

VARIODRIVE

VD-1-27.08

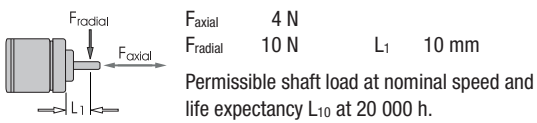


- 1-phase, 2-core reluctance motor as external rotor version.
- EC technology.
- Dynamically balanced rotor with 4-pole, plastic-bonded ferrite magnet.
- Determination of rotor position via Hall sensor.
- Commutation electronics fully integrated in the motor.
- Load-dependent speed setting via connection voltage.
- Customer-specific winding layout and / or motor part sets available on request.

ebm-papst · St. Georgen

Nominal Data

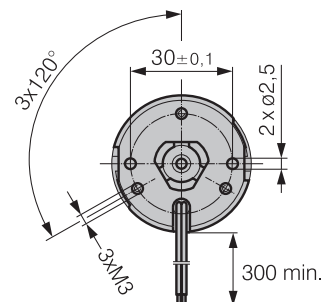
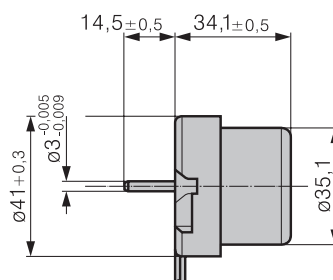
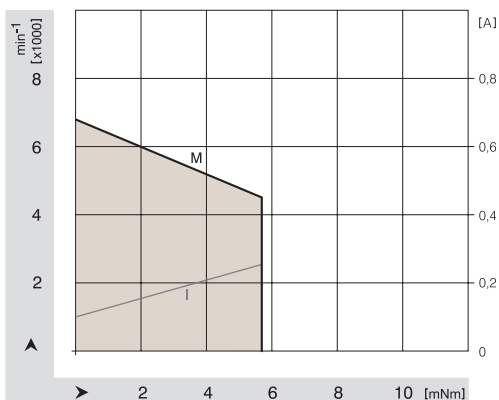
Type	VD-1-27.08	
Nominal voltage (U_{BN})	V DC	24 (16 ... 28)
Nominal speed (n_N)	min^{-1}	4 500
Nominal torque (M_N)	mNm	5.70
Nominal current (I_{BN})	A	0.25
Nominal output power (P_N)	W	2.7
Free-running speed (n_L)	min^{-1}	6 800
Free-running current (I_{BL})	A	0.10
Induced voltage (U_{imax})	V/1000 min^{-1}	3.25
Average starting torque	mNm	14
Max. starting current	A	0.60
Rotor moment of inertia (J_R)	$\text{kgm}^2 \times 10^{-6}$	11.0
Thermal resistance (R_{th})	K/W	14
Protection class		IP 00
Ambient temperature range (T_u)	$^{\circ}\text{C}$	0 ... +40
Motor mass (m)	kg	0.12
Order No.	Clockwise rotation	937 2708 500
Order No.	Counterclockwise rotation	937 2708 550



Electrical connection

Electrical connection via 2 single leads, AWG 24, TR 64, 300 mm long with stripped and tinned ends.

+ = red - = blue



VARIODRIVE

VD-1-27.15



- 1-phase, 2-core reluctance motor as external rotor version.
- EC technology.
- Dynamically balanced rotor with 4-pole, plastic-bonded ferrite magnet.
- Determination of rotor position via Hall sensor.
- Commutation electronics fully integrated in the motor.
- Load-dependent speed setting via connection voltage.
- Customer-specific winding layout and / or motor part sets available on request.

