

FAP asynchronous brake motors FLS FAP

General information



GENERAL USE : U.G.

Enclosed three-phase asynchronous brake motors, FLS series with failsafe alternating current (ac) brake, according to IEC 60034, 60072, EN50281.

Separate supply to the motor and the brake.
 • Single speed : power 4 to 30 kW, frame size 160 to 200 L; 4, 6 and 8 poles, 230/400 V, 50 Hz. Maximum number of starts/hr for continuous duty : 6.

• Two speed : 4/8, 4/12, 4/16 poles.

IP 55 protection for the motor

IP 44 protection for the brake

Options

- Brake
 - Release lever.
 - Brake release indicator.
 - Brake lining wear indicator.
 - Adaption for a tachometric dynamo or an alternator.
 - Special position of the brake terminal box.
 - IP 44 to IP 65 protection

• Motor

- PTO, PTF, PTC thermal protection.
- Anti-condensation heaters.
- Roller bearings.
- Forced ventilation - study.
- IP 65 protection for frame sizes 160 and 180.

Finish

Cast iron housing.
 Routine test, no load test, dielectric test, control of the resistance and direction of rotation.

Honing and traceability of the brake disk.

Brake motor mains supply

- Standard according to IEC 60038 :
 - 230/400 V +10% -10% at 50 Hz.
- Standard construction suitable for the following supplies :
 - 220/380 V +5% -5% and
 - 240/415 V +5% -5% at 50 Hz.

Motors in accordance with the European Directive 94/9/CE.

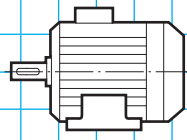
Description of the FLS FAP three-phase brake motors

Component	Materials	Remarks
Finned housing	Cast iron	- with cast feet or without feet <ul style="list-style-type: none"> • 4 or 6 mounting holes for the foot housing • lifting rings - optional earth terminal
Stator	Insulated low carbon magnetic steel laminations Enamelled electrolytic copper	- the low carbon content guarantees long term stability of the characteristics - semi-enclosed slots - insulation system class F
Rotor	Insulated low carbon magnetic steel laminations	- inclined slots - squirrel cage pressure die cast in aluminium (or alloy for special applications) - mounted on shaft by heat shrinking - dynamically balanced rotor class N - 1/2 key
Shaft	Steel	- tapped centre hole - open key
End shields	Cast iron	-front and rear, assembled with tie rods
Brake housing	Cast iron	- mounted to flange by bolts and protected by sheet metal cover
Bearings		- ball bearings C3 type 2RS for frame sizes 160 and 180 - regreasable bearings for frame size 200 - locked front bearing and preloaded rear bearing
Labyrinth seals Lipseals	Technopolymer or steel Synthetic rubber	- forward lipseals or jet deflector for flange motors - lipseals, jet deflector or labyrinth seals for foot motors
Fan	Composite material or aluminium alloy	- 2 directions of rotation : straight blades
Terminal box	Metal	- 1 terminal box for the motor - 1 terminal box for the brake - located on top of the motor, sealed, provided with cable glands (plastic or metal), or on the brake housing
Painting		- System Ia RAL 6000 (green)

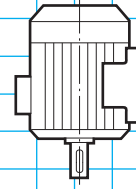
FAP asynchronous brake motors FLS FAP

Mounting positions

Foot mounted motor

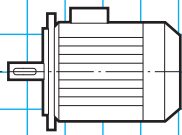


IM 1001 (IM B3)

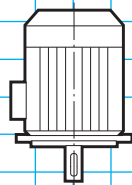


IM 1011 (IM V5)

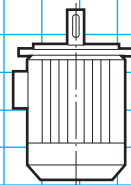
(FF) plain hole flange mounted motor



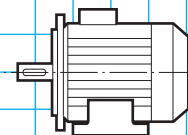
IM 3001 (IM B5)



IM 3011 (IM V1)



IM 3031 (IM V3)



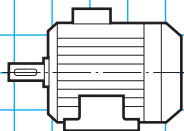
IM 2001 (IM B35)

*In consideration of the weight of certain motors, B5 mounting must be confirmed by the factory.
V1 - V5 mounting : consult the factory if 2 disk brake.
V3 mounting : impossible if 2 disk brake.*

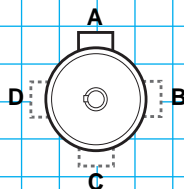
(FT) tapped hole flange mounted motors

• For frame size 160 mm. Consult us.

