

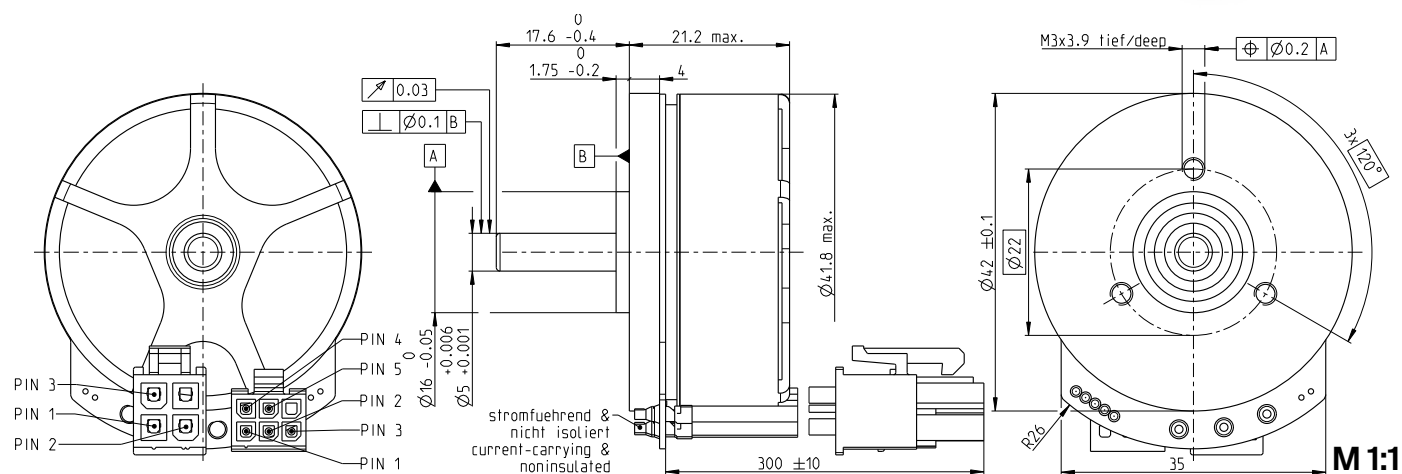
ECX FLAT 42 M Ø42 mm, brushless, BLDC motor

High Torque

Key data: 150/224 W, 221 mNm, 10 000 rpm



ECX FLAT



Motor data

1. Nominal voltage	V	24	48
2. No load speed	rpm	8050	7560
3. No load current	mA	363	163
4. Nominal speed	rpm	6470	6070
5. Nominal torque	mNm	214	221
6. Nominal current (max. continuous current)	A	7.34	3.53
7. Stall torque ¹	mNm	1120	1140
8. Stall current	A	103	51.4
9. Max. efficiency	%	83.5	84.1
10. Terminal resistance	Ω	0.233	0.934
11. Terminal inductance	mH	0.153	0.698
12. Torque constant	mNm/A	28.3	60.1
13. Speed constant	rpm/V	339	159
14. Speed/torque gradient	rpm/mNm	2.8	2.47
15. Mechanical time constant	ms	2.53	2.23
16. Rotor inertia	gcm ²	86.2	86.2

Thermal data

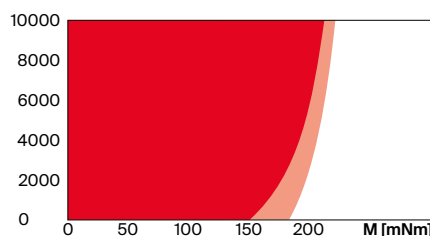
17. Thermal resistance housing-ambient	K/W	1.66
18. Thermal resistance winding-housing	K/W	3.01
19. Thermal time constant winding	s	20.1
20. Thermal time constant motor	s	92.2
21. Ambient temperature	°C	-40...+100
22. Max. winding temperature	°C	155

Mechanical data ball bearings

23. Max. speed	rpm	10 000
24. Axial play at axial load		
	< 6 N	0 mm
	> 6 N	0.14 mm
Direction of force		pull
25. Radial play		preloaded
26. Max. axial load (dynamic)	N	6
27. Max. force for press fits (static)	N	86
(static, shaft supported)	N	1300
28. Max. radial load [mm from flange]	N	40 [5]

Operating range

n [rpm] winding 24 V



Other specifications

29. Number of pole pairs	8
30. Number of phases	3
31. Weight of motor	g 127

Modular system

Gear	Stages [opt.]	Sensor
405_GPX 42 C	1-4	492_ENX 42 MILE
405_GPX 42 UP	1-4	
455_GSW 55 A		

Details on catalog page 44

Connections, motor (cable AWG 18)

Pin 1 Motor winding 1
Pin 2 Motor winding 2
Pin 3 Motor winding 3
Pin 4 N.C.

Connector, Part number

Molex, 39-01-2040

Connections, sensors (cable AWG 28)

Pin 1 Hall sensor 1
Pin 2 Hall sensor 2
Pin 3 Hall sensor 3
Pin 4 GND
Pin 5 V_{Hall} 2.7...24 VDC
Pin 6 N.C.

Connector, Part number

Molex, 43025-0600

Circuit diagram for Hall sensors see page 69.

¹calculation does not include saturation effect (p. 83/190)

Configuration

Flange: Standard flange/aluminum flange
Shaft, front: Length/shaft shoulder/faces
Shaft, rear: Length/shaft shoulder

■ Continuous operation
■ Continuous operation with reduced thermal resistance R_{th2} 50%
□ Short term operation

Motor Control
547_DEC Module 50/5
551_ESCON 36/3 EC
551_ESCON Module 50/5
553_ESCON 50/5
553_ESCON 70/10
557_ESCON2 Nano 24/2
557_ESCON2 Micro 60/5
563_EPOS4 Micro 24/5 CAN
563_EPOS4 Micro 24/5 EtherCAT
564_EPOS4 Module 50/5
565_Comp. 24/5 EtherCAT 3-axes
567_EPOS4 Compact 50/5
567_EPOS4 Compact 50/8
569_EPOS4 50/5
570_EPOS4 Disk 60/8
571_EPOS4 Disk 60/12