



LC-131

3-channel Digital Input with Open/Short Circuit Detection and 1-channel Relay Output Module

Introduction

The LC-131 is an easy-to-use digital input module, equipped with 3-channel digital input, functions open/short circuit detection, and 1-channel relay output. The digital input type is dry contact, meaning that wiring is easy. There are two methods of controlling the relay outputs, either directly from the digital input or via a remote host. Settings, such as communication protocol and node address can be configured either via hardware or via software, depending on the situation. The module has also passed + / -4 kV ESD reliability test, and is designed to operate in harsh environments.

System Specifications

Communication	
Interface	RS-485
Format	N, 8, 1
Baud Rate	1200 ~ 115200 bps
Protocol	DCON, Modbus RTU
Node Addresses	96 ~ 127
Connector	RJ-11
LED Indicators	
Power	1 LED as Power Indicator
EMS Protection	
ESD (IEC 61000-4-2)	+/-4 kV contact for each Terminal +/-8 kV Air for Random Point
EFT (IEC 61000-4-4)	+/-4 kV for Power Line
Power	
Reverse Polarity Protection	Yes
Powered from Terminal Block	Yes, 10 ~ 30 Vdc
Consumption	0.8 W Max.
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 ~ +80°C
Humidity	10 ~ 95% RH, Non-condensing

Features

- Power Relay Output
- Dry Contact Digital Input
- Digital Input With Open/Short Circuit Detection
- +/-4 kV ESD Protection
- Tiny Form Factor with Easy Screw Mounting



Applications



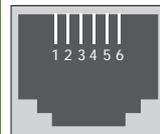
I/O Specifications

Digital Input		
Channels	3	
Type	Dry	
On Level	Close to GND	
Off Level	Open	
Counters	Max. Count	16-bit (65535)
	Max. Input Frequency	100 Hz
	Min. Pulse Width	5 ms
Short Circuit Detection	Yes, optioned external terminal resistance of 1 K Ohms is required	
Relay Output		
Channels	1	
Type	Power Relay, Form A (SPST N.O.)	
Operating Voltage	250 VAC or 30 Vdc	
Max. Load Current	16 A (Res. load)	
Operate Time	15 ms Max.	
Release Time	5 ms Max.	
Mechanical Endurance	10,000,000 OPS	
Electrical Endurance	50,000 OPS	
Power-on and Safe Value	Yes, programmable	

Power and Communication



RS-485 and power input daisy chain using an RJ-11 connector

RJ-11 Connector	Pin	Descriptions
	1	+VS Power Input Voltage (+10 Vdc ~ 30 Vdc)
	2	
	3	DATA+ RS-485 Serial Communication Interface
	4	
	5	GND Ground
	6	



Bottom View

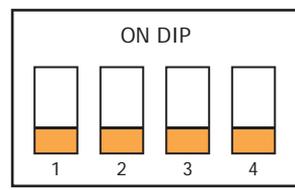
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LC Series

Configuration



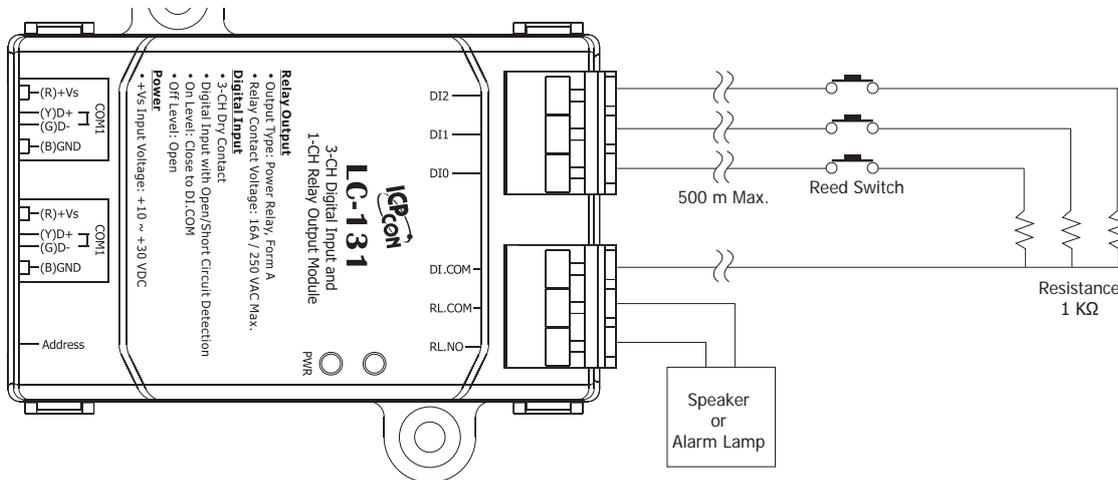
Rear View

DIP Switch Description		
SW1	ON	DCON Protocol
	OFF	Modbus RTU Protocol
SW2	ON	Software Configuration
	OFF	Hardware Configuration
SW3	ON	High Node Address
	OFF	Low Node Address
SW4	ON	INIT Mode
	OFF	Normal Mode



ON DIP

Wire Connections



Ordering Information

LC-131 CR	3-channel Digital Input Module with Open/Short Detection and 1-channel Relay Output (RoHS)
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Accessories

	tM-7520U CR	RS-232 to RS-485 Converter (RoHS)		LC-485 CR	4 Channels RS-485 Active Hub (RoHS)
	tM-7561 CR	USB to RS-485 Converter (RoHS)		TPD-280 CR	2.8" Touch HMI Device with RS-485 (RoHS)