LSES
high efficiency
three-phase asynchronous motors

General information

Efficiency class IE2

Totally enclosed three-phase power-saving asynchronous motors, LSES series, according to IEC 60034, 60038, 60072 ; power 0.75 to 200 kW, frame size 80 to 315 mm.
Single speed: 2 and 4 poles ; 230/400 V or 400 V Δ, 50 Hz.

The selection tables for motors in this catalogue allow for:
• Direct on line starting on the mains supplies 230 V or 400 V operating in:
- delta connection (Δ) at 230 V,
- star connection (Y) at 400 V.
• Star/delta star (Y/Δ) on mains supply 400 V with:
- star connection (Y) during initial starting,
- delta connection (Δ) on 400 V duty.

Finish
Assembled with protected screws.
RAL 6000 finishing paint (green).

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

Mains supply
• Standard according to IEC 60038:
- 230/400 V +10% -10% at 50 Hz.
Standard construction suitable for the following power supply:
- 220/380 V +5% -5% at 50 Hz,
- 230/400 V +10% -10% at 50 Hz,
- 240/415 V +5% -5% at 50 Hz,
- 265/460 V +5% -5% at 60 Hz.
Voltages for the powers equal or greater than 3 kW:
- 380 V Δ +5% -5% at 50 Hz,
- 400 V Δ +10% -10% at 50 Hz,
- 415 V Δ +5% -5% at 50 Hz,
- 460 V Δ +5% -5% at 60 Hz.
Construction suitable for Y/Δ starting.

Description of LSES aluminium three-phase motors

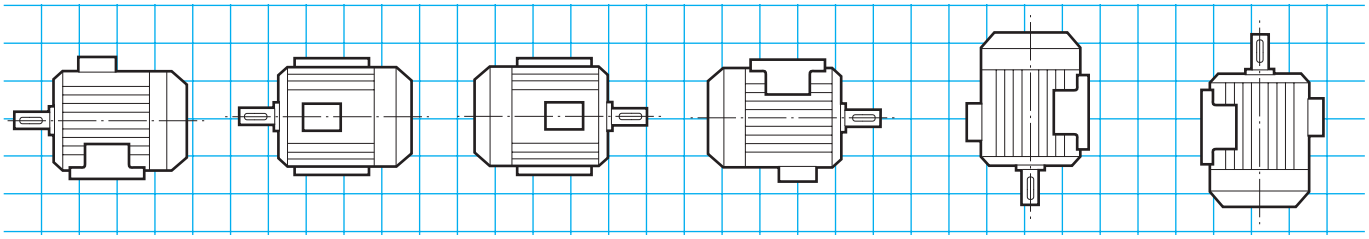
Component	Materials	Remarks
Housing with cooling fins	Aluminium alloy	- with integral or screw-on feet, or without feet - 4 or 6 fixing holes for housings with feet - lifting rings for frame size ≥ 132 M, optional for 132 S and 112 - optional earth terminal
Stator	Insulated low carbon magnetic steel laminations Electroplated copper	- low carbon content guarantees long-term lamination pack stability - welded packs - semi-enclosed slots - Class F insulation
Rotor	Insulated low carbon magnetic steel laminations Aluminium (A5L)	- inclined cage bars - rotor cage pressure die cast in aluminium (or alloy for special applications) - shrink-fitted to shaft - rotor balanced dynamically - 1/2 key
Shaft	Steel	- for frame size < 132: • shaft end fitted with screw and washer • closed keyway - for frame size ≥ 132: • tapped hole • open keyway
End shields	Aluminium alloy	- LS 80 - 90 non drive end
	Cast iron	- LS 80 - 90 drive end (optional for LS 80 and 90 at non drive end) - LS 100 to 315 drive end and non drive end
Bearings and lubrication		- ball bearings - ZZ types “greased for life” from LS 80 to LS 180 inclusive - semi-protected or open type for frame size 200 - open type, regreasable from 225 upwards - bearings preloaded at non drive end
Labyrinth seals Lipseals	Plastic or steel Synthetic rubber	- lipseal or deflector at drive end for all flange mounted motors - lipseal, deflector or labyrinth seals for foot mounted motors
Fan	Composite material or aluminium alloy	- 2 directions of rotation: straight blades
Fan cover	Composite material or pressed steel	- on request, fitted with a drip cover for operation in vertical position, shaft end facing down
Terminal box	Composite material or aluminium alloy	- IP 55 - can be turned on, opposite side to feet - fitted with a terminal block with 6 steel terminals as standard (brass as an option) - terminal box supplied fitted with cable glands (without cable glands as an option) - 1 earth terminal in each terminal box

LSES
high efficiency
three-phase asynchronous motors

Mounting positions

A

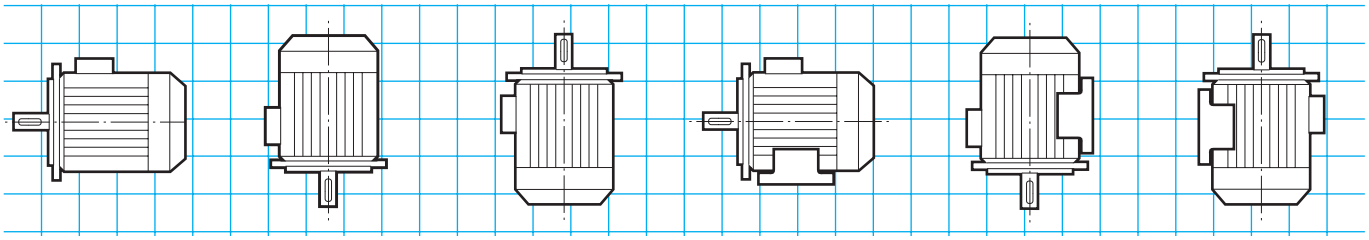
Foot mounted motors



IM 1001 (IM B3) | **IM 1051** (IM B6) | **IM 1061** (IM B7) | **IM 1071** (IM B8) | **IM 1011** (IM V5) | **IM 1031** (IM V6)

(FF) plain hole flange mounted motors

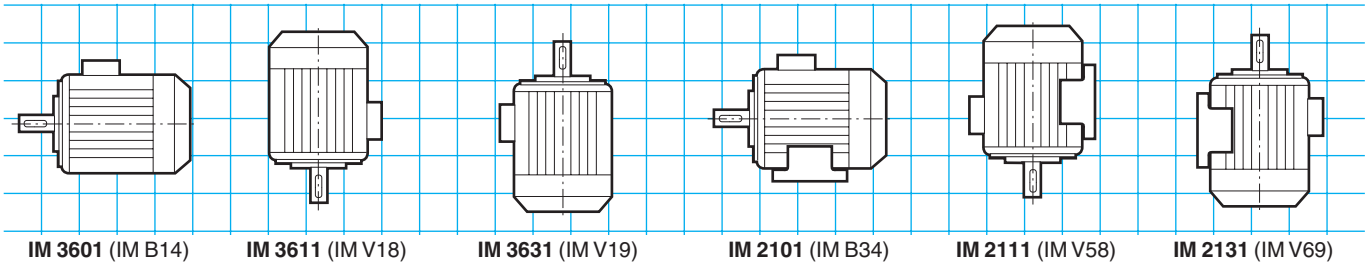
• Possible position IM 3001 (IM B5) up to 225 frame size inclusive



IM 3001 (IM B5) | **IM 3011** (IM V1) | **IM 3031** (IM V3) | **IM 2001** (IM B35) | **IM 2011** (IM V15) | **IM 2031** (IM V36)