ebm-papst · St. Georgen

Nominal Data

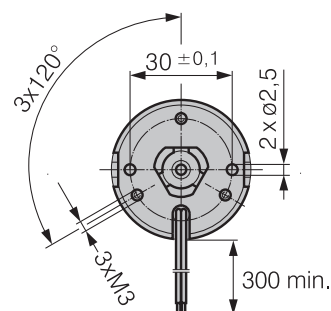
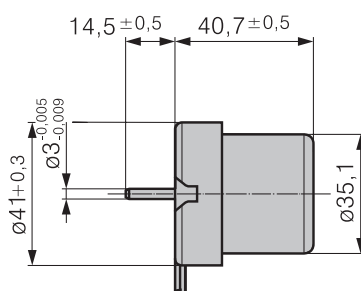
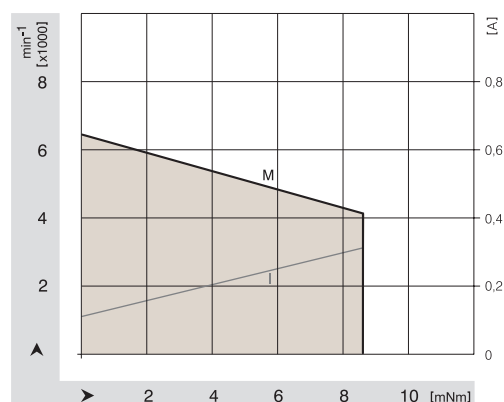
Type		VD-1-27.15
Nominal voltage (U_{BN})	V DC	24 (16 ... 28)
Nominal speed (n_N)	min^{-1}	4 200
Nominal torque (M_N)	mNm	8.6
Nominal current (I_{BN})	A	0.32
Nominal output power (P_N)	W	3.8
Free-running speed (n_L)	min^{-1}	6 400
Free-running current (I_{BL})	A	0.12
Induced voltage (U_{imax})	V/1000 min^{-1}	3.50
Average starting torque	mNm	24
Max. starting current	A	0.80
Rotor moment of inertia (J_R)	$\text{kgm}^2 \times 10^{-6}$	15.0
Thermal resistance (R_{th})	K/W	8
Protection class		IP 00
Ambient temperature range (T_u)	$^{\circ}\text{C}$	0 ... +40
Motor mass (m)	kg	0.15
Order No.	Clockwise rotation	-
Order No.	Counterclockwise rotation	937 2715 550



Electrical connection

Electrical connection via 2 single leads, AWG 24, TR 64, 300 mm long with stripped and tinned ends.

+ = red - = blue



VARIODRIVE

VD-1-35.05

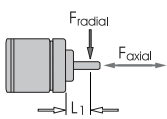


- 1-phase, 2-core reluctance motor as external rotor version.
- EC technology.
- Dynamically balanced rotor with 4-pole, plastic-bonded ferrite magnet.
- Determination of rotor position via Hall sensor.
- Commutation electronics fully integrated in the motor.
- Load-dependent speed setting via connection voltage.
- Customer-specific winding layout and / or motor part sets available on request.

ebm-papst · St. Georgen

Nominal Data

Type	VD-1-35.05	
Nominal voltage (U_{BN})	V DC	24 (12 ... 28)
Nominal speed (n_N)	min^{-1}	5 000
Nominal torque (M_N)	mNm	3.4
Nominal current (I_{BN})	A	0.31
Nominal output power (P_N)	W	1.8
Free-running speed (n_L)	min^{-1}	6 000
Free-running current (I_{BL})	A	0.20
Induced voltage (U_{imax})	V/1000 min^{-1}	2.40
Average starting torque	mNm	19
Max. Anlaufmoment	A	8.0
Rotor moment of inertia (J_R)	$\text{kgm}^2 \times 10^{-6}$	16.0
Thermal resistance (R_{th})	K/W	6.60
Protection class		IP 00
Ambient temperature range (T_u)	$^{\circ}\text{C}$	0 ... +40
Motor mass (m)	kg	0.12
Order No.	Clockwise rotation	937 3505 500
Order No.	Counterclockwise rotation	937 3505 550



