

# FCR asynchronous brake motors

## LS FCR

### General information



#### GENERAL USE : U.G.

**Enclosed three phase asynchronous brake motor**, series LS with failsafe brake, according to IEC 34, 72, EN 50281.

- Single speed : power 0.09 to 15 kW, frame size 71 to 160 mm, 2, 4, 6, 8 poles ; 230/400 V or 400 V  $\Delta$ , 50 Hz.
- Two speed : (on request) power 0.12 to 9 kW, frame size 80 to 132 mm at 2/4, 4/6, 4/8, 6/8, 6/12 poles general use, two windings or Dahlander ; 400 V Y or  $\Delta$ , 50 Hz.

#### Brake motor protection

IP 55 protection providing good sealing against projected liquid and dust in an industrial environment.

#### Operating as a variable speed motor :

- fitted with thermal probes in winding (obligatory)

#### Finish : aluminium casing

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

Protection of the flange and shaft end against atmospheric corrosion.

Individual anti-shock packaging.

#### Brake motor mains supply

- Standard according to IEC 38 :
  - 230/400 V +10 % -10 % at 50 Hz ; suitable for 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.

Design allows Y/ $\Delta$  starting.

- The brake mains supply is integral and the brake motor connects as a standard motor. If it is separate : the alternating (ac) supply is exterior to the motor.

#### Options

- Selection of brake inertia (HA 71 to 100) ; manual brake release
- Drip cover ; 2nd shaft end ; thermal probes
- Reduced response time ; connector
- Encoders and/or forced ventilation.

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

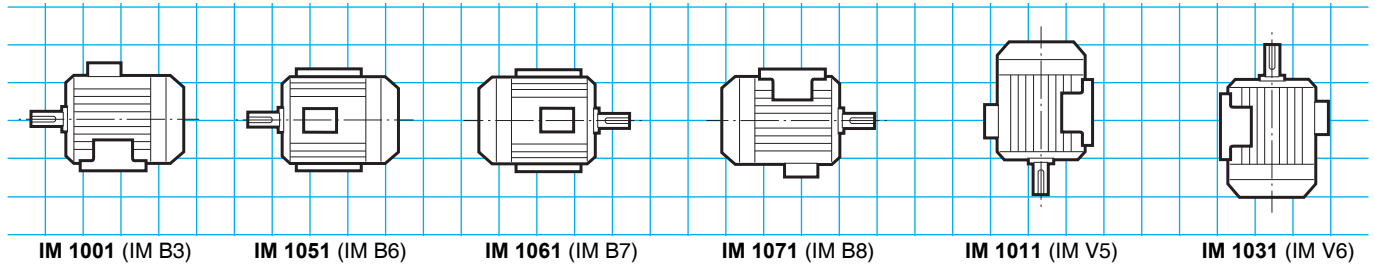
Component	Materials	Remarks
Finned housing	Aluminium alloy	- with cast feet, or without feet - pressure die-cast <ul style="list-style-type: none"> <li>• 4 mounting holes for the foot housing</li> <li>• optional lifting rings at 132 and 112</li> </ul> - optional earth terminal
Stator	Insulated low carbon magnetic steel laminations Electrolytic copper	- the low carbon content guarantees long term stability of the characteristics - welded sheet steel lamination pack - shrink fitted into heat expanded housing to provide mechanical rigidity - semi-closed slots - insulation system class F
Rotor	Insulated low carbon magnetic steel laminations	- inclined slots - squirrel cage pressure die cast in aluminium (or alloy for special applications) - mounted on shaft by heat shrinking - level A rotor dynamic balancing - 1/2 key
Shaft	Steel	- for all frame sizes : <ul style="list-style-type: none"> <li>• shaft end fitted with screw and washer</li> <li>• closed keyway</li> </ul>
End shields	Cast iron	- front and rear, assembled with tie rods
Bearings		- ball bearings, sealed, lubricated for life mounted as follows : <ul style="list-style-type: none"> <li>• locked rear to enable precise positioning of the load no matter the load direction</li> <li>• preloaded front to eliminate axial movement</li> </ul>
Lipseals	Synthetic rubber	- front and rear lipseals for IP 55 sealing on the shaft
Fan	Aluminium alloy or cast iron	- 2 directions of rotation : straight blades
Fan cover	Sheet steel	- on request, fitted with a drip cover for operation in vertical position, shaft facing down
Terminal box	Aluminium alloy	- IP 55, rotatable in 4 directions for flange version, mounted opposite position to the feet, or foot and flange version for frame sizes $\geq$ 80 - fitted with a 6 steel stud terminal board (brass as an optional extra) with connection by copper straps - delivered with polyamide cable glands - 1 earth terminal in all terminal boxes
Painting		- system 1a, colour RAL 6000 (green) - resistance to saline mist : 72 h (following NFX 41002)

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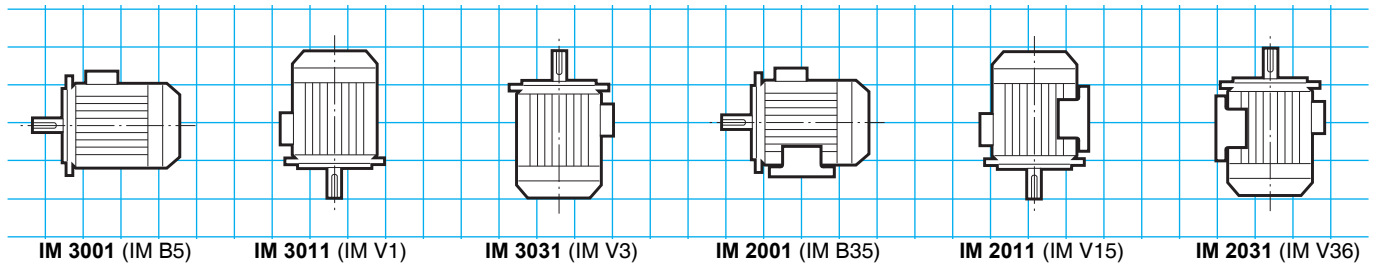
## Mounting - Operating positions

