



**FCR**  
**from 0.09 to 15 kW**  
**Asynchronous brake motors**  
**Catalogue extract**

# FCR asynchronous brake motors

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# FCR asynchronous brake motors

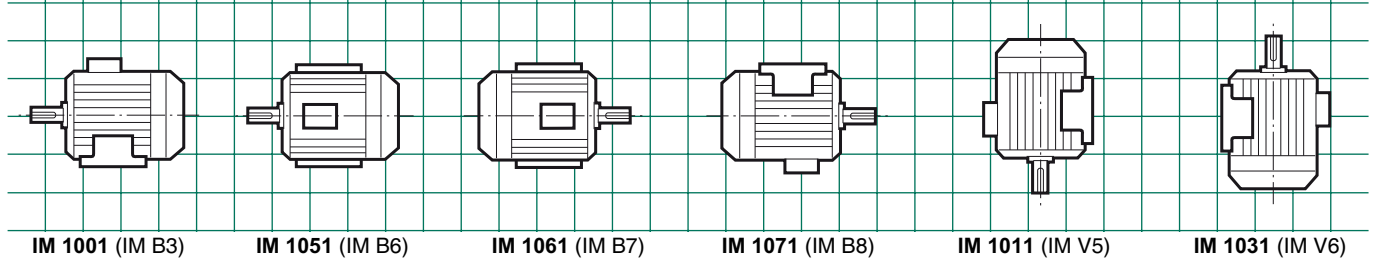
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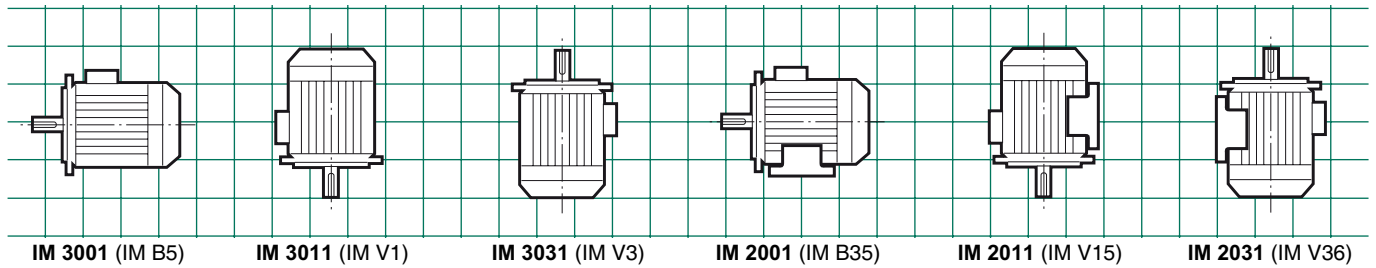
# FCR asynchronous brake motors

## Operating positions - Fixing

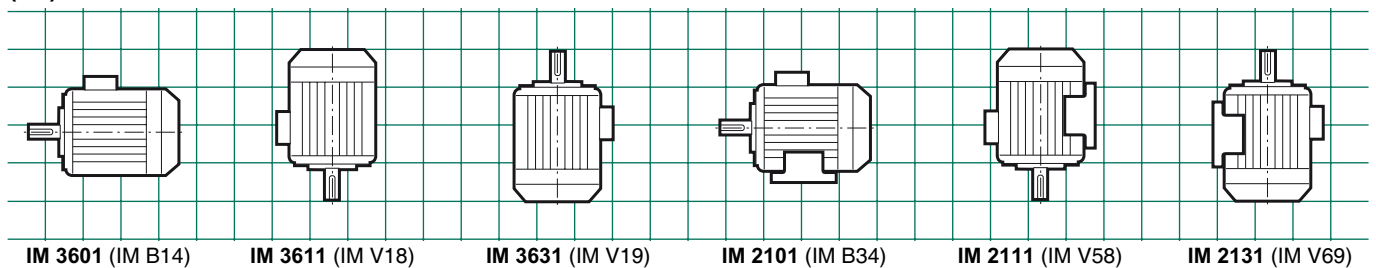
### Foot mounted motors



### (FF) Flange mounted motors

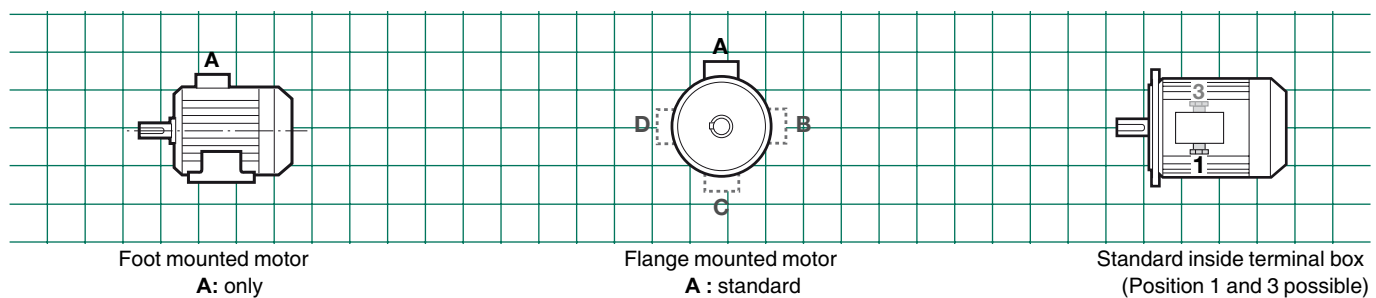


### (FT) Face mounted motors



### Terminal box positions

### Cable gland positions



# FCR asynchronous brake motors

## Adaptation possibilities

Leroy-Somer offers, for brake motors, several adaptations meeting a wide range of requirements. They are described below in this booklet, in the part related to gears for fixed speed motors.

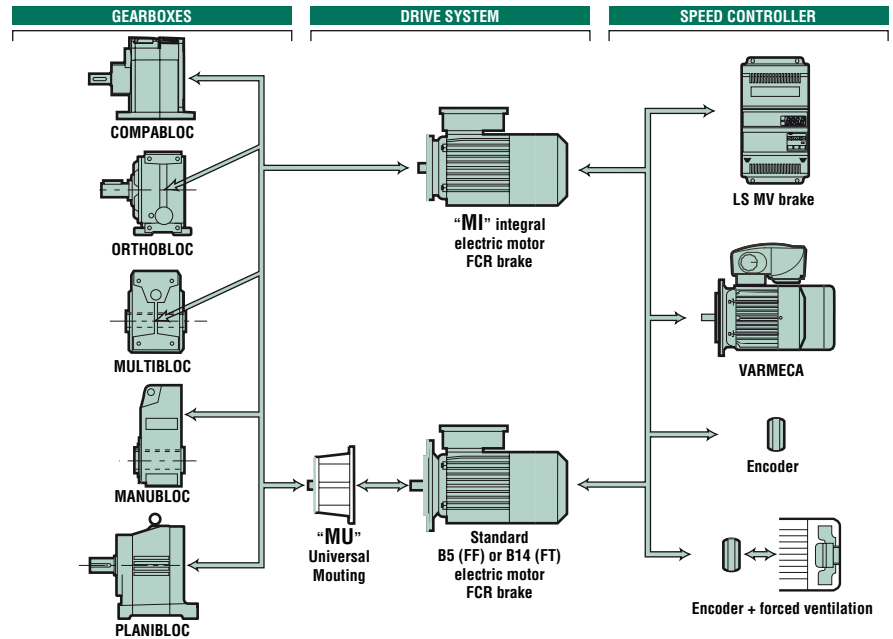
For other adaptations, ask the Leroy-Somer technical specialists who are always at your disposal.

FCR brake motor can be coupled either by integral mounting (adapted motor) or a universal mounting (I.E.C. standard motor) with the following gearboxes:

- Compabloc
- Orthobloc
- Multibloc
- Planibloc
- Manubloc

FCR brake motors can be controlled by speed controllers:

- LS MV with brake
- VARMECA



## Designation and coding

4P 1500 min <sup>-1</sup>	LS	80	L	0,9 kW	IM 3001 (IM B5)	230/400 V 50 Hz	U.G.	FCR	J02	10 N.m	A1
No. of poles speed	Motor type	Motor frame size	Manufacturer index (Motor)	Rated motor power : kW (or starting torque : Nm)	Operating position	Main supply voltage and frequency	Appli- cation (use)	Brake type	Select ed inertia	Braking torque	Terminal box and cable gland position

Coding examples :

4P LS 80 L 0.9 kW IM3001 (IM B5) 230/400 V  
50 Hz U.G. FCR J02 10 N.m A1

Designation

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

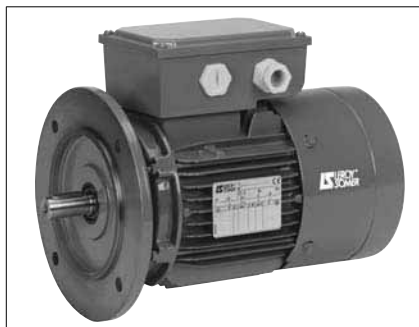
# FCR asynchronous brake motors

# FCR asynchronous brake motors

## U.G. General Use

### LS --- FCR

## General



**3-phase asynchronous brake motors**, LS series and failsafe brake, according to CEI 34, 72, EN 50281

- Single speed : **0.09 to 15 kW** power, 71 to 160 mm frame size, 2, 4, 6, 8 poles ; 230/400 V or 400 V  $\Delta$ , 50 Hz.
- Two speed : (on request) 0.12 to 6 kW power, 80 to 132 mm frame size with 2/4, 4/6, 4/8, 6/8, 6/12 poles in general use, PAM or Dahlander; 400 V Y or  $\Delta$ , 50 Hz.

– **Presentation of the brake motor**  
**IP55** protection providing good sealing against liquid projections and dust in an industrial environment.

– **Variable speed motors** :  
 • fitted with thermal probes in the winding (compulsory)

**Finish: aluminium casing**

Routine test, no load test, dielectric test, verification of resistance and of the direction of rotation.  
 Shaft and flange protection against atmospheric corrosion.  
 Individual anti-shock packaging.

**Brake power supply**

- Standard according to IEC 38 that is :  
 – 230/400 V + 10 % – 10 % at 50 Hz;  
 it provides the following supplies  
 220/380 V + 5 % – 5 % and  
 240/415 V + 5 % – 5 % at 50 Hz  
 – 400 V  $\Delta$  + 10 % – 10 % at 50 Hz.  
 Connection for Y/ $\Delta$  starting
- The brake supply is built-in ; the brake motor is connected as a standard motor. The brake can be connected with a separate AC supply.

**Options**

- Chosen inertia (Frame 71 to 100), braking torque ; manual release of the brake
- Drip cover ; secondary shaft ; thermal protection probes
- Reduced response time ; connector
- Encoder and/or forced ventilation

### Description of the LS --- FCR three phase aluminium brake motor

Designation	Material	Comments
Finned housing	Aluminium alloy	- with cast feet or without feet - pressure die-cast <ul style="list-style-type: none"> <li>• 4 fixing holes for foot mounting</li> <li>• 132 and 112 lifting rings, optional</li> </ul> - earth terminal, optional
Stator	Insulated low-carbon magnetic steel with laminations Cathode copper	- the low carbon content assures the stability of characteristics over time - sheets assembled by electric welding - heat shrink assembly in order to provide mechanical resistance - semi-enclosed slots - class F insulation
Rotor	Insulated low-carbon magnetic steel with laminations	- inclined slots - squirrel cage pressure die cast in aluminium (or alloys for special applications) - heat shrinked mounting on the shaft - dynamically balanced N class rotor - 1/2 key
Shaft	Steel	- shaft end fitted with screw and washer - closed keyway
End shields	Cast iron	- drive end and non-drive end, fixed by tie rods
Bearings		- dust and damp protected ball bearings, greased for life, with the following mounting : <ul style="list-style-type: none"> <li>• blocked at rear to guarantee precise positioning of the load, whatever the direction of the force</li> <li>• heavily preloaded front bearing to eliminate axial oscillations</li> </ul>
Seals	Synthetic rubber	- IP 55 front and rear shaft seals
Fan	Aluminium or cast iron alloy	- 2 directions of rotation : straight blades
Fan cover	Steel sheet	- on request, fitted with a drip cover for operation in the vertical position, shaft facing down
Terminal box	Aluminium alloy	- IP 55, 4 positions for flange mounted motors, opposite the feet for foot mount or foot and flange mount for frame size $\geq 80$ - fitted with a 6 steel terminal board (optionally, brass) and connection by copper bars - supplied with polyamide cable gland - 1 earth terminal in each terminal box
Painting		- system Ia, RAL 6000 paint finish (green) - resistance to saline mist : 72 h (according to NFX 41002)

# FCR asynchronous brake motors

## U.G. General Use

### LS --- FCR

## Selection

**2**  
poles  
3000 min<sup>-1</sup>

. Motor series LS - IP 55 - 50 HZ - Class F - 230/400 V  
Aluminium Rotor (ALU) U.G. General Use  
. Brake - IP 55 - Built-in brake power supply - Factory-set braking torque

Δ 230 / Y 400 V or Δ 400 V MAIN SUPPLY 50 Hz

Motor type	Brake type	Rated power at 50 Hz	Rated speed	Rated current	Power factor	Efficiency	Starting current / Rated current	Starting torque / Rated torque	Rated torque	Moment of inertia	Braking torque	Weight* IM B5	
		$P_n$ kW	$N_n$ min <sup>-1</sup>	$I_n(400V)$ A	$\cos \varphi$ 4/4	$\eta$ 100 %	$I_d / I_n$	$M_d / M_n$	$M_n$ N.m	$J$ 10 <sup>-3</sup> kg.m <sup>2</sup>	$M_f \pm 20\%$ N.m	J01 to J03 kg	J05 kg
LS 71 L	FCR J02	0.37	2785	0.9	0.88	66	6.1	2.6	1.26	1.35	5	9.1	11.6
LS 71 L	FCR J02	0.55	2800	1.5	0.82	62	4.5	2.6	1.88	1.45	5	10	12.5
LS 80 L	FCR J02	0.75	2850	1.7	0.83	75	6.2	2.6	2.58	3.2	10	15.5	19.2
LS 80 L	FCR J02	1.1	2870	2.4	0.87	78	6.6	2.9	3.70	3.4	10	17	20.7
LS 80 L	FCR J02	1.5	2880	3.3	0.84	79	6.7	3.6	5.01	3.6	10	18.6	22.3
LS 90 L	FCR J02	1.5	2880	3.5	0.77	79	6.6	2.9	4.99	6.1	20	21	25.5
LS 90 L	FCR J02	1.8	2885	3.4	0.91	83	9	3	6.01	6.4	20	23	27.5
LS 90 L	FCR J02	2.2	2890	4.4	0.86	83.5	7.4	3.3	7.35	6.8	20	25	29.5
LS 100 L	FCR J02	3	2860	6.3	0.83	81	7.6	3.8	9.99	6.9	25	30	-
LS 112 MG	FCR J01	4	2865	7.9	0.85	86	8.7	4.1	13.33	11.2	22	33.4	-
LS 132 S	FCR J01	5.5	2942	10.5	0.87	87.2	8.8	3.5	18.1	11.9	43	46	-
LS 132 M	FCR J02	7.5	2905	14.7	0.85	86.5	8.7	3.4	24.5	35.8	80	54	-
LS 132 M	FCR J02	9	2910	17.3	0.85	88.1	8.6	2.5	29.6	43	80	64	-
LS 132 M	FCR J02	11	2945	20.7	0.86	89.4	7.5	2.7	36	45	80	70	-
LS 160 MP	FCR J02	11	2945	20.7	0.86	89.4	7.5	2.7	36	46	80	77	-
LS 160 MP	FCR J02	15	2935	28.4	0.85	90	8.1	3	48.8	50	80	87	-

\*: These values are for information only.

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

. Motor series LS - IP 55 - 50 HZ - Class F - 230/400 V  
Aluminium Rotor (ALU) U.G. General Use  
. Brake - IP 55 - Built-in brake power supply - Factory set braking torque

Δ 230 / Y 400 V or Δ 400 V MAIN SUPPLY 50 Hz

Motor type	Brake type	Rated power at 50 Hz	Rated speed	Rated current	Power factor	Efficiency	Starting current / Rated current	Starting torque / Rated torque	Rated torque	Moment of inertia	Braking torque	Weight* IM B5	
		$P_n$ kW	$N_n$ min <sup>-1</sup>	$I_n(400V)$ A	$\cos \varphi$ 4/4	$\eta$ 100 %	$I_d / I_n$	$M_d / M_n$	$M_n$ N.m	$J$ 10 <sup>-3</sup> kg.m <sup>2</sup>	$M_f \pm 20\%$ N.m	J01 to J03 kg	J05 kg
LS 71 L	FCR J02	0.25	1410	0.85	0.78	54.3	4	2.5	1.68	1.68	5	9.1	11.6
LS 71 L	FCR J02	0.37	1420	1.2	0.79	60.7	4	2.5	2.49	1.85	5	10	12.5
LS 71 L	FCR J02	0.55	1400	1.6	0.72	69	4.3	2.3	3.75	2.1	5	11	13.5
LS 80 L	FCR J02	0.55	1420	1.65	0.71	68	4.3	2.4	3.50	3.8	10	15.5	19.2
LS 80 L	FCR J02	0.75	1400	2	0.73	72	4.6	2.6	5.12	4.3	10	16.6	20.3
LS 80 L	FCR J02	0.9	1430	2.4	0.71	77	5.5	3	6.03	4.9	10	18.2	21.9
LS 90 L	FCR J02	1.1	1440	2.6	0.79	76	5	2.1	7.35	7.3	20	20.5	25
LS 90 L	FCR J02	1.5	1435	3.5	0.80	78	5.3	2.5	10.03	7.9	20	22.5	27
LS 90 L	FCR J02	1.8	1440	4.1	0.79	80	6	2.7	11.95	8.4	20	24.2	28.7
LS 100 L	FCR J02	2.2	1435	5.2	0.78	78	5.8	2	14.5	9	25	27	-
LS 100 L	FCR J02	3	1450	8.3	0.70	77	6.9	3.1	19.5	10.2	25	30	-
LS 112 MG	FCR J01	4	1450	8.6	0.82	83	6.3	2.2	26.56	15.3	43	41	-
LS 132 S	FCR J01	5.5	1447	10.9	0.85	85.7	6.5	2.3	36.3	18.3	43	48	-
LS 132 M	FCR J02	7.5	1450	15.2	0.82	87	7	2.4	49.4	46	80	70	-
LS 132 M	FCR J02	9	1455	18.1	0.82	87.7	6.9	2.2	59.3	50	105	75	-
LS 160 MP	FCR J02	11	1455	21	0.86	88.4	7.7	2.3	72.2	57	120	85	-
LS 160 LR	FCR J02	15	1455	28.8	0.84	89.4	7.5	2.9	98	63	120	101	-



# FCR asynchronous brake motors

## U.G. General Use

### LS --- FCR

## Selection



. Motor series LS - IP 55 - 50 HZ - Class F - 230/400 V  
Aluminium Rotor (ALU) U.G. General Use  
. Brake - IP 55 - Built-in brake power supply - Factory set braking torque

Δ 230 / Y 400 V or Δ 400 V MAIN SUPPLY 50 Hz

Motor type	Brake type	Rated power at 50 Hz	Rated speed	Rated current	Power factor	Efficiency	Starting current / Rated current	Starting torque / Rated torque	Rated torque	Moment of inertia	Braking torque	Weight* IM B5	
		$P_n$ kW	$N_n$ min <sup>-1</sup>	$I_n(400V)$ A	$\cos \varphi$ 4/4	$\eta$ 100 %	$I_d / I_n$	$M_d / M_n$	$M_n$ N.m	$J$ 10 <sup>-3</sup> kg.m <sup>2</sup>	$M_f \pm 20\%$ N.m	J01 to J03 kg	J05 kg
LS 71 L	FCR J02	0.18	930	0.6	0.58	55	2.9	2.3	1.92	2.1	5	10.3	12.8
LS 71 L	FCR J02	0.25	930	1.1	0.65	51	2.8	1.9	2.84	2.3	5	10.6	13.1
LS 80 L	FCR J02	0.37	940	1.2	0.73	61	3.2	1.8	3.72	5.7	10	17	20.7
LS 80 L	FCR J02	0.55	945	1.6	0.73	66	3.5	1.8	5.53	6.7	10	18.6	22
LS 90 L	FCR J02	0.75	940	2.3	0.69	69	4.75	2.5	7.7	8.6	20	22.5	27
LS 90 L	FCR J02	1.1	945	2.9	0.73	74	4.8	2.45	11.48	9.5	20	24.2	28.7
LS 100 L	FCR J02	1.5	905	4.2	0.74	69	4.5	2.6	15.83	10.5	25	29	-
LS 112 MG	FCR J01	2.2	950	6.2	0.68	75.4	5.2	2.1	23.21	13	43	41	-
LS 132 S	FCR J01	3	965	8.2	0.59	75.2	5.25	3.1	24.6	22.3	43	54	-
LS 132 M	FCR J02	4	960	9.3	0.75	83.6	5.9	2.5	39.6	61	80	68.5	-
LS 132 M	FCR J02	5.5	960	13.3	0.71	84.1	5.5	2.5	54.2	66	80	75.5	-

\* : These values are for information only.



