

SYSTEMS & SOLUTIONS FOR MOTION CONTROL



BRUSHLESS MOTORS STAND ALONE
MMB



CMZ engineers and manufactures electronic systems for industrial motion control.

The company targets to OEMs and systems integrators for the co-development of automatic machines featuring a deep level of customization in multi axis motion. The result: high performing machines with unique, special features.

Established in 1976 focusing on controllers, today CMZ offers a complete portfolio of solutions including the systems design, the electronics programming, the development of ready-to-use application libraries and ad-hoc softwares, alongside a wide selection of master controllers IEC61131 up to 99 axis, integrated and stand-alone drives, brushless and stepper motors up to 120 Nm strictly compact and Made in Italy, peripherals and I/O modules both digital and analogic, integrated vision systems based on machine learning technology, HMI operator panels.

CMZ's high technological and safety standing is based on its team of 70 technicians and engineers. The systems realized to date in its plant count over 125,000 units.

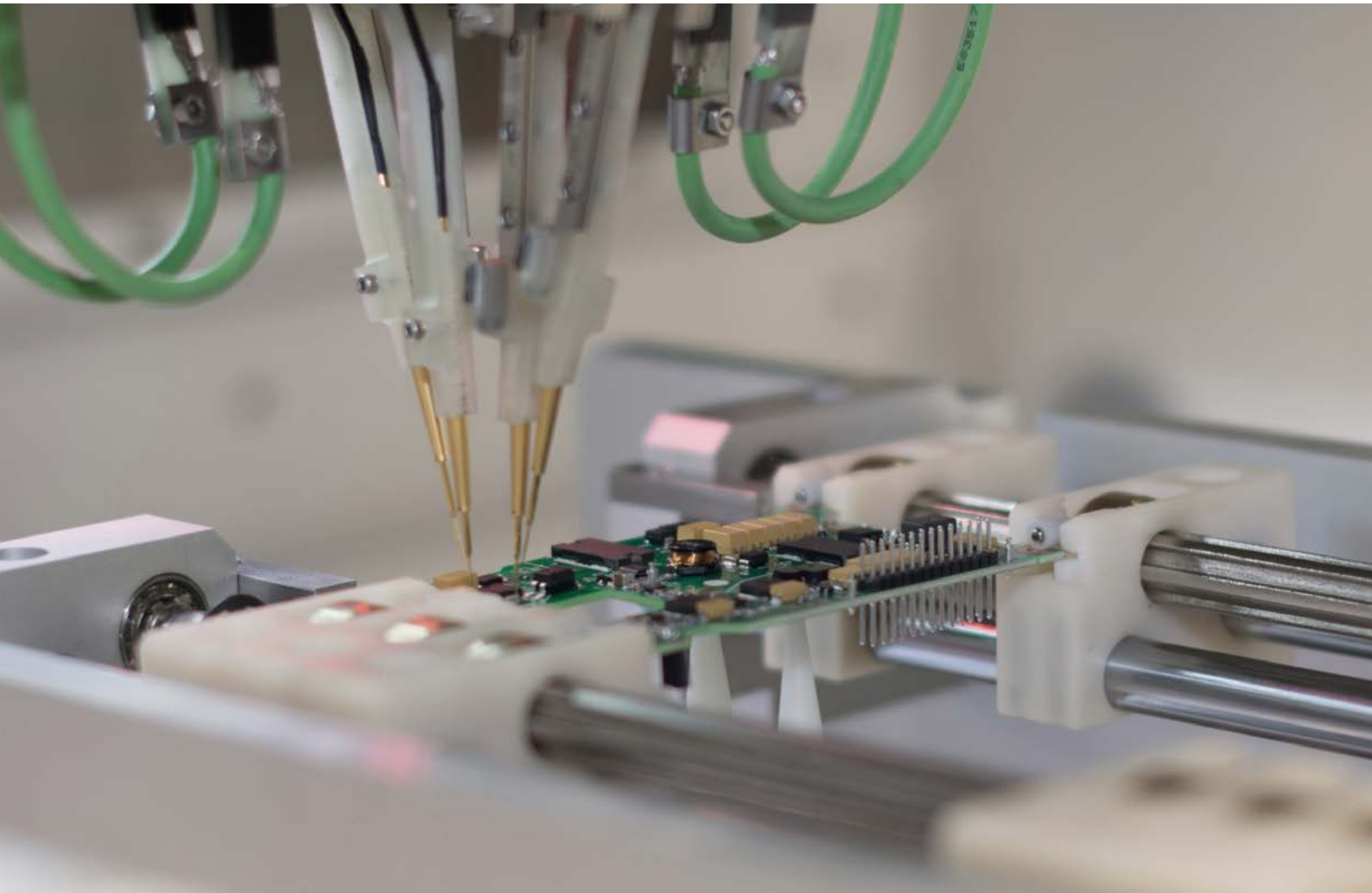
CMZ is part of SOGA ENERGY TEAM industrial group operating in energy, motion and control since 1966.

CMZ sviluppa e realizza sistemi elettronici e soluzioni per il motion control industriale.

L'azienda si rivolge a OEMs e system integrators per la co-progettazione di macchine automatiche dotate di funzionalità personalizzate e speciali nella movimentazione degli assi. Il risultato: macchine ad alta performance e dalle caratteristiche uniche.

Fondata nel 1976 con focus sui controllori, oggi CMZ offre un portfolio integrale di soluzioni che include la progettazione dei sistemi, la programmazione dell'elettronica, lo sviluppo di librerie applicative ready-to-use e pacchetti software ad-hoc, affiancati a un'ampia scelta di controllori IEC 61131 programmabili fino a 99 assi, azionamenti integrati e stand-alone, motori brushless e passo-passo fino a 120 Nm rigorosamente compatti e Made in Italy, periferiche e moduli I/O digitali e analogici, sistemi di visione integrata con tecnologia machine learning, pannelli operatore HMI.

L'elevato standing tecnologico e di sicurezza di CMZ si basa su un team di 70 tecnici e ingegneri. I sistemi realizzati fino ad oggi nel sito produttivo dell'azienda sono oltre 125.000. CMZ fa parte del gruppo industriale SOGA ENERGY TEAM, attivo dal 1966 a livello internazionale nei settori power generation, motion e control.



