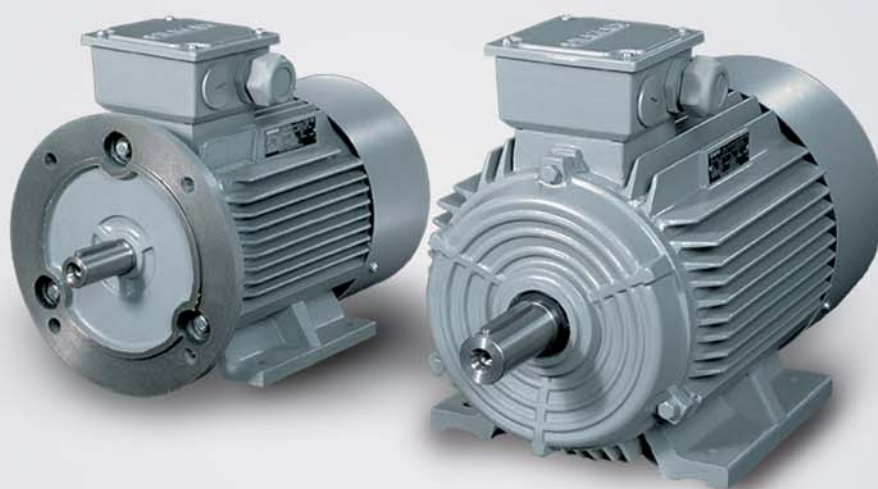




Low-voltage motors up to 315kW

Catalog D81.5 • 02.2010



1LG0 Low-voltage Motors

Answers for industry.

SIEMENS



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Overview

The 1LG0 series of 3 phase asynchronous motors are Totally Enclosed Fan Cooled (TEFC) with IP55 environmental protection. These motors are designed and manufactured in accordance with ISO, IEC standards.

Features of Siemens 1LG0 series

- Frame and terminal box material: Grey cast iron
- Standard colour: Stone Grey RAL 7030
- Available in 2,4,6 pole variants with efficiency class IE1 according to IEC60034-30
- Specific wound stators supporting multiple 3PH mains supply voltages at 50Hz or 60Hz
- Frame sizes: 80mm ~ 355mm
- Rated power range: 0.55kW ~ 315kW at 50Hz
- Standard mounting types and variations (IEC 60034-7)
- TEFC with IP55 degree of protection (IEC 60034-5)
- Overload capacity of 1.5 times rated current for 2 minutes (IEC 60034-1)
- V-ring as standard on DE rotor shaft for motor with FS 80 ~ 132, and oil seal as option; Oil seal as standard for motor with FS160 and above
- Anti-condensation heater (space heater) as option
- Winding protection with PTC and PT100 as option
- Insulation class: F, used according to temperature rise B

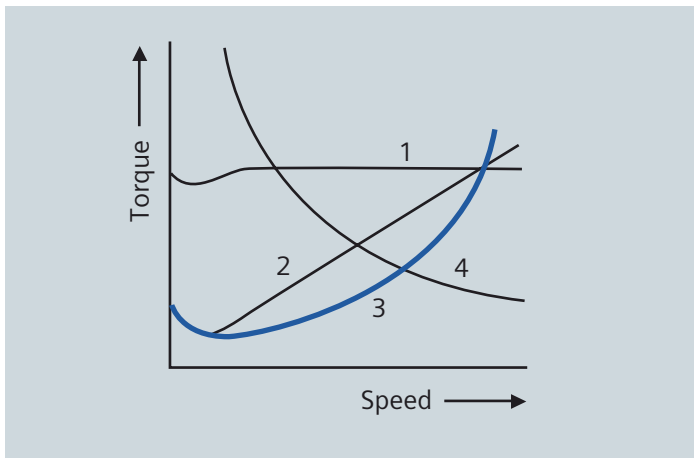
¹⁾ FS, abbreviation of "Frame size".

