

# Variable speed asynchronous motors with FCPL brake LSMV FCPL

## General information



### GENERAL USE : U.G.

**Enclosed three-phase asynchronous brake motors**, LSMV series with failsafe continuous current (dc) brake, according to IEC 60034, 60072, EN50281.

Separate mains supply to the motor and brake. Voltage 180 V

• Single speed : power 7.5 to 132 kW, frame size from 160 to 280 , 4, 6 poles ; 230/400 V, 50 Hz by frequency inverter.

### Protection

- IP 55 protection for the motor
- IP 44 protection for the brake

### Options

- Brake
- Brake voltage (20 V, 100 V, 200 V or other).
- Release lever.
- Brake release indicator.
- Brake lining wear indicator.
- Encoder : standard 1024 points, supply 5 V. Encoder 2 way + top 0 + supplementary way. Connection by 12 pin connector.
- Special position of the brake terminal box on request.
- Electronic boost card to reduce response time.

### • Motor

- Construction suitable for Y / Δ starting.
- PTO,PTF,PTC thermal protection.
- Anti-condensation heaters.
- Forced ventilation.

### Finish

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

Honing and traceability of the brake disk.

### Brake motor mains supply

• Standard according to IEC 60038 :

- 230/400 V +10% -10% at 50 Hz.

Standard construction suitable for the following supply :

- 220/380 V +5% -5% and

- 240/415 V +5% -5% at 50 Hz.

The 400 V supply is supplied to the motor through a rectifier S0 7 or an electronic boost card.

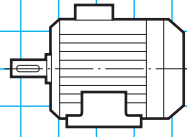
## Description of the LSMV FCPL aluminium three-phase brake motors

Component	Materials	Remarks
Finned housings	Aluminium alloy	- with cast or bolt-on feet, or without feet - pressure die-cast for frame sizes ≤ 180 - gravity cast for frame size = 200 <ul style="list-style-type: none"> <li>• 4 or 6 mounting holes for the foot housing</li> <li>• lifting rings</li> </ul> - earth terminal on feet or fin
Stator	Insulated low carbon magnetic steel laminations Enamelled electrolytic copper	- the low carbon content guarantees long term stability of the characteristics - fitted into a heat expanded housing to provide mechanical rigidity - semi-enclosed slots - insulation system class F
Rotor	Insulated low carbon magnetic steel laminations	- inclined slots - squirrel cage pressure die cast in aluminium (or alloy for special applications) or mixed with copper - mounted on shaft by heat shrinking - dynamically balanced rotor class N - 1/2 key
Shaft	Steel	- tapped centre hole - open keyway
End shields	Cast iron	- front and rear, assembled with tie rods
Brake housing	Cast iron	- bolted to the flange and protected by sheet steel cover
Bearings		- ball bearings C3 type 2RS from 160 to 225 MR - regreasable bearings from 225 MK to 280 frame size - front bearing locked and rear bearing preloaded
Labyrinth seals Lipseals	Technopolymer or steel Synthetic rubber	- front lipseals or jet deflector for all flange motors - lipseals, jet deflector or labyrinth seals for foot motors
Fan	Composite material or aluminium alloy	- 2 directions of rotation : straight blades
Terminal box	Metal	- 1 terminal box for the motor - 1 terminal box for the brake - sealed, provided with cable glands, located on top of the motor or on the brake housing
Painting		- System Ia RAL 9005 (black)

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## Mounting positions

### Foot mounted motor

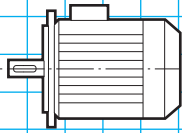


IM 1001 (IM B3)

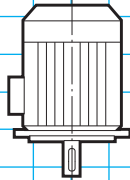


IM 1011 (IM V5)

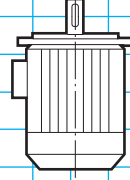
### (FF) plain hole flange mounted motor



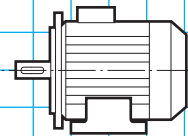
IM 3001 (IM B5)



IM 3011 (IM V1)



IM 3031 (IM V3)



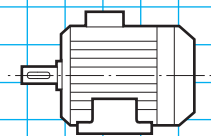
IM 2001 (IM B35)

*In consideration of the weight of certain motors, B5 mounting must be confirmed by the factory.  
V1 - V5 mounting : consult the factory if 2 disk brake.  
V3 mounting : impossible if 2 disk brake.*

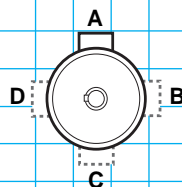
### (FT) tapped hole flange mounted motor

- For frame size 160 mm. Consult us.

