AXOR ★ INDUSTRIES ★ motors & drives SINCE 1988 ITALY

MACK® basic MOTOR

MKBM

BRUSHLESS SERVOMOTOR

0.15 - 1.2 Nm	50 - 750 W

P. N. : D.S./05.12.18/MKBM/03

SERIES			MKBM 42		MKBM 60				MKBM 80
SIZE (Power)			M (50 w)	L (100 w)	M (200 w)		L (400 w)		M (750 w)
Mo	Stall Torque (Δt=70°C)	(Nm)	**0.16**	**0.32**	**0.65**		**1.3**		**2.5**
Mn	Rated Torque at Nn (Δt=70°C)	(Nm)	0.15	0.3	0.6		1.2		2.4
WINDING CODE			F32	F42	J30	J32	J40	J42	P32
Drive's Supply Voltage	**In** Rated Current	(Arms)	2.6	5	10	5	20	10	20,5
	K_T Torque Constant	(Nm / Arms)	0.06	0.06	0.06	0.12	0.06	0.12	0.116
	K_E B.E.M.F.	(Vac / krpm)	3.5	3.5	3.5	7	3.5	7	7
48 VDC	N_n Rated Speed (Mo)	(Rpm)	**3000** (6000 max)	**3000** (6000 max)	**3000** (6000 max)	**3000** (3500 max)	**3000** (6000 max)	**3000** (3500 max)	**3000**
24 VDC	N_n Rated Speed (Mo)	(Rpm)	**3000**	**3000**	**3000**	**1500**	**3000**	**1500**	**1500**
W weight (**W1** with brake)		kg	0.35 (0.44)	0.5 (0.59)	1.0 (1.4)		1.4 (1.8)		2.4 (3.2)
J Rotor Inertia (J_B with brake)		$(Kgm^2)\cdot10^{-4}$	0.03 (0.05)	0.04 (0.06)	0.14 (0.15)		0.24 (0.25)		1 (1.2)
Brake stall torque (24 VDC +6% -10%)			**0.4 Nm** (0.5 A_{DC})		**2 Nm** (0.5 A_{DC})				**4.5 Nm** (0.45 A_{DC})

Mo : speed 5 - 100rpm - mounted on AL flange (300x300x6.5 mm, 65°C max) - no brake (with brake -5%)

STANDARD FEATURES

- 8 Poles sinusoidal B.E.M.F. Permanent rare earth magnets
- Medium rotor inertia
- Feedback: ..... . **EIS1** incr. Serial Encoder - 1024 P/rev
- Ambient temp.*: operating ..... 0°C / + 40°C
  storage ..... - 20°C / + 60°C
- Ambient Humidity*: operating & storage ..... 85% RH max
- Altitude (a.m.s.l.): operating & storage 1000m
- Vibration: ..... 5G max
- Insulation class: ..... F
- Ball-bearing life: ..... >20'000h

OPTIONS

- Holding brakes
- Protection rating: IP65
- **EIS2:** Incr. Serial Enc. - 2048 P/rev
- **EB3:** Enc. Biss 17bit
- **AB3:** Enc. Absolute Multiturn 17bit

NOTE: * Free from condensation

CABLE SPEC.

- Mobile usage for chain tracks, flame / oil resistance
- External sheating: PUR polyurethane
- Cycles: 5 million
- Minimum bending radius: 7 x Ø
- Operating temperature: ..... - 25°C / + 80°C
- Trail speed: 300m / min. max
- Acceleration: 20m / sec²
- DIN VDE

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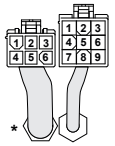
 AXOR INDUSTRIES

TYPE	Mo Nm	L mm	L1 mm	B h7 mm	D mm	V h9 mm	W mm	U mm	N h6 mm	M mm	F mm	E mm	S mm	R mm
MKBM 42 M	0.16	89	117	8	25	3 x 12	9.2	M3 x 6	30	45 ÷ 48	3.2	2.5	7.5	42 □
MKBM 42 L	0.32	104	132											
MKBM 60 M	0.65	99	132	14	30	5 x 25	16	M4 x 10	50	70	5.2	2.5	7	60 □
MKBM 60 L	1.3	113	146											
MKBM 80 M	2.5	132.5	165.5	19	40	6 x 32	21.5	M6 x 16	70	90	6.2	3	9	80 □