MMB

Brushless motors stand alone

Brushless motors
stand alone

Range: from 1,2 up to 120Nm - Voltage: 230/400 Vac - Protection: IP65 - IP67 on request

TECHNICAL FEATURES

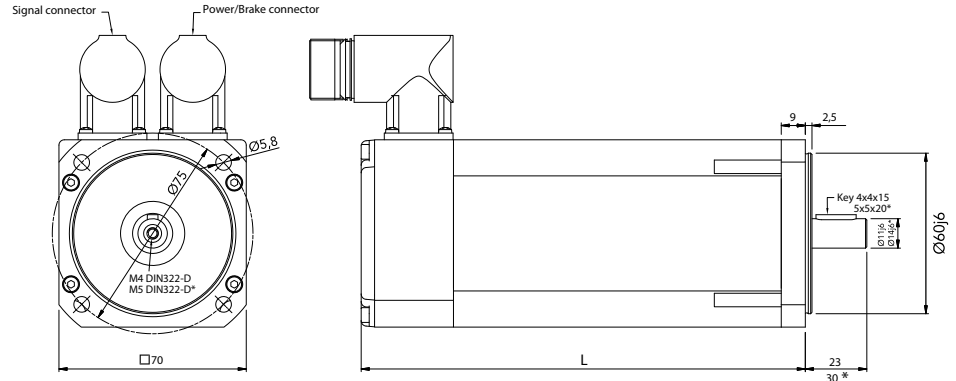
Stall torque (Nm)	Type	Peak torque Tp (Nm)	Stall current (Arms)	Type	Peak torque Tp (Nm)	Stall current (Arms)	Type	Peak torque Tp (Nm)	Stall current (Arms)	Type	Peak torque Tp (Nm)	Stall current (Arms)
Nm	400V, 3000 rpm, kt 1,45 (Nm/A)			400V, 6000 rpm, kt 0,73 (Nm/A)			230V, 3000 rpm, kt 0,85 (Nm/A)			230V, 6000 rpm, kt 0,42 (Nm/A)		
1,2	MMB36.E2Q_3H	4,2	0,8	MMB36.E2Q_6H	4,2	1,6	MMB36.E2Q_3M	4,2	1,4	MMB36.E2Q_6M	4,2	2,9
2,4	MMB36.F4Q_3H	8,5	1,7	MMB36.F4Q_6H	8,5	3,3	MMB36.F4Q_3M	8,5	2,8	MMB36.F4Q_6M	8,5	5,8
Nm	400V, 3000 rpm, kt 1,63 (Nm/A)			400V, 6000 rpm, kt 0,81 (Nm/A)			230V, 3000 rpm, kt 0,94 (Nm/A)			230V, 6000 rpm, kt 0,47(Nm/A)		
1,35	MMB56.E3Q_3H	5	0,8	MMB56.E3Q_6H	5	1,2	MMB56.E3Q_3M	5	1,40	MMB56.E3Q_6M	5	2,1
2,6	MMB56.F6Q_3H	10	1,6	MMB56.F6Q_6H	10	2,1	MMB56.F6Q_3M	10	2,7	MMB56.F6Q_6M	10	3,6
3,6	MMB56.G5Q_3H	15	2,2	MMB56.G5Q_6H	15	2,5	MMB56.G5Q_3M	15	3,3	MMB56.G5Q_6M	15	4,3
4,5	MMB56.H5Q_3H	20	2,8	MMB56.H5Q_6H	20	2,8	MMB56.H5Q_3M	18	4,2	MMB56.H5Q_6M	18	4,9
Nm	400V, 3000 rpm, kt 1,63 (Nm/A)			400V, 4500 rpm, kt 1,09 (Nm/A)			230V, 3000 rpm, kt 0,94 (Nm/A)			230V, 4500 rpm, kt 0,63 (Nm/A)		
4	MMB63.04Q_3H	12	2,5	MMB63.04Q_DH	12	3,7	MMB63.04Q_3M	12	4,3	MMB63.04Q_DM	12	6,4
6	MMB63.06Q_3H	18	3,7	MMB63.06Q_DH	18	5,5	MMB63.06Q_3M	18	6,4	MMB63.06Q_DM	18	9,6
8	MMB63.08Q_3H	24	4,9	MMB63.08Q_DH	24	7,4	MMB63.08Q_3M	24	8,5	MMB63.08Q_DM	24	12,8
10	MMB63.10Q_3H	30	6,1	MMB63.10Q_DH	30	9,2	MMB63.10Q_3M	30	10,6	MMB63.10Q_DM	30	15,9
Nm	400V, 3000 rpm, kt 1,63 (Nm/A)			400V, 4500 rpm, kt 1,09 (Nm/A)								
4,5	MMB71.04Q_3H	13,8	2,8	MMB71.04Q_DH	13,8	4,1						
9	MMB71.08Q_3H	27,6	5,5	MMB71.08Q_DH	27,6	8,3						
12,5	MMB71.12Q_3H	41,4	7,7	MMB71.12Q_DH	41,4	11,5						
16	MMB71.16Q_3H	55,2	9,8	MMB71.16Q_DH	55,2	14,7						
20	MMB71.20Q_3H	69,0	12,3	MMB71.20Q_DH	69,0	18,4						
26	MMB71.26Q_3H	96,6	16,0	MMB71.26Q_DH	96,6	23,9						
29	MMB71.29Q_3H	110,4	17,8	MMB71.29Q_DH	110,4	26,7						
Nm	400V, 2000 rpm, kt 2,45 (Nm/A)			400V, 3000 rpm, kt 1,63 (Nm/A)								
20	MMB10.20J_2H	75	8,2	MMB10.20J_3H	75	12,3						
28	MMB10.28J_2H	108	11,4	MMB10.28J_3H	108	17,2						
36	MMB10.36J_2H	144	14,7	MMB10.36J_3H	144	22,1						
42	MMB10.42J_2H	180	17,2	MMB10.42J_3H	180	25,8						
56	MMB10.56J_2H	230	22,9	MMB10.56J_3H	230	34,4						
68	MMB10.68J_2H	322	27,8	MMB10.68J_3H	322	41,7						
80	MMB10.80J_2H	396	32,7	MMB10.80J_3H	396	49,1						
Nm	400V, 1500 rpm, kt 3,26 (Nm/A)			400V, 2000 rpm, kt 2,44 (Nm/A)								
42	MMB13.42I_AH	120	12,9	MMB13.42I_2H	120	17,2						
58	MMB13.58I_AH	162	17,8	MMB13.58I_2H	162	23,7						
73	MMB13.73I_AH	204	22,4	MMB13.73I_2H	204	29,9						
81	MMB13.81I_AH	231	24,8	MMB13.81I_2H	231	33,1						
98	MMB13.98I_AH	280	30,1	MMB13.98I_2H	280	40,1						
120	MMB13.C2I_AH	345	36,8	MMB13.C2I_2H	345	49,1						



