

PROPERTIES

- Manual speed setting
- For DC and AC fan with 0-10 V control input
- DC operating voltage 12 V and 24 ... 48 V $\pm 20\%$
- Operating current transmission up to 5 A for DC fan
- Speedometer signal looped through
- Compatible with ebm-papst interfaces
- Protection class: IP20
- Installation: DIN rails 35 mm

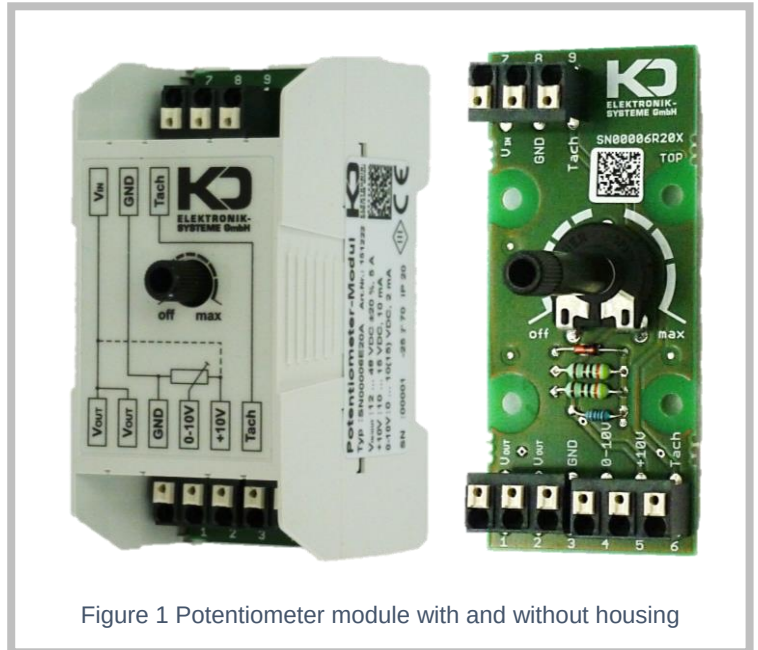


Figure 1 Potentiometer module with and without housing

APPLICATION

- Speed control of motors, ventilators, blowers and pumps with 0-10 V control input.

SHORT DESCRIPTION

The potentiometer module is used for the autarkic setting of the speed of motors, ventilators, blowers or pumps with a 0-10 V control input. The DC supply voltage is interconnected from the input to the output. Therefore DC motors with a compliant operating voltage range can be directly connected (figure 2-A). Existing speedometer connections can be installed on the input side.

The module has a manually operable rotary knob on the top side that changes the control signal at the **0-10V** connection with respect to **GND**. The left stop of the knob corresponds to the smallest control signal.

For DC applications in a voltage range 24 ... 48 VDC, the required voltage for the entire dynamic range is obtained internally from the voltage supply V_{IN} and can also be measured at the connection **+10V**. Only the control connection is connected for AC motors. The control connection of AC motors must supply a typical auxiliary voltage of 10 VDC (figure 2-B).

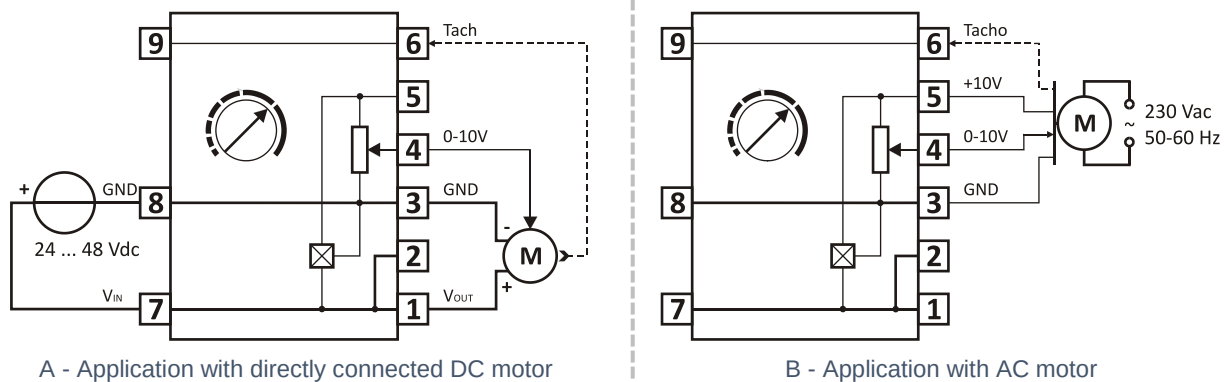


Figure 2 Typical connection schemes

CONNECTION

A - 12 VDC motor	B - 24 ... 48 VDC motor	C - 230 VAC motor (1~ or 3~)
When using a 12 V motor, the supply voltage of V_{OUT} is bridged after +10V. In doing so, the maximum speed is already reached before the right stop of the rotary knob in certain circumstances.	The DC supply voltage is interconnected from V_{IN} to V_{OUT}. DC motors with a compliant operating voltage range can be directly connected. The +10V connection remains unassigned.	The control voltage is to be supplied from the motor at +10V (or an additional external source). The V_{IN} and V_{OUT} connections must not be connected!

Figure 3 Connection variants (example)

i NOTE

Deviations to the connection specifications of the motors require a functional check in the system structure.

