

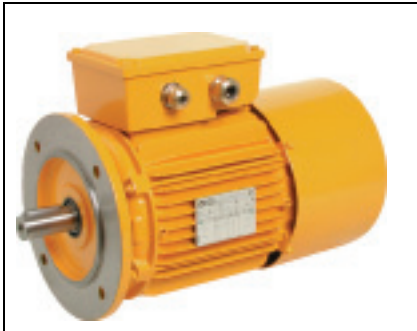
LSPXMV FCR

Atmospheres containing explosive dust FCR asynchronous brake motors



**CATEGORY 2
ZONE 21**

General information



GENERAL USE : U.G.

Enclosed three-phase brake asynchronous motors, LSPXMV series with failsafe brake, according to IEC 60034, 60072, EN 50281.
 • Single speed : power 0.25 to 11 kW, frame size from 71 to 160 mm, 4 poles 230/400 V, 50 Hz.

IP 65 protection

These brake motors have an INERIS 03 ATEX 0012 X **certification**

Motors for variable speed operation :

• fitted with thermal probes in the windings obligatory.

Options

- Selection of the brake torques ; manual brake release
- Drip cover ; 2nd shaft end ;
- IP 65 plug in connector
- Incremental encoder 5 V 1024 pts on request (dispensation).

Finish : aluminium housing

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

Protection of the flange and shaft end against atmospheric corrosion. Individual anti-shock packaging.

Brake motor mains supply

- Standard according to IEC 60038 :
 – 230/400 V +10% –10% at 50 Hz ; suitable for the following mains supply
 220/380 V +5% –5% and
 240/415 V +5% –5% at 50 Hz

Description of the LSPXMV FCR aluminium three-phase brake motor

Component	Materials	Remarks
Finned housing	Aluminium alloy	- with cast feet, or without feet - pressure die-cast • 4 mounting holes for the foot housing • lifting rings frame size series 160, option in 132 and 112 - optional earth terminal
Stator	Insulated low carbon magnetic steel laminations Electrolytic copper	- the low carbon content guarantees long term stability of the characteristics - welded sheet steel lamination pack - semi-enclosed slots - magnetic circuit based on acquired experience in frequency variation - impregnation resistant to violent voltage variations generated by the high chopping frequency of variable speed drive IGBT transistors. Conforms with standard IEC 34-17 - insulation system class F - PTC thermal protection (1 by phase) and OTP
Rotor	Insulated low carbon magnetic steel laminations	- inclined slots - squirrel cage pressure die cast in aluminium (or alloy for special applications) - mounted on the shaft by heat shrinking - level B rotor dynamic balancing
Shaft	Steel	- for all frame sizes : • centre holes fitted with screw and a shaft end washer • closed keyway
End shields	Cast iron	- front and rear assembled with tie rods
FCR brake		Variation range - from 10 to 50 Hz constant torque - from 50 to 60 Hz constant power
Bearings		- ball bearings, sealed, lubricated for life, with the following mounting • locked rear to provide precise positioning of the load no matter the load direction • preloaded front to eliminate axial movement
Lipseals	Synthetic rubber	- front and rear joints for IP 65 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
Terminals box	Aluminium alloy	- IP 65, rotatable in 4 directions for flange version, mounted opposite position to the feet, for foot or foot and flange versions - fitted with a 6 steel stud terminal board with captive screws - delivered with brass cable glands - 1 earth terminal in all terminal boxes
Painting		- system Ia, colour RAL 1007 (yellow) - resistance to saline mist : 72 h (following NFX 41002)