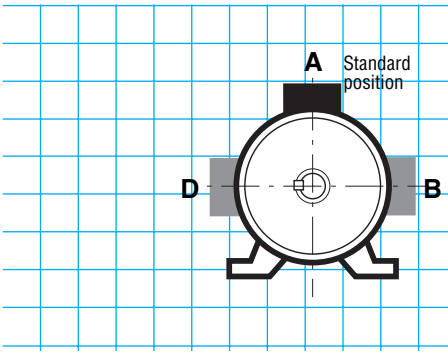
(FT) tapped hole flange mounted motors

• Possible positions up to 132 de frame size inclusive



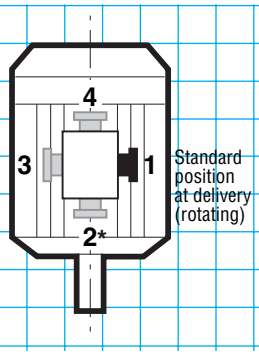
IM 3601 (IM B14) | **IM 3611** (IM V18) | **IM 3631** (IM V19) | **IM 2101** (IM B34) | **IM 2111** (IM V58) | **IM 2131** (IM V69)

Terminal box position in relation to the motor shaft end



A: standard

Cable gland position in relation to the motor shaft end



1: standard

* Position 2 not recommended and not feasible on plain hole flange standard motor (FF)

LSES
high efficiency
three-phase asynchronous motors

Adaptation possibilities

Leroy-Somer offers, for use with the LSES totally enclosed three-phase asynchronous motors, many options which meet the needs of highly diverse applications. They are described below and in the chapters relating to gearboxes and to speed variation.
For other variants or any specific adaptation, consult the technical specialists at Leroy-Somer.

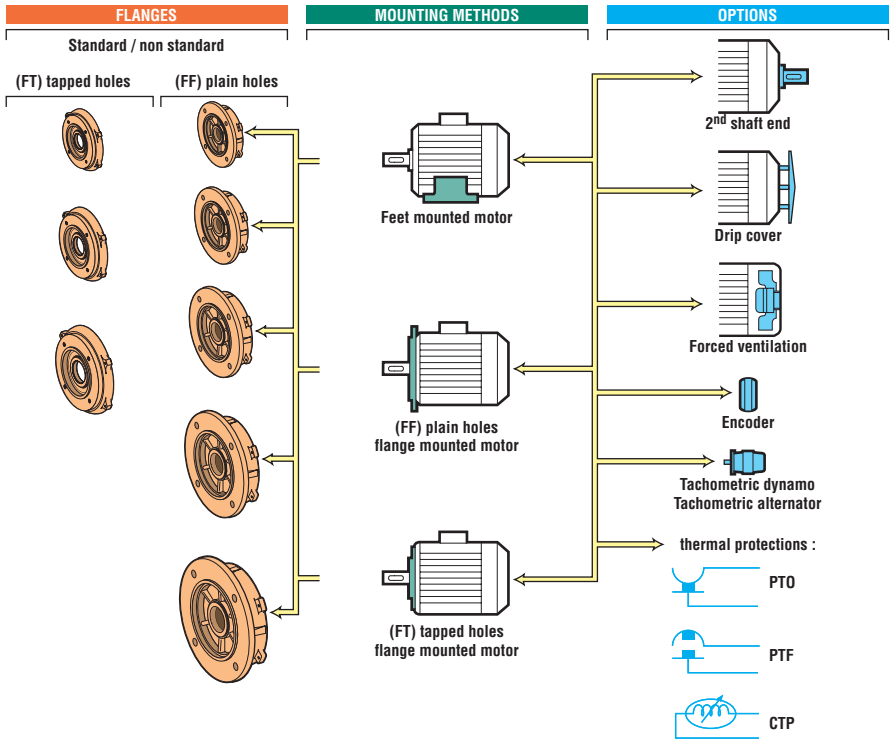
The LSES three-phase motors may be associated to:

- gearboxes
- electronic variable speed drive (1)

The options:

- drip cover
- anti-blocking cover
- forced ventilation
- thermal protections
- aluminium terminal box
- brass cable glands
- cable glands of different dimensions
- switch
- cable output
- stainless steel plate
- second shaft end
- non standard flanges
- reinforced sealing
- plug-in connector

(1) Conforming to the regulations for use indicated by the norm IEC 34-17.



Designation / Codification

4P 1500 min^{-1}	LSES	180	M	18.5 kW	IM 1001 (IM B3)	400 V Δ	50 Hz	IP 55
Speed polarity	Motor type	IEC 60072-1 frame size	Housings designation and builder index	Rated power	IEC 60034-7 mounting position	Power supply voltage	Power supply frequency	IEC 60034-5 protection

Codification example:
LSES three-phase asynchronous motor, 1500 min^{-1}, 18.5 kW IM 1001 (IM B3), 400 V Δ

Designation	Code
4P LSES 180 M 18.5 kW IM 1001 (IM B3) 400 V Δ	MAES 0077

The table above is an example.
It enables the creation of the designation for the required product.
This designation corresponds to a product code.
The product codes that are present in the selection grids can be used directly.
They simplify the ordering process.
The codification table is incorporated in the price list with the designations list.

LSES
high efficiency
three-phase asynchronous motors

Selection

A

IP 55 - 50 Hz - Class F - ΔT 80 K - 230 V Δ / 400 V Y and 400 V Δ - S1

2 poles 3000 min-1

IE2

Type	Rated power at 50 Hz P_N kW	Rated speed N_N min-1	Rated torque M_N Nm	Rated current $I_{N\,(400V)}$ A	Power factor Cos φ 4/4	Power factor Cos φ 3/4	Power factor Cos φ 2/4	Efficiency* IEC 60034-2-1; 2007 η 4/4	Efficiency* IEC 60034-2-1; 2007 η 3/4	Efficiency* IEC 60034-2-1; 2007 η 2/4	Starting current/ Rated current I_d / I_n	Starting torque/ Rated torque M_d / M_n	Maximum torque/ Rated torque M_M / M_n	Moment of inertia J kg.m2	Weight IM B3 kg	Noise LP db(A)
LSES 80 L	0.75	2870	2.2	1.43	0.83	0.75		**78.2**	77.7	75.2	7.52	5.76	4.6	0.0011	11.3	61
LSES 80 L	1.1	2877	3.7	2.3	0.85	0.78	0.63	**81.7**	82.2	80.6	7.5	3.5	2.8	0.0011	11.3	61
LSES 90 SL	1.5	2881	5	3	0.86	0.8	0.67	**83.3**	83.5	81.5	8.2	3.6	3.6	0.0017	14	64
LSES 90 L	2.2	2872	7.2	4.2	0.87	0.82	0.71	**83.5**	84.0	82.4	7.6	3.8	4.0	0.0024	15.4	64
LSES 100 L	3	2873	9.9	5.5	0.9	0.86	0.77	**86.1**	86.6	85.2	8.5	4.3	3.4	0.0032	22	66
LSES 112 MG	4	2937	13.1	7.7	0.86	0.81	0.68	**87.6**	87.0	84.5	9.1	3.6	3.8	0.0103	35	66
LSES 132 S	5.5	2932	17.9	10.2	0.88	0.82	0.79	**87.9**	87.4	85.0	9.0	3.6	3.8	0.0126	39	72
LSES 132 SM	7.5	2942	24	13.6	0.89	0.85	0.76	**89.3**	89.7	88.8	8.1	2.8	3.8	0.0236	49	72
LSES 132 M	9	2945	29	16.6	0.87	0.84	0.76	**89.5**	89.8	88.7	9.9	2.9	3.9	0.018	58	72
LSES 160 MP	11	2936	36	19.5	0.9	0.87	0.79	**89.4**	89.5	88.0	9.0	2.9	3.4	0.0381	67	72
LSES 160 LR	15	2956	48	27.7	0.85	0.8	0.68	**90.3**	90.5	88.6	9.3	2.3	4.0	0.0482	78	72
LSES 160 L	18.5	2940	60	32.5	0.89	0.86	0.79	**90.9**	91.6	91.5	8.1	2.9	3.1	0.051	96	72
LSES 180 MT	22	2940	71	38.4	0.89	0.86	0.79	**91.6**	92.4	92.1	8.6	2.8	3.2	0.059	108	72
LSES 200 L	30	2956	97	51.2	0.9	0.87	0.8	**92.8**	93.0	92.4	8.5	3.0	3.2	0.12	180	73
LSES 200 L	37	2956	120	64	0.9	0.88	0.83	**92.6**	93.1	92.8	8.3	3.0	3.2	0.14	200	73
LSES 225 MT	45	2950	146	77	0.9	0.87	0.82	**93.2**	93.7	93.4	8.1	3.0	3.2	0.14	200	73
LSES 250 MZ	55	2956	178	93	0.91	0.89	0.84	**93.8**	94	93.4	8.3	2.6	3.4	0.173	235	78
LSES 280 SC	75	2968	241	127	0.9	0.88	0.83	**94.6**	94.7	94.2	8.4	2.6	3.4	0.39	330	79
LSES 280 MC	90	2968	290	151	0.91	0.89	0.84	**94.7**	94.9	94.5	8.5	2.7	3.4	0.47	375	79
LSES 315 SP	110	2964	354	191	0.88	0.86	0.8	**94.6**	94.8	94.4	7.8	2.8	2.9	0.55	445	83
LSES 315 MP	132	2976	424	226	0.89	0.87	0.82	**94.6**	94.4	93.3	7.6	2.8	2.9	1.67	715	83
LSES 315 MR	160	2976	513	271	0.9	0.88	0.84	**94.8**	94.8	93.9	7.6	2.9	3.1	1.97	820	83
LSES 315 MR	200	2982	640	349	0.87	0.86	0.82	**95.1**	94.6	93.1	9.3	3.8	3.9	1.97	845	83