. Motor Series LS - IP 55 - 50 HZ - Class F - 230/400 V  
Aluminium Rotor (ALU) U.G. General Use  
. Brake - IP 55 - Built-in brake power supply - Factory set braking torque

Δ 230 / Y 400 V or Δ 400 V MAIN SUPPLY 50 Hz

Motor type	Brake type	Rated power at 50 Hz	Rated speed	Rated current	Power factor	Efficiency	Starting current / Rated current	Starting torque / Rated torque	Rated torque	Moment of inertia	Braking torque	Weight* IM B5	
		$P_n$ kW	$N_n$ min <sup>-1</sup>	$I_n(400V)$ A	$\cos \varphi$ 4/4	$\eta$ 100 %	$I_d / I_n$	$M_d / M_n$	$M_n$ N.m	$J$ 10 <sup>-3</sup> kg.m <sup>2</sup>	$M_f \pm 20\%$ N.m	J01 to J03 kg	J05 kg
LS 71 L	FCR J02	0.09	700	0.76	0.61	28	1.95	1.52	1.25	2.3	5	10.2	12.7
LS 71 L	FCR J02	0.12	655	0.72	0.62	44	1.97	1.43	1.76	2.3	5	10.7	13.2
LS 80 L	FCR J02	0.18	720	1	0.54	47	3	2.4	2.44	5.6	10	17	20.7
LS 80 L	FCR J02	0.25	725	1.3	0.52	54	3.2	2.8	3.41	6.6	10	18.6	22.3
LS 90 L	FCR J02	0.37	685	1.3	0.69	63	3.2	1.9	5.16	8.5	20	22.5	27
LS 90 L	FCR J02	0.55	690	1.8	0.67	67	3.3	2.1	7.78	9.4	20	24.2	28.7
LS 100 L	FCR J02	0.75	670	2.3	0.71	62	3.5	1.9	10.77	9.4	25	27	-
LS 100 L	FCR J02	1.1	670	3.7	0.68	63	3.7	2.1	15.68	11.5	25	31	-
LS 112 MG	FCR J01	1.5	710	4.7	0.64	72	3.8	2.1	20.17	19.3	43	41	-
LS 132 SM	FCR J02	2.2	713	6.1	0.68	77.1	4.3	1.7	30.2	52	80	60.6	-
LS 132 M	FCR J02	3	712	8	0.65	79.8	3.9	1.7	40.7	60	80	69	-

\* : These values are for information only.

# FCR asynchronous brake motors

## U.G. General Use

### LS --- FCR

## Selection

**2-4 poles**  
3000-1500 min<sup>-1</sup>

. Motor series LS - IP 55 - 50 HZ - Class F - 400 V  
Squirrel cage rotor - 1 Coil (Dahlander) - U.G. General Use  
. Brake - IP 55 - Separate supply<sup>1</sup> - Factory set braking torque

### 400 V MAIN SUPPLY 50 Hz

Motor type	Brake type	Rated power at 50 Hz		Rated speed		Rated current		Power factor		Efficiency		Starting current / Rated current		Starting torque / Rated torque		Rated torque		Moment of inertia	Braking torque	Weight* IM B5
		$P_n$ kW		$N_n$ min <sup>-1</sup>		$I_n(400V)$ A		$\cos \varphi$ 4/4		$\eta$ 100 %		$I_d / I_n$		$M_d / M_n$		$M_n$ N.m		$J$ 10 <sup>-3</sup> kg.m <sup>2</sup>	$M_f \pm 20\%$ N.m	kg
		GV	PV	GV	PV	GV	PV	GV	PV	GV	PV	GV	PV	GV	PV	GV	PV	-	-	-
LS 71 L	FCR J02	0.25	0.18																	
LS 71 L	FCR J02	0.37	0.25																	
LS 71 L	FCR J02	0.55	0.37																	
LS 80 L	FCR J02	0.55	0.37	2800	1420	1.6	1.2	0.83	0.67	0.6	0.62	3.4	3.3	1.9	2.1	1.75	2.3	5.5	10	15.5
LS 80 L	FCR J02	1.1	0.75	2810	1390	3	2	0.87	0.8	0.62	0.68	4	4.4	2	2.2	3.5	4.7	6.7	10	17.9
LS 90 L	FCR J02	1.5	1.1	2800	1400	4	2.7	0.83	0.74	0.64	0.73	3.6	4.1	1.8	2	4.8	7	8.6	20	21.5
LS 90 L	FCR J02	2.2	1.5	2780	1400	5	3.4	0.88	0.83	0.76	0.76	4.9	4.2	2	2.2	7	9.6	9.6	20	24.2
LS 100 L	FCR J02	3	2.6	2870	1400	7.5	5.9	0.88	0.88	0.75	0.76	5.6	5	1.6	1.9	11	18	10.9	25	33.5
LS 112 MG	FCR J01	4.5	3.7	2910	1450	12.5	8.5	0.79	0.81	0.78	0.81	4.6	6	1.8	1.9	16	23.5	19.3	32	53
LS 132 SM	FCR J02	6	4.5																	
LS 132 M	FCR J02	9	6.9	2880	1440	17	13	0.89	0.86	0.72	0.82	6.2	7.9	3	2.1	28	44	65.5	80	75

1. 180 V brake coil ; GV : high speed PV : low speed

\* : These values are for information only.

**4-8 poles**  
1500-750 min<sup>-1</sup>

. Motor series LS - IP 55 - 50 HZ - Class F - 400 V  
Squirrel cage rotor - 1 Coil (Dahlander) - U.G. General Use  
. Brake - IP 55 - Separate supply<sup>1</sup> - Factory set braking torque

### 400 V MAIN SUPPLY 50 Hz

Motor type	Brake type	Rated power at 50 Hz		Rated speed		Rated current		Power factor		Efficiency		Starting current / Rated current		Starting torque / Rated torque		Rated torque		Moment of inertia	Braking torque	Weight* IM B5
		$P_n$ kW		$N_n$ min <sup>-1</sup>		$I_n(400V)$ A		$\cos \varphi$ 4/4		$\eta$ 100 %		$I_d / I_n$		$M_d / M_n$		$M_n$ N.m		$J$ 10 <sup>-3</sup> kg.m <sup>2</sup>	$M_f \pm 20\%$ N.m	kg
		GV	PV	GV	PV	GV	PV	GV	PV	GV	PV	GV	PV	GV	PV	GV	PV	-	-	-
LS 80 L	FCR J02	0.25	0.12	1420	710	0.8	0.96	0.9	0.57	0.56	0.33	3.8	2.3	1.9	2.1	1.6	1.6	4	10	15.5
LS 80 L	FCR J02	0.55	0.22	1400	690	1.3	1.25	0.86	0.66	0.66	0.46	3.6	2.4	1.3	1.7	3.5	3.5	4.3	10	16.3
LS 90 L	FCR J02	1.2	0.6	1400	710	2	2.2	0.85	0.56	0.73	0.57	3.6	2.3	1.5	1.6	5.1	5.1	9.6	20	24.2
LS 100 L	FCR J02	1.7	0.9	1420	700	4	3.9	0.84	0.59	0.78	0.63	4.3	2.7	1.6	1.8	12	12	9.8	25	30
LS 112 MG	FCR J01	2.8	1.5	1430	720	6.8	6.5	0.88	0.56	0.72	0.6	4.4	3	1.2	1.8	19	19	19.3	32	53
LS 132 SM	FCR J02	5	2.85	1440	720	10.8	8.8	0.89	0.61	0.83	0.74	6.3	4.3	1.8	2.3	36	36	60.4	80	70
LS 132 M	FCR J02	7.6	4																	80

1. 180 V brake coil ; GV : high speed PV : low speed

\* : These values are for information only.

# FCR asynchronous brake motors

## U.G. General Use

### LS --- FCR

## Selection

Motor series LS - IP 55 - 50 Hz - Class F - 230/400 V  
Squirrel cage rotor - 2 Coil - U.G. General Use  
Brake - IP 55 - Separate supply<sup>1</sup> - Factory set braking torque

**2-4 poles**  
3000-1500 min<sup>-1</sup>

### Y 400 V MAIN SUPPLY 50 Hz

Motor type	Brake type	Rated power at 50 Hz		Rated speed		Rated current		Power factor		Efficiency		Starting current / Rated current		Starting torque / Rated torque		Rated torque		Moment of inertia	Braking torque	Weight* IM B5
		$P_n$ kW	$N_n$ min <sup>-1</sup>	$I_n(400V)$ A	$\cos \varphi$ 4/4	$\eta$ 100 %	$I_d / I_n$	$M_d / M_n$	$M_n$ N.m	$J$ 10 <sup>-3</sup> kg.m <sup>2</sup>	$M_f \pm 20\%$ N.m	kg								
		GV	PV	GV	PV	GV	PV	GV	PV	GV	PV	GV	PV	GV	PV	GV	PV			
LS 80 L	FCR J02	0.55	0.25																	Contact us.
LS 90 L	FCR J02	0.75	0.37																	Contact us.
LS 90 L	FCR J02	1.5	0.75																	Contact us.
LS 100 L	FCR J02	2.2	1.1																	Contact us.
LS 112 MG	FCR J01	3.3	1.7																	Contact us.
LS 132 SM	FCR J02	4	2																	Contact us.
LS 132 M	FCR J02	6	3																	Contact us.

1. 180 V brake coil ; GV : high speed PV : low speed

\* : These values are for information only.

**2-6 poles**  
3000-1000 min<sup>-1</sup>

### Y 400 V MAIN SUPPLY 50 Hz

Motor type	Brake type	Rated power at 50 Hz		Rated speed		Rated current		Power factor		Efficiency		Starting current / Rated current		Starting torque / Rated torque		Rated torque		Moment of inertia	Braking torque	Weight* IM B5
		$P_n$ kW	$N_n$ min <sup>-1</sup>	$I_n(400V)$ A	$\cos \varphi$ 4/4	$\eta$ 100 %	$I_d / I_n$	$M_d / M_n$	$M_n$ N.m	$J$ 10 <sup>-3</sup> kg.m <sup>2</sup>	$M_f \pm 20\%$ N.m	kg								
		GV	PV	GV	PV	GV	PV	GV	PV	GV	PV	GV	PV	GV	PV	GV	PV			
LS 80 L	FCR J02	0.55	0.18																	Contact us.
LS 90 L	FCR J02	0.75	0.25																	Contact us.
LS 90 L	FCR J02	1.5	0.5																	Contact us.
LS 100 L	FCR J02	2.2	0.75																	Contact us.
LS 112 MG	FCR J01	3	1																	Contact us.
LS 132 SM	FCR J02	4	1.3																	Contact us.
LS 132 M	FCR J02	6.5	2.2																	Contact us.

1. 180 V brake coil ; GV : high speed PV : low speed

\* : These values are for information only.

**2-8 poles**  
3000-750 min<sup>-1</sup>

### Y 400 V MAIN SUPPLY 50 Hz

Motor type	Brake type	Rated power at 50 Hz		Rated speed		Rated current		Power factor		Efficiency		Starting current / Rated current		Starting torque / Rated torque		Rated torque		Moment of inertia	Braking torque	Weight* IM B5
		$P_n$ kW	$N_n$ min <sup>-1</sup>	$I_n(400V)$ A	$\cos \varphi$ 4/4	$\eta$ 100 %	$I_d / I_n$	$M_d / M_n$	$M_n$ N.m	$J$ 10 <sup>-3</sup> kg.m <sup>2</sup>	$M_f \pm 20\%$ N.m	kg								
		GV	PV	GV	PV	GV	PV	GV	PV	GV	PV	GV	PV	GV	PV	GV	PV			
LS 80 L	FCR J02	0.55	0.12																	Contact us.
LS 90 L	FCR J02	0.75	0.18																	Contact us.
LS 90 L	FCR J02	1.5	0.37																	Contact us.
LS 100 L	FCR J02	2.2	0.55																	Contact us.
LS 112 MG	FCR J01	3	0.75																	Contact us.
LS 132 SM	FCR J02	4	1																	Contact us.
LS 132 M	FCR J02	5.5	1.6																	Contact us.

1. 180 V brake coil ; GV : high speed PV : low speed

\* : These values are for information only.

**FCR asynchronous brake motors  
U.G. General Use  
LS --- FCR**

# FCR asynchronous brake motors

## U.G. General Use

### FLS --- FCR

## General



– 3-phase asynchronous FCR brake motors, FLS series with cast iron casing, according to I.E.C. 34, 38, 72  
 • Single speed : **0.55 to 9 kW** power, 80 to 132 mm frame size, 4 poles 230/400 V or 400 V Δ, 50 Hz.

For non direct starting : contact us.

– **IP55 protection**

– **Variable speed motors :**  
 • fitted with thermal probes in the winding (compulsory),

**Finish : cast iron**  
 Corrosion protected screws.  
 Shaft and flange protection against atmospheric corrosion.  
 Shockproof individual packaging.

**Mains supply :**  
 • **Standard construction according to IEC 38 that is :**  
 – 230/400 V + 10 % – 10 % at 50 Hz ;  
 – 400 V Δ + 10 % – 10 % at 50 Hz.

### Description of FLS --- FCR three phase cast iron brake motors

Designation	Material	Comments
Finned housing	Cast iron	- with cast feet or without feet • 4 fixing holes for foot mounting • 132 and 112 lifting rings, optional - earth terminal on foot or fins
Stator	Insulated low-carbon steel with laminations Enamelled Cathode copper	- the low carbon content assures the stability of characteristics over time - assembled sheets - semi-enclosed slots - class F insulation
Rotor	Insulated low-carbon steel with laminations Aluminium	- inclined slots - squirrel cage pressure die cast in aluminium (or alloys for special applications) - heat shrunk mounting on the shaft - dynamically balanced N class rotor - 1/2 key
Shaft	Steel	- for frame size $\leq 132$ S : • shaft end fitted with screw and washer • closed keyway
End shields	Cast iron	- drive end and non-drive end, fixed by tie rods
Bearings		- 2RS dust and dump protected ball bearings, greased for life, with the following mounting : • blocked at rear to guarantee precise positioning of the load • heavily preloaded front bearing to eliminate axial oscillation
Seals	Synthetic rubber	- IP 55 front and rear shaft seals
Fan	Aluminium or cast iron alloy	- 2 directions of rotation: straight blades
Fan cover	Steel sheet	- on request, fitted with a drip cover for operation in vertical position, shaft facing down
Terminal box	Cast iron	- IP 55 - 4 positions for flange mount motors, opposite the feet for foot mount or foot and flange for frame size $\geq 80$ - fitted with a 6 steel terminal board - supplied with polyamide cable gland - 1 earth terminal in each terminal box
Painting		- system IIa, RAL 6000 paint finish (green) • 1 base coat (treatment of supports) • 1 polyurethane coat 25/30 $\mu$ m - resistance to saline mist : 250 h (according to NFX 41002)

# FCR asynchronous brake motors

## U.G. General Use

### FLS --- FCR

## Selection

- . Motor series FLS - IP 55 - 50 HZ - F Class - 230/400 V
- Aluminium Rotor (ALU) U.G. General Use
- . Brake - IP 55 - Built-in brake power supply - Factory set braking torque

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

Δ 230 / Y 400 V or Δ 400 V MAIN SUPPLY

50 Hz

Type	Brake type	Rated power at 50 Hz $P_n$ kW	Rated speed $N_n$ min <sup>-1</sup>	Rated current $I_n (400V)$ A	Power factor $\cos \varphi$ 4/4	Efficiency $\eta$ 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 $J$ 10 <sup>-3</sup> kg.m <sup>2</sup>	Braking torque $M_f \pm 20\%$ N.m	Weight* IM B5 kg
FLS 80 L	FCR J02	0.55	1410	1.6	0.74	69.2	4.4	2.1	3.7	3.8	10	22
FLS 80 L	FCR J02	0.75	1425	2	0.75	72.5	5.7	3	5	4.9	10	24
FLS 90 L	FCR J02	1.1	1429	2.5	0.83	78	4.9	1.6	7.5	7.3	20	28
FLS 90 L	FCR J02	1.5	1428	3.3	0.82	79.5	5.3	1.8	10	7.9	20	30
FLS 90 L	FCR J02	1.8	1438	4	0.82	80.1	5.9	2.1	12.3	8.4	20	32
FLS 100 LK	FCR J01	2.2	1457	4.6	0.83	83.8	6.3	1.9	15	12	22	57
FLS 100 LK	FCR J01	3	1454	6.2	0.82	84.7	6.5	2.1	20	13.7	43	60
FLS 112 MG	FCR J01	4	1462	8.4	0.81	85.1	7.4	2.5	27.5	16.3	43	64
FLS 132 SM	FCR J02	5.5	1467	10.9	0.84	87	8	2.7	37	42.4	80	80
FLS 132 M	FCR J02	7.5	1450	14.3	0.87	87	7.3	1.9	50	46.2	80	85
FLS 132 M	FCR J02	9	1449	16.8	0.88	87.7	7.6	2.8	61	50	105	90

\*: These values are for information only.



