

**LERROY[®]
SOMER**

Réf. 3266 GB - 1.33 / b - 2.03



ENERGY-SAVING motors

THE SOLUTION FROM INDUSTRY: HIGH-EFFICIENCY MOTORS

*D*uring International Conferences, countries have shown their **WILLINGNESS** to commit to a further reduction in greenhouse gas emissions into the atmosphere.

Increased energy efficiency is a major factor in controlling electricity consumption, which is responsible for 30% of the (CO₂) emissions in the European Community.

The future of our planet depends on a partnership approach to energy saving by all **PRODUCERS** and **USERS** of energy.



 **LEROY[®]
SOMER**



EFF 1

 LEROY[®]
SOMER :

MASTERY OF ENERGY

ENERGY-SAVING LEROY-SOMER'S COMMITMENT

OUR INTERNATIONAL DUTY



Energy is essential to industry, to competition and to jobs.

Economic growth and energy consumption are becoming the two main guiding forces in the rational use of energy and preservation of the environment.

Electric motors represent nearly 70% of electrical consumption in industry.



NORTH AMERICAN LAWS

Since October 1997, LEROY-SOMER's special ranges of induction motors, in aluminium and cast iron, have met the requirements of NORTH AMERICAN LAWS:

- **EPCA for the United States**
- **NRCan for Canada**

EUROPEAN ACCORD

In April 1999, LEROY-SOMER undertook to comply with the ACCORD SIGNED under the auspices of the European Commission to promote high-efficiency electric motors.

LEROY-SOMER is also participating in the United Kingdom's project (ECA: Enhanced Capital Allowance) which encourages industrial firms to invest in energy-saving technologies from 1st April 2001.

ENERGY-SAVING CUSTOMER BENEFITS

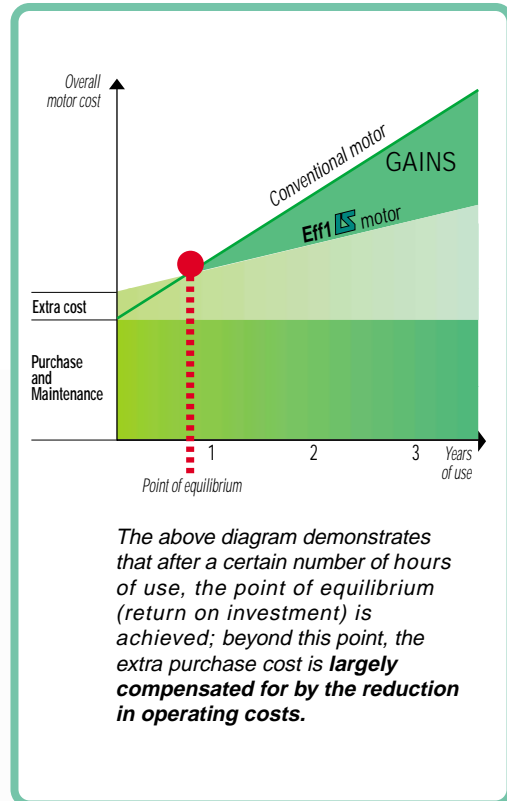
REDUCED OPERATING COSTS

The actual cost of a motor during its lifetime (generally over 10 years) consists of its purchase price (2 to 3%), the cost of servicing and maintenance (1 to 2%), but primarily the cost of the energy it consumes (> 95%).

As LEROY-SOMER LS ES and FLS ES (Eff1) motors consume less energy, the related operating costs are considerably reduced.

- **Example of the 45 kW motor**
(currently installed in heavy industry, for example)
Using a conventional motor:
- Efficiency = 91.5%, ie. absorbed power = 49.2 kW
- LEROY-SOMER FLS ES motor:**
- Efficiency = 94.5 %, ie. absorbed power = 47.6 kW
- **GAIN : 1.6 kW**
- **ANNUAL SAVINGS:**
 $1.6 \text{ kW} \times 0.35\text{F}^* \times 8000 \text{ hrs/yr} = 4480 \text{ F per year (682.9 €)}$
* (price of kW/h)

The extra cost of the "energy-saving motor" pays for itself in less than 10 months.

