



## LC-221

1-channel Dimmer Control Module

### Introduction

The LC-221 is an easy-to-use dimming ballast control module that requires no specialist skills to install and operate. It provides two methods of controlling the brightness of fluorescent lamps via a dimmer, either via digital input or a host controller. The digital input can directly control the light value from 10% to 100% luminous flux in sequence, without requiring a remote host controller. 4 kV ESD protection and 2500 VDC intra-module isolation are also provided. When required, communication with the LC-221 is programmable based on the Modbus RTU protocol, and an added benefit is that different addresses can be set for Modbus RTU communication via hardware configuration.

### System Specifications

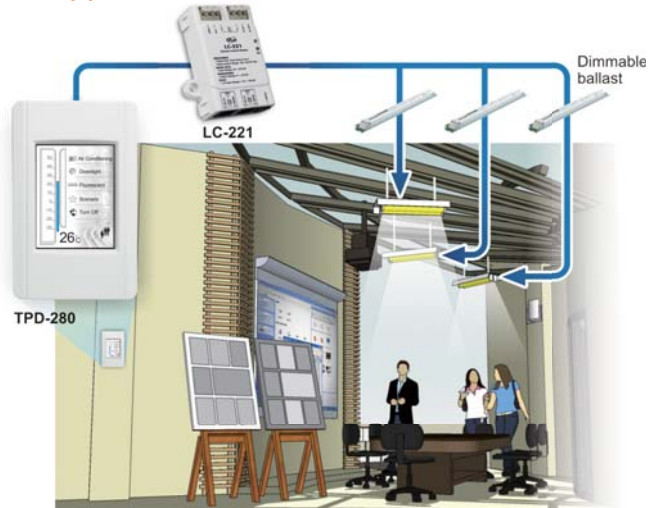
Communication	
Interface	RS-485
Format	N, 8, 1
Baud Rate	1200 ~ 115200 bps
Protocol	DCON, Modbus RTU
Node Addresses	64 ~ 95
Connector	RJ-11
LED Indicators	
Power	1 LED as Power Indicator
Isolation	
Intra-module Isolation, Field-to-Logic	2500 Vdc
EMS Protection	
ESD (IEC 61000-4-2)	±4 kV contact for each Terminal ±4 kV Air for Random Point
EFT (IEC 61000-4-4)	±4 kV for Power
Power	
Reverse Polarity Protection	Yes
Powered from Terminal Block	Yes, 10 ~ 30 Vdc
Consumption	1.4 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
- Isolated AC Digital Input
- Isolated Analog Output For Control Dimming Ballast
- Supports Modbus RTU and DCON Protocols
- 2500 VDC Intra-Module Isolation
- +/-4 kV ESD Protection
- Tiny form-factor with easy screw mounting



### Applications



### I/O Specifications

Analog Output	
Channels	1
Type	0 ~ 20 mA, 4 ~ 20 mA, 0 ~ 10 V
Resolution	12-bit
Accuracy	+/-0.1% of FSR
DA Output Response Time	10 ms
Voltage Output Capability	20 mA
Current Load Resistance	450 Ω
Digital Input	
Channels	1
Type	Wet
On Voltage Level	70 VAC ~ 240 VAC
Off Voltage Level	20 VAC Max.
Input Impedance	68 KΩ, 1 W
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

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	

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

Bottom View

Configuration

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

Rear View

Wire Connections

When the SW1 press less than 1 second	When the SW1 press more than 1 second
ON  OFF 	Light  Dark

LC-221

AGND, Vout, DI+, Switch AC In, DI-, RL.NO, RL.COM

Dimmable Ballast

Lamp

Ordering Information

LC-221 CR	1-channel Dimmer Control Module (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)