

LITROL™

Relay Control Module

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

RCM-4L



- 4-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 Power consumption (24V) RCM-4L receives its power via the LONWORKS Network in accordance with specification LPT-10	AC/DC 24V (Polarity insensitive) Max. 1.5VA 2 LPUL(Unit Load)
Functions	Max. Switching capacity On/off control of lighting	AC 300V / 20A SPST maintained contact
Interfaces	Interface type Transceiver Baud rate	LON (LONMARK) LPT-10 78 kBit/s
Cable connection	Terminals LONWORKS Network (Polarity insensitive)	Screw terminals 2-wire twisted pair 0.2 ~ 1.0 mm ²
Hardware	Processor type Processor clock Memory	TMPN3120FE3M 5MHz 20KB(18K ROM, 2K RAM)
Industry standards	CE conformity to EMC directive Emission Immunity LONMARK conformance	89/336/EEC EN 55011 EN 50082-2 Guidelines Version 3.2

LonWorks® Interoperability

LONMARK ® Version 3.2 interoperability

Standard program ID	80:00:72:1E:28:06:04:20
External Interface File	RCM4L_xx.XIF
Plug-In Software	RCM4L_xx.EXE

Objects

Object #0

Node object Status request support: RQ_NORMAL for each Object
Configuration properties for Location String

Object #1 to #4

Lamp Actuator object Functional profile 3040 version 1.0
SNVT_switch for feedback output and signal input
Configuration properties for output value and output function

Object #5

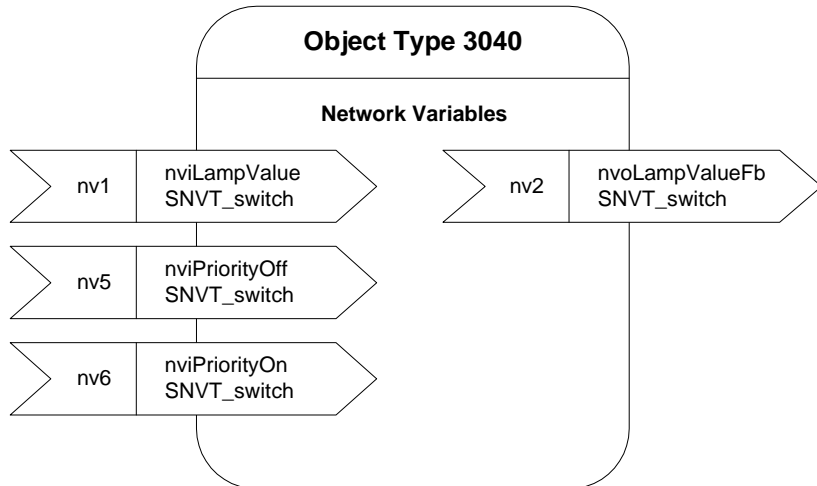
Controller object Functional profile 5 version 1.0
SNVT_switch for group feedback input and output

Object #6 to #9

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 #4

Relay Control (R1, R2, R3, R4)



