

MF family of brushless torque motors



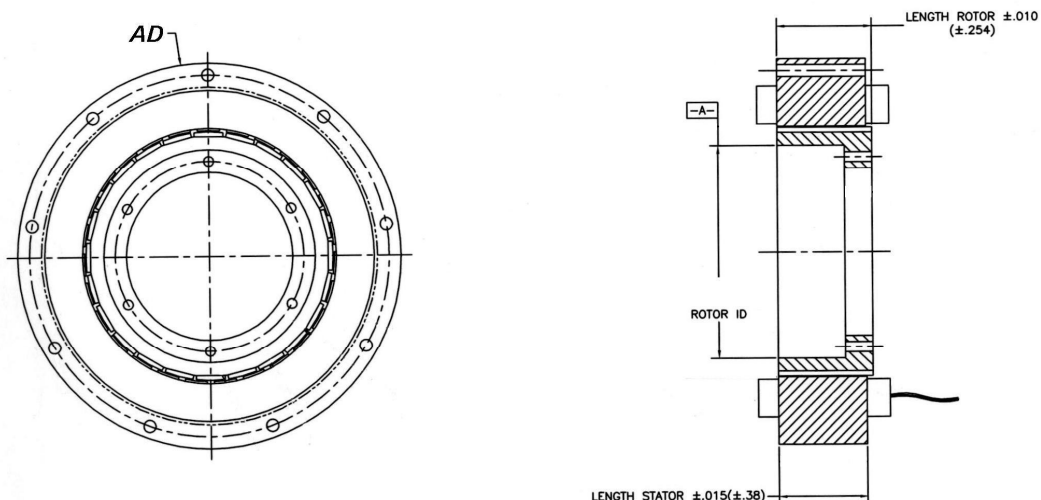
- frameless design (kit), housed version available upon request
- 8 sizes from 170 to 792mm OD and various stack length
- cont. holding torque from 3 to 2,020Nm
- windings for 42Vdc to 650Vdc winding design optimised for each application for best performance
- pole count: 24 to 128
- optional hall sensors
- electrical connection: flying leads
- optional thermal protection: PTC, thermal switch 145°C, KTY or NTC
- modification of mechanical properties like ID or OD possible
- customised versions possible

The Megalfux motors are 3 phase, brushless, synchronous motors with a high torque and power density (we use NdFeB magnets with a high energy product). The electro magnetical, thermal and mechanical design is tailored to optimise the integration of the motors into the mechanical structure of the machine. The use of a direct drive motors can improve the dynamic system behaviour regarding dynamic response, accuracy and smoothness.

The choice out of 8 motor sizes with various torque ratings and the specific winding design for each application guarantee optimum motor performance. The nominal design voltages for the MF motors range from 42Vdc to 650Vdc. The high overload capacity of more than threefold of the continuous torque rating provide useable peak torques of more than 6,000Nm and allow the usage of the MF motors in dynamic, applications. The low cogging torque helps to provide very smooth velocity control even at low speeds due to the low torque ripple.

The MF motors are designed for direct axial mounting both for stator and rotor; this makes mounting easy and provides good thermal conditions for heat dissipation. The big hollow shaft is needed in a lot of applications, e.g. to feed through cables or media. Also direct mounting surfaces for high resolution encoders of Renishaw can be provided as an option.

Drawing (data in table on the next page):

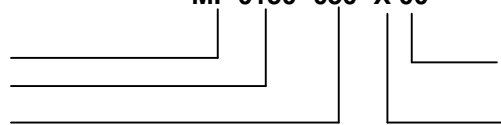


Model	peak-torque	cont. torque	motor-constant	max. cogging torque	pole count	AD	ID with / without mounting holes	Length (no halls)	weight	rotor inertia
	Nm	Nm	Nm/W ^{1/2}	Nm						
MF0150-010	19,4	3,5	0,44	0,24	24	170	74 / 94	28,95	1,12	0,0008
MF0150-025	50,9	9,1	0,99	0,62				44,95	2,73	0,002
MF0150-050	118	15,3	1,46	1,18				69,95	5,34	0,003
MF0150-075	176	21,3	1,88	1,62				94,95	7,93	0,004
MF0150-100	234	27,6	2,23	2,41				119,95	10,5	0,005
MF0210-010	59,3	8,7	0,96	0,36	32	230	130 / 150	28,95	1,68	0,003
MF0210-025	155,4	21,7	2,04	0,97				44,95	3,97	0,005
MF0210-050	306	41,1	3,32	1,83				69,95	7,61	0,01
MF0210-075	457	65,6	4,27	2,68				94,95	11,25	0,014
MF0210-100	607	83,6	5,05	3,72				119,95	14,86	0,018
MF0255-010	69,3	12	1,3	0,44	40	275	172 / 192	28,95	2,14	0,006
MF0255-025	181	31	2,78	0,95				44,95	5,1	0,012
MF0255-050	355	60	4,3	1,89				69,95	9,64	0,021
MF0255-075	530	89,4	5,52	2,7				94,95	14,27	0,029
MF0255-100	704	117	6,45	3,88				119,95	18,8	0,038
MF0310-010	101	20,5	2,03	0,41	48	330	210 / 230	31,49	3,15	0,011
MF0310-025	264	49,1	4,23	1,08				47,49	7,22	0,021
MF0310-050	517	100	6,92	1,93				72,49	13,81	0,037
MF0310-075	773	150	8,89	2,91				97,49	20,38	0,053
MF0310-100	1.031	202	10,56	4,11				122,49	26,99	0,07
MF0410-010	325	76,7	4,95	0,81	64	430	267,92 / 290	31,49	8,64	0,07
MF0410-025	530	129	7,48	1,48				47,49	13,34	0,101
MF0410-050	1.038	224	11,43	2,76				72,49	24,96	0,179
MF0410-075	1.551	323	14,89	4,1				97,49	37,04	0,258
MF0410-100	2.058	441	18,05	5,58				122,49	49,19	0,336
MF0510-010	811,6	121	8,02	0,91	80	535	389 / 410	31,53	9,74	0,104
MF0510-025	1.322	196	11,56	1,63				47,53	15,05	0,132
MF0510-050	2.590	377	18,24	3,13				72,53	28,25	0,203
MF0510-075	3.871	584	23,54	4,18				97,53	41,67	0,273
MF0510-100	5.139	736	27,85	6,11				122,53	54,89	0,344
MF0610-015	1.010	198	10,87	1,07	96	640	462 / 490	37,53	10,05	0,297
MF0610-025	1.646	318	15,62	1,89				47,53	21,8	0,39
MF0610-050	3.222	601	24,72	3,53				72,53	41,17	0,648
MF0610-075	4.814	880	31,77	4,99				97,53	60,74	0,91
MF0610-100	6.390	1.164	37,59	7,1				122,53	80,12	1,168
MF0760-015	2.523	331	18,63	1,22	128	792	581,99 / 620	37,53	19,71	0,636
MF0760-025	4.112	533	26,3	2,3				47,53	30,41	0,775
MF0760-050	8.060	1.024	41,48	4,11				72,53	57,13	1,195
MF0760-075	12.048	1.520	53,2	5,89				97,53	81,12	1,615
MF0760-100	15.914	2.020	62,71	8,21				122,53	110,29	1,967

Part number:

MF 0150- 050- X 00

type: MF = Megaflux
diameter (magnetic)
length over laminations



design modifications
(00 is standard)
winding