



**MACK**<sup>®</sup>  
**MOTOR**  
— MKM —



0.16 - 11  
Nm

50 - 3500  
W

SERIES	SIZE	MKM 42		MKM 60		MKM 70			MKM 85			MKM 120		
		M	L	M	L	S	M	L	S	M	L	S	M	L
<b>Power</b>	(W)	50	100	200	400	280	470	630	570	1050	1600	1300 <sup>2</sup>	2400 <sup>2</sup>	3500 <sup>2</sup>
<b>Mo</b> stall Torque ( $\Delta t=100^{\circ}\text{C}$ )	(Nm)	<b>0.16</b>	<b>0.32</b>	<b>0.65</b>	<b>1.3</b>	<b>0.9</b>	<b>1.5</b>	<b>2.0</b>	<b>1.8</b>	<b>3.3</b>	<b>5</b>	<b>4</b>	<b>7.5</b>	<b>11</b>
<b>Mo<sup>1</sup></b> stall Torque ( $\Delta t=70^{\circ}\text{C}$ )	(Nm)	0.15	0.3	0.6	1.2	0.8	1.35	1.8	1.65	3	4.5	3.6	6.8	10

WINDING CODE		-	-	-	-	*	*	*	Q28	Q38	Q48	V28	V38	V48
<b>400 VAC</b>	<b>Io<sup>1</sup> Stall Current</b> (Arms)	-	-	-	-	*	*	*	1.1	2	2.8	2.3	4.3	6.5
Drive's Voltage	<b>K<sub>T</sub> Torque Constant</b> (Nm/Arms)	-	-	-	-	*	*	*	1.5	1.5	1.6	1.55	1.6	1.55
	<b>N<sub>n</sub> Rated Speed</b> (Rpm)	-							3000					

WINDING CODE		F36	F46	J36	J46	K26	K36	K46	Q26	Q36	Q46	V28	V38	V48
<b>230 VAC</b>	<b>Io<sup>1</sup> Stall Current</b> (Arms)	0.5	0.9	1.45	2.4	1.1	1.5	2	2	3.3	4.7	2.3	4.3	6.5
Drive's Voltage	<b>K<sub>T</sub> Torque Constant</b> (Nm/Arms)	0.33	0.33	0.41	0.5	0.7	0.9	0.9	0.8	0.9	0.95	1.55	1.6	1.55
	<b>N<sub>n</sub> Rated Speed</b> (Rpm)	3000						1500						

<b>W</b> weight	kg	0.35	0.5	1.0	1.4	1.35	1.9	2.4	2.2	3.2	4.2	4.9	7.3	9.7
<b>W1</b> weight with brake	kg	0.44	0.59	1.4	1.8	1.55	2.1	2.6	2.5	3.5	4.5	5.8	8.2	10.6
<b>W2</b> weight with Hith Inertia Rotor	kg	-	-	-	-	1.7	2.3	2.8	3.0	4.0	5.0	6.9	9.3	11.7
<b>J</b> Rotor Inertia (std)	(Kgm <sup>2</sup> )·10 <sup>-4</sup>	0.03	0.04	0.14	0.24	0.35	0.7	1.0	1.3	2.2	3.1	9	14	19
<b>J<sub>H</sub></b> Higher Rotor Inertia (opt)	(Kgm <sup>2</sup> )·10 <sup>-4</sup>	N.A.	N.A.	N.A.	N.A.	1.9	2.2	2.5	6.3	7.2	8.2	30	35	40
<b>J<sub>B</sub></b> Rotor Inertia with brake	(Kgm <sup>2</sup> )·10 <sup>-4</sup>	0.05	0.06	0.15	0.25	0.4	0.75	1.05	1.5	2.4	3.3	9.5	14.5	19.5
<b>BRAKE</b> stall torque (24 VDC +6% -10%)		<b>0.4 Nm</b> (0.5 A <sub>DC</sub> )		<b>2 Nm</b> (0.5 A <sub>DC</sub> )		<b>2 Nm</b> (0.45 A <sub>DC</sub> )			<b>4.5 Nm</b> (0.5 A <sub>DC</sub> )			<b>9 Nm</b> (0.8 A <sub>DC</sub> )		