* This standard replaces the IEC 60034-2; 1996.

LSES
high efficiency
three-phase asynchronous motors

Selection

IP 55 - 50 Hz - Class F - ΔT 80 K - 230 V Δ / 400 V Y - S1

2 poles 3000 min-1

	Rated power at 50 Hz	IM 1001 (IM B3)		IM 3001 (IM B5)		IM 2001 (IM B35)	
Type	P_N kW	Code	Qty	Code	Qty	Code	Qty
LSES 80 L	0.75	MAES 0000	2	MAES 0090	2	MAES 0091	2
LSES 80 L	1.1	MAES 0001	2	MAES 0012	2	MAES 0023	
LSES 90 SL	1.5	MAES 0002	2	MAES 0013	2	MAES 0024	2
LSES 90 L	2.2	MAES 0003	2	MAES 0014	2	MAES 0025	2
LSES 100 L	3	MAES 0004	2	MAES 0015	2	MAES 0026	2
LSES 112 MG	4	MAES 0005	2	MAES 0016	2	MAES 0027	2
LSES 132 S	5.5	MAES 0007	2	MAES 0018	2	MAES 0029	2

IP 55 - 50 Hz - Class F - ΔT 80 K - 400 V Δ - S1

2 poles 3000 min-1

	Rated power at 50 Hz	IM 1001 (IM B3)		IM 3001 (IM B5)		IM 2001 (IM B35)	
Type	P_N kW	Code	Qty	Code	Qty	Code	Qty
LSES 112 MG	4	MAES 0006	2	MAES 0017	2	MAES 0028	2
LSES 132 S	5.5	MAES 0008	2	MAES 0019	2	MAES 0030	2
LSES 132 SM	7.5	MAES 0009	2	MAES 0020	2	MAES 0031	2
LSES 160 MP	11	MAES 0010	2	MAES 0021	2	MAES 0032	2
LSES 160 LR	15	MAES 0011	1	MAES 0022	1	MAES 0033	1
LSES 160 L	15		-		-		-
LSES 160 L	18.5	MAES 0035	1	MAES 0039	1	MAES 0043	1
LSES 180 MT	22	MAES 0036	1	MAES 0040	1	MAES 0044	1
LSES 200 L	30	MAES 0037	1	MAES 0041	1	MAES 0045	1
LSES 200 L	37	MAES 0095	1	MAES 0096	1	MAES 0097	1
LSES 225 MT	45	MAES 0098	1	MAES 0099	1	MAES 0100	1
LSES 250 MZ	55	MAES 0101	1			MAES 0102	1
LSES 280 SC	75	MAES 0103	1			MAES 0104	1
LSES 280 MC	90	MAES 0105	1			MAES 0106	1

LSES
high efficiency
three-phase asynchronous motors

Selection

A

IP 55 - 50 Hz - Class F - ΔT 80 K - 230 V Δ / 400 V Y and 400 V Δ - S1

								IE2								
	Rated power at 50 Hz	Rated speed	Rated torque	Rated current	Power factor			Efficiency* IEC 60034-2-1; 2007			Starting current/ Rated current	Starting torque/ Rated torque	Maximum torque/ Rated torque	Moment of inertia	Weight	Noise
	P_N	N_N	M_N	$I_{N\,(400V)}$	$Cos\,\varphi$			η			I_d/I_n	M_d/M_n	M_M/M_n	J	IM B3	LP
Type	kW	min-1	Nm	A	4/4	3/4	2/4	4/4	3/4	2/4				kg.m2	kg	db(A)
LSES 90 ST	0.75	1445	4.4	1.6	0.81	0.73	0.59	**81.1**	80.8	79	6.4	2.1	2.8	0.0043	16.7	48
LSES 90 SL	1.1	1448	7.2	2.42	0.78	0.69	0.62	**83.5**	84.3	82.9	6.2	2.5	2.9	0.0043	16.7	48
LSES 90 LU	1.5	1451	9.9	3.18	0.8	0.72	0.61	**84.6**	85.1	83.6	7.1	2.6	3.1	0.0051	20	48
LSES 100 LR	2.2	1454	14.5	4.4	0.84	0.78	0.69	**86**	86.3	84.6	7.4	2.6	3.3	0.0067	24.5	48
LSES 100 LG	3	1459	19.7	5.96	0.83	0.77	0.68	**87.08**	88.0	87.3	7.1	2.2	2.8	0.0117	32	48
LSES 112 MU	4	1465	26.2	8.07	0.81	0.74	0.65	**87.5**	87.9	85.8	7.8	2.5	3.2	0.0154	40	49
LSES 132 SM	5.5	1453	36.1	10.2	0.87	0.82	0.77	**89**	89.3	88.3	7.2	2.2	2.9	0.029	59.9	62
LSES 132 M	7.5	1458	49	14.1	0.85	0.8	0.76	**89.48**	90.1	90.4	8.0	2.6	3.3	0.039	70	62
LSES 160 MP	9	1460	58.9	17.6	0.82	0.75	0.63	**90.1**	90.9	89.9	7.7	2.5	3.7	0.03	70	62
LSES 160 MR	11	1461	71.8	21	0.83	0.78	0.65	**90.1**	90.8	90.2	7.9	3.0	3.7	0.047	78	62
LSES 160 L	15	1464	98	27.8	0.84	0.79	0.68	**91.5**	92.4	92.5	8.4	2.8	3.6	0.09	103	62
LSES 180 M	18.5	1468	120	34.3	0.84	0.79	0.7	**91.8**	92.4	92.1	6.9	2.9	3.0	0.123	136	64
LSES 180 LU	22	1468	143	40.6	0.84	0.79	0.7	**92.3**	92.9	92.5	7.2	3.1	3.2	0.145	155	64
LSES 200 L	30	1472	195	55.6	0.83	0.79	0.7	**93.1**	93.8	93.8	6.4	2.7	2.6	0.24	200	64
LSES 225 SR	37	1474	240	69	0.83	0.78	0.69	**93.5**	94.0	93.8	7.0	3.0	2.9	0.29	235	64
LSES 225 MG	45	1482	290	83	0.83	0.79	0.69	**93.8**	93.7	92.8	7.8	3.1	2.9	0.63	320	64
LSES 250 ME	55	1482	354	101	0.84	0.81	0.72	**93.7**	93.9	93.8	7.4	2.9	3.0	0.73	340	66
LSES 280 SD	75	1482	483	139	0.83	0.79	0.7	**94.1**	94.5	93.8	8.3	3.3	3.0	1.41	495	69
LSES 280 MK	90	1485	579	163	0.84	0.82	0.73	**94.7**	94.6	93.6	8.0	3.0	3.1	2.32	655	69
LSES 315 SP	110	1488	706	199	0.84	0.79	0.69	**95**	94.7	93.6	9.1	3.4	3.6	2.79	750	70
LSES 315 MR	132	1488	847	241	0.83	0.78	0.67	**95.1**	94.8	93.8	9.3	3.4	3.8	2.79	845	74
LSES 315 MR	160	1484	1030	286	0.85	0.82	0.74	**94.9**	94.8	94.0	7.4	2.6	3.0	3.27	845	74
LSES 315 MR	200	1486	1285	359	0.84	0.79	0.69	**95.6**	95.6	95.2	8.1	3.1	3.4	3.27	845	74