MMB 36Q

Brushless motors stand alone

Number of poles:
Sinusoidal 8
Voltage:
H(400V) e M(230V)
Available torque:
from 1,2Nm to 2,4Nm



*Only for type B36.F4Q

• ELECTRICAL DATA

Type	Stall torque (At=105°C) M0 (Nm)	Rated speed n (rpm)	Rated apower Pn (kW)	Rated torque Mn (Nm)	Peak torque Mpk (Nm)	Moment of inertia Jm (10 ⁻⁴ kgm ²)	Peak torque acceleration apk (rad/sec ²)	Thermal time constant T _{th} (min)	Thermal protection threshold (°C)	Voltage constant ke (Vs)	Torque constant Kt (Nm/A)	BEMF at rated speed En (V)	Phase to phase resistance R (Ω)	Phase to phase inductance L (mH)	Stall current I ₀ (Arms)	Nominal current I _n (Arms)
Voltage H (400 Volt) - 3000 Min-1- connection Y																
MMB36.E2Q_3H	1,2	3000	0,346	1,1	4,2	0,44	95455	32	140	0,84	1,45	264	36,2	69,6	0,8	0,8
MMB36.F4Q_3H	2,4	3000	0,691	2,2	8,5	1,05	103659	36	140	0,84	1,45	264	15	36	1,7	1,5
Voltage H (400 Volt) - 6000 Min-1- connection Y																
MMB36.E2Q_6H	1,2	6000	0,628	1,0	4,2	0,77	95455	32	140	0,42	0,73	264	9,04	17,4	1,6	1,4
MMB36.F4Q_6H	2,4	6000	1,225	2,0	8,5	1,05	103659	36	140	0,42	0,73	264	3,75	9,0	3,3	2,7
Voltage M (230 Volt) - 3000 Min-1- connection Y																
MMB36.E2Q_3M	1,2	3000	0,346	1,1	4,2	0,44	95455	32	140	0,49	0,85	152	12,1	23,2	1,4	0,8
MMB36.F4Q_3M	2,4	3000	0,691	2,2	8,5	0,82	103659	36	140	0,49	0,85	152	5,0	12,0	2,8	1,5
Voltage M (230 Volt) - 6000 Min-1- connection Y																
MMB36.E2Q_6M	1,2	6000	0,628	1,0	4,2	0,44	95455	32	140	0,24	0,42	152	3,00	5,8	2,9	1,4
MMB36.F4Q_6M	2,4	6000	1,225	2,2	8,5	0,82	103659	36	140	0,24	0,42	152	51,25	3,0	5,8	2,7

• OVERALL DIMENSIONS

Type	Stall Torque (Nm)	Lenght with RESOLVER		Lenght with ENCODER		Motor weight (Kg)	Motor weight with brake (Kg)
		Without brake	With brake	Without brake	With brake		
MMB36.E2Q	1,2	127	162	138	173	2,2	2,8
MMB36.F4Q	2,4	167	198	180	211	3,6	4,2

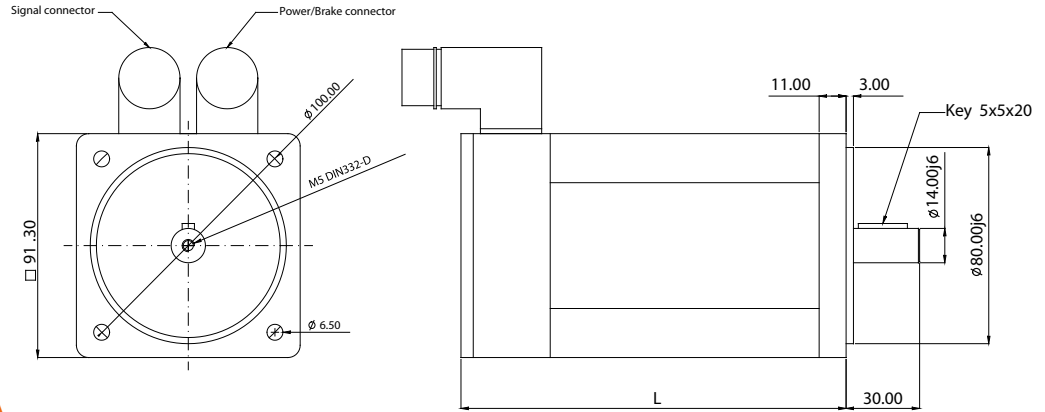
Power connector size: SIZE 1 (M23), see page 29

MMB 56Q

Brushless motors stand alone

Brushless motors stand alone

Number of poles:
Sinusoidal 8
Voltage:
H(400V) e M(230V)
Available torque:
from 1,35Nm to 4,5Nm



• ELECTRICAL DATA

Type	Stall torque ($\Delta t=105^{\circ}\text{C}$)	Rated speed	Rated power	Rated torque	Peak torque	Moment of inertia	Peak torque acceleration	Thermal time constant	Thermal protection threshold	Voltage constant	Torque constant	BEMF at rated speed	Phase to phase resistance	Phase to phase inductance	Stall current	Nominal current
	M0 (Nm)	n (rpm)	Pn (kW)	Mn (Nm)	Mpk (Nm)	Jm (10^{-4}kgm^2)	apk (rad/sec ²)	T _{th} (min)	($^{\circ}\text{C}$)	ke (Vs)	Kt (Nm/A)	En (V)	R (Ω)	L (mH)	I ₀ (Arms)	I _n (Arms)

Voltage H (400 Volt) - 3000 Min-1- connection Y

MMB56.E3Q_3H	1,35	3000	0,4	1,3	5	0,47	106383	31	140	0,94	1,63	296	37,4	137	0,8	0,8
MMB56.F6Q_3H	2,60	3000	0,8	2,5	10	0,88	113636	34	140	0,94	1,63	296	18,9	73,7	1,6	1,5
MMB56.G5Q_3H	3,60	3000	1,0	3,1	14	1,09	128440	36	140	0,94	1,63	296	10,7	54,7	2,1	1,9
MMB56.H5Q_3H	4,50	3000	1,2	3,9	18	1,40	128571	39	140	0,94	1,63	296	8,0	43,7	2,8	2,4

Voltage H (400 Volt) - 6000 Min-1- connection Y

MMB56.E3Q_6H	1,35	6000	0,6	1,0	5	0,47	106383	31	140	0,47	0,81	296	9,4	33,8	1,7	1,2
MMB56.F6Q_6H	2,60	6000	1,1	1,7	10	0,88	113636	34	140	0,47	0,81	296	4,0	18,2	3,2	2,1
MMB56.G5Q_6H	3,60	6000	1,3	2,0	15	1,09	128440	36	140	0,47	0,81	296	2,7	13,5	4,3	2,5
MMB56.H5Q_6H	4,50	6000	1,4	2,3	18	1,40	128571	39	140	0,47	0,81	296	2,0	10,8	5,6	2,8