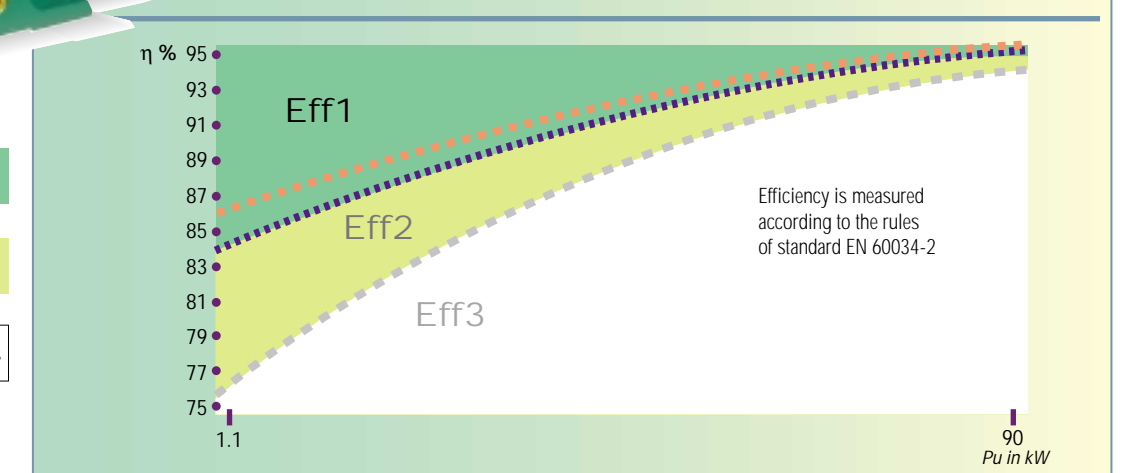


ENERGY-SAVING EUROPEAN ACCORDS



LEROY-SOMER are manufacturing a new generation of **HIGH-EFFICIENCY INDUCTION MOTORS**, conforming to the **EUROPEAN ACCORD** signed with the European Energy Commission.

CONTRACTUAL EFFICIENCY VALUES at 50 Hz



RANGES CONCERNED

2 or 4-pole motors, 3-phase, from 1.1 to 90 kW, 400 V, 50 Hz, S1 duty	EN 60034-1
IP54 and 55	EN 60034-5
Ventilated IC 411	EN 60034-6
Type N	EN 60034-12
Frame size 90 to 280	IEC 60072-1
foot mounted and / or flange (FF) or face (FT) mounted	
With or without protection and / or heating accessories.	

INCREASED MOTOR SERVICE LIFE



The increased efficiency of motors manufactured by LEROY-SOMER is the result of:

- Elongation of the magnetic circuit
- Use of laminations with very low losses
- Optimisation of the winding geometry
- Reduction of ventilation losses

MINIMISED LOSSES

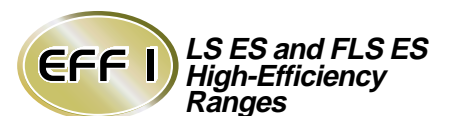
REDUCED TEMPERATURE RISE

INCREASED SERVICE LIFE

THE OFFER
LEROY-SOMER

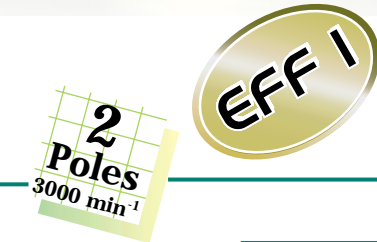
LEROY-SOMER have undertaken a complete overhaul of their conventional induction motor range and now offer, since January 2000, two new ranges of products bearing the Eff2 and Eff1 labels.