- Flexible cable entry (Rotatable terminal box)
- Rotor shaft with closed keyway (A type key) and NDE shaft extension
- Dynamically balanced rotor with a half key
- Drain plug on FS 160 ~ 355 motor as standard

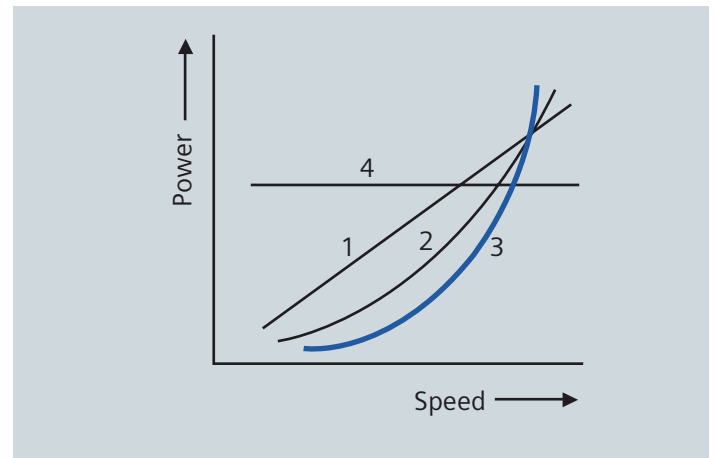
- Ribbed end shields for better bearing heat dissipation and prolonged bearing life
- Lubrication of bearing
 - FS 80 ~ 160 motor - greased for life
 - FS 180 ~ 280 motor - regreasable when ordered with K40 option
 - FS 315 ~ 355 motor - with regreasing device as standard

The 1LG0 is a General Purpose Motor with cast iron frame designed for constant or adjustable speed with continuous duty operation (S1) requiring variable torque over a speed range.

Load torque characteristics



Torque / speed characteristic



Power / speed characteristic

1. Torque almost constant; power proportional to speed.

2. Torque increases proportionally with the speed; power proportional to the square of the speed.

3. Torque increases proportionally with the square of the speed; power proportional to the cube of the speed. (applicable for 1LG0 series motors)

4. Torque decreases in inverse proportion to the speed; power constant.

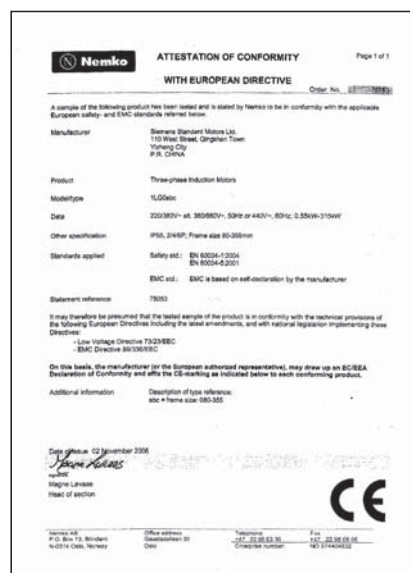


1LG0 motors are suitable for pumps, fans, compressors and HVAC applications where variable or constant speed is required (Curve 3). For more demanding applications we recommend Siemens consultation.

Motor standards

The 1LG0 complies with the following electrical and mechanical standards:

Standard title	DIN / VDE / EN	IEC standard
General regulations for rotation and electrical machines	DIN EN 60034-1	IEC 60034-1 IEC 60085
AC induction motors for general use with standardized dimensions and power	DIN EN 50347	IEC 60072
Restart characteristic of rotation electrical machines	DIN EN 60034-12	IEC 60034-12
Terminal markings and direction rotation of rotating electrical machines	DIN VDE 0530-8	IEC 60034-8
Type of construction and installation	DIN EN 60034-7	IEC 60034-7
IEC standard voltage	DIN IEC 60038	IEC 60038
Cooling methods for rotation electrical machines	DIN EN 60034-6	IEC 60034-6
Mechanical vibrations of rotating electrical machines	DIN EN 60034-14	IEC 60034-14
Degrees of protection for rotating	DIN EN 60034-5	IEC 60034-5
Rotating electrical machines and - Part 9 : Noise limits	IEC 60034-9:2007	EN 60034-9:2007
Guide for the design and performance of cage induction motors specifically designed for converter supply	DIN IEC 60034-17	IEC 60034-17