Voltage M (230 Volt) - 3000 Min-1- connection Y

MMB56.E3Q_3M	1,35	3000	0,4	1,3	5	0,47	106383	31	140	0,54	0,94	170	12,4	45	1,4	1,4
MMB56.F6Q_3M	2,60	3000	0,8	2,5	10	0,88	113636	34	140	0,54	0,94	170	5,2	24,2	2,8	2,7
MMB56.G5Q_3M	3,60	3000	1,0	3,1	14	1,09	128440	36	140	0,54	0,94	170	3,2	18,0	3,7	3,3
MMB56.H5Q_3M	4,50	3000	1,2	3,9	18	1,40	128571	39	140	0,54	0,94	170	2,4	14,4	4,8	4,2

Voltage M (230 Volt) - 6000 Min-1- connection Y

MMB56.E3Q_6M	1,35	6000	0,6	1,0	5	0,47	106383	31	140	0,27	0,47	170	3,1	11,2	2,9	2,1
MMB56.F6Q_6M	2,60	6000	1,1	1,7	10	0,88	113636	34	140	0,27	0,47	170	1,1	6,1	5,5	3,6
MMB56.G5Q_6M	3,60	6000	1,3	2,0	14	1,09	128440	36	140	0,27	0,47	170	0,9	4,5	7,5	4,3
MMB56.H5Q_6M	4,50	6000	1,4	2,3	18	1,40	128571	39	140	0,27	0,47	170	0,6	3,6	9,6	4,9

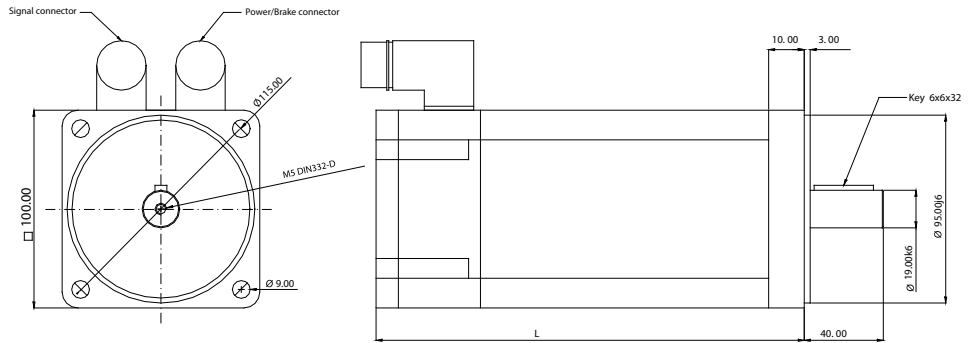
• OVERALL DIMENSIONS

Type	Stall Torque (Nm)	Lenght with RESOLVER		Lenght with ENCODER		Motor weight (Kg)	Motor weight with brake (Kg)
		Without brake	With brake	Without brake	With brake		
MMB56.E3Q	1,35	122	157	137	172	3,50	4,10
MMB56.F6Q	2,60	145	180	159	194	4,40	5,00
MMB56.G5Q	3,60	160	195	174	209	5,00	5,6
MMB56.H5Q	4,50	180	215	194	229	5,80	6,4

MMB 63Q

Brushless motors stand alone

Number of poles:
Sinusoidal 8
Voltage:
H(400V) e M(230V)
Available torque:
from 4Nm to 10Nm



• ELECTRICAL DATA

Type	Stall torque ($\Delta T = 105^\circ\text{C}$) M_0 (Nm)	Rated speed n (rpm)	Rated power P_n (kW)	Rated torque M_n (Nm)	Peak torque M_{pk} (Nm)	Moment of inertia J_m (10^{-4}kgm^2)	Peak torque acceleration a_{pk} (rad/sec 2)	Thermal time constant T_{th} (min)	Thermal protection threshold ($^\circ\text{C}$)	Voltage constant k_e (Vs)	Torque constant K_t (Nm/A)	BEMF at rated speed E_n (V)	Phase to phase resistance R (Ω)	Phase to phase inductance L (mH)	Stall current I_0 (Arms)	Nominal current I_n (Arms)
Voltage H (400 Volt) - 3000 Min-1- connection Y																
MMB63.04Q_3H	4,0	3000	1,1	3,50	12	1,87	64171	25	140	0,94	1,63	296	5,40	36,5	2,5	2,1
MMB63.06Q_3H	6,0	3000	1,6	5,25	18	2,67	67416	30	140	0,94	1,63	296	3,50	24,0	3,7	3,2
MMB63.08Q_3H	8,0	3000	2,4	7,50	24	3,47	69164	30	140	0,94	1,63	296	2,50	21,8	4,9	4,6
MMB63.10Q_3H	10,0	3000	2,7	8,75	30	4,27	70258	35	140	0,94	1,63	296	1,90	17,4	6,1	5,4
Voltage H (400 Volt) - 4500 Min-1- connection Y																
MMB63.04Q_DH	4,0	4500	1,5	3,10	12	1,87	64171	25	140	0,63	1,09	296	2,40	16,5	3,7	2,9
MMB63.06Q_DH	6,0	4500	2,2	4,65	18	2,67	67416	30	140	0,63	1,09	296	1,50	10,8	5,5	4,3
MMB63.08Q_DH	8,0	4500	2,9	6,20	24	3,47	69164	30	140	0,63	1,09	296	1,10	9,70	7,4	5,7
MMB63.10Q_DH	10,0	4500	3,6	7,70	30	4,27	70258	35	140	0,63	1,09	296	0,90	7,80	9,2	7,1
Voltage M (230 Volt) - 3000 Min-1- connection Y																
MMB63.04Q_3M	4,0	3000	1,1	3,5	12	1,87	64171	25	140	0,54	0,94	171	1,78	12,2	4,3	3,7
MMB63.06Q_3M	6,0	3000	1,6	5,25	18	2,67	67416	30	140	0,54	0,94	171	1,16	8,0	6,4	5,6
MMB63.08Q_3M	8,0	3000	2,4	7,50	24	3,47	69164	30	140	0,54	0,94	171	0,83	7,3	8,5	8,0
MMB63.10Q_3M	10,0	3000	2,7	8,75	30	4,27	70258	35	140	0,54	0,94	171	0,63	5,8	10,6	9,3
Voltage M (230 Volt) - 4500 Min-1- connection Y																
MMB63.04Q_DM	4,0	4500	1,5	3,10	12	1,87	64171	25	140	0,36	0,63	171	0,80	5,4	6,4	4,9
MMB63.06Q_DM	6,0	4500	2,2	4,65	18	2,67	67416	30	140	0,36	0,63	171	0,50	3,6	9,6	7,4
MMB63.08Q_DM	8,0	4500	2,9	6,20	24	3,47	69164	30	140	0,36	0,63	171	0,37	3,2	12,8	9,9
MMB63.10Q_DM	10,0	4500	3,6	7,70	30	4,27	70258	35	140	0,36	0,63	171	0,30	2,6	15,9	12,3