* This standard replaces the IEC 60034-2; 1996.

LSES
high efficiency
three-phase asynchronous motors

Selection

IP 55 - 50 Hz - Class F - ΔT 80 K - 230 V Δ / 400 V Y - S1

4 poles 1500 min^{-1}

	Rated power	IM 1001		IM 3001		IM 2001	
	at 50 Hz	(IM B3)		(IM B5)		(IM B35)	
Type	P_N kW	Code	Qty	Code	Qty	Code	Qty
LSES 90 S	0.75	MAES 0092	2	MAES 0093	2	MAES 0094	2
LSES 90 SL	1.1	MAES 0046	2	MAES 0056	2	MAES 0066	2
LSES 90 LU	1.5	MAES 0047	2	MAES 0057	2	MAES 0067	2
LSES 100 LR	2.2	MAES 0048	2	MAES 0058	2	MAES 0068	2
LSES 100 LG	3	MAES 0049	2	MAES 0059	2	MAES 0069	2
LSES 112 MU	4	MAES 0050	2	MAES 0060	2	MAES 0070	2
LSES 132 SM	5.5	MAES 0052	2	MAES 0062	2	MAES 0072	2

IP 55 - 50 Hz - Class F - ΔT 80 K - 400 V Δ - S1

4 poles 1500 min^{-1}

	Rated power	IM 1001		IM 3001		IM 2001	
	at 50 Hz	(IM B3)		(IM B5)		(IM B35)	
Type	P_N kW	Code	Qty	Code	Qty	Code	Qty
LSES 112 MU	4	MAES 0051	2	MAES 0061	2	MAES 0071	2
LSES 132 SM	5.5	MAES 0053	2	MAES 0063	2	MAES 0073	2
LSES 132 M	7.5	MAES 0054	2	MAES 0064	2	MAES 0074	2
LSES 160 MR	11	MAES 0055	2	MAES 0065	2	MAES 0075	2
LSES 160 L	15	MAES 0076	1	MAES 0080	1	MAES 0084	1
LSES 180 M	18.5	MAES 0077	1	MAES 0081	1	MAES 0085	1
LSES 180 LU	22	MAES 0078	1	MAES 0082	1	MAES 0086	1
LSES 200 L	30	MAES 0079	1	MAES 0083	1	MAES 0087	1
LSES 225 SR	37	MAES 0107	1	MAES 0108	1	MAES 0109	1
LSES 225 MG	45	MAES 0110	1	MAES 0111	1	MAES 0112	1
LSES 250 ME	55	MAES 0113	1			MAES 0114	1
LSES 280 SC	75	MAES 0115	1			MAES 0116	1
LSES 280 MK	90	MAES 0117	1			MAES 0118	1

LSES
high efficiency
three-phase asynchronous motors

Options

A

2 poles 3000 min-1

4 poles 1500 min-1

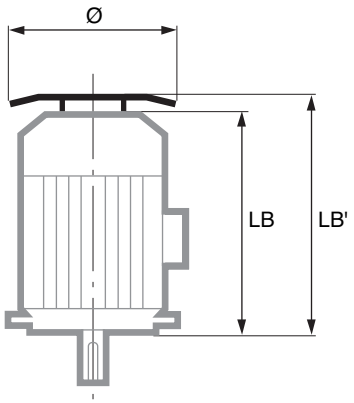
	Operating position (draining holes at lowest point)						Ventilation cover		
	IM V1[1] IM 3011	IM V3 IM 3031	IM V5 IM 1011	IM V6 IM 1031	IM V18[1] IM 3611	IM V19 IM 3631	Steel sheet	Drip cover	Anti-filling
Type	Code	Code	Code	Code	Code	Code	Code	Code	Code
LSES 80	MAV 80 003	MAV 80 015	MAV 80 025	MAV 80 038	MAV 80 051	MAV 80 059	MATE 1014	MATP 1014	MA00 0247
LSES 90	MAV 90 004	MAV 90 016	MAV 90 026	MAV 90 039	MAV 90 052	MAV 90 060	MATE 1015	MATP 1015	MA00 0248
LSES 100	MAV 100 05	MAV 100 17	MAV 100 27	MAV 100 40	MAV 100 53	MAV 100 61	MATE 1016	MATP 1016	MA00 0249
LSES 112	MAV 112 06	MAV 112 18	MAV 112 28	MAV 112 41	MAV 112 54	MAV 112 62	MATE 1017	MATP 1017	MA00 0250
LSES 132	MAV 132 07	MAV 132 19	MAV 132 29	MAV 132 42	MAV 132 55	MAV 132 63	Standard	MATP 1018	MA00 0251
LSES 160 M	MAV 160 08	MAV 160 20	MAV 160 30	MAV 160 43			Standard	MATP 1019	
LSES 160 L	MAV 160 08	MAV 160 20	MAV 160 30	MAV 160 43			Standard	MATP 1019	
LSES 160 MP	MAV 160 08	MAV 160 20	MAV 160 30	MAV 160 43			Standard	MATP 1019	
LSES 160 LR	MAV 160 08	MAV 160 20	MAV 160 30	MAV 160 43			Standard	MATP 1019	
LSES 180	MAV 180 11	MAV 180 12	MAV 180 64	MAV 180 65			Standard	MATP 1024	
LSES 200	MAV 200 09	MAV 200 21	MAV 200 31	MAV 200 44			Standard	MATP 1020	
LSES 225	MAV 225 10	MAV 225 22	MAV 225 32	MAV 225 45			Standard	MATP 1021	
LSES 250			MAV 250 33	MAV 250 46			Standard	MATP 1022	
LSES 280			MAV 280 34	MAV 280 47			Standard	MATP 1023	
LSES 315							Standard		

1. Motors 2, 4, 6 and 8 poles on white background IM B5 / IM V1 or IM B14 / IM V18.

Drip cover
for operation in vertical position, shaft facing down

Dimensions in millimetres

Type	LB'	ø
80	LB + 20	145
90	LB + 20	185
100	LB + 20	185
112 M	LB + 20	185
112 MG	LB + 25	210
132 S	LB + 25	210
132 SM et M	LB + 30	240
160 MP/LR	LB + 30	240
160 M/L/LU	LB + 36.5	265
180 MT/LR	LB + 36.5	265
180 L/LU	LB + 36.5	305
200 LT	LB + 36.5	305
200 L/LU	LB + 36.5	350
225 ST/MT/MR	LB + 36.5	350
225 MG	LB + 55	420
250 MZ	LB + 36.5	350
250 ME/MF	LB + 55	420
280 SC/SD/MC/MD	LB + 55	420
280 SK/MK	LB + 76.5	505
315 SP/MP/MR	LB + 76.5	505



Use guide:

• STEP 1: Select the required basic motor according to the selection grids of the previous pages.