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

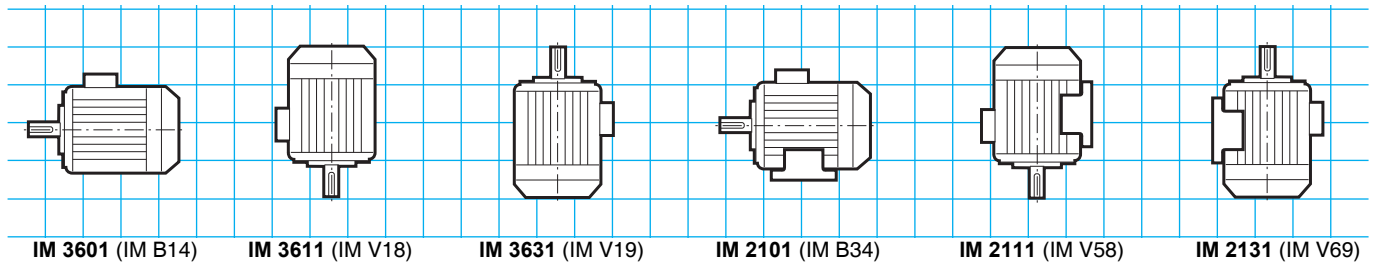
### Foot mounted motor



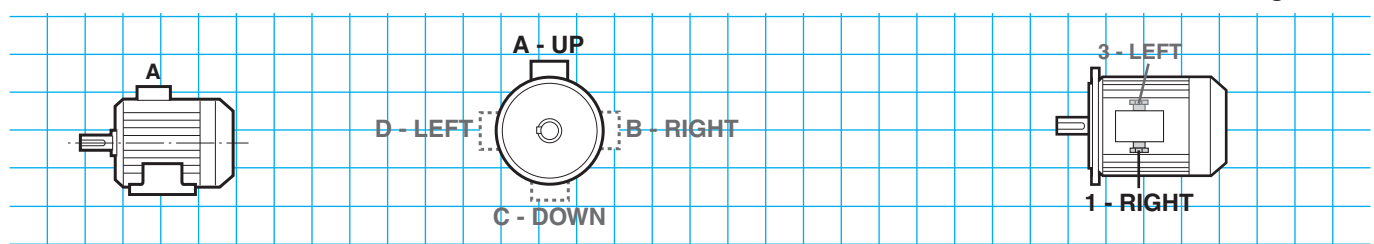
### (FF) plain hole flange mounted motor



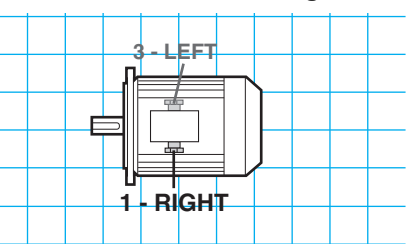
### (FT) tapped hole flange mounted motor



### Positions of the terminal box



### Positions of cable gland



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## Adaptation possibilities

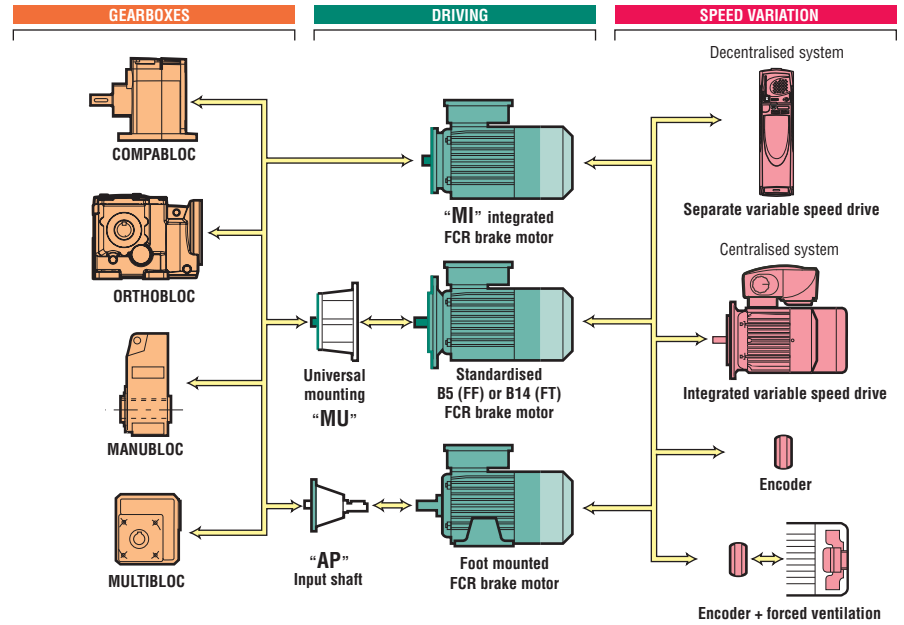
Leroy-Somer offers, for use with their general use brake motors, many options which meet the needs of highly diverse applications. They are described below and in the chapters relating to gearboxes (D) and to variable speed. For other variants or any specific adaptation, consult the technical specialists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

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

- Compabloc
- Orthobloc
- Manubloc
- Multibloc

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

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



## Designation / Codification

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

☞ **Codification example :**

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

All the products in this catalogue have a code. The coding table is incorporated in the price list together with the list of designations. Each brake motor product is classified first in order of power and then in order of speed.

# FCR asynchronous brake motors

## LS FCR

### Selection

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

- LS series motor - IP 55 - 50 Hz - Class F - 230 V  $\Delta$  / 400 V  $Y$  or 400 V  $\Delta$   
Aluminium Rotor (ALU) - U.G. General Use
- Brake - IP 55 - Integrated mains supply - Factory set brake torque