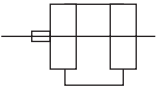
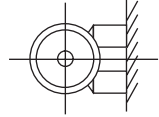
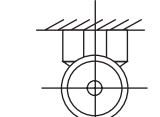
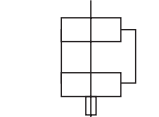
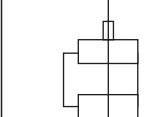
Mechanical design

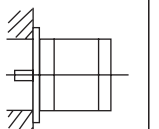
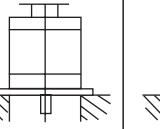
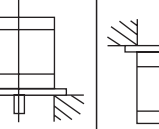
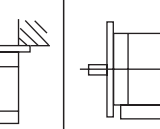
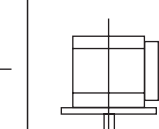
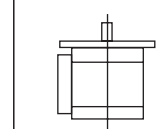
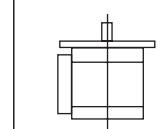
Terminal box

Terminal boxes are top mounted as default on the motor. This box can be rotated by 4 X 90° to allow for cable entry from each direction. In addition the terminal box can be installed either on the Left Hand Side (LHS – code K10) or Right Hand Side (RHS – code K09) when viewed from the drive end (DE) side of the motor.

Type	Frame Size	Protection degree	Rotation of terminal box	Number of cable grand	Terminal box materia	Terminal bus	Max. cable size (mm ²)	Cable entry size
1LG0	80	IP55	4 x 90°	2	Cast-iron	M4	2.5	M24 x 1.5 + M16 x 1.5
	90	IP55	4 x 90°	2	Cast-iron	M5	2.5	M24 x 1.5 + M16 x 1.5
	100	IP55	4 x 90°	2	Cast-iron	M5	4	M24 x 1.5 + M16 x 1.5
	112	IP55	4 x 90°	2	Cast-iron	M5	4	2 – M32 x 1.5
	132	IP55	4 x 90°	2	Cast-iron	M5	6	2 – M32 x 1.5
	160	IP55	4 x 90°	2	Cast-iron	M6	16	2 – M36 x 2
	180	IP55	4 x 90°	2	Cast-iron	M6	16	2 – M36 x 2
	200	IP55	4 x 90°	2	Cast-iron	M8	25	2 – M48 x 2
	225	IP55	4 x 90°	2	Cast-iron	M8	35	2 – M48 x 2
	250	IP55	4 x 90°	2	Cast-iron	M10	120	2 – M64 x 2
	280	IP55	4 x 90°	2	Cast-iron	M10	120	2 – M64 x 2
	315	IP55	4 x 90°	2	Cast-iron	M16	240	2 – M64 x 2
	355	IP55	4 x 90°	2	Cast-iron	M20	400	2 – M72 x 2

Construction or mounting type

Construction type	With feet and without flange on the end-shield (DE)					
Mounting type	IM B3 FS 80 ~ 355	IM B6 FS 80 ~ 160	IM B7 FS 80 ~ 160	IM B8 FS 80 ~ 160	IM V5 FS 80 ~ 225	IM V6 FS 80 ~ 225
Diagram						

Construction type	Without feet and with flange on the end-shield (DE)				With feet and with flange on the end-shield (DE)		
Mounting type	IM B5 FS 80 ~ 280	IM V1 ¹⁾ FS 80 ~ 355		IM V3 FS 80 ~ 160	IM B35 FS 80 ~ 355	IM V15 FS 80 ~ 160	IM V36 FS 80 ~ 160
Diagram							

¹⁾ For IMV1 with canopy and without canopy, motor has different order number.
Please find detailed information in "Technical data table".

