

# FCR asynchronous brake motors LS FCR application iA

## General information



**FOOD INDUSTRY APPLICATION : iA**  
**Enclosed three-phase asynchronous brake motors**, LS series with failsafe brake, according to IEC 60034, 60072, EN 50281.  
 • Single speed : power 0.18 to 9 kW, frame size from 71 to 132 mm, 4 poles ; 230/400 V, 50 Hz.

**Presentation of the brake motor**  
 IP65 protection providing a good sealing against projected liquid and dust in a specific industrial environment such as the food industry.

**Motors for variable speed operation centralised system :**  
 • fitted with thermal probes in windings (obligatory)

**Decentralised system :**  
 • with integrated VARMECA variable speed drive.

**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.  
 Stainless steel name plate.

**Brake motor mains supply**  
 • Standard according to IEC 60038 :  
 – 230/400 V +10 % –10 % at 50 Hz ;  
 it is suitable for the following mains supply 220/380 V +5 % –5 % and 240/415 V +5 % –5 % at 50 Hz  
 Design suitable for Y/Δ starting  
 • The mains supply to the brake is incorporated ; the brake motor connects as a standard motor. If the brake is supplied by a separate alternating (ac) supply this is supplied externally to the motor.

**Options**  
 • Inertia selection (HA 71 to 100), brake torques ; manual brake release  
 • Drip cover ; 2nd shaft end ; thermal probes  
 • Reduced response time ; IP 65 connector  
 • Encoders and/or forced ventilation  
 • Stainless steel cover.

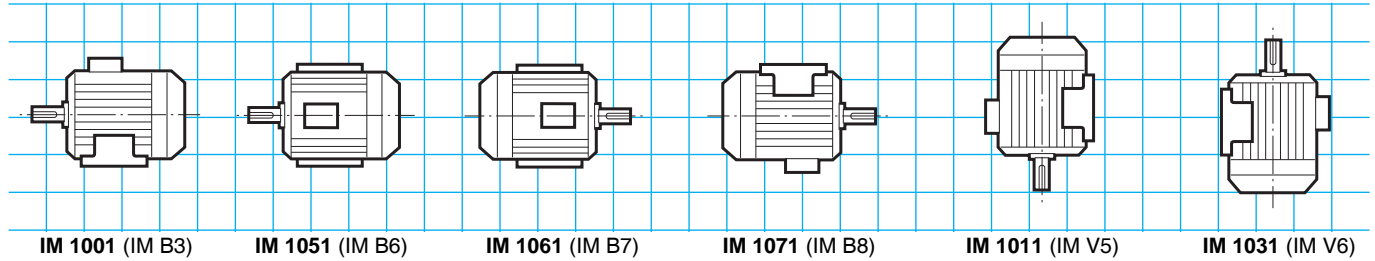
## Description of the LS FCR aluminium three-phase brake motors Food Industry Application

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 as an optional extra in 132 and 112 - earth terminal as an optional extra
Stator	Insulated low carbon magnetic steel laminations Electrolytic copper	- the low carbon content guarantees long term stability of the characteristics - electric welded sheet steel lamination pack - fitted into the heat expanded housing to provide mechanical rigidity - 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 specific applications) - mounted on shaft by heat shrinking - dynamically balanced rotor class N - 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 - VLS dynamic sealing or lip seals on the rear flange
Brake	Cylinder head : cast iron Frame : steel	- Frame, pins, springs - anti-corrosion and anti-sticking treatments
Bearings		- ball bearings, sealed, greased 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	Nitrile	- terminal box cover - front and rear joints for sealing at the shaft
Fan	Aluminium alloy or cast iron	- 2 directions of rotation : straight blades
Fan cover	Std : steel sheet metal	- on request, fitted with a drip cover for operation in vertical position, shaft facing down
Terminal box	Aluminium alloy	- IP 65, 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 steelstud terminal board (brass as an optional extra) terminated by copper straps - delivered with IP 68 polyamide cable glands mounted on concentrically tightened flat plate and fixed cable - 1 earth terminal in all terminal boxes - stainless steel screws
Painting		- standard : system Ia, colour RAL 6000 (green) ; - option : system IIb, colour RAL 9010 (white) 55 to 75 μm • resistance to saline mist : 150 h (following NFX 41002) • chemical aggression (accidental projection) suits the heavy industry and food