**Mo<sup>1</sup>** : 5-100rpm - mounted on AL flange (300x300x6.5 mm, 65°C max) - no brake ( with brake **Mo<sup>1</sup>** -5% ) \* See 230VAC version <sup>2</sup> Power refers to 400VAC / 3000Rpm

## STANDARD FEATURES

- ◆ 8 Poles sinusoidal B.E.M.F.
- ◆ Medium - high rotor inertia
- ◆ Permanent rare earth magnets
- ◆ Very low torque fluctuation at minimum speed
- ◆ Feedback: ..... **Mack**<sup>®</sup> Serial Encoder 13 bit DSL
- ◆ Ambient temp, <sup>1</sup>: operating ..... 0 / + 40°C storage ..... - 20 / + 60°C
- ◆ Ambient Humidity <sup>1</sup>: operating & storage ..... 85% RH max
- ◆ Altitude (a.m.s.l.): operating & storage ..... 1000m
- ◆ Vibration: ..... 5G max
- ◆ Insulation class: ..... F
- ◆ Protection rating: ..... IP54
- ◆ Ball-bearing life: ..... >20'000h



NOTE: <sup>1</sup> Free from condensation

## OPTIONS

- ◆ Holding brakes
- ◆ Protection rating: IP65
- ◆ Special flanges and shafts
- ◆ JH Higher rotor inertia (additional)
- ◆ Thermal Switch
- ◆ **MKEC1** Commutation Enc. feedback
- ◆ **ES3** Mack<sup>®</sup> Serial Enc. 17 bit DSL
- ◆ **AS3** Mack<sup>®</sup> Absolute Multiturn Enc. 17 bit DSL
- ◆ **H01** Absolute Enc. feedback (**Endat 2.1**)

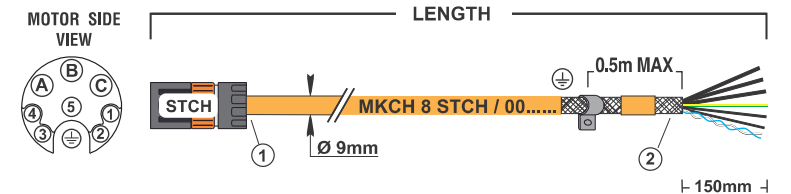
## CABLE SPEC.

- ◆ Mobile usage for chain tracks
- ◆ External sheating: PUR polyurethane
- ◆ Flame / oil resistance
- ◆ Trailing speed: ..... 300m / min. max
- ◆ Acceleration: ..... 20m / sec<sup>2</sup>
- ◆ Cycles: ..... 5 million
- ◆ Minimum bending radius: ..... 7 x Ø
- ◆ Operating temperature: - 25°C / + 80°C
- ◆ Length > 10m use a 3 Ph choke (LXT20).
- ◆ DIN VDE

