



FLSPX FCR

Atmospheres containing explosive dust

FCR asynchronous brake motors

CATEGORY 2
ZONE 21

General information



GENERAL USE : U.G.
Enclosed three-phase asynchronous brake motors FCR, series FLSPX, according to IEC 34, 72, EN 50281.
 • Single speed : power 0.55 to 9 kW, frame size from 80 to 132 mm, 4 poles 230/400 V or 400 V Δ, 50 Hz.
 • Two speed : (on request) general use, 2/4 and 4/8 poles, 400 V or 400 V Δ.
 For a non direct start : consult us.

IP 65 protection

Motors for variable speed operation :
 • fitted with thermal probes in windings (obligatory),
 • on request
 • forced ventilation not allowed.

Finish : cast iron housing
 Assembled with protected screws.
 Protection of the flange and shaft end against atmospheric corrosion.

Individual anti-shock packaging.

Brake motor mains supply

- Standard construction according to IEC 38 :
 – 230/400 V +10 % -10 % at 50 Hz ;
 – 400 V Δ +10 % -10 % at 50 Hz.
- The brake mains supply is integral and the brake motor connects as a standard motor. If it is separate: the alternating (ac) supply is exterior to the motor.

Options

- Selection of brake inertia (HA 80 to 100) ; manual brake release
- Drip cover ; 2nd shaft end ; thermal probes
- Reduced response time ; connector
- Encoders and/or forced ventilation.

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

They have the following ATEX certification: INERIS 080 03ATEX 0012X.

Description of the FLSPX FCR - Zone 21 cast iron three-phase brake motors



II 2D T 125 °C

Component	Materials	Remarks
Finned housing	Cast iron	- with cast feet, or without feet • 4 mounting holes for the foot housing • optional lifting rings in 132 and 112 - earth terminal on foot or fin
Stator	Insulated low carbon magnetic steel laminations Enamelled electrolytic copper	- the low carbon content guarantees long term stability of the characteristics - assembled sheet steel lamination pack - semi-enclosed slots - insulation system class F
Rotor	Insulated low carbon magnetic steel laminations Aluminium	- inclined slots - squirrel cage pressure die cast in aluminium (or alloy for special applications) - mounted on shaft by heat shrinking - level A rotor dynamic balancing - 1/2 key
Shaft	Steel	• shaft end fitted with screw and washer • closed keyway
End shields	Cast iron	- front and rear, assembled with tie rods
Bearings		- ball bearings, sealed, greased for life, type 2RS with the following mounting • locked rear to provide precise positioning of the load • front preloaded to eliminate axial movement
Lipseals	Synthetic rubber	- front seals for IP 65 at the shaft
Fan	Aluminium alloy or cast iron	- 2 directions of rotation : straight blades
Fan cover	Sheet steel	- on request, fitted with a drip cover for operating in vertical position, shaft facing down
Terminal box	Cast iron	- IP 65 - 4 directions for flange version, mounted opposite to the feet for foot or foot and flange versions for frame sizes ≥ 80 - fitted with a 6 stud terminal board with captive nuts - delivered with brass cable glands - 1 earth terminal in all terminal boxes
Painting		- system IIa, colour RAL 1007 (yellow) - resistance to saline mist : 150 h (following NFX 41002)



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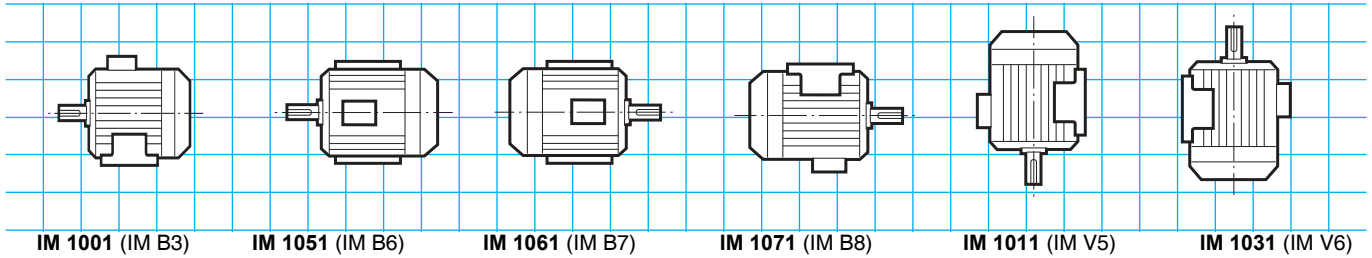
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Mounting - Operating positions

