



FAST-BACK®

POWERED BRUSHLESS MOTOR

All-in-one fully digital Drive+Motor. The decentralized structure gives you much more freedom in designing your machine's layout. Installation, commissioning and service are much simpler. Many advantages such as cables and control cabinet space reduction. Motion controller and EMC line filter suppression are integrated.

STANDARD FEATURES

- ✓ 220 Vac 3PH pwr supply. EMC line filter and in-rush circuit on board
- ✓ Logic supply for control circuits obtained from DC Bus
- ✓ Integrated regenerative circuit and power resistor
- ✓ Integrated positioning control
- ✓ Feedback from encoder 2048 P/rev
- ✓ **CBMD CAN BUS** - CAN V2.0B (⚡) + RS232 to CAN BUS multidrop
CAN OPEN protocol implementations: DS301-V4.02 - DSP402-V2.0
- ✓ Fully programmable via RS232 (⚡), Mod Bus-RTU based
- ✓ **Speeder-One®** software interface (Windows 98/2000/XP based)

OPTIONS

- ✓ **220M** 220 Vac single PH power supply
- ✓ **D300** 300 Vdc Power Supply
- ✓ **HB+HBD** Holding Brake + Drive Circuitry
- ✓ **RS 485** interface, Mod Bus-RTU based (⚡), 230 kbps max
- ✓ **H01** feedback from absolute multiturn encoder
- ✓ Special flange and shafts available upon request
- ✓ Special connection orientation available upon request
- ✓ Special windings
- ✓ 2 digital inputs (opto-isolated) 24 Vdc - 7 mA (PLC compatible)
- ✓ 1 digital output (opto-isolated) 24 Vdc - 50 mA (PLC compatible)
- ✓ PROTECTION CLASS: level **2** = IP65
level **3** = IP65S (with shaft sealing)

SPECIFICATIONS

- Operating frequency 10 KHz
- Ambient temperature
 - operating at rated data: 0 ÷ 40°C (no derating)
 - Mo - Mpk torque derating: 40 ÷ 55°C (2.5%/°C)
 - maximum operating: 55°C max
 - storage: - 20 ÷ 55°C
- Altitude a.m.s.l.
 - operating at rated data: 1000 m
 - Mo - Mpk torque derating: 1000 ÷ 2500 m (1.5%/100m)
- Storage duration 1 year max*
- Protection class IP54

NOTE

- 1) Rated speed refers at 220 Vac power supply three phase
- 2) Single phase does not allow you to obtain the rated performance (torque and speed). Contact Axor's technical department for details.

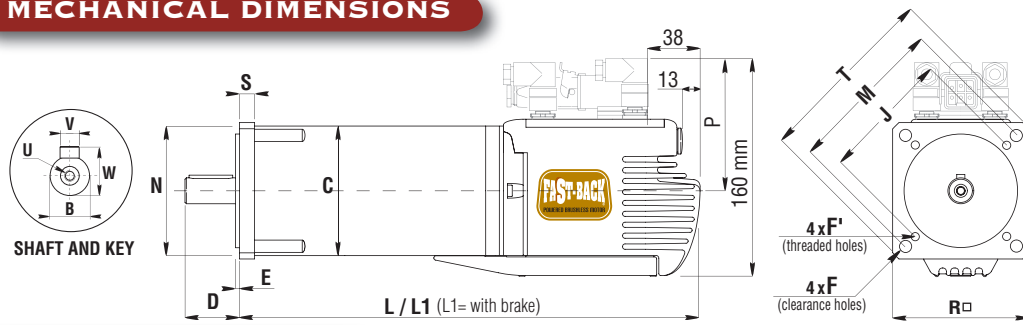
⚡:Optocoupled

*: After 1 year storage duration the internal electrolytic power capacitors must be re-formed. Contact Axor's technical department for details.



