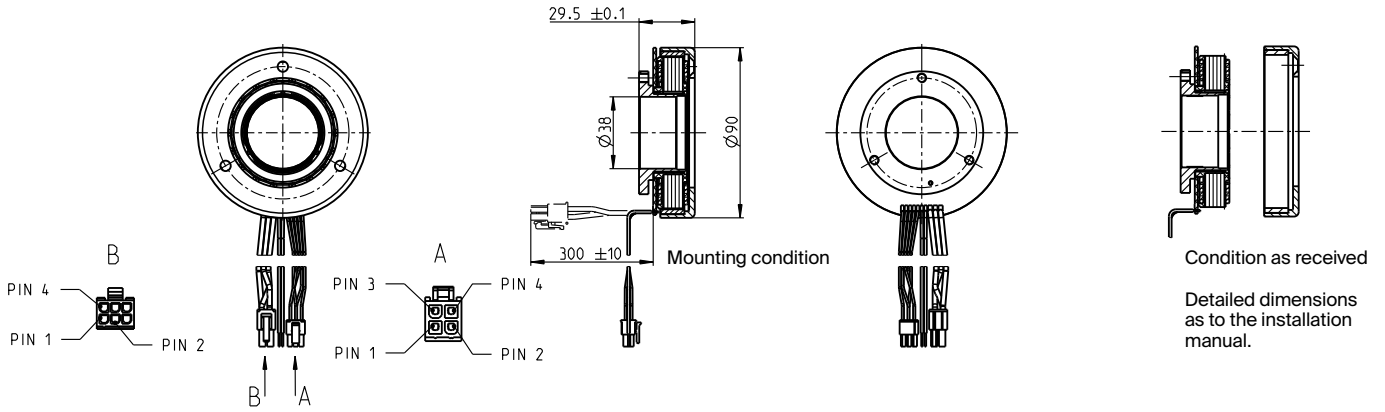


# EC frameless 90 flat $\varnothing 90$ mm, brushless, 160 watt

EC frameless



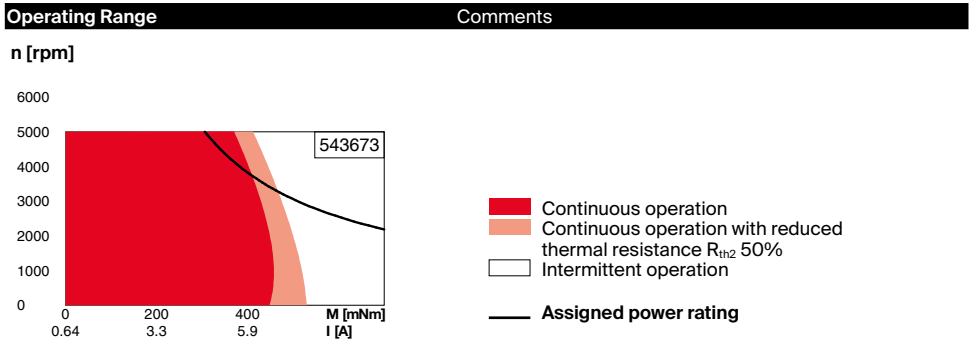
M 1:4

- Stock program
- Standard program
- Special program (on request)

Part Numbers				
with Hall sensors	588847	543673	581301	581302

Motor Data					
<b>Values at nominal voltage</b>					
1 Nominal voltage	V	12	24	36	60
2 No load speed	rpm	3160	3170	3070	2600
3 No load current	mA	1320	658	420	197
4 Nominal speed	rpm	2670	2710	2630	2200
5 Nominal torque (max. continuous torque)	mNm	458	458	453	460
6 Nominal current (max. continuous current)	A	12.8	6.39	4.09	2.1
7 Stall torque	mNm	6260	7540	7430	6380
8 Stall current	A	176	106	67.5	29.4
9 Max. efficiency	%	83	85	85	84
<b>Characteristics</b>					
10 Terminal resistance phase to phase	$\Omega$	0.0682	0.226	0.533	2.04
11 Terminal inductance phase to phase	mH	0.058	0.232	0.554	2.15
12 Torque constant	mNm/A	35.6	71.2	110	217
13 Speed constant	rpm/V	268	134	86.8	44.1
14 Speed/torque gradient	rpm/mNm	0.514	0.427	0.421	0.414
15 Mechanical time constant	ms	17.1	14.2	14	13.8
16 Rotor inertia	gcm <sup>2</sup>	3170	3170	3170	3170

Specifications	
<b>Thermal data</b>	
17 Thermal resistance housing-ambient	1.77 K/W
18 Thermal resistance winding-housing	3.71 K/W
19 Thermal time constant winding	69.6 s
20 Thermal time constant motor	263 s
21 Ambient temperature	-40...+100°C
22 Max. winding temperature	+125°C
<b>Mechanical data</b>	
23 Max. speed	5000 rpm
<b>Other specifications</b>	
29 Number of pole pairs	11
30 Number of phases	3
31 Weight of motor	490 g
Weight of rotor	195 g
Weight of stator	295 g



Values listed in the table are nominal.

Connection motor (Cable AWG 16)		
red	Motor winding 1	Pin 1
black	Motor winding 2	Pin 2
white	Motor winding 3	Pin 3
	N.C.	Pin 4

Connector Part number		
Molex	39-01-2040	
Connection sensors (Cable AWG 24)		
yellow	Hall sensor 1	Pin 1
brown	Hall sensor 2	Pin 2
grey	Hall sensor 3	Pin 3
blue	GND	Pin 4
green	$V_{Hall}$ 4.5...24 VDC	Pin 5
	N.C.	Pin 6

Connector Part number  
Molex 43025-0600  
Wiring diagram for Hall sensors see p. 59

Connection NTC (Cable AWG 24)	
pink	NTC
blue	NTC

Resistance 25°C: 5 k $\Omega$   $\pm$ 1%,  $\beta$ (25-85°C): 3490K

maxon Modular System

Details on catalog page 46

**Recommended Electronics:**

Notes	Page 46
ESCON Mod. 50/4 EC-S	501
ESCON Mod. 50/5	501
ESCON Mod. 50/8 (HE)	502
ESCON 50/5	503
ESCON 70/10	503
DEC Module 50/5	505
EPOS4 Mod./Comp. 50/5	510
EPOS4 Mod./Comp. 50/8	513
EPOS4 50/5	515
EPOS4 70/15	515
EPOS4 Disk 60/12	517
EPOS2 P 24/5	520