- LS and LS ES: Aluminium housing
- FLS and FLS ES: Cast iron housing



ENERGY-SAVING ALUMINIUM FRAME MOTORS

ENERGY-SAVING ALUMINIUM FRAME MOTORS



ELECTRICAL CHARACTERISTICS

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

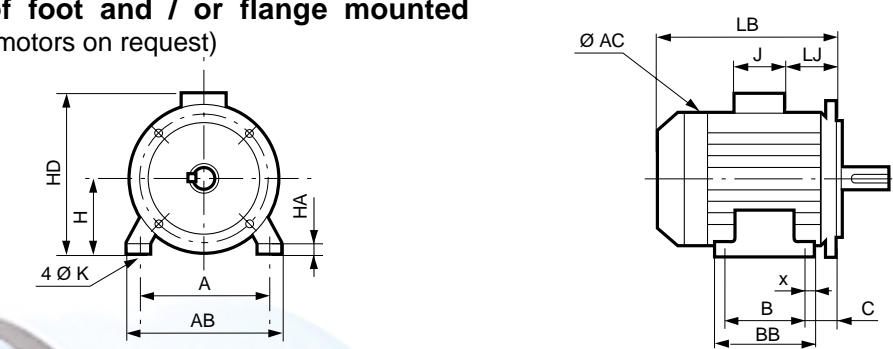
Type	Rated power kW	Rated speed min ⁻¹	Rated torque Nm	Rated current A	Power factor		Efficiency		Starting current / Rated current <i>I_D/I_N</i>	Starting torque / Rated torque <i>M_D/M_N</i>	Maximum torque / Rated torque <i>M_M/M_N</i>	Apparent rated power <i>kVA_N</i>	Moment of inertia <i>J</i> m ² .kg	Weight IM B3 kg
					3/4 Pn	4/4 Pn	3/4 Pn %	4/4 Pn %						
LS ES 80 L	1.1	2877	3.7	2.3	0.78	0.85	83.2	83	7.5	3.5	2.8	1.6	0.0011	11.3
LS ES 90 SL	1.5	2881	5.0	3.0	0.80	0.86	84	84.1	8.2	3.6	3.5	2.1	0.0017	14
LS ES 90 L	2.2	2885	7.3	4.2	0.82	0.87	85.8	85.9	7.6	3.8	3.3	2.9	0.0024	15.4
LS ES 100 L	3	2930	9.7	5.5	0.86	0.90	87.6	86.9	8.5	4.3	3.3	3.8	0.0032	22
LS ES 112 MG	4	2937	13.0	7.7	0.81	0.86	86.5	87.6	9.1	3.6	3.8	5.3	0.0103	35
LS ES 132 S	5.5	2932	17.9	10.2	0.82	0.88	88.1	88.6	9	3.6	4	7.1	0.0126	39
LS ES 132 SM	7.5	2939	24.4	13.6	0.85	0.89	89.9	89.9	8.1	2.8	3.6	9.4	0.0236	49
LS ES 160 MP	11	2937	35.8	19.5	0.87	0.90	90.8	90.7	9	2.9	3.4	13.5	0.0381	67
LS ES 160 LR	15	2936	48.8	26.1	0.88	0.91	91.7	91.3	9.3	2.3	4	18.1	0.0482	78
LS ES 160 L	15	2940	48.7	26.9	0.85	0.88	91.6	91.4	8.4	2.8	3.3	18.6	0.044	88
LS ES 160 L	18.5	2940	60.1	32.6	0.86	0.89	92.2	91.9	8.1	2.9	3.1	22.6	0.051	96
LS ES 180 MT	22	2940	71.5	38.7	0.86	0.89	92.6	92.3	8.6	2.8	3.2	26.8	0.059	108
LS ES 200 L	30	2956	96.9	52.2	0.87	0.89	93.2	93.2	8.5	3.0	3.2	36.2	0.12	180
LS ES 200 L	37	2956	120	63.4	0.88	0.90	93.7	93.6	8.3	3.0	3.2	43.9	0.14	200
LS ES 225 MR	45	2956	145	75.9	0.89	0.91	94.2	94.0	8.3	3.0	3.2	52.6	0.16	220
LS ES 250 ME	55	2968	177	93.5	0.88	0.90	94.3	94.3	8.4	2.6	3.3	64.8	0.36	315
LS ES 280 SC	75	2968	241	127	0.88	0.90	94.8	94.8	8.4	2.6	3.3	87.9	0.39	330
LS ES 280 MC	90	2968	289	150	0.89	0.91	95	95	8.6	2.7	3.4	104.1	0.47	375



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

Type	Rated power kW	Rated speed min ⁻¹	Rated torque Nm	Rated current A	Power factor		Efficiency		Starting current / Rated current <i>I_D/I_N</i>	Starting torque / Rated torque <i>M_D/M_N</i>	Maximum torque / Rated torque <i>M_M/M_N</i>	Apparent rated power <i>kVA_N</i>	Moment of inertia <i>J</i> m ² .kg	Weight IM B3 kg
					3/4 Pn	4/4 Pn	3/4 Pn %	4/4 Pn %						
LS ES 90 SL	1.1	1448	7.3	2.4	0.69	0.78	84.2	83.8	6.2	2.5	2.9	1.7	0.0043	16.7
LS ES 90 LU	1.5	1451	9.9	3.2	0.72	0.80	85.0	85.0	7.1	2.6	3.1	2.2	0.0051	20
LS ES 100 LR	2.2	1454	14.4	4.4	0.78	0.84	86.6	86.4	7.4	2.6	3.2	3	0.0067	24.5
LS ES 100 LG	3	1459	19.6	6.0	0.77	0.83	87.5	87.4	7.1	2.2	2.8	4.1	0.0117	32
LS ES 112 MU	4	1465	26.1	8.1	0.74	0.81	88.5	88.3	7.8	2.5	3.2	5.6	0.0154	40
LS ES 132 SM	5.5	1453	36.1	10.2	0.82	0.87	89.9	89.2	7.2	2.2	2.9	7.1	0.029	59.9
LS ES 132 M	7.5	1458	49.1	14.1	0.80	0.85	90.5	90.1	8	2.6	3.3	9.8	0.039	70
LS ES 160 MR	11	1461	72.0	21	0.78	0.83	91.0	91.0	7.9	3	3.4	14.4	0.047	78
LS ES 160 L	15	1464	97.8	28.0	0.79	0.84	92.6	92.0	8.4	2.8	3.6	19.4	0.090	103
LS ES 180 M	18.5	1468	120	34.4	0.79	0.84	92.8	92.4	6.9	2.9	3.0	23.8	0.123	136
LS ES 180 LU	22	1468	143	40.7	0.79	0.84	93.2	92.8	7.2	3.1	3.2	28.2	0.145	155
LS ES 200 L	30	1472	195	55.9	0.79	0.83	93.8	93.4	6.4	2.7	2.6	38.7	0.240	200
LS ES 225 SR	37	1474	240	68.6	0.78	0.83	94.1	93.8	7.0	3.0	2.9	47.5	0.290	235
LS ES 225 MG	45	1482	290	83.1	0.79	0.83	94.2	94.2	7.8	3.1	3.2	57.6	0.63	320
LS ES 250 ME	55	1482	354	100	0.80	0.84	94.5	94.4	7.4	2.9	2.9	69.4	0.73	340
LS ES 280 SD	75	1482	483	138	0.79	0.83	94.8	94.7	8.3	3.3	3.2	95.4	0.96	430
LS ES 280 MK	90	1482	578	163	0.81	0.84	95.1	95.1	7.9	3.0	3.1	112.7	2.320	655