Motor type	Brake type	Rated power at 50 Hz $P_N$ kW	Rated speed $N_N$ min <sup>-1</sup>	Rated torque $M_N$ N.m	Rated current $I_N$ 400 V A	Power factor $\cos \varphi$	Efficiency $\eta$ 100 %	Starting current / Rated current $I_D / I_N$	Starting torque / Rated torque $M_D / M_N$	Moment of inertia $J$ 10 <sup>-3</sup> kg.m <sup>2</sup>	Brake torque $M_T \pm 20\%$ N.m	Weight <sup>1</sup> IM B5	J01 to J03 kg	J05 kg
LS 71 L	FCR J02	0.37	2800	1.3	0.98	0.80	68	5.2	3.2	1.35	5	9.1	11.6	
LS 71 L	FCR J02	0.55	2800	1.9	1.32	0.80	75	6	3.2	1.45	5	10	12.5	
LS 80 L	FCR J02	0.75	2840	2.5	1.64	0.87	76	5.9	2.4	3.2	10	15.5	19.2	
LS 80 L	FCR J02	1.1	2837	3.7	2.4	0.84	78	5.8	2.7	3.4	10	17	20.7	
LS 80 L	FCR J02	1.5	2859	5	3.2	0.83	80.3	7	3.6	3.6	10	18.6	22.3	
LS 90 L	FCR J02	1.5	2870	5	3.4	0.81	79.6	8	3.9	6.1	20	21	25.5	
LS 90 L	FCR J02	1.8	2865	6	3.6	0.86	83.1	8	3.6	6.4	20	23	27.5	
LS 90 L	FCR J02	2.2	2862	7.4	4.3	0.88	83.6	7.7	3.7	6.8	20	25	29.5	
LS 100 L	FCR J02	3	2868	10	6.3	0.81	83.9	7.5	3.8	6.9	25	30	-	
LS 112 MG	FCR J01	4	2877	13.5	7.8	0.85	86	7.8	4.1	11.2	22	33.4	-	
LS 132 S	FCR J01	5.5	2916	18.1	10.5	0.88	86.6	9	3.1	11.9	43	46	-	
LS 132 SM	FCR J02	7.5	2905	24.5	14.7	0.85	86.5	8.7	3.4	35.8	80	54	-	
LS 132 M	FCR J02	9	2910	29.6	17.3	0.85	88.1	8.6	2.5	43	80	64	-	
LS 132 M	FCR J02	11	2944	36	20.7	0.86	89.4	7.5	2.7	45	80	70	-	
LS 160 MP	FCR J02	11	2944	36	20.7	0.86	89.4	7.5	2.7	46	80	77	-	
LS 160 MP	FCR J02	15	2935	48.8	28.4	0.85	90	8.1	3	50	80	87	-	

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

- LS series motor - IP 55 - 50 Hz - Class F - 230 V  $\Delta$  / 400 V  $Y$  or 400 V  $\Delta$   
Aluminium Rotor (ALU) - U.G. General Use
- Brake - IP 55 - Integrated mains supply - Factory set brake torque

Motor type	Brake type	Rated power at 50 Hz $P_N$ kW	Rated speed $N_N$ min <sup>-1</sup>	Rated torque $M_N$ N.m	Rated current $I_N$ 400 V A	Power factor $\cos \varphi$	Efficiency $\eta$ 100 %	Starting current / Rated current $I_D / I_N$	Starting torque / Rated torque $M_D / M_N$	Moment of inertia $J$ 10 <sup>-3</sup> kg.m <sup>2</sup>	Brake torque $M_T \pm 20\%$ N.m	Weight <sup>1</sup> IM B5	J01 to J03 kg	J05 kg
LS 71 L	FCR J02	0.25	1425	1.7	0.80	0.65	69	4.6	2.7	1.68	5	9.1	11.6	
LS 71 L	FCR J02	0.37	1420	2.5	1.06	0.70	72	4.9	2.4	1.85	5	10	12.5	
LS 71 L	FCR J02	0.55	1400	3.8	1.62	0.70	70	4.8	2.3	2.1	5	11	13.5	
LS 80 L	FCR J02	0.55	1410	3.8	1.42	0.76	73.4	4.5	2	3.8	10	15.5	19.2	
LS 80 L	FCR J02	0.75	1400	5.1	2.01	0.77	70	4.5	2	4.3	10	16.6	20.3	
LS 80 L	FCR J02	0.9	1425	6	2.44	0.73	73	5.8	3	4.9	10	18.2	21.9	
LS 90 L	FCR J02	1.1	1429	7.4	2.5	0.84	76.8	4.8	1.6	7.3	20	20.5	25	
LS 90 L	FCR J02	1.5	1428	10	3.4	0.82	78.5	5.3	1.8	7.9	20	22.5	27	
LS 90 L	FCR J02	1.8	1438	12	4	0.82	80.1	6	2.1	8.4	20	24.2	28.7	
LS 100 L	FCR J02	2.2	1436	14.7	4.8	0.81	81	5.9	2.1	9	25	27	-	
LS 100 L	FCR J02	3	1437	20.1	6.5	0.81	82.6	6	2.5	10.2	25	30	-	
LS 112 MG	FCR J01	4	1450	26.56	8.6	0.82	83	6.3	2.2	15.3	43	41	-	
LS 132 S	FCR J01	5.5	1447	36.7	11.1	0.83	85.7	6.3	2.4	18.3	43	48	-	
LS 132 M	FCR J02	7.5	1451	49.4	15.2	0.82	87	7	2.4	46	80	70	-	
LS 132 M	FCR J02	9	1455	59.3	18.1	0.82	87.7	6.9	2.2	50	105	75	-	
LS 160 MP	FCR J02	11	1454	72.2	21	0.86	88.4	7.7	2.3	57	120	85	-	
LS 160 LR	FCR J02	15	1453	98	28.8	0.84	89.4	7.5	2.9	63	120	101	-	

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# FCR asynchronous brake motors LS FCR

## Selection

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

U.G. general use  
IP 55 - 50 Hz - Class F - 230 V  $\Delta$  / 400 V Y (LS 71 to LS 132) - 400 V  $\Delta$  (LS 160)

Motor type	Brake type	Rated power at 50 Hz	Brake torque	IM 1001 (IM B3)		IM 3001 (IM B5)		IM 3601 (IM B14)	
		$P_N$ kW	$M_f \pm 20\%$ N.m	Code	Qty	Code	Qty	Code	Qty
LS 71 L	FCR J02	0.37	5	3843417	-	3808901	-	3809704	-
LS 71 L	FCR J02	0.55	5	4118245	-	4118247	-	3969812	-
LS 80 L	FCR J02	0.75	10	3994559	-	4032265	-	4118252	-
LS 80 L	FCR J02	1.1	10	4033295	-	4033106	-	3841459	-
LS 80 L	FCR J02	1.5	10	4015958	-	3946018	-	3840901	-
LS 90 L	FCR J02	1.5	20	4072193	-	4118263	-	4038269	-
LS 90 L	FCR J02	1.8	20	4012424	-	4118504	-	4118505	-
LS 90 L	FCR J02	2.2	20	3969185	-	3845020	-	3895929	-
LS 100 L	FCR J02	3	25	4042504	-	3952713	-	4118508	-
LS 112 MG	FCR J01	4	22	4556368	-	4556371	-	4556372	-
LS 132 S	FCR J01	5.5	43	4068406	-	4069679	-	4069682	-
LS 132 SM	FCR J02	7.5	80	4300418	-	4300419	-	4300420	-
LS 132 M	FCR J02	9	80	4300421	-	4300427	-	4300428	-
LS 132 M	FCR J02	11	80	4300431	-	4300432	-	4300433	-
LS 160 MP	FCR J02	11	80	4312895	-	4312896	-	4312902	-
LS 160 MP	FCR J02	15	80	4312905	-	4312910	-	4312911	-