Positions of the terminal box in relation to the motor shaft end

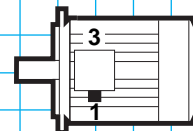


Foot mounted motor
A : only possibility



Flange mounted motor
A : standard

Positions of the cable gland in relation to the motor shaft end



LS 160 to 200 : 1 : standard
(3 : only optional)

FAP asynchronous brake motors FLS FAP

Adaptation possibilities

Leroy-Somer offers, for use with their general use brake motors, many options which meet the needs of highly diverse applications. Atex dust. They are described below and in the chapter relating to gearboxes.

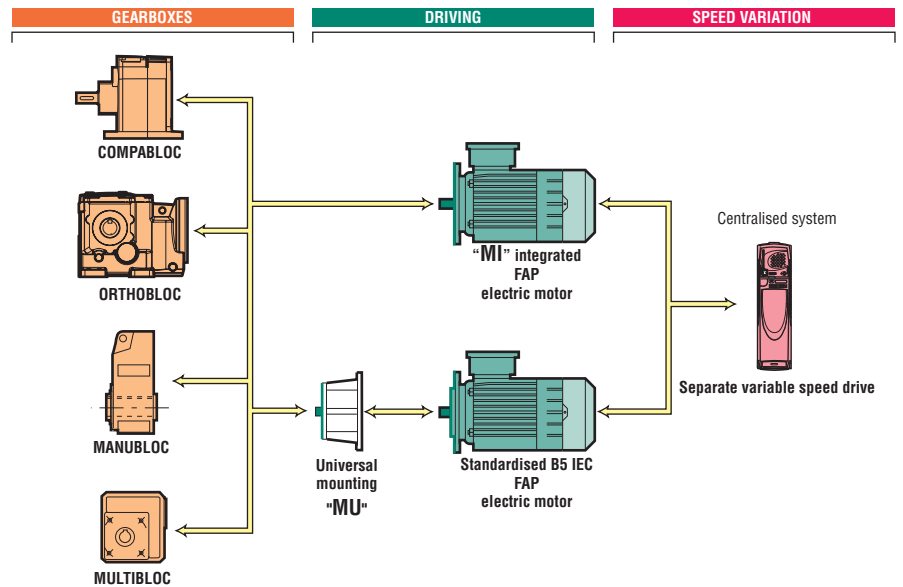
For other variants or any specific adaptation, consult the technical specialists at Leroy-Somer who will be pleased to advise you.

👉 **FLS FAP brake motors may be integrally mounted (fitted motor), or with universal mounting (IEC standardised motor) with the following gearboxes :**

- Compabloc
- Orthobloc
- Manubloc
- Multibloc

👉 **FLS FAP brake motors may be controlled by a variable speed drive :**

- Centralised system with separate variable speed drive (open loop vector variable speed drive technology or universal variable speed drive with encoder feedback).



Designation / Codification

4 P 1500 min⁻¹	FLS	180	LU	FAP	S1	143 N.m	22 kW	IM 1001 (IM B3)	230/400 V	A
Speed polarity	Motor type	Motor frame size	Manuf. index (motor)	Brake type	Operation duty	Brake torque	Motor power	Mounting position	Supply voltage	T Box position

👉 **Codification example :**

4P FLS 180 LU FAP S1 143 N.m 22 kW
IM 1001 (IM B3), 230/400 V - A

Designation

4P FLS 180 LU FAP 22 kW
B3 230/400 V

Code

-

All the products in this catalogue have a code.

The coding table is incorporated in the price list together with the list of designations.