DIMENSIONS of foot and / or flange mounted motors. (Face mounted motors on request)

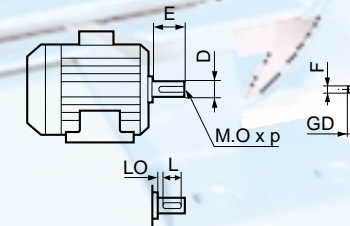


Dimensions in millimetres

Type	Main dimensions															
	A	AB	B	BB	C	X	K	HA	H	AC	HD	LB*	LJ	J	Flange symbol	
LS ES 80 L	125	157	100	120	50	10	9	10	80	170	203	215	26	86	FF 165	
LS ES 90 S	140	172	100	120	56	10	10	11	90	190	223	218	26	86	FF 165	
LS ES 90 SL	140	172	125	162	56	28	10	11	90	190	223	245	26	86	FF 165	
LS ES 90 L	140	172	125	162	56	28	10	11	90	190	223	245	26	86	FF 165	
LS ES 90 LU	140	172	125	162	56	28	10	11	90	190	223	265	26	86	FF 165	
LS ES 100 L	160	196	140	165	63	12	12	13	100	200	238	290	26	86	FF 215	
LS ES 100 LR	160	196	140	165	63	12	12	13	100	200	238	290	26	86	FF 215	
LS ES 100 LG	160	196	140	165	63	12	12	14	100	200	238	315	26	86	FF 215	
LS ES 112 MG	190	220	140	165	70	12	12	14	112	235	260	315	36	86	FF 215	
LS ES 112 MU	190	220	140	165	70	12	12	14	112	235	260	334	36	86	FF 215	
LS ES 132 S	216	250	140	170	89	16	12	15	132	235	280	350	53	86	FF 265	
LS ES 132 SM/M	216	250	178	208	89	16	12	18	132	280	307	387	25	110	FF 265	
LS ES 160 MP	254	294	210	294	108	20	14.5	25	160	315	368	468	44	134	FF 300	
LS ES 160 MR	254	294	210	294	108	20	14.5	25	160	315	368	495	44	134	FF 300	
LS ES 160 LR	254	294	254	294	108	20	14.5	25	160	315	368	495	44	134	FF 300	
LS ES 160 L	254	294	254	294	108	20	14.5	25	160	310	395	495	44	134	FF 300	
LS ES 180 MT	279	324	241	316	121	20	14.5	28	180	310	428	495	45	205	FF 300	
LS ES 180 M	279	339	241	291	121	25	14.5	25	180	350	435	552	54	205	FF 300	
LS ES 180 LU	279	339	279	329	121	25	14.5	25	180	350	435	593	54	205	FF 300	
LS ES 200 L	318	388	305	375	133	35	18.5	36	200	390	475	621	68	205	FF 350	
LS ES 225 SR	366	431	286	386	149	50	18.5	36	225	390	500	676	74	205	FF 400	
LS ES 225 MR	356	431	311	386	149	50	18.5	36	225	390	500	676	74	205	FF 400	
LS ES 225 MG	356	420	311	375	149	30	18.5	30	225	479	629	810	68	292	FF 400	
LS ES 250 ME	406	470	349	420	168	35	24	36	250	479	654	810	68	292	FF 500	
LS ES 280 SC	457	520	368	478	190	35	24	35	280	479	684	810	68	292	FF 500	
LS ES 280 MC	457	520	419	478	190	35	24	35	280	479	684	810	68	292	FF 500	
LS ES 280 SD	457	520	368	478	190	35	24	35	280	479	684	870	68	292	FF 500	
LS ES 280 MK	457	533	419	495	190	40	24	35	280	586	745	921	99	292	FF 500	

