

# VD motor.

VD-49.15-K1



- 3-phase external rotor motor with EC technology
- High poled motor structure for optimum power density
- Basic motor with electronic module K1 for operation on external control electronics
- Very good synchronization characteristics
- Robust mechanical design in IP 54 for industrial applications
- Long lifetime by using precision ball bearings
- Insulation class E
- Electrical connection via cable

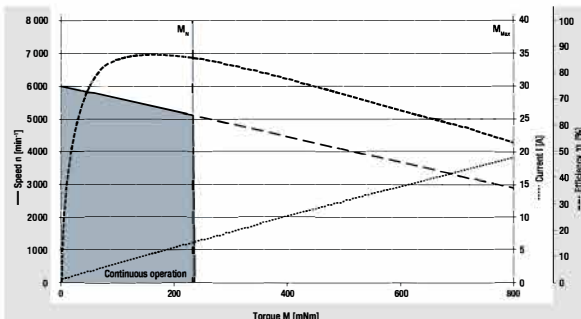
Nominal data			
Type		VD-49.15-K1-B00	VD-49.15-K1-D00
Nominal voltage ( $U_N$ )	V DC	24	48
Nominal speed ( $n_N$ )*	rpm	4 500	5 300
Nominal torque ( $M_N$ )*	mNm	235	245
Nominal current ( $I_N$ )*	A	6.10	3.40
Nominal output power ( $P_N$ )*	W	110	135
Starting torque ( $M_{max}$ )	mNm	1 150	1 300
Permissible peak current ( $I_{max}$ )**	A	30.0	18.5
Speed at no-load operation ( $n_l$ )	rpm		6 000
No-load current ( $I_l$ )	A	0.47	0.36
Recommended speed control range	rpm		0 ... 6 000
Rotor moment of inertia ( $J_R$ )	kgm <sup>2</sup> x10 <sup>-6</sup>		108
Motor constant ( $K_E$ )	mVs/rad	41.0	80.7
Connection resistance ( $R_V$ )	$\Omega$	0.23	0.62
Connection inductance ( $L_V$ )	mH	0.17	0.62
Overload protection		To be implemented via the control electronics	
Permissible ambient temperature range ( $T_U$ )	$^{\circ}\text{C}$		0 ... +40
Weight	kg		0.59
Order no. (cable type)***	IP 54	937 4915 000	937 4915 001

Subject to alterations

\* At  $T_U$  max. 40 $^{\circ}\text{C}$   
 \*\* Permissible time for peak current: max. 1 sec. – to be repeated only after complete cool down  
 \*\*\* Classification of protection class refers to installed state with sealing on the flange side

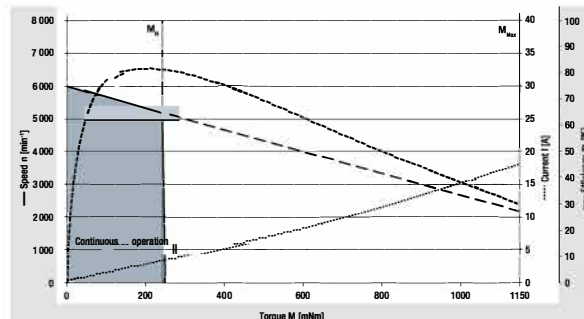
## Characteristic curve

VD-49.15-K1-B00 (at 25 $^{\circ}\text{C}$ )



<sup>1)</sup> Nominal data, see table

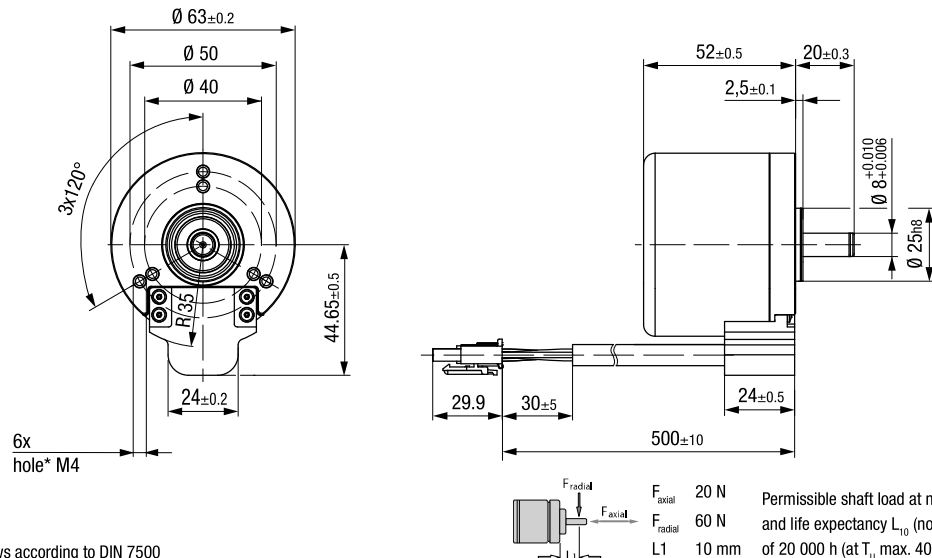
VD-49.15-K1-D00 (at 25 $^{\circ}\text{C}$ )



<sup>1)</sup> Nominal data, see table

Technical drawing

All dimensions in mm



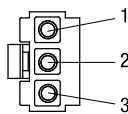
\* For thread-rolling screws according to DIN 7500

$F_{axial}$  20 N Permissible shaft load at nominal speed  
 $F_{radial}$  60 N and life expectancy  $L_{10}$  (nominal operation)  
 $L1$  10 mm of 20 000 h (at  $T_v$  max. 40°C)

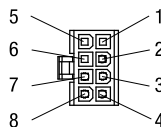
Electrical connection

Supply wire

No.	Color	Function
1	yellow	Phase W
2	violet	Phase V
3	brown	Phase U



Molex plug no. 39-03-6035



Molex plug no. 39-01-2085

Signal wire

No.	Color	Function
1	–	–
2	red	+12 V
3	white	Hall B
4	green	Hall A
5	–	–
6	–	–
7	black	GND
8	gray	Hall C

Modular construction kit

Recommended external control electronics

VTD-XX.XX-K3	Speed (page 34)
VTD-XX.XX-K4S	Position (page 36)
VTD-60.13-K5SB	Position (page 38)

Basic motor



Planetary gearheads

- NoiselessPlus 63 (page 44)
- Performax® 63 (page 46)
- Performax®Plus 63 (page 48)

Crown gearheads

- EtaCrown® 75 (page 50)
- EtaCrown®Plus 63 (page 52)

Spur gearheads

- Compactline 91 (page 56)
- Flatline 85 (page 60)