

LITROL™

## Relay Control Module

for integrated operation of lighting ;  
with LONMARK Association-Certified device

## RCM-2L



- 2-channel latched relay output module
- Switching relay contacts for lighting control
- Auxiliary contact for indicating of the main contact
- Maintain current status after power failure
- Simple installation – DIN rail mounting device
- LONMARK Association-Certified device

### Application

The Relay Control Module has Lamp Actuator Object to control lighting load up to 300VAC. Group and Scene functions provide versatile way for the lighting applications.

### Technical data

Power requirements	Relay Operating voltage	AC/DC 24V (Polarity insensitive)
	Power consumption (24V)	Max. 1.5VA
	RCM-2L receives its power via the LONWORKS Network in accordance with specification LPT-10	1 LPUL(Unit Load)
Functions	Max. Switching capacity	AC 300V / 20A
	On/off control of lighting	SPST maintained contact
Interfaces	Interface type	LON (LONMARK)
	Transceiver	LPT-10
	Baud rate	78 kBit/s
Cable connection	Terminals	Screw terminals
	LONWORKS network (Polarity insensitive)	2-wire twisted pair 0.2 ~ 1.0 mm <sup>2</sup>
Hardware	Processor type	TMPN3120FE3M
	Processor clock	5MHz
	Memory	20KB(18K ROM, 2K RAM)
Industry standards	<b>CE</b> conformity to EMC directive	89/336/EEC
	Emission	EN 55011
	Immunity	EN 50082-2
	LONMARK conformance	Guidelines Version 3.2

**LonWorks®  
Interoperability**

LONMARK ® Version 3.2 interoperability

Standard program ID	80:00:72:1E:28:06:04:00
External Interface File	RCM2L_xx.XIF
Plug-In Software	RCM2L_xx.EXE

**Objects**

**Object #0**  
Node object                      Status request support: RQ\_NORMAL for each Object  
Configuration variables for Location String

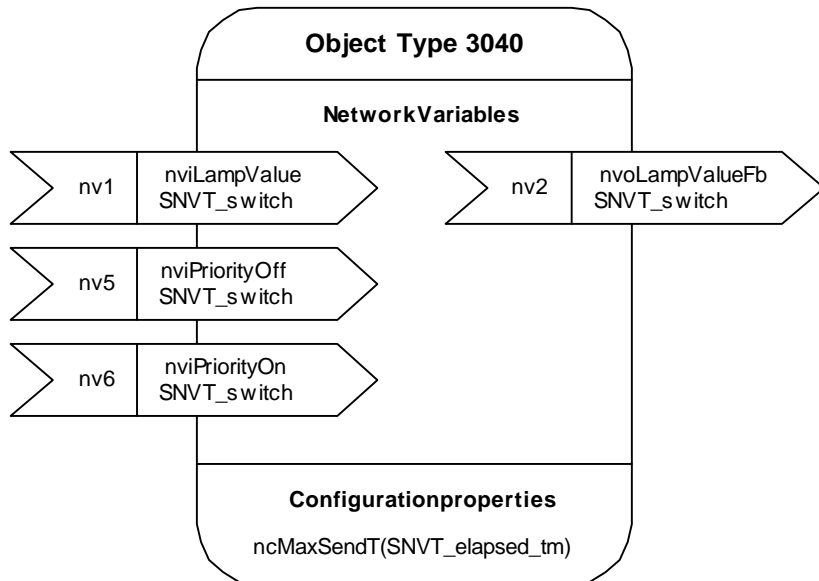
**Object #1 to #2**  
Lamp actuator object            Functional profile 3040 version 1.0  
SNVT\_switch for feedback output and signal input  
Configuration variables for output value and output function

**Object #3**  
Controller object                Functional profile 5 version 1.0  
SNVT\_switch for group feedback input and output

**Object #4 to #5**  
Scene Controller object        Functional profile 3251 version 1.0  
SNVT\_switch for control output, and SNVT\_scene for scene trigger input  
Configuration properties for output value

**Object #1 to #2**

Relay Control (R1, R2)



**Network Variables**

<b>nviLampValue</b>	Switch input. Includes state on/off
<b>nvoLampValueFb</b>	Switch feedback output. State of each relay contact
<b>nviPriorityOff</b>	Off priority input. If the state of nviPriorityOff is 1, nviLampValue is ignored and relay output is Off(40.0 0).
<b>nviPriorityOn</b>	On priority input. If the state of nviPriorityOn is 1, nviLampValue is ignored and the relay output is On(40.0 1).

## Configuration Properties

### ncMaxSendT

Time between subsequent updates.

