

## Main Feature

1. Slim size(28.0 x 5.0 x 15.0mm).
2. Wide switching capacity 100mA/12VDC~8A/250VAC.
3. Sensitive coil 170mW.
4. 5kV coil-contact, 6 / 8mm clearance/creepage, NO version with 8 / 8mm clearance/creepage on request.
5. Light weight Approx.6g.
6. Reinforced insulation(protection class II).
7. Allows high function-/packing density.
8. Halogen Free series is available.

## Contact Rating

Load Type	LR (DM)	LR (D)
Rated Load (Resistive)	8A 277VAC	8A 277VAC
	8A 30VDC	8A 30VDC
Rated Carrying Current	8A	8A
Max. Allowable Voltage	AC 400V	AC 400V
	DC 30V	DC 30V
Max. Allowable Current	8A	8A
Max. Allowable Power Force	2000VA	2000VA
	240W	240W
Contact Material	Ag Alloy	Ag Alloy
Contact Form	SPST	SPDT

## Application

PLC, Factory Machine, Timer / Counter, Temperature Controller, Measuring Instrument, Testing Instrument, OA Equipments...etc.

## Performance (at Initial Value)

- Contact Resistance ..... 100mΩ Max.@1A,6VDC
- Operate Time..... 8 mSec. Max.
- Release Time ..... 4 mSec. Max.
- Dielectric Strength:
  - Between Coil & Contact.....5,000VAC at 50/60 Hz for one minute
  - Between Contacts..... 1,000VAC at 50/60 Hz for one minute
- Surge Resistance ..... 6,000V (between coil & Contact 1.2 / 50μSec.)
- Insulation Resistance ..... 100 MegaΩ Min. at 500VDC.
- Max. On/Off Switching:
  - Electrical ..... 6 Cycles per Minute.
  - Mechanical..... 180 Cycles per Minute.

- Temperature Range ..... -40~85°C
- Humidity Range..... 45~85% RH.
- Temperature Range ..... 40°C Max
- Vibration :
  - Endurance..... 10 to 55 Hz dual Amplitude width 1.5mm
  - Error Operation ..... 10 to 55 Hz dual Amplitude width 1.0mm
- Shock:
  - Endurance..... 1,000 m/S<sup>2</sup>
  - Error Operation..... 100 m/S<sup>2</sup>
- Life Expectancy :
  - Mechanical ..... 5x10<sup>6</sup> Operations at No Load condition.
  - Electrical.....(NO: 5x10<sup>4</sup>,NC:3x10<sup>4</sup>) Operations at Rated Resistive Load.
- Contact Material ..... Ag Alloy.
- Weight ..... About 6 g.

## Safety Standard & Its File Number

- UL & C-UL ..... E141060 & E175730
- VDE ..... 40029874

## Coil Specification (at 20 °C)

Coil Sensitivity	Nominal Voltage (VDC)	Nominal Current (mA)	Coil Resistance ( ±10%)	Power Consumption (W)	Pull-In Voltage (VDC)	Drop-Out Voltage (VDC)	Maximum Allowable Voltage (VDC)
LR	3	56.6	53	Abt. 0.17	70% Maximum	5% Minimum	150%
	4.5	37	121				
	5	34	147				
	6	28.3	211				
	9	18.8	476				
	12	14.2	847				
	15	11.3	1,323				
	18	9.4	1,905				
	24	7.1	3,388				
	48	4.5	10,617	Abt. 0.217			
60	3.6	16,590					

## Ordering Information

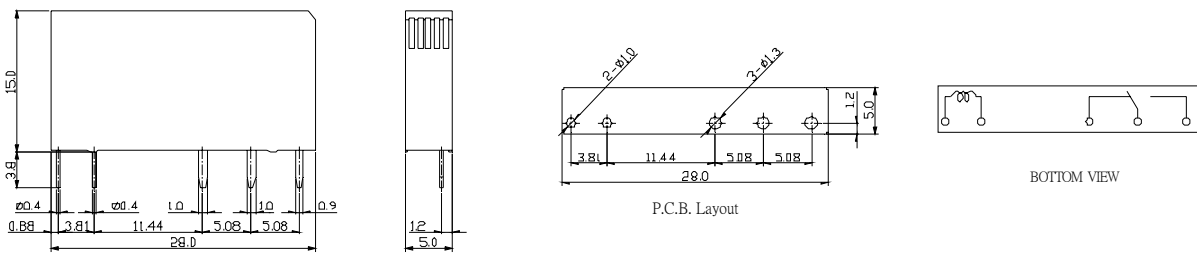
LR - SH - 1 12 D M N - L F	Insulation System:	Nil: Standard Class F: F Class
	Operation function:	Nil: Vertical Mounting L: Level Mounting
	Contact Material:	Nil: AgNi N: AgSnO2 S: AgSnO2 Gilded
	Contact Form:	Nil: One Form C M: One Form A
	Coil Type:	D: Standard DC Coil
	Coil Voltage:	03: 3V, 04: 4.5V, 05: 5V, 06: 6V, 09: 9V, 12: 12V, 15: 15V, 18: 18V, 24: 24V, 48: 48V, 60: 60V
	Number of Pole:	1: One Pole
	Type of Sealing:	SS: RT II Flux Proofed Relays SH: RT III Wash Tight Relays
	Type:	LR

