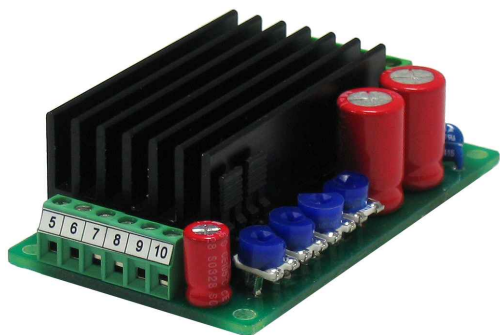


EM-175 DC-MOTOR CONTROLLER

12/24Vdc 10A



FEATURES:

- Unidirectional
- 2-quadrant, drive and brake
- Dynamic and regenerative braking
- Smooth startup ramp
- Adjustable current limit
- Load compensation
- High efficiency
- High peak loading capacity
- Rail mountable

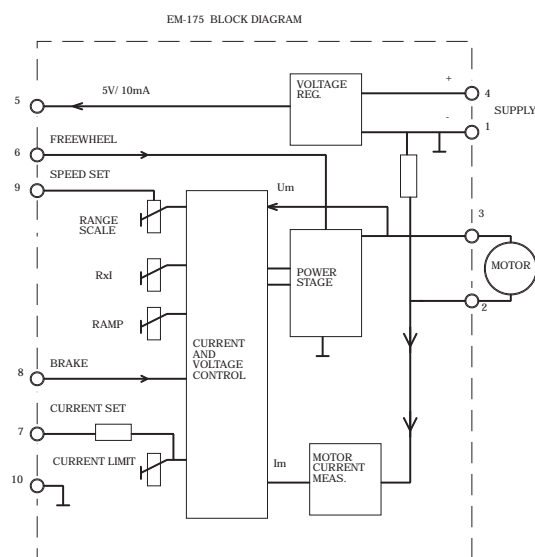
EM-175 motor driver is designed for DC-motor speed control. The unit regulates motor voltage so non regulated supply voltage is well suited. A load affecting the motor rpm can be compensated with an adjustable load compensation (Rxl). Potentiometer or direct voltage signal can be used to give the speed control value. The current limit can be set with a trim or direct voltage signal to protect the motor and mechanics in jam situations.

Startup speed can be limited with so called ramp, which slowly rises the motor voltage in a desired way. Ramp time is set with a trim. The unit also features a brake input which can be used to rapidly brake motor (dynamic braking). There are two different dynamic braking options available: in the first one even very short braking resets the set value and ramp time, that is after braking motor starts from zero rpm. The second braking method reduces ramp value during braking according to ramp time, in other words motor starts from ramp value after braking. When the unit is battery-operated, regenerative braking can be used. This method feeds the braking energy back to battery. Regenerative braking automatically activates when motor voltage exceeds set value, for example in a situation where set value is rapidly being reduced.

The freewheel command sets motor free from control. Freewheel overrides all other controls. EM-175 can be optimised for 12 or 24 V supply use.

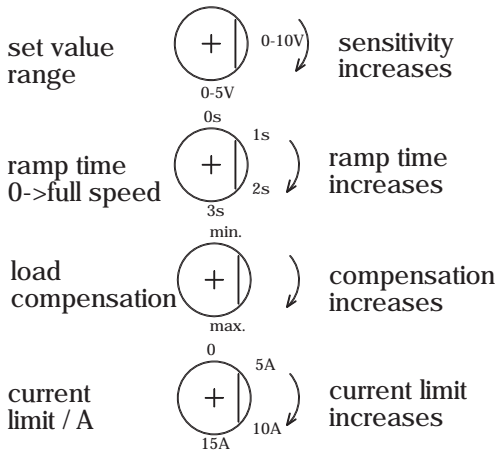
TECHNICAL DATA

Supply	12-32Vdc
Overvoltage protection	40V
Idle current	approx. 20mA
Motor current	10A continuous (Ta<50°C) 15A peak
Motor voltage	0-15V (12V setting) 0-29V (24V setting)
Current limit	adj. 0...15A
Cur. lim. volt. control	0...5V (0...15A)
Ramp time	adj. 0...3s
Voltage loss	1V (Im=10A)
Operating frequency	25kHz
Aux. voltage	5V 10mA
Control pot.	1-50kohm
Control volt. range	adj. 0-5V...0...10V
Digital inputs (brake and freewheel)	"on" @ Uin 4 -30V "off" @ Uin 0-1V or open impedance 10kohm
Operating temp	-20...+70
Dimensions	43x73x30mm
Weight	approx. 80g



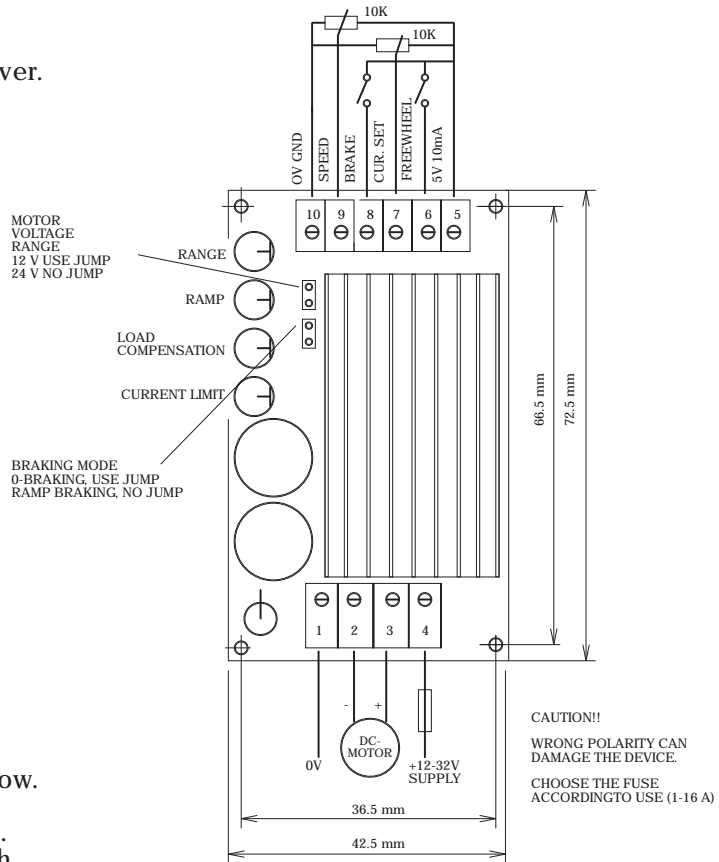
EM-175 OPERATING INSTRUCTIONS

Supply should be filtered 12-32Vdc,
 max. ripple <30% on full load.
 ATT. Wrong supply polarity can damage the driver.
 ATT. Driver has no internal fuse.



SETTINGS AND ADJUSTMENTS

Choose desired braking option, see picture below.
 Potentiometer or direct voltage signal 0-5 V ... 0-10 V can be used to set speed value.
 Acceleration and deceleration ramp are set with trims, 0-3 s, this is time from zero to full speed or from full speed to zero. Compensation adjustment: set motor on to a low rpm, add compensation until motor starts twitching and then reduce compensation until twitching ends. After this motor loading can be tested for steady motor run.
 Current limit can be set to 0-12 A, current limit can also be set using direct 0-5 V voltage signal or potentiometer. If the external control is used, turn the inbuilt current limit trim to 0-position.



BRAKING OPTIONS

