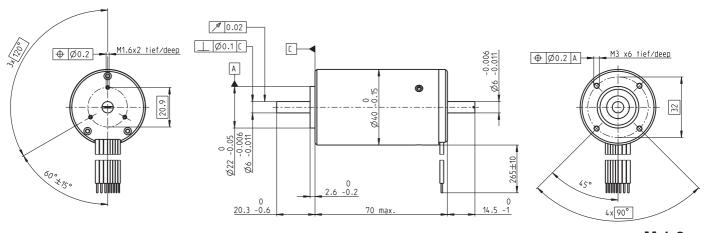
EC 40 Ø40 mm, brushless, 120 Watt, C€ approved



M 1:2

74.8

8.76

7.79

85.0

66.0

8.56

7.62

85.0

43.2

7.78

85.0

8.75

114

8.59

7.64

85.0

Stock program Standard program Special program (on request)			Article Numbers													
		167176	167177	118894	118895	167178	167179	118896	118897	167180	118898	167181	167183	118899	118901	
Motor Data																
Values at nominal voltage																
1 Nominal voltage	V	12	18	21	30	24	36	42	48	48	48	48	48	48	48	
2 No load speed	rpm	10300	12000	10400	11600	10300	9830	10400	7560	10300	5930	5420	3530	3110	2020	
3 No load current	mA	886	754	515	426	443	275	258	139	222	97.8	86.2	48.6	41.3	24.4	
4 Nominal speed	rpm	9050	10900	9240	10500	9160	8710	9290	6450	9190	4830	4290	2400	1990	893	
5 Nominal torque (max. continuous torque)	mNm	107	113	116	120	120	123	122	127	123	130	126	127	129	129	
6 Nominal current (max. continuous current)	Α	10.4	8.62	6.46	5.24	5.78	3.76	3.40	2.22	2.96	1.77	1.57	1.03	0.920	0.599	
7 Stall torque	mNm	985	1340	1150	1420	1210	1200	1280	940	1270	743	639	410	370	237	
8 Starting current	Α	89.2	94.4	60.1	57.9	55.0	34.6	33.5	15.7	28.8	9.72	7.65	3.21	2.56	1.07	
9 Max. efficiency	%	81	83	83	84	83	83	84	82	84	81	80	77	76	72	
Characteristics																
10 Terminal resistance phase to phase	Ω	0.134	0.191	0.349	0.518	0.436	1.04	1.25	3.07	1.66	4.94	6.28	14.9	18.8	44.8	
11 Terminal inductance phase to phase	mH	0.0266	0.0439	0.0797	0.132	0.106	0.263	0.319	0.788	0.425	1.28	1.52	3.56	4.57	10.7	
12 Torque constant	mNm/A	11.0	14.2	19.1	24.6	22.1	34.7	38.2	60.1	44.1	76.4	83.5	128	145	221	

389

8.20

7.30

85.0

433

8.55

7.61

85.0

275

8.26

7.35

85.0

250

8.20

7.30

85.0

159

8.12

7.22

85.0

216

8.16

7.26

85.0

125

8.07

7.18

85.0

Specifications Operating Range Comments Thermal data n [rpm] Continuous operation 3.2 K/W 1.2 K/W 17.1 s Thermal resistance housing-ambient In observation of above listed thermal resistance 18 Thermal resistance winding-housing 120 W (lines 17 and 18) the maximum permissible win-Thermal time constant winding 18000 ding temperature will be reached during continuous 167177 20 Thermal time constant motor 1050 s operation at 25°C ambient. Ambient temperature -20...+100°C = Thermal limit. 22 Max. permissible winding temperature +125°C 12000 Mechanical data (preloaded ball bearings) 18000 rpm Short term operation The motor may be briefly overloaded (recurring). 23 Max. permissible speed 6000 24 Axial play at axial load < 8 N 0 mm max. 0.14 mm > 8 N Assigned power rating 25 Radial play preloaded 100 150 M [mNm] 26 Max. axial load (dynamic) 10 N 4.0 8.0

500

9.13

8.13

85.0

rpm/V

ms

qcm²

133 N

5000 N

rpm/mNm

865

10.5

9.39

85.0

673

9.05

8.06

85.0

Other specifications

Max. force for press fits (static) (static, shaft supported)

28 Max. radial loading, 5 mm from flange

- Number of pole pairs
- 30 Number of phases

13 Speed constant

16 Rotor inertia

14 Speed/torque gradient

15 Mechanical time constant

Weight of motor

Values listed in the table are nominal. Explanation of the figures on page 137

Connection motor (Cable AWG 22) red Motor winding 1 Motor winding 2

white Motor winding 3 Connection sensors (Cable AWG 26)¹⁾ VHall 4.5 ... 24 VDC green

blue **GND** Hall sensor 1 red/arev black/grey Hall sensor 2 white/grey Hall sensor 3

Wiring diagram for Hall sensors see p. 27

1) Not lead through in combination with resolver