Each brake motor product is classified first in order of power and then in order of speed.

FAP asynchronous brake motors

FLS FAP

Selection

4
poles
1500 min⁻¹

- FLS FAP motor - IP 55 - 50 Hz - Class F - 230 V Δ / 400 V Y - Aluminium rotor, U.G. general use
- IP 44 brake - Separate mains supply

Motor type	Brake type	Rated power at 50 Hz P_N kW	Rated speed N_N min ⁻¹	Rated current $I_N(400V)$ A	Power factor $\cos \varphi$ 100 %	Efficiency η 100 %	Starting current / Rated current I_D / I_N	Starting torque / Rated torque M_D / M_N	Rated torque M_N N.m	Moment of inertia J kg.m ²	Brake torque $M_f \pm 20 \%$ N.m	Weight IM B3 kg
FLS 160 M	FAP 132	11	1455	21	0.86	88.3	7.8	2.6	72.2	0.089	72.2	150
FLS 160 L	FAP 160	15	1455	28.2	0.86	89.5	7.8	2.6	98.5	0.110	98.5	170
FLS 180 MR	FAP 160	18.5	1465	34.5	0.86	90	7.8	2.6	121	0.127	121	165
FLS 180 L	FAP 160	22	1465	40.5	0.86	91.4	7.4	2.6	143	0.173	143	220
FLS 200 L	FAP 180	30	1471	56	0.85	91.9	6.5	2.5	195	0.273	195	315

Above, consult us

6
poles
1000 min⁻¹

- FLS FAP motor - IP 55 - 50 Hz - Class F - 230 V Δ / 400 V Y - Aluminium rotor, U.G. general use
- IP 44 brake - Separate mains supply

Motor type	Brake type	Rated power at 50 Hz P_N kW	Rated speed N_N min ⁻¹	Rated current $I_N(400V)$ A	Power factor $\cos \varphi$ 100 %	Efficiency η 100 %	Starting current / Rated current I_D / I_N	Starting torque / Rated torque M_D / M_N	Rated torque M_N N.m	Moment of inertia J kg.m ²	Brake torque $M_f \pm 20 \%$ N.m	Weight IM B3 kg
FLS 160 M	FAP 132	7.5	965	15.8	0.80	86	5	1.5	74	0.115	74	150
FLS 160 L	FAP 160	11	965	22.7	0.81	87	5	1.5	109	0.150	109	180
FLS 180 L	FAP 160	15	975	29.6	0.82	89.5	7.1	2.1	147	0.234	147	200
FLS 200 L	FAP 180	18.5	975	36	0.83	90.7	7	2.2	181	0.320	181	295
FLS 200 L	FAP 180	22	973	43	0.81	91.5	7	2.2	215	0.346	215	315

Above, consult us

8
poles
750 min⁻¹

- FLS FAP motor - IP 55 - 50 Hz - Class F - 230 V Δ / 400 V Y - Aluminium rotor, U.G. general use
- IP 44 brake - Separate mains supply

Motor type	Brake type	Rated power at 50 Hz P_N kW	Rated speed N_N min ⁻¹	Rated current $I_N(400V)$ A	Power factor $\cos \varphi$ 100 %	Efficiency η 100 %	Starting current / Rated current I_D / I_N	Starting torque / Rated torque M_D / M_N	Rated torque M_N N.m	Moment of inertia J kg.m ²	Brake torque $M_f \pm 20 \%$ N.m	Weight IM B3 kg
FLS 160 M	FAP 132	4	710	11.3	0.63	81.5	3.8	1.6	54	0.093	54	150
FLS 160 M	FAP 132	5.5	710	14.9	0.65	82	3.7	1.7	74	0.104	74	160
FLS 160 L	FAP 160	7.5	715	19.5	0.65	83	3.7	1.8	100	0.121	100	160
FLS 180 L	FAP 160	11	724	26.6	0.70	85.1	3.9	1.4	147	0.249	147	230
FLS 200 L	FAP 180	15	730	34	0.72	88.1	5	1.8	196	0.380	196	330