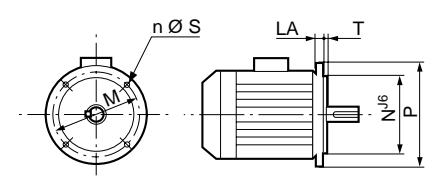
* dimension LB with IM B5 and IM B35 form for LS ES 90 S = 238, for LS ES 90 L = 265 and for LS ES 90 LR = 285

Dimensions of shaft extensions



Type	Main shaft extensions																	
	4, 6 and 8 poles							2 poles										
	F	GD	D	G	E	O	p	L	LO	F	GD	D	G	E	O	p	L	LO
LS ES 80	6	6	19j6	15.5	40	6	16	30	6	6	6	19j6	15.5	40	6	16	30	6
LS ES 90	8	7	24j6	20	50	8	19	40	6	8	7	24j6	20	50	8	19	40	6
LS ES 100	8	7	28j6	24	60	10	22	50	6	8	7	28j6	24	60	10	22	50	6
LS ES 112	8	7	28j6	24	60	10	22	50	6	8	7	28j6	24	60	10	22	50	6
LS ES 132	10	8	38k6	33	80	12	28	63	10	10	8	38k6	33	80	12	28	63	10
LS ES 160	12	8	42k6	37	110	16	36	100	6	12	8	42k6	37	110	16	36	100	6
LS ES 180	14	9	48k6	42.5	110	16	36	97	13	14	9	48k6	42.5	110	16	36	97	13
LS ES 200	16	10	55m6	49	110	20	42	97	13	16	10	55m6	49	110	20	42	97	13
LS ES 225	18	11	60m6	53	140	20	42	126	14	16	10	55m6	49	110	20	42	97	13
LS ES 250	18	11	65m6	58	140	20	42	126	14	18	11	60m6	53	140	20	42	126	14
LS ES 280	20	12	75m6	67.5	140	20	42	125	15	18	11	65m6	58	140	20	42	126	14

Dimensions of flanges (FF)