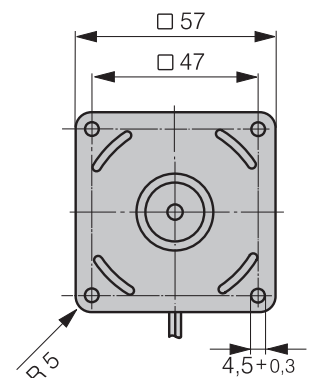
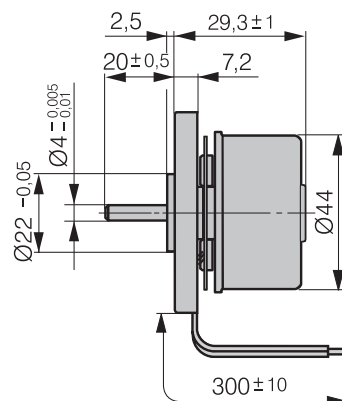
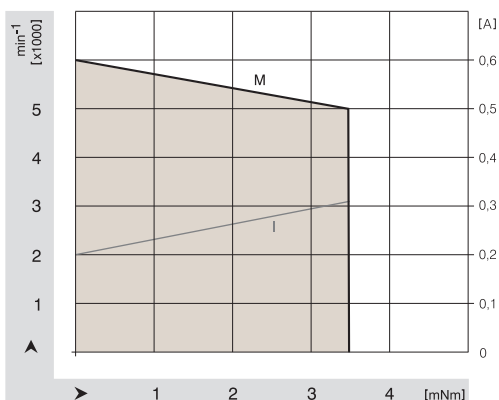
F_{axial} 5 N
 F_{radial} 25 N L_1 10 mm

Permissible shaft load at nominal speed and life expectancy L_{10} at 20 000 h.

Electrical connection

Electrical connection via 2 single leads, AWG 24, TR 64, 300 mm long with stripped and tinned ends.

+ = red - = blue



VARIODRIVE

VD-1-43.10

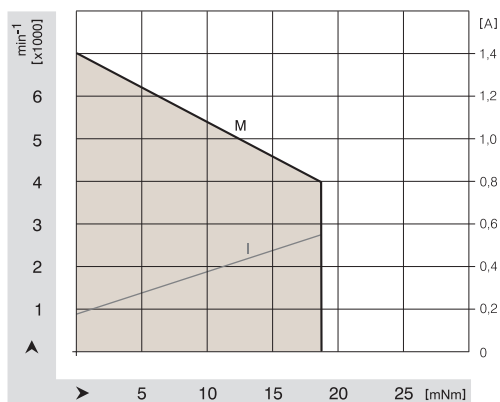
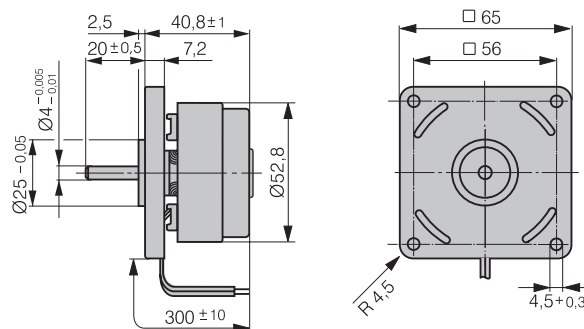


- 1-phase, 2-core reluctance motor as external rotor version.
- EC technology.
- Dynamically balanced rotor with 4-pole, plastic-bonded ferrite magnet.
- Determination of rotor position via Hall sensor.
- Commutation electronics fully integrated in the motor.
- Load-dependent speed setting via connection voltage.
- Customer-specific winding layout and / or motor part sets available on request.

