



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 Vrms 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



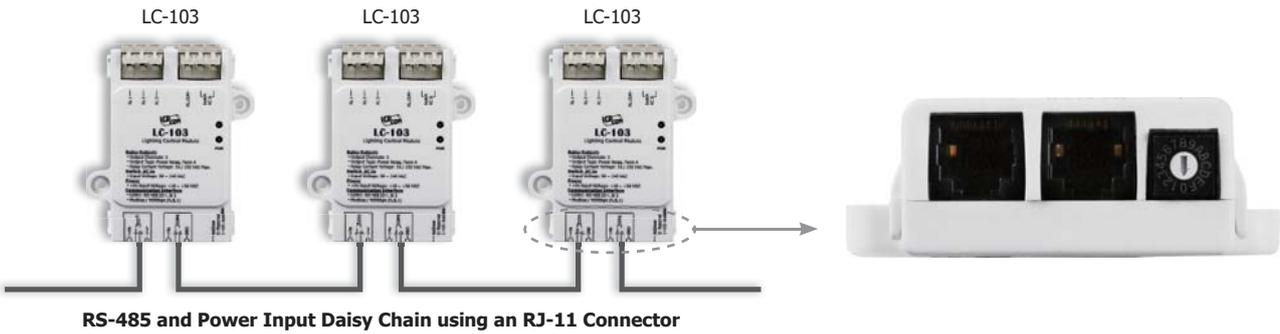
Applications



I/O Specifications

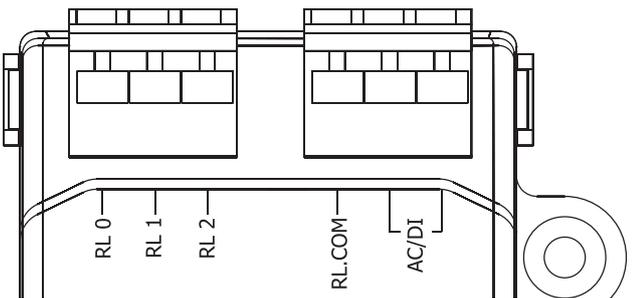
Digital Input	
Input Channels	1
Type	90 ~ 240 VAC
On Voltage Level	85 VAC
Off Voltage Level	60 VAC
Input Impedance	68 KΩ, 1 W
Isolation	5000 Vrms
Function	Local and Remote Direct Control Relay ON/OFF and Remote Status Monitoring
Relay Output	
Output Channels	3
Type	Power Relay, Form A (SPST N.O.)
Operating Voltage	250 VAC or 30 VDC
Max. Load Current	5 A
Operate 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



RS-485 and Power Input Daisy Chain using an RJ-11 Connector

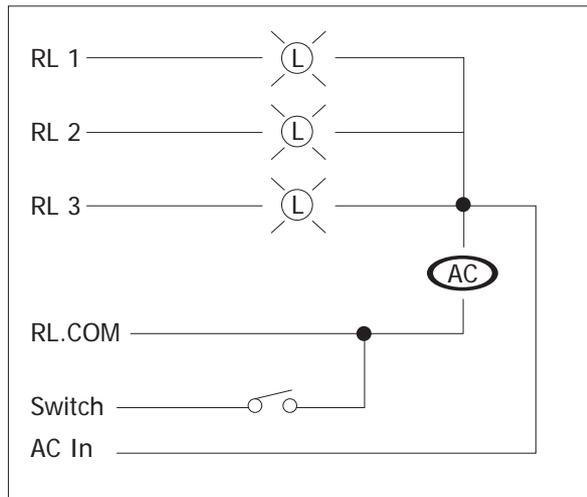
Pin Assignments



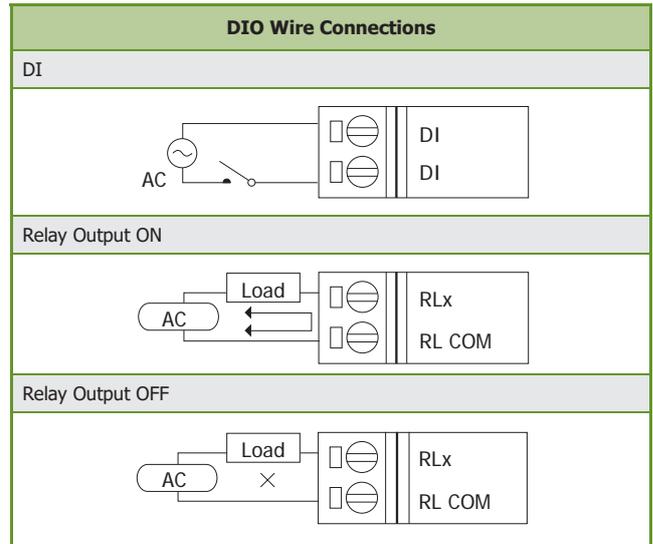
RJ-11 Connector	Pin	Descriptions
	1	+VS Power Input Voltage (+10 V _{DC} ~ 30 V _{DC})
	2	+VS Power Input Voltage (+10 V _{DC} ~ 30 V _{DC})
	3	RS-485 Serial Communication Interface
	4	
	5	Ground
	6	Ground

Function Diagram

Block Diagram



Wire Connections



Ordering Information

LC-103	1-channel AC Digital Input and 1-channel Relay Output Lighting Control Module (screw mount) (RoHS)
LC-101/DIN CR	1-channel AC Digital Input and 1-channel Relay Output Lighting Control Module (DIN Rail mount) (RoHS)
LC-103 CR	1-channel AC Digital Input and 3-channel Relay Output Lighting Control Module (RoHS)
LC-103 CR/DIN CR	1-channel AC Digital Input and 3-channel Relay Output Lighting Control Module (DIN Rail mount) (RoHS)

Accessories

	tM-7520U CR	RS-232 to RS-485 converter (RoHS)		LC-485 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)