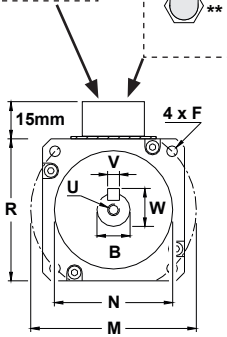
M	WIRE	DATA
1	Black (1)	U MOTOR
2	Black (2)	V MOTOR
3	Black (3)	W MOTOR
4	Black (4)	+ BRAKE
5	Black (5)	- BRAKE
6	Green-Yellow	PE

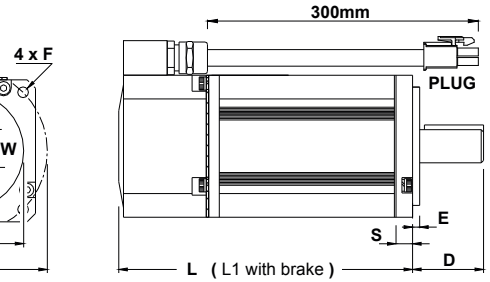
E	WIRE	DATA
1	Pink	CHA +
2	Grey	CHA -
3	Green	CHB +
4	Yellow	CHB -
5	Brown	CHZs +
6	White	CHZs -
7	Red	+5V
8	Blue	0V
9	Ext. shield	PE

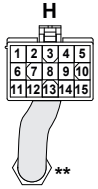


***All shields are internally connected to PE motor ground.**

****External shield internally connected to PE motor ground. Internal shields internally wrapped toghether and isolated.**





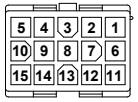


H	WIRE	DATA
1	Black	U MOTOR
3	Brown	V MOTOR
5	Blue	W MOTOR
2/4	Red / Black	+ / - BRAKE
6	Green-Yellow	PE
7/8	Pink / Grey	+ / - CHA
9/10	Green / Yellow	+ / - CHB
11/12	Blue / White	+ / - CHZs
13/14	Red / Brown	+5V / 0V
15	Int. shields	PE

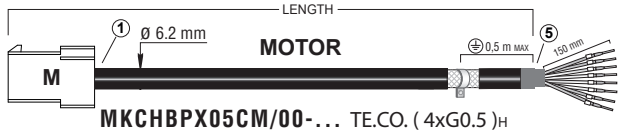
CAP

TYCO CAP: 172160-1
6 x PWR PIN: 171639-1

TYCO CAP: 172161-1
9 x SIGNAL PIN: 770988-1



TYCO CAP: 172163-1
6 x PWR PIN: 171639-1
9 x SIGNAL PIN: 770988-1

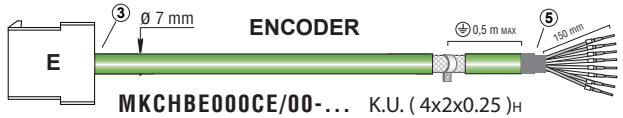


MKCHBPX05CM/00-... TE.CO. (4xG0.5)H

M	WIRE	(mark)	DATA
1	Black	(U/L1)	U MOTOR
2	Black	(V/L2)	V MOTOR
3	Black	(W/L3)	W MOTOR
4/5	N.C.		N.C.
6	G-Y		PE

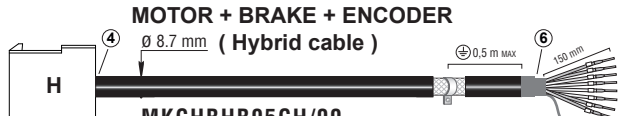
MKCHBPB10CM... K.U. (4G1 + (2x0.5)) ø = 9.4mm
MKCHBPB20CM... K.U. (4G1.5 + (2x1)) ø = 10.6mm

M	WIRE	(mark)	DATA
1	Black	(U/L1)	U MOTOR
2	Black	(V/L2)	V MOTOR
3	Black	(W/L3)	W MOTOR
4/5	White / Black		+ / - BRAKE
6	Green-Yellow		PE