IEC symbol	Flanges							
	M	N	P	T	n	α	S	LA
FF 165	165	130	200	3.5	4	45		

ENERGY-SAVING CAST IRON FRAME MOTORS

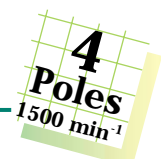
ENERGY-SAVING CAST IRON FRAME MOTORS



ELECTRICAL CHARACTERISTICS

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

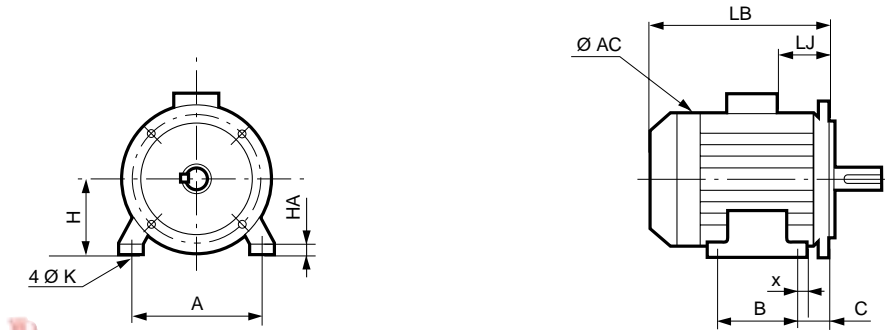
Type	Rated power kW	Rated speed min ⁻¹	Rated torque Nm	Rated current A	Power factor		Efficiency		Starting current / Rated current I_D/I_N	Starting torque / Rated torque M_D/M_N	Maximum torque / Rated torque M_M/M_N	Apparent rated power kVA _N	Moment of inertia J m ² .kg	Weight IM B3 kg
					3/4 Pn	4/4 Pn	3/4 Pn %	4/4 Pn %						
FLS ES 80 L	1.1	2877	3.7	2.3	0.79	0.85	82.3	82.8	7.7	3.5	2.8	1.6	0.0011	19
FLS ES 90 S	1.5	2881	5.0	3	0.80	0.86	83.9	84.1	8.7	3.6	3.5	2.1	0.0017	21
FLS ES 90 L	2.2	2885	7.3	4.2	0.81	0.87	86.2	85.9	8.4	3.9	4	2.9	0.0023	26
FLS ES 100 LK	3	2900	9.7	5.7	0.82	0.87	86.1	86.7	9	3.4	3.5	4.0	0.0069	42
FLS ES 112 M	4	2937	13.0	7.7	0.81	0.86	86.5	87.6	9.1	3.6	3.8	5.3	0.0107	52
FLS ES 132 S	5.5	2935	17.9	10.3	0.82	0.87	88.7	88.6	8	3.1	3.6	7.1	0.0211	66
FLS ES 132 M	7.5	2939	24.4	13.7	0.83	0.88	90.1	89.9	8.1	3.3	3.8	9.5	0.0236	70
FLS ES 160 MA	11	2950	35	21	0.85	0.87	89.9	90.5	8.3	2.8	2.9	14.6	0.039	102
FLS ES 160 MB	15	2944	48	27	0.88	0.9	90.7	91.3	8.3	2.7	2.7	18.8	0.046	114
FLS ES 160 L	18.5	2938	61	33	0.88	0.9	91.2	91.8	8.5	3.2	3.3	22.9	0.06	133
FLS ES 180 MR	22	2941	71	40	0.86	0.88	91.6	92.2	8.3	2.5	2.5	27.8	0.069	142
FLS ES 200 LA	30	2956	96	52	0.87	0.89	92.8	93	8.2	2.8	3.7	36	0.14	245
FLS 200 LB	37	2959	120	63	0.89	0.9	93	93.5	8.3	3	3.4	44.4	0.16	265
FLS 225 MT	45	2958	145	78	0.88	0.89	93.3	93.8	8.3	2.8	3.2	54	0.19	290
FLS 250 M	55	2966	177	94	0.87	0.89	94	94.6	7.9	2.5	3.5	65	0.44	405
FLS 280 S	75	2965	241	127	0.89	0.9	94.2	94.6	8	2.7	3.8	88	0.47	505
FLS 280 M	90	2962	290	149	0.89	0.91	95.1	95.5	7.7	2.6	3.7	104	0.53	560



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

Type	Rated power kW	Rated speed min ⁻¹	Rated torque Nm	Rated current A	Power factor		Efficiency		Starting current / Rated current I_D/I_N	Starting torque / Rated torque M_D/M_N	Maximum torque / Rated torque M_M/M_N	Apparent rated power kVA _N	Moment of inertia J m ² .kg	Weight IM B3 kg
					3/4 Pn	4/4 Pn	3/4 Pn %	4/4 Pn %						
FLS ES 90 S	1.1	1448	7.3	2.4	0.69	0.78	84.2	83.8	6.2	2.4	2.9	1.7	0.0043	24
FLS ES 90 LU	1.5	1451	9.9	3.2	0.72	0.80	85	85	7.1	2.7	3.1	2.2	0.0051	27
FLS ES 100 LK	2.2	1455	14.4	4.5	0.78	0.82	86.6	86.4	7.1	2.3	2.8	3.1	0.0096	37
FLS ES 100 L	3	1459	19.6	6.0	0.77	0.83	87.5	87.4	7.1	2.2	2.8	4.1	0.0134	43
FLS ES 112 MU	4	1465	26.1	8.1	0.74	0.81	88.5	88.3	7.9	2.5	3.2	5.6	0.0168	53
FLS ES 132 S	5.5	1453	36.1	10.2	0.82	0.87	89.9	89.2	7.2	2.2	2.9	7.1	0.029	71
FLS ES 132 M	7.5	1458	49.1	14.1	0.80	0.85	90.5	90.1	8.1	2.6	3.3	9.8	0.036	80
FLS ES 160 MB	11	1465	72	21	0.79	0.84	91.2	91.0	9.2	2.7	3.3	14.6	0.067	115
FLS ES 160 LU	15	1465	97	28	0.79	0.84	92.0	91.8	9.2	2.7	3.3	19.5	0.092	130
FLS ES 180 M	18.5	1468	121	35	0.79	0.84	92.8	92.4	7.1	3.0	2.7	24.3	0.123	170
FLS ES 180 LU	22	1465	143	42	0.78	0.82	92.7	92.6	7.3	3.0	2.7	29	0.146	200
FLS ES 200 LB	30	1470	194	56	0.81	0.83	93.4	93.2	6.5	2.6	2.3	39	0.26	270
FLS 225 ST	37	1476	240	70	0.77	0.82	93.2	93.5	7	2.6	2.4	49	0.28	290
FLS 225 M	45	1483	290	79	0.84	0.87	94.3	94.5	7	2.5	2.6	55	0.7	388
FLS 250 M	55	1479	355	100	0.8	0.84	94.6	94.5	6.5	2.4	2.5	70	0.7	395
FLS 280 S	75	1483	484	136	0.79	0.84	94.8	94.9	7.7	2.9	3	95	0.815	475
FLS 280 M	90	1478	581	161	0.82	0.85	95	95	7.6	3	3.1	112	1.015	565

