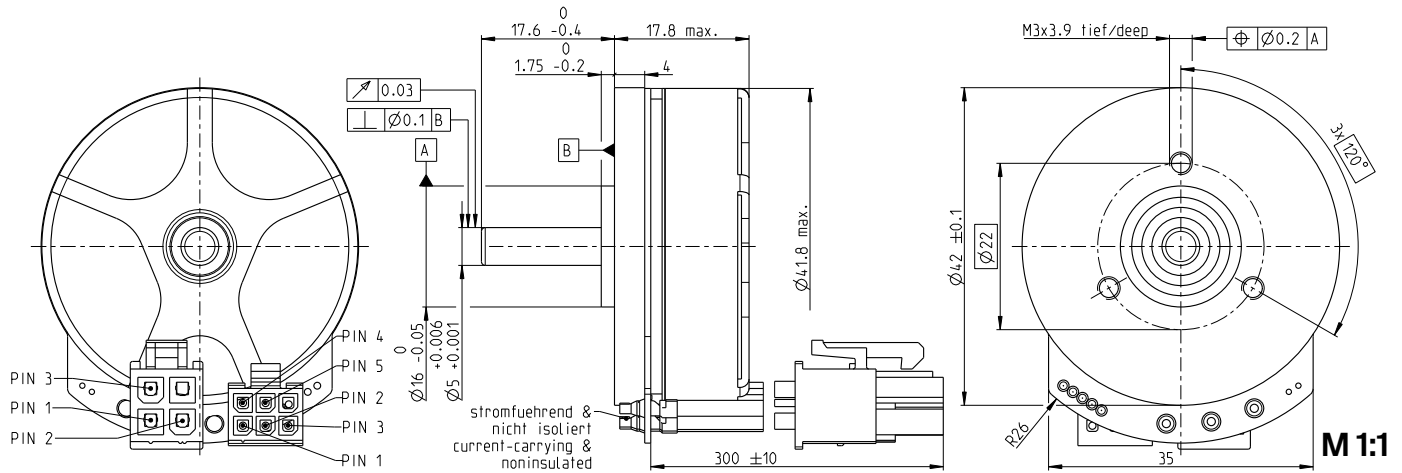


ECX FLAT 42 S Ø42 mm, brushless, BLDC motor

High Torque

Key data: 100/131 W, 133 mNm, 10000 rpm



M 1:1

Motor data

1_	Nominal voltage	V	24	48
2_	No load speed	rpm	9150	8760
3_	No load current	mA	307	143
4_	Nominal speed	rpm	7320	7020
5_	Nominal torque	mNm	127	133
6_	Nominal current (max. continuous current)	A	5.2	2.57
7_	Stall torque ¹	mNm	604	632
8_	Stall current	A	64.5	34.1
9_	Max. efficiency	%	79.2	80.0
10_	Terminal resistance	Ω	0.372	1.41
11_	Terminal inductance	mH	0.185	0.807
12_	Torque constant	mNm/A	24.7	51.7
13_	Speed constant	rpm/V	386	185
14_	Speed/torque gradient	rpm/mNm	5.81	5.02
15_	Mechanical time constant	ms	3.97	3.43
16_	Rotor inertia	gcm ²	65.3	65.3

Thermal data

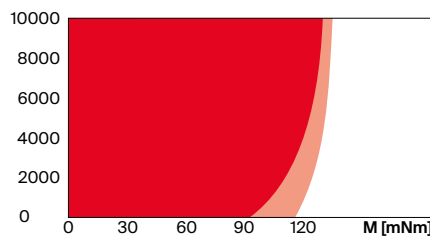
17_	Thermal resistance housing-ambient	K/W	2.19	
18_	Thermal resistance winding-housing	K/W	3.55	
19_	Thermal time constant winding	s	16.5	
20_	Thermal time constant motor	s	121	
21_	Ambient temperature	°C	-40...+100	
22_	Max. winding temperature	°C	155	

Mechanical data ball bearings

23_	Max. speed	rpm	10000	
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	35 [5]	

Operating range

n [rpm] winding 48 V



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

Other specifications

29_	Number of pole pairs	8		
30_	Number of phases	3		
31_	Weight of motor	g	106	

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)

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	1	
456_GSW 62 A	1	

Details on catalog page 44

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 Micro 60/5
558_ESCON2 Module 60/12
559_ESCON2 Compact 60/12
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
569_EPOS4 50/5

Configuration

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