# FCR asynchronous brake motors for atmospheres containing explosive dust LS --- FCR

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

## General



– **3-phase asynchronous brake motors**, LS series, according to IEC 34, 72, EN 50281

- Single speed : **0.25 to 15 kW** power, 71 to 160 mm frame size, 4 poles; 230/400 V or 400 V Δ, 50 Hz.
- Other polarities and 2 speed : upon request (0.09 to 9 kW power, 71 to 160 mm frame size, general use, PAM or Dahlander ; 400 V Y or Δ, 50 Hz.

– **IP55 protection**

- **Variable speed motors :**
    - fitted with the thermal probes in the winding (compulsory),
    - according to advice
    - forced ventilation is forbidden (up to 15 kW)
- Finish : aluminium casing**

Corrosion protected screws.  
Shaft and flange protection against atmospheric corrosion.  
Individual anti-shock packaging.

**Mains supply :**

- Standard construction according to IEC 38 that is:
  - 230/400 V + 10 % – 10 % at 50 Hz ;
  - 400 V Δ + 10 % – 10 % at 50 Hz.

## Description of LS --- FCR three phase aluminium brake motors



**II 3D T<sub>MAX</sub> 125 °C**

Designation	Material	Comments
Finned housing	Aluminium alloy	- with cast feet or without feet - pressure die cast <ul style="list-style-type: none"> <li>• fixing holes for foot mounting</li> <li>• 132 and 112 lifting rings, optional</li> </ul> - earth terminal, optional
Stator	Insulated low-carbon magnetic steel with laminations Cathode copper	- the low carbon content assures the stability of characteristics over time - sheets assembled by electric welding - heat shrink assembly in order to provide mechanical resistance - semi-enclosed slots - class F insulation
Rotor	Insulated low-carbon magnetic steel with laminations	- inclined slots - squirrel cage pressure die cast in aluminium (or alloys for special applications) - heat shrunk mounting on the shaft - dynamically balanced N class rotor - 1/2 key
Shaft	Steel	- shaft end fitted with screw and washer - closed keyway
End shields	Cast iron	- drive end and non-drive end, fixed by tie rods
Bearings		- dust and damp protected ball bearings, greased for life, with the following mounting : <ul style="list-style-type: none"> <li>• blocked at rear to guarantee precise positioning of the load,</li> <li>• heavily preloaded front bearing to eliminate axial oscillation</li> </ul>
Seals	Synthetic rubber	- front seals or deflectors for all motors
Fan	Aluminium or cast iron alloy	- 2 directions of rotation: straight blades
Fan cover	Steel sheet	- on request, fitted with a drip cover for operation in vertical position, shaft facing down
Terminal box	Aluminium alloy	- <b>IP 55</b> - 4 positions for flange mount motors opposite the feet for foot mount or foot and flange for frame size ≥ 80 - fitted with a 6 steel terminal board - supplied with polyamide cable gland - 1 earth terminal in each terminal box
Painting		- system Ia, <b>RAL 6000</b> paint finish ( <b>green</b> ) - resistance to saline mist : 72 h (according to NFX 41002)



# FCR asynchronous brake motors for atmospheres containing explosive dust LS --- FCR

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

## Selection

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

. Motor series LS - IP 55 - 50 HZ - F Class - 230/400 V  
Aluminium Rotor (ALU) U.G. General Use  
. Brake - IP 55 - Built-in brake power supply - Factory set braking torque



**II 3D T<sub>MAX</sub> 125 °C**

**Δ 230 / Y 400 V or Δ 400 V MAIN SUPPLY 50 Hz**

Type	Brake type	Rated power at 50 Hz	Rated speed	Rated current	Power factor	Efficiency	Starting current / Rated current	Starting torque / Rated torque	Rated torque	Moment of inertia	Braking torque	Weight* IM B5
		$P_n$ kW	$N_n$ min <sup>-1</sup>	$I_n(400V)$ A	$\cos \varphi$ 4/4	$\eta$ 100 %	$I_d / I_n$	$M_d / M_n$	$M_n$ N.m	$J$ 10 <sup>-3</sup> kg.m <sup>2</sup>	$M_f \pm 20\%$ N.m	kg
LS 71 L	FCR J02	0.25	1410	0.85	0.78	54.3	4	2.5	1.68	1.68	5	9.1
LS 71 L	FCR J02	0.37	1420	1.2	0.79	60.7	4	2.5	2.49	1.85	5	10
LS 71 L	FCR J02	0.55	1400	1.6	0.72	69	4.3	2.3	3.75	2.1	5	11
LS 80 L	FCR J02	0.55	1420	1.65	0.71	68	4.3	2.4	3.50	3.8	10	15.5
LS 80 L	FCR J02	0.75	1400	2	0.73	72	4.6	2.6	5.12	4.3	10	16.6
LS 80 L	FCR J02	0.9	1430	2.4	0.71	77	5.5	3	6.03	4.9	10	18.2
LS 90 L	FCR J02	1.1	1440	2.6	0.79	76	5	2.1	7.35	7.3	20	20.5
LS 90 L	FCR J02	1.5	1435	3.5	0.80	78	5.3	2.5	10.03	7.9	20	22.5
LS 90 L	0FCR J02	1.8	1440	4.1	0.79	80	6	2.7	11.95	8.4	20	24.2
LS 100 L	FCR J02	2.2	1435	5.2	0.78	78	5.8	2	14.5	9	25	27
LS 100 L	FCR J02	3	1450	8.3	0.70	77	6.9	3.1	19.5	10.2	25	30
LS 112 MG	FCR J01	4	1450	8.6	0.82	83	6.3	2.2	26.56	15.3	43	41
LS 132 S	FCR J01	5.5	1447	10.9	0.85	85.7	6.5	2.3	36.3	18.3	43	48
LS 132 M	FCR J02	7.5	1450	15.2	0.82	87	7	2.4	49.4	46	80	70
LS 132 M	FCR J02	9	1455	18.1	0.82	87.7	6.9	2.2	59.3	50	105	75
LS 160 MP	FCR J02	11	1455	21	0.86	88.4	7.7	2.3	72.2	57	120	85
LS 160 LR	FCR J02	15	1455	28.8	0.84	89.4	7.5	2.9	98	63	120	101

\*: These values are for information only.





# FCR asynchronous brake motors for atmospheres containing explosive dust FLS --- FCR

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

## General



- **3-phase asynchronous FCR brake motors, FLS series**, according to IEC 34, 72, EN 50281
  - Single speed : **0.55 to 9 kW** power, 80 to 132 mm frame size, 4 poles, 230/400 V or 400 V Δ, 50 Hz.
  - 2 speed : upon request, general use, 2/4 and 4/8 poles, 400 V or 400 V Δ.
- For indirect starting : contact us.

- **IP55 protection**

- **Variable speed motors :**
    - fitted with thermal probes in the winding (compulsory),
    - according to advice
    - forced ventilation is forbidden
- Finish : aluminium casing**  
Corrosion protected screws.

Shaft and flange protection against atmospheric corrosion.  
Individual anti-shock packaging.

### Mains supply

- Standard construction according to IEC 38 that is :
  - 230/400 V + 10 % - 10 % at 50 Hz ;
  - 400 V Δ + 10 % - 10 % at 50 Hz.



**II 3D TMAX 125 °C**

### Description of FLS --- FCR three phase cast iron brake motors

Designation	Material	Comments
Finned housing	Cast iron	- with cast feet or without feet <ul style="list-style-type: none"> <li>• 4 fixing holes for foot mounting</li> <li>• 100 to 132 frame size motor lifting rings</li> </ul> - earth terminal on foot or fins
Stator	Insulated low-carbon magnetic steel with laminations Enamelled cathode copper	- the low carbon content assures the stability of characteristics over time - assembled sheet - semi-closed slots - class F insulation
Rotor	Insulated low-carbon magnetic steel with laminations Aluminium	- inclined slots - squirrel cage pressure die cast in aluminium (or alloys for special applications) - heat shrunk mounting on the shaft - dynamically balanced N class rotor - 1/2 key
Shaft	Steel	- for frame size ≤ 132 S : <ul style="list-style-type: none"> <li>• shaft end fitted with screw and washer</li> <li>• closed keyway</li> </ul>
End shields	Cast iron	- drive end and non-drive end, fixed by tie rods
Bearings		- Dust and damp protected ball bearings, greased for life, 2RS type with the following mounting: <ul style="list-style-type: none"> <li>• blocked at rear to guarantee precise positioning of the load,</li> <li>• heavily preloaded front bearing to eliminate axial oscillation</li> </ul>
Seals	Synthetic rubber	- front and rear seals for shaft tightness
Fan	Aluminium or cast iron alloy	- 2 directions of rotation: straight blades
Fan cover	Steel sheet	- on request, fitted with a drip cover for operation in vertical position, shaft facing down
Terminal box	Cast iron	- <b>IP 55</b> - 4 positions for flange mount motors, opposite the feet for foot mount or foot and flange for frame size ≥ 80 - fitted with a 6 steel terminal board - supplied with polyamide cable gland - 1 earth terminal in each terminal box
Painting		- system Ia, <b>RAL 6000</b> paint finish ( <b>green</b> ) - resistance to saline mist : 250 h (according to NFX 41002)



# FCR asynchronous brake motors for atmospheres containing explosive dust FLS --- FCR

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

## Selection

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

. Motor series FLS - IP 55 - 50 Hz - F Class - 230/400 V  
Aluminium Rotor (ALU) U.G. General Use  
. Break - IP 55 - Built-in brake power supply - Factory set braking torque



**II 3D T<sub>MAX</sub> 125 °C**

**Δ 230 / Y 400 V or Δ 400 V MAIN SUPPLY 50 Hz**

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

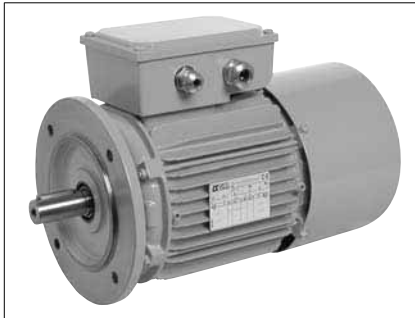
\*: These values are for information only.



# FCR asynchronous brake motors for atmospheres containing explosive dust LSPX --- FCR

**CATEGORY 2  
ZONE 21**

## General



– **3-phase asynchronous brake motors**, LSPX series, according to IEC 34, 72, EN 50281

- Single speed : **0.25 to 15 kW** power, 71 to 160 mm frame size, 4 poles 230/400 V or 400 V Δ, 50 Hz.
- Other polarities and 2 speed : upon request (0.09 to 9 kW power, 71 to 160 mm frame size, general use, PAM or Dahlander; 400 V Y or Δ, 50 Hz.

– **IP65 protection**

– **Variable speed motors :**

- fitted with thermal probes in the winding (compulsory),
- according to advice
- forced ventilation is forbidden

**Finish : aluminium casing**  
Corrosive protected screws.  
Shaft and flange protection against atmospheric corrosion.  
Individual anti-shock packaging.

**Mains supply :**

- Standard construction according to IEC 38 that is :
  - 230/400 V + 10 % – 10 % at 50 Hz ;
  - 400 V Δ + 10 % – 10 % at 50 Hz.

### Description of LSPX --- FCR three phase aluminium brake motors



**II 2D T<sub>MAX</sub> 125 °C**

Designation	Material	Comments
Finned housing	Aluminium alloy	- with cast feet or without feet - pressure die-cast <ul style="list-style-type: none"> <li>• fixing holes for foot mounting</li> <li>• 132 and 112 lifting rings, optional</li> </ul> - earth terminal, optional
Stator	Insulated low-carbon magnetic steel with laminations Cathode copper	- the carbon content assures the stability of characteristics over time - sheets assembled by electric welding - heat shrink assembly in order to provide mechanical resistance - semi-enclosed slots - class F insulation system
Rotor	Insulated low-carbon magnetic steel with laminations	- inclined slots - squirrel cage pressure die cast in aluminium (or alloys for special applications) - heat shrunk mounting on the shaft - dynamically balanced N class rotor - 1/2 key
Shaft	Steel	- shaft end fitted with screw and washer - closed keyway
End shields	Cast iron	- front and rear, assembled by mounting shaft
Bearings		- dust and damp protected ball bearings, greased for life, with the following mounting: <ul style="list-style-type: none"> <li>• blocked at rear to guarantee precise positioning of the load,</li> <li>• heavily preloaded front bearing to eliminate axial oscillation</li> </ul>
Seals	Synthetic rubber	- <b>DE and NDE lip seals for IP 65</b> protection on the shaft
Fan	Aluminium or cast iron alloy	- 2 directions of rotation : straight blades
Fan cover	Steel sheet	- on request, fitted with a drip cover for operation in vertical position, shaft facing down
Terminal box	Aluminium alloy	- <b>IP 65</b> - 4 positions for flange mount motors, opposite the feet for foot mount or floor and flange for frame size ≥ 80 - fitted with a <b>6 steel terminal board and lock nuts</b> - supplied with <b>cable fixed brass cable gland</b> - 1 earth terminal in each terminal box
Painting		- system Ia, <b>RAL 1007</b> paint finish ( <b>yellow</b> ) - resistance to saline mist : 72 h (according to NFX 41002)



# FCR asynchronous brake motors for atmospheres containing explosive dust LSPX --- FCR

**CATEGORY 2  
ZONE 21**

## Selection

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

. Motor series LSPX - IP 65 - 50 HZ - F Class - 230/400 V  
Aluminium Rotor (ALU) U.G. General Use  
. Brake - IP 65 - Built-in brake power supply - Factory set braking torque



**II 2D T<sub>MAX</sub> 125 °C**

**Δ 230 / Y 400 V or Δ 400 V MAIN SUPPLY 50 Hz**

Type	Brake type	Rated power at 50 Hz	Rated speed	Rated current	Power factor	Efficiency	Starting current / Rated current	Starting torque / Rated torque	Rated torque	Moment of inertia	Braking torque	Weight*
		$P_n$ kW	$N_n$ min <sup>-1</sup>	$I_n(400V)$ A	$\cos \varphi$ 4/4	$\eta$ 100 %	$I_d / I_n$	$M_d / M_n$	$M_n$ N.m	$J$ 10 <sup>-3</sup> kg.m <sup>2</sup>	$M_f \pm 20\%$ N.m	kg
LSPX 71 L	FCR J02	0.25	1410	0.85	0.78	54.3	4	2.5	1.68	1.68	5	9.1
LSPX 71 L	FCR J02	0.37	1420	1.2	0.79	60.7	4	2.5	2.49	1.85	5	10
LSPX 71 L	FCR J02	0.55	1400	1.6	0.72	69	4.3	2.3	3.75	2.1	5	11
LSPX 80 L	FCR J02	0.55	1420	1.65	0.71	68	4.3	2.4	3.50	3.8	10	15.5
LSPX 80 L	FCR J02	0.75	1400	2	0.73	72	4.6	2.6	5.12	4.3	10	16.6
LSPX 80 L	FCR J02	0.9	1430	2.4	0.71	77	5.5	3	6.03	4.9	10	18.2
LSPX 90 L	FCR J02	1.1	1440	2.6	0.79	76	5	2.1	7.35	7.3	20	20.5
LSPX 90 L	FCR J02	1.5	1435	3.5	0.80	78	5.3	2.5	10.03	7.9	20	22.5
LSPX 90 L	FCR J02	1.8	1440	4.1	0.79	80	6	2.7	11.95	8.4	20	24.2
LSPX 100 L	FCR J02	2.2	1435	5.2	0.78	78	5.8	2	14.5	9	25	27
LSPX 100 L	FCR J02	3	1450	8.3	0.70	77	6.9	3.1	19.5	10.2	25	30
LSPX 112 MG	FCR J01	4	1450	8.6	0.82	83	6.3	2.2	26.56	15.3	43	41
LSPX 132 S	FCR J01	5.5	1447	10.9	0.85	85.7	6.5	2.3	36.3	18.3	43	48
LSPX 132 M	FCR J02	7.5	1450	15.2	0.82	87	7	2.4	49.4	46	80	70
LSPX 132 M	FCR J02	9	1455	18.1	0.82	87.7	6.9	2.2	59.3	50	105	75
LSPX 160 MP	FCR J02	11	1455	21	0.86	88.4	7.7	2.3	72.2	57	120	85
LSPX 160 LR	FCR J02	15	1455	28.8	0.84	89.4	7.5	2.9	98	63	120	101

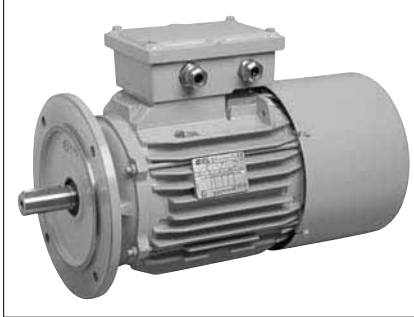
\*: These values are for information only.



# FCR asynchronous brake motors for atmospheres containing explosive dust FLSPX --- FCR

**CATEGORY 2  
ZONE 21**

## General



– **3-phase asynchronous FCR brake motors, FLSPX series**, according to IEC 34, 72, EN 50281

- Single speed : **0.55 to 9 kW** power, 80 to 132 mm frame size, 4 poles 230/400 V ou 400 V Δ, 50 Hz.
- 2 speed : (upon request) general use, 2/4 and 4/8 poles, 400 V or 400 V Δ. For indirect starting: contact us.

– **IP65 protection**

– **Variable speed motors :**

- fitted with thermal probes in the winding (compulsory),
- according to advice
- forced ventilation is forbidden

**Finish : cast iron casing**

Corrosion protected screws.

Shaft and flange protection against atmospheric corrosion.  
Individual anti-shock packaging.

**Mains supply**

- Standard construction according to IEC 38 that is :
  - 230/400 V + 10 % – 10 % at 50 Hz ;
  - 400 V Δ + 10 % – 10 % at 50 Hz.

### Description of FLSPX --- FCR three phase cast iron brake motors



**II 2D TMAX 125 °C**

Designation	Material	Comments
Finned housing	Cast iron	- with cast feet or without feet <ul style="list-style-type: none"> <li>• 4 fixing holes for foot mounting</li> <li>• 132 and 112 lifting rings, optional</li> </ul> - supported or blade earth terminal
Stator	Insulated low-carbon magnetic steel with laminations Enamelled cathode copper	- the low carbon content assures the stability of characteristics in time - assembled sheet metal - semi-enclosed slots - class F insulation
Rotor	Insulated low-carbon magnetic steel with laminations Aluminium	- inclined slots - squirrel cage pressure die cast in aluminium (or alloys for special applications) - heat shrunk mounting on the shaft - dynamically balanced N class rotor - 1/2 key
Shaft	Steel	- for frame size ≤ 132 S : <ul style="list-style-type: none"> <li>• shaft end fitted with screw and washer</li> <li>• closed keyway</li> </ul>
End shields	Cast iron	- drive and non-drive end, fixed by mounting shafts
Bearings		- dust and damp protected ball bearings, greased for life, 2RS type with the following mounting: <ul style="list-style-type: none"> <li>• blocked at rear to guarantee precise positioning of the load</li> <li>• heavily preloaded front bearing to eliminate axial oscillation</li> </ul>
Seals	Synthetic rubber	- <b>DE and NDE lip seals for IP 65</b> protection on the shaft
Fan	Aluminium or cast iron alloy	- 2 directions of rotation : straight blades
Fan cover	Steel sheet	- on request, fitted with a drip cover for operation in vertical position, shaft facing-down
Terminal box	Cast iron	- <b>IP 65</b> - 4 positions for flange mount motors, opposite the feet for foot mount or foot and flange for frame size ≥ 80 - fitted with a <b>6 steel terminal block and captive nuts</b> - supplied with <b>fixed brass cable gland</b> - 1 earth terminal in each terminal box
Painting		- system Ia, <b>RAL 1007</b> paint finish ( <b>yellow</b> ) - resistance to saline mist : 250 h (according to NFX 41002)



# FCR asynchronous brake motors for atmospheres containing explosive dust FLSPX --- FCR

**CATEGORY 2  
ZONE 21**

## Selection

. Motor series FLSPX - IP 65 - 50 HZ - F Class - 230/400 V  
Aluminium Rotor (ALU) U.G. General Use

. Brake - IP 65 - Built-in brake power supply - Factory set braking torque

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



**II 2D T<sub>MAX</sub> 125 °C**

**Δ 230 / Y 400 V or Δ 400 V MAIN SUPPLY 50 Hz**

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

\*: These values are for information only.