Bearing

All motors are supplied with the ball bearing as standard. These bearings are either of the sealed or regreasable type.

Bearing design

- Floating bearing situated at DE & NDE of FS 80 ~ 160 motor;
- Fixed bearing situated at DE of FS 180 ~ 355 motor with IM B3, IM B5;
- Fixed bearing situated at DE of FS 180 ~ 225 motor with IM V1;
- Fixed bearing situated at NDE of FS 250 ~ 355 motor with IM V1;

Bearing type

Type	Frame Size	Poles	Drive-end bearing		Non-drive-end bearing	
			Horizontal mounting	Vertical mounting	Horizontal mounting	Vertical mounting
1LG0	80	2, 4, 6	6204 2RZC3		6204 2RZC3	
	90	2, 4, 6	6205 2RZC3		6205 2RZC3	
	100	2, 4, 6	6206 2RZC3		6206 2RZC3	
	112	2, 4, 6	6206 2RZC3		6206 2RZC3	
	132	2, 4, 6	6208 2RZC3		6208 2RZC3	
	160	2	6209 2RZC3		6209 2RZC3	
		4, 6	6309 2RZC3		6209 2RZC3	
	180	2	6211 C3		6211 C3	
		4, 6	6311 C3		6211 C3	
	200	2	6312 C3		6212 C3	
		4, 6	6312 C3		6212 C3	
	225	2	6312 C3		6312 C3	
		4, 6	6313 C3		6312 C3	
	250	2	6313 C3		6313 C3	7313AC
		4, 6	6314 C3		6313 C3	7313AC
	280	2	6314 C3		6314 C3	7314AC
		4, 6	6317 C3		6314 C3	7314AC
	315	2	6317 C3		6317 C3	7317AC
		4, 6	6319 C3		6319 C3	7319AC
	355	2	6319 C3		6319 C3	7319AC
		4, 6	6322 C3		6322 C3	7322AC

Bearing life

Frame Size	Poles	Bearing lifetime ¹⁾
80 ~ 355	2, 4, 6	20000 or 40000 ²⁾ (hours)

¹⁾ Lifetime means that motor runs under normal operation, maintained according to operating manual.

²⁾ 40000Hrs applies for horizontally installed motors with coupling output without additional axial loads and at least 20,000 hours with the admissible permitted loads.

Grease life and Relubrication interval (for horizontal installation)

Please refer to 1LG0 series motor operationg instruction for grease life and relubrication interval (for horizontal installation)

If the coolant temperature is increased by 10°C, the grease lifetime and regreasing interval is halved. Operating the 1LG0 motor beyond the rated speed will increase the mechanical stress on the motor resulting in increased vibrations, reduced bearing and grease lifespan.

Cooling and ventilation

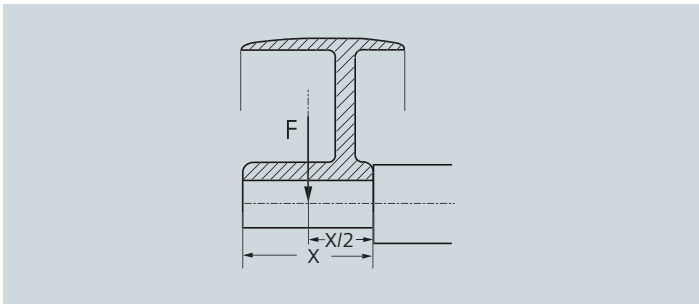
The 1LG0 standard motors from FS 80 ~ 355 are fitted with an radial flow fan for cooling in accordance with IEC 60034-6 cooling method.

Permissible Radial forces (F) on the DE rotor shaft

The table below contains the permissible Radial Force values in Newtons with the assumption of zero axial forces.