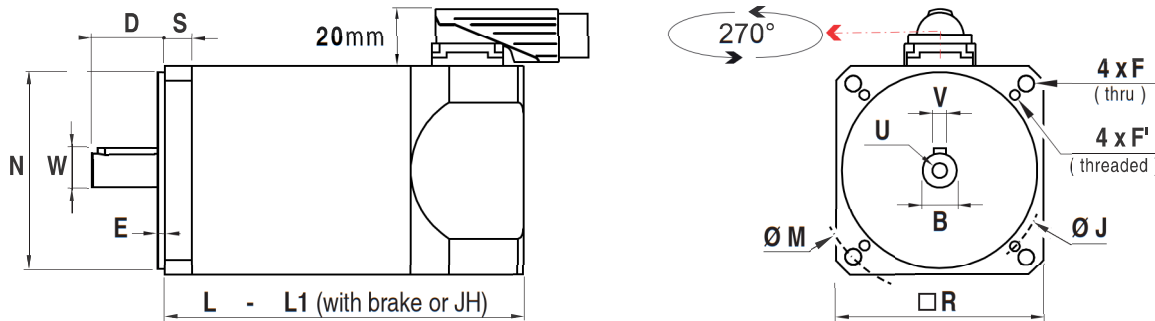


TYPE	Mo	L	L1	B <sub>h7</sub>	D	V <sub>h9</sub>	W	U	N <sub>h6</sub>	M	F	J	F'	E	S	R
	Nm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
MKM 42 M	0.16	93	121	8	25	3 x 12	9.2	M3 x 10	30	45/48	3.2	-	-	2.5	7.5	42
MKM 42 L	0.32	107	135													□
MKM 60 M	0.65	91	124	14	30	5 x 25	16	M4 x 10	50	70	5.2	-	-	2.5	7	60
MKM 60 L	1.3	105	138													□
MKM 70 S	0.9	100	125	11	23	4 x 18	12.5	M4 x 10	60	90	5.5	75	Ø4.2 x 10	2.5	10	75
MKM 70 M	1.5	125	150													□
MKM 70 L	2.0	150	175													□
MKM 85 S	1.8	115	145	14	30	5 x 25	16	M4 x 10	80	100	6.5	-	-	3	11	85
MKM 85 M	3.3	145	175													□
MKM 85 L	5	175	205													□
MKM 120 S	4	135	170	19	40	6 x 32	21.5	M6 x 16	110	145	9	-	-	3.5	12.5	120
MKM 120 M	7.5	170	205													□
MKM 120 L	11	205	240													□

**HYBRID: Power + MKES Serial Encoder**



NOTE: ① All shields (int. and ext.) wired to housing ② Int. and ext. shields wrapped together



STCH	FUNCTION	WIRE COLOR	MARK
A / C / B	U / V / W MOTOR	BLACK	U-1/V-2/W-3
1 / 2	(+) / (-) BRAKE	WHITE / BLACK	-
4 / 3	SE+ / SE-	BLU / WHITE	-
⊕	PE	GREEN YELLOW	-
5	N.C.	-	-
HOUSING	ALL SHIELDS	-	-

MACK® MOTOR ORDERING CODE										MACK® CABLE ORDERING CODE						
MKM85 M Q36 - 000 D 00 X										MKCH 8STCH / 00 - 030 Sxxx						
P 0 MKES1 ST R 1 X X - Sxxx																
<b>SERIES:</b> MKM 42 - 60 - 70 85 - 120	<b>MOUNTING FLANGE:</b> 000 = standard 001-499 = IEC metric 501-999 = Reserved	<b>SHAFT KEY:</b> X = with key (std) W = w/out key (opt)	<b>TH.PROT.:</b> P = PTC (std) N = w/out	<b>CONNECTOR ORIENTATION:</b> R = Rear (std) F = Front (opt) T = Top (opt)	<b>SPEC</b>	<b>GEARBOX:</b> R = With, X = W/out	<b>INERTIA:</b> X = (std), H = High (opt)	<b>IP RATING:</b> 1 = IP54 (std), 2 = IP65 (opt)	<b>CABLE LINE:</b> Preassembled Hybrid cables	<b>ASSEMBLY MOTOR SIDE:</b> 8 STCH = 8 Arms cable + M15 Springtec connector	<b>LENGTH:</b> 030 = 3m 050 = 5m 070 = 7m 100 = 10m					
<b>SIZE:</b> S, M, L	<b>MOUNTING HOLES:</b> D = B5 thru holes (std) C = B14 threaded holes (opt)	<b>SHAFT DIAMETER:</b> 00 = standard 01-49 = IEC metric 51-99 = Reserved	<b>FEEDBACK + CONNECTOR TYPE:</b> MKES1 ST = Mack® Serial Enc. 13bit DSL + STCH (std) ES3 ST = Mack® Serial Enc. 17bit DSL + STCH (opt) AS3 ST = Mack® Absolute Multiturn Enc. 17bit DSL + STCH (opt)						<b>ASSEMBLY DRIVE SIDE:</b> 00 = Flying leads (no connector)							
<b>WINDING CODE:</b> See table on reverse																
<b>FLANGES &amp; SHAFT OPTIONAL</b>	<b>B<sub>h7</sub></b>	<b>D</b>	<b>V<sub>h9</sub></b>	<b>W</b>	<b>U</b>	<b>N<sub>h6</sub></b>	<b>M</b>	<b>F</b>	<b>J</b>	<b>F'</b>	<b>E</b>	<b>S</b>	<b>R</b>			
090D14X (MKM70 all)	14	30	5x25	16	M4x10	60	90	5.2	75	4.2x10	2.5	10	75			
100D19X (MKM85 all)	19	40	6x32	21.5	M6x16	80	100	6.5	-	-	3	11	85			
115D19X (MKM85 all)	19	40	6x32	21.5	M6x16	95	115	9	-	-	3	11	100			

For cables see CBLs datasheet