# FCR asynchronous brake motors

## U.L. Hoisting applications

### LS --- FCR

## General



**3-phase asynchronous brake motors**, LS series and fail stop brake, according to IEC 34, 72, EN 50281

- Single speed : **0.55 to 15 kW** power, 80 to 160 mm frame size, 4 poles ; 230/400 V or 400 V  $\Delta$ , 50 Hz.
- Two speed : (on request) 0.55 to 6 kW power, 80 to 132 mm frame size at 2/6, 2/8, used for lifting, PAM or Dahlander ; 400 V Y or  $\Delta$ , 50 Hz.

– **Presentation of the brake motor**  
**IP55** protection providing good sealing against liquid projections and dust in an industrial environment.

– **Variable speed motors** :  
 • fitted with thermal probes in the winding (compulsory)

**Finish : aluminium casing**

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

Shaft and flange protection against atmospheric corrosion.  
 Individual anti-shock packaging.

**Brake power supply**

- Standard according to IEC 38 that is :
  - 230/400 V + 10 % – 10 % at 50 Hz ;
 it provides the following supplies
  - 220/380 V + 5 % – 5 % and
  - 240/415 V + 5 % – 5 % at 50 Hz
  - 400 V  $\Delta$  + 10 % – 10 % at 50 Hz.
 Connection for Y/ $\Delta$  starting
  - The brake supply is built-in ; the brake motor is connected as a standard motor. The brake can be connected with a separate AC supply.

**Options**

- Chosen inertia,
- Manual release of the brake
- Drip cover; secondary shaft; thermal protection probes
- Reduced response time; connector
- Encoder and/or forced ventilation

### Description of LS --- FCR three phase aluminium brake motors

Designation	Material	Comments
Finned casing	Aluminium alloy	- with cast feet or without feet - pressure die cast <ul style="list-style-type: none"> <li>• 4 fixing holes for foot mounting</li> <li>• 132 and 112 lifting rings, optional</li> </ul> - earth terminal, optional
Stator	Insulated low-carbon magnetic steel with laminations Cathode copper	- the low carbon content assures the stability of characteristics over time - sheets assembled by electric welding - heat shrink assembly in order to provide mechanical resistance - semi-enclosed slots - class F insulation
Rotor	Insulated low-carbon magnetic steel with laminations	- inclined slots - squirrel cage pressure die cast bin alloy for special application : Lifting - heat shrunk mounting on the shaft - dynamically balanced N class keyed rotor - 1/2 key
Shaft	Steel	- shaft end fitted with screw and washer - closed keyway
End shields	Cast iron	- drive end and non-drive end, fixed by mounting shaft
Bearings		- dust and damp protected ball bearings, greased for life, with the following mounting : <ul style="list-style-type: none"> <li>• blocked at rear to guarantee precise positioning of the load, whatever the direction of the force</li> <li>• heavily preloaded front bearing to eliminate axial oscillation</li> </ul>
Seals	Synthetic rubber	- IP 55 front and back shaft seals
Fan	Aluminium or cast iron alloy	- 2 directions of rotation: straight blades
Fan cover	Steel sheet	- on request, fitted with a drip cover for operation in vertical position, shaft facing down
Terminal box	Aluminium alloy	- IP 55, 4 positions for flange mount motors opposite the feet for foot mount or foot and flange for frame size $\geq 80$ - fitted with a 6 steel terminal board (optionally, brass) and connection by copper bars - supplied with polyamide cable gland - 1 earth terminal in each terminal box
Painting		- system Ia, RAL 6000 paint finish (green) - resistance to saline mist: 72 h (according to NFX 41002)

# FCR asynchronous brake motors U.L. Hoisting applications LS --- FCR

## Selection

. Motor series LS - IP 55 - 50 HZ - F Class - 230/400 V  
DP Rotor - Keyed weight - U.L. Used for Lifting  
. Brake - IP 55 - Built-in brake power supply - Factory set braking torque

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

Δ 230 / Y 400 V or Δ 400 V MAIN SUPPLY **50 Hz**

Motor type	Brake type	Rated power at 50 Hz	Rated speed	Rated current	Power factor	Efficiency	Starting current / Rated current	Starting torque / Rated torque	Rated torque	Moment of inertia	Braking torque	Weight* IM B5	
		$P_n$ kW	$N_n$ min <sup>-1</sup>	$I_n$ (400V) A	$\cos \varphi$ 4/4	$\eta$ 100 %	$I_d / I_n$	$M_d / M_n$	$M_n$ N.m	$J$ 10 <sup>-3</sup> kg.m <sup>2</sup>	$M_f \pm 20\%$ N.m	J01 to J03 kg	J05 kg
LS 80 L	FCR J02	0.55	1370	1.64	0.71	68	3.8	2.9	3.50	3.8	10	15.5	19.2
LS 80 L	FCR J02	0.75	1370	2	0.77	70	4.2	2.7	5.12	4.3	10	16.6	20.3
LS 90 L	FCR J02	1.1	1360	2.8	0.8	70	3.9	1.9	7.35	7.3	20	20.5	25
LS 90 L	FCR J02	1.5	1380	3.8	0.78	73.5	4.4	2.3	10.03	7.9	20	22.5	27
LS 90 L	FCR J02	1.8	1400	4.2	0.81	77.3	5.4	2.7	11.95	8.4	20	24.2	28.7
LS 100 L	FCR J02	2.2	1400	5.4	0.77	76	5.3	2.5	14.5	9	25	27	-
LS 100 L	FCR J02	3	1410	7.1	0.77	79	5.4	2.7	19.5	10.2	32	30	-
LS 112 MG	FCR J01	4	1440	8.8	0.82	82	6.4	2.9	26.56	15.3	43	41	-
LS 132 SM	FCR J02	5.5	1420	12	0.85	80	5.7	2.6	37	42.2	80	61	-
LS 132 M	FCR J02	7.5	1430	16	0.81	85	6.6	2.7	49.4	46	105	70	-
LS 132 M	FCR J02	9	1440	20	0.81	83	6.9	3.1	59.3	50	120	75	-
LS 160 MP	FCR J02	11	1450	21.7	0.84	87	7.6	3.1	72.2	57	160	85	-
LS 160 LR	FCR J02	15	1430	27.8	0.88	87	7.4	3.1	98	63	160	101	-

\*: These values are for information only.



# FCR asynchronous brake motors

## U.L. Hoisting applications

### LS --- FCR

## Selection

. Motor series LS - IP 55 - 50 HZ - F Class - 230/400 V  
 DP Rotor - Keyed weight - U.L. Used for Lifting  
 . Brake - IP 55 - Separated supply - Factory set braking torque

**2-6**  
poles  
3000-1000 min<sup>-1</sup>

Y 400 V MAIN SUPPLY **50 Hz**

Motor type	Brake type	Rated power at 50 Hz		Rated speed		Rated current		Power factor		Efficiency		Starting current / Rated current		Starting torque / Rated torque		Rated torque		Moment of inertia	Braking torque	Weight* IM B5			
		$P_n$ kW		$N_n$ min <sup>-1</sup>		$I_n(400V)$ A		Cos $\varphi$ 4/4		$\eta$ 100 %		$I_d / I_n$		$M_d / M_n$		$M_n$ N.m		$J$ 10 <sup>-3</sup> kg.m <sup>2</sup>	$M_f \pm 20\%$ N.m	kg			
		GV	PV	GV	PV	GV	PV	GV	PV	GV	PV	GV	PV	GV	PV	GV	PV	-	-	-			
LS 80 L	FCR J02	0.55	0.18	Contact us.																		10	18.2
LS 90 L	FCR J02	0.75	0.25	2760	925	2.1	1.8	0.85	0.78	62	62	4.2	4	3.2	2.7	2.5	2.5	7.2	20	23			
LS 90 L	FCR J02	1.5	0.5	2820	920	3.8	1.5	0.8	0.77	72	63	4.7	3.3	2.9	2	5	5	8.5	20	25			
LS 100 L	FCR J02	2.2	0.75	2855	925	5.4	2.1	0.8	0.76	73	69	6.1	4.3	4.4	2.7	7.5	7.5	9.8	25	31			
LS 112 MG	FCR J01	3	0.9	Contact us.																			43
LS 132 SM	FCR J02	4	1.3	Contact us.																			75
LS 132 M	FCR J02	6	2	Contact us.																			80

1. 180 V brake coil ; GV : high speed PV : low speed  
 \* : These values are for information only.

. Motor series LS - IP 55 - 50 HZ - F Class - 230/400 V  
 DP Rotor - Keyed weight - U.L. Used for Lifting  
 . Brake - IP 55 - Separated supply - Factory set braking torque

**2-8**  
poles  
3000-750 min<sup>-1</sup>

Y 400 V MAIN SUPPLY **50 Hz**

Motor type	Brake type	Rated power at 50 Hz		Rated speed		Rated current		Power factor		Efficiency		Starting current / Rated current		Starting torque / Rated torque		Rated torque		Moment of inertia	Braking torque	Weight* IM B5
		$P_n$ kW		$N_n$ min <sup>-1</sup>		$I_n(400V)$ A		Cos $\varphi$ 4/4		$\eta$ 100 %		$I_d / I_n$		$M_d / M_n$		$M_n$ N.m		$J$ 10 <sup>-3</sup> kg.m <sup>2</sup>	$M_f \pm 20\%$ N.m	kg
		GV	PV	GV	PV	GV	PV	GV	PV	GV	PV	GV	PV	GV	PV	GV	PV	-	-	-
LS 80 L	FCR J02	0.55	0.12	2870	670	1.55	0.7	0.8	0.65	65	40	4.8	2	1.95	1.82	1.9	1.7	4.2	10	18.2
LS 90 L	FCR J02	0.75	0.18	2650	690	2.1	1.1	0.88	0.65	59	39	3.5	1.9	2.8	1.6	2.5	2.5	7.2	20	23
LS 90 L	FCR J02	1.1	0.33	2860	710	3.1	2	0.74	0.55	70	45	5.3	2.5	3.68	2.31	3.8	4.5	8.5	20	25
LS 100 L	FCR J02	2.2	0.55	2760	685	5.4	2.2	0.82	0.68	70	52	4.6	2.9	2.8	2.04	7.5	7.5	9.8	25	31
LS 112 MG	FCR J01	3	0.75	2870	705	8.2	3.1	0.75	0.63	70	56	5.4	2.7	3.5	1.95	10	10	15.3	43	43
LS 132 SM	FCR J02	4	1	2810	710	12	4.3	0.7	0.54	67	62	3.8	3	2.44	2	13.5	13.5	46.2	105	75
LS 132 M	FCR J02	6	1.5	2845	720	17.5	6.7	0.7	0.54	72	59	4.5	3.1	3.2	2.28	20	20	51	105	80

1. 180 V brake coil ; GV : high speed PV : low speed  
 \* : These values are for information only.

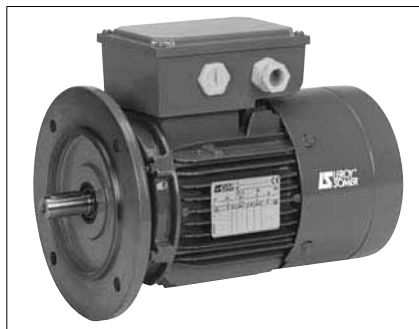
**FCR asynchronous brake motors  
U.L. Hoisting applications  
LS --- FCR**

# FCR asynchronous brake motors

## U.T. Horizontal motions applications

### LS --- FCR

## General



- **3-phase asynchronous brake motors**, LS series, according to IEC 34, 72, EN 50281
  - Single speed : **3.5 to 120 N.m** starting moment, 71 to 132 mm frame size, 4 poles ; 230/400 V or 400 V  $\Delta$ , 50 Hz.
  - Two speed : 2.5 to 40 N.m starting moment, 71 to 132 mm frame size with 2/8 poles used for transport, two coils 400 V Y or  $\Delta$ , 50 Hz.
- **Presentation of the brake motor**  
**IP55** protection providing good sealing against liquid projections and dust in an industrial environment.
- **Variable speed motors** :
  - fitted with thermal probes in the winding (compulsory)

**Finish : aluminium casing**  
 Routine test, no load test, dielectric test, verification of resistance and of the direction of rotation.  
 Shaft and flange protection against atmospheric corrosion.  
 Individual anti-shock packaging.

**Brake motor mains supply**  
 • Standard according to IEC 38 that is :  
 - 230/400 V + 10 % - 10 % at 50 Hz ; it provides the following supplies 220/380 V + 5 % - 5 % and 240/415 V + 5 % - 5 % at 50 Hz  
 - 400 V  $\Delta$  + 10 % - 10 % at 50 Hz. It provides the following supplies  
 Connection for Y/ $\Delta$  starting  
 • The brake supply is built-in ; the brake motor is connected as a standard motor. The brake can be connected to a separate AC supply.

**Options**  
 • Chosen inertia (Frame 71 to 100), braking torque ; hand release of the brake  
 • Drip cover; secondary shaft ; thermal protection probes  
 • Reduced response time; connector  
 • Encoder and/or forced ventilation

### Description of LS --- FCR aluminium three phase brake motors

Designation	Material	Comments
Finned housing	Aluminium alloy	- with cast feet or without feet - pressure die cast <ul style="list-style-type: none"> <li>• 4 fixing holes for foot mounting</li> <li>• 132 and 112 lifting rings, optional</li> </ul> - earth terminal, optional
Stator	Insulated low-carbon magnetic steel with laminations Cathode copper	- the low carbon content assures the stability of characteristics in time - sheets assembled by electric welding - heat shrink assembly in order to provide mechanical resistance - semi-enclosed slots - class F insulation
Rotor	Insulated low-carbon magnetic steel with laminations	- inclined slots - squirrel cage pressure die cast in alloy for transportation applications - heat shrunk mounting on the shaft - dynamically balanced N class rotor - 1/2 key
Shaft	Steel	- shaft end fitted with screw and washer - closed keyway
End shields	Cast iron	- drive end and non-drive end, fixed by mounting shaft
Bearings		- dust and damp protected ball bearings, greased for life, with the following mounting : <ul style="list-style-type: none"> <li>• blocked at rear to guarantee precise positioning of the load, whatever the direction of the force</li> <li>• heavily preloaded front bearings to eliminate axial oscillations</li> </ul>
Seals	Synthetic rubber	- IP 55 front and rear shaft seals
Fan	Aluminium or cast iron alloy	- 2 directions of rotation : straight blades
Fan cover	Steel sheet	- on request, fitted with a drip cover for operation in vertical position, shaft facing down
Terminal box	Aluminium alloy	- IP 55, 4 positions for flange mount motors opposite the feet for foot mount or foot and flange for frame size $\geq 80$ - fitted with a steel terminal board and fixed screws - supplied with polyamide cable gland - 1 earth terminal in each terminal box
Painting		- system Ia, RAL 6000 paint finish (green) - resistance to saline mist: 72 h (according to NFX 41002)

# FCR asynchronous brake motors U.T. Horizontal motions applications LS --- FCR

## Selection

. Motor series LS - IP 55 - 50 HZ - F Class - 230/400 V  
U.T. Used for Transportation

. Brake - IP 55 - Built-in brake power supply - Factory set braking torque

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

Δ 230 / Y 400 V or Δ 400 V MAIN SUPPLY **50 Hz**

Motor type	Brake type	Starting torque at 50 Hz	Rated speed	Average starting torque 400 V 1300min <sup>-1</sup>	Average starting torque 400 V 1200min <sup>-1</sup>	Starting current 400 V	Rated current 400 V 1200min <sup>-1</sup>	Rated torque 400 V 1300min <sup>-1</sup>	Rated torque 400 V 1200 min <sup>-1</sup>	Input power kW	Braking torque M <sub>f</sub> ±20% N.m	Moment of inertia J 10 <sup>-3</sup> kg.m <sup>2</sup>	Brake current		Weight * IM B5 kg
		M <sub>d</sub> N.m	N <sub>n</sub> min <sup>-1</sup>	M <sub>dm</sub> N.m	M <sub>dm</sub> N.m	I <sub>d</sub> A	I <sub>n</sub> A	M <sub>n</sub> N.m	M <sub>n</sub> N.m				I: 100 V A	I: 180 V A	
LS 71 L	FCR J02	3.5	1410	2.8	2.9	1.7	0.7	1	1.4	0.25	1.6	2.5	0.46	0.27	9.1
LS 71 L	FCR J02	5	1420	3.8	3.9	2.4	1.1	1.4	2	0.37	2	2.5	0.46	0.27	10
LS 71 L	FCR J02	7.5	1400	6.1	6.4	3.4	1.6	1.8	2.7	0.55	2.4	2.5	0.46	0.27	11
LS 71 L	FCR J02	10	1410	7.7	8.2	4.5	2.6	2.3	3.3	0.75	4	2.5	0.46	0.27	12.5
LS 80 L	FCR J02	15	1420	12.2	12.7	5.6	2.45	4.3	6	1.1	6	5	0.54	0.31	18.2
LS 90 L	FCR J02	20	1440	14.9	15.7	7.3	2.9	4.9	6.2	1.5	6	10	0.65	0.35	20.5
LS 90 L	FCR J02	25	1435	15.2	16	8.5	3.15	5.3	7.6	1.8	8	10	0.65	0.35	22.5
LS 90 L	FCR J02	30	1440	19.4	20.4	9.3	3.45	6.3	8.8	2.2	9	10	0.65	0.35	24.2
LS 100 L	FCR J02	40	1435	32.5	33.9	16.4	5.7	10.8	14.9	3	15	11.5	0.65	0.35	27
LS 112 MG	FCR J01	55	1450	43	46	22.6	7.5	20	25	4	22	35.7	0.79	0.44	41
LS 132 M	FCR J02	80	1450	64	67	31.5	9.5	26	36	6	40	55.5	-	0.49	70
LS 132 M	FCR J02	120	1455	94	97	47.5	14	34	47	9	40	55.5	-	0.49	75

\*: These values are for information only.

