



## LC-103

1-channel AC Digital Input and 3-channel Relay Output Lighting Control Module

### Introduction

The LC-103 is an easy-to-use lighting control module that requires no specialist skills to install and operate, and no software is needed in order to control the DO channels.

The LC-103 provides 1 channel for digital input (photo couple isolation) and 3 channels for relay output. All output channels are form A type relays, while the input channel is a sink-type using a wire connection. The input channel can directly control a 3-channel relay ON and OFF sequence without requiring a remote host controller. 4 kV ESD protection and 5000 V<sub>rms</sub> intramodule isolation are also provided.

When required, communication with the LC-103 is programmable based on the Modbus RTU protocol, and an added benefit is that node address can be set for Modbus RTU communication via rotary switch.

### System Specifications

Communication	
Interface	RS-485
Format	N, 8, 1
Baud Rate	9600 bps
Protocol	Modbus RTU /DCON
Node Addresses	1~31
Connector	RJ-11
LED Indicator/Display	
Power	1 LED as Power Indicator
EMS Protection	
ESD (IEC 61000-4-2)	±2 kV Contact for Each Terminal
	±4 kV Air for Random Point
EFT (IEC 61000-4-4)	±2 kV for Power
Power Requirements	
Input Voltage Range	10 ~ 30 Vdc
Consumption	0.5 W Max.
Connector	RJ-11
Mechanical	
Dimensions (W x L x H)	52 mm x 98 mm x 27 mm
Installation	Screw Mounting
Environment	
Operating Temperature	-25 ~ +75°C
Storage Temperature	-30 ~ +75°C
Humidity	10 ~ 95% RH, Non-condensing

### Features

- Cost-effective for lighting control
- Power Relay Outputs
- Isolated AC Digital Input
- Tiny form-factor with easy screw mounting
- Made from fire retardant materials (UL94-V0 Level)
- Low power consumption
- Support Modbus and DCON protocol
- Dual RJ-11 connector for fast and easy cabling



