FAST-BACK®

POWERED BRUSHLESS MOTOR

FAST-BACK® (FBK)

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

- ✔ Power supply 230 VAC three phase
- ✔ EMC line filter and in-rush circuit integrated
- ✔ Power supply for control circuits obtained from DC Bus
- ✔ Integrated regenerative circuit and power resistor
- ✔ Optical insulation between power stage and signals
- ✔ Integrated positioning control
- ✔ Feedback from encoder 2048 P/rev
- ✔ CAN BUS - CAN V2.0B standard (⚡ Optocoupled)
- ✔ CAN OPEN protocol implementations:
  - part of the DS301-V4.02
  - part of the DSP402-V2.0
- ✔ Fully programmable via RS232 (opto-isolated), Mod Bus-RTU based
- ✔ **Speeder-One®** software interface (Windows 98/2000/XP based)
- ✔ Multidrop interface RS232 to CAN BUS

OPTIONS

- ✔ Power supply 230 VAC single phase[2]
- ✔ Holding brake (internally controlled)
- ✔ Protection class: IP65, IP65S (with shaft sealing)
- ✔ Special flange and shafts 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)
- ✔ 1 analog programmable output ±10 VDC - 10 mA
- ✔ RS485 interface, Mod Bus - RTU based (⚡ Optocoupled) 230 Kbps max
- ✔ Safety Enable Function

SPECIFICATIONS

✔ Operating frequency	10 KHz
✔ Ambient temperature	
- operating at rated data:	0 ÷ 45°C (no derating)
- rated and peak current derating:	45 ÷ 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
- rated and peak current derating:	1000 ÷ 2500 m (1.5 %/100m)
✔ Storage duration	1 year max*
✔ Protection class	IP54

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

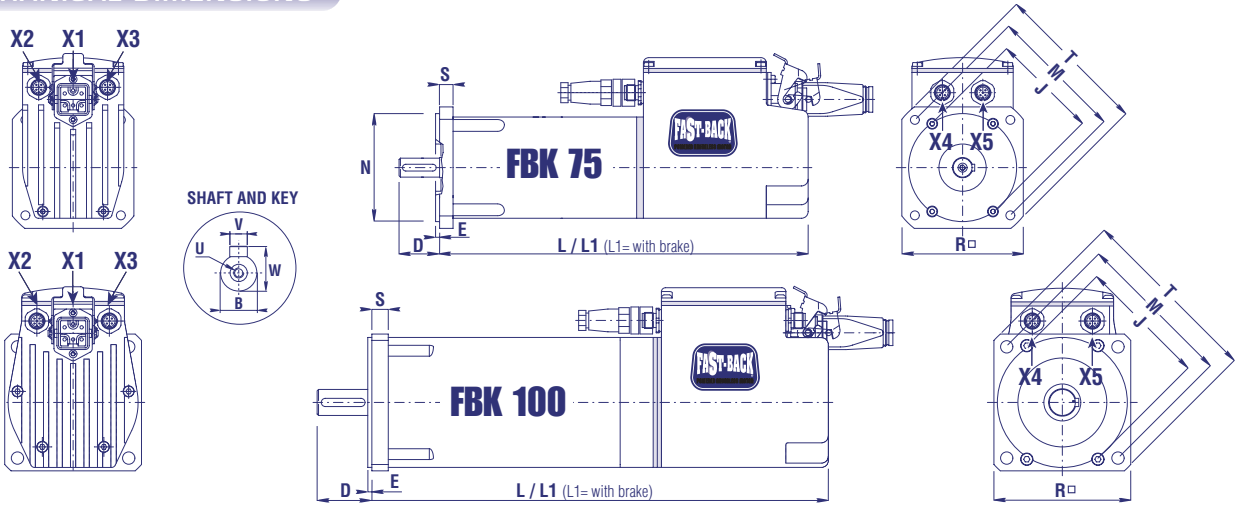
TYPICAL APPLICATIONS

- *food processing*
- *labelling equipment*
- *adjustment of formats*
- *medical equipment*
- *laser/water jet cutters*
- *pick-and-place equipment*
- *industrial printing*
- *limit stop adj. for wood, metal working machines*
- *size adj. for packing machines*

SERIES		FBK 75				FBK 100		
SIZE		XS	S	M	L	S	M	L
Mo stall Torque (Δt=100°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 (Δt=100°C)	(Nm)	0.95	1.35	2.35	3.3	2.8	4.5	6.4
Power Supply (grounded systems only)		230 VAC ± 10% three phase (single-ph as optional feature)[2]						
Logic Supply (for back-up only)		24 VDC (±10%) - 200mA						
Logic Supply (for back-up+brake)		24 VDC (±5%) - 800 mA MAX						
J Rotor Inertia	$(Kgm^2)\cdot10^{-4}$	0.4	0.6	1	1.4	1.8	2.8	3.8
JB Brake Inertia	$(Kgm^2)\cdot10^{-4}$	0.122				0.37		
BRAKE stall torque (Δt=100°C)		4 Nm (0.5 ADC)				8 Nm (0.8 ADC)		
MODULE		2	3	5	7	3	5	7

NOTE [1]: Rated speed refers at 230 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.

