

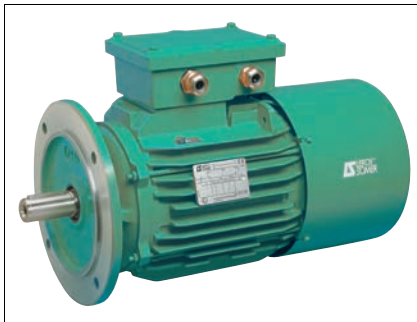
FLS FCR

Atmospheres containing explosive dust FCR asynchronous brake motors



**CATEGORY 3
ZONE 22**
Non-conductive dust

General information



GENERAL USE : U.G.

Enclosed three-phase asynchronous brake motors FCR, FLS series, 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 starting : consult us.

Protection

IP 55 standard version providing a good sealing against projected liquid and dust in an industrial environment.

Motors for variable speed operation :

- fitted with thermal probes in windings (obligatory),
- on consultation
- forced ventilation not allowed

Finish : cast iron casing

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 self-certification in atmospheres containing explosive dust Category 3, Zone 22.

Description of the FLS FCR - Zone 22 cast iron three-phase brake motors



Component	Materials	Remarks
Finned housing	Cast iron	- with cast feet, or without feet • 4 mounting holes for the foot housing • optional lifting rings at 132 and 112 - earth terminal on feet or fin
Stator	Insulated low carbon magnetic steel laminations Enamelled electrolytic copper	- the low carbon content guarantees long term stability of the characteristics - 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	- for frame size ≤ 132 : • 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 • preloaded front to eliminate axial movement
Lipseals	Synthetic rubber	- front lipseals for IP 55 sealing 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 operation in vertical position, shaft facing down
Terminal box	Aluminium alloy	- IP 55, sealed - rotatable in 4 directions for flange version, the opposite position to the feet for foot or foot and flange versions for frame size ≥ 80 - fitted with a 6 stud terminal board - delivered with polyamide cable glands - 1 earth terminal in all terminal boxes
Painting		- system IIa, colour RAL 6000 (green) - resistance to saline mist : 150 h (following NFX 41002)

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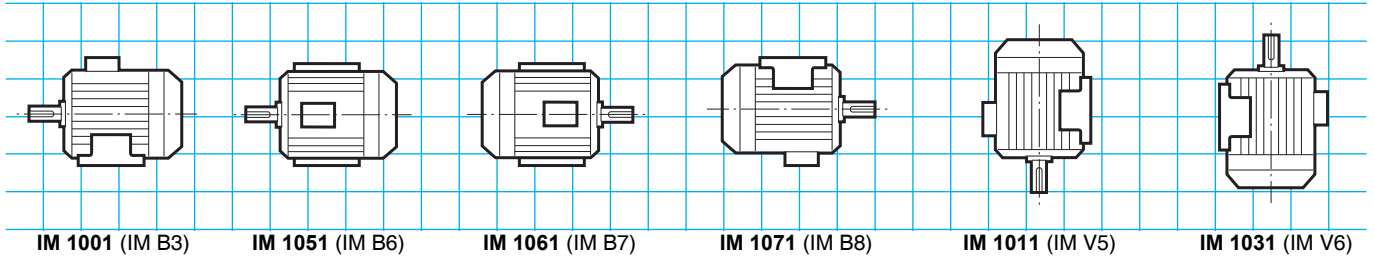


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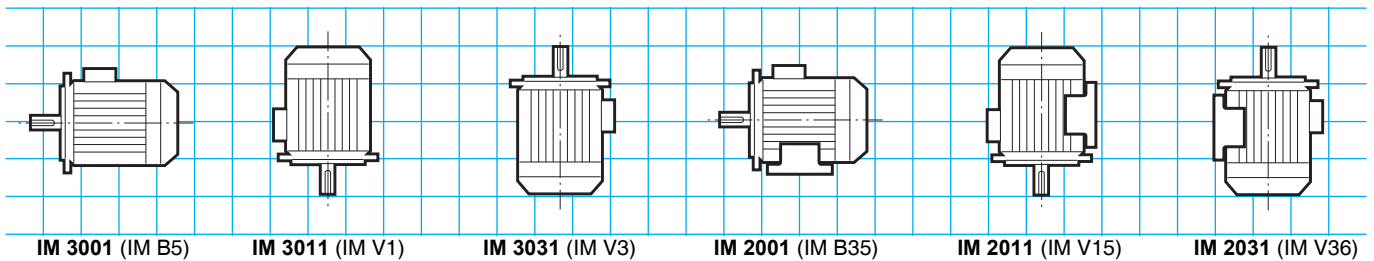
Mounting - Operating positions