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

U.G. general use  
IP 55 - 50 Hz - Class F - 230 V  $\Delta$  / 400 V Y (LS 71 to LS 132) - 400 V  $\Delta$  (LS 160)

Motor type	Brake type	Rated power at 50 Hz	Brake torque	IM 1001 (IM B3)		IM 3001 (IM B5)		IM 3601 (IM B14)	
		$P_N$ kW	$M_f \pm 20\%$ N.m	Code	Qty	Code	Qty	Code	Qty
LS 71 L	FCR J02	0.25	5	3833477	3	3828937	5	3839263	5
LS 71 L	FCR J02	0.37	5	3811072	3	3791716	5	3807805	5
LS 71 L	FCR J02	0.55	5	3830503	-	3825437	5	3811226	5
LS 80 L	FCR J02	0.55	10	3808056	3	3807964	5	3808584	5
LS 80 L	FCR J02	0.75	10	3809565	3	3807581	5	3800442	5
LS 80 L	FCR J02	0.9	10	3807104	3	3825992	5	3808975	5
LS 90 L	FCR J02	1.1	20	3809277	3	3818909	5	3805131	5
LS 90 L	FCR J02	1.5	20	3806769	3	3804387	5	3806070	5
LS 90 L	FCR J02	1.8	20	3810247	3	3809843	5	3820606	5
LS 100 L	FCR J02	2.2	25	3981592	3	3953942	5	3969460	5
LS 100 L	FCR J02	3	25	3954186	3	3941367	5	3937586	5
LS 112 MG	FCR J01	4	43	4069692	3	4069695	5	4069697	5
LS 132 S	FCR J01	5.5	43	4069699	3	4069700	5	4069701	-
LS 132 M	FCR J02	7.5	80	4299292	3	4266324	5	4314360	-
LS 132 M	FCR J02	9	105	4314366	3	4309836	5	4314369	-
LS 160 MP	FCR J02	11	120	4312913	1	4312916	1	4314370	-
LS 160 LR	FCR J02	15	120	4312918	1	4282492	1	4314374	-

### Selection example :

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

### Designation :

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

**Code : 3818909**

# FCR asynchronous brake motors

## LS FCR

### Selection

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

- LS series motor - IP 55 - 50 Hz - Class F - 230 V  $\Delta$  / 400 V  $Y$  or 400 V  $\Delta$   
Aluminium Rotor (ALU) - U.G. General Use
- Brake - IP 55 - Integrated mains supply - Factory set brake torque

Motor type	Brake type	Rated power at 50 Hz	Rated speed	Rated torque	Rated current	Power factor	Efficiency	Starting current / Rated current	Starting torque / Rated torque	Moment of inertia	Brake torque	Weight <sup>1</sup> IM B5	
		$P_N$ kW	$N_N$ min <sup>-1</sup>	$M_N$ N.m	$I_N$ 400 V A	$\cos \varphi$	$\eta$ 100 %	$I_D / I_N$	$M_D / M_N$	$J$ 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	895	1.8	0.81	0.62	52	2.7	1.9	2.1	5	10.3	12.8
LS 71 L	FCR J02	0.25	840	2.6	1	0.7	50	2.5	1.7	2.3	5	10.6	13.1
LS 80 L	FCR J02	0.37	950	3.7	1.1	0.72	66	4.3	1.7	5.7	10	17	20.7
LS 80 L	FCR J02	0.55	950	5.5	1.8	0.64	68	4.9	2.1	6.7	10	18.6	22
LS 90 L	FCR J02	0.75	930	7.7	2.1	0.77	68.5	4.2	2.4	8.6	20	22.5	27
LS 90 L	FCR J02	1.1	915	11.5	3	0.76	70	4.7	2.4	9.5	20	24.2	28.7
LS 100 L	FCR J02	1.5	905	15.8	4.2	0.74	69	4.5	2.5	10.5	25	29	-
LS 112 MG	FCR J01	2.2	950	23.21	6.2	0.68	75.4	5.2	2.1	13	43	41	-
LS 132 S	FCR J01	3	957	30.3	6.8	0.78	81.1	6	2	22.3	43	54	-
LS 132 M	FCR J02	4	961	39.6	9.3	0.75	83.6	5.9	2.5	61	80	68.5	-
LS 132 M	FCR J02	5.5	960	54.2	13.3	0.71	84.1	5.5	2.5	66	80	75.5	-

1. These values are given for information only.

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

- LS series motor - IP 55 - 50 Hz - Class F - 230 V  $\Delta$  / 400 V  $Y$  or 400 V  $\Delta$   
Aluminium Rotor (ALU) - U.G. General Use
- Brake - IP 55 - Integrated mains supply - Factory set brake torque

Motor type	Brake type	Rated power at 50 Hz	Rated speed	Rated torque	Rated current	Power factor	Efficiency	Starting current / Rated current	Starting torque / Rated torque	Moment of inertia	Brake torque	Weight <sup>1</sup> IM B5	
		$P_N$ kW	$N_N$ min <sup>-1</sup>	$M_N$ N.m	$I_N$ 400 V A	$\cos \varphi$	$\eta$ 100 %	$I_D / I_N$	$M_D / M_N$	$J$ 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	690	1.25	0.5	0.55	44	2.8	1.52	2.1	5	10.2	12.7
LS 71 L	FCR J02	0.12	650	1.7	0.72	0.55	44	2.1	1.3	2.3	5	10.7	13.2
LS 80 L	FCR J02	0.18	705	2.4	0.79	0.63	52	2.9	1.5	5.6	10	17	20.7
LS 80 L	FCR J02	0.25	700	3.4	0.98	0.68	54	2.8	1.7	6.6	10	18.6	22.3
LS 90 L	FCR J02	0.37	685	5.2	1.2	0.72	62	3.8	1.7	8.5	20	22.5	27
LS 90 L	FCR J02	0.55	670	7.8	1.7	0.72	63.5	3.5	1.7	9.4	20	24.2	28.7
LS 100 L	FCR J02	0.75	670	10.7	2.4	0.71	63.5	3.5	1.8	9.4	25	27	-
LS 100 L	FCR J02	1.1	670	15.7	3.7	0.68	63	3.7	2	11.5	25	31	-
LS 112 MG	FCR J01	1.5	710	20.2	4.7	0.64	72	3.8	2	19.3	43	41	-
LS 132 SM	FCR J02	2.2	713	30.2	6.1	0.68	77.1	4	1.7	52	80	60.6	-
LS 132 M	FCR J02	3	712	40.7	8	0.65	79.8	4.3	1.9	60	80	69	-