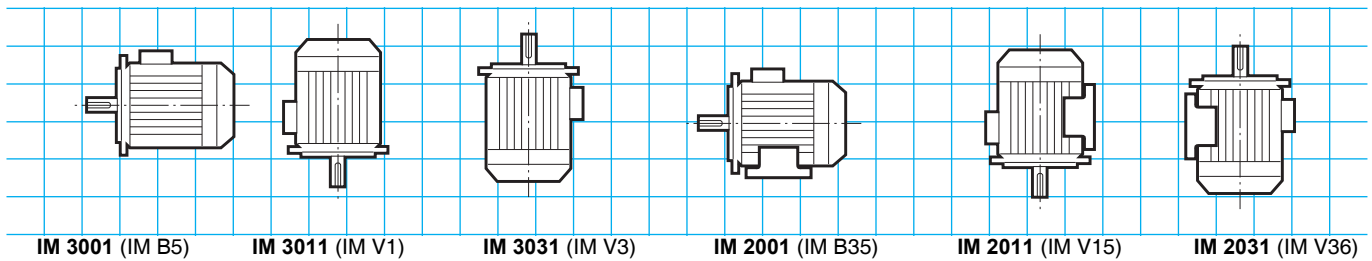
Reference position is viewed from side F (drive end shaft)

Foot mounted motor

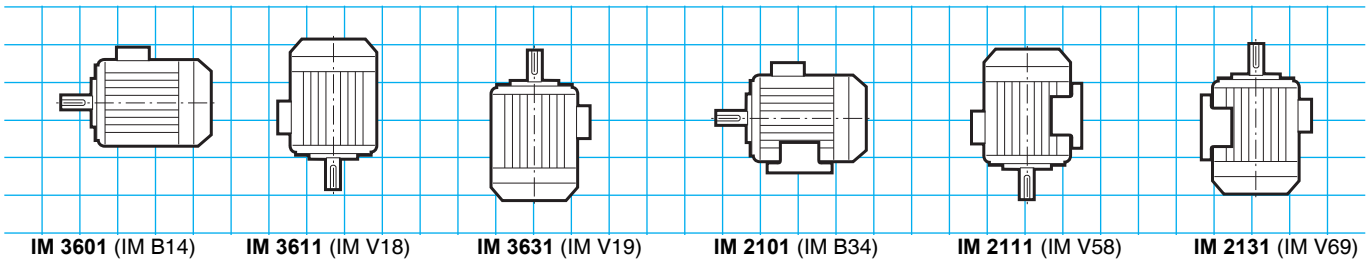


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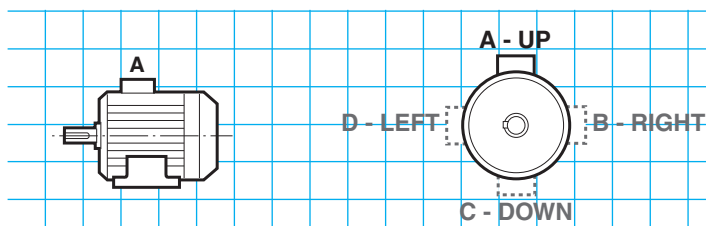
(FF) plain hole flange mounted motor



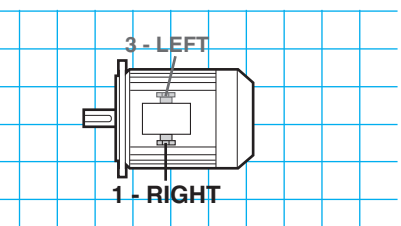
(FT) tapped hole flange mounted motor



Positions of the terminal box



Positions of the cable gland



Foot mounted motor
A: only possibility

Flange mounted motor
A - UP: standard

Standard in the terminals box
(1: RIGHT and 3: LEFT possible)