Network Variables

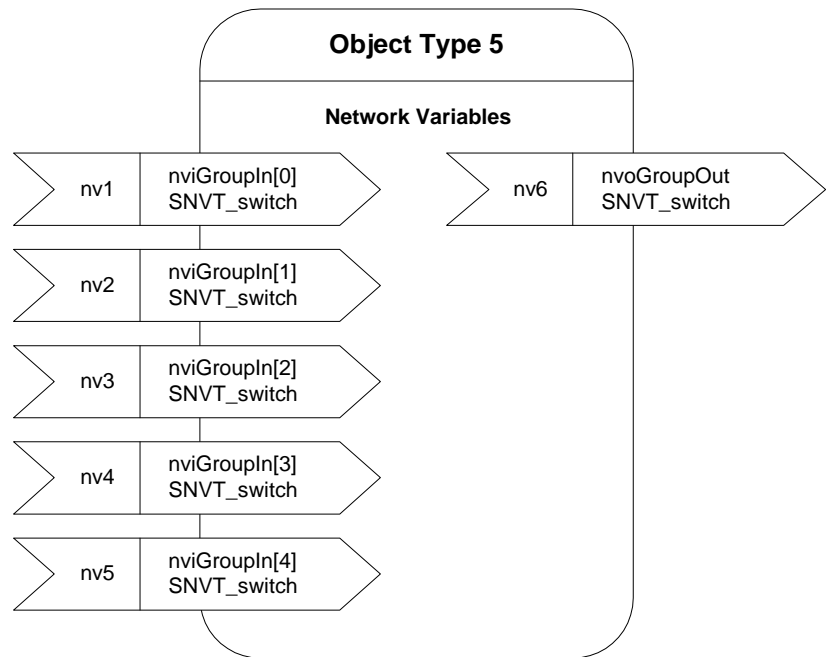
nviLampValue	Switch input. Includes state on/off
nvoLampValueFb	Switch feedback output. State of each relay contact
nviPriorityOff	Off priority input. If the state of nviPriorityOff is 1, nviLampValue is ignored and relay output is Off(40.0 0).
nviPriorityOn	On priority input. If the state of nviPriorityOn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

Control priority

Step	1	2	3	4
Last input	Normal	OFF Priority	ON Priority	Normal
nviLampValue	ON(100 1)	ON(100 1)	ON(100 1)	OFF(0 0)
nviPriorityOff	OFF(0 0)	ON(100 1)	OFF(0 0)	OFF(0 0)
nviPriorityOn	OFF(0 0)	OFF(0 0)	ON(100 1)	OFF(0 0)
nvoLampValueFb (Output)	ON(100 1)	OFF(40 0)	ON(40 1)	OFF(0 0)

Object #5

Group Control (DE)



Network Variables

nviGroupIn
nvoGroupOut

Feedback Input
Feedback Output

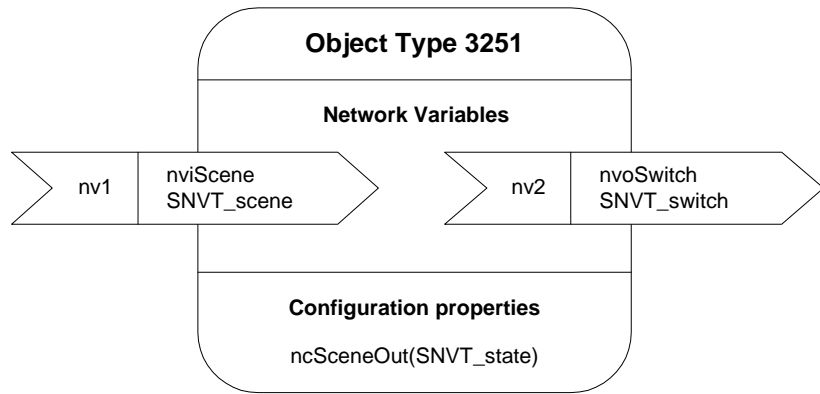
100.0 1(On) : All of the nviGroupIn's state is 1(On)

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)
nviGroupIn[3]	ON(100 1)	OFF(0 0)	OFF(0 0)	ON(100 1)
nviGroupIn[4]	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)