## Classification

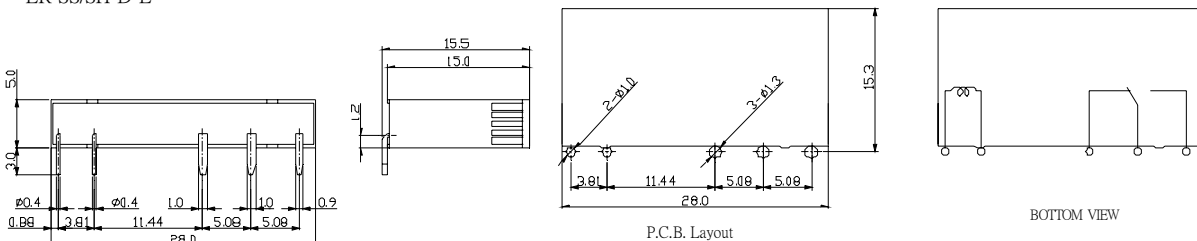
Model	LR			
Coil Type	Standard DC Coil			
Contact Form	1C		1A	
Flux Proofed Relays	LR-SS-1□□D/F	LR-SS-1□□D-L/F	LR-SS-1□□DM/F	LR-SS-1□□DM-L/F
Wash Tight Relays	LR-SH-1□□D/F	LR-SH-1□□D-L/F	LR-SH-1□□DM/F	LR-SH-1□□DM-L/F

Dimension (≤ 5mm±0.2mm, > 5mm±0.3mm, the tolerance of PCB thru hole: +0.1mm)

LR-SS/SH-D



LR-SS/SH-D-L



# LR ( Performance Comparison List )

Supplier		GOODSKY	MILLIONSPT	Finder	SONG CHUAN	SCHRACK	TYCO	
Item		LR	H400	34.51	882	SNR	V23092	
Coil Type		DVC	DCV	DCV	DCV	DCV	DCV	
Contact Specs	Contact Configuration	1a ,1b,1c	1a, 1b, 1c	1c	1a, 1c	1a, 1c	1a, 1b, 1c	
	Contact Material	AgSnO <sub>2</sub>	AgSnO <sub>2</sub>	AgNi/AgSnO <sub>2</sub>	AgSnO <sub>2</sub>	AgSnO <sub>2</sub> /AgNi	AgSnO <sub>2</sub>	
	Contact Rating	8A /250VAC 8A 30VDC	6A/250VAC	6A/250VAC 6A/30VDC 0.2A/110VDC 0.12A/220VDC	6A/240VAC NO: 8A/240VAC NC: 6A/240VAC	5A/250VAC 6A/250VAC 2A/250VAC Cosφ =0.4 3A/250VAC Cosφ =0.4 1A/24VDC L/R=48mS	6A/250VAC	
	Max. Allowable Current	8A	6A	6A	8A/6A	6A	6A	
	Max. Allowable Voltage	380VAC / 120 VDC	400VAC/300VDC	400VAC	277VAC/250VAC	440VAC/250VAC	400VAC/300VDC	
Coil Specs	Nominal Voltage	5,6,9,12,18,24,48 ,60 VDC	4.5, 6, 12, 18, 24, 48	5, 12, 24, 48, 60	3, 4.5, 5, 9, 12, 18, 24, 48, 60	5, 12, 24, 48	5, 12, 24, 48	
	Pull-In Voltage %	80%	66%	70%	75%	70%	70%	
	Drop-Out Voltage %	5%	5%	5%	5%	5%	10%	
	Power Consumption	0.22W	0.17W	0.17W	S = 0.21W	0.17W	0.17W	
	Max. Allowable Voltage	135%	235%	150%	160%	223%	-	
Performance	Contact Resistance	100mΩ	100mΩ	-	100mΩ	-	100mΩ	
	Operate Time	12ms	8mS	5mS	10mS	5mS	5mS	
	Release Time	8ms	4mS	3mS	5mS	2.5mS	2.5mS	
	Max. On/Off Switching:	Mechanical	300 / Min	180 ops. /min	-	7,200 ops. /h	20 ops. /Sec	1,200 ops. /min
		Electrical	6 / Min	6 ops. /min	-	360 ops. /h	6 ops. /min	6 ops. /min
	(AC) Dielectric Strength	I/O	4000V	4,000V	4,000V	4,000V	4,000V	4,000V
		O/O	1000V	1,000V	1,000V	1,000V	1,000V	1,000V
	Vibration	Endurance	100m/S <sup>2</sup>	10~55Hz 1.0mm	10~55Hz 1.0mm	10~55Hz 1.0mm	-	-
		Error Operation	100m/S <sup>2</sup>	10~55Hz 1.0mm	10~55Hz 1.0mm	10~55Hz 1.0mm	-	-
	Life Expectancy	Mechanical	1x10 <sup>7</sup>	5x10 <sup>4</sup>	10x10 <sup>6</sup>	30x10 <sup>6</sup>	10x10 <sup>6</sup>	-
		Electrical	1x10 <sup>5</sup>	NO: 5x10 <sup>4</sup> NC: 3x10 <sup>4</sup>	60x10 <sup>3</sup>	10x10 <sup>3</sup>	7x10 <sup>4</sup>	-
	Temperature Range	-40~85°C	-40~+85°C	-40~+85°C	-40~+85°C	-40~+85°C	-40~+85°C	-40~+85°C
	Humidity Range	40~85%RH	5%~85%RH	-	-	-	-	20%~85% RH
Weight	11g	4g	-	6g	6g	6g	6g	
Safety Standard	VDE, CUL	UL, CUL, VDE	GOST, CUL, VDE	UL, CUL, VDE	CUL, VDE	UL, CSA, VDE, SEMKO, SWISS		
Dimension	Dimension	30x10x10.5	28.2x5.0x15.0	28.0x5.0x15.0	28.0x5.0x15.0	28.0x5.0x15.0	28.0x5.0x15.0	
Terminal Type	Pin(DIP)	-	○	○	○	○	○	
	90°Pin(SMD)	-	○	○	-	○	-	