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# FCR asynchronous brake motors LS FCR

## Selection

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

U.G. general use  
IP 55 - 50 Hz - Class F - 230 V  $\Delta$  / 400 V Y

Motor type	Brake type	Rated power at 50 Hz	Brake torque	IM 1001 (IM B3)		IM 3001 (IM B5)		IM 3601 (IM B14)	
		$P_N$ kW	$M_f \pm 20\%$ N.m	Code	Qty	Code	Qty	Code	Qty
LS 71 L	FCR J02	0.18	5	4118609	-	4118605	-	4107389	-
LS 71 L	FCR J02	0.25	5	4118619	-	3835887	-	3854335	-
LS 80 L	FCR J02	0.37	10	3948819	-	3949737	-	3828851	-
LS 80 L	FCR J02	0.55	10	4012508	-	3831533	-	3828241	-
LS 90 L	FCR J02	0.75	20	3926529	-	3922205	-	3828268	-
LS 90 L	FCR J02	1.1	20	3988622	-	3957548	-	3820644	-
LS 100 L	FCR J02	1.5	25	4118731	-	4037271	-	4043816	-
LS 112 MG	FCR J01	2.2	43	4069705	-	4069710	-	4069712	-
LS 132 S	FCR J01	3	43	4175248	-	4302371	-	4355291	-
LS 132 M	FCR J02	4	80	4266634	-	4367965	-	4400591	-
LS 132 M	FCR J02	5.5	80	4299814	-	4276264	-	4324053	-

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

U.G. general use  
IP 55 - 50 Hz - Class F - 230 V  $\Delta$  / 400 V Y

Motor type	Brake type	Rated power at 50 Hz	Brake torque	IM 1001 (IM B3)		IM 3001 (IM B5)		IM 3601 (IM B14)	
		$P_N$ kW	$M_f \pm 20\%$ N.m	Code	Qty	Code	Qty	Code	Qty
LS 71 L	FCR J02	0.09	5	4556620	-	4556622	-	4556625	-
LS 71 L	FCR J02	0.12	5	4556619	-	4255890	-	4057360	-
LS 80 L	FCR J02	0.18	10	4118760	-	3839957	-	3864044	-
LS 80 L	FCR J02	0.25	10	4118763	-	4118775	-	3819676	-
LS 90 L	FCR J02	0.37	20	3969277	-	4118781	-	3829675	-
LS 90 L	FCR J02	0.55	20	3937466	-	3834889	-	3948129	-
LS 100 L	FCR J02	0.75	25	4118814	-	4118816	-	4023641	-
LS 100 L	FCR J02	1.1	25	4118817	-	4118818	-	3980299	-
LS 112 MG	FCR J01	1.5	43	4069715	-	4069716	-	4069717	-
LS 132 SM	FCR J02	2.2	80	4390366	-	4419187	-	4556615	-
LS 132 M	FCR J02	3	80	4310643	-	4556616	-	4556618	-

### Selection example :

Required power :	1.1 kW
Required speed :	945 min <sup>-1</sup>
Mounting and position :	IM 3001 (IM B5)

### Designation :

**6P LS 90 L 1.1 kW B5 230/400V  
UG FCR J02 20 N.m**

**Code : 3957548**

# FCR asynchronous brake motors

## LS FCR

### Selection

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

- LS series motor - IP 55 - 50 Hz - Class F - 400 V
- Cage rotor - 1 winding (Dahlander) - U.G. General Use
- Brake - IP 55 - Separate mains supply<sup>1</sup> - Factory set brake torque

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	Brake torque	Weight <sup>2</sup> IM B5	
		$P_N$ kW		$N_N$ min <sup>-1</sup>		$I_N$ 400 V A		$\cos$ 100 %		$\eta$ 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	Consult us																	
LS 71 L	FCR J02	0.37	0.25	Consult us																	
LS 71 L	FCR J02	0.55	0.37	Consult us																	
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	3.5	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	6	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	9	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	15	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	Consult us																	
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. brake coil 180 V ; GV : high speed ; PV : low speed  
2. These values are given for information only.

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

- LS series motor - IP 55 - 50 Hz - Class F - 400 V
- Cage rotor - 1 winding (Dahlander) - U.G. General Use
- Brake - IP 55 - Separate mains supply<sup>1</sup> - Factory set brake torque

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	Brake torque	Weight <sup>2</sup> IM B5	
		$P_N$ kW		$N_N$ min <sup>-1</sup>		$I_N$ 400 V A		$\cos$ 100 %		$\eta$ 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	3	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	4.5	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	8	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	20	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	50	70	
LS 132 M	FCR J02	7.6	4	Consult us																	

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

# FCR asynchronous brake motors LS FCR

## Selection

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

**U.G. general use**  
**IP 55 - 50 Hz - Class F - 400 V Y**

Motor type	Brake type	Rated power at 50 Hz		Brake torque	IM 1001 (IM B3)		IM 3001 (IM B5)		IM 3601 (IM B14)	
		$P_N$ kW	$Mf \pm 20\%$ N.m		Code	Qty	Code	Qty	Code	Qty
LS 71 L	FCR J02	0.25/0.18	NC <sup>1</sup>		-		-		-	
LS 71 L	FCR J02	0.37/0.25	NC <sup>1</sup>		-		-		-	
LS 71 L	FCR J02	0.55/0.37	NC <sup>1</sup>		-		-		-	
LS 80 L	FCR J02	0.55/0.37	3.5		-		-		-	
LS 80 L	FCR J02	1.1/0.75	6		-		-		-	
LS 90 L	FCR J02	1.5/1.1	9		-		-		-	
LS 90 L	FCR J02	2.2/1.5	15		-		-		-	
LS 100 L	FCR J02	3/2.6	25		-		-		-	
LS 112 MG	FCR J01	4.5/3.7	32		-		-		-	
LS 132 SM	FCR J02	6/4.5	NC <sup>1</sup>		-		-		-	
LS 132 M	FCR J02	9/6.9	80		-		-		-	