• STEP 2: Select the additional required option or options and add them to the basic designation.

Codification example:

Motor LSES tri 11 kW 3000 min-1 standard flange B5 400 V Δ with PTO and drip cover.

Designation	Code
2P LSES 160MP 11kW B5 400V Δ	MAES 0021
+	+
PTO	MAPT 1011
+	+
Drip cover	MATP 1019

LSES
high efficiency
three-phase asynchronous motors

Options

2 poles 3000 min-1

4 poles 1500 min-1

	Terminal box equipment					Forced ventilation
		Cable glands				
	Switch (with aluminium terminal box)	Brass (with aluminium terminal box)[1]	Smaller than standard		Cable output[2]	
Type	Code	Code	Code	N°	Code	Code
LSES 80		MAPE 1014	MAPE 1027	13	MASPC 104	MVA 00 068
LSES 90		MAPE 1015	MAPE 1028	13	MASPC 105	MVA 00 001
LSES 100		MAPE 1016	MAPE 1029	13	MASPC 106	MVA 00 063
LSES 112 M		MAPE 1017	MAPE 1030	13	MASPC 107	MVA 00 063
LSES 112 MG		MAPE 1017	MAPE 1030	13	MASPC 107	MVA 00 002
LSES 132 S		MAPE 1018	MAPE 1031	13	MASPC 108	MVA 00 002
LSES 132 M		MAPE 1036	MAPE 1038	16	MASPC 114	MVA 00 064
LSES 160 L		MAPE 1019	MAPE 1032	16	MASPC 109	
LSES 160 M		MAPE 1019	MAPE 1032	16	MASPC 109	
LSES 160 LR		MAPE 1019	MAPE 1032	16	MASPC 109	
LSES 160 MP		MAPE 1019	MAPE 1032	16	MASPC 109	
LSES 180		MAPE 1037	MAPE 1039	16	MASPC 115	
LSES 200		MAPE 1020	MAPE 1033	21	MASPC 110	
LSES 225		MAPE 1021	MAPE 1034	29	MASPC 111	
LSES 250		MAPE 1022	MAPE 1035	36	MASPC 112	
LSES 280		MAPE 1023	MAPE 1036	36	MASPC 113	
LSES 315				36		

1. Aluminium terminal box p. A2.19
2. Cable lenght: 1 metre. Conductor number: 6 + 1 (section according to the power and to the mains supply voltage). Cable connected to the board. Standard terminal box.

LSES
high efficiency
three-phase asynchronous motors

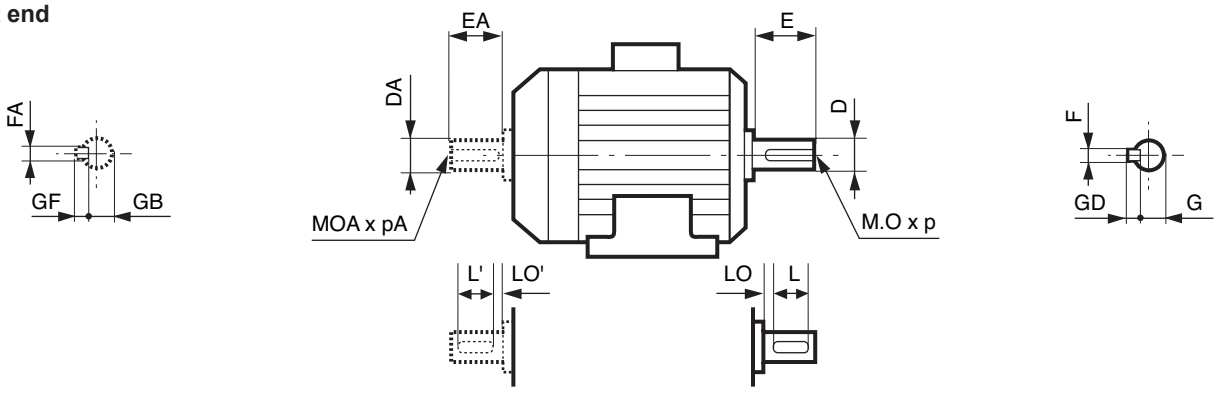
Dimensions

A

LSES totally enclosed three-phase asynchronous motors dimensions - IP 55
Cage rotor

Dimensions in millimetres

- shaft end



	Main shaft end																	
	4 poles									2 poles								
Type	F	GD	D	G	E	O	p	L	LO	F	GD	D	G	E	O	p	L	LO
LSES 80 L	6	6	19j6	15.5	40	6	16	30	6	6	6	19j6	15.5	40	6	16	30	6
LSES 90 S/SL/ST/L/LU	8	7	24j6	20	50	8	19	40	6	8	7	24j6	20	50	8	19	40	6
LSES 100 L/LG/LR	8	7	28j6	24	60	10	22	50	6	8	7	28j6	24	60	10	22	50	6
LSES 112 MG/MU	8	7	28j6	24	60	10	22	50	6	8	7	28j6	24	60	10	22	50	6
LSES 132 S/SM/M	10	8	38k6	33	80	12	28	63	10	10	8	38k6	33	80	12	28	63	10
LSES 160 MP/MR/L/LR	12	8	42k6	37	110	16	36	100	6	12	8	42k6	37	110	16	36	100	6
LSES 180 M/MT/LU	14	9	48k6	42.5	110	16	36	98	12	14	9	48k6	42.5	110	16	36	98	12
LSES 200 L	16	10	55m6	49	110	20	42	97	13	16	10	55m6	49	110	20	42	97	13
LSES 225 SR/MG/MR	18	11	60m6	53	140	20	42	126	14	16	10	55m6	49	110	20	42	97	13
LSES 250 ME	18	11	65m6	58	140	20	42	126	14	18	11	60m6	53	140	20	42	126	14
LSES 280 SC/SD/MC	20	12	75m6	67.5	140	20	42	125	15	18	11	65m6	58	140	20	42	125	14
LSES 280 MK	20	12	75m6	67.5	140	20	42	125	15	18	11	65m6	58	140	20	42	126	14
LSES 315 SP/MP/MR	22	14	80m6	71	170	20	42	155	15	18	11	65m6	58	140	20	42	126	14

	Secondary shaft end																	
	4 poles									2 poles								
Type	FA	GF	DA	GB	EA	OA	pA	L'	LO'	FA	GF	DA	GB	EA	OA	pA	L'	LO'
LSES 80 L	5	5	14j6	11	30	5	15	25	3.5	5	5	14j6	11	30	5	15	25	3.5
LSES 90 S/SL/ST/L/LU	6	6	19j6	15.5	40	6	16	30	6	6	6	19j6	15.5	40	6	16	30	6
LSES 100 L/LG/LR	8	7	24j6	20	50	8	19	40	6	8	7	24j6	20	50	8	19	40	6
LSES 112 MG/MU	8	7	24j6	20	50	8	19	40	6	8	7	24j6	20	50	8	19	40	6
LSES 132 S/SM/M	8	7	28k6	24	60	10	22	50	6	8	7	28k6	24	60	10	22	50	6
LSES 160 MP/MR/L/LR	12	8	38k6	37	80	16	36	100	6	12	8	38k6	37	80	16	36	100	6
LSES 180 M/MT/LU	14	9	48k6	42.5	110	16	36	98	12	14	9	48k6	42.5	110	16	36	98	12
LSES 200 L	16	10	55m6	49	110	20	42	97	13	16	10	55m6	49	110	20	42	97	13
LSES 225 SR/MG/MR	18	11	60m6	53	140	20	42	126	14	16	10	55m6	49	110	20	42	97	13
LSES 250 ME	18	11	60m6	53	140	20	42	126	14	18	11	60m6	53	140	20	42	126	14
LSES 280 SC/SD/MC	18	11	65m6	58	140	20	42	126	14	18	11	65m6	58	140	20	42	126	14
LSES 280 MK	20	12	75m6	67.5	140	20	42	125	15	18	11	65m6	58	140	20	42	126	14
LSES 315 SP/MP/MR	22	14	80m6	71	170	24	42	155	15	18	11	65m6	58	140	20	42	126	14