• OVERALL DIMENSIONS

Type	Stall Torque (Nm)	Lenght with RESOLVER		Lenght with ENCODER		Motor weight (Kg)	Motor weight with brake (Kg)
		Without brake	With brake	Without brake	With brake		
MMB63.04Q	4,0	150	182	161	193	4,70	5,60
MMB63.06Q	6,0	170	202	181	213	5,30	6,10
MMB63.08Q	8,0	194	226	205	237	6,20	7,10
MMB63.10Q	10,0	214	246	225	257	7,20	8,10

MMB 71Q

Brushless motors stand alone

Brushless motors stand alone

Number of poles:

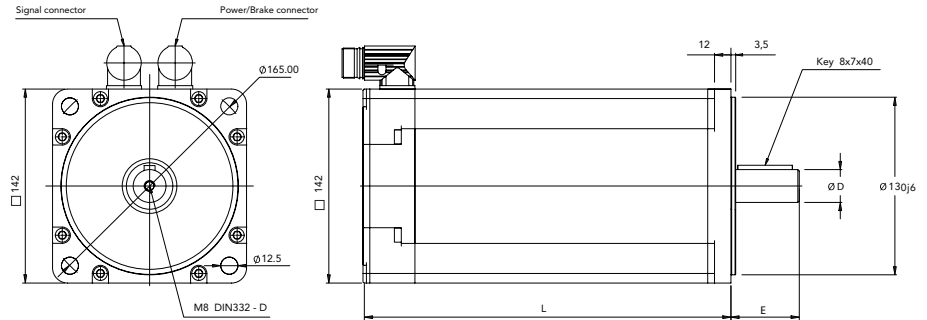
Sinusoidal 8

Voltage:

H(400V)

Available torque:

from 4,5 to 29 Nm



Type	D	E
MMB71 4,5Nm-26Nm	24K6	50
MMB71.29Q	28J6	58

ELECTRICAL DATA

Type	Stall torque ($\Delta I = 105^\circ\text{C}$) M0 (Nm)	Rated speed n (rpm)	Rated power Pn (kW)	Rated torque Mn (Nm)	Peak torque Mpk (Nm)	Moment of inertia Jm (10^{-4}kgm^2)	Peak torque acceleration apk (rad/sec ²)	Thermal time constant T _{th} (min)	Thermal protection threshold ($^\circ\text{C}$)	Voltage constant ke (Vs)	Torque constant Kt (Nm/A)	BEMF at rated speed En (V)	Phase to phase resistance R (Ω)	Phase to phase inductance L (mH)	Stall current I ₀ (Arms)	Nominal current I _n (Arms)
Voltage H (400 Volt) - 3000 Min-1- connection Y																
MMB71.04Q_3H	4,5	3000	1,3	4,0	13,8	3,6	38122	33	140	0,94	1,63	296	5,13	40,3	2,8	2,5
MMB71.08Q_3H	9,0	3000	2,4	7,7	27,6	6,0	45695	37	140	0,94	1,63	296	2,16	21,5	5,5	4,7
MMB71.12Q_3H	12,5	3000	3,6	11,6	41,4	8,20	50488	40	140	0,94	1,63	296	1,13	12,5	7,7	7,1
MMB71.16Q_3H	16,0	3000	4,4	13,9	55,2	10,7	51589	43	140	0,94	1,63	296	0,75	8,20	9,8	8,5
MMB71.20Q_3H	20,0	3000	5,5	17,5	69,0	13,1	52672	46	140	0,94	1,63	296	0,56	6,30	12,3	10,7
MMB71.26Q_3H	26,0	3000	5,9	18,9	96,6	18,4	52500	49	140	0,94	1,63	296	0,41	5,00	16,0	11,6
MMB71.29Q_3H	29,0	3000	6,4	20,3	110,4	20,6	53592	51	140	0,94	1,63	296	0,34	4,30	17,8	12,5
Voltage H (400 Volt) - 4500 Min-1- connection Y																
MMB71.04Q_DH	4,5	4500	1,8	3,9	13,8	3,6	38122	33	140	0,63	1,09	296	2,22	19,3	4,1	3,6
MMB71.08Q_DH	9,0	4500	3,4	7,3	27,6	6,0	45695	37	140	0,63	1,09	296	0,79	8,7	8,3	6,7
MMB71.12Q_DH	12,5	4500	4,5	9,5	41,4	8,2	50488	40	140	0,63	1,09	296	0,51	5,0	11,5	8,7
MMB71.16Q_DH	16,0	4500	6,0	12,7	55,2	10,7	51589	43	140	0,63	1,09	296	0,34	4,1	14,7	11,7
MMB71.20Q_DH	20,0	4500	6,9	14,6	69,0	13,1	52672	46	140	0,63	1,09	296	0,26	3,2	18,4	13,4
MMB71.26Q_DH	26,0	4500	6,9	14,7	96,6	18,4	52500	49	140	0,63	1,09	296	0,19	2,4	23,9	13,5
MMB71.29Q_DH	29,0	4500	7,2	15,3	110,4	20,6	53592	51	140	0,63	1,09	296	0,16	2,0	26,7	14,1