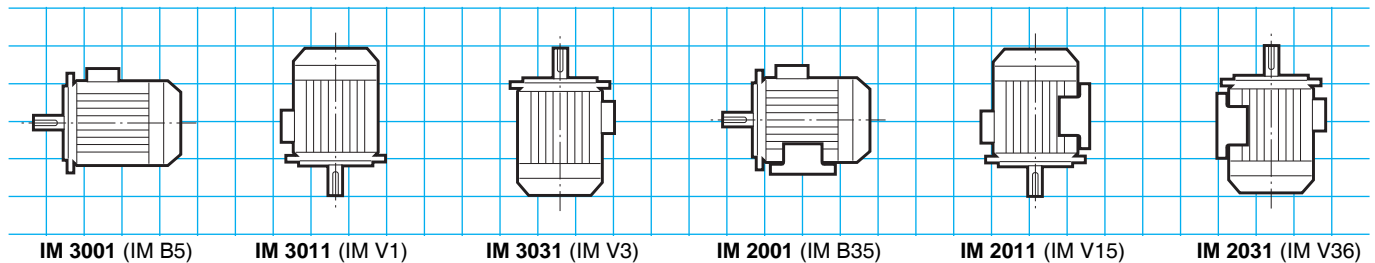
# FCR asynchronous brake motors LS FCR application iA