. Motor series LS - IP 55 - 50 HZ - F Class - 230/400 V  
U.T. Used for Transportation

. Brake - IP 55 - Separated supply - Factory set braking torque

. Brake - IP 55 - Built-in brake power supply - Factory set braking torque

**2-8**  
poles  
3000-750 min<sup>-1</sup>

400 V MAIN SUPPLY **50 Hz**

Motor type	Brake type	Rated power at 50 Hz	Average starting torque 400 V 2600min <sup>-1</sup>	Average starting torque 400 V 2400min <sup>-1</sup>	Starting current 400 V	Rated Current 400 V 2400 / 600	Rated torque 400 V 2600min <sup>-1</sup>	Rated torque 400 V 2400 min <sup>-1</sup>	Input power 2400 / 600	Braking torque M <sub>f</sub> ±20% N.m	Moment of inertia J 10 <sup>-3</sup> kg.m <sup>2</sup>	Brake current		Rh <sup>1</sup>	Electromagnet resistance 100 V 180 V		Weight * IM B5 kg
		M <sub>d</sub> N.m	M <sub>dm</sub> N.m	M <sub>dm</sub> N.m	I <sub>d</sub> A	I <sub>n</sub> A	M <sub>n</sub> N.m	M <sub>n</sub> N.m	kW			I: 100 V A	I: 180 V A		R	R	
LS 71 L	FCR J02	2.5	2.1	2.2	3.4 / 0.85	1.1 / 0.6	0.55	0.75	0.25/0.06	1.2	1.5	0.46	0.27	200	219	665	9.1
LS 71 L	FCR J02	3.5	3.5	3.9	5.5 / 1.8	1.6 / 1.3	0.88	1.4	0.37 / 0.09	1.6	1.5	0.46	0.27	95	219	665	10
LS 71 L	FCR J02	4.5	4.2	4.5	6.3 / 2.2	1.6 / 1.3	1.1	1.7	0.55 / 0.13	1.6	1.6	0.46	0.27	80	219	665	12.5
LS 80 L	FCR J02	5	3.9	4.1	5.2 / 1.6	2.2 / 1.3	2.2	2.4	0.75 / 0.19	3	5.5	0.54	0.31	100	186	572	18.2
LS 90 L	FCR J02	7.5	4.4	4.7	5.2 / 2.3	2.5 / 1.7	1.7	2.4	1.1 / 0.27	4	10	0.65	0.35	80	155	510	23
LS 90 L	FCR J02	10	9.3	9.7	10.8 / 3	4.7 / 2	4.4	6	1.5 / 0.37	6	10	0.65	0.35	50	155	510	25
LS 100 L	FCR J02	15	13.9	14.7	16.3 / 3.6	6 / 2.35	6	8.1	2.2 / 0.55	9	11.5	0.65	0.35	40	155	510	31
LS 112 MG	FCR J01	20	14.9	15.4	20.5 / 5.5	7.1 / 3.1	5.4	8	3 / 0.75	16	35.7	0.79	0.44	30	128	412	43
LS 132 M	FCR J02	30	25.2	25.8	33 / 9	12.6 / 4	11.8	15.8	4.5 / 1.1	40	55.5	-	0.49	18	-	361	75
LS 132 M	FCR J02	40	31.4	32.3	36.5 / 10.5	14.5 / 4.9	16	21.4	6 / 1.5	40	55.5	-	0.49	15	-	361	80

1. Hypersynchronous resistance for 1 motor ; for x motors, divide R by x.  
\*: These values are for information only.

# FCR asynchronous brake motors

## U.G. General Use

### LSMVR --- FCR

## General



**Closed 3-phase asynchronous brake motors**, LSMVR series and stop control brake, according to IEC 34, 72, EN 50281

- Single speed : **0.25 to 11 kW** power, 71 to 160 mm frame size, 2, 4, 6 poles 230/400 V or 400 V  $\Delta$ , 50 Hz.

– **Presentation of the brake motor**  
**IP55** protection providing good sealing against liquid projections and dust in an industrial environment.

– **Variable speed motors :**

- fitted with thermal probes in the winding (compulsory)

**Options**

- Chosen braking moments ; manual release of the brake
- Drip cover ; secondary shaft ;
- release connector
- Encoders and/or forced ventilation

**Finish : aluminium casing**  
 Routine test, no load test, dielectric test, verification of resistance and of the direction of rotation.  
 Shaft and flange protection against atmospheric corrosion.  
 Individual anti-shock packaging.

**Brake motor mains supply**

- Standard according to IEC 38 that is :
  - 230/400 V + 10 % – 10 % at 50 Hz ;
 it provides the following supplies
  - 220/380 V + 5 % – 5 % and
  - 240/415 V + 5 % – 5 % at 50 Hz
  - 400 V  $\Delta$  + 10 % – 10 % at 50 Hz.
 Connection for the Y/ $\Delta$  starting
  - The brake supply is built-in ; the brake motor is connected as a standard motor. The brake can be connected with a separate AC supply.

### Description of LSMVR --- FCR aluminium three phase brake motors

Designation	Material	Comments
Finned housing	Aluminium alloy	<ul style="list-style-type: none"> <li>- with cast feet or without feet</li> <li>- pressure die-cast               <ul style="list-style-type: none"> <li>• 4 fixing holes for foot mounting</li> <li>• series lifting rings at 160 frame size, optionally 132 and 112</li> </ul> </li> <li>- earth terminal, optional</li> </ul>
Stator	Insulated low-carbon magnetic steel with laminations Cathode copper	<ul style="list-style-type: none"> <li>- the low carbon content assures the stability of characteristics in time</li> <li>- assembled sheet metal</li> <li>- semi-enclosed slots</li> <li>- magnetic circuit in compliance with the frequency variation</li> <li>- soaking allowing resistance to sudden voltage variations due to high voltage cuts of IGBT transistor drives according to IEC 34-17 standard</li> <li>- class F insulation</li> <li>- thermal protection provided by 3 CTP probes (1 per phase)</li> </ul>
Rotor	Insulated low-carbon magnetic steel with laminations	<ul style="list-style-type: none"> <li>- inclined slots</li> <li>- squirrel cage pressure die cast in aluminium (or alloys for special applications)</li> <li>- heat shrunk mounting on the shaft</li> <li>- S or R class dynamically balanced rotor according to frame size</li> </ul>
Shaft	Steel	<ul style="list-style-type: none"> <li>- shaft end fitted with screw and washer</li> <li>- closed keyway</li> </ul>
End shields	Cast iron	<ul style="list-style-type: none"> <li>- drive end and non-drive end, fixed by mounting shafts</li> </ul>
Bearings		<ul style="list-style-type: none"> <li>- dust and damp protected ball bearings, greased for life, with the following mounting :               <ul style="list-style-type: none"> <li>• blocked at rear to guarantee precise positioning of the load, whatever the direction of the force</li> <li>• heavily preloaded front bearing to eliminate axial oscillation</li> </ul> </li> </ul>
Seals	Synthetic rubber	<ul style="list-style-type: none"> <li>- IP 55 front and rear shaft seals</li> </ul>
Fan	Aluminium or cast iron alloy	<ul style="list-style-type: none"> <li>- 2 directions of rotation : straight blades</li> </ul>
Fan cover	Steel sheet	<ul style="list-style-type: none"> <li>- on request, fitted with a drip cover for operation in vertical position, shaft facing down</li> </ul>
Terminal box	Aluminium alloy	<ul style="list-style-type: none"> <li>- IP 55, 4 positions for flange mount motors, opposite the feet for foot mount or foot and flange</li> <li>- fitted with a steel terminal board (brass, optionally) and connection by copper bars</li> <li>- supplied with polyamide cable gland</li> <li>- 1 earth terminal in each terminal box</li> </ul>
Painting		<ul style="list-style-type: none"> <li>- system Ia, RAL 6000 paint finish (green)</li> <li>- resistance to saline mist : 72 h (according to NFX 41002)</li> </ul>

# FCR asynchronous brake motors

## U.G. General Use

### LSMVR --- FCR

## Selection

**2**  
poles  
3000 min<sup>-1</sup>

. Motor series LSMVR - IP 55 - 50 HZ - Class F - 230/400 V  
Aluminium (ALU) Rotor - U.G. General Usage  
. Brake - IP 55 - Separated supply - Factory set braking torque

Δ 230 / Y 400 V or Δ 400 V MAIN SUPPLY **50 Hz**

Motor type	Brake type	Rated power at 50 Hz	Rated speed	Rated current	Rated torque	Braking torque	Release response time	Standard braking response time	DC <sup>2</sup> cut braking response time	Moment of inertia	Weight* IM B5
		$P_n$ kW	$N_n$ min <sup>-1</sup>	$I_n(400V)$ A	$M_n$ N.m	$M_f \pm 20\%$ N.m	$t_1$ ms	$t_2$ ms	$t_2$ ms	$J$ 10 <sup>-3</sup> kg.m <sup>2</sup>	kg
LSMVR 71 L	FCR J01	0.37					Contact us.				12
LSMVR 71 L	FCR J01	0.55					Contact us.				13
LSMVR 80 L	FCR J01	0.75	2865	1.6	2.4	10	80	85	≤ 10	1.9	16.8
LSMVR 80 L	FCR J01	1.1	2880	2.2	3.5	10	80	85	≤ 10	2.1	18.8
LSMVR 90 L	FCR J01	1.5	2885	2.9	4.8	20	150	140	≤ 10	3.5	26
LSMVR 90 L	FCR J01	2.2	2890	4.5	7.1	20	150	140	≤ 10	4.1	28.4
LSMVR 100 L	FCR J01	3	2875	5.7	9.7	25	150	140	≤ 10	4.7	33.4
LSMVR 112 MG	FCR J01	4	2900	7.5	13	43	150	580	≤ 40	13.5	52
LSMVR 132 SM	FCR J02	5.5	2942	10.1	18	80	280	620	≤ 90	50.6	78
LSMVR 132 M	FCR J02	7.5	2915	13.6	24	80	280	620	≤ 90	55.9	87
LSMVR 132 M	FCR J02	9					Contact us.				97
LSMVR 160 MP	FCR J02	11					Contact us.				110

1. Take into account the maximum mechanical speed : 4000 min<sup>-1</sup>. 2. Braking time at power out , when DC is cut.

\*: These values are for information only.

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

. Motor series LSMVR - IP 55 - 50 HZ - Class F - 230/400 V  
Aluminium Rotor (ALU) - U.G. General Use  
. Brake - IP 55 - Separated supply - Factory set braking torque

Δ 230 / Y 400 V or Δ 400 V MAIN SUPPLY **50 Hz**

Motor type	Brake type	Rated power at 50 Hz	Rated speed	Rated current	Rated torque	Braking torque	Release response time	Standard braking response time	DC <sup>2</sup> cut braking response time	Moment of inertia	Weight* IM B5
		$P_n$ kW	$N_n$ min <sup>-1</sup>	$I_n(400V)$ A	$M_n$ N.m	$M_f \pm 20\%$ N.m	$t_1$ ms	$t_2$ ms	$t_2$ ms	$J$ 10 <sup>-3</sup> kg.m <sup>2</sup>	kg
LSMVR 71 L	FCR J01	0.25	1445	0.84	1.68	5	60	90	≤ 10	2.1	11.5
LSMVR 71 L	FCR J01	0.37	1440	1.3	2.49	5	60	90	≤ 10	2.5	12.5
LSMVR 80 L	FCR J01	0.75	1435	2	5.12	10	80	85	≤ 10	3.4	16.6
LSMVR 90 L	FCR J01	1.1	1445	2.5	7.35	20	150	140	≤ 10	5.7	22.7
LSMVR 90 L	FCR J01	1.5	1435	3.2	10.03	20	150	140	≤ 10	6.7	24.7
LSMVR 100 L	FCR J01	2.2	1440	4.7	14.5	25	150	140	≤ 10	6.9	30
LSMVR 100 L	FCR J01	3	1435	6.3	19.5	25	150	140	≤ 10	8.9	33
LSMVR 112 MG	FCR J01	4	1440	8	26.56	43	150	580	≤ 40	19.3	49.3
LSMVR 132 SM	FCR J02	5.5	1460	10.4	36.3	80	280	620	≤ 90	60.4	71.3
LSMVR 132 M	FCR J02	7.5	1455	14	49.4	80	280	620	≤ 90	62	77.3
LSMVR 132 M	FCR J02	9	1460	16.8	59.3	105	280	620	≤ 90	65.5	80
LSMVR 160 MR	FCR J02	11	1460	22	72.2	120	280	550	≤ 90	96	102

1. Take into account the maximum mechanical speed : 4000 min<sup>-1</sup>. 2. Braking time at power out , when DC is cut.

\*: These values are for information only.

# FCR asynchronous brake motors

## U.G. General Use

### LSMVR --- FCR

## Selection



. Motor series LSMVR - IP 55 - 50 HZ - Class F - 230/400 V  
 Aluminium (ALU) Rotor - U.G. General Usage  
 . Brake - IP 55 - Separated supply - Factory set braking torque

Δ 230 / Y 400 V o Δ 400 V MAIN SUPPLY **50 Hz**

Motor type	Brake type	Rated power at 50 Hz	Rated speed	Rated current	Rated torque	Braking torque	Release response time	Standard braking response time	DC <sup>2</sup> out braking response time	Moment of inertia	Weight* IM B5
		$P_n$ kW	$N_n$ min <sup>-1</sup>	$I_n(400V)$ A	$M_n$ N.m	$M_f \pm 20\%$ N.m	$t_f$ ms	$t_2$ ms	$t_2$ ms	$J$ 10 <sup>-3</sup> kg.m <sup>2</sup>	kg
LSMVR 71 L	FCR J01	0.18					Contact us				11.5
LSMVR 71 L	FCR J01	0.25					Contact us				12.5
LSMVR 80 L	FCR J01	0.37					Contact us				16.8
LSMVR 80 L	FCR J01	0.55					Contact us				18.8
LSMVR 90 L	FCR J01	0.75	930	2.1	7.2	20	150	140	≤ 10	5.7	22.7
LSMVR 90 L	FCR J01	1.1	915	3	10.5	20	150	140	≤ 10	6.6	24.7
LSMVR 100 L	FCR J01	1.5	905	4.2	14.3	25	150	140	≤ 10	7.6	28.7
LSMVR 112 MG	FCR J01	2.2	905	5.8	21	43	150	580	≤ 40	13	39
LSMVR 132 M	FCR J02	4	965	9.4	38.2	80	280	620	≤ 90	78.7	71
LSMVR 132 M	FCR J02	5.5	970	12.9	52.5	80	280	620	≤ 90	86.5	76

1. Take into account the maximum mechanical speed : 4000 min<sup>-1</sup>. 2. Braking time at power out , when DC is cut.

\* : These values are for information only.

# FCR asynchronous brake motors

## Characteristics

### Mains supply connection

The standard brake motor terminal box has the following holes drilled on sides 1 and 3:

- LS 71 to 132 S :
  - 2 x (ISO M20x1.5 + ISO M20x1.5),
- LS 132 M and LS 160 MP, LR :
  - 2 x (ISO M25x1.5 + ISO M20x1.5).

It is supplied with holes closed by blanking plugs and provided with a cable gland kit according to the following table, including ISO 20c for separate power supply (fit with a plug if this is not used).

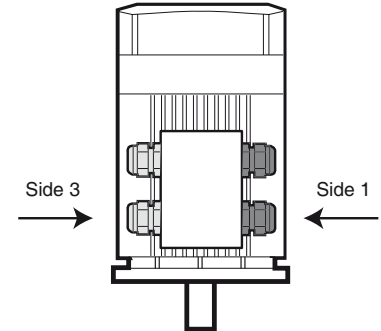


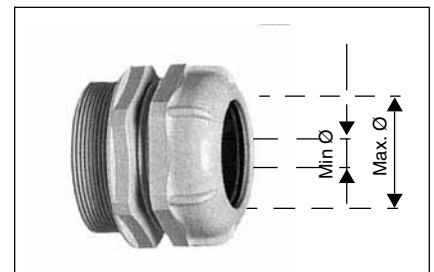
Table of terminal boxes and cable glands for LS and LSMVR series FCR brake motors, for 400 V rated power supply voltage, standard polyamide cable gland.

Frame size	Terminal box material	Single speed motor		2 speed motor			Cable gland for accessories <sup>1</sup>	
		YΔ Starting	Direct starting	1 Dalhandler winding	2 windings 1 voltage	2 windings 2 voltages	Accessory(ies) quantity 1 or 2	Accessories quantity > 2
71	Aluminium alloy	-	ISO 20b ISO 20c	ISO 20b ISO 20c	ISO 20b ISO 20c	2 x ISO 20b ISO 20c	ISO 20c	ISO 20b
80	Aluminium alloy	-	ISO 20c	ISO 20c	ISO 20c	2 x ISO 20 ISO 20c	ISO 20c	ISO 20b
90	Aluminium alloy	-	ISO 20 ISO 20c	ISO 20 ISO 20c	ISO 20 ISO 20c	2 x ISO 20 ISO 20c	ISO 20c	ISO 20b
100	Aluminium alloy	2 x ISO 20 ISO 20c	ISO 20 ISO 20c	ISO 20 ISO 20c	ISO 20 ISO 20c	2 x ISO 20 ISO 20c	ISO 20c	ISO 20b
112 and 132 S	Aluminium alloy	2 x ISO 20 ISO 20c	ISO 20 ISO 20c	ISO 20 ISO 20c	ISO 20 ISO 20c	2 x ISO 20 ISO 20c	ISO 20c	ISO 20b
132 M	Aluminium alloy	2 x ISO 25 ISO 20c	ISO 25 ISO 20c	ISO 25 ISO 20c	2 x ISO 25 ISO 20c	2 x ISO 25 ISO 20c	ISO 20c	ISO 20b
160 MP, LR	Aluminium alloy	2 x ISO 25 ISO 20c	ISO 25 ISO 20c	2 x ISO 25 ISO 20c	2 x ISO 25 ISO 20c	2 x ISO 25 ISO 20c	ISO 20c	ISO 20b

1. Sensor (PTO, PTF...), resistors... In LSMVR series motor, consider the column : > 2 accessories for the PTC sensors supplied in series.

### Cable gland clamping capacity (NFEN 50 262 standards)

Type of cable gland	Clamping capacity	
	Standard CG (polyamide)	
	Min. cable Ø (mm)	Max. cable Ø (mm)
ISO 20c	5.5	8.5
ISO 20b	7	10.5
ISO 20	9.5	15
ISO 25	13	19



Polyamide cable gland

On request, the terminal boxes can be supplied without cable gland.