1. Consult us

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

**U.G. general use**  
**IP 55 - 50 Hz - Class F - 400 V Y**

Motor type	Brake type	Rated power at 50 Hz		Brake torque	IM 1001 (IM B3)		IM 3001 (IM B5)		IM 3601 (IM B14)	
		$P_N$ kW	$Mf \pm 20\%$ N.m		Code	Qty	Code	Qty	Code	Qty
LS 80 L	FCR J02	0.25/0.12	3		-		-		-	
LS 80 L	FCR J02	0.55/0.22	4.5		-		-		-	
LS 90 L	FCR J02	1.2/0.6	8		-		-		-	
LS 100 L	FCR J02	1.7/0.9	20		-		-		-	
LS 112 MG	FCR J01	2.8/1.5	32		-		-		-	
LS 132 SM	FCR J02	5/2.85	50		-		-		-	
LS 132 LR	FCR J02	7.6/4	NC <sup>1</sup>		-		-		-	

1. Consult us

### Selection example :

Required power :	0.55/0.22 kW
Required speed :	1500/750 min <sup>-1</sup>
Mounting and position :	IM 3001 (IM B5)

### Designation :

**4/8P LS 80 L 0.55/0.22 kW B5 400V Y**  
**UG FCR J02 4.5 N.m**

**Code : consult us**

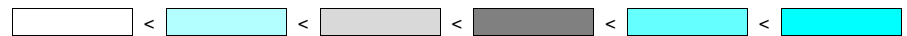
# FCR asynchronous brake motors LS FCR

## Selection

### Possible flanges

		(FF) plain hole flange (IM B5)						
Type	FF 85	FF 100	FF 115	FF 130	FF 165	FF 215	FF 265	FF 300
LS 71	Available	Available	Not Available	Not Available	Available	Available	Not Available	Not Available
LS 80	Available	Available	Not Available	Not Available	Available	Available	Not Available	Not Available
LS 90	Not Available	Not Available	Available	Available	Available	Available	Available	Not Available
LS 100	Not Available	Not Available	Available	Available	Available	Available	Available	Not Available
LS 112	Not Available	Not Available	Available	Available	Available	Available	Available	Available
LS 132	Not Available	Not Available	Not Available	Available	Available	Available	Available	Available
LS 160	Not Available	Not Available	Not Available	Not Available	Available	Available	Available	Available

		(FT) tapped hole flange (IM B14)							
Type	FT 65	FT 75	FT 85	FT 100	FT 115	FT 130	FT 165	FT 215	FT 265
LS 71	Available	Available	Not Available	Not Available	Available	Available	Not Available	Not Available	Not Available
LS 80	Available	Available	Not Available	Not Available	Available	Available	Not Available	Not Available	Not Available
LS 90	Not Available	Not Available	Available	Available	Available	Available	Available	Not Available	Not Available
LS 100	Not Available	Not Available	Available	Available	Available	Available	Available	Not Available	Not Available
LS 112	Not Available	Not Available	Not Available	Available	Available	Available	Available	Available	Not Available
LS 132	Not Available	Not Available	Not Available	Not Available	Not Available	Available	Available	Available	Available
LS 160	Not Available	Not Available	Not Available	Not Available	Not Available	Not Available	Available	Available	Available



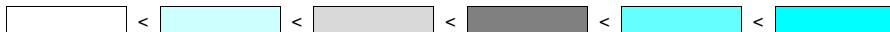
# FCR asynchronous brake motors LS FCR

## Options

### Options index

Type	Fixed speed					Variable speed		
	Environment					Environment		
	Std	ATEX 21		ATEX 22		Std	ATEX 21	ATEX 22
	LS	LSPX	FLSPX	LS	FLS	LSMV	LSMV PX	LSMV
Rotor DP (S4 duty)						-	-	-
DLRA release lever (LS 71 to LS 160)								
Shaft exiting on the brake side								
Drip cover (LS 71 to LS 160)								
Separate brake supply : - coil 180 V power supply	400 V ~							
- coil 180 V power supply	230 V ~							
Optional brake torque	71 to 132 S							
	132 M and 160							
Thermal protection PTO, or PTF, or PTC								
Adaptation and encoder 5V 1024 pts	Series LS 71 to 160	NC	NC	NC	NC	-	-	-
	Series LSMV 71 to 132	-	-	-	-	-	NC	NC
Forced ventilation	Series LS 80 to 132	-	-	-	-	-	-	-
	Series LSMV 71 to 132	-	-	-	-	-	-	-
Key weight								
Absolute encoder and adaption		NC	NC	NC	NC		NC	NC
Optional inertia J01 (LS 71 to 100)						-	-	-
Optional inertia J03 - J05 (71 to 90)						-	-	-
Quick release connector male + cover WMS (LS 71 to LS 132 7.5 kW)			NC		NC			
Kit TB + WMS connector (LS 71 to LS 132 7.5 kW)		-	-	-	-			
Quick release connector male + female WMFS (LS 71 to LS 132 7.5 kW)			NC		NC			
Kit TB + WMFS connector (LS 71 to LS 132 7.5 kW)		-	-	-	-			
TRR reduced response time (LS 71 to LS 132)								
Drain hole positions IM1001 (IMB3), IM3001 (IMB5)								
Drain holes all other positions								
Finish iA : food industry								
Finish MO : machine tool								

NC : consult us.



### Option compatibility

	J01, J02 or J03 <sup>1</sup>	J05 <sup>2</sup>	Anticorrosion treatment	Drip cover	DLRA lever	2 <sup>nd</sup> shaft manual crank handle	2 <sup>nd</sup> cylindrical shaft	Encoder	Reduced response time	Quick release connector	Forced ventilation
J01, J02 or J03 <sup>1</sup>	•	Technical impossibility	•	•	•	•	•	•	•	•	•
J05 <sup>2</sup>	•	A.S.	•	•	•	•	•	Technical impossibility	•	•	Technical impossibility
		Anticorrosion treatment	•	•	•	•	•	•	•	•	•
		Drip cover	•	•	•	Technical impossibility	Technical impossibility	N.D.	•	•	Technical impossibility
		DLRA lever	•	•	•	•	•	•	•	•	•
		2 <sup>nd</sup> shaft manual crank handle	•	•	•	•	Technical impossibility	Technical impossibility	•	•	Technical impossibility
		2 <sup>nd</sup> cylindrical shaft	•	•	•	•	•	Technical impossibility	•	•	Technical impossibility
		Encoder	•	•	•	•	•	•	Technical impossibility	•	•
		Reduced response time	•	•	•	•	•	•	•	N.D.	Technical impossibility
		Forced ventilation	•	•	•	•	•	•	•	•	•

1. Only J01 standard inertia on LS 112 and 132 S, not available on LS 132 M and 160 ; J02 not available on LS 112 and 132 S ; J03 not available on LS 112, 132 and 160.