ebm-papst · St. Georgen

Nominal Data

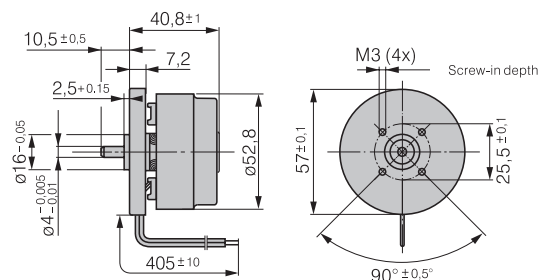
Type		VD-1-43.10	...504	...508
Nominal voltage (U _{BN})	V DC	24 (12 ... 28)	12	24 (12...25)
Nominal speed (n _N)	min ⁻¹	4 000	3 800	3 450
Nominal torque (M _N)	mNm	18	11	19.5
Nominal current (I _{BN})	A	0.55	0.7	0.5
Nominal output power (P _N)	W	7.5	4.4	7.0
Free-running speed (n _L)	min ⁻¹	7 000	5 250	6 300
Free-running current (I _{BL})	A	0.18	0.3	0.15
Induced voltage (U _{imax})	V/1000 min ⁻¹	3.7	2.19	4.0
Average starting torque	mNm	70	50	50
Max. starting current	A	2.5	3.0	1.5
Rotor moment of inertia (J _R)	kgm ² x10 ⁻⁶	40	40	40
Thermal resistance (R _{th})	K/W	4.5	5.0	5.0
Protection class		IP 00	IP 00	IP 00
Ambient temperature range (T _u)	°C	0 ... +40	0 ... +40	0 ... +40
Motor mass (m)	kg	0.24	0.24	0.24
Order No.	Clockwise rotation	937 4310 500	937 4310 504	937 4310 508
Order No.	Counterclockwise rotation	937 4310 550		



Electrical connection

Electrical connection via 2 single leads, AWG 22, TR 64, 300 mm long with stripped and tinned ends
 + = red - = blue

Type 504 / 508 VARIODRIVE with round flange



VARIODRIVE

VD-1-54.14

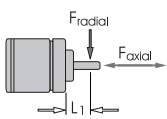


- 1-phase, 2-core reluctance motor as external rotor version.
- EC technology.
- Dynamically balanced rotor with 4-pole, plastic-bonded ferrite magnet.
- Determination of rotor position via Hall sensor.
- Commutation electronics fully integrated in the motor.
- Load-dependent speed setting via connection voltage.
- Customer-specific winding layout and / or motor part sets available on request.

ebm-papst · St. Georgen

Nominal Data

Type		VD-1-54.14	...550
Nominal voltage (U_{BN})	V DC	24 (12 ... 28)	24 (20 ... 28)
Nominal speed (n_N)	min^{-1}	4 000	3 300
Nominal torque (M_N)	mNm	62	40
Nominal current (I_{BN})	A	1.75	0.95
Nominal output power (P_N)	W	26	14
Free-running speed (n_L)	min^{-1}	8 000	5 400
Free-running current (I_{BL})	A	0.70	0.55
Induced voltage (U_{imax})	V/1000 min^{-1}	4.2	5.6
Average starting torque	mNm	100	100
Max. starting current	A	2.7	2.0
Rotor moment of inertia (J_R)	$\text{kgm}^2 \times 10^{-6}$	200	200
Thermal resistance (R_{th})	K/W	3.2	3.5
Protection class		IP 00	IP 00
Ambient temperature range (T_u)	$^{\circ}\text{C}$	0 ... +40	0 ... +40
Motor mass (m)	kg	0.52	0.52
Order No.	Clockwise rotation	937 5414 502	-
Order No.	Counterclockwise rotation	-	937 5414 550



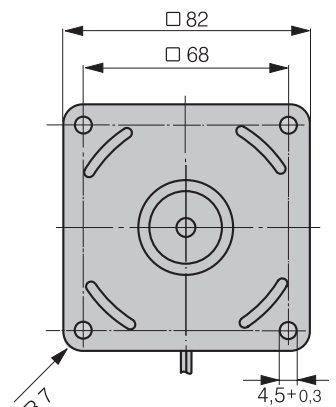
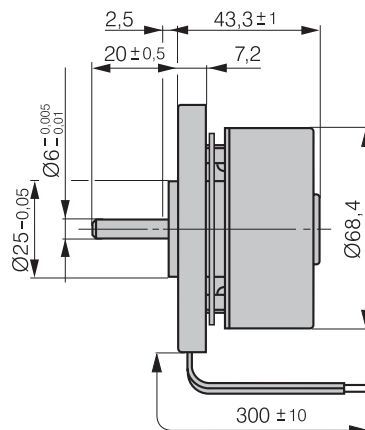
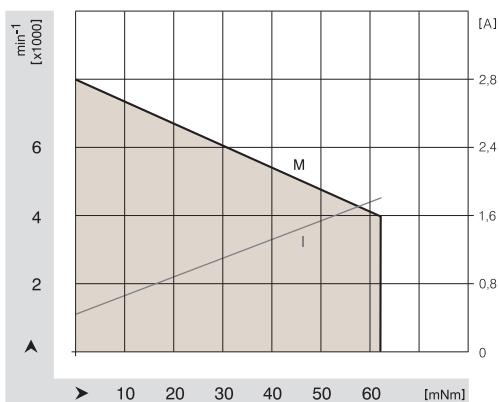
F_{axial} 10 N
 F_{radial} 60 N L_1 10 mm