# FCR asynchronous brake motors

## Characteristics

### Performances

#### Available braking torque (N.m)

Brake motor type	Braking torque (N.m)																				
	1.2	1.6	2	2.4	4	5	6	7.5													
LS 71 FCR																					
LS 80 FCR			2	3	3.5	4.5	6	8	10	12											
LS 90 FCR					4		6	8	9		15	20	25								
LS 100 FCR					4		6	8	9		15	20	25	32							
LS 112 MG FCR											16	22		32	43						
LS 132 S FCR											16	22		32	43						
LS 132 SM, M FCR														40	50	80	105	120	160		
LS 160 MP, LR FCR																40	50	80	105	120	160

#### Moment of inertia for brake and brake motor (10<sup>-3</sup> kg m<sup>2</sup>)

Motor type	Power kW	Moment of inertia															
		2p				4p				6p				8p			
		Flywheel				Flywheel				Flywheel				Flywheel			
		J01	J02	J03	J05	J01	J02	J03	J05	J01	J02	J03	J05	J01	J02	J03	J05
LS 71 L	FCR single	0.4	1	3.2	6	0.4	1	3.2	6	0.4	1	3.2	6	0.4	1	3.2	6
	0.12																
	0.18													1.7	2.3	4.5	7.3
	0.25					1.08	1.68	3.88	6.68	1.7	2.3	4.5	7.3				
	0.37	0.75	1.35	3.55	6.35	1.25	1.88	4.05	6.85								
	0.55	0.85	1.45	3.65	6.45	1.5	2.1	4.3	7.1								
	0.75					1.5	2.1	4.3	7.1								
LS 80 L	FCR single	1	2.5	5	12.3	1	2.5	5	12.3	1	2.5	5	12.3	1	2.5	5	12.3
	0.18													4.1	5.6	8.1	15.4
	0.25													5.1	6.6	9.1	16.4
	0.37									4.2	5.7	8.2	15.5				
	0.55					2.3	3.8	6.3	13.6	5.2	6.7	9.2	16.5				
	0.75	1.7	3.2	5.7	13	2.8	4.3	6.8	14.1								
	0.9					3.4	4.9	7.4	14.7								
LS 90 L	FCR single	1.8	4.7	9	20	1.8	4.7	9	20	1.8	4.7	9	20	1.8	4.7	9	20
	0.37													4.8	7.7	12	23
	0.55													5.4	8.3	12.6	23.6
	0.75									5.7	8.6	12.9	23.9				
	1.1					4.4	7.3	11.6	22.6	6.6	9.5	13.8	24.8				
	1.5	3.2	6.1	10.4	21.4	5	7.9	12.2	23.2								
	1.8	3.5	6.4	10.7	21.7	5.5	8.4	12.7	23.7								
LS 100 L	FCR single	1.8	4.7	9	-	1.8	4.7	9	-	1.8	4.7	9	-	1.8	4.7	9	-
	0.75													6.5	9.4	13.7	
	1.1													8.6	11.5	15.8	
	1.5									7.6	10.5	14.8					
	2.2					6.1	9	13.3									
LS 112 MG	FCR single	4.3	-	-	-	4.3	-	-	-	4.3	-	-	-	4.3	-	-	-
	1.5													19.3			
	2.2									13							
	4	11.2				15.3											
LS 132 S	FCR single	4.3	-	-	-	4.3	-	-	-	4.3	-	-	-	-	-	-	-
	3									22.3							
LS 132 SM, M	FCR single	-	27	-	-	-	27	-	-	-	27	-	-	-	27	-	-
	2.2													52			
	3													60			
	4									61							
	5.5									66							
	7.5		35.8				46										
LS 160 MP, LR	FCR single	-	27	-	-	-	27	-	-	-	-	-	-	-	-	-	-
	11		46				57										
	15		50				63										

# FCR asynchronous brake motors

## Characteristics

### Characteristics of electromagnets

The characteristics of electromagnets are given at 20 °C, ± 5%. All electromagnets are made in class F and may remain indefinitely connected to voltage.

Type of brake motor	Brake coil voltage 180 V			Brake coil voltage 100 V			Brake coil voltage 20 V		
	Current	Resistance	Power	Current	Resistance	Power	Current	Resistance	Power
	A	Ω	W	A	Ω	W	A	Ω	W
LS 71 FCR	0.27	665	49	0.46	219	46	2.22	9	44
LS 80 FCR	0.31	572	57	0.54	186	54	2.7	7.4	54
LS 90 FCR	0.35	510	64	0.65	155	65	2.99	6.7	60
LS 100 FCR	0.35	510	64	0.65	155	65	2.99	6.7	60
LS 112 MG <sup>1</sup> FCR	0.44	412	79	0.79	127	79	3.93	5.1	79
LS 132 S FCR	0.44	412	79	0.79	127	79	3.93	5.1	79
LS 132 M <sup>2</sup> FCR	0.5	361	90	0.85	118	85	4.2	4.7	84
LS 132 M <sup>3</sup> FCR	0.79	228	142	1.4	71	140	7	2.8	141
LS 160 MP, LR FCR	0.79	228	142	1.4	71	140	7	2.8	141

1. LS 112 M 2 poles with 180V coil excepted : A = 0.35 ; Ω = 510 ; W = 64

2. LS 132 M with braking torque = 40 to 80 N.m

3. LS 132 M with braking torque = 105 to 160 N.m

### Starting frequency (no load for ΔT = 100°; values expressed in h<sup>-1</sup>)

Brake motor type	Polarity	Rotor	Operating factor											
			J01 flywheel			J02 flywheel			J03 flywheel			J05 flywheel		
			25%	40%	60%	25%	40%	60%	25%	40%	60%	25%	40%	60%
LS 71 FCR	4 p	ALU	4800	3500	3000	4000	2950	2500	3100	2250	1950	2650	1950	1650
		DP	5000	3800	3200	4550	3450	2900	4100	3100	2450	3300	2500	1950
LS 80 FCR	6 p	ALU	5400	4000	3500	4100	3050	2650	3500	2600	2250	3050	2250	2000
		DP	6000	4250	4000	5250	3750	3500	4100	2900	2750	3800	2700	2550
LS 90 FCR	4 p	ALU	2800	1750	1650	2500	1550	1450	1800	1100	1050	950	600	550
		DP	2950	2200	1750	2600	1900	1650	1950	1450	1150	1000	750	600
LS 100 FCR	6 p	ALU	4000	2550	2400	2900	1850	1750	1900	1200	1150	1200	750	700
		DP	4400	3300	2600	3850	2900	2250	2900	2150	1700	1650	1250	950
LS 112 FCR	4 p	ALU	1400	1200	1000	1150	1000	800	800	700	600	650	550	450
		DP	1650	1400	1150	1350	1150	950	950	800	650	800	650	550
LS 132 S FCR	6 p	ALU	2150	1850	1550	1550	1350	1100	1000	850	700	900	750	650
		DP	2450	2100	1750	1900	1650	1350	1500	1300	1050	1350	1150	950
LS 132 M FCR	4 p	ALU	2000	1500	1300	1500	1200	1000	1200	900	700	-	-	-
		DP	2500	2000	1700	2000	1700	1300	1500	1200	1000	-	-	-
LS 160 MP, LR FCR	6 p	ALU	2300	1800	1500	1800	1500	1200	1500	1200	900	-	-	-
		DP	2800	2500	2000	2100	1800	1500	1700	1500	1200	-	-	-
LS 112 FCR	4 p	ALU	900	800	700	-	-	-	-	-	-	-	-	-
		DP	1100	950	850	-	-	-	-	-	-	-	-	-
LS 132 S FCR	6 p	ALU	1200	1000	900	-	-	-	-	-	-	-	-	-
		DP	1350	1200	1100	-	-	-	-	-	-	-	-	-
LS 132 M FCR	4 p	ALU	700	600	500	-	-	-	-	-	-	-	-	-
		DP	900	800	700	-	-	-	-	-	-	-	-	-
LS 160 MP, LR FCR	4 p	ALU	-	-	-	350	340	290	-	-	-	-	-	-
		DP	-	-	-	450	430	400	-	-	-	-	-	-
LS 160 MP, LR FCR	6 p	ALU	-	-	-	300	290	250	-	-	-	-	-	-
		DP	-	-	-	400	380	350	-	-	-	-	-	-

Starting frequencies with brake motor CS rotor are defined by the FEM class.

# FCR asynchronous brake motors

## Characteristics

### Response time (values expressed in $10^{-3}$ seconds)


- The brake release response time ( $t_1$ ) is the time between energisation of the electro-magnet and the moment when the brake is released (zero braking).

- The brake is applied by demagnetising the electro-magnet then moving the lining or the counter-material. The response time ( $t_2$ ) is the time between cutting the power supply of the brake motor and the moment when the lining comes into contact with the counter-material.

The response times contained in the table opposite result from tests with air gap set at 0.4 millimeters : rated value.

OPTION Reduced response time via electronic booster RRT : S1-18R (0.25 to 1.8 kW) and S1-90R (2.2 to 9 kW).

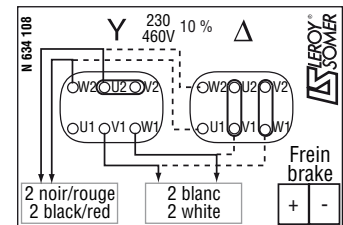
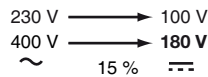
LS series FCR brake motors can be fitted with this option with built-in power supply connected in the factory. Its use increases starting frequency and improves stopping accuracy. Furthermore, it saves on the cost of recabling following a power cut.

 This option is not compatible with the LSMV series motor for operation with a variable speed drive.

Type of brake motor	Response time on release of brake $t_1$		Brake application response time (at maximum braking torque) $t_2$		
	standard	TRR <sup>1</sup>	standard	TRR <sup>1</sup>	Direct current cut
LS 71 FCR	60	30	90	30	≤ 10
LS 80 FCR	80	30	85	30	≤ 10
LS 90 FCR	150	50	140	30	≤ 10
LS 100 FCR	150	50	140	30	≤ 10
LS 112 FCR	150	70	580	40	≤ 40
LS 132 S FCR	150	70	580	40	≤ 40
LS 132 M FCR	240	140	605	90	≤ 100
LS 160 FCR	350	-	460	-	≤ 100

1. Reduced response time with electronic booster power supply (option).

Power supply for single speed motor ►



Wiring diagram for option:  
Reduced Response Time **RRT**

# FCR asynchronous brake motors

## U.G. General Use

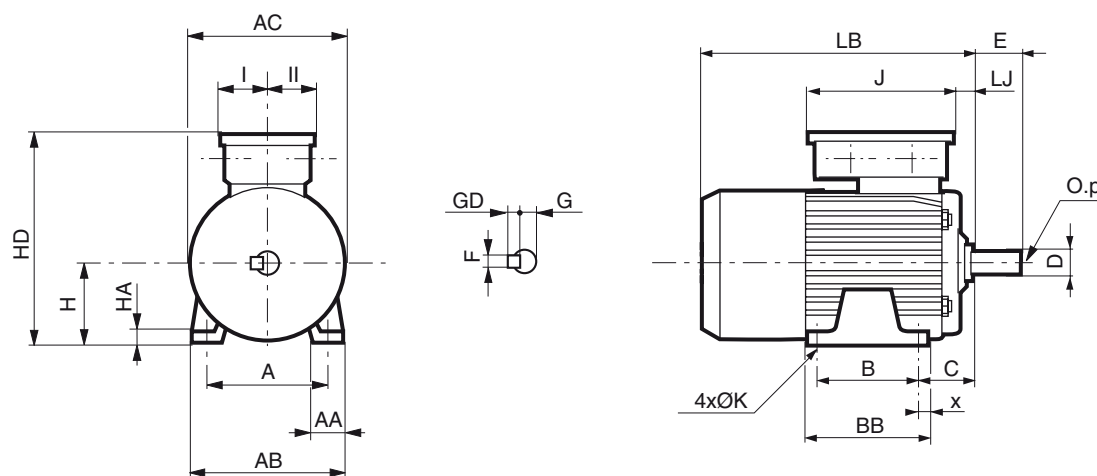
### LS --- FCR

## Dimensions

Dimensions of 3-phase motors and brake - LS, LSMVR, LSPX... FCR  
2 - 4 - 6 - 8 poles - IP 55 protection

Dimensions in millimetres

– foot mounted



Type	Brake motors																	
	A	AA	AB	AC	B	BB	C	HD	H	HA	J	I	II	K	LB J01 to J03 <sup>1</sup>	LB J05 <sup>1</sup>	LJ	x
LS 71 L FCR	112	23	126	140	90	104	45	206	71	9	160	55	55	7	245	271	13	7
LS 80 L FCR	125	29	157	172	100	120	50	226	80	10	160	55	55	9	265	316	11	10
LS 90 L FCR	140	38.5	172	184	125	162	56	246	90	11	160	55	55	10	304	331	13	28
LS 100 L FCR	160	44	196	200	140	165	63	261	100	13	160	55	55	12	388	-	21	12
LS 112 MG FCR	190	52	220	235	140	164	70	281	112	14	160	55	55	12	396	-	23	12
LS 132 S FCR	216	50	250	235	140	170	89	301	132	15	160	55	55	12	419	-	41	16
LS 132 M FCR	216	59	250	280	178	208	89	318	132	18	160	55	55	12	493	-	25	16
LS 160 MP FCR	254	64	294	316	210	294	108	361	160	25	160	55	55	14.5	568	-	55	20
LS 160 LR FCR	254	64	294	316	254	294	108	361	160	25	160	55	55	14.5	568	-	55	20

1. Check the brake type (inertia)

Type	Output shaft					
	D	E	F	G	GD	O.p
LS 71 L FCR	14j6	30	5	11	5	M5.12.5
LS 80 L FCR	19j6	40	6	15.5	6	M6.16
LS 90 L FCR	24j6	50	8	20	7	M8.19
LS 100 L FCR	28j6	60	8	24	7	M10.22
LS 112 MG FCR	28j6	60	8	24	7	M10.22
LS 132 FCR	38k6	80	10	33	8	M12.28
LS 160 FCR	42k6	110	12	37	8	M16.36

# FCR asynchronous brake motors

## U.G. General Use

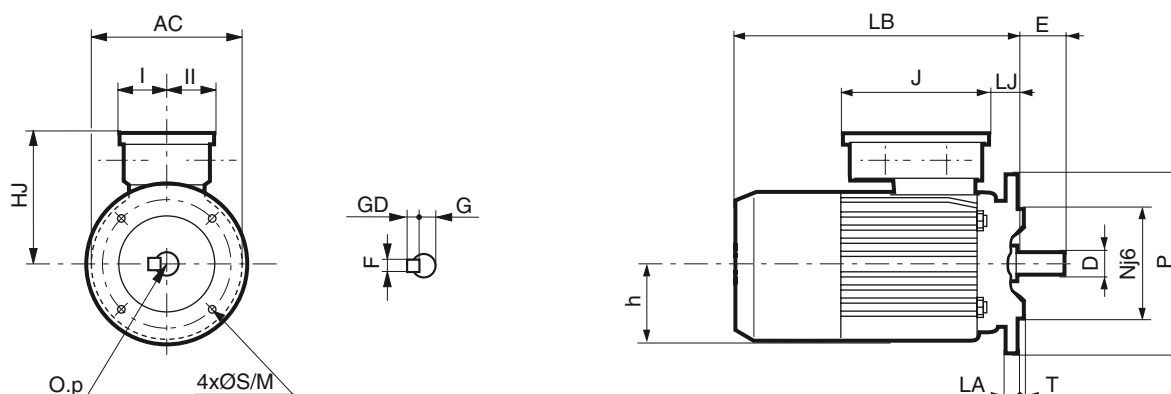
### LS --- FCR

## Dimensions

Dimensions of 3-phase motors and brake - LS, LSMVR, LSPX... FCR  
2 - 4 - 6 - 8 poles - IP 55 protection

Dimensions in millimetres

– (FF) flange mounted



Type	Brake motors										Output shaft					
	AC	HJ	h	J	I	II	LB J01 to J03 <sup>1</sup>	LB J05 <sup>1</sup>	LJ	D	E	F	G	GD	O.p	
LS 71 L FCR	140	135	70	160	55	55	271	297	38	14j6	30	5	11	5	M5.12.5	
LS 80 L FCR	172	146	80	160	55	55	292	343	38	19j6	40	6	15.5	6	M6.16	
LS 90 L FCR	184	156	90	160	55	55	324	351	33	24j6	50	8	20	7	M8.19	
LS 100 L FCR	200	161	98	160	55	55	388	-	50	28j6	60	8	24	7	M10.22	
LS 112 MG FCR	235	169	110	160	55	55	425	-	49	28j6	60	8	24	7	M10.22	
LS 132 S FCR	235	169	110	160	55	55	437	-	41	38k6	80	10	33	8	M12.28	
LS 132 M FCR	280	188	130	160	55	55	533	-	65	38k6	80	10	33	8	M12.28	
LS 160 MP FCR	316	201	131	160	55	55	568	-	31	42k6	110	12	37	8	M16.36	
LS 160 LR FCR	316	201	131	160	55	55	568	-	31	42k6	110	12	37	8	M16.36	

<sup>1</sup>. Check the brake type (inertia)

Type	FF flange							
	Symb.	M	N	n	P	S	T	LA
LS 71 L FCR	FF 130	130	110	4	160	10	3.5	10
LS 80 L FCR	FF 165	165	130	4	200	12	3.5	10
LS 90 L FCR	FF 165	165	130	4	200	12	3.5	10
LS 100 L FCR	FF 215	215	180	4	250	14.5	4	12
LS 112 MG FCR	FF 215	215	180	4	250	14.5	4	12
LS 132 FCR	FF 265	265	230	4	300	15	4	14
LS 160 FCR	FF 300	300	250	4	350	19	5	16

# FCR asynchronous brake motors

## U.G. General Use

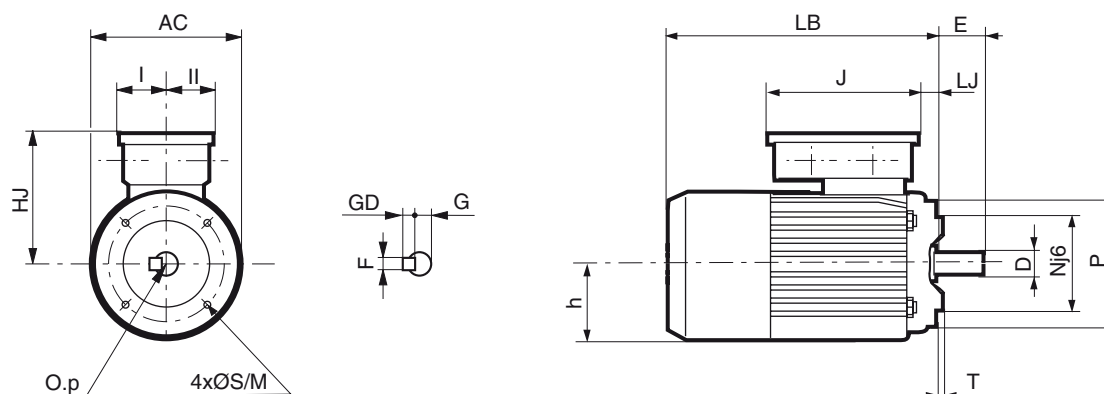
### LS --- FCR

## Dimensions

Dimensions of 3-phase motors and brake - LS, LSMVR, LSPX... FCR  
2 - 4 - 6 - 8 poles - IP 55 protection