2. No available inertia on frame sizes 100 to 160.

- Compatibility
- A.S. It needs a special shaft ; not available on frame size  $\geq 100$
- N.D. Not available
- Technical impossibility

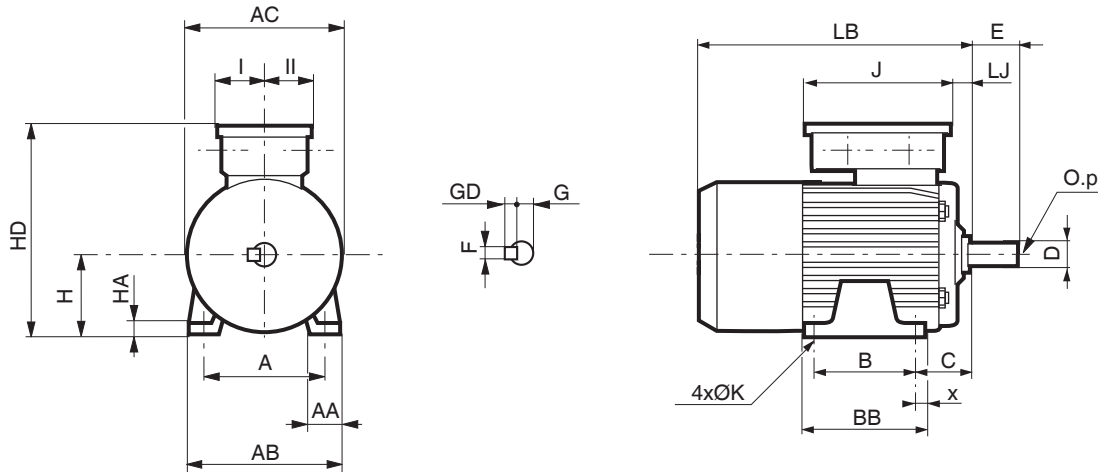
# FCR asynchronous brake motors LS FCR

## Dimensions

### Dimensions of the LS FCR, LSMV FCR, LSPX FCR asynchronous brake motors

Dimensions in millimetres

– foot mounted



Type	Brake motor																	
	A	AA	AB	AC	B	BB	C	HD	H	HA	J	I	II	K	LB J01 to J03 <sup>2</sup>	LB J05 <sup>2</sup>	LJ	x
LS <sup>1</sup> 71 L FCR	112	23	126	140	90	104	45	206	71	9	160	55	55	7	245	271	13	7
LS <sup>1</sup> 80 L FCR	125	29	157	172	100	120	50	226	80	10	160	55	55	9	265	316	13	10
LS <sup>1</sup> 90 L FCR	140	38.5	172	184	125	162	56	246	90	11	160	55	55	10	304	331	13	28
LS <sup>1</sup> 100 L FCR	160	44	196	200	140	165	63	261	100	13	160	55	55	12	352	-	22	12
LS <sup>1</sup> 112 MG FCR	190	52	220	235	140	164	70	281	112	14	160	55	55	12	396	-	23	12
LS <sup>1</sup> 132 S FCR	216	50	250	235	140	170	89	301	132	15	160	55	55	12	437	-	48	16
LS <sup>1</sup> 132 M, SM FCR	216	59	250	280	178	208	89	318	132	18	160	55	55	12	493	-	25	16
LS <sup>1</sup> 160 MP FCR	254	64	294	316	210	294	108	361	160	25	160	55	55	14.5	568	-	55	20
LS <sup>1</sup> 160 LR, MR FCR	254	64	294	316	254	294	108	361	160	25	160	55	55	14.5	568	-	55	20

1. Identical dimensions for LSMV, LS zone 22, LSPX zone 21  
2. Check the brake type (inertia)

Type	Output shaft					
	D	E	F	G	GD	O.p
LS <sup>1</sup> 71 L FCR	14j6	30	5	11	5	M5.12.5
LS <sup>1</sup> 80 L FCR	19j6	40	6	15.5	6	M6.16
LS <sup>1</sup> 90 L FCR	24j6	50	8	20	7	M8.19
LS <sup>1</sup> 100 L FCR	28j6	60	8	24	7	M10.22
LS <sup>1</sup> 112 MG FCR	28j6	60	8	24	7	M10.22
LS <sup>1</sup> 132 FCR	38k6	80	10	33	8	M12.28
LS <sup>1</sup> 160 FCR	42k6	110	12	37	8	M16.36