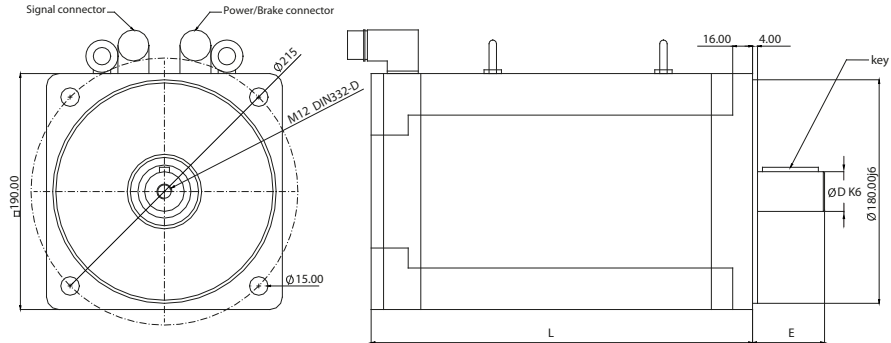
OVERALL DIMENSIONS

Type	Stall Torque (Nm)	Lenght with RESOLVER (")		Lenght with ENCODER		Motor weight (Kg)	Motor weight with brake (Kg)
		Without brake	With brake	Without brake	With brake		
MMB71.04Q	4,5	148	183	159	194	7,50	9,50
MMB71.08Q	9,0	173	208	184	219	9,50	11,50
MMB71.12Q	12,5	198	228	209	239	11,50	13,50
MMB71.16Q	16,0	223	253	234	264	13,50	15,50
MMB71.20Q	20,0	248	273	259	284	15,50	17,50
MMB71.26Q	26,0	298	318	309	329	19,50	21,50
MMB71.29Q	29,0	338	373	349	384	22,50	24,50

MMB 100J

Brushless motors stand alone

Number of poles:
Sinusoidal 10
Voltage:
H(400V)
Available torque:
from 20Nm to 80Nm



Type	D	E	Key
MM10.20J-MM10.42J	32	58mm	10x8x45
MM10.56J-MM10.80J	38	80mm	10x8x70

• ELECTRICAL DATA

Type	Stall torque ($\Delta T=105^{\circ}\text{C}$)	Rated speed	Rated power	Rated torque	Peak torque	Moment of inertia	Peak torque acceleration	Thermal time constant	Thermal protection threshold	Voltage constant	Torque constant	BEMF at rated speed	Phase to phase resistance	Phase to phase inductance	Stall current	Nominal current	Power connector size
	M0 (Nm)	n (rpm)	Pn (kW)	Mn (Nm)	Mpk (Nm)	Jm (10^{-4}kgm^2)	apk (rad/sec^2)	T _{th} (min)	($^{\circ}\text{C}$)	ke (Vs)	Kt (Nm/A)	En (V)	R (Ω)	L (mH)	I ₀ (Arms)	I _n (Arms)	

Voltage H (400 Volt) - 2000 Min-1- connection Y

MMB10.20J_2H	20	2000	3,8	18,3	75	33	22727	32	140	1,41	2,45	296	1,78	18,7	8,20	7,50	1 (M23)
MMB10.28J_2H	28	2000	5,2	24,7	108	46	23478	37	140	1,41	2,45	296	0,90	14,2	11,4	10,1	1 (M23)
MMB10.36J_2H	36	2000	6,3	30,1	144	60	24000	41	140	1,41	2,45	296	0,63	11,0	14,7	12,3	1 (M23)
MMB10.42J_2H	42	2000	7,6	36,1	180	74	24324	46	140	1,41	2,45	296	0,50	8,80	17,2	14,8	1 (M23)
MMB10.56J_2H	56	2000	9,3	44,5	230	102	22549	56	140	1,41	2,45	296	0,31	5,60	22,9	18,2	1 (M23)
MMB10.68J_2H	68	2000	10,7	50,9	322	130	24769	65	140	1,41	2,45	296	0,23	4,70	27,8	20,8	1,5 (M40)
MMB10.80J_2H	80	2000	12,1	57,8	396	158	25063	74	140	1,41	2,45	296	0,18	4,10	32,7	23,6	1,5 (M40)

Voltage H (400 Volt) - 3000 Min-1- connection Y

MMB10.20J_3H	20	3000	5,1	16,1	75	33	22727	32	140	0,94	1,63	296	0,79	8,30	12,3	9,9	1 (M23)
MMB10.28J_3H	28	3000	6,9	22,0	108	46	23478	37	140	0,94	1,63	296	0,40	6,30	17,2	13,5	1 (M23)
MMB10.36J_3H	36	3000	8,8	28,0	144	60	24000	41	140	0,94	1,63	296	0,28	4,90	22,1	17,2	1 (M23)
MMB10.42J_3H	42	3000	10,2	32,5	180	74	24324	46	140	0,94	1,63	296	0,22	3,90	25,8	19,9	1 (M23)
MMB10.56J_3H	56	3000	11,6	37,0	230	102	22549	56	140	0,94	1,63	296	0,15	2,70	34,4	22,7	1,5 (M40)
MMB10.68J_3H	68	3000	12,8	40,9	322	130	24769	65	140	0,94	1,63	296	0,10	2,10	41,7	25,1	1,5 (M40)
MMB10.80J_3H	80	3000	13,8	44,0	396	158	25063	74	140	0,94	1,63	296	0,08	1,80	49,1	27,0	1,5 (M40)

• OVERALL DIMENSIONS

Type	Stall Torque (Nm)	Lenght with RESOLVER*		Lenght with ENCODER*		Motor weight (Kg)	Motor weight with brake (Kg)
		Without brake	With brake	Without brake	With brake		
MMB10.20J	20	195	225	223	253	17	22
MMB10.28J	28	218	248	246	276	21	26
MMB10.36J	36	240*	270*	268*	298*	25	30
MMB10.42J	42	263*	293*	291*	321*	30	35
MMB10.56J	56	308*	338*	336*	366*	38	43
MMB10.68J	68	369	399	369	399	47	52
MMB10.80J	80	414	444	414	444	55	60

*Motors with sizes 1,5 connectors have an additional lenght of 16 mm

MMB 132I

Brushless motors stand alone

Brushless motors stand alone

Number of poles:

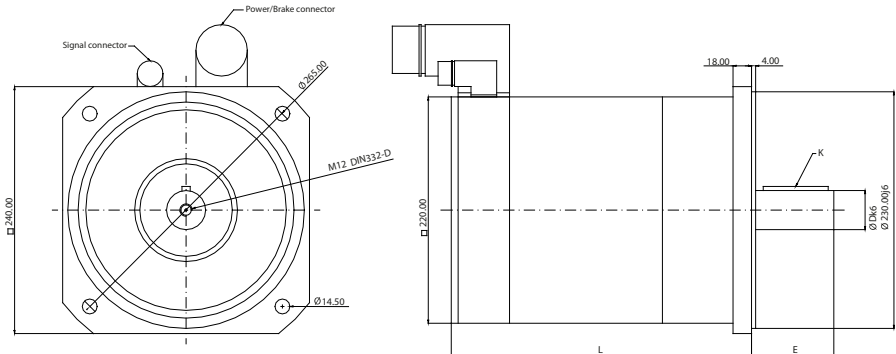
Sinusoidal 6

Voltage:

H(400)

Available torque:

from 42Nm to 120Nm



Type	D	E	Key
MMB13.42I-MMB13.73I	38	80	10x8x63
MMB13.81I-MMB13.C2I	42	110	12x8x63

• ELECTRICAL DATA

Type	Stall torque ($\Delta T=105^{\circ}\text{C}$)	Rated speed	Rated power	Rated torque	Peak torque	Moment of inertia	Peak torque acceleration	Thermal time constant	Thermal protection threshold	Voltage constant	Torque constant	BEMF at rated speed	Phase to phase resistance	Phase to phase inductance	Stall current	Nominal current
	M_0 (Nm)	n (rpm)	P_n (kw)	M_n (Nm)	M_{pk} (Nm)	J_m (10^{-9})kgm ²)	a_{pk} (rad/sec ²)	T_{th} (min)	($^{\circ}\text{C}$)	k_e (Vs)	K_t (Nm/A)	E_n (V)	R (Ω)	L (mH)	I_0 (Arms)	I_n (Arms)

Voltage H (400 Volt) - 1500 Min-1- connection Y

MMB13.42I_AH	42,0	1500	5,6	35,5	120	65	18462	50	140	1,88	3,26	296	0,90	16,9	12,9	10,9
MMB13.58I_AH	58,0	1500	7,4	47,0	162	90	18000	57	140	1,88	3,26	296	0,62	14,8	17,8	14,4
MMB13.73I_AH	73,0	1500	9,2	58,5	204	114	17895	65	140	1,88	3,26	296	0,45	12,5	22,4	17,9
MMB13.81I_AH	81,0	1500	10,2	65,0	231	126	18333	70	140	1,88	3,26	296	0,39	11,5	24,8	19,9
MMB13.98I_AH	98,0	1500	12,2	77,5	280	150	18667	80	140	1,88	3,26	296	0,33	9,4	30,1	23,8
MMB13.C2I_AH	120,0	1500	14,8	94,5	345	192	17969	90	140	1,88	3,26	296	0,20	6,1	36,8	29,0

Voltage H (400 Volt) - 2000 Min-1- connection Y

MMB13.42I_2H	42,0	2000	6,8	32,5	120	65	18462	50	140	1,41	2,44	296	0,53	12,7	17,2	13,3
MMB13.58I_2H	58,0	2000	9,0	43,0	162	90	18000	57	140	1,41	2,44	296	0,36	8,6	23,7	17,6
MMB13.73I_2H	73,0	2000	11,2	53,5	204	114	17895	65	140	1,41	2,44	296	0,24	7,3	29,9	21,9
MMB13.81I_2H	81,0	2000	12,6	60,0	231	126	18333	70	140	1,41	2,44	296	0,22	6,5	33,1	24,6
MMB13.98I_2H	98,0	2000	15,2	72,5	280	150	18667	80	140	1,41	2,44	296	0,17	4,9	40,1	29,7
MMB13.C2I_2H	120,0	2000	17,9	85,5	345	192	17969	90	140	1,41	2,44	296	0,12	3,9	49,1	35,0

• OVERALL DIMENSIONS

Type	Stall Torque (Nm)	Lenght with RESOLVER		Lenght with ENCODER		Motor weight (Kg)	Motor weight with brake (Kg)
		Without brake	With brake	Without brake	With brake		
MMB13.42I	42,0	303	353	331	381	48,0	55,0
MMB13.58I	58,0	343	393	371	421	55,0	62,0
MMB13.73I	73,0	383	433	411	461	62,0	69,0
MMB13.81I	81,0	403	453	431	481	67,0	74,0
MMB13.98I	98,0	443	493	471	521	76,0	83,0
MMB13.C2I	120,0	503	553	531	581	92,0	99,0

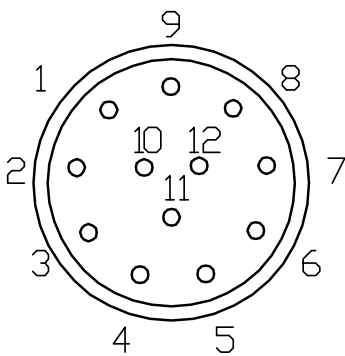
MMB

Electrical design

Brushless motors
stand alone

• RESOLVER CONNECTION

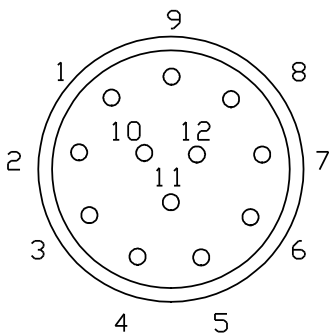
SIGNAL CONNECTOR / CONNETTORE SEGNALI



PIN	SIGNAL	COLORS
1	S2 (Sen+)	Yellow (giallo)
2	S1 (Cos+)	Red (rosso)
3	S3 (Cos-)	Black (nero)
4	N. c.	
5	N. c.	
6	S4 (Sen -)	Blue (blu)
7	R1 (Ecc+)	Red/White (rosso/bianco)
8	Shield (Schermo)	
9	To (PTO)	White (bianco)
10	To (PTO)	White (bianco)
11	R2 (Ecc -)	Yellow / White (giallo / bianco)
12	N. c.	Yellow / White (Giallo / Bianco)

• ABSOLUTE ENCODER HIPERFACE CONNECTION

SIGNAL CONNECTOR / CONNETTORE SEGNALI



PIN	SIGNAL	COLORS
1	Us (7-12 V)	Red (rosso)
2	GND	Blue (blu)
3	Ref Sin	Brown (marrone)
4	Ref Cos	Black (nero)
5	Data+ (RS 485)	Grey (grigio)
6	Data- (RS 485)	Green (verde)
7	+ Sin	White (bianco)
8	+ Cos	Pink (rosa)
9	Pto Ther.Prot.	White to winding (bianco da avv.)
10	Pto Ther.Prot.	White to winding (bianco da avv.)
11	N. c.	N. c.
12	N. c.	N. c.