LSPXMV FCR

Atmospheres containing explosive dust FCR asynchronous brake motors

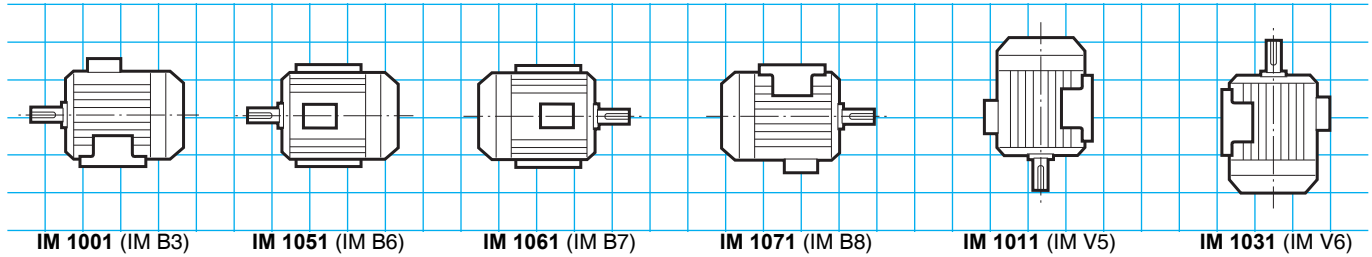


**CATEGORY 2
ZONE 21**

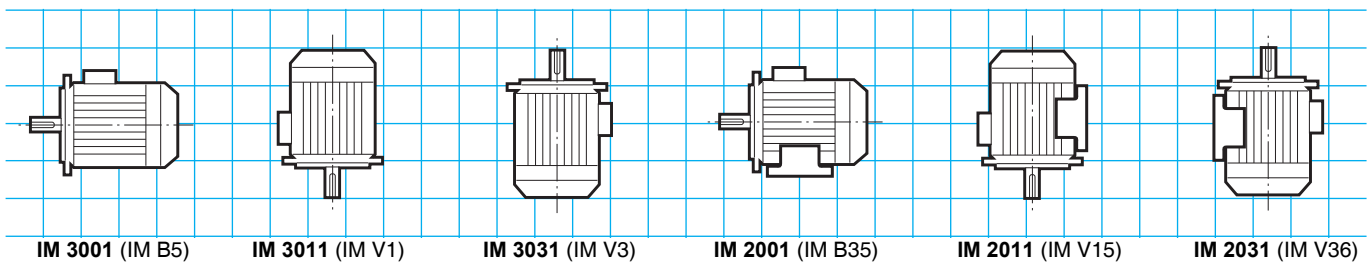
Mounting positions

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

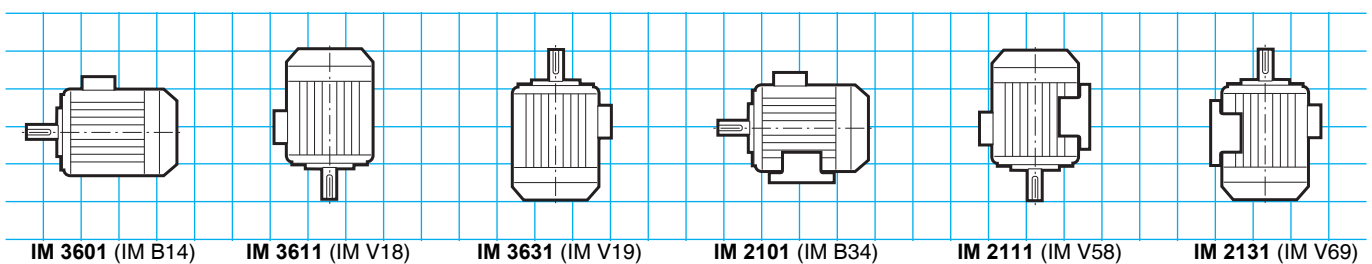
Foot mounted motor



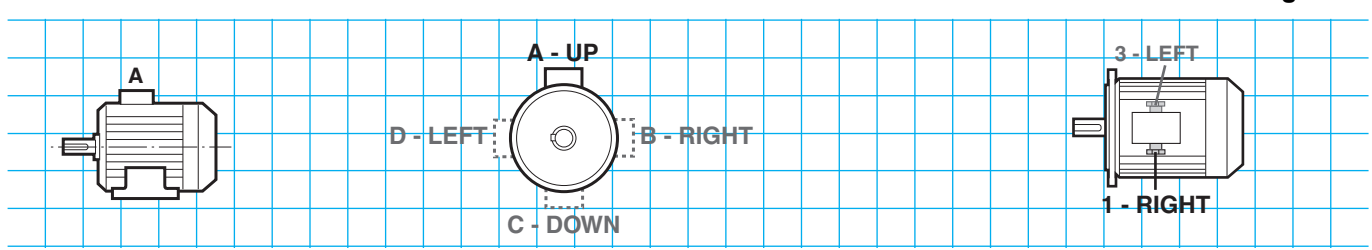
(FF) plain hole flange mounted motor



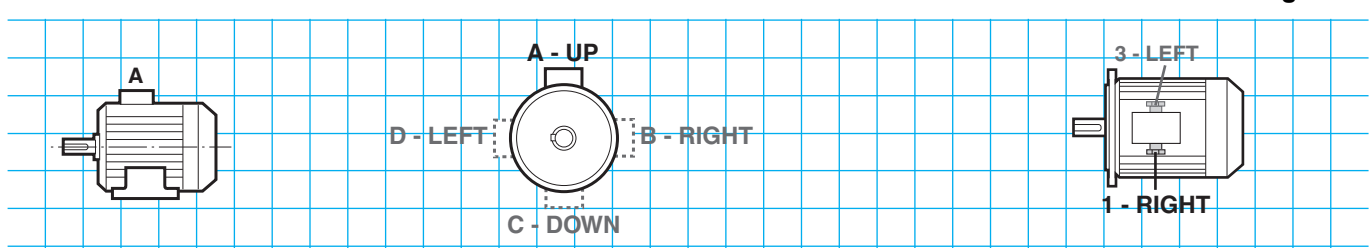
(FT) tapped hole flange mounted motor



Positions of the terminal box



Positions of the cable glands



Foot mounted motor
A: only possibility

Flange mounted motor
A - UP: standard

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



LSPXMV FCR

Atmospheres containing explosive dust

FCR asynchronous brake motors

CATEGORY 2
ZONE 21

Adaptation possibilities

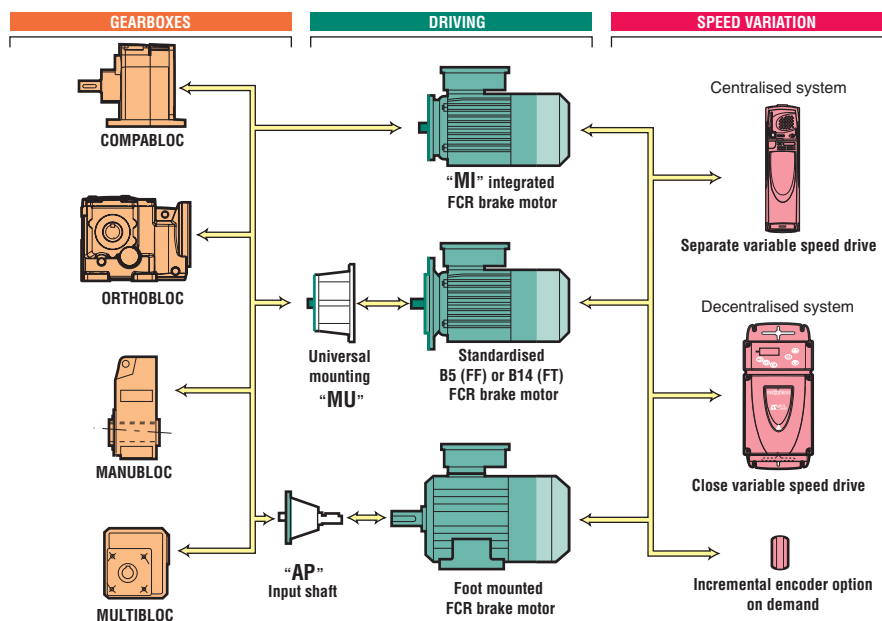
Leroy-Somer offers, for use with their general use brake motors, many options which meet the needs of highly diverse applications: Atex dust. They are described below and included in the chapter of the catalogue relating to gearboxes .
For other variants or any specific adaptation, consult the technical specialists at Leroy-Somer who will be pleased to advise.

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

- Compabloc
- Orthobloc
- Manubloc
- Multibloc

The LSPXMV FCR 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).
- Decentralised system with variable speed drive close to the brake motor.



Designation / Codification

ATEX II 2D T 125°C	4P 1500 min ⁻¹	LSPX MV	80	L	0.75 kW	IM 3001 (IM B5)	230/400 V 50 Hz	U.G.	FCR J01	10 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	Inertia and brake type	Brake torque	TB and PE position

Codification example :

LSPXMV flange brake motor, 1500 min⁻¹, 230/400 V operating in zone 21

Designation :

4P LSPXMV 80 L 0.75 kW B5 230/400 V 50 Hz
U.G. FCR J01 10 N.m Atex zone 21

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.

LSPXMV FCR

Atmospheres containing explosive dust FCR asynchronous brake motors



**CATEGORY 2
ZONE 21**

Selection

**4
poles
1500 min⁻¹**

- LSPXMV series motor - IP 65 - 50 Hz - Class F - 230 V Δ / 400 V Y Aluminium Rotor (ALU) - U.G. General Use
- Brake - IP 65 - Separate mains supply - Brake torque set in factory