1. Identical dimensions for LSMV, LS zone 22, LSPX zone 21

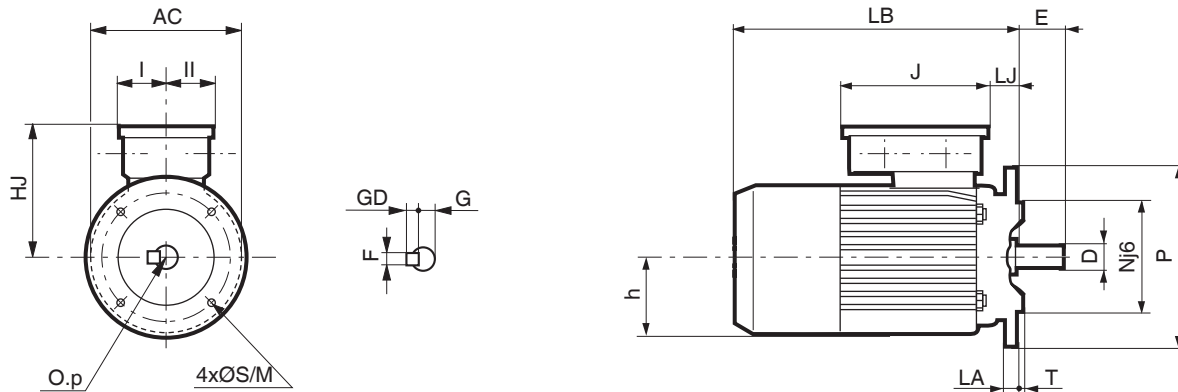
# FCR asynchronous brake motors LS FCR

## Dimensions

### Dimensions of the LS FCR, LSMV FCR, LSPX FCR asynchronous brake motor

Dimensions in millimetres

– (FF) plain hole flange mounted



Type	Brake motor									Output shaft					
	AC	HJ	h	J	I	II	LB J01 to J03 <sup>2</sup>	LB J05 <sup>2</sup>	LJ	D	E	F	G	GD	O.p
LS <sup>1</sup> 71 L FCR	140	135	70	160	55	55	271	297	38	14j6	30	5	11	5	M5.12.5
LS <sup>1</sup> 80 L FCR	172	146	80	160	55	55	292	343	40.5	19j6	40	6	15.5	6	M6.16
LS <sup>1</sup> 90 L FCR	184	156	90	160	55	55	324	351	33	24j6	50	8	20	7	M8.19
LS <sup>1</sup> 100 L FCR	200	161	98	160	55	55	388	-	50	28j6	60	8	24	7	M10.22
LS <sup>1</sup> 112 MG FCR	235	169	110	160	55	55	425	-	49	28j6	60	8	24	7	M10.22
LS <sup>1</sup> 132 S FCR	235	169	110	160	55	55	437	-	41	38k6	80	10	33	8	M12.28
LS <sup>1</sup> 132 M, SM FCR	280	188	130	160	55	55	533	-	65	38k6	80	10	33	8	M12.28
LS <sup>1</sup> 160 MP FCR	316	201	131	160	55	55	568	-	55	42k6	110	12	37	8	M16.36
LS <sup>1</sup> 160 LR, MR FCR	316	201	131	160	55	55	568	-	55	42k6	110	12	37	8	M16.36

1. Identical dimensions for LSMV, LS zone 22, LSPX zone 21

2. Check the brake type (inertia)

Type	FF flange							
	Symb.	M	N	n	P	S	T	LA
LS <sup>1</sup> 71 L FCR	FF 130	130	110	4	160	10	3.5	10
LS <sup>1</sup> 80 L FCR	FF 165	165	130	4	200	12	3.5	10
LS <sup>1</sup> 90 L FCR	FF 165	165	130	4	200	12	3.5	10
LS <sup>1</sup> 100 L FCR	FF 215	215	180	4	250	14.5	4	12
LS <sup>1</sup> 112 MG FCR	FF 215	215	180	4	250	14.5	4	12
LS <sup>1</sup> 132 FCR	FF 265	265	230	4	300	15	4	14
LS <sup>1</sup> 160 FCR	FF 300	300	250	4	350	19	5	16

1. Identical dimensions for LSMV, LS zone 22, LSPX zone 21

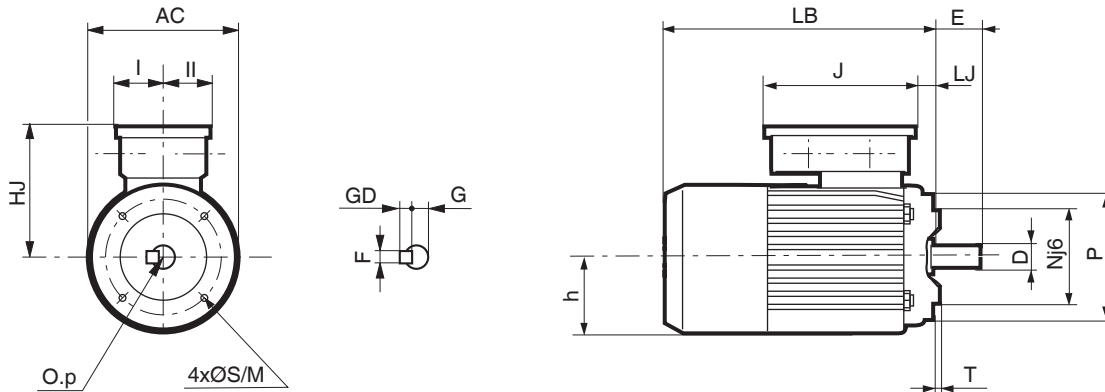
# FCR asynchronous brake motors LS FCR

## Dimensions

### Dimensions of the LS FCR, LSMV FCR, LSPX FCR asynchronous brake motors

Dimensions in millimetres

– (FT) tapped hole flange mounted



Type	Brake motor									Output shaft					
	AC	HJ	h	J	I	II	LB J01 to J03 <sup>2</sup>	LB J05 <sup>2</sup>	LJ	D	E	F	G	GD	O.p
LS <sup>1</sup> 71 L FCR	140	135	70	160	55	55	245	271	13	14j6	30	5	11	5	M5.12.5
LS <sup>1</sup> 80 L FCR	172	146	80	160	55	55	265	316	13	19j6	40	6	15.5	6	M6.16
LS <sup>1</sup> 90 L FCR	184	156	89	160	55	55	304	331	13	24j6	50	8	20	7	M8.19
LS <sup>1</sup> 100 L FCR	200	161	98	160	55	55	352	-	22	28j6	60	8	24	7	M10.22
LS <sup>1</sup> 112 MG FCR	235	169	110	160	55	55	396	-	23	28j6	60	8	24	7	M10.22
LS <sup>1</sup> 132 S FCR	235	169	110	160	55	55	437	-	48	38k6	80	10	33	8	M12.28
LS <sup>1</sup> 132 M, SM FCR	280	188	130	160	55	55	493	-	25	38k6	80	10	33	8	M12.28
LS <sup>1</sup> 160 MP FCR	316	201	131	160	55	55	568	-	55	42k6	110	12	37	8	M16.36
LS <sup>1</sup> 160 LR, MR FCR	316	201	131	160	55	55	568	-	55	42k6	110	12	37	8	M16.36

1. Identical dimensions for LSMV, LS zone 22, LSPX zone 21  
2. Check the brake type (inertia)

Type	Symb.	FT flange					
		M	N	n	P	S	T
LS <sup>1</sup> 71 L FCR	FT 85	85	70	4	105	M6	2.5
LS <sup>1</sup> 80 L FCR	FT 100	100	80	4	120	M6	3
LS <sup>1</sup> 90 L FCR	FT 115	115	95	4	140	M8	3
LS <sup>1</sup> 100 L FCR	FT 130	130	110	4	160	M8	3.5
LS <sup>1</sup> 112 MG FCR	FT 130	130	110	4	160	M8	3.5
LS <sup>1</sup> 132 FCR	FT 215	215	180	4	250	M12	4
LS <sup>1</sup> 160 FCR	FT 215	215	180	4	250	M12	4

1. Identical dimensions for LSMV, LS zone 22, LSPX zone 21