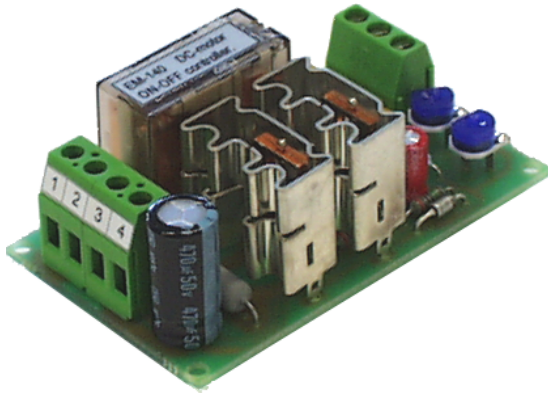


# EM-140A DC-MOTOR STARTER 12-24V 8A



## FEATURES

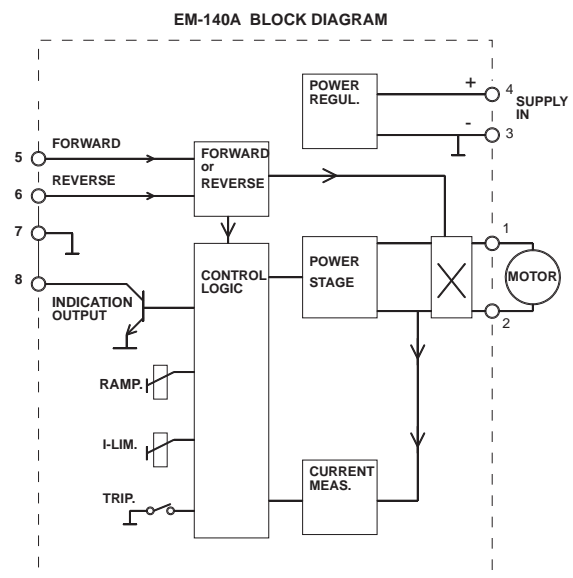
- **Controlled direction change**
- **Soft startup, ramp**
- **Trip or continuous current limit mode**
- **Settable current limit**
- **High efficiency**
- **High momentary load capacity**
- **Rail mounting base fittable**
- **Current limit indication**
- **Replaces models EM-140, EM-140-12 and EM-140ind**

EM-140A DC-motor controller is designed for DC-motor on-off driving with direction change. The unit has an advanced current limit feature, that limits motor current in startup and jam-situation and in that way protects the motor and mechanics.

As the controller starts up in chosen direction, the startup speed can be limited with a so called ramp, thus full voltage isn't instantly lead to the motor but slowly risen through the ramp. The ramp time is set with a trim. When direction is changed the unit relay doesn't instantly change state but first drives control to zero and then waits for a while before driving in new direction. This feature protects the relay and the motor. The current limit works in two ways: the actual current limit is always enabled and limits controlling if the current exceeds the preset value. Additionally a trip-feature is included, this will shut down control when the current limit is exceeded. After this the unit will startup only with reverse control, with double current limit for 0,3 s.

## TECHNICAL DATA:

|                     |                                  |
|---------------------|----------------------------------|
| Supply              | 11...35 Vdc                      |
| Idle current        | approx. 30mA                     |
| Control current     | 8A rms                           |
| Current limit       | 10A 50/50%                       |
|                     | 1...10A                          |
|                     | 2...20A @ startup                |
| Indication output   | NPN open collector               |
|                     | 50mA max                         |
| Current trip delay  | approx. 2ms                      |
| Startup delay       | 10ms                             |
| Braking delay       | 5ms                              |
| Dir. change delay   | approx. 200ms                    |
| Voltage loss        | 0,5V @ $I_m=8A$                  |
| Operating frequency | 500Hz                            |
| Ramp                | 0, 10, 20, 40, 80, 150ms         |
|                     | 0,25; 0,5; 1s                    |
| Digital control     | "off" @ $U_{in}=4...30V$ or open |
|                     | "on" @ $U_{in}=0...1V$           |
| Dimensions          | 43x73x35mm                       |
| Weight              | approx. 70g                      |

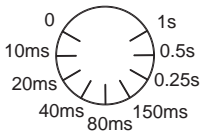


# EM-140A OPERATING INSTRUCTIONS

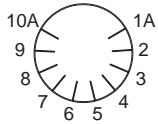
Supply voltage must be filtered 11-35 VDC with less than 30% ripple at full load. Caution! Wrong polarity can damage the unit.  
 Caution! The unit does not have a internal fuse.