#### Positions of the terminal box in relation to the motor shaft end

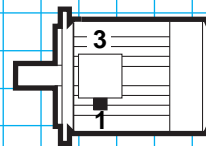


Foot mounted motor  
A : only possibility



Flange mounted motor  
A : standard

#### Positions of the cable gland in relation to the motor shaft end



LS 160 to 225 : 1 : standard  
(3 : only as an optional extra)



# Variable speed asynchronous motors with FCPL brake LSMV FCPL

## Selection

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

- LSMV motor - IP 55 - 50 Hz - Class F - 230 V  $\Delta$  / 400 V Y - Aluminium rotor, U.G. general use
- IP 44 brake - Separate mains supply

Motor type	Brake type	Rated power at 50 Hz	Rated speed	Rated current	Power factor	Efficiency	Starting torque / Rated torque	Rated torque	Moment of inertia	Brake torque	Weight
		$P_N$ kW	$N_N$ min <sup>-1</sup>	$I_N(400V)$ A	$\cos \varphi$ 100 %	$\eta$ 100 %	$M_D / M_N$	$M_N$ N.m	$J$ kg.m <sup>2</sup>	$M_f \pm 20\%$ N.m	IM B3 kg
LSMV 160 MR	FCPL 40 - 108	11	1460	20.2	0.88	89	2.5	72	0.058	80	105
LSMV 160 LU	FCPL 54 - 211	15	1465	28.1	0.85	90.6	3.6	100	0.117	110	150
LSMV 180 MU	FCPL 54 - 313	18.5	1465	32.9	0.89	91.2	2.6	120	0.171	130	200
LSMV 180 LU	FCPL 54 - 215	22	1465	40.8	0.86	90.6	2.8	144	0.171	150	205
LSMV 200 L	FCPL 54 - 222 <sup>1</sup>	30	1475	55.1	0.85	92.4	2.9	195	0.306	220	235
LSMV 225 SR	FCPL 60 - 126	37	1475	66.8	0.86	93	2.8	235	0.365	260	320
LSMV 225 MG	FCPL 60 - 230 <sup>1</sup>	45	1482	83.1	0.83	94.2	3.1	290	0.749	300	400
LSMV 250 ME	FCPL 60 - 239	55	1482	100	0.84	94.4	2.9	354	0.988	390	420
LSMV 280 SD	FCPL 60 - 152	75	1482	138	0.83	94.7	3.3	483	1.132	520	580
LSMV 280 MK	FCPL 60 - 260 <sup>1</sup>	90	1490	164	0.84	93.3	3.1	577	2.793	590	780

LSMV 315

Above, consult us

1. Requires a CDF brake mains supply card

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

- LSMV motor - IP 55 - 50 Hz - Class F - 230 V  $\Delta$  / 400 V Y - Aluminium rotor, U.G. general use
- IP 44 brake - Separate mains supply

Motor type	Brake type	Rated power at 50 Hz	Rated speed	Rated current	Power factor	Efficiency	Starting torque / Rated torque	Rated torque	Moment of inertia	Brake torque	Weight
		$P_N$ kW	$N_N$ min <sup>-1</sup>	$I_N(400V)$ A	$\cos \varphi$ 100 %	$\eta$ 100 %	$M_D / M_N$	$M_N$ N.m	$J$ kg.m <sup>2</sup>	$M_f \pm 20\%$ N.m	IM B3 kg
LSMV 160 M	FCPL 40 - 108	7.5	967	16.1	0.79	85.2	2.1	74	0.100	80	120
LSMV 160 L	FCPL 54 - 211	11	967	23.3	0.79	86.3	2.1	109	0.140	110	140
LSMV 180 L	FCPL 54 - 215	15	972	30.1	0.81	88.7	2.8	147	0.232	150	180
LSMV 200 LT	FCPL 54 - 318	18.5	970	37	0.81	89	2.8	182	0.281	180	205
LSMV 200 L	FCPL 54 - 222 <sup>1</sup>	22	972	43.6	0.81	89.9	2.7	215	0.366	220	260
LSMV 225 MR	FCPL 60 - 230 <sup>1</sup>	30	968	59.5	0.81	89.9	2.5	296	0.475	300	305
LSMV 250 ME	FCPL 60 - 239	37	978	71.1	0.81	92.7	2.3	361	0.994	390	410
LSMV 280 SC	FCPL 60 - 152	45	978	86.5	0.81	92.7	2.3	439	1.268	520	495
LSMV 280 MC	FCPL 60 - 260 <sup>1</sup>	55	978	106	0.81	92.6	2.4	537	1.463	590	570