Permissible shaft load at nominal speed and life expectancy L_{10} at 20 000 h.

Electrical connection

Electrical connection via 2 single leads, AWG 24, TR 64, 300 mm long with stripped and tinned ends.

+ = red - = blue



VARIODRIVE

VD-3-25.07

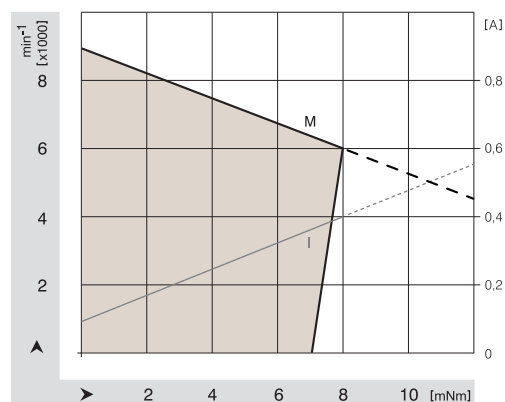
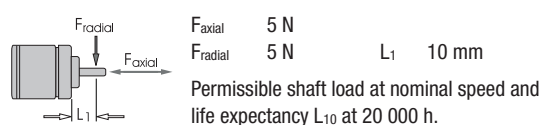


- 3-phase, 6-pulse external rotor motor.
- EC technology.
- Dynamically balanced rotor with 4-pole, plastic-bonded ferrite magnet.
- Determination of rotor position via 3 Hall sensors.
- Motor supply and control via external operating electronics.
- Customer-specific winding layout and / or motor part sets available on request.

ebm-papst · St. Georgen

Nominal Data

Type	VD-3-25.07	
Nominal voltage (U_{BN})	V DC	24
Nominal speed (n_N)	min^{-1}	6 000
Nominal torque (M_N)	mNm	8.0
Nominal current (I_{BN})	A	0.4
Nominal output power (P_N)	W	5
Free-running speed (n_L)	min^{-1}	8 500
Free-running current (I_{BL})	A	0.095
Permanent stall torque (M_{BNO})	mNm	7.0
Permissible eff. stall current, motor lead (I_{BDefl})	A	0.32
Permissible permanent input power at stall (P_{BNO})	W	2.0
Short-term permiss. peak torque (M_{max})	mNm	40
Permiss. peak current, motor lead (I_{max})	A	1.8
Induced voltage (U_{imax})	$\text{V}/1000 \text{ min}^{-1}$	2.78
Terminal resistance	Ω	14.8
Terminal inductance	mH	8
Rotor moment of inertia (J_R)	$\text{kgm}^2 \times 10^{-6}$	4.3
Thermal resistance (R_{th})	K/W	16.7
Protection class		IP 00
Ambient temperature range (T_U)	$^{\circ}\text{C}$	0 ... +40
Motor mass (m)	kg	0.055
Order No.		937 2507 000



Operating electronics:

Adapted operating electronics
DRIVECONTROL VT-A on request

Hall - IC A 3280 ELH

Supply voltage range:

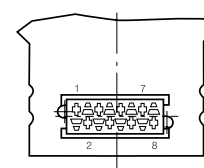
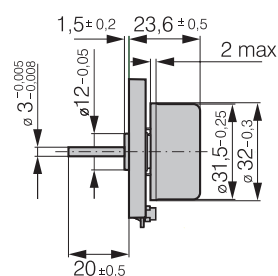
$V_{CC} = 4.2 \dots 24 \text{ V}$

