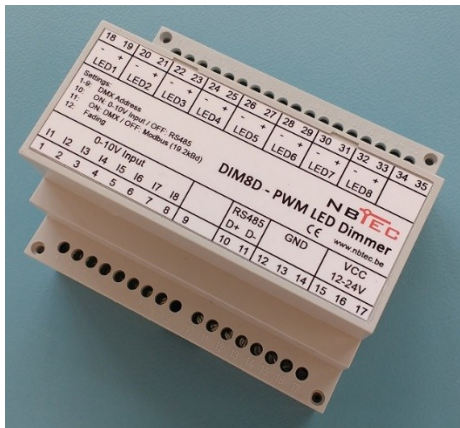


## DIM8D – 8 Channel LED Dimmer



## Info

The DIM8D dimmer can control up to 8 LED strips or spots (5A per channel). The brightness of each channel can be set using 0-10V inputs, DMX or Modbus RTU. The dimmer has a switchable “fading” function which ensures a smooth transition between brightness settings.

### Connections (also present on dimmer)

18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35
-	+	-	+	-	+	-	+	-	+	-	+	-	+	-	+		
LED1	LED2	LED3	LED4	LED5	LED6	LED7	LED8										
Settings: 1-9: DMX Address 10: ON: 0-10V Input / OFF: RS485 11: ON: DMX / OFF: Modbus (19.2kBd) 12: Fading																	
 <b>DIM8D - PWM LED Dimmer</b> www.nbtec.be																	
0-10V Input									RS485		GND		VCC				
I1	I2	I3	I4	I5	I6	I7	I8	D+	D-								
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	

The current rating of the power supply should at least be equal to 1.2 times the total current draw of the LED strips/spots.

Depending on the total current draw, more than one cable (for GND and VCC) should be connected between the power supply and the dimmer. The following table shows the minimal amount of cables in function of the maximum current draw:

Max. Current	No. of cables
15A	1 x 2.5mm <sup>2</sup>
30A	2 x 2.5mm <sup>2</sup>
40A	3 x 2.5mm <sup>2</sup>

Keep the cable length between the dimmer and power supply as short as possible

The voltage of the power supply must be equal to the rated voltage of the connected LED strips/spots. Only connect LED strips/spots to the dimmer which have the same rated voltage.

It is advisable to install a fuse in series with the input power cables rated 10% above the normal load current.

### Specifications

Power Supply	12-24V
Power usage	50mA (dimmer only)
PWM Outputs	8 x 5A (sinking)
Inputs	8 x 0-10V DMX512 Modbus RTU (RS485)
CE Compliance	The DIM8D dimmer is CE compliant when installed in a shielded and earthed metal case.
Operating Temperature	0 – 70°C
Size (LxWxH)	105x90x61mm

## Setup

Setup is done using the dip-switch (SW2) found on the printed circuit board.

DIP-Switch Button	Function	
<b>1 to 8</b>	DMX Address (Binary)	Modbus RTU Address (Binary)
<b>9</b>		ON: 9600 baud / OFF: 19200 baud
<b>10</b>	ON: 0-10V Input / OFF: RS485 Input	
<b>11</b>	ON: DMX / OFF: Modbus RTU	
<b>12</b>	Fading	ON: even parity / OFF: no parity

The dimmer needs to be restarted when dip-switch changes are made for the changes to take effect.

## 0-10V Input

In 0-10V mode the dimmer channels will respond to the voltage applied to the analog inputs (I1 to I8). 0V corresponds to a PWM duty cycle of 0%, 10V to a duty cycle of 100%.

The inputs have to be driven from an active voltage source.

## RS485

### DMX

In DMX mode, the RS485 serial interface accepts DMX512 packets.

The dimmer channels will respond to the 8 slots (8-bit each) including and following the slot selected using the dip-switches (switch 1-9).

A slot value of 0 corresponds to a PWM duty cycle of 0%, 255 to a duty cycle of 100%.

### Modbus

In Modbus mode the dimmer is configured as a Modbus slave, the RS485 serial interface will accept Modbus RTU packets. The serial interface has the following configuration:

<b>Serial speed</b>	Selectable (dip-switch 9) : ON: 9600 baud / OFF: 19200 baud
<b>Start bits</b>	1
<b>Data bits</b>	8
<b>Parity</b>	Selectable (dip-switch 12) : ON: even parity / OFF: no parity
<b>Stop bits</b>	1
<b>Handshaking</b>	none

The dimmer will respond to the following Modbus commands:

- Read Holding Registers (fc03)
- Preset Single Register (fc06)
- Preset Multiple Registers (fc16)

The Modbus slave address (1 to 247) is configured using the dip-switches (switch 1-8).

The duty cycle of the dimmer channels respond to register addresses 0 to 7.

Writing a value of 0 corresponds to a PWM duty cycle of 0%, 65535 to 100%.

Fading is configured through register 8 (0: Fading OFF, 1: Fading ON).

**Termination Resistor**

The dimmer contains an RS485 termination resistor which can be enabled by shorting jumper JP1.

**Fading**

Fading, when enabled, will provide for a smooth transition between dimming levels.

In Modbus mode fading is configured through register 8 (0: Fading OFF, 1: Fading ON).