DIMENSIONS of foot and / or flange mounted motors. (Face mounted motors on request)

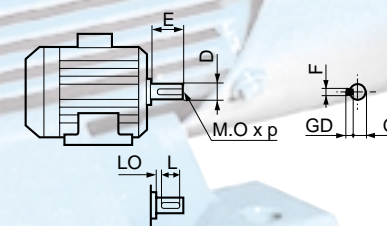


Dimensions in millimetres

Type	Main dimensions															
	A	AB	B	BB	C	X	K	HA	H	AC	HD	LB*	LJ	J	Flange symbol	
FLS ES 80 L	125	157	100	130	50	20	9	10	80	160	222	214	33	114	FF 165	
FLS ES 90 S	140	172	100	160	56	22	9	11	90	185	247	243	28	114	FF 165	
FLS ES 90 L	140	172	125	160	56	22	9	11	90	185	247	269	28	114	FF 165	
FLS ES 90 LU	140	172	125	160	56	22	9	11	90	185	247	269	28	114	FF 165	
FLS ES 100 LK	160	200	140	174	63	22	12	12	100	226	276	323	55	114	FF 215	
FLS ES 112 M	190	230	140	174	70	22	12	12	112	226	288	323	55	114	FF 215	
FLS ES 112 MU	190	230	140	174	70	22	12	12	112	226	288	345	55	114	FF 215	
FLS ES 132 S	216	255	140	223	89	31	12	15	132	264	323	387	46	114	FF 265	
FLS ES 132 M	216	255	178	223	89	31	12	15	132	264	323	387	46	114	FF 265	
FLS ES 160 MA	254	294	210	294	108	20	14	24	160	310	385	495	50	160	FF 300	
FLS ES 160 MB	254	294	210	294	108	20	14	24	160	310	385	495	50	160	FF 300	
FLS ES 160 L	254	294	254	294	108	20	14	24	160	310	385	495	50	160	FF 300	
FLS ES 160 LU	254	294	254	294	108	20	14	24	160	310	385	515	50	160	FF 300	
FLS ES 180 MR	279	324	241	295	121	25	14	28	180	310	405	515	50	160	FF 300	
FLS ES 180 M	279	324	241	295	121	25	14	40	180	350	405	555	55	160	FF 300	
FLS ES 180 LU	279	330	279	335	121	25	14	40	180	350	460	576	55	220	FF 300	
FLS ES 200 LA - LB	318	374	305	361	133	28	18	50	200	394	515	681	65	220	FF 350	
FLS 200 LB	318	374	305	361	133	28	18	50	200	394	515	681	65	220	FF 350	
FLS 225 ST	356	420	286	367	149	28	18	35	225	394	540	681	65	220	FF 400	
FLS 225 M	356	420	311	367	149	28	18	35	225	394	540	681	65	220	FF 400	
FLS 225 M	356	426	311	375	149	32	18	27	225	540	656	780	70	352	FF 400	
FLS 250 M	406	476	349	413	168	32	22	27	250	540	681	780	70	352	FF 500	
FLS 280 S	457	527	368	432	190	32	22	27	280	540	711	860	70	352	FF 500	
FLS 280 M	457	527	419	483	190	32	22	27	280	540	711	960	70	352	FF 500	

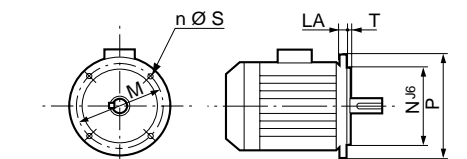
* dimension LB with IM B5 and IM B35 form for FLS ES 90 S and L = 263, for FLS ES 90 LU = 289

