

**MD 6102 MN / MP / AN / AP**



MD 6102

**DC PWM Dimmer**

**24 VDC**

**Basic brightness adjustable**

**Key operation or potentiometer controlled**

**0-20mA / 0-10V controlled**

**Cascadable Master/Slave System**

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### Description

MD Series Dimmers are microprocessor-controlled PWM dimmers for top-hat rail mounting. They are suitable for the operation of filament lamps and LEDs with series resistors. The connected lamps are switched on and off with a frequency of 120 Hertz. These switching processes are not visible to the human eye. The ratio of the on and off times determines the brightness and this can be set on the dimmer.

The control of the dimmer takes place via one or two keys or a potentiometer. When it is switched on the dimmer detects which controller option is installed. The base brightness can be set by a trimming potentiometer. The load current is constantly monitored and switches off in the event of an overload. After the switch-off the dimmer carries out tests at periodic intervals to check whether the load current is in the nominal range and then switches itself on again. A status display provides information on the operating status of the dimmer.

The dimmers can be cascaded by means of plug-in jumpers. In this case a module takes over the master function at which the brightness is set with one of the controller options. The other dimmers operate as slaves and follow the settings on the master unit. The link between the dimmers is metallically separated and in this way permits their use in different load circuits.

The dimmers are designed for operation in 24VDC systems and are available for operation in the positive or negative arm of the load circuit. Both versions can dim a load of 60W.

Use the negative type for loads with a common minus, and the positive type for loads with a common plus.

### Technical Data

<i>Nomination</i>	<i>sign</i>	<i>min.</i>	<i>typ.</i>	<i>max.</i>
Operating Voltage	$U_b$	16,8V		30V
Nominal Voltage +25% / -30%	$U_n$		24V	
Output Current	$I_A$		2,5A	
Current Consumption at $\psi_{max}$	$I_b$		10mA	
Cut-off Current	$I_{off}$		13A	
Switching Frequency	$f$	114Hz	120Hz	126Hz
Control Current (A Type)	$I_{Dim}$	0mA		20mA
Control Voltage /A Type)	$U_{Dim}$	0V		10V
Ambient Temperature Operation	$T_A$	-25°C		+55°C
Ambient Temperature Storage	$T_s$	-25°C		+70°C

### Operation Note

The dimmers status is displayed by a red led. A blinking led indicates dimmer is in operation.

An active led indicates a dimmer error.

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### Connection

The dimmers get connected by two three pin screw terminals.

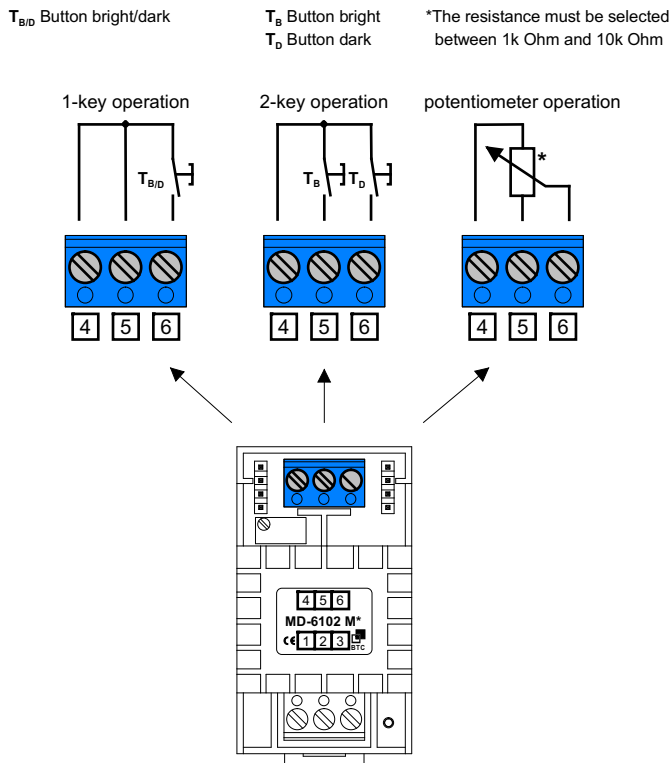
#### Conductor Cross Section

solid max. 2,5 mm<sup>2</sup>  
 fine strands max. 1,5mm<sup>2</sup>

#### Fuse

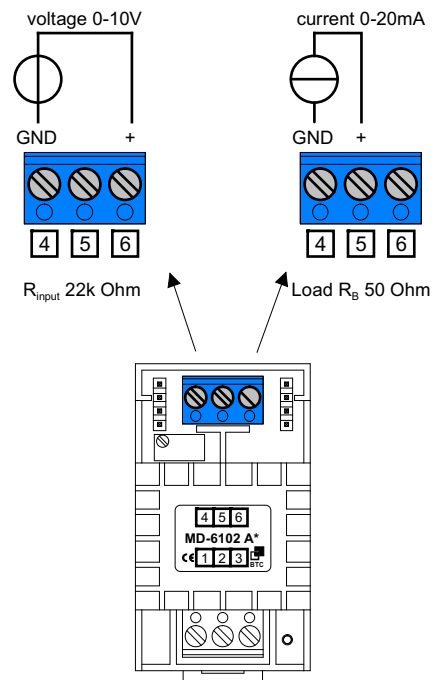
The dimmers must be fused with a 2,5A slow-blow fuse.