## Mounting - Operating positions

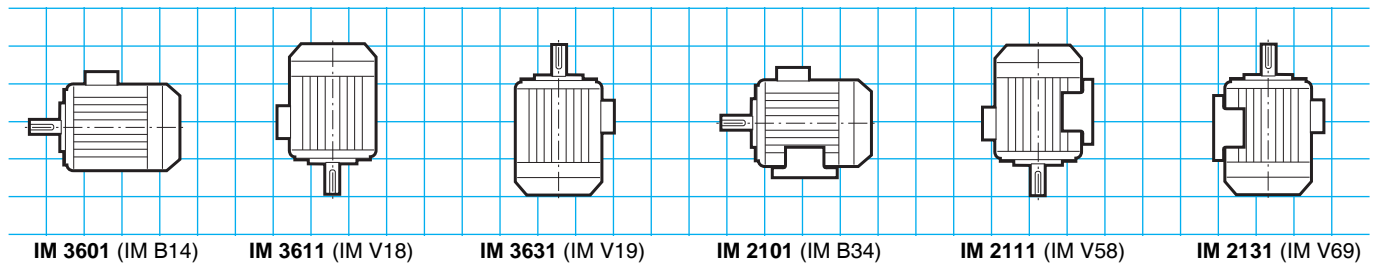
### Foot mounted motor



### (FF) plain hole flange mounted motor

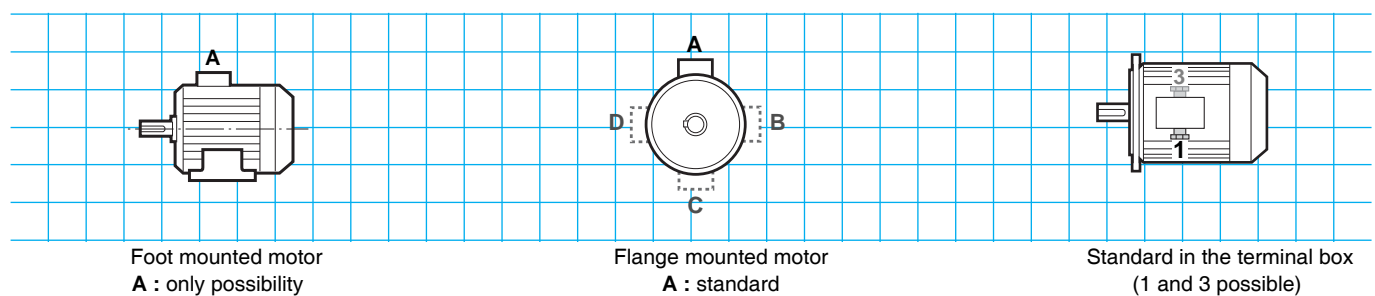


### (FT) tapped hole flange mounted motor



### Positions of the terminal box

### Positions of the cable gland



# FCR asynchronous brake motors LS FCR application iA

## Adaptation possibilities

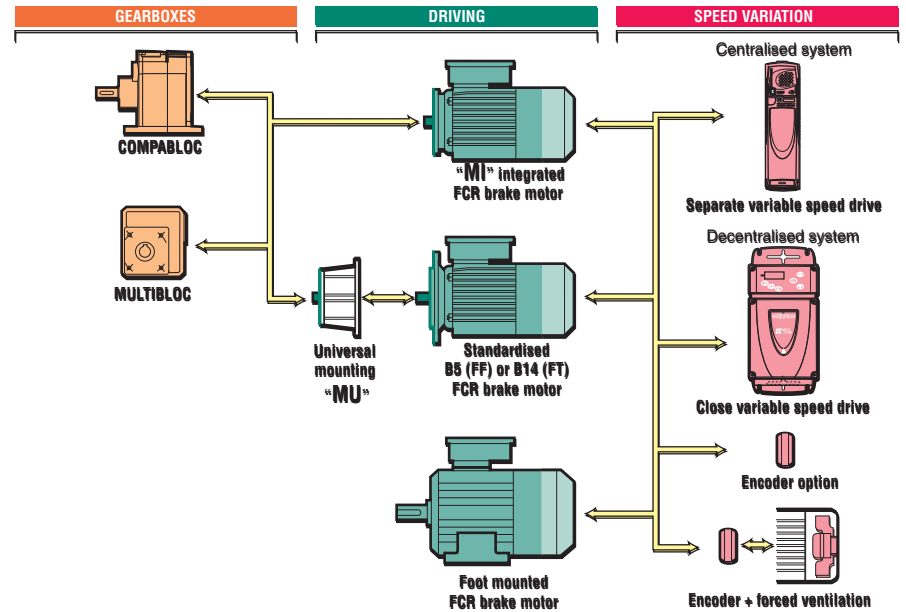
Leroy-Somer offers for use with their specific use iA brake motors, many options which meet the needs of highly diverse applications. They are described below and included in the chapters of the catalogue relating to gearboxes (D) and fixed speed motors. For other variants or any specific adaptation,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

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

- Compabloc
- Multibloc

☞ **LS FCR iA brake motors may be controlled by a variable speed drive :**

- Centralised system with separate variable speed drive LSMV brake FCR
- Decentralised system with integrated variable speed drive LS VARMECA FCR



## Designation / Codification

iA	4P 1500 min <sup>-1</sup>	LS	80	L	0.9 kW	IM 3001 (IM B5)	230/400 V 50 Hz	FCR	J02	10 N.m	A1
Food Industry application	Speed polarity	Motor series	Motor frame size	Manuf. index (motor)	Motor rated power : kW (or start moment : N.m)	Mounting position	Power supply frequency and voltage	Brake type	Selected inertia	Brake torque	T Box and PE position

☞ **Codification example :**

Three-phase asynchronous brake motor  
0.9 kW, 4 p, B5 for food industry

**Designation :**

4P LS 80 L 0.9 kW B5 230/400 V 50 Hz U.G. FCR  
J02 10 N.m Application iA

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.

# FCR asynchronous brake motors LS FCR application iA

## Selection

**4**  
poles  
1500 min<sup>-1</sup>

• LS series motor - 50 Hz - Class F - 230 V  $\Delta$  / 400 V Y  
U.G. General Use