Signal output: Open Collector

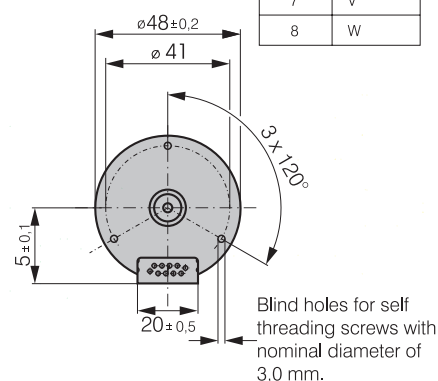
Current consumption per Hall $I_{CC} < 6 \text{ mA}$

Max. output voltage: $V_o = 26 \text{ V}$

Max. output current: $I_o = 25 \text{ mA}$

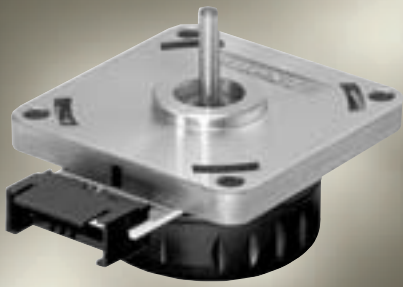


Pin position	Connection
1	GND
2	PS3
3	+Ub
4	PS2
5	PS1
6	U
7	V
8	W



VARIODRIVE

VD-3-35.06

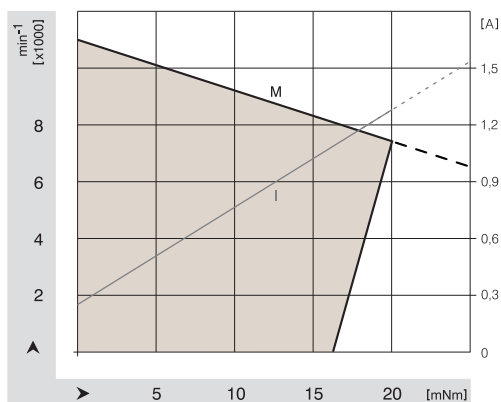
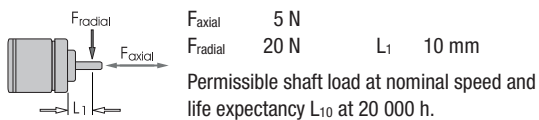


- 3-phase, 6-pulse external rotor motor.
- EC technology.
- Dynamically balanced rotor with 4-pole, plastic-bonded ferrite magnet.
- Determination of rotor position via 3 Hall sensors.
- Motor supply and control via external operating electronics.
- Customer-specific winding layout and / or motor part sets available on request.