Dimensions in millimetres

– (FT) face mounted



Type	Brake motors						Output shaft								
	AC	HJ	h	J	I	II	LB J01 to J03 <sup>1</sup>	LB J05 <sup>1</sup>	LJ	D	E	F	G	GD	O.p
LS 71 L FCR	140	135	70	160	55	55	245	271	13	14j6	30	5	11	5	M5.12.5
LS 80 L FCR	172	146	80	160	55	55	265	316	11	19j6	40	6	15.5	6	M6.16
LS 90 L FCR	184	156	89	160	55	55	304	331	13	24j6	50	8	20	7	M8.19
LS 100 L FCR	200	161	98	160	55	55	351	-	21	28j6	60	8	24	7	M10.22
LS 112 MG FCR	235	169	110	160	55	55	396	-	23	28j6	60	8	24	7	M10.22
LS 132 S FCR	235	169	110	160	55	55	419	-	23	38k6	80	10	33	8	M12.28
LS 132 M FCR	280	188	130	160	55	55	493	-	25	38k6	80	10	33	8	M12.28
LS 160 MP FCR	316	201	131	160	55	55	568	-	55	42k6	110	12	37	8	M16.36
LS 160 LR FCR	316	201	131	160	55	55	568	-	55	42k6	110	12	37	8	M16.36

1. Check the brake type (inertia)

Type	FT face						
	Symb.	M	N	n	P	S	T
LS 71 L FCR	FT 85	85	70	4	105	M6	2.5
LS 80 L FCR	FT 100	100	80	4	120	M6	3
LS 90 L FCR	FT 115	115	95	4	140	M8	3
LS 100 L FCR	FT 130	130	110	4	160	M8	3.5
LS 112 MG FCR	FT 130	130	110	4	160	M8	3.5
LS 132 FCR	FT 215	215	180	4	250	M12	4
LS 160 FCR	FT 215	215	180	4	250	M12	4

# FCR asynchronous brake motors

## U.G. General Use

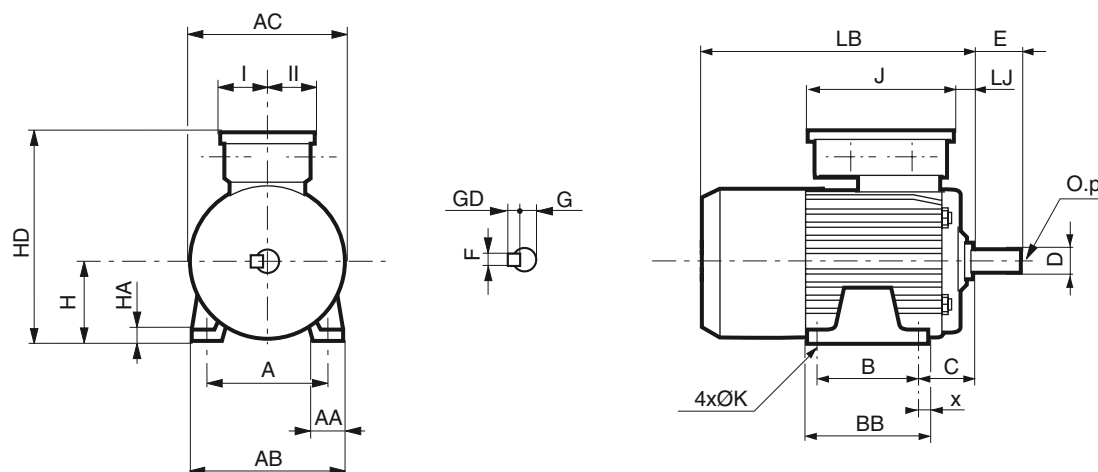
### FLS --- FCR

## Dimensions

Dimensions of 3-phase motors and brake - FLS, FLSPX... FCR  
4 poles - IP 55 protection

Dimensions in millimetres

– foot mounted



Type	Brake motors																
	A	AA	AB	AC	B	BB	C	HD	H <sup>1</sup>	HA	LJ	J	I	II	K	LB	x
<b>FLS 80 L FCR J02</b>	125	32	157	160	100	130	50	236	80	10	26.5	187	63.5	63.5	9	265	20
<b>FLS 90 L FCR J02</b>	140	34	172	185	125	160	56	256	90	11	21.5	187	63.5	63.5	9	304	22
<b>FLS 100 LK FCR J01</b>	160	42	200	226	140	174	63	291	112	12	48.5	187	63.5	63.5	12	406	22
<b>FLS 112 MG FCR J01</b>	190	45	230	226	140	174	70	302	112	12	48.5	187	63.5	63.5	12	406	22
<b>FLS 132 M FCR J02</b>	216	58	255	264	178	223	89	345	132	15	39.5	187	63.5	63.5	12	492	31

1. Caution, dimension AC divided by 2 may be greater than H.

Type	Output shaft					
	D	E	F	G	GD	O.p
<b>FLS 80 L FCR J02</b>	19j6	40	6	15.5	6	6.16
<b>FLS 90 L FCR J02</b>	24j6	50	8	20	7	8.19
<b>FLS 100 LK FCR J01</b>	28j6	60	8	24	7	10.22
<b>FLS 112 MG FCR J01</b>	28j6	60	8	24	7	10.22
<b>FLS 132 M FCR J02</b>	38k6	80	10	33	8	12.28

# FCR asynchronous brake motors

## U.G. General Use

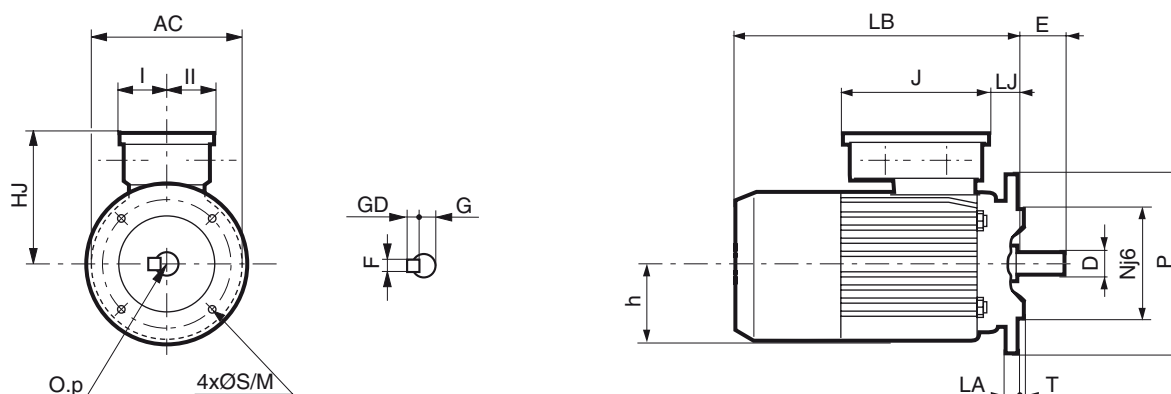
### FLS --- FCR

## Dimensions

Dimensions of 3-phase motors and brake - FLS, FLSPX... FCR  
4 poles - IP 55 protection

Dimensions in millimetres

– (FF) flange mounted



Type	Brake motors								Output shaft					
	AC	HJ	h	J	I	II	LB	LJ	D	E	F	G	GD	O.p
<b>FLS 80 L FCR J02</b>	158	156	90	187	63.5	63.5	292	53.5	19j6	40	6	15.5	6	6.16
<b>FLS 90 L FCR J02</b>	184	166	100	187	63.5	63.5	324	41.5	24j6	50	8	20	7	8.19
<b>FLS 100 LK FCR J01</b>	220	191	131	187	63.5	63.5	424	66.5	28j6	60	8	24	7	10.22
<b>FLS 112 MG FCR J01</b>	220	191	131	187	63.5	63.5	424	66.5	28j6	60	8	24	7	10.22
<b>FLS 132 M FCR J02</b>	264	213	131	187	63.5	63.5	532	79.5	38k6	80	10	33	8	12.28

Type	FF flange							
	Symb.	M	N	n	P	S	T	LA
<b>FLS 80 L FCR J02</b>	FF 165	165	130	4	200	12	3.5	10
<b>FLS 90 L FCR J02</b>	FF 165	165	130	4	200	12	3.5	10
<b>FLS 100 LK FCR J01</b>	FF 215	215	180	4	250	15	4	12
<b>FLS 112 MG FCR J01</b>	FF 215	215	180	4	250	15	4	12
<b>FLS 132 M FCR J02</b>	FF 265	265	230	4	300	15	4	14



# FCR asynchronous brake motors

## U.G. General Use

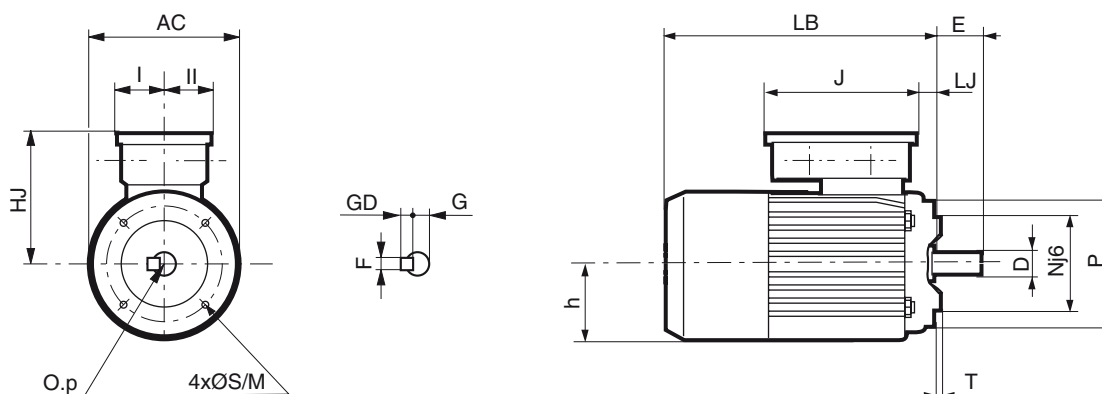
### FLS --- FCR

## Dimensions

Dimensions of 3-phase motors and brake - FLS, FLSPX... FCR  
4 poles - IP 55 protection

Dimensions in millimetres

– (FT) face mounted



Type	Brake motors								Output shaft					
	AC	HJ	h	LJ	J	I	II	LB	D	E	F	G	GD	O.p
<b>FLS 80 L FCR J02</b>	158	156	90	26.5	187	63.5	63.5	265	19j6	40	6	15.5	6	6.16
<b>FLS 90 L FCR J02</b>	184	166	100	21.5	187	63.5	63.5	304	24j6	50	8	20	7	8.19
<b>FLS 100 LK FCR J01</b>	220	191	131	48.5	187	63.5	63.5	406	28j6	60	8	24	7	10.22
<b>FLS 112 MG FCR J01</b>	220	191	131	48.5	187	63.5	63.5	406	28j6	60	8	24	7	10.22
<b>FLS 132 M FCR J02</b>	264	213	131	39.5	187	63.5	63.5	492	38k6	80	10	33	8	12.28

Type	FT face						
	Symb.	M	N	n	P	S	T
<b>FLS 80 L FCR J02</b>	FT 100	100	80	4	120	M6	3
<b>FLS 90 L FCR J02</b>	FT 115	115	95	4	140	M8	3
<b>FLS 100 LK FCR J01</b>	FT 130	130	110	4	160	M8	3.5
<b>FLS 112 MG FCR J01</b>	FT 130	130	110	4	160	M8	3.5
<b>FLS 132 M FCR J02</b>	FT 215	215	180	4	250	M12	4

# FCR asynchronous brake motors

## U.G. General Use

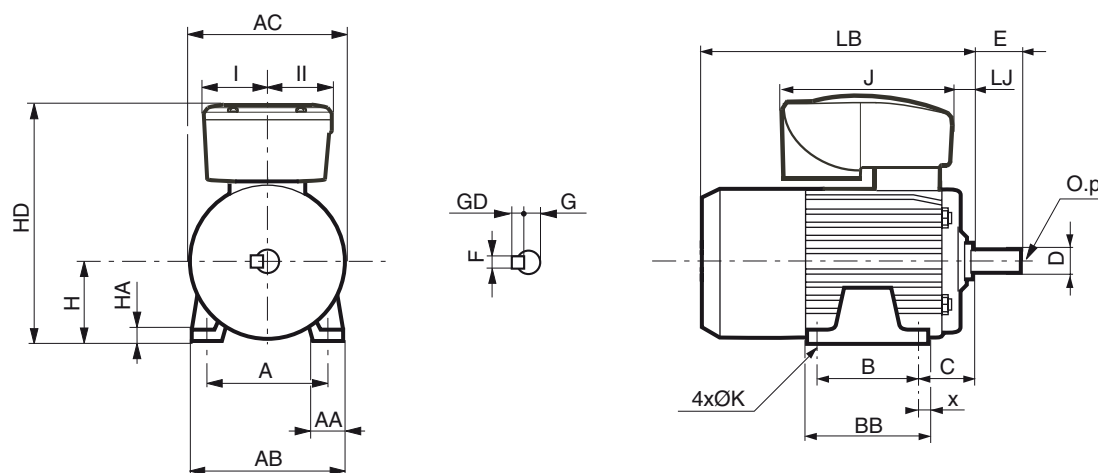
### LS ...VMA --- FCR

## Dimensions

### Dimensions of brake motors - LS... VMA... FCR 4 poles - IP 55 protection

Dimensions in millimetres

– foot mounted



#### VARMECA integrated variable speed brake motors

Type	A	AA	AB	AC	B	BB	C	HD	H	HA	J	I'	II	K	LB	LJ	x
LS 71 L VMA 31 FCR	112	23	126	140	90	104	45	266	71	9	218	94	75	7	245	8	7
LS 80 L VMA 31 FCR	125	29	157	172	100	120	50	285	80	10	218	94	75	9	265	12	10
LS 80 L VMA 32 FCR	125	29	157	172	100	120	50	285	80	10	231	94	75	9	265	12	10
LS 90 L VMA 31 FCR	140	38.5	172	184	125	162	56	305	90	11	218	94	75	10	304	12	28
LS 90 L VMA 32 FCR	140	38.5	172	184	125	162	56	305	90	11	231	94	75	10	304	12	28
LS 100 L VMA 32 FCR	160	44	196	200	140	165	63	320	100	13	231	94	75	12	388	12	12
LS 100 L VMA 33 FCR	160	44	196	200	140	165	63	370	100	13	336	141	115	12	388	4	12
LS 112 MG VMA 32 FCR	190	52	220	235	140	164	70	341	112	14	231	94	75	12	396	21	12
LS 112 MG VMA 33 FCR	190	52	220	235	140	164	70	392	112	14	336	141	115	12	396	13	12
LS 132 SM VMA 33 FCR	216	59	250	280	178	208	89	402	132	18	336	141	115	12	492	8	16
LS 132 SM VMA 34 FCR	216	59	250	280	178	208	89	402	132	18	336	141	115	12	492	8	16
LS 132 M VMA 33 FCR	216	59	250	280	178	208	89	402	132	18	336	141	115	12	492	8	16
LS 132 M VMA 34 FCR	216	59	250	280	178	208	89	402	132	18	336	141	115	12	492	8	16
LS 160 MR VMA 34 FCR	254	64	294	316	210	294	108	471	160	25	336	141	115	14.5	567	38	20

1. Dimension I includes the control button ; for delivery without button, take dimension II.

#### Output shaft

Type	D	E	F	G	GD	O.p
LS 71 L VMA...FCR	14j6	30	5	11	5	M5.12.5
LS 80 L VMA... FCR	19j6	40	6	15.5	6	M6.16
LS 90 L VMA... FCR	24j6	50	8	20	7	M8.19
LS 100 L VMA... FCR	28j6	60	8	24	7	M10.22
LS 112 MG VMA... FCR	28j6	60	8	24	7	M10.22
LS 132 SM,M VMA. FCR	38k6	80	10	33	8	M12.28
LS 160 MR VMA... FCR	42k6	110	12	37	8	M16.36

# FCR asynchronous brake motors

## U.G. General Use

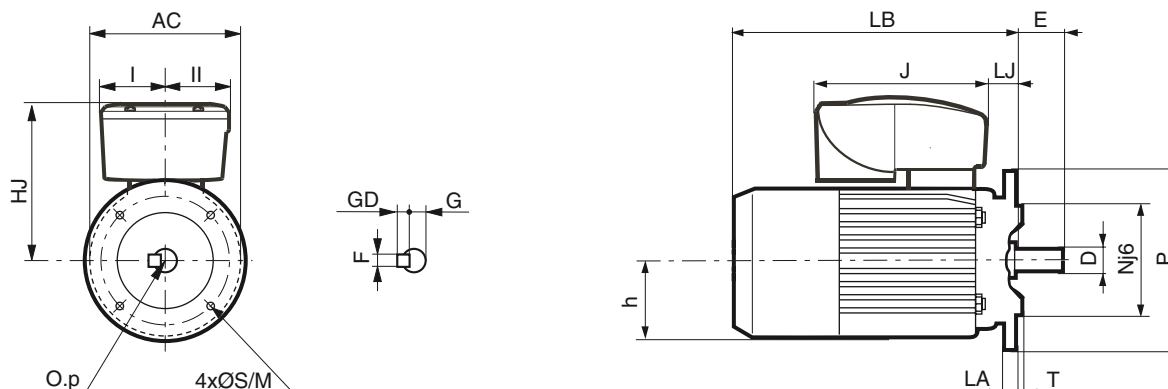
### LS ...VMA --- FCR

## Dimensions

Dimensions of brake motors - LS... VMA... FCR  
4 poles - IP 55 protection

Dimensions in millimetres

– (FF) flange mounted



Type	VARMECA integrated variable speed brake motors								Output shaft					
	AC	HJ	h	J	I'	II	LB	LJ	D	E	F	G	GD	O.p
LS 71 L VMA 31 FCR	140	195	70	218	94	75	271	34	14j6	30	5	11	5	M5.12.5
LS 80 L VMA 31 FCR	172	205	80	218	94	75	292	38	19j6	40	6	15.5	6	M6.16
LS 80 L VMA 32 FCR	172	205	80	231	94	75	292	38	19j6	40	6	15.5	6	M6.16
LS 90 L VMA 31 FCR	184	215	90	218	94	75	324	12	24j6	50	8	20	7	M8.19
LS 90 L VMA 32 FCR	184	215	90	231	94	75	324	12	24j6	50	8	20	7	M8.19
LS 100 L VMA 32 FCR	200	220	98	231	94	75	388	48	28j6	60	8	24	7	M10.22
LS 100 L VMA 33 FCR	200	270	98	336	141	115	388	40	28j6	60	8	24	7	M10.22
LS 112 MG VMA 32 FCR	235	229	110	231	94	75	425	50	28j6	60	8	24	7	M10.22
LS 112 MG VMA 33 FCR	235	280	110	336	141	115	425	42	28j6	60	8	24	7	M10.22
LS 132 SM VMA 33 FCR	280	300	130	336	141	115	532	26	38k6	80	10	33	8	M12.28
LS 132 SM VMA 33 FCR	280	300	130	336	141	115	532	26	38k6	80	10	33	8	M12.28
LS 132 M VMA 33 FCR	280	300	130	336	141	115	532	26	38k6	80	10	33	8	M12.28
LS 132 M VMA 34 FCR	280	300	130	336	141	115	532	26	38k6	80	10	33	8	M12.28
LS 160 MR VMA 34 FCR	316	311	131	336	141	115	567	38	42k6	110	12	37	8	M16.36