• Brake - IP 65 - Incorporated mains supply - Brake torque set in factory

Motor type	Brake type	Rated power at 50 Hz $P_N$ kW	Rated speed $N_N$ min <sup>-1</sup>	Rated torque $M_N$ N.m	Rated current $I_N$ 400 V A	Power factor $\cos \varphi$ 100 %	Efficiency $\eta$ 100 %	Starting current / Rated current $I_D / I_N$	Starting torque / Rated torque $M_D / M_N$	Moment of inertia $J$ 10 <sup>-3</sup> kg.m <sup>2</sup>	Brake torque $M_T \pm 20\%$ N.m	Weight <sup>1</sup> IM B5	J01 to J03 kg	J05 kg
LS 71 L	FCR J02	0.25	1425	1.7	0.80	0.65	69	4.6	2.5	1.65	5	9.1	11.6	
LS 71 L	FCR J02	0.37	1420	2.5	1.06	0.70	72	4.9	2.5	1.8	5	10	12.5	
LS 71 L	FCR J02	0.55	1400	3.8	1.62	0.70	70	4.8	2.3	2	5	11	13.5	
LS 80 L	FCR J02	0.55	1410	3.8	1.42	0.76	73.4	4.5	2.4	3.8	10	15.5	19.2	
LS 80 L	FCR J02	0.75	1400	5.1	2.01	0.77	70	4.5	2.6	4.2	10	16.6	20.3	
LS 80 L	FCR J02	0.9	1425	6	2.44	0.73	73	5.8	3	4.7	10	18.2	21.9	
LS 90 L	FCR J02	1.1	1429	7.4	2.5	0.84	76.8	4.8	2.1	7.2	20	20.5	25	
LS 90 L	FCR J02	1.5	1428	10	3.4	0.82	78.5	5.3	2.5	7.9	20	22.5	27	
LS 90 L	FCR J02	1.8	1438	12	4	0.82	80.1	6	2.7	8.5	20	24.2	28.7	
LS 100 L	FCR J02	2.2	1436	14.7	4.8	0.81	81	5.9	2	8.6	25	27	-	
LS 100 L	FCR J02	3	1437	20.1	6.5	0.81	82.6	6	3.1	9.8	25	30	-	
LS 112 MG	FCR J01	4	1450	26.56	8.6	0.82	83	6.3	2.2	15.3	43	41	-	
LS 132 S	FCR J01	5.5	1447	36.7	11.1	0.83	85.7	6.3	2.3	18.3	43	48	-	
LS 132 M	FCR J02	7.5	1451	49.4	15.2	0.82	87	7	2.4	46	80	70	-	
LS 132 M	FCR J02	9	1455	59.3	18.1	0.82	87.7	6.9	2.2	50	105	75	-	
LS 160 MP	FCR J02	11	1454	72.2	21	0.86	88.4	7.7	2.3	57	120	85	-	
LS 160 LR	FCR J02	15	1453	98	28.8	0.84	89.4	7.5	2.9	63	120	101	-	

1. These values are given for information only.

**8**  
poles  
750 min<sup>-1</sup>

• LS series motor - 50 Hz - Class F - 230 V  $\Delta$  / 400 V Y  
U.G. General Use

• Brake - IP 65 - Incorporated mains supply - Brake torque set in factory

Motor type	Brake type	Rated power at 50 Hz $P_N$ kW	Rated speed $N_N$ min <sup>-1</sup>	Rated torque $M_N$ N.m	Rated current $I_N$ 400 V A	Power factor $\cos \varphi$ 100 %	Efficiency $\eta$ 100 %	Starting current / Rated current $I_D / I_N$	Starting torque / Rated torque $M_D / M_N$	Moment of inertia $J$ 10 <sup>-3</sup> kg.m <sup>2</sup>	Brake torque $M_T \pm 20\%$ N.m	Weight <sup>1</sup> IM B5	J01 to J03 kg	J05 kg
LS 71 L	FCR J02	0.09	690	1.25	0.5	0.55	44	2.8	1.52	2.1	5	10.2	12.7	
LS 71 L	FCR J02	0.12	650	1.7	0.72	0.55	44	2.1	1.43	2.2	5	10.7	13.2	
LS 80 L	FCR J02	0.18	705	2.4	0.79	0.63	52	2.9	2.4	5.5	10	17	20.7	
LS 80 L	FCR J02	0.25	700	3.4	0.98	0.68	54	2.8	2.8	6.3	10	18.6	22.3	
LS 90 L	FCR J02	0.37	685	5.2	1.2	0.72	62	3.8	1.9	7.7	20	22.5	27	
LS 90 L	FCR J02	0.55	670	7.8	1.7	0.72	63.5	3.5	2.1	8.3	20	24.2	28.7	
LS 100 L	FCR J02	0.75	670	10.7	2.4	0.71	63.5	3.5	1.9	9.4	25	27	-	
LS 100 L	FCR J02	1.1	670	15.7	3.7	0.68	63	3.7	2.1	11.5	25	31	-	
LS 112 MG	FCR J01	1.5	710	20.2	4.7	0.64	72	3.8	2.1	19.3	43	41	-	
LS 132 S	FCR J02	2.2	713	30.2	6.1	0.68	77.1	4	1.7	52	80	60.6	-	
LS 132 M	FCR J02	3	712	40.7	8	0.65	79.8	4.3	1.7	60	80	69	-	