This configuration property indicates the time that must pass without an update for mode definitions to be automatically retransmitted. A value of 0 indicates that there is no heartbeat. The default value is 0.

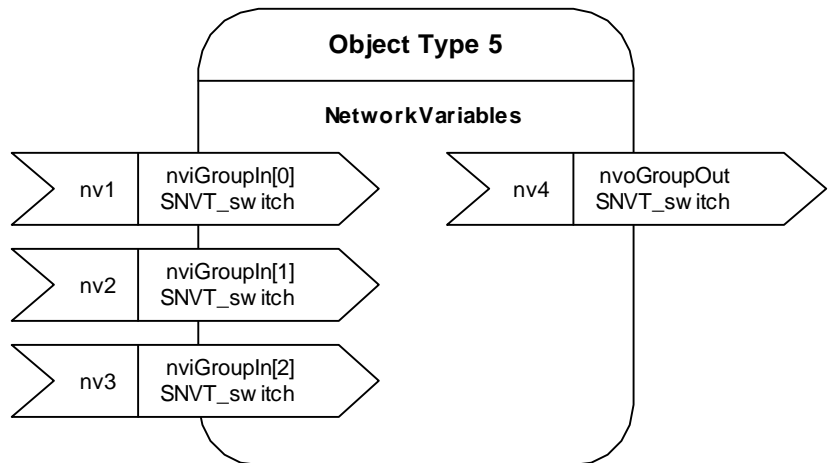
Range 0min 0sec ~ 59min 59sec.

## Control priority

Step	1	2	3	4
Last input	Normal	OFF Priority	ON Priority	Normal
nviLampValue	<b>ON(100 1)</b>	ON(100 1)	ON(100 1)	<b>OFF(0 0)</b>
nviPriorityOff	OFF(0 0)	<b>ON(100 1)</b>	OFF(0 0)	OFF(0 0)
nviPriorityOn	OFF(0 0)	OFF(0 0)	<b>ON(100 1)</b>	OFF(0 0)
nvoLampValueFb (Output)	ON(100 1)	OFF(40.0 0)	ON(40.0 1)	OFF(0 0)

## Object #3

Group Control (DE)



## Network Variables

### nviGroupIn nvoGroupOut

Feedback Input

Feedback Output

100.0 1(On) : All of the nviGroupIn's state is 1(On)

0.0 0(Off) : All of the nviGroupIn's state is 0(Off)

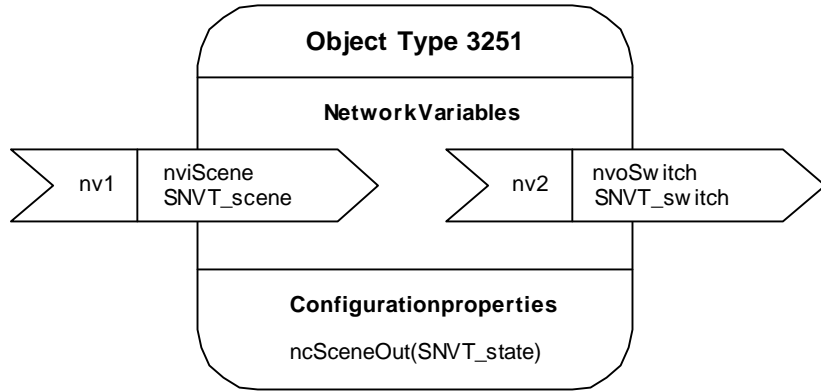
50.0 1or 50.0 0 : The state(1(On), 0(Off)) of nviGroupIns is mixed.

## Status of group

Step	1	2	3	4
Output Status	All ON	Mixed ON	All OFF	Mixed OFF
nviGroupIn[0]	ON(100 1)	ON(100 1)	OFF(0 0)	ON(100 1)
nviGroupIn[1]	ON(100 1)	OFF(0 0)	OFF(0 0)	OFF(0 0)
nviGroupIn[2]	ON(100 1)	ON(100 1)	OFF(0 0)	ON(100 1)
nvoGroupOut	ON(100 1)	ON(50 1)	OFF(0 0)	OFF(50 0)

**Object #4 to #5**

Scene Control (SC1, SC2)