MECHANICAL DIMENSIONS



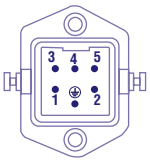
REFERENCES	L	L1	Bj6	D	Vh9	W	U	Nj6	M	F	J	F'	E	S	R □	T	WEIGHT°	WEIGHT° with BRAKE
SERIES - Mo (Nm)	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	Kg	Kg
FBK 75 XS 1.1	230	280	11	23	4 x 18	12.5	M4x10	60	90	5.5	75	M5x8	2.5	10	75	100	2.85	3.45
FBK 75 S 1.6	245	295															3.3	3.9
FBK 75 M 2.7	275	325															4.2	4.8
FBK 75 L 3.8	305	355	14	30	5 x 25	16											5.0	5.6
FBK 100 S 3.2	303	359	19	40	6 x 32	21.5	M6x16	95	115	9	/	/	3	12	100	135	5.8	6.5
FBK 100 M 5.2	338	394															7	7.7
FBK 100 L 7.5	373	429															8.2	8.9

CONNECTION DATA

POWER SUPPLY CONNECTOR X1

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

1 = ⏚ PE / Shield
2 = CAN L
3 = PGND (0V CAN)
4 = CAN H

RS 485 IN/OUT

optional

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

M12/4p connector

SIGNALS IN/OUT X4

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

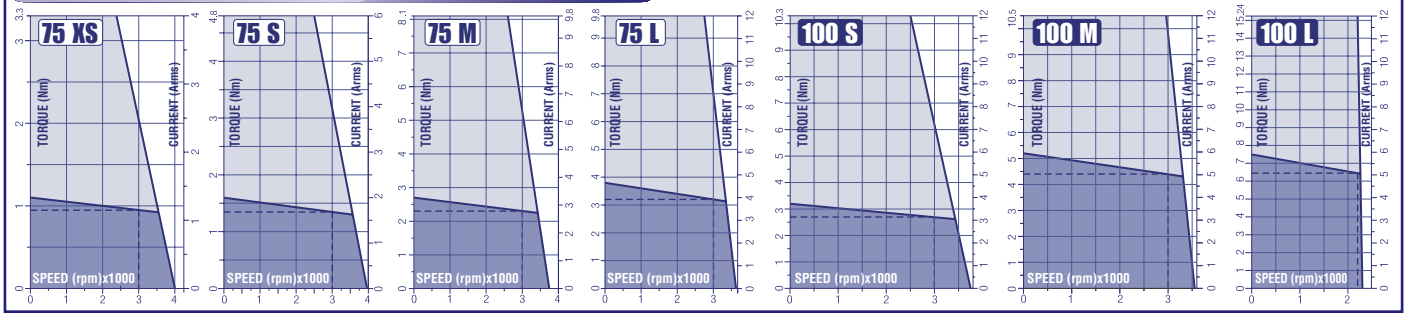
M12/5p connector

RS232 X5

1 = TXD
2 = RXD
3 = PGND
4 = AN-OUT 1
5 = AGND

M12/5p connector

CHARACTERISTIC CURVES TORQUE VS. SPEED



ORDERING CODE

Example:

HARDWARE | **SOFTWARE**

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

NAME: Drive's name
SERIES: 75,100
SIZE: XS, S, M, L
NOMINAL SPEED Ex: 30=3000 Rpm
POWER SUPPLY MODE:
220T= Three ph. 230 VAC (std.)
220M= Single ph.230 VAC (opt)

HOLDING BRAKE:
0=without brake (std)
1=with brake (opt)

FEEDBACK:
T15=Encoder OIH35ø6- 2048PPR (std for FBK 75)
T05=Encoder OIH48ø8- 2048PPR (std for FBK 100)

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

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

FLANGE & SHAFT

000D00X = standard for all motors (see above)

MOUNTING FLANGE:
000= standard (see above)
001÷499= IEC metric dimension
501÷999= Axor's internal code

MOUNTING HOLES:
D= B5 flange with thru holes (standard)
C= B14 flange with threaded holes (optional)

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
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

ADDITIONAL FEATURES:
1 0 0 0 X

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

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

Not in use

Reducer presence:
0= Not present (std)
1= Present (opt)

SEF: Safety Enable Function
1= Present (opt)
0= Not Present (std)

FIRMWARE VERSION

SETTING FILE

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Part number D.S./03.05/FBK/04

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