KALEJA GmbH
D-73553 Alfdorf
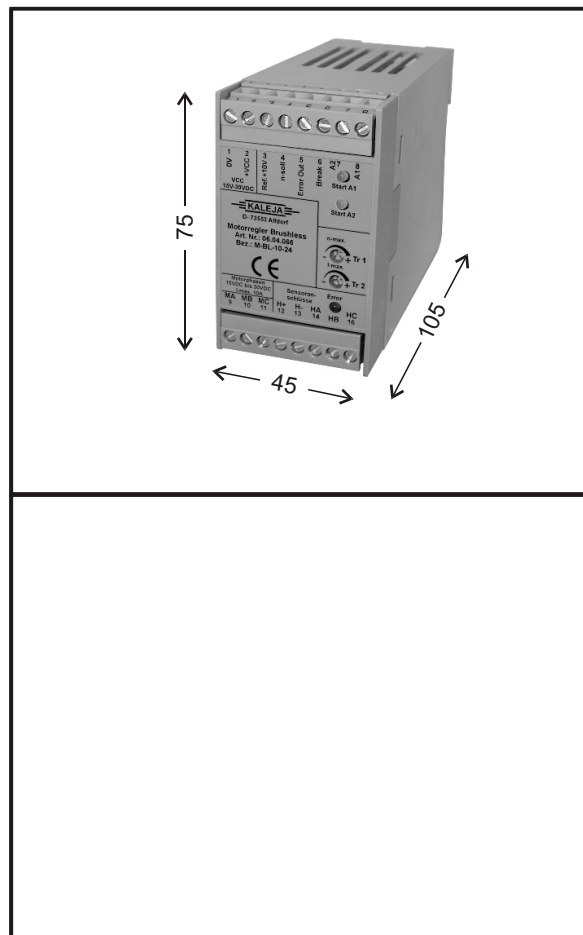
Motor control for brush sticking direct current DC motors 24VDC

Model for switched currents up to 10A

Multifunction controller with following applications: - speed control - ramp function, - current control, - current adjustment
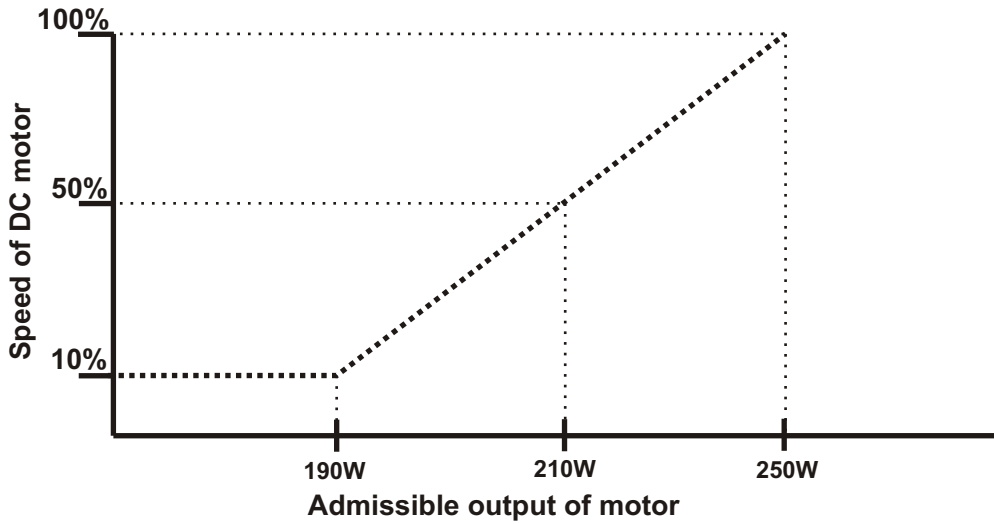
Snap-fit for DIN rail   EN 50022

Model width: 45mm

Short Designation Type	Nominal voltage 24VDC M-4Q-10-30
Order no. (Art.no)	**06.04.075**

Specifications: input circuit	
Nominal voltage / control voltage	**24 VDC**
Nominal voltage range min. / max.	**19V to 32VDC**
Input current at Un	**10mA**
Analogue input rotational speed control	**0V to 10VDC**
Status indicator	LED 3mm red
Specifications: Output circuit	**MOS-FET**
Starting ramp Tr2 soft start	**0,1 sec. to 5sec. adjustable**
Max. Rated load current	**10A**
Current limitation Tr. 3 min. / max.	**1A to 10A**
Signal output current monitor	**I-max. 50mA**
dynamic brake	**yes switching ON/OFF**
IxR amplification (speed compensation by increasing resitance	**120°**
Power driver	**MOS- FET**
Further specifications	
Allowable ambient temperature	**-20°C to + 60°C**
Vibration resistance a/r (10...500Hz)	**> 20 / 5**
Overload protected/ short-circuit-proof / temperature monitoring	**Yes / Yes / Yes**
DIN VDE-regulations	**VDE 0110, 0160 in sep. Parts**
Mounting position / installation	can be snapped, addable
Type of connection: screwed connection / plug-in	**single wire 4mm², finely. 2,5mm²**
Case dimensions: w x h x d	**45mm x 75mm x 105mm**

Description

Module M-4Q-10-30 is a four-quadrant motor control system with soft start / speed regulation for DC motors. It ensures switching ON / OFF as well as the controlled and defined driving of motors. Speed regulation of motors can be set via a potentiometer or an analog voltage 0 - 10 VDC. The trimmer Tr2 (ramp) is used to set the starting time of the motors from 0,1s to 5s. Trimmer Tr3 (IxR) is used to set IxR compensation, i.e., in case of load variations at the motor, the IxR compensation tries to keep the speed of the motor constant. Trimmer 4 (current) is used to set the admissible total current. At terminal2 (I change-over) it is possible to change over to current limitation (motor is not switched off but limited to the current set) by applying a high signal from the current monitor (motor switches off as soon as the over-current set is reached). As soon as the over-current is reached, the LED lights up and the output (rerminal 16) is changed over to VCC. At the control input (terminal 3) it is possible to change over from the speed set to the full speed. If (terminal 1) is controlled, there is no dynamic braking.

Speed of DC motor vs. Admissible output of motor

Standard wiring

Important: If no external potentiometer is connected, bridge terminal 4 and terminal 5

S1= start clockwise run
S2= start anti-clockwise run

Setting of max. speed

Setting of starting time

Setting of IxR compensation

Setting of max. admissible motor current

S3 = ON - max.speed active
S3 = OFF - set speed active

S4 = ON - current limitation active
S4 = OFF - current switch-off active

S5 = ON - dyn. braking deactivated
S5 = OFF - dyn. braking active

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4-Q-DC-Amplifier
Art. No.: 06.04.075
Bez.: M-4Q-10-30

Current - message output, I-max. = 50mA

GND +VCC

SPS - wiring

ON - dyn. braking deactivated
OFF - dyn. braking active
ON - current limitation active
OFF - current switch-off active
ON - max.speed active
OFF - set speed active
Set speed value 0-10VDC
start clockwise run
start anti - clockwise run
Current - message output
0V SPS

Setting of max. speed

Setting of starting time

Setting of IxR compensation

Setting of max. admissible motor current

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GND +VCC