**Network Variables**

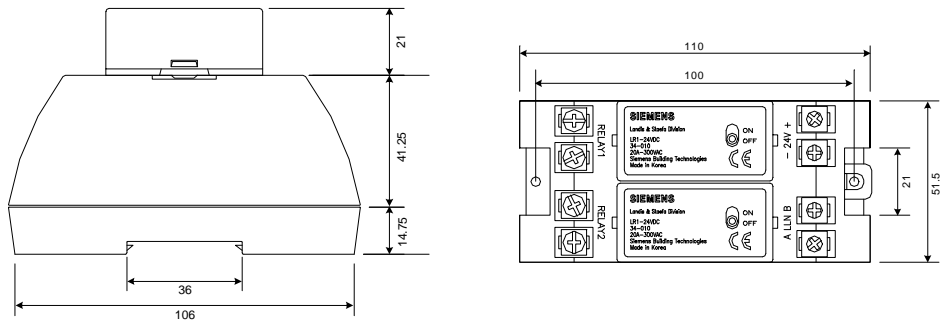
- nviScene**: Scene Input. RECALL function is used to call scene from memory, valid range 1-16.
- nvoSwitch**: Switch output for slave units(Scene), include only off(0%) and on(100%).

**Configuration Properties**

- ncSceneOut**: Save maximum 16 scenes

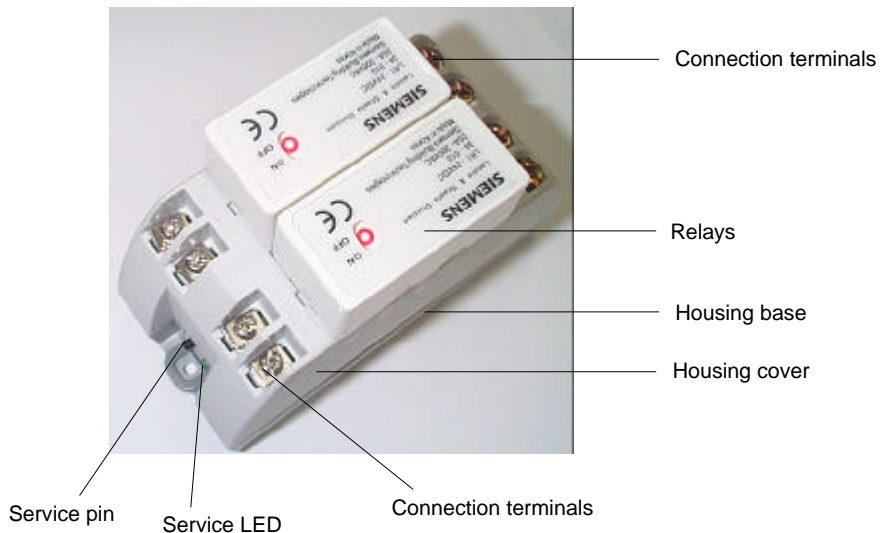
**Dimensions**

All dimensions in mm



**Mechanical design**

The RCM-2L comprises a housing base, a housing cover and latch relays. The device also has a service Pin/LED and connection terminals for 24V AC/DC, NET A/B.



**Service LED**

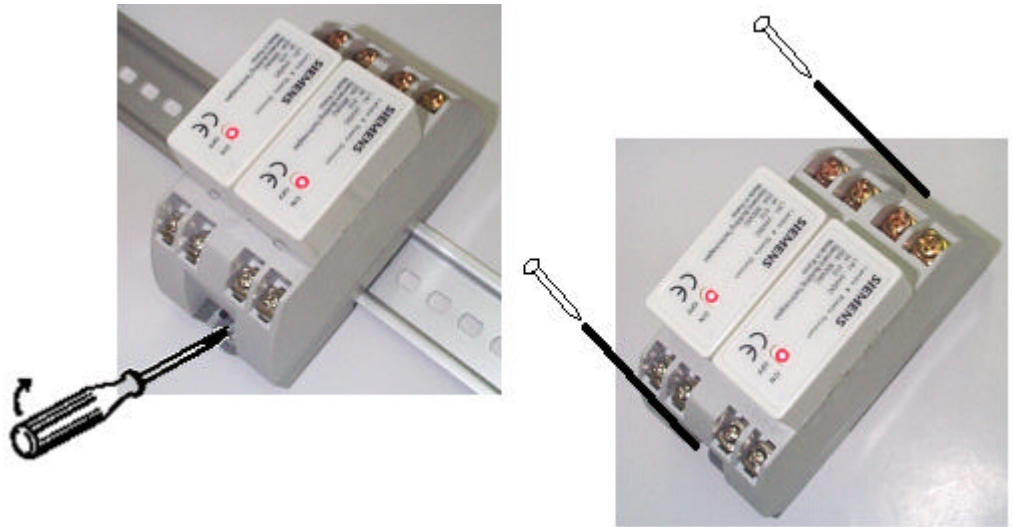
This LED shows the overall status of the LonWorks device. When the device application is not configured, this LED flashes green and off. When the device application is configured, the LED goes off.