Frame Size	Poles	Radial force, in: N
80	2	640
	4	800
	6	920
90	2	700
	4	870
	6	1,000
100	2	970
	4	1,205
	6	1,390
112	2	1,240
	4	1,550
	6	1,790
132	2	1,485
	4	1,685
	6	2,156
160	2	1,570
	4	1,925
	6	2,125
180	2	3,010
	4	3,695
	6	4,290

Frame Size	Poles	Radial force, in: N
200	2	4,035
	4	4,830
	6	5,520
225	2	4,420
	4	5,450
	6	6,160
250	2	5,035
	4	6,190
	6	7,060
280	2	3,690
	4	9,220
	6	10,525
315	2	3950
	4	9,900
	6	12,109
355	2	6,500
	4	10,400
	6	12,500



Permissible radial force "F" (N) applied at X/2 (mm) to shaft shoulder

Noise levels

The table below contains noise level for the 1LG0 unloaded motors taken at 50Hz operation.

And all published values here have a tolerance of +3dB.

Output (kW)	synchronous speed (r/min)		
	L_{pfa} / L_{WA} (dB (A))		
	3000 (2 poles)	1500 (4 poles)	1000 (6 poles)
0.55	–	47 / 58	42 / 54
0.75	56 / 67	47 / 58	45 / 57
1.1	56 / 67	49 / 61	45 / 57
1.5	60 / 72	49 / 61	49 / 61
2.2	60 / 72	52 / 64	53 / 65
3	64 / 76	52 / 64	57 / 69
4	65 / 77	53 / 65	57 / 69
5.5	68 / 80	59 / 71	57 / 69
7.5	68 / 80	59 / 71	61 / 73
11	73 / 86	63 / 75	61 / 73
15	73 / 86	63 / 75	61 / 73
18.5	73 / 86	64 / 76	64 / 76
22	75 / 89	64 / 76	64 / 76
30	78 / 92	66 / 79	64 / 76
37	78 / 92	68 / 81	66 / 78
45	78 / 92	68 / 81	68 / 80
55	79 / 93	70 / 83	68 / 80
75	80 / 94	73 / 86	73 / 85
90	80 / 94	73 / 86	73 / 85
110	82 / 96	80 / 93	73 / 85
132	82 / 96	80 / 93	73 / 85
160	85 / 98	84 / 94	80 / 92
200	85 / 98	84 / 94	80 / 92
220	89 / 103	88 / 101	80 / 92
250	89 / 103	88 / 101	N / A
280	89 / 103	88 / 101	N / A
315	89 / 103	88 / 101	N / A

L_{pfa} – sound pressure level

L_{WA} – sound power level

Vibration

1LG0 rotors are dynamically balanced to severity grade A using a half key.

Table below contain the effective vibration values for unloaded motors.

Vibration grade	Frame size (mm)	$56 \leq FS \leq 132$	$160 \leq FS \leq 280$	$280 < FS \leq 355$
A	Mounting	Vibration velocity (mm/s)	Vibration velocity (mm/s)	Vibration velocity (mm/s)
	Free suspension	1.6	2.2	2.8
	Rigid mounting	1.3	1.8	2.3

Electrical design

Reliable quality and performance

To ensure reliable and long life, the 1LG0 windings are made of materials with class F temperature rise limited to class B (80K) .

Voltage and Frequency

1LG0 standard motor will operate on main power supplies in accordance with IEC 60034-1 Category A (combination of voltage deviation $\pm 5\%$ and frequency deviation $\pm 2\%$) for voltage and frequency fluctuations.

Rated Output

1LG0 rated output power refers to continuous duty (S1) operation in accordance with IEC 60034-1 when operated at 40°C ambient temperature and at site altitudes of 1000m or less.

1LG0 current overload is in accordance with IEC 60034-1 (1.5 times for 2 minutes) when operated as per the rated nameplate data.

Environmental

- Suitable for IP55 installations
- Below or equal to 1000m above sea level
- Operating temperature between -20°C and 40°C
- Relative humidity

Temperature	Relative humidity
$-20^{\circ}\text{C} \leq T \leq 20^{\circ}\text{C}$	100%
$20^{\circ}\text{C} < T \leq 30^{\circ}\text{C}$	95%
$30^{\circ}\text{C} < T \leq 40^{\circ}\text{C}$	55%

Note: For other requirements, Siemens should be consulted.

