LC-101H/LC-102H

1-CH Lighting Control Module with AC Load Current Measurement (1 Relay output with 1 AC AI + 1 AC DI)

2-CH Lighting Control Module with AC Load Current Measurement (2 Relay output with 2 AC AI + 2 AC DI)

Features

- Each lighting circuit can be controlled for on/off through RS-485 communication
- Each lighting circuit can also be controlled for on/off via physical switches
- Remote control via communication and physical switches can be used separately or combined
- The lighting circuit output relay is Form C, allowing for dual-loop designs with physical switches
- The current value on the lighting circuit can be read back via RS-485 communication to determine if any lights are faulty, and whether the lights on the dual-loop are on or off
- The current value on the lighting circuit ranges from 0 to 5 A
- Recommended number of lights that can be connected:
  - Incandescent Lamp: 40 W/ 220 VAC * 6 units
  - LED(Electronic ballast): 40 W/ 220 VAC *8 units

Introduction

LC-101H and LC-102H are lighting control modules designed specifically for smart home applications, with the former being a single-loop and the latter a dual-loop model, both equipped with AC load current measurement capabilities. These modules not only effectively control lighting circuits but also provide real-time monitoring of load current, giving users an intuitive understanding of the lighting system's operational status.

Since the lighting circuits typically use inductive loads, switching can generate strong inrush currents (approximately 10 to 20 times the working current), which may damage the relays within the modules. The LC-101H and LC-102H are equipped with high-power relays that are resistant to inrush currents, allowing them to withstand these surges, prolonging their lifespan and reducing maintenance needs.

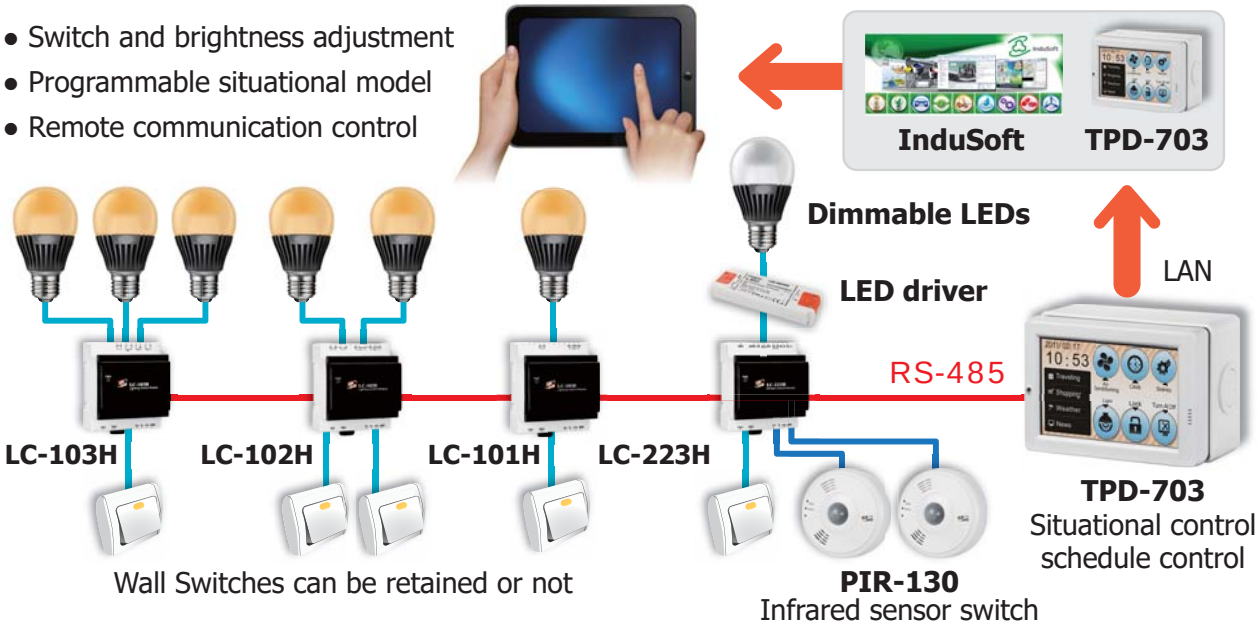
When users turn the lights on or off, the modules can detect the relay's switching state by measuring the load current, ensuring the normal operation of the lighting control system and promptly identifying any issues. Additionally, the relays in these modules utilize a Form C design, supporting dual-loop configurations with physical switches, providing users with greater flexibility and convenience. The current measurement feature also helps users monitor load current and check the relay's switching status, ensuring that the load operates correctly in the lighting circuit and preventing relay sticking.