ebm-papst · St. Georgen

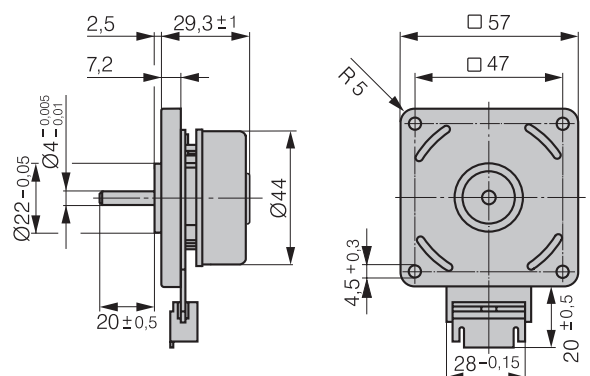
Nominal Data

Type		VD-3-35.06	...010
Nominal voltage (U_{BN})	V DC	24	24
Nominal speed (n_N)	min^{-1}	7 500	3 700
Nominal torque (M_N)	mNm	20	20
Nominal current (I_{BN})	A	1.25	0.8
Nominal output power (P_N)	W	16	8.0
Free-running speed (n_L)	min^{-1}	11 000	7 100
Free-running current (I_{BL})	A	0.25	0.16
Permanent stall torque (M_{BNO})	mNm	16	16
Permissible eff. stall current, motor lead (I_{Noeff})	A	1.0	0.6
Permissible permanent input power at stall (P_{BNO})	W	5.0	5.0
Short-term permiss. peak torque (M_{max})	mNm	69	69
Permiss. peak current, motor lead (I_{max})	A	4.0	2.5
Induced voltage (U_{imax})	V/1000 min^{-1}	2.19	3.52
Terminal resistance	Ω	3.7	9.4
Terminal inductance	mH	2.5	6.4
Rotor moment of inertia (J_R)	$\text{kgm}^2 \times 10^{-6}$	16.0	16.0
Thermal resistance (R_{th})	K/W	5.2	7.0
Protection class		IP 00	IP 00
Ambient temperature range (T_u)	$^{\circ}\text{C}$	0 ... +40	0 ... +40
Motor mass (m)	kg	0.120	0.120
Order No.		937 3506 000	937 3506 010



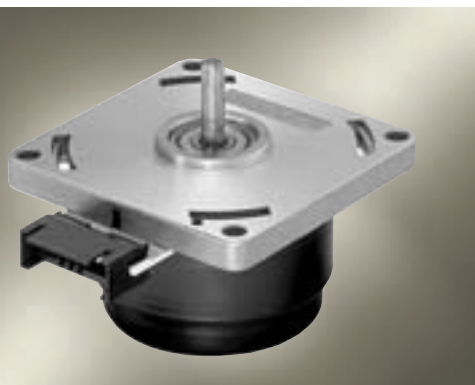
Operating electronics for speed-controlled operation:

for Order No. 937 3506 000 = DRIVECONTROL VT-A / Order No. 937 1201 001
for Order No. 937 3506 010 = DRIVECONTROL VT-A / Order No. 937 1201 002



VARIODRIVE

VD-3-43.10



- 3-phase, 6-pulse external rotor motor.
- EC technology.
- Dynamically balanced rotor with 4-pole, plastic-bonded ferrite magnet.
- Determination of rotor position via 3 Hall sensors.
- Motor supply and control via external operating electronics.
- Customer-specific winding layout and / or motor part sets available on request.

ebm-papst · St. Georgen

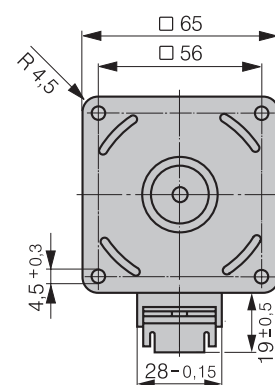
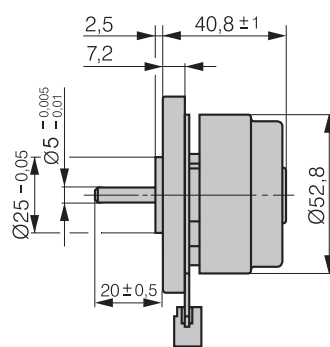
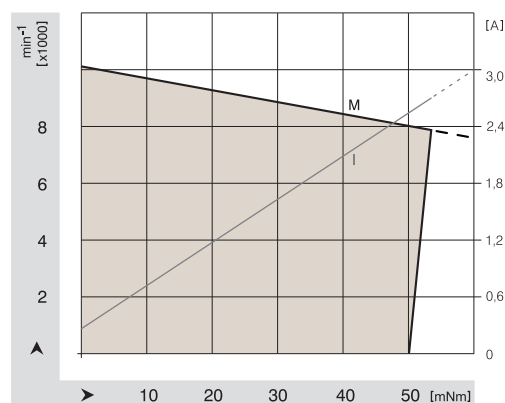
Nominal Data