LSPXMV FCR without option

Motor type	Brake type	Rated power at 50 Hz P_N kW	Rated speed ¹ N_N min ⁻¹	Rated current N_{max} min ⁻¹	Rated torque M_N N.m	Brake torque $M_f \pm 20\%$ N.m	Brake release response time t_1 ms	Brake applied response time t_2 ms	Brake applied response time cut in DC supply t_2 ms	Moment of inertia J 10 ⁻³ kg.m ²	Weight ³ IM B5 kg
LSPXMV 71 L	FCR J01	0.25	1445	4000	1.68	5	60	90	≤ 10	1.075	11.5
LSPXMV 71 L	FCR J01	0.37	1440	4000	2.49	5	60	90	≤ 10	1.25	12.5
LSPXMV 80 L	FCR J01	0.75	1435	4000	5.12	10	80	85	≤ 10	3.4	16.6
LSPXMV 90 SL	FCR J01	1.1	1445	4000	7.35	20	150	140	≤ 10	5.7	22.7
LSPXMV 90 L	FCR J01	1.5	1435	4000	10.03	20	150	140	≤ 10	6.7	24.7
LSPXMV 100 L	FCR J01	2.2	1440	4000	14.5	25	150	140	≤ 10	8.9	30
LSPXMV 100 L	FCR J01	3	1435	4000	19.5	25	150	140	≤ 10	8.9	33
LSPXMV 112 MG	FCR J01	4	1440	4000	26.56	43	150	580	≤ 40	19.3	49.3
LSPXMV 132 SM	FCR J02	5.5	1460	4000	36.3	80	280	620	≤ 90	60.4	71.3
LSPXMV 132 M	FCR J02	7.5	1455	4000	49.4	80	280	620	≤ 90	62	77.3
LSPXMV 132 M	FCR J02	9	1460	4000	59.3	105	280	620	≤ 90	65.5	80
LSPXMV 160 MR	FCR J02	11	1460	4000	72.2	120	280	550	≤ 90	96	102

1. Take into account the maximum mechanical speed : 4000 min⁻¹.
2. Brake screwing period of time when powering down, when the cut is made in the continuous circuit.
3. These values are given for information only.

**4
poles
1500 min⁻¹**

- LSPXMV series motor - IP 65 - 50 Hz - Class F - 230 V Δ / 400 V Y Aluminium Rotor (ALU) - U.G. General Use
- Brake - IP 65 - Separate mains supply - Brake torque set in factory

**LSPXMV FCR +
encoder 5V 1024 pts**

Motor type	Brake type	Rated power at 50 Hz P_N kW	Rated speed ¹ N_N min ⁻¹	Rated current N_{max} min ⁻¹	Rated torque M_N N.m	Brake torque $M_f \pm 20\%$ N.m	Brake release response time t_1 ms	Brake applied response time t_2 ms	Brake applied response time cut in DC supply t_2 ms	Moment of inertia J 10 ⁻³ kg.m ²	Weight ³ IM B5 kg
LSPXMV 71 L	FCR J01	0.25	1445	4000	1.68	5	60	90	≤ 10	1.075	11.5
LSPXMV 71 L	FCR J01	0.37	1440	4000	2.49	5	60	90	≤ 10	1.25	12.5
LSPXMV 80 L	FCR J01	0.75	1435	4000	5.12	10	80	85	≤ 10	3.4	16.6
LSPXMV 90 SL	FCR J01	1.1	1445	4000	7.35	20	150	140	≤ 10	5.7	22.7
LSPXMV 90 L	FCR J01	1.5	1435	4000	10.03	20	150	140	≤ 10	6.7	24.7
LSPXMV 100 L	FCR J01	2.2	1440	4000	14.5	25	150	140	≤ 10	8.9	30
LSPXMV 100 L	FCR J01	3	1435	4000	19.5	25	150	140	≤ 10	8.9	33
LSPXMV 112 MG	FCR J01	4	1440	4000	26.56	43	150	580	≤ 40	19.3	49.3
LSPXMV 132 SM	FCR J02	5.5	1460	4000	36.3	80	280	620	≤ 90	60.4	71.3
LSPXMV 132 M	FCR J02	7.5	1455	4000	49.4	80	280	620	≤ 90	62	77.3
LSPXMV 132 M	FCR J02	9	1460	4000	59.3	105	280	620	≤ 90	65.5	80
LSPXMV 160 MR	FCR J02	11	1460	4000	72.2	120	280	550	≤ 90	96	102

1. Take into account the maximum mechanical speed : 4000 min⁻¹.
2. Brake applied response time, with no applied voltage, when the continuous current (dc) circuit is cut
3. These values are given for information only.