1. Dimension I includes the control button ; for delivery without button, take dimension II.

Type	FF flange							
	Symb.	M	N	n	P	S	T	LA
LS 71 L VMA...FCR	FF 130	130	110	4	160	10	3.5	10
LS 80 L VMA... FCR	FF 165	165	130	4	200	12	3.5	10
LS 90 L VMA... FCR	FF 165	165	130	4	200	12	3.5	10
LS 100 L VMA... FCR	FF 215	215	180	4	250	14.5	4	12
LS 112 MG VMA... FCR	FF 215	215	180	4	250	14.5	4	12
LS 132 SM,M VMA. FCR	FF 265	265	230	4	300	15	4	14
LS 160 MR VMA... FCR	FF 300	300	250	4	350	19	5	16

# FCR asynchronous brake motors

## U.G. General Use

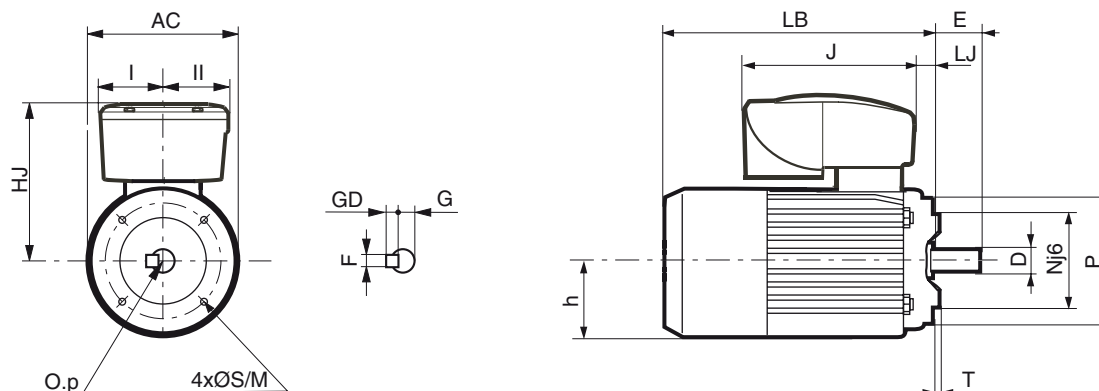
### LS ...VMA --- FCR

## Dimensions

### Dimensions of brake motors - LS... VMA... FCR 4 poles - IP 55 protection

Dimensions in millimetres

– (FT) face mounted



Type	VARMECA integrated variable speed brake motors							Output shaft						
	AC	HJ	h	J	I <sup>1</sup>	II	LB	LJ	D	E	F	G	GD	O.p
LS 71 L VMA 31 FCR	140	195	70	218	94	75	245	8	14j6	30	5	11	5	M5.12.5
LS 80 L VMA 31 FCR	172	205	80	218	94	75	265	12	19j6	40	6	15.5	6	M6.16
LS 80 L VMA 32 FCR	172	205	80	231	94	75	265	12	19j6	40	6	15.5	6	M6.16
LS 90 L VMA 31 FCR	184	215	89	218	94	75	304	12	24j6	50	8	20	7	M8.19
LS 90 L VMA 32 FCR	184	215	89	231	94	75	304	12	24j6	50	8	20	7	M8.19
LS 100 L VMA 32 FCR	200	220	98	231	94	75	388	12	28j6	60	8	24	7	M10.22
LS 100 L VMA 33 FCR	200	270	98	336	141	115	388	4	28j6	60	8	24	7	M10.22
LS 112 MG VMA 32 FCR	235	229	110	231	94	75	396	21	28j6	60	8	24	7	M10.22
LS 112 MG VMA 33 FCR	235	280	110	336	141	115	396	13	28j6	60	8	24	7	M10.22
LS 132 SM VMA 33 FCR	280	300	130	336	141	115	492	8	38k6	80	10	33	8	M12.28
LS 132 SM VMA 34 FCR	280	300	130	336	141	115	492	8	38k6	80	10	33	8	M12.28
LS 132 M VMA 33 FCR	280	300	130	336	141	115	492	8	38k6	80	10	33	8	M12.28
LS 132 M VMA 34 FCR	280	300	130	336	141	115	492	8	38k6	80	10	33	8	M12.28
LS 160 MR VMA 34 FCR	316	311	131	336	141	115	567	38	42k6	110	12	37	8	M16.36

1. Dimension I includes the control button; for delivery without button, take dimension II.

Type	FT face						
	Symb.	M	N	n	P	S	T
LS 71 L VMA...FCR	FT 85	85	70	4	105	M6	2..5
LS 80 L VMA... FCR	FT 100	100	80	4	120	M6	3
LS 90 L VMA... FCR	FT 115	115	95	4	140	M8	3
LS 100 L VMA... FCR	FT 130	130	110	4	160	M8	3.5
LS 112 MG VMA... FCR	FT 130	130	110	4	160	M8	3.5
LS 132 SM,M VMA. FCR	FT 215	215	180	4	250	M12	4
LS 160 MR VMA... FCR	FT 215	215	180	4	250	M12	4

# FCR asynchronous brake motors

## Options










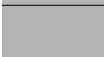
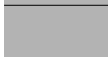


### Option list

Type		
DP rotor (S4 duty)		FAB
Release via lever DLRA		10 WD
Shaft extension (NDE)		FAB
Drip cover		10 WD
Separate brake power supply : - mains supply 180 V coil	400 V ~	3 WD
	- mains supply 180 V coil 230 V ~	3 WD
Optional braking torque:	71 to 132 S	10 WD
	132 M and 160	FAB
TRR reduced response time (S1-18R or S1-90R) (71 to 132)		10 WD
Thermal protection PTO or PTF or CTP		10 WD
Encoder adaptation 5V, 1024 PTS (LS MV 71 to 132)		10 WD
Forced ventilation (71 to 132)		10 WD
Keyed rotor (hoisting applications)		FAB
Other encoder adaptation (LS MVR)		FAB
J01 optional inertia (71 to 100)		10 WD
J03 - J05 optional inertia (71 to 90)		FAB
WMS Plugable male connector + cover (71 to 132 : 7,5 kW)		FAB
BAB kit + WMS connector (71 to 132 : 7,5 kW)		FAB
WMFS Plugable male + female connector (71 to 132 : 7,5 kW)		FAB
BAB kit + WMFS connector (71 to 132 : 7,5 kW)		FAB
TRR reduced response time (71 to 132)		10 WD
Drain hole - position B3, B5		3 WD
Drain hole - any other position		FAB
IA finishing : food processing industry		FAB
MO finishing : machine-tool		FAB

### Guaranteed availability (ex work) :


	Guaranteed availability (1 working day)
	Guaranteed availability (3 working days)
	Guaranteed availability (5 working days)
	Guaranteed availability (10 working days)
	Guaranteed availability (15 working days)
	Manufacturing time (FAB)

### Option compatibility

	J01, J02 or J03 <sup>1</sup>	J05 <sup>2</sup>	Anti-corrosion treatment	Drip cover	DLRA lever	2 <sup>nd</sup> shaft end crank-shaft socket	2 <sup>nd</sup> shaft end cylindrical	Encoder	Reduced response time	Release connector	Forced ventilation
J01, J02 or J03 <sup>1</sup>	•		•	•	•	•	•	only on J01	•	•	•
J05 <sup>2</sup>		• S.S.	•	•	•	•	•		•	•	
		Anticorrosion treatment	•	•	•	•	•	•	•	•	•
		Drip cover		•	•			N.D.	•	•	
		DLRA lever		•	•	•	•	•	•	•	•
		2 <sup>nd</sup> shaft end crank-shaft socket			•	•			•	•	
		2 <sup>nd</sup> shaft end cylindrical				•	•		•	•	
		Encoder					•	•		•	•
		Reduced response time						•	•	N.D.	
		Forced ventilation									•

1. J01 standard inertia of LS 112 and 132 S, not developed in LS 132 M and 160 ; J02 not developed in LS 112 and 132 S ; J03 not developed in LS 112, 132 and 160.

2. Inertia not developed in 100 to 160 frame size.

•	Compatibility
S.S.	Special shaft; not developed for frame size ≥ 100
N.D.	Not developed
	Technically impossible

# FCR asynchronous brake motors

## Options

### Flange options

FF flange mounted motors (IM B5)								
Type	FF 85	FF 100	FF 115	FF 130	FF 165	FF 215	FF 265	FF 300
LS 71	FAB	FAB	10 WD	3 WD	FAB			
LS 80	FAB	FAB	FAB	10 WD	3 WD	FAB		
LS 90			FAB	10 WD	3 WD	10 WD		
LS 100			FAB	FAB	FAB	3 WD	10 WD	
LS 112				FAB	10 WD	3 WD	FAB	FAB
LS 132					FAB	10 WD	3 WD	FAB
LS 160					FAB	FAB	FAB	3 WD

### Guaranteed availability (ex work) :

	Guaranteed availability (1 working day)
	Guaranteed availability (3 working days)
	Guaranteed availability (5 working days)
	Guaranteed availability (10 working days)
	Guaranteed availability (15 working days)
	Manufacturing time (FAB)

FF face mounted motors (IM B14)									
Type	FT 65	FT 75	FT 85	FT 100	FT 115	FT 130	FT 165	FT 215	FT 265
LS 71	FAB	10 WD	3 WD	10 WD	FAB				
LS 80	FAB		10 WD	3 WD	10 WD				
LS 90			FAB	10 WD	3 WD	10 WD			
LS 100					10 WD	3 WD	10 WD		
LS 112						3 WD	10 WD		
LS 132							FAB	FAB	FAB
LS 160							FAB	FAB	FAB

# FCR asynchronous brake motors

## Options

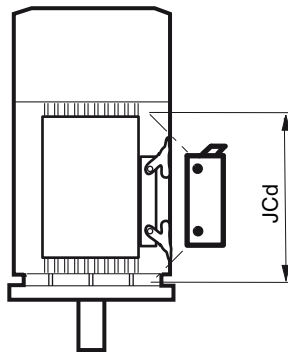
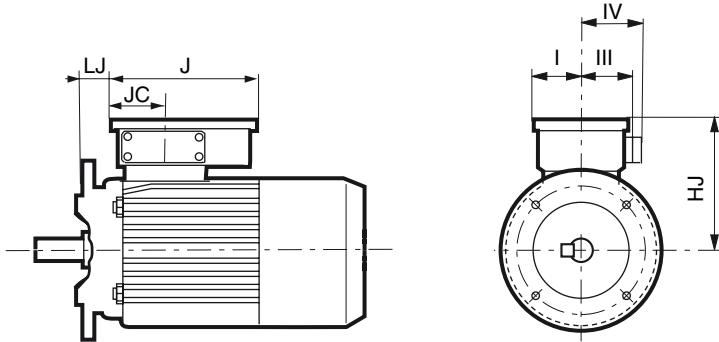
### Quick release connector

To meet the requirements of certain machines, the LS and LSMV series FCR brake motors can be supplied with an IP65 10 pin connector (or another model according advice), for 71 to 132 frame size, power supply : 400V (16 amps or maximum 7.5 kW, 4 poles) 500 V +/- 10 %.

It complies with the UL and CSA standards.

Two versions are proposed :

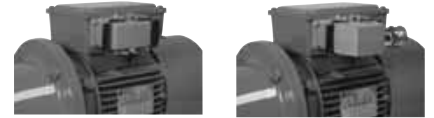
### Sizes (dimensions in mm)



Motor type	Release connector								
	HJ	J	JC	JcD	Lj		I	III	IV
					B3/B14	B5			
LS 71	135	160	63	116	13	38	55	83	135
LS 80	146	160	63	116	11	38	55	83	135
LS 90	156	160	63	116	13	33	55	83	135
LS 100	161	160	63	116	21	50	55	83	135
LS 112	169	160	63	116	23	49	55	83	135
LS 132 S	169	160	63	116	23	41	55	83	135
LS 132 M	188	160	63	116	25	65	55	83	135

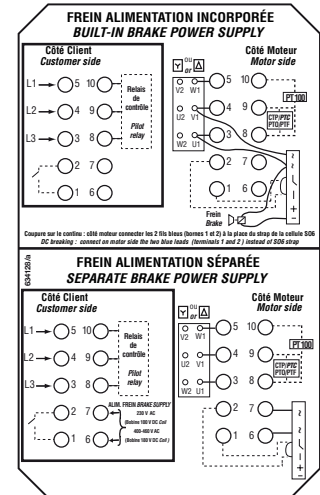
- WMS or male version: crimped connector support with cross stirrups, closed by a cord cover (for transportation).

- WMFS or complete version: crimped male connector support with cross stirrup and female extension cover supplied, on one side, with a brass cable gland with an ISO 25 link for a cable input having a minimum diameter of 12.5 mm and a maximum diameter of 18 mm (this cable is not supplied).



WMS model

WMFS model

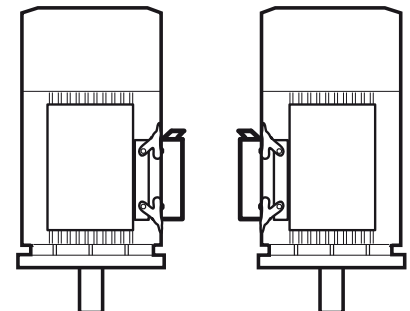


634 128 connection diagram (in the terminal box cover)

This diagram may be used in the following cases:

- single speed motor
- built-in or separate brake power supply
- managed thermal probes
- star / delta connection (230/400V voltage)
- factory set motor cabling / brake / probes

### Connector positions



Std : 1

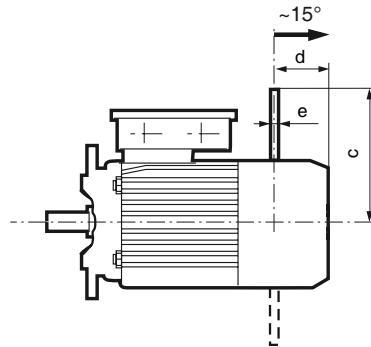
3

# FCR asynchronous brake motors

## Options

Dimensions in millimetres

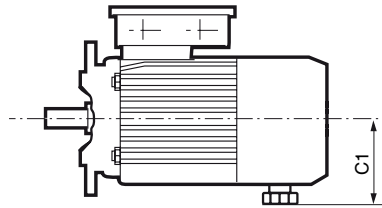
### Manual release : - DLRA



Type	Auto return hand release		
	c	d J01 to J03 / J05	e
LS 71 L	141	63 / 89	ø 8
LS 80 L	153	67 / 118	ø 8
LS 90 L	188	91 / 118	ø 8
LS 100 L	188	91 / -	ø 8
LS 112 MG	280	146 / -	ø 12
LS 132 S	280	146 / -	ø 12
LS 132 M	298	118 / -	ø 12
LS 160 MP, LR	298	118 / -	ø 12

DLRA lever is at 0° considering terminal box (pos. A). In option, it can be fitted at 180°.

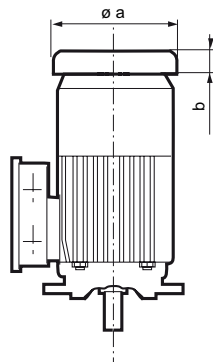
### - DLM



Type	Lock off hand release
	c1
LS 80 L	116
LS 90 L	128
LS 100 L	128

DLM lever is at 180° considering terminal box (pos. A) exclusively.

### Drip cover



Type	Drip cover	
	ø a	b
LS 71 L	141	25
LS 80 L	182	25
LS 90 L	220	25
LS 100 L	220	25
LS 112 MG	264	25
LS 132 S	264	25
LS 132 M	310	25
LS 160	310	25



# FCR asynchronous brake motors

## Options

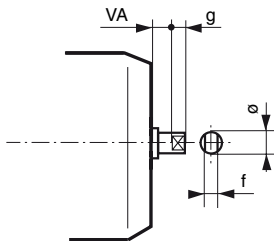
Dimensions in millimetres

### Shafts projecting on brake side (NDE)

Type	Crankshaft			
	Socket			
	$\varnothing$	f	g	VA
LS 71 L	11	8	6	2
LS 80 L	13	10	7	2
LS 90 L	16	13	11	4
LS 100 L	16	13	11	4
LS 112 MG	17	13	11	4
LS 132 S	17	13	11	4
LS 132 M	27	23	18	5
LS 160 MP, LR	27	23	18	5

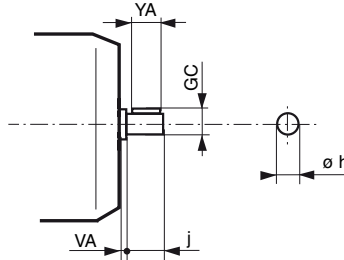
Type	Cylindrical				
	Keyed shaft				
	GC	$\varnothing h$	j	VA	YA
LS 71 L	10,2	9	20	0	16
LS 80 L	12,5	11	23	2	18
LS 90 L	16	14	30	4	25
LS 100 L	16	14	30	4	25
LS 112 MG	16	14	30	4	25
LS 132 S	16	14	30	4	25
LS 132 M	27	24	50	5	40
LS 160 MP, LR	27	24	50	5	40

Crankshaft socket according to ISO 4014



(unless otherwise indicated, this option is supplied as standard)

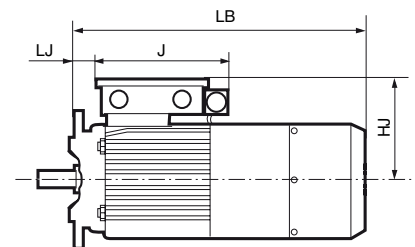
Cylindrical keyed shaft according to NFE 22-051



### Dimensions of FCR brake motors, (FF) flange mounted with encoder

Type	Encoder			
	HJ	J	LB (J01 flywheel)	LJ
LS or LSMVR 71*	130	197	334	38
LS or LSMVR 80*	146	197	384	38
LS or LSMVR 90*	156	197	394	33
LS or LSMVR 100*	161	197	458	50
LS or LSMVR 112*	169	197	499	49
LS 132 S*	169	197	511	49
LSMVR 132 SM, M*	192	197	603	65
LSMVR 160 MR*	192	197	638	55

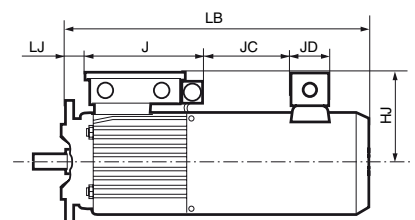
\* For other dimensions, see FCR dimensions pages.



### Dimensions of FCR brake motors, (FF) flange mounted with encoder + forced ventilation

Type	Encoder + Forced ventilation					
	HJ	J	JC	JD	LB (J01 flywheel)	LJ
LS or LSMVR 71*	135	197	68	75	404	38
LS or LSMVR 80*	146	197	99	98	474	38
LS or LSMVR 90*	156	197	131	98	486	33
LS or LSMVR 100*	161	197	178	98	550	50
LS or LSMVR 112*	169	197	182	110	581	49
LS 132 S*	169	197	194	110	593	49
LSMVR 132 SM, M*	192	197	299	110	713	65
LSMVR 160 MR*	192	197	344	110	748	55

\* For other dimensions, see FCR dimensions pages.







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