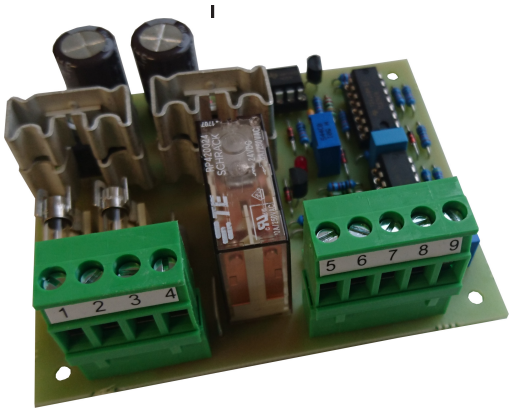
EM-12A PWM DC-MOTOR CONTROL UNIT 24V 8A 200W



FEATURES:

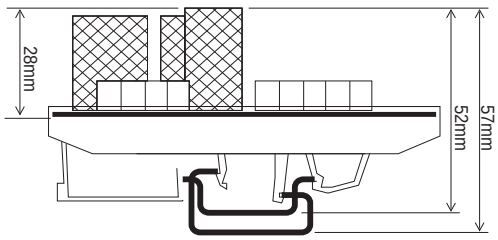
- **Continuous power regulation and controlled direction change**
- **Adjustable current limit, acceleration ramp and max. power limit**
- **Load short circuit protected**
- **CB-mode for increased starting torque**
- **High efficiency, small size**
- **Controllable with potentiometer, switch or voltage signal**
- **Rail mounting base available**

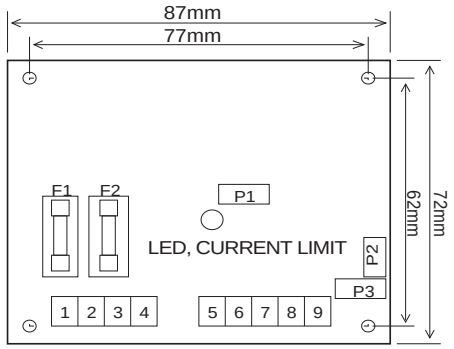
EM-12A DC-motor control unit is designed for use in industry and automation applications in power range of 0...200 W. With EM-12A DC-motor can be controlled easily and economically.
EM-12A includes many adjustments and various connection choices. Inbuilt protection features increase the reliability of use. CB-function (current boost) eliminates motor rushing if started with load.
EM-12A can be controlled continuously with one potentiometer forward/stop/reverse or the control can be divided to switch and potentiometer or just for switch. EM-12A can be controlled with ±10 V signal as well.

TECHNICAL DATA:

Operating voltage	18...30 Vdc
Idle current	50mA
Load capacity	8A (RMS) mom. 15A (5s)
Operating frequency	approx. 22 kHz
Control pot.meter	10k or 25k 0.25W lin.
Recommended fuses (F1,F2)	max. 8A, slow
Operating temp.	0...50 °C
Dimensions	87*72*28 mm

Adjustments:	
Acceleration ramp (0...100%)	0.5 ... 5 s
Current limit	0.5 ... 20 A
Max. power limit	0 ... 100 %





FUSES (8A, SLOW)
F1, SUPPLY
F2, MOTOR

ADJUSTMENTS
P1, CURRENT LIMIT
P2, ACCELERATION RAMP
P3, MAX. POWER LIMIT

EM-12A INSTRUCTIONS

CONNECTIONS

Connection choices are displayed in figures 2a, 2b, 2c and 2d. If the operating direction of the connected potentiometer is not as desired, the outer wires should be switched. If the rotating direction of the motor is not as wanted, the motor wires should be switched.

CAUTION. When the card is supplied from a transformer, capacitor should be added as shown in figures. With battery supply the capacitor is needed only if supply leads are extensive (over 5m).

INTRODUCTION

Adjust the max. power limit to 100 % (P3 clockwise), acceleration ramp to 5 s position (P2 counterclockwise) and the current limit to 20 A (P1 clockwise).

CONTROL LIMIT

Drive the motor full forward or full reverse. If the maximum running speed of the motor needs to be restricted, adjust P3 counter-clockwise until the running speed of the motor is acceptable.

