

Choke Module

The choke module contains **3 linear storage chokes**. The design and the connection technology are particularly suitable for the combination with maxon EC motors. With brushed DC motors, the chokes are used in series connection. The storage choke increases the terminal inductance. This results in a smaller current ripple in PWM-operation (pulse width modulation) and therefore less self-heating of the motor.

Technical Data per Linear Storage Choke

Electrical data

- Nominal DC current $I_N = 5 \text{ A}$
- Inductance at I_N $L = 250 \text{ } \mu\text{H}$
- DC current resistor $R_{Cu} = 60 \text{ m}\Omega$

Temperature range Operation $-25 \dots 70^\circ\text{C}$

Humidity range $20 \dots 75 \%$ noncondensing

Mechanical data

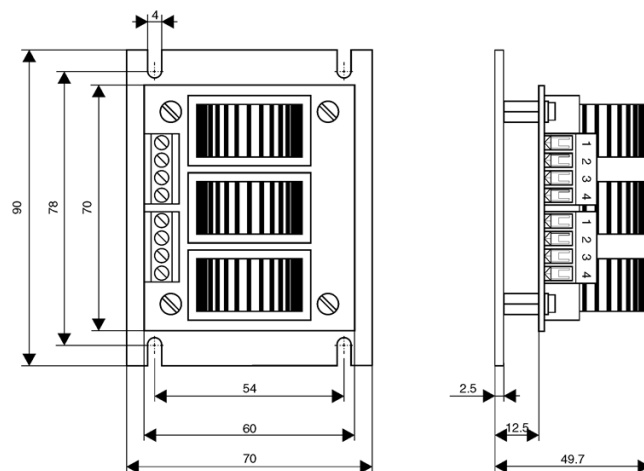
- Weight: 250 g
- Dimensions:
 - Length 90 mm
 - Width 70 mm
 - Height 49.7 mm
- Mounting plate:
 - for 4 screws M3
 - Pitch of hole $78 \times 54 \text{ mm}$

Connections

- PCB-clamps 4 poles
 - Pitch $5,08 \text{ mm}$
- suitable for cable profile
- multiple-stranded wire $0.14 - 2.5 \text{ mm}^2$
 - single wire $0.14 - 4.0 \text{ mm}^2$

Dimension Drawing

Dimensions in [mm]



The latest edition of these operating instructions may be downloaded in the internet under <http://www.maxonmotor.com>.

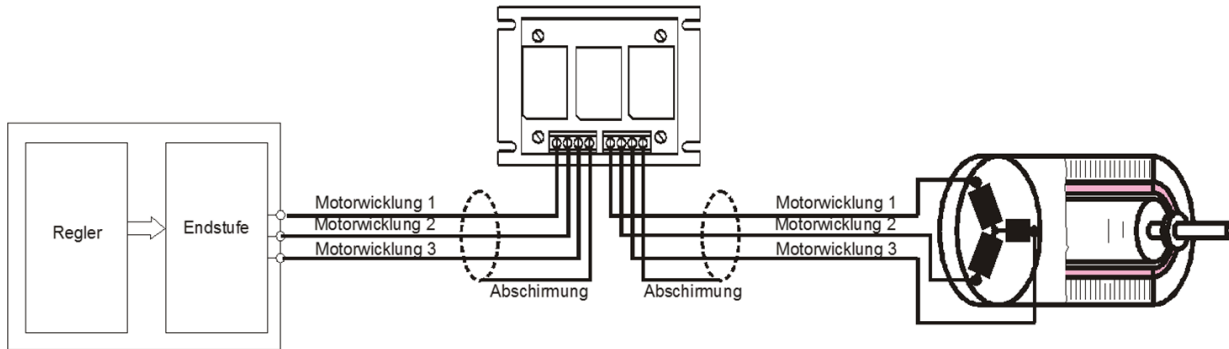
Pin assignment

Plug Input	Pin 1	Choke 1 Input
	Pin 2	Choke 2 Input
	Pin 3	Choke 3 Input
	Pin 4	Shield

Plug Output	Pin 1	Choke 1 Output
	Pin 2	Choke 2 Output
	Pin 3	Choke 3 Output
	Pin 4	Shield

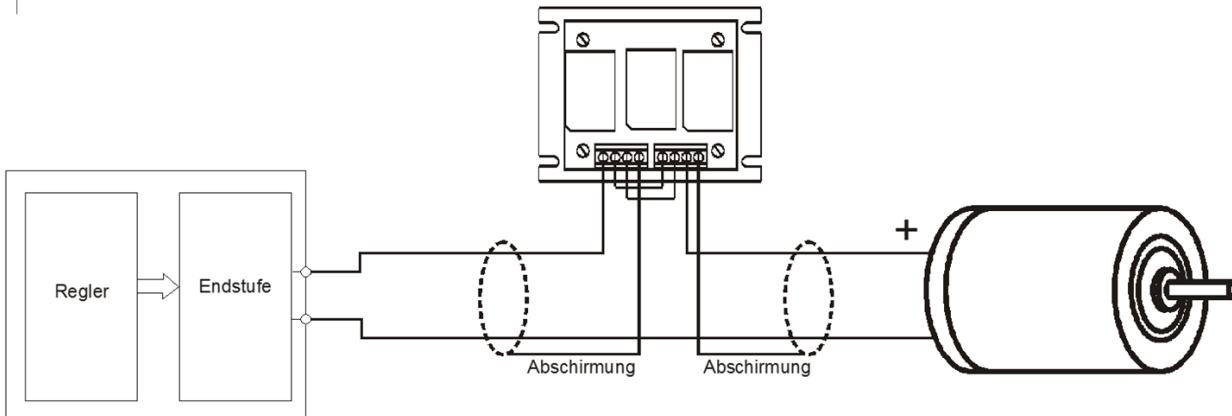
Examples

maxon EC motor



maxon DC motor

e.g.: 10 A / 125 μ H



Sample calculations

Motor type	maxon EC motor \varnothing 32 mm	maxon DC motor RE75 mm
Order number	118891	118821
Motor data		
Max. continuous current:	$I_{max} = 5 \text{ A}$	7.23 A
Terminal inductance (phase-phase):	$L_{Motor(Ph-Ph)} = 0.03 \text{ mH}$	0.16 mH
Linear storage choke data		
Nominal DC current:	$I_N = 5 \text{ A}$	10 A (parallel connection)
Inductance at I_N :	$L_{choke} = 0.25 \text{ mH}$	0.125 mH (parallel connection)
Total inductance:	$L_{Total(Ph-Ph)} = L_{Motor(Ph-Ph)} + L_{choke} + L_{choke}$	$L_{Motor(Ph-Ph)} + L_{choke}$
	$L_{Total(Ph-Ph)} = 0.03 \text{ mH} + 0.25 \text{ mH} + 0.25 \text{ mH}$	0.16 mH + 0.125 mH
	$L_{Total(Ph-Ph)} = 0.53 \text{ mH}$	0.285 mH
Continuous Current:	$I_{max} \leq I_N = 5 \text{ A}$	7.23 A < 10 A