Network Variables

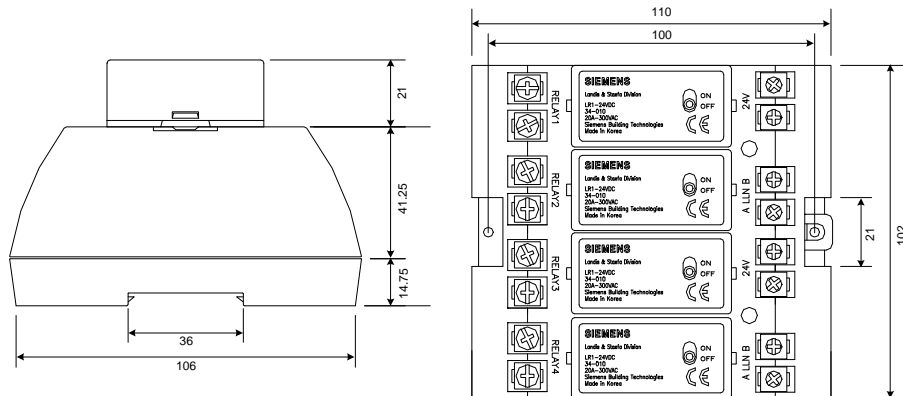
- nviScene** Scene Input. RECALL function is used to call scene from memory, valid range 1-16.
- nvoSwitch** Switch output for slave units(Scene), include only Off(0%) and On(100%).

Configuration Properties

- ncSceneOut** Save maximum 16 scenes

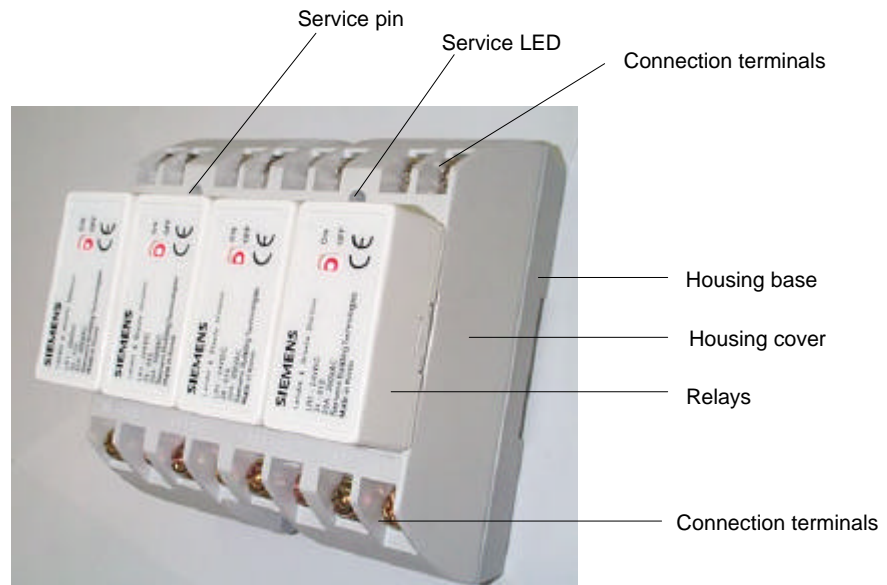
Dimensions

All dimensions in mm



Mechanical design

The RCM-4L 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.

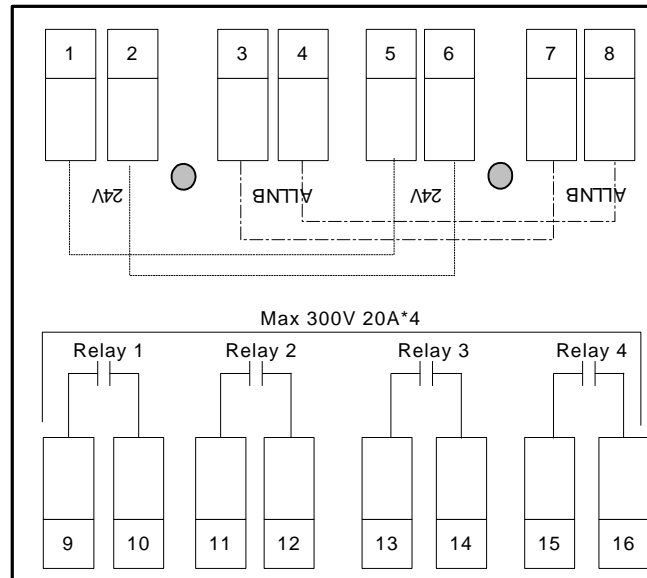
Mounting notes

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
5	AC/DC Max 24V
6	AC/DC Max 24V