INTERFACES

Connection	Designation	Description
1	V_{OUT}	Output DC supply voltage "+" (connected internally with 7)
2	V_{OUT}	Output DC supply voltage "+" (for VDC < 15 Vdc connected with 5)
3	GND	Connection DC supply voltage "-" or control signal (reference ground)
4	0-10V	Connection control signal (signal)
5	+10V	Connection control voltage supply (required for AC applications)
6	Tach	Input for speedometer signal from motor (connected internally with 9)
7	V_{IN}	Input DC supply voltage "+" (connected internally with 1 and 2)
8	GND	Input DC supply voltage "-" (connected internally with 3)
9	Tach	Output for speedometer signal from motor (connected internally with 6)

TECHNICAL DATA

Input V_{IN}	Figure 3-A	Figure 3-B	Figure 3-C
Operating voltage	12 VDC $\pm$ 20 %	24 ... 48 VDC $\pm$ 20 %	not connected
max. input current	5 A, external fuse		
Output V_{OUT}			
Output voltage	12 ... 48 VDC, input V_{IN} is looped through		
max. output current	5 A		
Potentiometer			
Value	10 k Ω $\pm$ 20 %		
max. actuation cycles	100,000		
Output 0-10V	Figure 3-A	Figure 3-B	Figure 3-C
Voltage for left stop	0 VDC	0 VDC	0 VDC
Voltage for right stop	V_{IN}	10 ... 13 VDC ¹	+10V
max. current	10.0 mA	2.0 mA	10.0 mA ²
Input +10V			
max. input voltage	15.0 VDC		
Current (typical without load)	1.0 mA @ 10 VDC; 16 mA @ 15 VDC		
Mechanical data	Version in housing	Version without housing	
Dimensions (L x W x H)	(75.4 x 35.7 x 60.0) mm	(73.1 x 31.0 x 55.0) mm	
Weight	approx. 60 g	approx. 45 g	
Protection type	IP20	IP00	
Contamination level	2 according to EN 60730-1 or 1 according to EN 60950-1		
Installation	DIN rail 35 mm (DIN EN 50022)		Screw , $\varnothing$ < 3.2 mm
Connection			
Connection type	Push-in spring connection technology (direct plug technology)		
Clamping range	0.13 ... 1.5 mm ² (AWG 24...16) (ferrule with collar max. 0.75 mm ²)		
Line length	max. 3 m		
Environmental conditions			
Operating temperature	-25 ... +70 °C		
Storage temperature	-40 ... +80 °C		
Relative humidity	0 ... 95 %, no condensation		

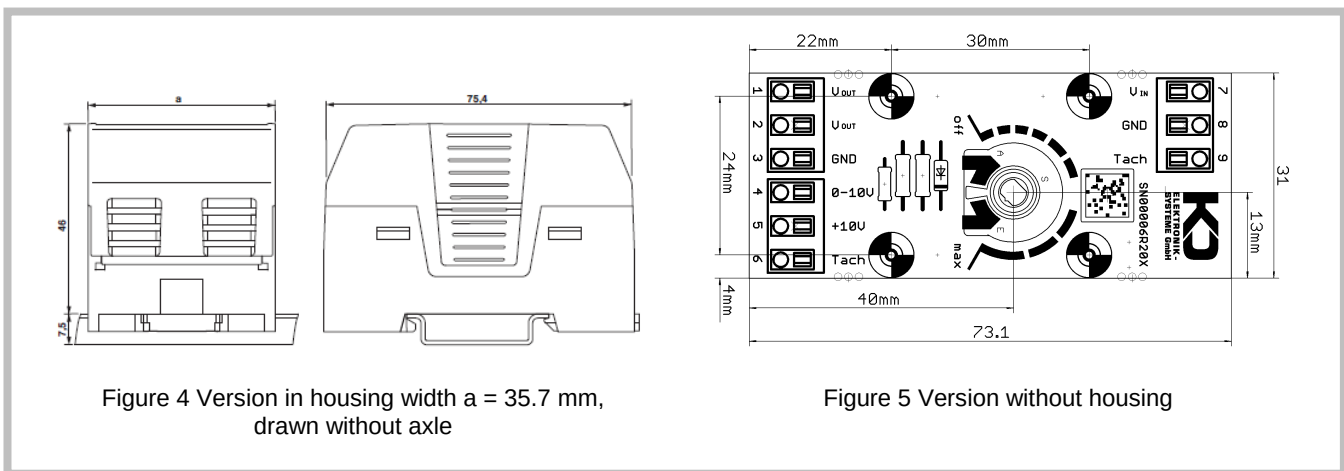
DIRECTIVES / STANDARDS

Directives	Standards
Low voltage directive 2014/35/EU	EN 60730-1, Automatic electrical controls for household and similar use EN 62368-1, Audio/Video Information and communication technology equipment - Safety
EMC directive 2014/30/EU	EN 55011, Industrial, scientific and medical equipment - Radio-frequency disturbance characteristics - Limits and methods of measurement EN 61000-6-2, Generic standards - Immunity standard for industrial environments EN 61000-6-3, Generic standards - Emission standard for residential, commercial and light-industrial environments
RoHS directive 2011/65/EU	
Markings	
 	

ORDER INFORMATION

Order No.	Article code	Description
15 12 22	SN00006E	Potentiometer module, circuit board with half-axle, in housing
15 15 00	SN00007E	Potentiometer module, circuit board with half-axle

DRAWINGS



¹ Dependent on the input voltage V_{in}

² See ventilator manual! Observe maximum permitted load current at fan output (typical max. 1.1 mA).