LSMV 315

Above, consult us

1. Requires a CDF brake mains supply card

# Variable speed asynchronous motors with FCPL brake LSMV FCPL

## Selection

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

- LSMV motor - IP 55 - 50 Hz - Class F - 230 V  $\Delta$  / 400 V Y - Aluminium rotor, U.G. general use
- IP 44 brake - Separate mains supply

Motor type	Brake type	Rated power at 50 Hz $P_N$ kW	Brake torque $M_f \pm 20\%$ N.m	IM 1001 (IM B3)		IM 3001 (IM B5)	
				Code	Qty	Code	Qty
LSMV 160 MR	FCPL 40 - 108	11	80		-		-
LSMV 160 LU	FCPL 54 - 211	15	110		-		-
LSMV 180 MU	FCPL 54 - 313	18.5	130		-		-
LSMV 180 LU	FCPL 54 - 215	22	150		-		-
LSMV 200 L	FCPL 54 - 222 <sup>1</sup>	30	220		-		-
LSMV 225 SR	FCPL 60 - 126	37	260		-		-
LSMV 225 MG	FCPL 60 - 230 <sup>1</sup>	45	300		-		-
LSMV 250 ME	FCPL 60 - 239	55	390		-		-
LSMV 280 SD	FCPL 60 - 152	75	520		-		-
LSMV 280 MK	FCPL 60 - 260 <sup>1</sup>	90	590		-		-
LSMV 315				Above, consult us			

1. Requires a CDF brake mains supply card

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

- LSMV motor - IP 55 - 50 Hz - Class F - 230 V  $\Delta$  / 400 V Y - Aluminium rotor, U.G. general use
- IP 44 brake - Separate mains supply

Motor type	Brake type	Rated power at 50 Hz $P_N$ kW	Brake torque $M_f \pm 20\%$ N.m	IM 1001 (IM B3)		IM 3001 (IM B5)	
				Code	Qty	Code	Qty
LSMV 160 M	FCPL 40 - 108	7.5	80		-		-
LSMV 160 L	FCPL 54 - 211	11	110		-		-
LSMV 180 L	FCPL 54 - 215	15	150		-		-
LSMV 200 LT	FCPL 54 - 318	18.5	180		-		-
LSMV 200 L	FCPL 54 - 222 <sup>1</sup>	22	220		-		-
LSMV 225 MR	FCPL 60 - 230 <sup>1</sup>	30	300		-		-
LSMV 250 ME	FCPL 60 - 239	37	390		-		-
LSMV 280 SC	FCPL 60 - 152	45	520		-		-
LSMV 280 MC	FCPL 60 - 260 <sup>1</sup>	55	590		-		-
LSMV 315				Above, consult us			

1. Requires a CDF brake mains supply card

### Selection example :

Speed :	1500 min <sup>-1</sup> - 4 poles
Power :	22 kW
Brake torque :	220 N.m
Use :	U.G. general use
Mounting and position :	IM 1001 (IM B3)
Mains supply voltage :	230/400 V

