VARIODRIVE Compact-Motor

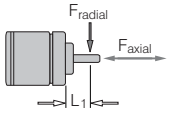
VDC-3-54.32



- 3-phase external rotor motor in EC technology.
- Dynamically balanced rotor with 4-pole, plastic-bonded ferrite magnet.
- Integrated operating electronics with powerful microcontroller.
- Excellent control response due to digital 4-Q PI controller.
- High operating efficiency due to FET power stage.
- Analogue set value.
- Operating mode selection (direction of rotation, braking and motor enable) via 2 control inputs.
- Protection against overload due to integrated, speed-dependent current limiting.
- Customer-specific version possible based on software and hardware adaption (e.g. fixed speed, direction of rotation).

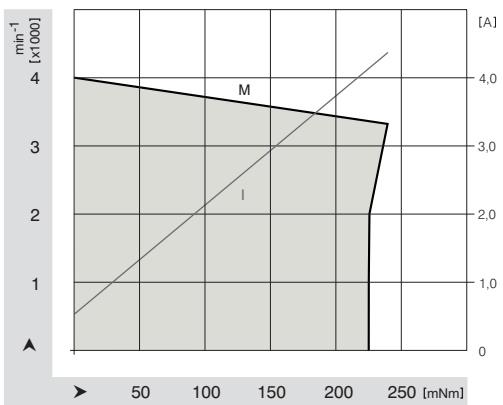
Nominal Data

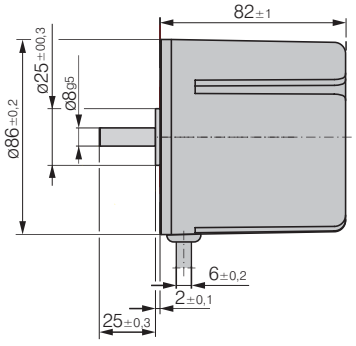
Type		VDC-3-54.32
Nominal voltage (U_{BN})	V DC	24 (18 ... 28)
Nominal speed (n_N)	min^{-1}	3 300
Nominal torque (M_N)	mNm	240
Nominal current (I_{BN})	A	4.3
Nominal output power (P_N)	W	83
Free-running speed (n_L)	min^{-1}	4 100
Free-running current (I_{BL})	A	0.5
Max. reverse voltage	V DC	40
Set value input	V	0 ... 10
Desired speed	min^{-1}	0 ... 4 000
Recommended speed control range	min^{-1}	300 ... n_{max}
Function for motor protection at stall		yes
by stall protection pulsing		T_{on} 0.8 / T_{off} 2.5 s
Overload protection		yes
Average starting torque	mNm	280
Rotor moment of inertia (J_R)	kgm^2x10^{-6}	500
Thermal resistance (R_{th})	K/W	2.15
Protection class		IP 40
Ambient temperature range (T_U)	°C	0 ... +40
Motor mass (m)	kg	1.1
Order No.		937 5432 610

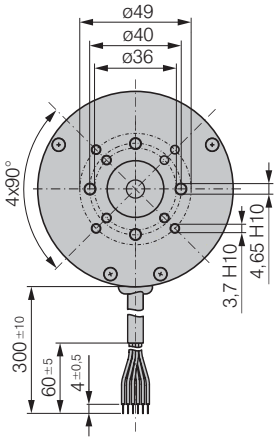


F_{axial} 25 N
F_{radial} 60 N L_1 10 mm

Permissible shaft load at nominal speed and life expectancy L10 at 20 000 h.







ebmpapst

Permissible S1 operating characteristics

Order No. 937 5432 610				
Speed n (min^{-1})	300	1000	2000	3300
Torque M (mNm)	225	225	225	240
Input power $P_{S1\ max}$ (W)	31	50	70	115

Pin connection

Yellow	ACTUAL	ACTUAL Speed value
White	A	Input A
Grey	B	Input B
–	C	Not connected

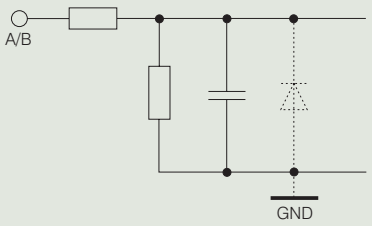
Green	S+	Set value
–	S-	Ground set value
Black	GND	Ground
Red	+Ub	Supply voltage

1. Control inputs

A	B	
0	0	Power stage disabled
0	1	Counterclockwise rotation
1	0	Clockwise rotation
1	1	Brake function*

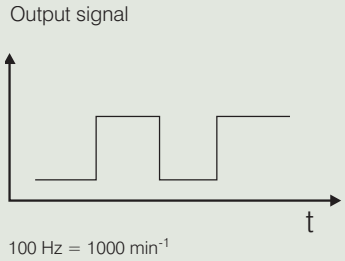
low (0) 0 ... 0.8 V
high (1) 2.4 ... 30 V

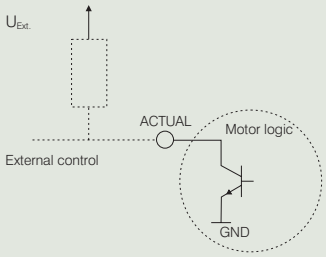
* Brake function:
The braking function serves to slow down the motor only.
It has no holding brake function for static duty.



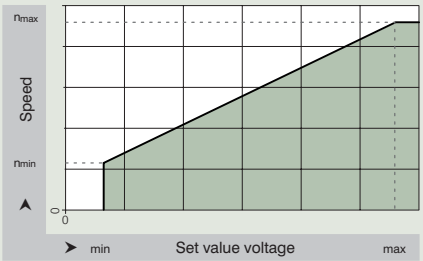
2. Actual speed value output

Version:
Open Collector
$U_{ext.\ max}$ = 30 V
U_{CESAT} = 0.5 V
I_{CMAX} = 5mA

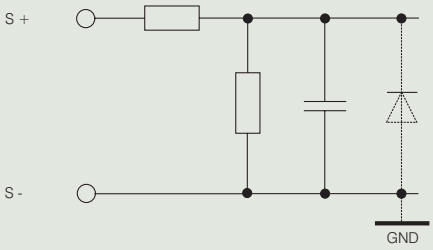




3. Set value



Speed setting for speed control via set value voltage (interface 0 ... 10 V DC).



For detailed information, please refer to the corresponding specification data sheets.
The instructions and safety notes in the operating manual must be kept at all times.