### Connecting the control elements



### Current or voltage control Connecting the lines of the analog signals

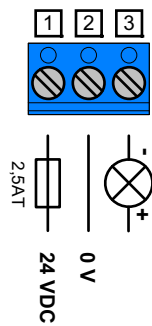
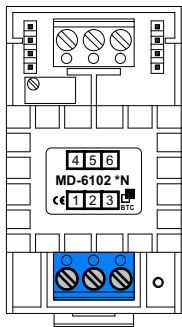
Use shielded cables and connect the shield on one side to terminal 4.



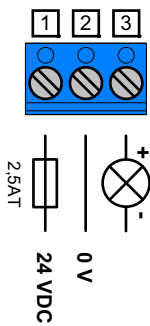
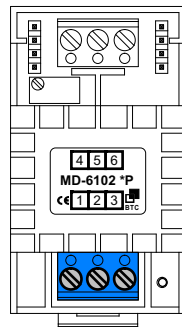
## MD 6102 MN / MP / AN / AP

### Connecting power supply and load

Negative Dimmer  
 MD-6102 MN/AN

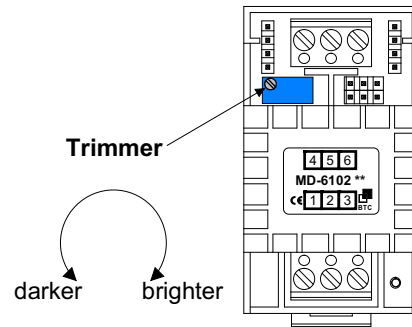


Positive Dimmer  
 MD-6102 MP/AP



### Adjust the basic brightness

On the dimmer can be adjusted the basic brightness, that is to say the slightest dimmable brightness.

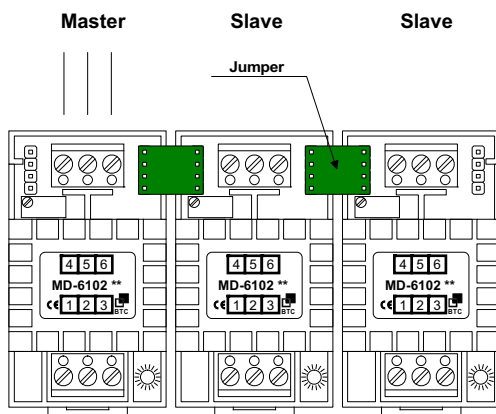


### Master Slave Cascading by jumper

With the jumper ST-6002 an unlimited number of dimmer can be cascaded.

Here, the left dimmer module is the master module. On master their controls or analog signals can be connected and the basis brightness adjusted with the trimmer. All connected dimmers follow the master and are electrically isolated from each other.

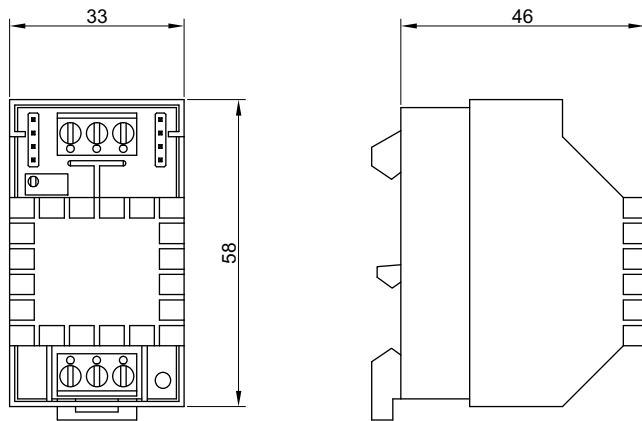
Modulee may be combined as desired.



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### Mechanical Specification

<b>Mounting:</b>	DIN rail 35mm and 15 mm
<b>Protection:</b>	class IP10
<b>Wight:</b>	0,065 Kg



### Ordering Information

Module	Type	Control
MD 6102 MN	negative	key / potentiometer
MD 6102 MP	positive	key / potentiometer
MD 6102 AN	negative	0-10V / 0-20mA
MD 6102 AP	positive	0-10V / 0-20mA

<b>Equipment</b>	
ST 6002	Jumper

### Standards and Guidelines

These products conforms with the following standards and guidelines:  
Railway standard, electromagnetic compatibility

EN50121-3-2:2016