Type		VD-3-43.10	...010
Nominal voltage (U_{BN})	V DC	24	24
Nominal speed (n_N)	min^{-1}	7 900	3 700
Nominal torque (M_N)	mNm	53	54
Nominal current (I_{BN})	A	2.7	1.6
Nominal output power (P_N)	W	44	21
Free-running speed (n_L)	min^{-1}	10 200	8 000
Free-running current (I_{BL})	A	0.27	0.18
Permanent stall torque (M_{BNO})	mNm	50	49
Permissible eff. stall current, motor lead (I_{Noeff})	A	2.7	1.8
Permissible permanent input power at stall (P_{BNO})	W	10	10
Short-term permiss. peak torque (M_{max})	mNm	110	110
Permiss. peak current, motor lead (I_{max})	A	6.5	4.2
Induced voltage (U_{imax})	V/1000 min^{-1}	2.03	3.07
Terminal resistance	Ω	0.96	2.3
Terminal inductance	A	1.55	3.5
Rotor moment of inertia (J_R)	$\text{kgm}^2 \times 10^{-6}$	40	40
Thermal resistance (R_{th})	K/W	4.11	4.75
Protection class		IP 00	IP 00
Ambient temperature range (T_u)	$^{\circ}\text{C}$	0 ... +40	0 ... +40
Motor mass (m)	kg	0.24	0.24
Order No.		937 4310 000	937 4310 010



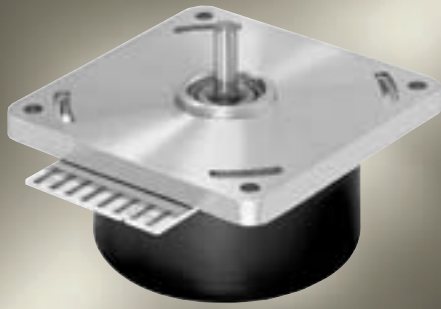
Operating electronics for speed-controlled operation:

for Order No. 937 4310 000 = DRIVECONTROL VT-A / Order No. 937 1401 001
for Order No. 937 4310 010 = DRIVECONTROL VT-A / Order No. 937 1401 002



VARIODRIVE

VD-3-54.14

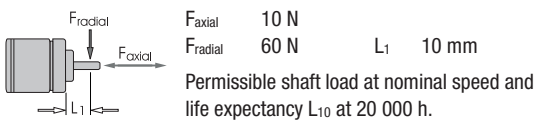


- 3-phase, 6-pulse external rotor motor.
- EC technology.
- Dynamically balanced rotor with 4-pole, plastic-bonded ferrite magnet.
- Determination of rotor position via 3 Hall sensors.
- Motor supply and control via external operating electronics.
- Customer-specific winding layout and / or motor part sets available on request.

ebm-papst · St. Georgen

Nominal Data

Type		VD-3-54.14	...010	...005
Nominal voltage (U_{BN})	V DC	24	24	24
Nominal speed (n_N)	min^{-1}	5 600	3 700	6 200
Nominal torque (M_N)	mNm	150	150	150
Nominal current (I_{BN})	A	5.1	3.6	5.7
Nominal output power (P_N)	W	88	57	97
Free-running speed (n_L)	min^{-1}	7 100	5 200	7 250
Free-running current (I_{BL})	A	0.41	0.26	0.43
Permanent stall torque (M_{BNO})	mNm	115	115	135
Permissible eff. stall current, motor lead (I_{Noeff})	A	4.4	3.1	5.4
Permissible permanent input power at stall (P_{BNO})	W	13	13	13
Short-term permiss. peak torque (M_{max})	mNm	400	400	440
Permiss. peak current, motor lead (I_{max})	A	15	10	20
Induced voltage (U_{imax})	V/1000 min^{-1}	3.06	4.38	2.95
Terminal resistance	Ω	0.49	0.96	0.33
Terminal inductance	A	1.00	2	0.72
Rotor moment of inertia (J_R)	$\text{kgm}^2 \times 10^{-6}$	145	145	165
Thermal resistance (R_{th})	K/W	2.5	3	2.4
Protection class		IP 00	IP 00	IP 00
Ambient temperature range (T_u)	$^{\circ}\text{C}$	0 ... +40	0 ... +40	0 ... +40
Motor mass (m)	kg	0.52	0.52	0.52
Order No.		937 5414 000	937 5414 010	937 5414 005



Operating electronics for speed-controlled operation:

for Order No. 937 5414 000 = DRIVECONTROL VT-A / Order No. 937 2501 001
 for Order No. 937 5414 010 = DRIVECONTROL VT-A / Order No. 937 2501 002
 for Order No. 937 5414 005 = DRIVECONTROL VT-D on request