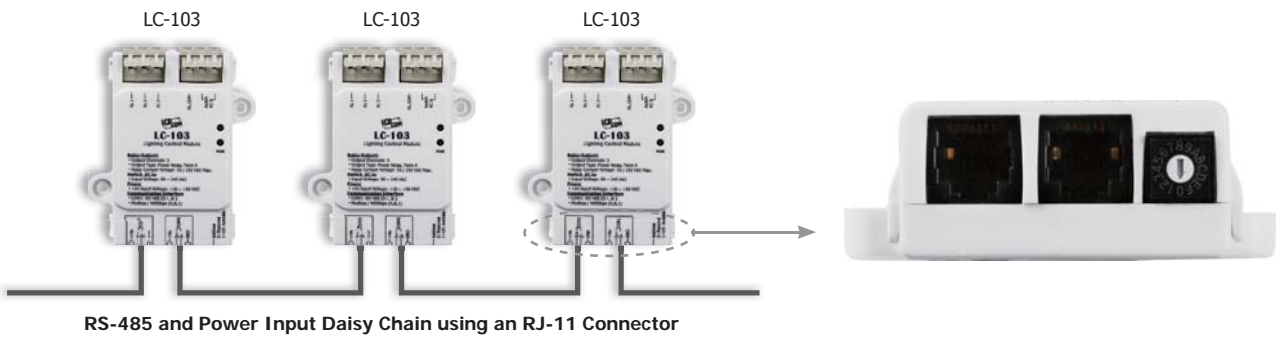
### Applications



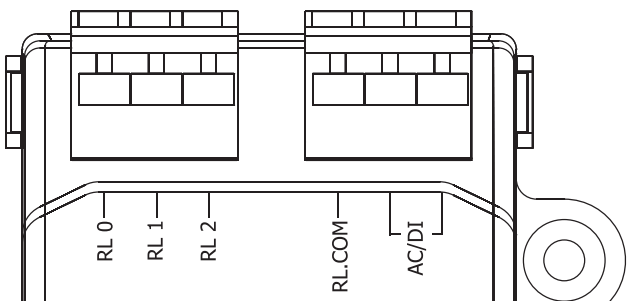
### I/O Specifications

Digital Input	
Input Channels	1
Type	90 ~ 240 V <sub>AC</sub>
On Voltage Level	85 V <sub>AC</sub>
Off Voltage Level	60 V <sub>AC</sub>
Input Impedance	68 KΩ, 1 W
Isolation	5000 V <sub>rms</sub>
Function	Local and Remote Direct Control Relay ON/OFF and Remote Status Monitoring
Relay Output	
Output Channels	3
Type	Power Relay, Form A (SPST N.O.)
Operating Voltage	250 V <sub>AC</sub> or 30 V <sub>DC</sub>
Max. Load Current	5 A
Operating Time	10 ms Max.
Release Time	5 ms Max.
Electrical Life (Resistive load)	100,000 ops
Mechanical Life	20,000,000 ops at no load (300 ops/minute)
Safety Approval	UL/CUL, TÜV
Power-on Value	-
Safe Value	-

Power and communication



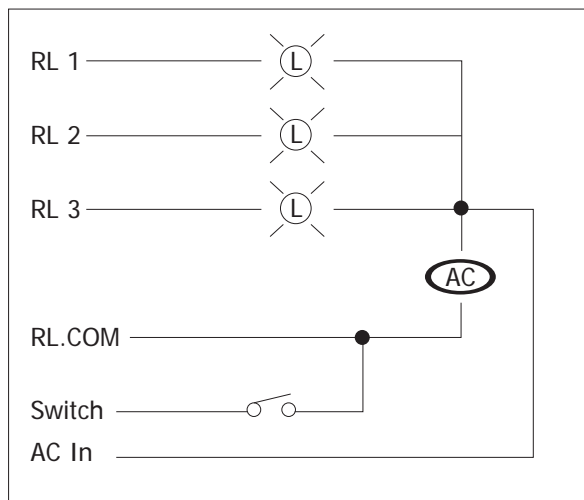
Pin Assignments



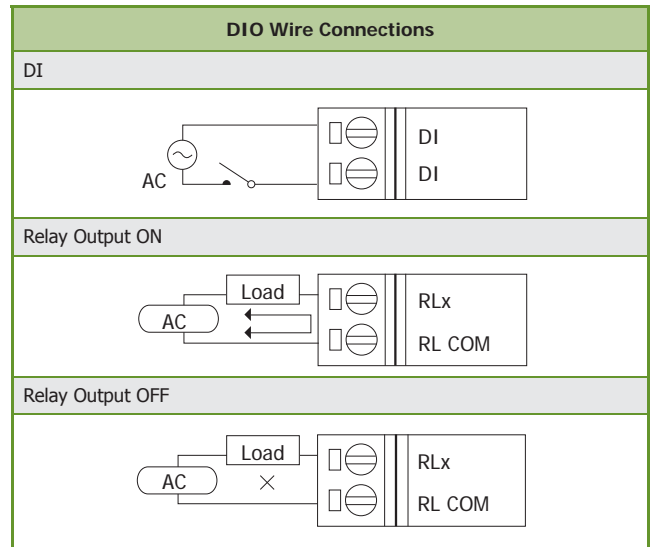
RJ-11 Connector	Pin	Descriptions
	1	+VS Power Input Voltage (+10 Vdc ~ 30 Vdc)
	2	+VS Power Input Voltage (+10 Vdc ~ 30 Vdc)
	3	DATA+
	4	DATA-
	5	GND Ground
	6	GND Ground

Function Diagram

Block Diagram



Wire Connections



Ordering Information

LC-103	1-channel AC Digital Input and 3-channel Relay Output Lighting Control Module
--------	---

Accessories

	tM-7520U CR	RS-232 to RS-485 converter (RoHS)		I-7514U-RJ11 CR	4-channel RS-485 Hub (RoHS)
	tM-7561 CR	USB to RS-485 converter (RoHS)		TPD-280 CR	2.8" Touch HMI device with RS-485 (RoHS)