LSES
high efficiency
three-phase asynchronous motors

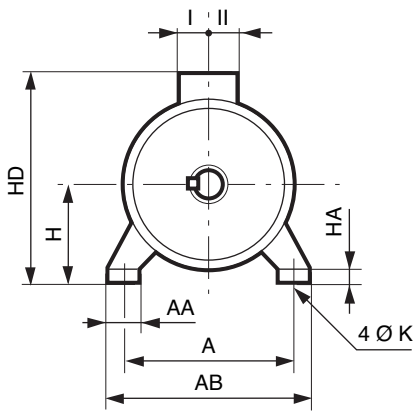
Dimensions

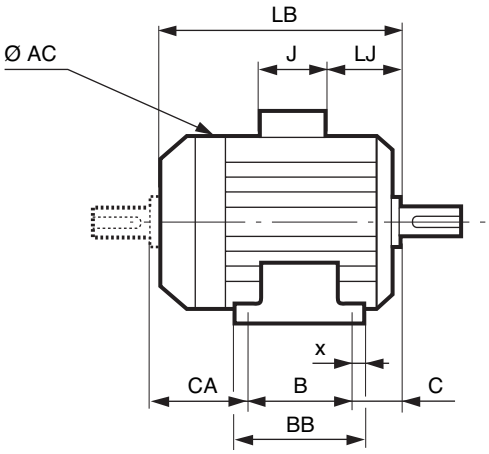
LSES totally enclosed three-phase asynchronous motors dimensions - IP 55
Cage rotor

A

Dimensions in millimetres

- foot mounted





	Main dimensions																		
Type	A	AB	B	BB	C	x	AA	K	HA	H	AC	HD	LB	LB1*	LJ	J	I	II	CA
LSES 80 L	125	157	100	120	50	10	29	9	10	80	170	203	215	177	26	86	43	43	68
LSES 80 LU	125	157	100	120	50	10	29	9	10	80	170	203	267	232	26	86	43	43	120
LSES 90 S/ST	140	172	100	120	56	10	37	10	11	90	190	223	218	177	26	86	43	43	66
LSES 90 SL/L	140	172	125	162	56	28	37	10	11	90	190	223	245	204	26	86	43	43	68
LSES 90 LU	140	172	125	162	56	28	37	10	11	90	190	223	265	230	26	86	43	43	88
LSES 100 L	160	196	140	165	63	12	40	12	13	100	200	238	290	250	26	86	43	43	93
LSES 100 LR	160	196	140	165	63	12	40	12	13	100	200	238	290	250	26	86	43	43	93
LSES 100 LG	160	196	140	165	63	12	40	12	13	100	200	238	315	275	26	86	43	43	93
LSES 112 MG	190	220	140	165	70	12	52	12	14	112	235	260	315	265	36	86	43	43	110
LSES 112 MU	190	220	140	165	70	12	52	12	14	112	235	260	334	288	36	86	43	43	130
LSES 132 S	216	250	140	170	89	16	50	12	15	132	235	280	350	306	53	86	43	43	128
LSES 132 SM/M	216	250	178	208	89	16	59	12	18	132	280	307	387	327	25	110	57	73	126
LSES 160 MP	254	294	210	294	108	20	64	14.5	25	160	315	368	468	407	44	134	92	63	154
LSES 160 MR	254	294	210	294	108	20	60	14.5	25	160	316	395	495	435	44	134	92	63	182
LSES 160 LR	254	294	254	294	108	20	64	14.5	25	160	315	368	495	440	44	134	92	63	138
LSES 160 L	254	294	254	294	108	20	60	14.5	25	160	316	395	495	435	44	134	92	63	138
LSES 180 MT	279	324	241	316	121	20	79	14.5	28	180	316	428	495	435	55	186	112	98	138
LSES 180 M	279	339	241	291	121	25	86	14.5	25	180	350	435	552	481	64	186	112	98	197
LSES 180 LU	279	339	279	329	121	25	86	14.5	25	180	350	435	593	508	64	186	112	98	199
LSES 200 L	318	388	305	375	133	35	103	18.5	36	200	390	475	621	539	77	186	112	98	194
LSES 225 SR	356	431	286	386	149	50	127	18.5	36	225	390	500	676	593	84	186	112	98	253
LSES 225 MR	356	431	311	386	149	50	127	18.5	36	225	390	500	676	593	84	186	112	98	228
LSES 225 MG	356	420	311	375	149	30	65	18.5	30	225	479	629	810	716	68	292	148	180	360
LSES 250 ME	406	470	349	420	168	35	90	24	36	250	479	655	810	716	68	292	148	180	303
LSES 280 SC	457	520	368	478	190	35	90	24	35	280	479	685	810	716	68	292	148	180	262
LSES 280 SD	457	520	368	478	190	35	90	24	35	280	479	685	870	776	68	292	148	180	322
LSES 280 MC	457	520	419	478	190	35	90	24	35	280	479	685	810	716	68	292	148	180	211
LSES 280 MK	457	533	419	495	190	40	85	24	35	280	586	746	921	819	99	292	148	180	328
LSES 315 SP	508	594	406	537	216	40	114	28	70	315	586	781	947	845	125	292	148	180	341
LSES 315 MP	508	594	457	537	216	40	114	28	70	315	586	781	947	845	125	292	148	180	290
LSES 315 MR	508	594	457	537	216	40	114	28	70	315	586	781	1017	947	125	292	148	180	360

* LB1 : motor not ventilated

LSES
high efficiency
three-phase asynchronous motors

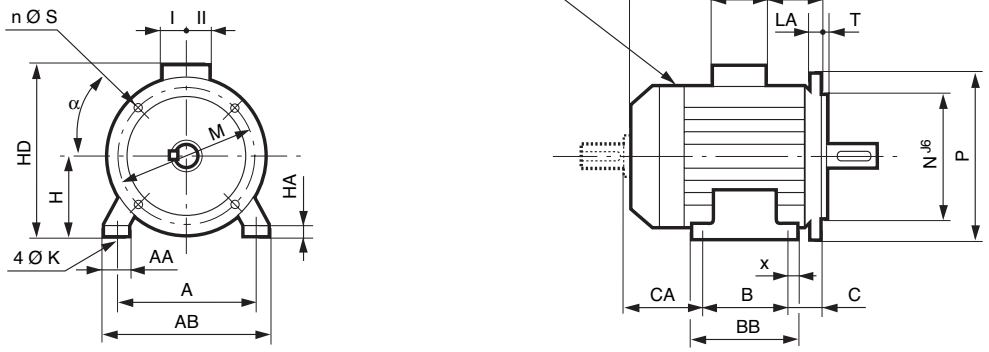
Dimensions

A

LSES totally enclosed three-phase asynchronous motors dimensions - IP 55
Cage rotor