### Designation :

4P LSMV 200 L 22 kW IM 1001 (IM B3)  
230/400V U.G. FCPL 220 N.m

Code : -

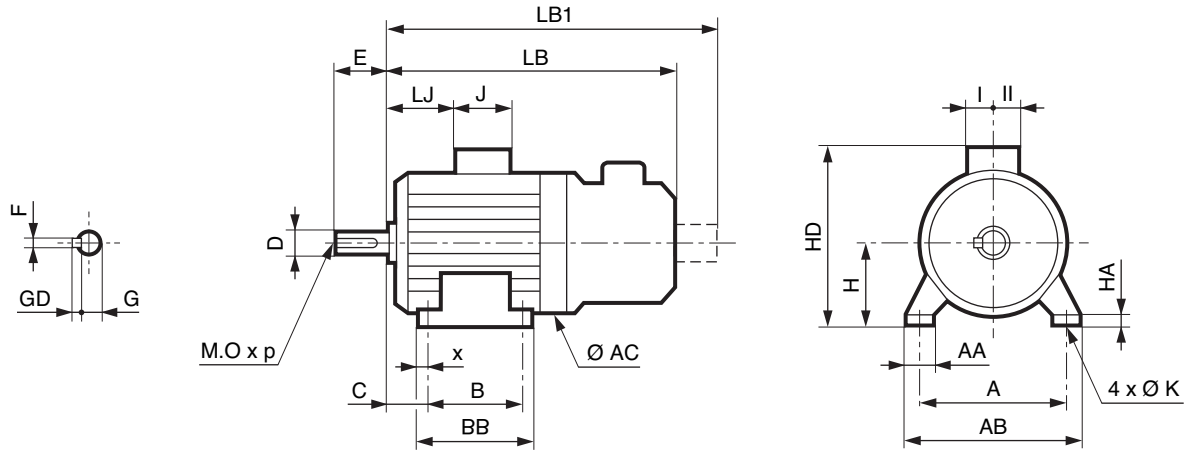
# Variable speed asynchronous motors with FCPL brake LSMV FCPL

## Dimensions

Dimensions of the FCPL asynchronous brake motors - 4, 6 poles  
IP 55 motor protection, IP 44 brake protection

Dimensions in millimetres

– foot mounted



Brake asynchronous motors																		
Type	A	AB	B	BB	C	X	AA	K	HA	H	AC	HD	LB	LB1 <sup>1</sup>	LJ	J	I	II
LSMV 160 MR	254	294	210	294	108	20	64	14.5	25	160	264	360	603	673	55	160	55	55
LSMV 160 M	254	294	210	294	108	20	60	14.5	25	160	345	395	668	748	44	134	92	63
LSMV 160 L	254	294	254	294	108	20	60	14.5	25	160	345	395	668	748	44	134	92	63
LSMV 160 LU	254	294	254	294	108	20	60	14.5	25	160	345	395	683	763	44	134	92	63
LSMV 180 M	279	339	241	291	121	25	86	14.5	25	180	384	435	752	832	54	205	100	95
LSMV 180 L	279	339	279	329	121	25	86	14.5	25	180	384	435	752	832	54	205	100	95
LSMV 180 LU	279	339	279	329	121	25	86	14.5	25	180	384	435	779	859	54	205	100	95
LSMV 200 LT	318	378	305	365	133	30	108	18.5	32	200	384	455	785	865	60	205	100	95
LLSMV 200 L	318	388	305	375	133	35	103	18.5	36	200	410	475	827	907	68	205	100	95
LSMV 225 SR	356	431	286	386	149	50	127	18.5	36	225	410	500	922	1002	74	205	100	95
LSMV225 MR	356	431	311	386	149	50	127	18.5	36	225	410	500	922	1002	74	205	100	95
LSMV 225 MG	356	420	311	375	149	30	65	18.5	30	225	481	629	1180	1180	68	292	148	180
LSMV 250 ME	406	470	349	420	168	35	90	24	36	250	481	654	1180	1180	68	292	148	180
LSMV 280 SC/SD	457	520	368	478	190	35	90	24	35	280	505	684	1180	1180	68	292	148	180
LSMV 280 MC/MD	457	520	419	478	190	35	90	24	35	280	505	684	1180	1180	68	292	148	180
LSMV 280 MK	457	533	419	495	190	40	85	24	35	280	586	745	1310	1310	99	292	148	180