ACCELERATION RAMP

With the preset ramp length of 5 s and maximum power, reversing the motor (full forward <=> full reverse) takes approximately 10 s. If the application can be stopped faster, the acceleration ramp can be set to shorter value by turning the P2 clockwise. DO NOT ADJUST THE RAMP TO SO SHORT VALUE THAT THE REVERSING OCCURS WHILE THE MOTOR IS STILL RUNNING.

CURRENT LIMIT

The purpose of the current limit is to protect the motor from overloading. Adjust the current limit so that the red led on the card is not lit during normal load conditions. NOTE: by adjusting the current limit too low, the torque of the motor is decreased. The operation of the current limit can be checked by overloading the motor.

CAUTION: Do not use the control card in applications with high inertia (eg. flywheel drive) or where the load rotates the motor (eg. automotive devices going downhill).

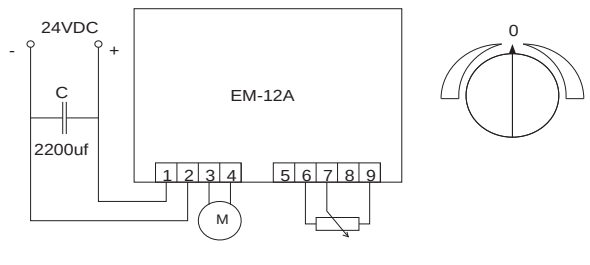


FIGURE 2a. POTENTIOMETER CONTROL. MIDDLE POSITION OF POT.METER FUNCTION STOP. CONTINUOS CONTROL IN BOTH DIRECTIONS

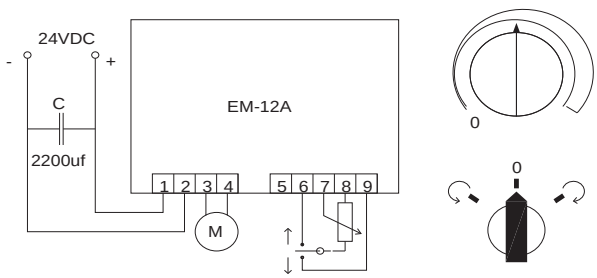


FIGURE 2b. SPEED CONTROL WITH POT.METER, DIRECTION WITH SWITCH. STOP FUNCTION IS ACHIEVED WITH THREE POSITION SWITCH.

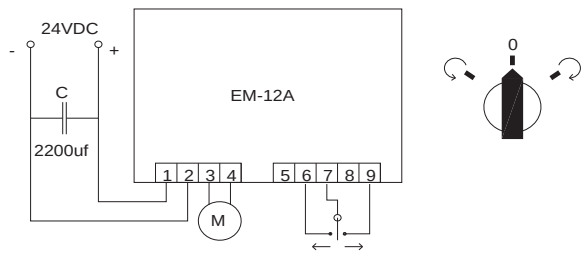


FIGURE 2c. CONTROL WITH SWITCH. FUNCTIONS FORWARD/STOP/REVERSE.

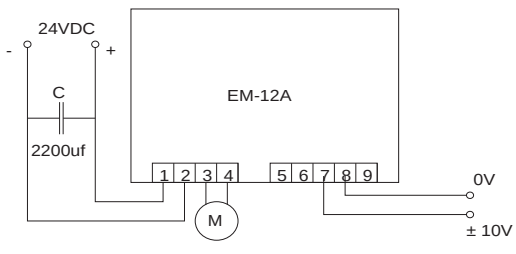


FIGURE 2d. VOLTAGE CONTROL. VOLTAGE SHOULD BE GALVANICALLY ISOLATED FROM DRIVER VOLTAGE.

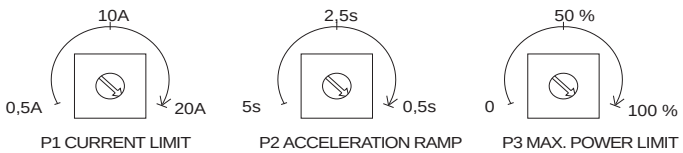


FIGURE 3. EM-12A ADJUSTMENTS.

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