SERIES	FBK220T75				FBK220T100		
	XS	S	M	L	S	M	L
Mo stall Torque ($\Delta t=100^\circ\text{C}$) (Nm)	1.1	1.6	2.7	3.8	3.2	5.2	7.5
Mpk Peak Stall Torque (x 2 sec.) (Nm)	3.3	4.8	8.1	10	10.3	10.5	15
Nn Rated speed ¹⁾ (Rpm)	3000	3000	3000	3000	3000	3000	2200
Mn Rated torque at Nn ($\Delta t=100^\circ\text{C}$) (Nm)	0.95	1.35	2.35	3.3	2.8	4.5	6.4
Power Supply (grounded systems only)	220 VAC \pm 10% three phase (single-ph as optional feature) ²⁾						
Logic Supply (for back-up only)	24 VDC (\pm 10%) - 200mA						
Logic Supply (for back-up+brake)	24 VDC (\pm 5%) - 800 mA MAX						
J Rotor Inertia (Kg m ²) · 10 ⁻⁴	0.4	0.6	1	1.4	1.8	2.8	3.8
Jb Brake Inertia (Kg m ²) · 10 ⁻⁴	0.122				0.37		
BRAKE stall torque ($\Delta t=100^\circ\text{C}$)	4 Nm (0.5 Aoc)				8 Nm (0.8 Aoc)		
MODULE	2	3	5	7	3	5	7

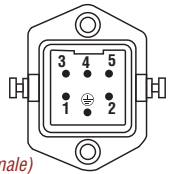
MECHANICAL DIMENSIONS



REFERENCES SERIES - Mo (Nm)	L	L1	Bj6	D	Vh9	W	U	Nj6	M	F	J	F'	E	S	R	T	C	P	WEIGHT ^o Kg	WEIGHT ^o with BRAKE Kg	
	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm			
FBK...220 75 XS	1.1	230	285																2.85	3.45	
FBK...220 75 S	1.6	245	300	11	23	4x18	12.5												3.3	3.9	
FBK...220 75 M	2.7	275	330					M4x10	60	90	5.5	75	M5x8	2.5	10	75	100	75	107	4.2	4.8
FBK...220 75 L	3.8	305	360	14	30	5x25	16													5.0	5.6
FBK...220 100 S	3.2	301	359																	5.8	6.5
FBK...220 100 M	5.2	336	394	19	40	6x32	21.5	M6x16	95	115	9	/	/	3	12	100	135	95	97	7	7.7
FBK...220 100 L	7.5	371	429																	8.2	8.9

CONNECTION DATA

POWER SUPPLY CONNECT X1



Bayonet (male)

- 1 = L1 (Power supply)
 - 2 = L2 (Power supply)
 - 3 = +24 Vdc (back-up)
 - 4 = L3 (Power supply)*
 - 5 = 0 Vdc (back-up)
 - ⊕ = PE
- *: for three phase power supply only

CAN BUS IN / OUT X2 - X3



M12 / 4p connector (male)

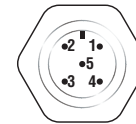
M12 / 5p Optional

- 1 = ⊕ PE / Shield
- 2 = CAN L
- 3 = PGND (0V CAN)
- 4 = CAN H
- 5 = CAN L Optional

RS 485 IN / OUT
Optional

- 1 = ⊕ PE / Shield
- 2 = 485 B
- 3 = PGND (0V 485)
- 4 = 485 A

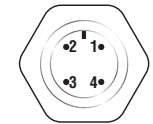
SIGNALS IN / OUT X4



M12 / 5p connector (male)