**Service pin**

The service pin is used to identify the device at commissioning. When the service pin is pressed, program ID and LonWorks Unique ID(Neuron ID) contained in the device are transmitted to the commissioning or service tools.

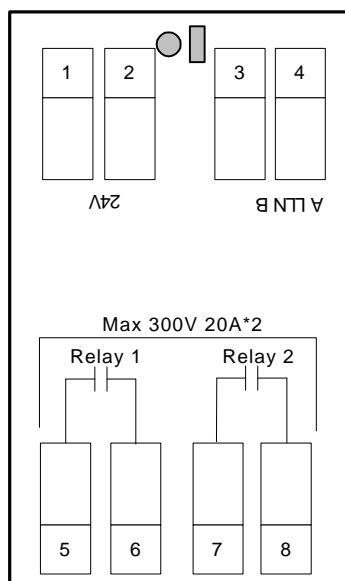
**Mounting notes**

The device can be mounted in any orientation and fixed as follows:



<i>Rail mounting</i>	<i>Direct mounting</i>
The housing base is designed for snap-mounting on DIN rails.(can be released with a screwdriver)	Two drill holes are provided for screw-mounting.

**Connection terminals**



**Power supply for relay outputs**

- 1 AC/DC Max 24V
- 2 AC/DC Max 24V

### LonWorks network

- 3 Data B
- 4 Data A

### Relay outputs

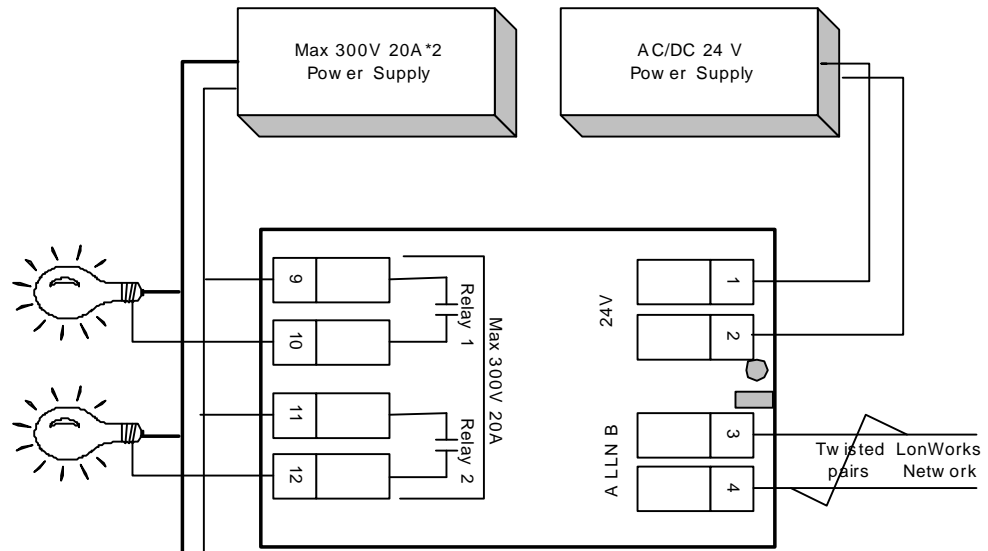
- 5 contact for 6
- 6 Max AC 300V, maintained contact, 20 A
- 7 contact for 8
- 8 Max AC 300V, maintained contact, 20 A



**Warning** Observe the technical data for the relay outputs: Max AC 300V, 20A.

## Connection diagrams

Connection of lighting bulbs, another *LITROL* devices, LonWorks network and power supply.



**Caution** The communication cables must be connected to the screw terminal LLN A and LLN B.

## Installation instructions

1. Mount the RCM-2L in the required location by firmly fixing to the wall with a minimum of two screws or by fixing to the din rail. (See mounting notes)
2. Connect the cable as per connection diagram. (See connection diagrams)
3. Once the connections are completed, you must commission the device using LonWorks commissioning tool. (like as Echelon's LonMaker for Windows or SBT's Robust Manager)
4. Once the device is successfully added in the LonWorks network, you have to check the following.  
"The service LED is indicated by 5 flashes by **Wink** command."
5. If you want to set unconfigured state of the device, press the "Service pin" during 10 second.

## Ordering information

Model	Description	P/N	Remark
RCM-2L	Relay Control Module, 2 Latch Relays, for LonMark	35-110	
LR1-24VDC	Latch Relay	34-010	

\*note : The minimum ordering quantity is 10 pcs for Latch Relays