LonWorks network

3	Data B
4	Data A
7	Data B
8	Data A

Relay outputs

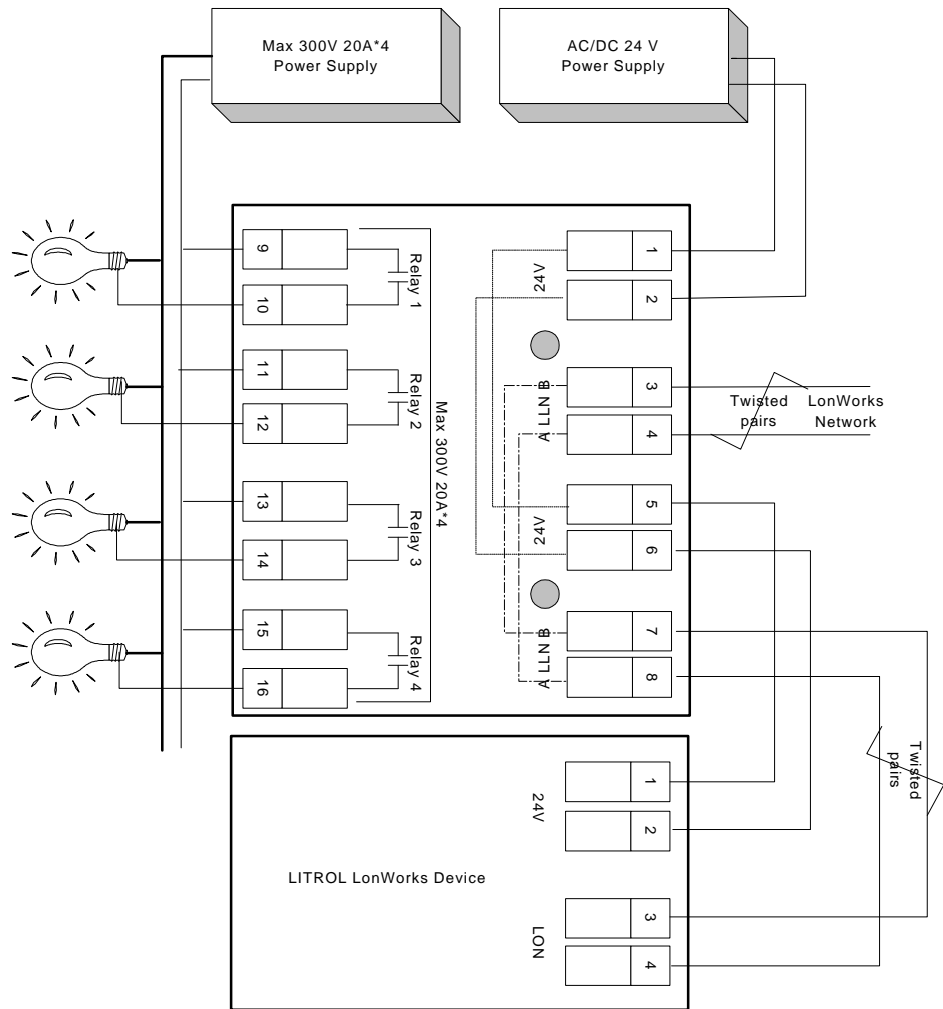
9	contact for 10
10	Max AC 300V, maintained contact, 20 A
11	contact for 12
12	Max AC 300V, maintained contact, 20 A
13	contact for 14
14	Max AC 300V, maintained contact, 20 A
15	contact for 16
16	Max AC 300V, maintained contact, 20 A



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.

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Installation instructions

1. Mount the RCM-4L 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-4L	Relay Control Module, 4 Latch Relays, for LonMark	35-111	
LR1-24VDC	Latch Relay	34-010	
*note : The minimum ordering quantity is 10 pcs for Latch Relays			

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