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

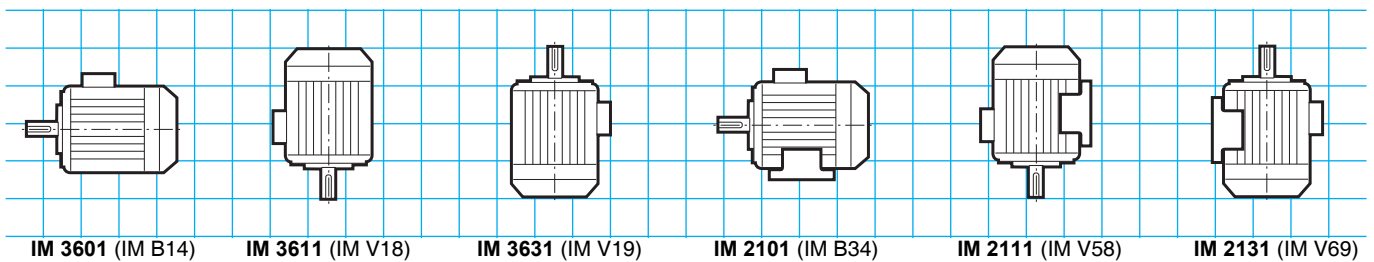
Foot mounted motor



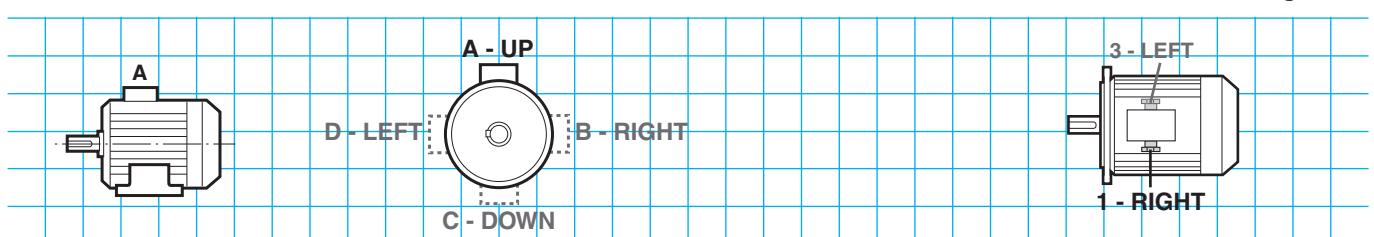
(FF) plain hole flange mounted motor



(FT) tapped hole flange mounted motor



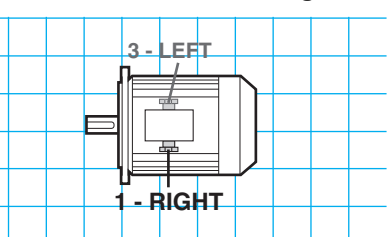
Positions of the terminal box



Foot mounted motor
A: only possibility

Flange mounted motor
A - UP: standard

Positions of the cable glands



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



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Adaptation possibilities

Leroy-Somer offers, for use with their general use brake motors operating in explosive dust atmospheres, 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.

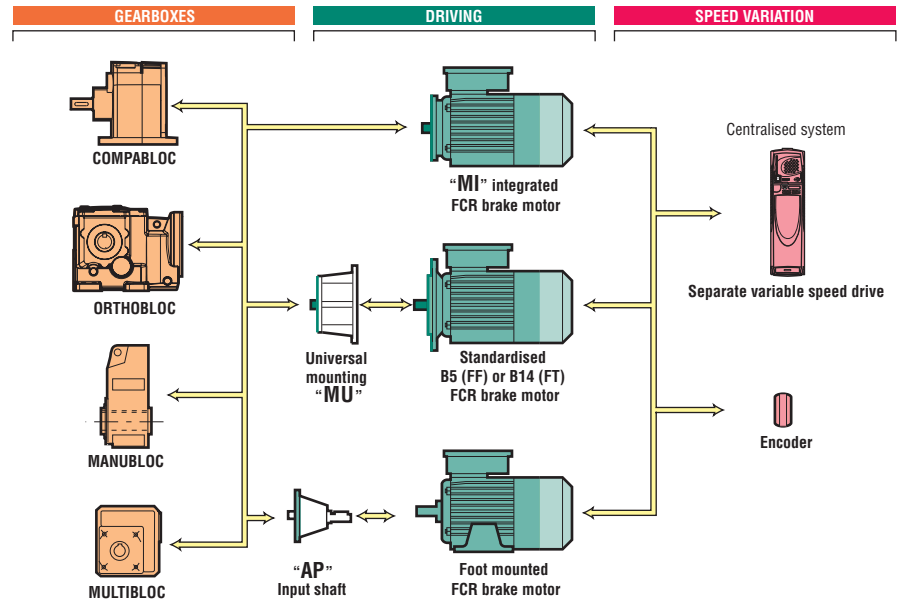
For other variants or any specific adaptation, consult the technical specialists at Leroy-Somer who will be pleased to advise.

