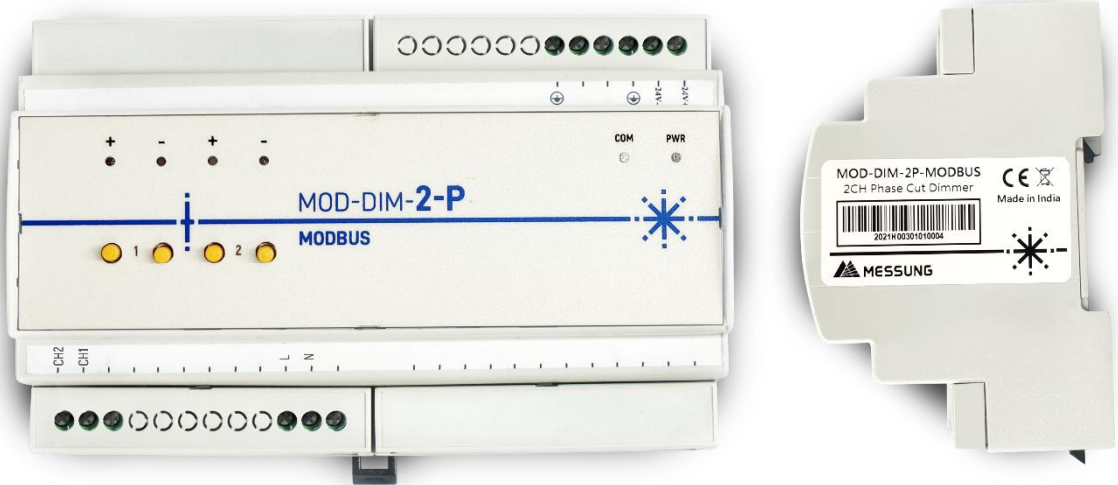


2 Channel Phase Cut Dimmer – Modbus RTU Technical Documentation

# MOD-DIM-2P



### Features:

- 2 channel phase cut dimmer for incandescent and LED lamps
- Manual output operation with push button and LED status indicator
- LED indication for communication and power status
- DIP switch for Modbus Configuration
- DIN rail mount assembly
- No need of any software
- High speed Modbus RTU (Slave) communication
- CE Marking\*

General Product Specifications		
Type of Device		Electric operation control device
Main Supply	Voltage (typical)	24V DC
	Voltage Range	18-30V DC
	Connection Type	Screw terminal connector
Mains Supply		230V AC (50 Hz), +10%, -20%
Communication Interface and Protocol		RS485 & MODBUS RTU
Dimming Control		On/Off and Dimming 0 – 100%
Edge Selection for Dimming		Leading and Trailing Edge
Operating Temperature		0 to 70
Storage Temperature		-25 to +75 °C
Ambient & Storage Humidity		5 to 95% RH (No condensation)
Dimension		142.3 (L) X 90.5 (H) X 62 (D) mm [8 DIN Units]
Manual Test Facility		4 Push button switches – On/Off or Dim Up/Down
Usage		Indoor, to be mounted inside distribution boxes or electrical panels with DIN rail
IP Class		IP 20
Power Failure Response		Data saving
Response when Starting		Data recovery and other settings
Operation Indication		1 Power LED indicates whether product is On/Off (Red) 1 Communication LED indicates Modbus Communication (Yellow) 4 Output status LED indicators reflect On/Offstate & errors(Green)

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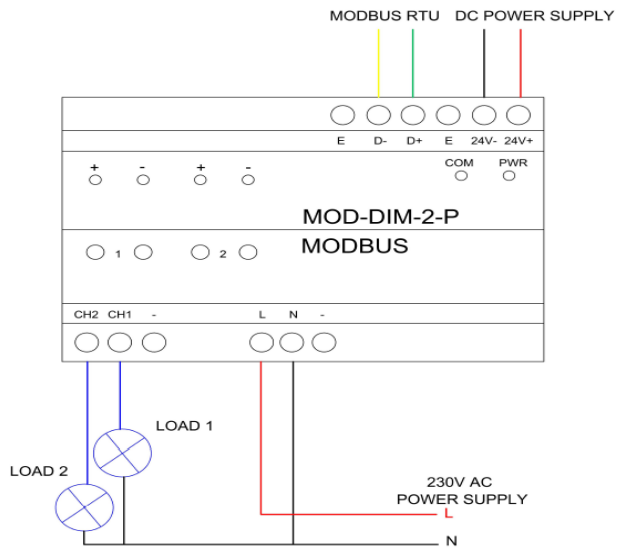
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Output Specifications	
No. of Channels	2
230V AC Input Protection	Yes
Short circuit Protection	Yes
Connection Type	Screw Terminal Block
Recommended Cable Selection	0.5 mm <sup>2</sup> to 4 mm <sup>2</sup> (26-10 AWG)
Cable Type	Stranded or Solid Wire
Load Type	Incandescent and LED
Maximum Allowed Load Power	250W per Channel