Dimensions in millimetres

– (FF) foot and plain hole flange mounted



Type	Main dimensions																			
	A	AB	B	BB	C	x	AA	K	HA	H	AC	HD	LB	LB1*	LJ	J	I	II	CA	Sym.
LSES 80 L	125	157	100	120	50	10	29	9	10	80	170	203	215	177	26	86	43	43	68	FF 165
LSES 80 LU	125	157	100	120	50	10	29	9	10	80	170	203	267	232	26	86	43	43	120	FF 165
LSES 90 S/ST	140	172	100	120	56	10	37	10	11	90	190	223	218	177	26	86	43	43	66	FF 165
LSES 90 SL/L	140	172	125	162	56	28	37	10	11	90	190	223	245	204	26	86	43	43	68	FF 165
LSES 90 LU	140	172	125	162	56	28	37	10	11	90	190	223	265	230	26	86	43	43	88	FF 165
LSES 100 L	160	196	140	165	63	12	40	12	13	100	200	238	290	250	26	86	43	43	93	FF 215
LSES 100 LR	160	196	140	165	63	12	40	12	13	100	200	238	290	250	26	86	43	43	93	FF 215
LSES 100 LG	160	196	140	165	63	12	40	12	13	100	200	238	315	275	26	86	43	43	93	FF 215
LSES 112 MG	190	220	140	165	70	12	52	12	14	112	235	260	315	265	36	86	43	43	110	FF 215
LSES 112 MU	190	220	140	165	70	12	52	12	14	112	235	260	334	288	36	86	43	43	130	FF 215
LSES 132 S	216	250	140	170	89	16	50	12	15	132	235	280	350	306	53	86	43	43	128	FF 265
LSES 132 SM/M	216	250	178	208	89	16	59	12	18	132	280	307	387	327	25	110	57	73	126	FF 265
LSES 160 MP	254	294	210	294	108	20	64	14.5	25	160	315	368	468	407	44	134	92	63	154	FF 300
LSES 160 MR	254	294	210	294	108	20	60	14.5	25	160	316	395	495	435	44	134	92	63	182	FF 300
LSES 160 LR	254	294	254	294	108	20	64	14.5	25	160	315	368	495	440	44	134	92	63	138	FF 300
LSES 160 L	254	294	254	294	108	20	60	14.5	25	160	316	395	495	435	44	134	92	63	138	FF 300
LSES 180 MT	279	324	241	316	121	20	79	14.5	28	180	316	428	495	435	55	186	112	98	138	FF 300
LSES 180 M	279	339	241	291	121	25	86	14.5	25	180	350	435	552	481	64	186	112	98	197	FF 300
LSES 180 LU	279	339	279	329	121	25	86	14.5	25	180	350	435	593	508	64	186	112	98	199	FF 300
LSES 200 L	318	388	305	375	133	35	103	18.5	36	200	390	475	621	539	77	186	112	98	194	FF 350
LSES 225 SR	356	431	286	386	149	50	127	18.5	36	225	390	500	676	593	84	186	112	98	253	FF 400
LSES 225 MR	356	431	311	386	149	50	127	18.5	36	225	390	500	676	593	84	186	112	98	228	FF 400
LSES 225 MG	356	420	311	375	149	30	65	18.5	30	225	479	629	810	716	68	292	148	180	360	FF 400
LSES 250 ME	406	470	349	420	168	35	90	24	36	250	479	655	810	716	68	292	148	180	303	FF 500
LSES 280 SC	457	520	368	478	190	35	90	24	35	280	479	685	810	716	68	292	148	180	262	FF 500
LSES 280 SD	457	520	368	478	190	35	90	24	35	280	479	685	870	776	68	292	148	180	322	FF 500
LSES 280 MC	457	520	419	478	190	35	90	24	35	280	479	685	810	716	68	292	148	180	211	FF 500
LSES 280 MK	457	533	419	495	190	40	85	24	35	280	586	746	921	819	99	292	148	180	328	FF 500
LSES 315 SP	508	594	406	537	216	40	114	28	70	315	586	781	947	845	125	292	148	180	341	FF 600
LSES 315 MP	508	594	457	537	216	40	114	28	70	315	586	781	947	845	125	292	148	180	290	FF 600
LSES 315 MR	508	594	457	537	216	40	114	28	70	315	586	781	1017	947	125	292	148	180	360	FF 600

* LB1 : motor not ventilated

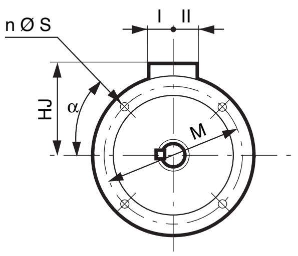
Dimensions

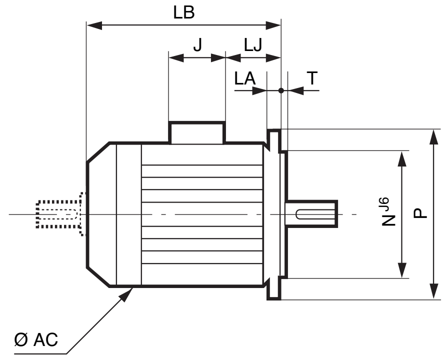
LSES totally enclosed three-phase asynchronous motors dimensions - IP 55
Cage rotor

Dimensions in millimetres

A

– (FF) plain hole flange mounted





IEC symbol	Flange dimensions							
	M	N	P	T	n	α°	S	LA
FF 165	165	130	200	3.5	4	45	12	10
FF 165	165	130	200	3.5	4	45	12	10
FF 165	165	130	200	3.5	4	45	12	10
FF 165	165	130	200	3.5	4	45	12	10
FF 165	165	130	200	3.5	4	45	12	10
FF 215	215	180	250	4	4	45	15	11
FF 215	215	180	250	4	4	45	15	11
FF 215	215	180	250	4	4	45	15	11
FF 215	215	180	250	4	4	45	15	11
FF 215	215	180	250	4	4	45	15	11
FF 265	265	230	300	4	4	45	14.5	13
FF 265	265	230	300	4	4	45	14.5	13
FF 300	300	250	350	5	4	45	18.5	13
FF 300	300	250	350	5	4	45	18.5	13
FF 300	300	250	350	5	4	45	18.5	13
FF 300	300	250	350	5	4	45	18.5	13
FF 300	300	250	350	5	4	45	18.5	13
FF 300	300	250	350	5	4	45	18.5	13
FF 300	300	250	350	5	4	45	18.5	13
FF 350	350	300	400	5	4	45	19	15
FF 400	400	350	450	5	8	22.3	19	16
FF 400	400	350	450	5	8	22.3	19	16
FF 400	400	350	450	5	8	22.3	19	16
FF 500	500	450	550	5	8	22.3	18	18
FF 500	500	450	550	5	8	22.3	18	18
FF 500	500	450	550	5	8	22.3	18	18
FF 500	500	450	550	5	8	22.3	18	18
FF 500	500	450	550	5	8	22.3	18	18
FF 600	600	550	660	6	8	22.3	22	25
FF 600	600	550	660	6	8	22.3	22	25
FF 600	600	550	660	6	8	22.3	22	25