MKCHBE000CE/00-... K.U. (4x2x0.25)H

E	WIRE	DATA
1/2	Pink / Grey	+ / - CHA
3/4	Green / Yellow	+ / - CHB
5/6	Brown / White	+ / - CHZs
7/8	Red / Blue	+5V / 0V
9	Ext. shield	PE



MKCHBHB05CH/00-...
Axor (4xG0.5 + 2x0.34 + 2x(4x0.18))

MKCHBHB20CH/00-...
Axor (4xG1.5 + 2x0.5 + 2x(4x0.18))

H	WIRE	(mark)	DATA
1	Black	(1)	U MOTOR
3	Brown	(2)	V MOTOR
5	Blue	(3)	W MOTOR
2	Red	(4)	+ BRAKE
4	Black	(5)	- BRAKE
6	G-Y		PE
7	Pink		+ CHA
8	Grey		- CHA
9	Green		+ CHB
10	Yellow		- CHB
11	Blue		+ CHZs
12	White		- CHZs
13	Red		+ 5V
14	Brown		0V
15	Int. shields		PE

NOTE:
① Ext. shield isolated ② Int. and Ext. shields isolated ③ Ext. shield connected to pin 9 ④ Ext. shield isolated, all int. shields connected to pin 15
⑤ All shields wrapped together and isolated ⑥ Ext. shield isolated ⑦ All int. shields connected to a single wire (isolated from ext. shield)

MACK® basic MOTOR — ORDERING CODE

MKBM60 M J32 - 0 D 0 X - 0 EIS1 P0S03F 1 X - Sxxx

SERIES: MKBM 42 - 60 - 80

SIZE: M, L

WINDING CODE: See table on reverse

FLANGE: 0 = standard

MOUNTING HOLES: D = B5 thru holes (std) C = B14 threaded holes (opt)

SHAFT DIAMETER: 0 = standard

SHAFT KEY: X = with key (std) W = w/out key (opt)

BRAKE: 0 = w/out (std) 1 = with (opt)

FEEDBACK:
EIS1 = Incr. Serial Enc. - 1024 P/rev (std) (± A, ± B, ± Zs,+5V,0V)
EIS2 = Incr. Serial Enc. - 2048 P/rev (opt) (± A, ± B, ± Zs,+5V,0V)
EB3 = Enc. Biss 17bit (opt)
AB3 = Enc. Absolute Multi. 17bit
0000 = No Feedback

ELETRICAL CONNECTIONS:
P0S 03 F
F: Front exit (std) **R**: Rear exit (opt)
Cables lenght: 03 = 0.3 m (std)
P0S: Plug Connectors (M+E), static cables (std)
PHM: Plug Connector (H), mobile hybrid cable (opt)
FHM: Flying Leads (H), mobile hybrid cable (opt)

GEARBOX: X = W/out **R** = With

IP RATING: 1 = IP54 (std) **2** = IP65 (opt)

SPEC

MACK® basic CABLE — ORDERING CODE

MKCHB PX05 CM/00 - 030 Sxxx

CABLE LINE: Preassembled cables for mobile usage

CABLE TYPE:
E000 = Encoder
PX05 = Pwr w/out brake *(3A-10m max / 5A-7m max / 10A-3m max)
PB10 = Pwr with brake *(7A-10m max / 10A-7m max)
PB20 = Pwr with brake *(10A-10m max / 20A-5m max)
HB05 = Hybrid with brake *(3A-10m max / 5A-7m max / 10A-3m max)
HB20 = Hybrid with brake *(10A-10m max / 20A-5m max)

*(current-lenght data refers to **S5** Duty Cycle, intermittent operation for **S1** Duty Cycle, continuous operation contact **AXOR**.)

ASSEMBLY MOTOR SIDE:
CM = Cap 6 pin connector power
CE = Cap 9 pin connector encoder
CH = Cap 15 pin connector hybrid

ASSEMBLY DRIVE SIDE:
00 = Flying leads (no connector)

LENGTH:
030 = 3m
050 = 5m
070 = 7m
100 = 10m

SPEC

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