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Adaptation possibilities

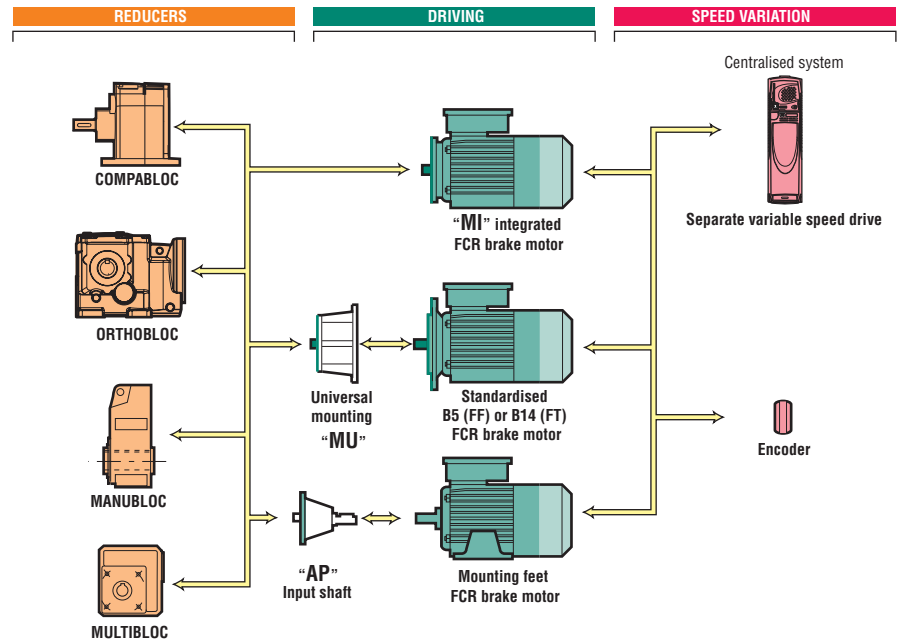
Leroy-Somer offers, for use with their brake motors, many options which meet the needs of highly diverse applications. They are described below and in the chapters relating to fixed speed motors, gearboxes and to variable speed drives. For other variants or any specific adaptation, consult the technical specialists at Leroy-Somer who will be pleased to advise.

FLSPX FCR brake motors may be integrally mounted (fitted motor), or with universal mounting (IEC standardised motor) with the following gearboxes :

- Compabloc
- Orthobloc
- Manubloc
- Multibloc

FLSPX FCR brake motors may be controlled by a variable speed drive :

- Centralised system with separate variable speed drive FLSPX MV brake FCR



Designation / Codification

ATEX II 2D T 125°C	4P 1500 min ⁻¹	FLSPX	90	S	1.1	IM 3001 (IM B5)	230/400 V 50 Hz	U.G.	FCR	J02	20 N.m	A1
Specific application	Speed polarity	Motor series	Motor frame size	Manuf. index (motor)	Motor rated power : kW	Mounting position	Power supply frequency and voltage	Use	Brake type	Selected inertia	Brake torque	T Box and PE position

Codification example :

For 4P flange brake motor operating in zone 21

Designation :

4P FLSPX 90 S 1.1 kW IM3001 (IM B5) 230/400 V 50 Hz U.G. FCR J02 20 N.m A1

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.



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Selection

- FLSPX series motor - IP 65 - 50 Hz - Class F - 230 V Δ / 400 V Y
Aluminium Rotor (ALU) - U.G. General Use
- Brake - IP 65 - Incorporated mains supply - Brake torque set in factory
 II 2D T 125° C