The LC series lighting control modules are user-friendly, allowing for installation and operation without professional skills, and can control lighting channels without the need for software. When software control is required, programming can be done via the Modbus RTU communication protocol, and the Modbus RTU communication address can be set by hardware.

Applications

Light control

- Switch and brightness adjustment
- Programmable situational model
- Remote communication control



(For example: when 10 lamps are normally connected, the current is 2.2A. When the reading is less than 2.2A, it can be judged that there is a lamp failure and it needs to be repaired)

Specifications

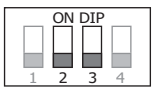
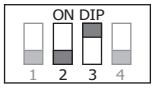
Model	LC-101H	LC-102H
Software		
Function	Local and Remote Direct Control Relay ON/OFF and Remote Status Monitoring	
EMS Protection		
ESD (IEC 61000-4-2)	±4 kV Contact for each Terminal	
EFT (IEC 61000-4-4)	±4 kV for Power	
SURGE (IEC 61000-4-5)	±2 kV for Power	
LED Indicators		
Status	1 LED as Power Indicator	
Digital Input		
Channels	1	2
Type	Wet Contact, 90 ~ 240 VAC	
ON Voltage Level	65 VAC	
OFF Voltage Level	56 VAC	
Input Impedance	68 KΩ, 2W	
Isolation	3000 VDC	
Relay Output		
Channels	1	2
Type	Power Relay, Form C (SPDT N.O+N.C..)	
Contact Rating	30 A @ 250 VAC	
AC Load Current Measurement	Yes, 0 ~ 5 A range with 3% of FSR Accuracy.	
Operate Time	15 ms Max	
Release Time	22 ms Max.	
Electrical Endurance	100,000 ops.	
Mechanical Endurance	10,000,000 ops	
Power on Value	Yes	
Safe Value	Yes	
Application Specification	(1) Incandescent Lamp: 40W/ 220 VAC * 5 Sets (2) LED(Electronic ballast): 40W/ 220 VAC *8 Sets	
COM Ports		
Ports	1 x RS-485	
Baud Rate	Hardware Configuration: Fixed 9600 bps Software Configuration: 1200 to 115200 bps	
Data Format	N,8,1/O,8,1/E,8,1/N,8,2	
Protocol	Modbus RTU/DCON	
Node Address	32 to 63 for hardware configuration	
Power		
Reverse Polarity Protection	Yes	
Input Range	10 ~ 30 VDC	
Consumption	1.9 W Max.	2.8 W Max.
Mechanical		
Dimensions (mm)	72 × 95 ×57 (W × L × H)	
Installation	DIN-Rail	
Environment		
Operating Temperature	-25 ~ +75°C	
Storage Temperature	-30 ~ +75°C	
Humidity	10 ~ 95% RH, Non-condensing	

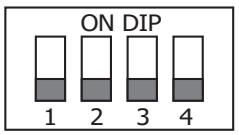
LC-10xH comparison table

Model	LC-101H	LC-102H	LC-103H
Digital Input	1	2	1
Relay Output	1	2	3
Max. Load Current	30 A (Resistive Load, recommend working current is 1.0 A with 220 VAC)		16 A (Resistive Load, recommend working current is 1.5 A with 220 VAC)
Max. Lighting Loads	(1) Incandescent Lamp: 6 units (2) LED (Electronic ballast): 8 units		(1) Incandescent Lamp: 8 units (2) LED (Electronic ballast): 10 units
Load Current Readback	Yes.		No
AC Load Current Measurement	0 ~ 5 A		No
Function	Local and Remote Direct Control Relay ON/OFF and Remote Status Monitoring		