1. These values are given for information only.

# FCR asynchronous brake motors LS FCR application iA

## Selection

**4**  
poles  
1500 min<sup>-1</sup>

U.G. general use  
50 Hz - Class F - 230 V  $\Delta$  / 400 V Y

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
LS 71 L	FCR J02	0.25	5		-		-		-
LS 71 L	FCR J02	0.37	5		-		-		-
LS 71 L	FCR J02	0.55	5		-		-		-
LS 80 L	FCR J02	0.55	10		-		-		-
LS 80 L	FCR J02	0.75	10		-		-		-
LS 80 L	FCR J02	0.9	10		-		-		-
LS 90 L	FCR J02	1.1	20		-		-		-
LS 90 L	FCR J02	1.5	20		-		-		-
LS 90 L	FCR J02	1.8	20		-		-		-
LS 100 L	FCR J02	2.2	25		-		-		-
LS 100 L	FCR J02	3	25		-		-		-
LS 112 MG	FCR J01	4	43		-		-		-
LS 132 S	FCR J01	5.5	43		-		-		-
LS 132 M	FCR J02	7.5	80		-		-		-
LS 132 M	FCR J02	9	105		-		-		-

**8**  
poles  
750 min<sup>-1</sup>

U.G. general use  
50 Hz - Class F - 230 V  $\Delta$  / 400 V Y

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
LS 71 L	FCR J02	0.09	5		-		-		-
LS 71 L	FCR J02	0.12	5		-		-		-
LS 80 L	FCR J02	0.18	10		-		-		-
LS 80 L	FCR J02	0.25	10		-		-		-
LS 90 L	FCR J02	0.37	20		-		-		-
LS 90 L	FCR J02	0.55	20		-		-		-
LS 100 L	FCR J02	0.75	25		-		-		-
LS 100 L	FCR J02	1.1	25		-		-		-
LS 112 MG	FCR J01	1.5	43		-		-		-
LS 132 SM	FCR J02	2.2	80		-		-		-
LS 132 M	FCR J02	3	80		-		-		-

### Selection example :

Application :	Food industry
Required power :	1.1 kW
Required speed :	1430 min <sup>-1</sup>
Mounting and position :	IM 3001 (IM B5)

### Designation :

**4P LS 90 L 1.1 kW B5 230/400V  
UG FCR J02 20 N.M iA**

**Code : consult us**

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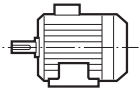
## Dimensions

### Dimensions of the LS FCR iA asynchronous brake motors

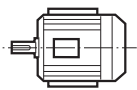
According to the operating position and mechanical forms of the brake motor

Foot mounted motor

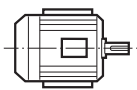
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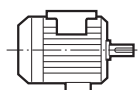
IM 1001 (IM B3)



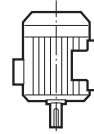
IM 1051 (IM B6)



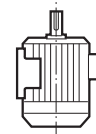
IM 1061 (IM B7)



IM 1071 (IM B8)



IM 1011 (IM V5)

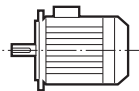


IM 1031 (IM V6)

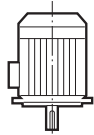
Page C2.12

(FF) plain hole flange mounted motor

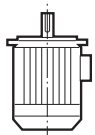
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IM 3001 (IM B5)



IM 3011 (IM V1)

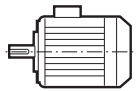


IM 3031 (IM V3)

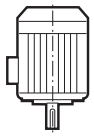
Page C2.13

(FT) tapped hole flange mounted motor

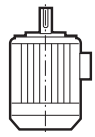
BT



IM 3061 (IM B14)



IM 3611 (IM V18)



IM 3631 (IM V19)

Page C2.14

Options

Pages C2.10 and C2.11