LSPXMV FCR

Atmospheres containing explosive dust FCR asynchronous brake motors



**CATEGORY 2
ZONE 21**

Selection

**4
poles
1500 min⁻¹**

**U.G. general use
IP 65 - 50 Hz - Class F - 230 V Δ / 400 V Y**

LSPXMV FCR without option

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
LSPXMV 71 L	FCR J01	0.25	5		-	4591372	5	4591399	5
LSPXMV 71 L	FCR J01	0.37	5		-	4591374	5	4591400	5
LSPXMV 80 L	FCR J01	0.75	10		-	4591382	5	4591401	5
LSPXMV 90 SL	FCR J01	1.1	20		-	4591389	5	4592963	5
LSPXMV 90 L	FCR J01	1.5	20		-	4591390	5	4592964	5
LSPXMV 100 L	FCR J01	2.2	25		-	4591391	5	4592967	5
LSPXMV 100 L	FCR J01	3	25		-	4591392	5	4592968	5
LSPXMV 112 MG	FCR J01	4	43		-	4591393	5	4592969	5
LSPXMV 132 SM	FCR J02	5.5	80		-	4591394	3	4592970	-
LSPXMV 132 M	FCR J02	7.5	80		-	4591395	3	4592972	-
LSPXMV 132 M	FCR J02	9	105		-	4591397	3	4592973	-
LSPXMV 160 MR	FCR J02	11	120		-	4591398	-	4592974	-



**4
poles
1500 min⁻¹**

**U.G. general use
IP 65 - 50 Hz - Class F - 230 V Δ / 400 V Y**

**LSPXMV FCR +
encoder 5V 1024 pts**

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
LSPXMV 71 L	FCR J01	0.25	5		-		-		-
LSPXMV 71 L	FCR J01	0.37	5		-		-		-
LSPXMV 80 L	FCR J01	0.75	10		-		-		-
LSPXMV 90 SL	FCR J01	1.1	20		-		-		-
LSPXMV 90 L	FCR J01	1.5	20		-		-		-
LSPXMV 100 L	FCR J01	2.2	25		-		-		-
LSPXMV 100 L	FCR J01	3	25		-		-		-
LSPXMV 112 MG	FCR J01	4	43		-		-		-
LSPXMV 132 SM	FCR J02	5.5	80		-		-		-
LSPXMV 132 M	FCR J02	7.5	80		-		-		-
LSPXMV 132 M	FCR J02	9	105		-		-		-
LSPXMV 160 MR	FCR J02	11	120		-		-		-

Selection example :

Application :	Atex 21
Required power :	1.1 kW
Required speed :	1500 min ⁻¹
Mounting and position :	IM 3001 (IM B5)
Mains supply voltage :	230/400 V

Designation :

**4P LSPXMV 90 SL 1.1 kW B5 230/400V
UG FCR J01 20 N.m**

Code : 4591389

LSPXMV FCR

Atmospheres containing explosive dust FCR asynchronous brake motors



**CATEGORY 2
ZONE 21**

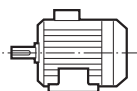
Dimensions

Dimensions of the LSPXMV FCR brake asynchronous motors

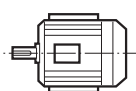
According to the operating position and mechanical forms of the brake motor

Foot mounted motor

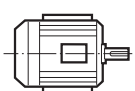
S



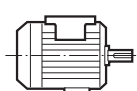
IM 1001 (IM B3)



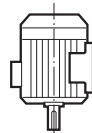
IM 1051 (IM B6)



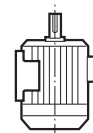
IM 1061 (IM B7)



IM 1071 (IM B8)



IM 1011 (IM V5)

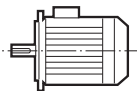


IM 1031 (IM V6)

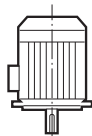
Page C2.12

(FF) plain hole flange mounted motor

BS



IM 3001 (IM B5)



IM 3011 (IM V1)

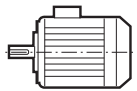


IM 3031 (IM V3)

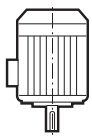
Page C2.13

(FT) tapped hole flange mounted motor

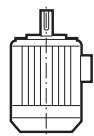
BT



IM 3061 (IM B14)



IM 3611 (IM V18)



IM 3631 (IM V19)

Page C2.14

Options

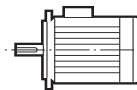
Pages C2.10 and C2.11

Options

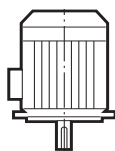
Dimensions of the FCR (FF) flange mounted, asynchronous brake motor, with incremental encoder

Flange mounted motor

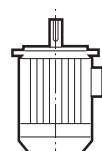
BS



IM 3001 (IM B5)



IM 3011 (IM V1)



IM 3031 (IM V3)

Page C13.10