1. Encoder included.

Output shaft							
Type	F	GD	D	G	E	O	p
LSMV 160 M/L/LU/MR	12	8	42 k6	37	110	16	36
LSMV 180 M/L/LU	14	9	48 k6	42.5	110	16	36
LSMV 200 LT/L	16	10	55 m6	49	110	20	42
LSMV 225 SR/MR/MG	18	11	60 m6	53	140	20	42
LSMV 250 ME	18	11	65 m6	58	140	20	42
LSMV 280 SC/SD/MC/MD/MK	20	12	75 m6	67.5	140	20	42

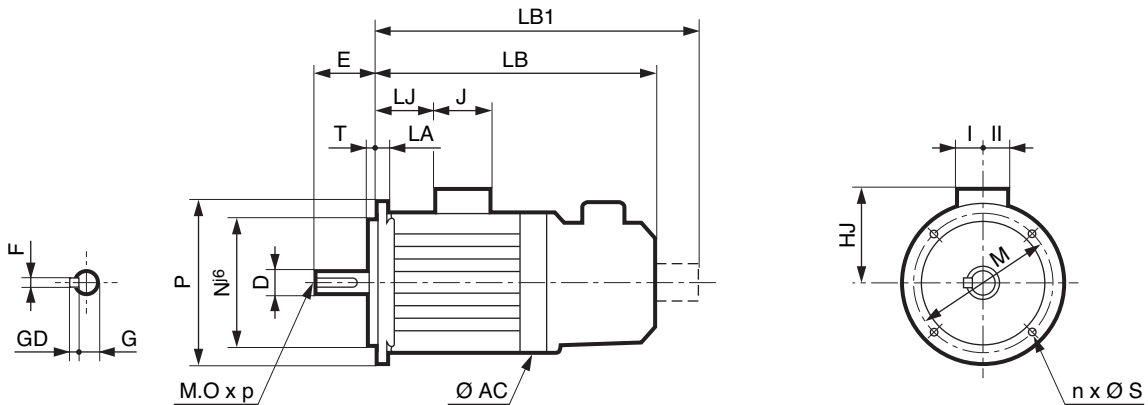
# Variable speed asynchronous motors with FCPL brake LSMV FCPL

## Dimensions

Dimensions of the FCPL asynchronous brake motors - 4, 6 poles  
IP 55 motor protection, IP 44 brake protection

Dimensions in millimetres

- (FF) plain hole flange mounted



Brake asynchronous motors									
Type	LB	AC	LB1 <sup>1</sup>	HJ	LJ	J	I	II	Symb.
LSMV 160 MR	603	264	673	200	55	160	55	55	FF 300
LSMV 160 M	668	345	748	235	44	134	92	63	FF 300
LSMV 160 L	668	345	748	235	44	134	92	63	FF 300
LSMV 160 LU	683	345	763	235	44	134	92	63	FF 300
LSMV 180 M	752	384	832	255	54	205	100	95	FF 300
LSMV 180 L	752	384	832	255	54	205	100	95	FF 300
LSMV 180 LU	779	384	859	255	54	205	100	95	FF 300
LSMV 200 LT	785	384	865	255	60	205	100	95	FF 350
LSMV 200 L	905	410	985	275	68	205	100	95	FF 350
LSMV 225 SR	922	410	1002	275	74	205	100	95	FF 400
LSMV 225 MR	922	410	1002	275	74	205	100	95	FF 400
LSMV 225 MG	1180	481	1180	404	68	292	148	180	FF 400
LSMV 250 ME	1180	481	1180	404	68	292	148	180	FF 500
LSMV 280 SC/SD	1180	505	1180	404	68	292	148	180	FF 500
LSMV 280 MC/MD	1180	505	1180	404	68	292	148	180	FF 500
LSMV 280 MK	1057	586	1137	465	99	292	148	180	FF 500

1. Encoder included.

Flange								
Type	Symb.	M	N	P	T	n	S	LA
LSMV 160	FF 300	300	250	350	5	4	18.5	14
LSMV 180	FF 300	300	250	350	5	4	18.5	14
LSMV 200	FF 350	350	300	400	5	4	18.5	15
LSMV 225	FF 400	400	350	450	5	8	18.5	16
LSMV 250	FF 500	500	450	550	5	8	18.5	18
LSMV 280	FF 500	500	450	550	5	8	18.5	18

