 1 form C

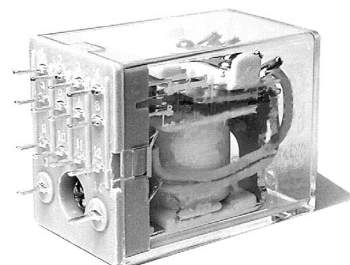


Tolerance: ± 0.1

Greenwich Electronics, Inc.

LD5 Series

- High quality and reliability, low cost
- Standard PCB, plug-in, panel mount types
- AC and DC coils
- SPDT up to 4PDT
- Industry standard footprint
- Approvals:  **us** (E197070)
- Applications: timers, industrial controls and equipment, appliances, vending machines, general purpose



COIL DATA

Nominal Voltage (AC)	Nominal Coil Current (mA) ($\pm 10\%$ at 20°C)	Coil Resistance (Ω) ($\pm 10\%$ at 20°C)	Nominal Voltage (DC)	Nominal Coil Current (mA) ($\pm 10\%$ at 20°C)	Coil Resistance (Ω) ($\pm 10\%$ at 20°C)
6	183	12	6	150	40
12	91	46	12	75	160
24	46	180	24	37	650
50	22	788	48	19	2600
100/110	10/11	3750	100/110	9/10	11000
110/120	8/9	4430			
200/220	5/6	12950			
220/240	4/5	18790			

Pick-up Voltage

DC: $\leq 80\%$ nominal **AC:** $\leq 80\%$ nominal

Drop-out Voltage

DC: $\geq 10\%$ nominal **AC:** $\leq 30\%$ nominal

Max. Coil Voltage

DC/AC: 110% nominal

Coil Consumption
1.0VA

DC: $\sim 0.9\text{W}$ **AC:** 6-24V $\sim 1.1\text{VA}$, 50-240V $\sim$

Contact

Configuration

1C: 1 form C (SPDT), **2C:** 2 form C (DPDT),
3C: 3 form C (3PDT), **4C:** 4 form C (4PDT)

Material

1- 3C: Silver (Ag) alloy

4C: Gold (Au) plated silver (Ag) alloy

Rated Load

1- 3C: 5A@30VDC / 250VAC (resistive)
2A@30VDC / 250VAC (inductive)

4C: 3A@30VDC / 250VAC (resistive)
1.5A@30VDC, 0.8A@250VAC (inductive)

Max. Carry Current

1-3C: 5A, **4C:** 3A

Greenwich Electronics, Inc.

Max. Switching Voltage

30VDC / 250VAC

Max. Switching Current

1-3C: 5A, **4C:** 3A

Max. Switching Power

1-3C: Resistive - 150W / 1250VA, Inductive - 60W, 500VA

4C: Resistive - 90W / 750VA, Inductive - 45W, 200VA

CHARACTERISTICS

Contact Resistance

Max. 100mΩ

Operate Time

≤20ms

Release Time

≤20ms

Insulation Resistance

100MΩ (@500VDC)

Dielectric Strength:

- Between coil and contacts 1500VAC - one minute
- Between open contacts 750VAC - one minute
- Between contact sets 750VAC - one minute

Vibration Resistance

6g, 10-55Hz, 1.0mm, double amplitude (functional)

Shock Resistance

Min. 20g (functional)

Ambient Temperature

- Operate -40°C to 70°C
- Storage -40°C to 70°C

Relative Humidity

45 to 85%

Life Expectancy:

- Mechanical 1×10^7
- Electrical 2×10^5 (at rated load)

Weight

Approx. 35 grams (package dependent)

ORDERING INFORMATION

LD4 - 048D - 3C TM D
I II III IV V

I. Series

LD4

II. Coil Voltage (VDC)

DC: **006, 012, 024, 048, 100/110**

AC: **006, 012, 024, 050, 100/110, 110/120, 200/220, 220/240**

D - DC, **A** - AC

III. Contact Configuration

1C - 1 form C (SPST), **2C** - 1 form C (DPDT)

3C - 3 form C (3PDT), **4C** - 4 form C (4PDT)

IV. Mounting Style

PC - PCB, **PL** - Plug-in, **TM** - Top (flange) mount

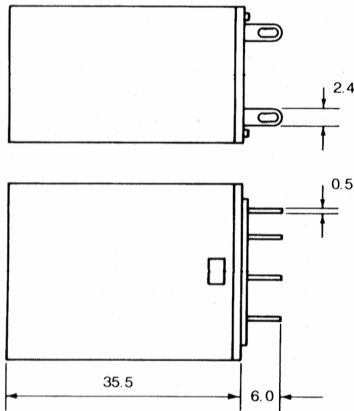
V. LED Option

nil - no LED, **D** - LED

Greenwich Electronics, Inc.

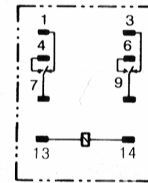
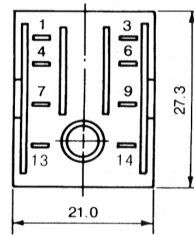
LD5 Series PL type continued

DPDT –
2 form C

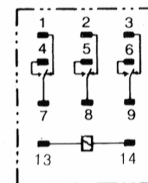
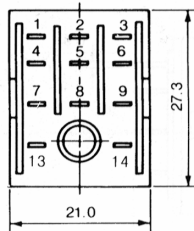
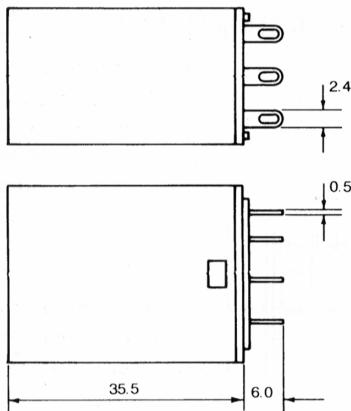


Tolerance : ± 0.3

Terminal arrangement and wiring diagram



3PDT –
3 form C



4PDT –
4 form C