Selecting the current limit; trip-jumper is  
 on = cut-off -mode  
 off = only current limit control

Choose startup speed ( ramp )

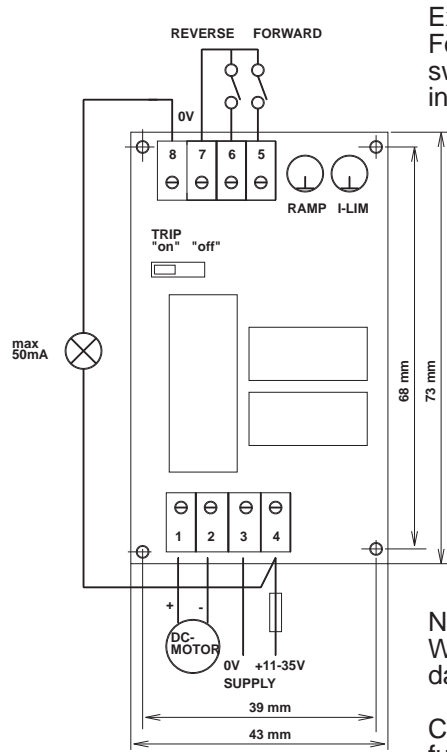


Choose current limit /A ( I-lim )



Notice!

- Motor specs can affect the current limit value
- At startup the current limit value is double the value set

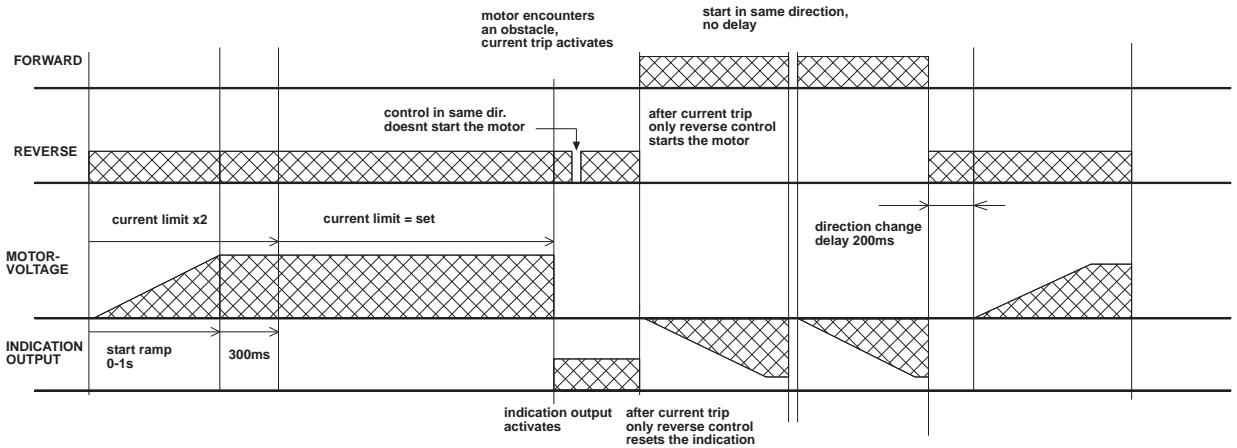


Example:  
 Forward / Reverse with switches, current limit indication with ext. lamp.

NOTICE!  
 Wrong polarity can damage the unit.

Choose a suitable fuse for the application.

EXAMPLE 1: ( current-trip selected )



EXAMPLE 2: ( continuous current limit selected )