4
poles
1500 min⁻¹

Motor type	Brake type	Rated power at 50 Hz P_N kW	Rated speed N_N min ⁻¹	Rated torque M_N N.m	Rated current I_N 400 V 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	Moment of inertia J 10 ⁻³ kg.m ²	Brake torque $M_f \pm 20\%$ N.m	Weight ¹ IM B3 or B5 kg
FLSPX 80 L	FCR J02	0.55	1410	3.7	1.6	0.74	69.2	4.4	2.1	3.8	10	22
FLSPX 80 L	FCR J02	0.75	1425	5	2	0.75	72.5	5.7	3	4.9	10	24
FLSPX 90 S	FCR J02	1.1	1429	7.5	2.5	0.83	78	4.9	1.6	7.3	20	28
FLSPX 90 L	FCR J02	1.5	1428	10	3.3	0.82	79.5	5.3	1.8	7.9	20	30
FLSPX 90 L	FCR J02	1.8	1438	12.3	4	0.82	80.1	5.9	2.1	8.4	20	32
FLSPX 100 LK	FCR J01	2.2	1457	15	4.6	0.83	83.8	6.3	1.9	12	22	57
FLSPX 100 LK	FCR J01	3	1454	20	6.2	0.82	84.7	6.5	2.1	13.7	43	60
FLSPX 112 MG	FCR J01	4	1462	27.5	8.4	0.81	85.1	7.4	2.5	16.3	43	64
FLSPX 132 SM	FCR J02	5.5	1467	37	10.9	0.84	87	8	2.7	42.4	80	80
FLSPX 132 M	FCR J02	7.5	1450	50	14.3	0.87	87	7.3	1.9	46.2	80	85
FLSPX 132 M	FCR J02	9	1449	61	16.8	0.88	87.7	7.6	2.8	50	105	90

1. These values are given for information only.



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Selection

IP 65 - 50 Hz - Class F - 230 V Δ / 400 V Y
U.G. General Use - II 2D T 125° C

4
poles
1500 min⁻¹

Motor type	Brake type	Rated power at 50 Hz P_N kW	Brake torque $M_f \pm 20\%$ N.m	IM 1001 (IM B3)		IM 3001 (IM B5)		IM 3601 (IM B14)	
				Code	Qty	Code	Qty	Code	Qty
FLSPX 80 L	FCR J02	0.55	10		-		-		-
FLSPX 80 L	FCR J02	0.75	10		-		-		-
FLSPX 90 S	FCR J02	1.1	20		-		-		-
FLSPX 90 L	FCR J02	1.5	20		-		-		-
FLSPX 90 L	FCR J02	1.8	20		-		-		-
FLSPX 100 LK	FCR J01	2.2	22		-		-		-
FLSPX 100 LK	FCR J01	3	43		-		-		-
FLSPX 112 MG	FCR J01	4	43		-		-		-
FLSPX 132 SM	FCR J02	5.5	80		-		-		-
FLSPX 132 M	FCR J02	7.5	80		-		-		-
FLSPX 132 M	FCR J02	9	105		-		-		-



Selection example :

Required power :	1.1kW
Required speed :	1430 min ⁻¹
Mounting and position :	IM 3001 (IM B5)
Application :	ATEX zone 21

Designation :

4P FLSPX 90 S 1.1 kW B5 230/400V
50 Hz UG FCR J02 20 N.m A1

Code : consult us



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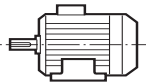
Dimensions

Dimensions of the FLSPX FCR asynchronous brake motors

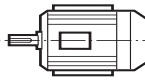
According to the operating position and mechanical forms of the brake motor

Foot mounted motor

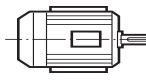
S



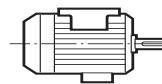
IM 1001 (IM B3)



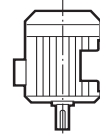
IM 1051 (IM B6)



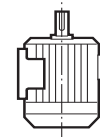
IM 1061 (IM B7)



IM 1071 (IM B8)



IM 1011 (IM V5)

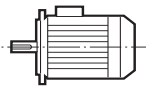


IM 1031 (IM V6)

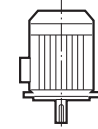
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(FF) plain hole flange mounted motor

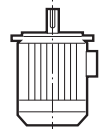
BS



IM 3001 (IM B5)



IM 3011 (IM V1)

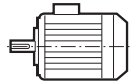


IM 3031 (IM V3)

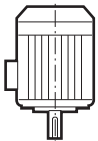
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(FT) tapped hole flange mounted motor

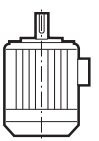
BT



IM 3061 (IM B14)



IM 3611 (IM V18)



IM 3631 (IM V19)

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Options

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