Pin Assignments

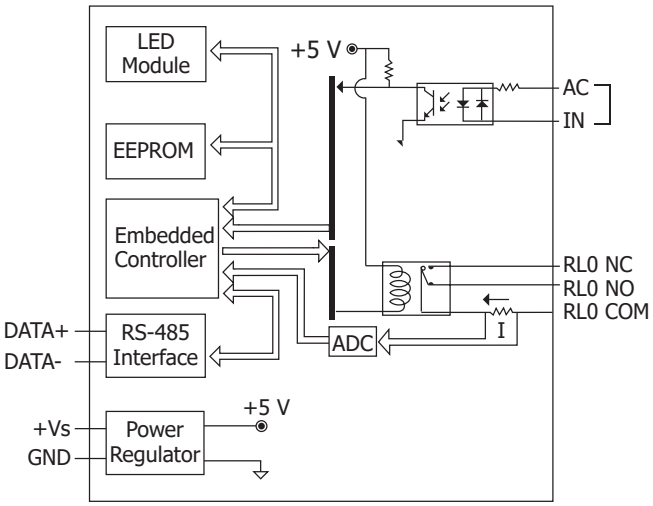
Configuration

SW1		
		0 to F for Address 32-47 (Node Address - Low)
		0 to F for Address 48 -63 (Node Address - High)

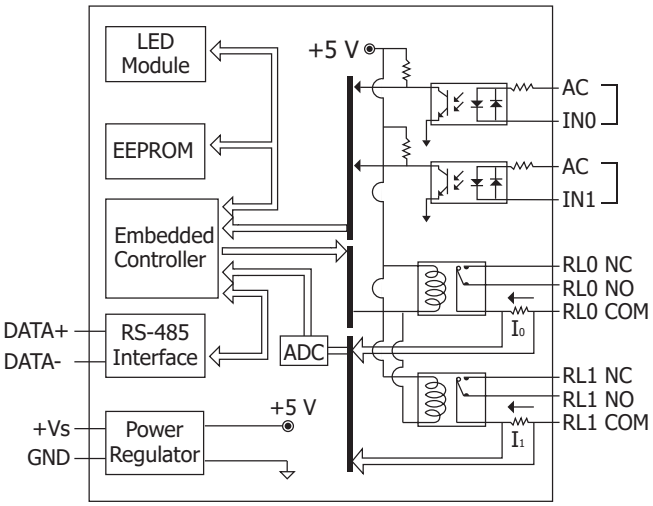
SW2			
	1	ON	DCON Protocol
		OFF	Modbus RTU Protocol
	2	ON	Software Configuration
		OFF	Hardware Configuration
	3	ON	Node Address (High)
		OFF	Node Address (Low)
	4	ON	INIT Mode
		OFF	Normal Mode

Internal I/O Structure

LC-101H



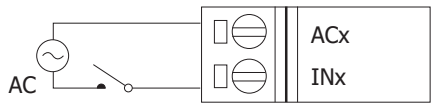
LC-102H



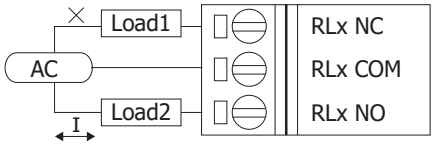
Wire Connections

DIO Wire Connections

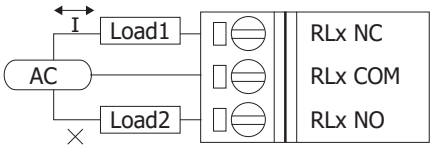
DI



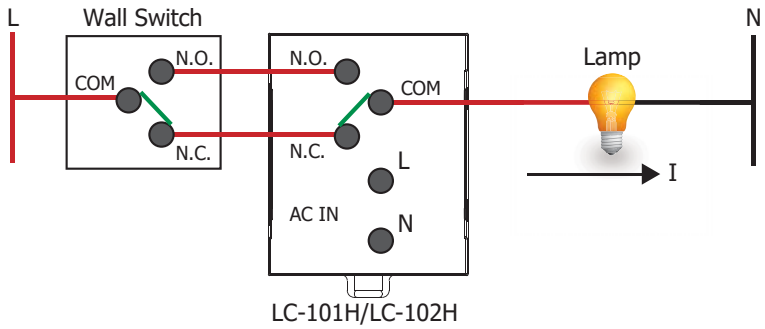
Relay Output ON



Relay Output OFF



Wiring Application



Ordering Information

LC-101H CR	1-CH Lighting Control Module with AC Load Current Measurement (1 Relay output with 1 AC AI + 1 AC DI) (RoHS)
LC-102H CR	2-CH Lighting Control Module with AC Load Current Measurement (2 Relay output with 2 AC AI + 2 AC DI) (RoHS)

Accessories

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