## Wiring Diagram

Modbus Communication Specifications	
Protocol	Slave Modbus RTU
Baud Rate	9600, 19200
Slave Address	1-31
Data Bit	8
Stop Bit	1
Parity	None, Odd, Even
Response Time	<100 ms
Termination Resistance	120 Ω (switchable)
Distance	Up to 1200m



## Modbus Configuration DIP Switch Access

### Steps:

1. Open the upper fascia plate of the module.
2. DIP Switch S2 for address and DIP Switch S1 for Baud Rate, Parity and termination resistance.
3. Adjust the DIP switch according to requirements using below table.

DIP Switch 2					
Slave ID Configuration					
Slave ID	1	2	3	4	5
1	ON	OFF	OFF	OFF	OFF
2	OFF	ON	OFF	OFF	OFF
3	ON	ON	OFF	OFF	OFF
4	OFF	OFF	ON	OFF	OFF
5	ON	OFF	ON	OFF	OFF
6	OFF	ON	ON	OFF	OFF
7	ON	ON	ON	OFF	OFF
8	OFF	OFF	OFF	ON	OFF
9	ON	OFF	OFF	ON	OFF
10	OFF	ON	OFF	ON	OFF
11	ON	ON	OFF	ON	OFF
12	OFF	OFF	ON	ON	OFF
13	ON	OFF	ON	ON	OFF

DIP Switch 1		
Baud Rate Configuration		
Parity	Pin 1	Pin 2
9600	OFF	OFF
19200	ON	OFF
Parity		
Parity	Pin 3	Pin 4
None	OFF	OFF
Odd	ON	OFF
Even	OFF	ON
Termination Resistor Configuration (120 Ω)		
Termination	Pin 5	
ON	ON	
OFF	OFF	

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14	OFF	ON	ON	ON	OFF
15	ON	ON	ON	ON	OFF
16	OFF	OFF	OFF	OFF	ON
17	ON	OFF	OFF	OFF	ON
18	OFF	ON	OFF	OFF	ON
19	ON	ON	OFF	OFF	ON
20	OFF	OFF	ON	OFF	ON
21	ON	OFF	ON	OFF	ON
22	OFF	ON	ON	OFF	ON
23	ON	ON	ON	OFF	ON
24	OFF	OFF	OFF	ON	ON
25	ON	OFF	OFF	ON	ON
26	OFF	ON	OFF	ON	ON
27	ON	ON	OFF	ON	ON
28	OFF	OFF	ON	ON	ON
29	ON	OFF	ON	ON	ON
30	OFF	ON	ON	ON	ON
31	ON	ON	ON	ON	ON

## Modbus Address Mapping

Modbus Register	Function	Value
400001	Channel 1 Dimming Value %	0 – 100%
400002	Channel 2 Dimming Value %	
400005	Channel 1 Dimming Status %	
400006	Channel 2 Dimming Status %	
400009	Channel 1 Minimum Dimming Value %	0 - 50%
400010	Channel 2 Minimum Dimming Value %	
400013	Channel 1 Maximum Dimming Value %	51 – 100%
400014	Channel 2 Maximum Dimming Value %	
400017	Channel 1 Smooth Dim Time	0 – 300 sec
400018	Channel 1 Smooth Dim Time	(Max time = 5 mins)
400021	Channel 1 Select Edge	0 – Trailing Edge*
400022	Channel 2 Select Edge	1 – Leading Edge*
400029	Error Notification	0 – None 1 – AC Power Supply Failure 2 – Overheating 3 – Channel 1 Short Circuit 4 – Channel 2 Short Circuit

\*Only 1 edge can be selected for both the channels at a time. 2 channels cannot have different Edges for Dimming simultaneously.

## Error Indication using LEDs:

1. AC Power Supply Failure: One LED of each channel will blink for 1 second.
2. Overheating: Both the LEDs of each channel will blink for 1 second.
3. Short Circuit Error: Both the LEDs of the channel with error will blink alternately for 0.25 seconds each.

## SAFETY INSTRUCTIONS

- Installation should only be performed by qualified professionals according to the laws and regulations.
- Do not connect the mains voltage nor any other external voltage to any point of the Mesbus connector; it would represent a risk for the entire system. The facility must have enough insulation between the mains (or auxiliary) voltage and the Mesbus or the wires of other accessories, in case of being installed.
- Once the device is installed (in the panel or box), it must not be accessible from outside.
- Keep the device away from water and do not cover it with clothes, paper or any other material while in use. 