Above, consult us

FAP asynchronous brake motors

FLS FAP

Selection

4
poles
1500 min⁻¹

FLS FAP motor - IP 55 - 50 Hz - Class F - 230 V Δ / 400 V Y - Aluminium rotor, U.G. general use
• IP 44 brake - Separate mains supply

Motor type	Brake type	Rated power at 50 Hz	Brake torque	IM 1001 (IM B3)		IM 3001 (IM B5)	
		P_N kW	$M_f \pm 20\%$ N.m	Code	Qty	Code	Qty
FLS 160 M	FAP 132	11	72.2		-		-
FLS 160 L	FAP 160	15	98.5		-		-
FLS 180 MR	FAP 160	18.5	121		-		-
FLS 180 L	FAP 160	22	143		-		-
FLS 200 L	FAP 180	30	195		-		-

Above, consult us

6
poles
1000 min⁻¹

FLS FAP motor - IP 55 - 50 Hz - Class F - 230 V Δ / 400 V Y - Aluminium rotor, U.G. general use
• IP 44 brake - Separate mains supply

Motor type	Brake type	Rated power at 50 Hz	Brake torque	IM 1001 (IM B3)		IM 3001 (IM B5)	
		P_N kW	$M_f \pm 20\%$ N.m	Code	Qty	Code	Qty
FLS 160 M	FAP 132	7.5	74		-		-
FLS 160 L	FAP 160	11	109		-		-
FLS 180 L	FAP 160	15	147		-		-
FLS 200 L	FAP 180	18.5	181		-		-
FLS 200 L	FAP 180	22	215		-		-

Above, consult us

8
poles
750 min⁻¹

FLS FAP motor - IP 55 - 50 Hz - Class F - 230 V Δ / 400 V Y - Aluminium rotor, U.G. general use
• IP 44 brake - Separate mains supply

Motor type	Brake type	Rated power at 50 Hz	Brake torque	IM 1001 (IM B3)		IM 3001 (IM B5)	
		P_N kW	$M_f \pm 20\%$ N.m	Code	Qty	Code	Qty
FLS 160 M	FAP 132	4	54		-		-
FLS 160 M	FAP 132	5.5	74		-		-
FLS 160 L	FAP 160	7.5	100		-		-
FLS 180 L	FAP 160	11	147		-		-
FLS 200 L	FAP 180	15	196		-		-

Above, consult us

Selection example :

Speed :	1500 min ⁻¹ - 4 poles
Power :	22 kW
Brake torque :	143 N.m
Use :	U.G. general use
Mounting and position :	IM 1001 (IM B3)
Mains supply voltage :	230/400 V

Designation :

4P FLS 180 LU 22 kW IM 1001 (IM B3)
230/400 V U.G. FAP 143 N.m

Code : -

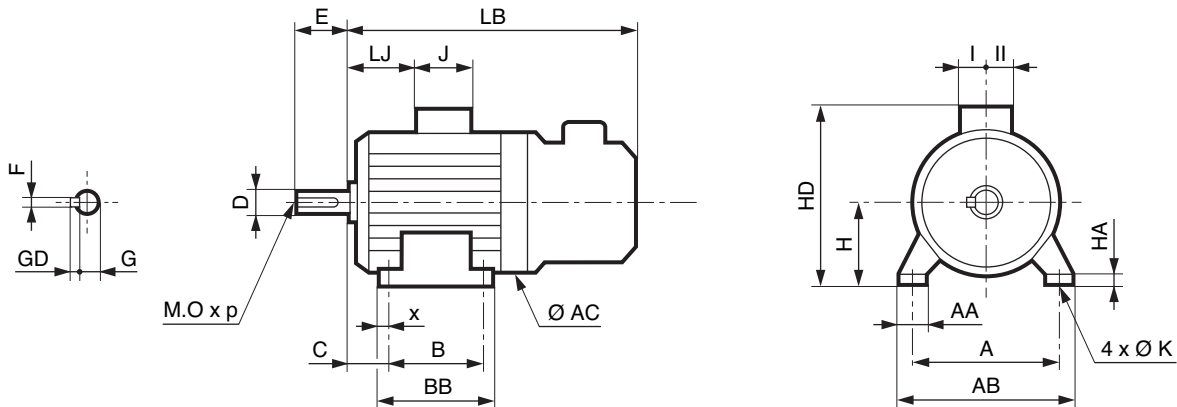
FAP asynchronous brake motors FLS FAP

Dimensions

Dimensions of the FAP asynchronous brake motors - 4, 6, 8 poles
IP 55 motor protection, IP 44 or IP 55 brake protection