Type	Main dimensions							
	AC	LB	LB1*	HJ	LJ	J	I	II
LSES 80 L	170	215	177	123	26	86	43	43
LSES 80 LU	170	267	232	123	26	86	43	43
LSES 90 S/ST	190	218	177	133	26	86	43	43
LSES 90 SL/L	190	245	204	133	26	86	43	43
LSES 90 LU	190	265	230	133	26	86	43	43
LSES 100 L	200	290	250	138	26	86	43	43
LSES 100 LR	200	290	250	138	26	86	43	43
LSES 100 LG	200	315	275	138	26	86	43	43
LSES 112 MG	235	315	265	148	36	86	43	43
LSES 112 MU	235	334	288	148	36	86	43	43
LSES 132 S	235	350	306	148	53	86	43	43
LSES 132 SM/M	280	387	327	175	25	110	57	73
LSES 160 MP	315	468	407	208	44	134	92	63
LSES 160 MR	316	495	435	235	44	134	92	63
LSES 160 LR	315	495	440	208	44	134	92	63
LSES 160 L	316	495	435	235	44	134	92	63
LSES 180 MT	316	495	435	248	55	186	112	98
LSES 180 M	350	552	481	255	64	186	112	98
LSES 180 LU	350	593	508	255	64	186	112	98
LSES 200 L	390	621	539	275	77	186	112	98
LSES 225 SR	390	676	593	275	84	186	112	98
LSES 225 MR	390	676	593	275	84	186	112	98
LSES 225 MG	479	810	716	405	68	292	148	180
LSES 250 ME	479	810	716	405	68	292	148	180
LSES 280 SC	479	810	716	405	68	292	148	180
LSES 280 SD	479	870	776	405	68	292	148	180
LSES 280 MC	479	810	716	405	68	292	148	180
LSES 280 MK	586	921	819	466	99	292	148	180
LSES 315 SP	586	947	845	466	125	292	148	180
LSES 315 MP	586	947	845	466	125	292	148	180
LSES 315 MR	586	1017	947	466	125	292	148	180

* LB1 : motor not ventilated

For IM 3001 use, for frame size ≥ 250 mm. consult us.

Shaft end dimensions identical to those of the foot mounted motors.

LSES
high efficiency
three-phase asynchronous motors

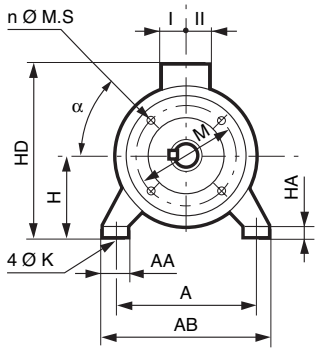
Dimensions

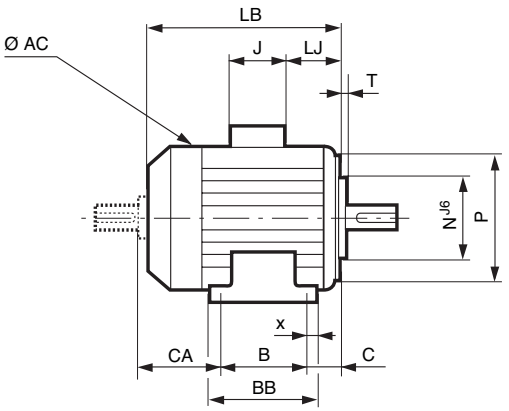
A

LSES totally enclosed three-phase asynchronous motors dimensions - IP 55
Cage rotor

Dimensions in millimetres

– (FT) foot and tapped hole flange mounted motor





	Main dimensions																			
Type	A	AB	B	BB	C	x	AA	K	HA	H	AC	HD	LB	LB1*	LJ	J	I	II	CA	Sym.
LSES 80 L	125	157	100	120	50	10	29	9	10	80	170	203	215	177	26	86	43	43	68	FT 100
LSES 80 LU	125	157	100	120	50	10	29	9	10	80	170	203	267	232	26	86	43	43	120	FT 100
LSES 90 S/ST	140	172	100	120	56	10	37	10	11	90	190	223	218	177	26	86	43	43	66	FT 115
LSES 90 SL/L	140	172	125	162	56	28	37	10	11	90	190	223	245	204	26	86	43	43	68	FT 115
LSES 90 LU	140	172	125	162	56	28	37	10	11	90	190	223	265	230	26	86	43	43	88	FT 115
LSES 100 L	160	196	140	165	63	12	40	12	13	100	200	238	290	250	26	86	43	43	93	FT 130
LSES 100 LR	160	196	140	165	63	12	40	12	13	100	200	238	290	250	26	86	43	43	93	FT 130
LSES 100 LG	160	196	140	165	63	12	40	12	13	100	200	238	315	275	26	86	43	43	93	FT 130
LSES 112 MG	190	220	140	165	70	12	52	12	14	112	235	260	315	265	36	86	43	43	110	FT 130
LSES 112 MU	190	220	140	165	70	12	52	12	14	112	235	260	334	288	36	86	43	43	130	FT 130
LSES 132 S	216	250	140	170	89	16	50	12	15	132	235	280	350	306	53	86	43	43	128	FT 215
LSES 132 SM/M	216	250	178	208	89	16	59	12	18	132	280	307	387	327	25	110	57	73	126	FT 215
LSES 160 MP	254	294	210	294	108	20	64	14.5	25	160	315	368	468	407	44	134	92	63	154	FT 215
LSES 160 LR	254	294	254	294	108	20	64	14.5	25	160	315	368	495	440	44	134	92	63	138	FT 215

* LB1 : motor not ventilated

LSES
high efficiency
three-phase asynchronous motors

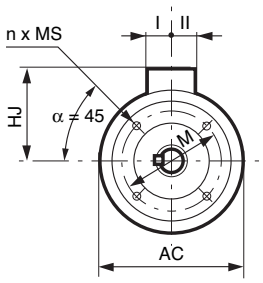
Dimensions

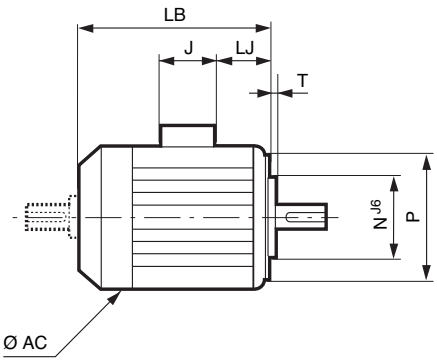
LSES totally enclosed three-phase asynchronous motors dimensions - IP 55
Cage rotor

A

Dimensions in millimetres

– (FT) tapped hole flange mounted





IEC symbol	Flange dimensions					
	M	N	P	T	n	MS
FT 100	100	80	120	3	4	M6
FT 100	100	80	120	3	4	M6
FT 115	115	95	140	3	4	M8
FT 115	115	95	140	3	4	M8
FT 115	115	95	140	3	4	M8
FT 130	130	110	160	3.5	4	M8
FT 130	130	110	160	3.5	4	M8
FT 130	130	110	160	3.5	4	M8
FT 215	215	180	250	4	4	M12
FT 215	215	180	250	4	4	M12
FT 215	215	180	250	4	4	M12
FT 215	215	180	250	4	4	M12
FT 215	215	180	250	4	4	M12
FT 215	215	180	250	4	4	M12

* LB1 : motor not ventilated

Type	Main dimensions							
	AC	LB	LB1*	HJ	LJ	J	I	II
LSES 80 L	170	215	177	123	26	86	43	43
LSES 80 LU	170	267	232	123	26	86	43	43
LSES 90 S/ST	190	218	177	133	26	86	43	43
LSES 90 SL/L	190	245	204	133	26	86	43	43
LSES 90 LU	190	265	230	133	26	86	43	43
LSES 100 L	200	290	250	138	26	86	43	43
LSES 100 LR	200	290	250	138	26	86	43	43
LSES 100 LG	200	315	275	138	26	86	43	43
LSES 112 MG	235	315	265	148	36	86	43	43
LSES 112 MU	235	334	288	148	36	86	43	43
LSES 132 S	235	350	306	148	53	86	43	43
LSES 132 SM/M	280	387	327	175	25	110	57	73
LSES 160 MP	315	468	407	208	44	134	92	63
LSES 160 LR	315	495	440	208	44	134	92	63