- 1 = DGT-IN 1
- 2 = DGT-IN 2
- 3 = DGT-OUT 1
- 4 = DGT-IN/OUT RTN
- 5 = ⊕ PE / Shield

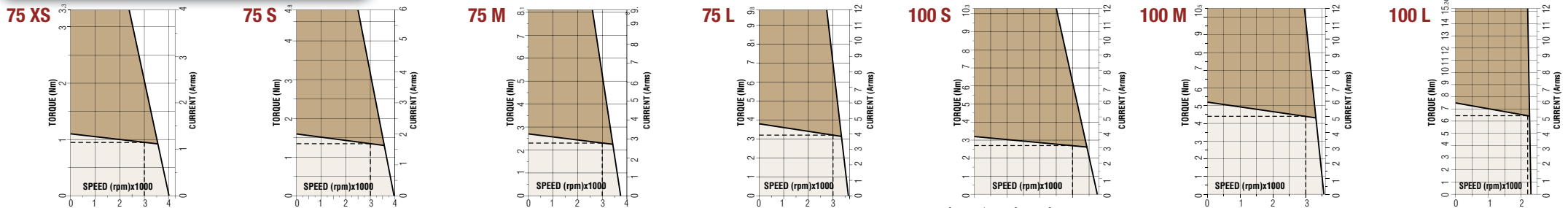
PC - RS232 X5



M12 / 4p connector (male)

- 1 = TXD
- 2 = RXD
- 3 = PGND
- 4 = N.C.

CHARACTERISTIC CURVES



ORDERING CODE

HARDWARE

SOFTWARE

FBK 220T - 75 M 30 - 000D00X - 0 T15 1 - 1000X - Sxxx 00000 / 00000

POWER SUPPLY:
 220T = 220 Vac 3PH (std)
 220M = 220 Vac single PH (opt)
 D300 = 300 Vdc (opt)

SERIES: 75,100

SIZE: XS,S,M,L

see table on the right

NOMINAL SPEED:
 Ex: 30= 3000 Rpm

HB+HBD:
 0= without brake (std)
 1= with brake (opt)

PROTECTION CLASS:
 1= IP54 (std)
 2= IP65 (opt)
 3= IP65S with shaft oil seal (opt)

FEEDBACK:
 T15 = Encoder OIH3506- 2048PPR (std for FBK 75)
 T05 = Encoder OIH4808- 2048PPR (std for FBK 100)
 H01 = Encoder EQ1130 absolute multiturn (opt)

ADDITIONAL FEATURES:
1 0 0 0 X
 Not in use

CBMD: CAN BUS+ MULTIDROP interf.
 1= Present (std)
 0= Not present (opt)

RS485 Interface
 1= Present (opt)
 0= Not present (std)

AXOR's int. use
 1= Present (std)
 0= Not present (std)

SPECIFIC NUMBER PRESENCE (opt):
S xxx
 001÷999= specific number

FIRMWARE VERSION
SETTING FILE

000D00X = standard for all motors (see above)

- MOUNTING FLANGE:**
 000= standard (see above)
 001÷499= IEC metric dimension
 501÷999= Axor's internal code
- SHAFT KEY:**
 x= with key (standard)
 w= without key (optional)
- SHAFT DIAMETER:**
 00= standard (see above)
 01 ÷ 49= IEC metric diameter
 51 ÷ 99= Axor's internal code

SPECIAL FLANGES & SHAFTS OPTIONAL	Bj6	D	Vh9	W	U	Nj6	M	F	J	F'	E	S	R	T
100D11X (FBK 75 XS, S, M)	11	23	4x18	12.5	M4x10	80	100	6.6	—	—	3	10	90	115
100D14X (FBK 75 all sizes)	14	30	5x25	16	M4x10	80	100	6.6	—	—	3	10	90	115
130D14X (FBK 75 all sizes)	14	30	5x25	16	M4x10	110	130	9	—	—	3.5	10	115	150
100C19X (FBK 100 all sizes)	19	40	6x32	21.5	M6x16	80	—	—	100	M6x10	3	12	95	120
115D24X (FBK 100 all sizes)	24	50	8x40	27	M8x19	95	115	9	—	—	3	12	100	135
130D19X (FBK 100 all sizes)	19	40	6x32	21.5	M6x16	110	130	9	—	—	3.5	12	115	150
130D24X (FBK 100 all sizes)	24	50	8x40	27	M8x19	110	130	9	—	—	3.5	12	115	150