Dimensions in millimetres

– foot mounted



Asynchronous brake motor

Type	A	AB	B	BB	C	X	AA	K	HA	H	AC	HD	LB	LJ	J	I	II
FLS 160 M	254	294	210	294	108	20	65	14	24	160	345	385	680	50	160	80	80
FLS 160 L	254	294	254	294	108	20	65	14	24	160	345	385	708	50	160	80	80
FLS 180 MR	279	324	241	295	121	25	80	14	28	180	345	385	723	50	160	80	80
FLS 180 L	279	330	279	335	121	25	68	14	40	180	384	460	792	55	220	128	128
FLS 200 L	318	374	305	361	133	28	80	18	50	200	410	515	860	65	220	128	128

Output shaft

Type	F	GD	D	G	E	O	P
FLS 160 M	12	8	42 k6	37	110	16	36
FLS 160 L	12	8	42 k6	37	110	16	36
FLS 180 MR	14	9	48 k6	42.5	110	16	36
FLS 180 L	14	9	48 k6	42.5	110	16	36
FLS 200 L	16	10	55 m6	49	110	20	42

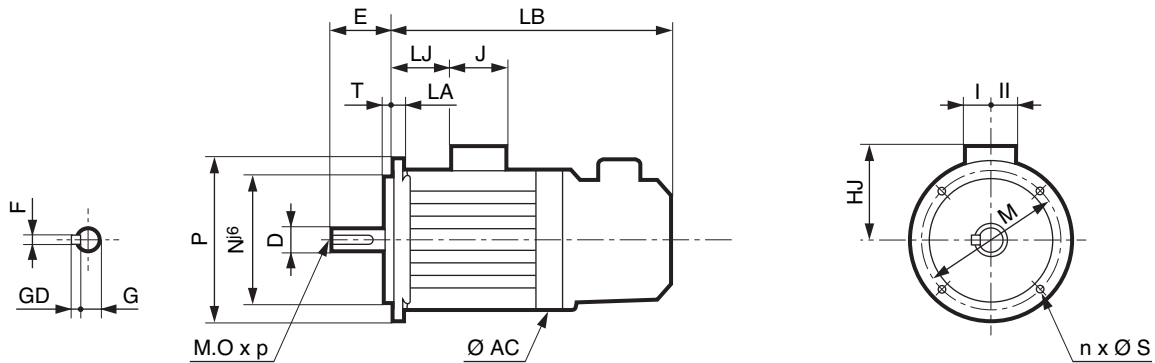
FAP asynchronous brake motors FLS FAP

Dimensions

Dimensions of the FAP asynchronous brakemotors - 4, 6, 8 poles
IP 55 motor protection, IP 44 or IP 55 brake protection

Dimensions in millimetres

– (FF) plain hole flange mounted



Asynchronous brake motor								
Type	LB	AC	HJ	LJ	J	I	II	Symb.
FLS 160 M	680	345	225	50	160	80	80	FF 300
FLS 160 L	708	345	225	50	160	80	80	FF 300
FLS 180 MR	723	345	225	50	160	80	80	FF 300
FLS 180 L	792	384	280	55	220	128	128	FF 300
FLS 200 L	860	410	315	65	220	128	128	FF 350

Flange								
Type	Symb.	M	N	P	T	n	S	LA
FLS 160-180	FF 300	300	250	350	5	4	18	15
FLS 200	FF 350	350	300	400	5	4	18	15