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

- Compabloc
- Orthobloc
- Manubloc
- Multibloc

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

- Centralised system with separate variable speed drive FLSMV brake FCR



Designation / Codification

ATEX II 3D T 125°C	4P 1500 min ⁻¹	FLS	90	S	1.1 kW	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 a flange cast iron brake motor 1.1 kW operating in zone 22

Designation :

4P FLS 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

- FLS -series motor - IP 55 - 50 Hz - Class F - 230 V Δ / 400 V Y Aluminium Rotor (ALU) U.G. General Use
 - Brake - IP 55 - Incorporated mains supply - Brake torque set in factory
- II 3D 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
FLS 80 L	FCR J02	0.55	1410	3.7	1.6	0.74	69.2	4.4	2.1	3.8	10	22
FLS 80 L	FCR J02	0.75	1425	5	2	0.75	72.5	5.7	3	4.9	10	24
FLS 90 S	FCR J02	1.1	1429	7.5	2.5	0.83	78	4.9	1.6	7.3	20	28
FLS 90 L	FCR J02	1.5	1428	10	3.3	0.82	79.5	5.3	1.8	7.9	20	30
FLS 90 L	FCR J02	1.8	1438	12.3	4	0.82	80.1	5.9	2.1	8.4	20	32
FLS 100 LK	FCR J01	2.2	1457	15	4.6	0.83	83.8	6.3	1.9	12	22	57
FLS 100 LK	FCR J01	3	1454	20	6.2	0.82	84.7	6.5	2.1	13.7	43	60
FLS 112 MG	FCR J01	4	1462	27.5	8.4	0.81	85.1	7.4	2.5	16.3	43	64
FLS 132 SM	FCR J02	5.5	1467	37	10.9	0.84	87	8	2.7	42.4	80	80
FLS 132 M	FCR J02	7.5	1450	50	14.3	0.87	87	7.3	1.9	46.2	80	85
FLS 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.



FLS FCR

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FCR asynchronous brake motors

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Selection

4
poles
1500 min⁻¹

IP 55 - 50 Hz - Class F - 230 V Δ / 400 V Y
U.G. General Use - II 3D T 125° C

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



Selection example :

Required power :	1.1 kW
Required speed :	1430 min ⁻¹
Mounting and position :	IM 3001 (IM B5)
Application :	ATEX zone 22

Designation :

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

Code : consult us



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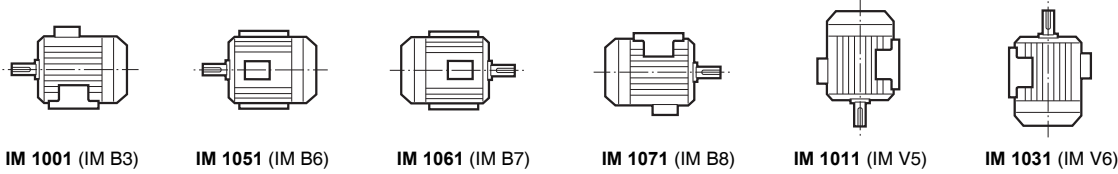
Dimensions

Dimensions of the FLS FCR asynchronous brake motors

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

Foot mounted motor

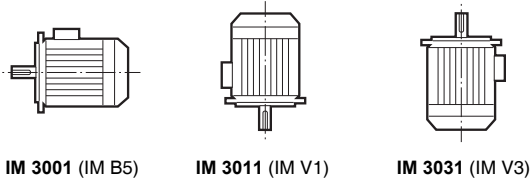
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(FF) plain hole flange mounted motor

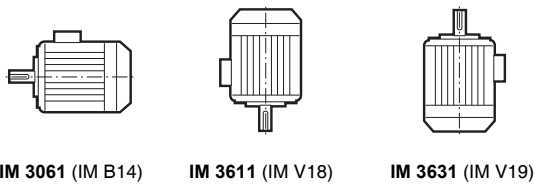
BS



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(FT) tapped hole flange mounted motor

BT



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Options

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