Dimensions of shaft extensions



Type	Main shaft extensions																	
	4, 6 and 8 poles								2 poles									
	F	GD	D	G	E	O	p	L	LO	F	GD	D	G	E	O	p	L	LO
FLS ES 80	6	6	19j6	15.5	40	6	16	30	6	6	6	19j6	15.5	40	6	16	30	6
FLS ES 90	8	7	24j6	20	50	8	19	40	6	8	7	24j6	20	50	8	19	40	6
FLS ES 100	8	7	28j6	24	60	10	22	50	6	8	7	28j6	24	60	10	22	50	6
FLS ES 112	8	7	28j6	24	60	10	22	50	6	8	7	28j6	24	60	10	22	50	6
FLS ES 132	10	8	38k6	33	80	12	28	63	10	10	8	38k6	33	80	12	28	63	10
FLS ES 160	12	8	42k6	37	110	16	36	100	6	12	8	42k6	37	110	16	36	100	6
FLS ES 180	14	9	48k6	42.5	110	16	36	97	13	14	9	48k6	42.5	110	16	36	97	13
FLS 200	16	10	55m6	49	110	20	42	97	13	16	10	55m6	49	110	20	42	97	13
FLS 225	18	11	60m6	53	140	20	42	126	14	16	10	55m6	49	110	20	42	97	13
FLS 250	18	11	65m6	58	140	20	42	126	14	18	11	60m6	53	140	20	42	126	14
FLS 280	20	12	75m6	67.5	140	20	42	125	15	18	11	65m6	58	140	20	42	126	14

Dimensions of flanges (FF)



IEC symbol	Flange dimensions							
	M	N	P	T	n	α	S	LA
FF 165	165	130	200	3.5	4	45	12	10
FF 215	215	180	250	4	4	45	14.5	12
FF 265	265	230	300	4	4	45	14.5	14
FF 300	300	250	350	5	4	45	18.5	14
FF 350	350	300	400	5	4	45	18.5	15
FF 400	400	350	450	5	8	22.5	18.5	16
FF 500	500	450	550	5	8	22.5	18.5	18

ENERGY-SAVING

THE COMPLETE, UNIQUE OFFER

The new LEROY-SOMER **high-efficiency** motors reduce both energy consumption and manufacturing costs. The reduction in absorbed energy and the increased life of motors result in substantial economies. The LS ES and FLS ES motor installation dimensions are identical to those of motors in the standard range, ensuring **interchangeability**.

LEROY-SOMER has a complete and unique offer consisting of motors specially designed to operate with electronic frequency inverters and speed reducers.

These product ranges are manufactured using basic technical principles, resulting in drive systems which are ideally suited to market requirements.

ENERGY-SAVING

for ALL APPLICATIONS



• CHEMICALS, PETRO-CHEMICALS



• INDUSTRY



• FOOD PROCESSING



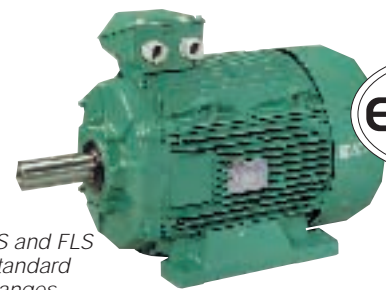
• ENVIRONMENT, SANITATION

• IRON & STEEL,
• PAPER & BOARD,
• SUGAR
REFINERIES,
• INDUSTRIES :
*Automotive,
Textile,
Timber, etc*

Increased efficiency
of rotating machines

DRIVING

MOTORS with ALUMINIUM or CAST IRON frame, 0.09 kW to 750 kW



EFF 2

LS and FLS
Standard
Ranges



EFF 1

LS ES and FLS ES
High-Efficiency
Ranges

Increased overall
efficiency of the installation

POWER
TRANSMISSION

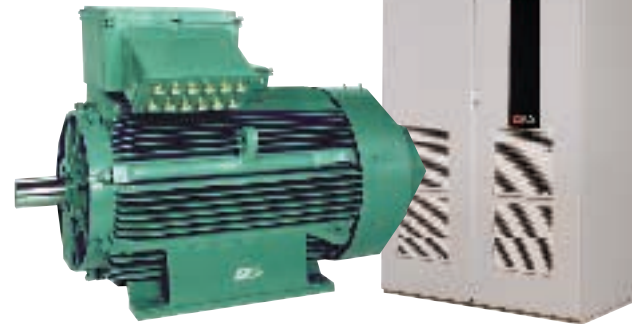
GEARED MOTORS



Gearboxes with helical gears such as COMPABLOC, ORTHOBLOC etc, with very high efficiency, are world leaders in the transmission market due to their very compact dimensions and low maintenance. These products contribute to **significant energy savings (25 %)**.

EQUIPMENT

VARIABLE SPEED DRIVES



Induction motors used in conjunction with speed drives can be optimised by adapting the speed, torque or power to the load: the power absorbed by the installation is therefore reduced. Variable speed control also presents an important opportunity for **savings in industry**.



LEROY-SOMER 16015 ANGOULÊME CEDEX - FRANCE

RCS ANGOULÊME N° B 671 820 223
S.A. au capital de 62 779 000 €

www.leroy-somer.com