MMB

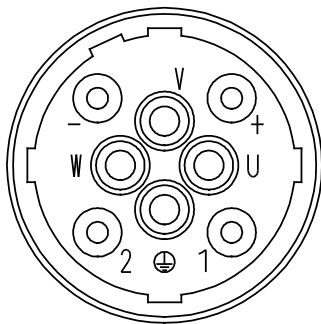
Electrical design

Brushless motors
stand alone

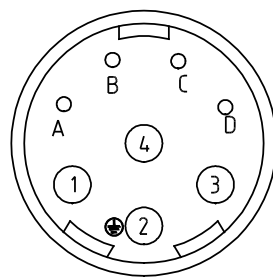
Brushless motors
stand alone

• POWER CONNECTOR CONNETTORE POTENZA

SIZE 1.5



SIZE 1



PIN SIZE 1.5	PIN SIZE 1	SIGNAL	COLORS
U	1	Phase U	Black (nero)
V	3	Phase V	Blue (blu)
W	4	Phase W	Red (rosso)
⊖	2 ⊖	PE / Motor Case	Yellow / Green (giallo / verde)
1	A	N.c.	N.c.
2	B	N.c.	N.c.
+	C	+ 24 V Brake / Freno (option)	Red (rosso)
-	D	0V Brake / Freno (option)	Blue (blu)

• CONNECTION

Fixed connectors for power-brake and signals

Motor type	Power connector
MMB36, MMB56, MMB63, MMB71	M23 (SIZE 1)
MMB100 - 20Nm to 42Nm	M23 (SIZE 1)
MMB100 - 56Nm to 80Nm	M40 (SIZE 1,5)
MMB132	M40 (SIZE 1,5)

DESCRIPTION																	
MMX	PRODUCT TYPE B Complete Brushless Servomotor																
	MOTOR SIZE																
aa	36 36Q Flange 70			56 56Q Flange 91,3			63 63Q Flange 100			71 71Q Flange 142							
	10 100J Flange 190			13 132I Flange 240													
bb	STALL TORQUE CODE Integer: digit+digit		Fractional: letter+digit		Over hundred: +digit or letter				Over threehundred: digit+digit+digit								
	02	2 Nm	DX	0.X Nm	C0	100 Nm			300	300 Nm							
	12	12 Nm	EX	1.X Nm	CA	105 Nm			375	375 Nm							
	25	25 Nm	FX	2.X Nm	C1	110 Nm			460	460 Nm							
	...	etc	GX	3.X Nm	CB	115 Nm											
			HX	4.X Nm	...	etc											
			IX	5.X Nm	B0	200 Nm											
			LX	6.X Nm	BA	205 Nm											
			MX	7.X Nm	B1	210 Nm											
			NX	8.X Nm	BB	215 Nm											
			OX	9.X Nm	...	etc											
c	MOTOR TYPE																
	Frame size	Series	Description				Frame size	Series	Description								
	36	Q	Sinusoidal 8 poles				71	Q	Sinusoidal 8 poles LOW inertia								
	56	Q	Sinusoidal 8 poles				100	J	Sinusoidal 10 poles standard inertia								
	63	Q	Sinusoidal 8 poles low inertia				132	I	Sinusoidal 6 poles standard inertia								
d	SPEED																
	1	1000 rpm	2	2000 rpm	3	3000 rpm	4	4000 rpm	6	6000 rpm	A	1500 rpm	B	2500 rpm	C	3500 rpm	D
e	VOLTAGE																
	M	220/230V				H	380/400V										
f	CONNECTION TYPE																
	4	Straight connectors on endshield															
	7	Swiveling 90° angled connectors															
	8	Power & signal connectors on enc cover															
g	BRAKE AND SHAFT EXTENSION																
	A	Without brake, keyed shaft					D	Without brake, smooth shaft									
	B	With brake, Keyed shaft					E	With brake, smooth shaft									
	C	With reinforced brake, keyed shaft (if available)					F	With reinforced brake, Keyed shaft (if available)									
hh	FEEDBACK																
	00	Without feedback															
	RESOLVER																
	05	Resolver 2 poles															
	SIN/COS HIPERFACE ABSOLUTED ENCODER																
RS	Single-turn 1024 sin/cos Stegmann SRS50					RM	Multi-turn 1024 sin/cos, 4096 rev. Stegmann SRM50										
EK	Single turn 16 sin/cos Stegmann SEK37					EL	Multi-turn 16 sin/cos, 4096 rev. Stegmann SEL37										
i	CONNECTION DIRECTION																
	0	Standard				1	Position 1			2	Position 2		3	Position 3			
	COOLING																
l	0 Natural convection					X Forced Ventilation 24Vdc from NDE to DE											
	V Forced Ventilation 230Vac from NDE to DE																
mm	57																
EG.	MM	x	aa	bb	c	d	e	f	g	hh	i	l	mm				
	MM	B	56	G5	Q	3	H	7	A	05	0	0	57				

Ordering codes

CONNECTORS FOR MMB MOTORS SERIES

Connectors table

Type	Description
BSTA078FR19080235000	Motor power connector
ASTA021FS13620235000	Motor resolver connector

CABLES FOR MMB MOTORS SERIES

Cable with connector motor side and drive side for dynamic laying - standard lenght 5 and 3 mt

Type	Description	Connectors features	Cable features
CMBL.IIPL.CFCF.A.xxxx	Motor cable for LBD	M23 (size 1)	Ø 13.2 mm, 2.5 mm ²
CMBL.IIPL.CFCF.E.xxx	Motor cable for LBD	M40 (size 1,5)	Ø 16 mm, 6 mm ²
CMBL.IIPL.CFCF.F.xxxx	Motor cable for LBD	M40 (size 1,5)	Ø 20 mm, 10 mm ²
CMBL.IIPL.CFCF.G.xxxx	Motor cable for LBD	M40 (size 1,5)	Ø 23 mm, 16 mm ²
CMBL.IIPI.CFCF.D.xxxx	Motor cable for EASY	M23 (size 1)	Ø 10.6 mm, 1,5 mm ²
CMBL.CMCS.CFCF.D.xxxx	Motor cable for NBD	M23 (size 1)	Ø 10.6 mm, 1,5 mm ²
CMBL.CMCS.CFCF.U.xxxx	Motor cable for NBD	M23 (size 1)	Ø 12.9 mm, 2,5 mm ²
CRES.DMCL.CFWF.C.xxxx	Resolver cable for LBD and EASY	M23 (size 1)	Ø 8,3 mm
CEAY.DMCL.CFCF.C.xxxx	HIPERFACE absolute encoder cables for LBD	M23 (size 1)	Ø 9 mm
CENC.CMCS.CFWF.D.xxxx	Resolver cable for NBD	M23 (size 1)	Ø 10,3 mm
CEAY.CMCS.CFWF.B.xxxx	HIPERFACE absolute encoder cables for NBD	M23 (size 1)	Ø 9,4 mm

*.xxxx = cm example for 5 mt: .0500

CMZ reserves the right to change the data in order to update or improve its products without prior notice
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soga  energyteam

MMB Rev.2 - June 2021

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