If environmental conditions vary from those listed above, please consult the chart below for output power derating factor.

	< 30°C	30 ~ 40°C	45°C	50°C	55°C	60°C
1000 m	1.07	1.00	0.96	0.92	0.87	0.82
1500 m	1.04	0.97	0.93	0.89	0.84	0.79
2000 m	1.00	0.94	0.90	0.86	0.82	0.77
2500 m	0.96	0.90	0.86	0.83	0.78	0.74
3000m	0.92	0.86	0.82	0.79	0.75	0.70
3500 m	0.88	0.82	0.79	0.75	0.71	0.67
4000 m	0.82	0.77	0.74	0.71	0.67	0.63

Space heater (Option code: K45) electrical data

Frame Size	80 ~ 90	100 ~ 112	132 ~ 160	180 ~ 200	225 ~ 280	315	355
Power (W)	20	30	40	50	60	80	110
Voltage (V)	220						

Converter fed application

1LG0 motors from FS 80 ~ 250 are suitable for converter fed operation in variable torque (VT) applications. When 1LG0 motor is operated with a converter, the motor must be ordered with winding protection options such as PTC, PT100.

Note:

- Insulated bearing is not available as an option for the 1LG0 motors. This must be taken into consideration during selection and configuration.
- In application where the motor is driven by a converter, the degree of electrical interference depends on the type of converter used (type, number of IGBTs, interference suppression measures, and manufacturer), cabling, distance and application requirements.
- The installation guidelines of the converter manufacturer with regards to electromagnetic compatibility must be considered at all times during the design and implementation phases.

Nameplate Overview

- Rated voltage
- Rated frequency
- Rated output
- Rated speed
- Efficiency
- Power factor
- Connection type
- Protection degree
- Series number
- Motor type
- Balance
- Insulation class
- Weight

⊕ SIEMENS 3~Mot. 1LG0183-2AA70-Z EFF2 ⊕											
LMH ----- / ----- / ----- Q/321081KYA04-2006 CE											
IP55	180M	IMB3	165kg	BRG	DE	6211	C3	BRG	NDE	6211	C3 Thcl.F
50HZ		380/660V		Δ/Y		60HZ		440V Δ			
22kW		41.3/23.8A				24.5kW		39.7A			
EFF.91.2%		COS φ 0.89	2940r/min			EFF.90%		COS φ 0.90	3540r/min		
360-400/630-690V		Δ/Y				420-460V Δ			(H)		
39.1-43.5/22.7-24.8A						38.0-41.6A					
⊕ SIEMENS STANDARD MOTORS LTD. ⊕											



MLFB configuration

1	2	3	4	5	6	7	8	9	10	11	12 ¹⁾	*
1	L	G	0									

Motor series

80 ~ 355 FS 80 ~ 355

S = short (0, 1, 2)

M = medium (3, 4, 5)

L = long (6, 7, 8)

Number of poles 2, 4, 6

Design type

Voltage, connections and frequency

1 – 230 VD / 400 VY 50Hz

2 – 220 VD / 380 VY 50Hz

6 – 400 VD / 690 VY 50Hz

7 – 380 VD / 660 VY 50Hz

9²⁾ – Special voltage and frequency

Construction type

0 - With feet and without flange on the end-shield (DE)

1 - Without feet and with flange on the end-shield (DE)

6 - With feet and with flange on the end-shield (DE)

4 - Without feet and with flange on the end-shield (DE), and with canopy on non-driven end

8³⁾ - Without feet and with flange on the end-shield (DE), IMV1 without canopy



Ordering example:

Three-phase motor IP55

2-pole 50 Hz, 11kW 380VD/660VY IMB3

Order No. 1LG0163-2AA..

Voltage identifier: 7

construction type identifier: 0

¹⁾ Option codes are added after position 12;

²⁾ When selecting special voltage and frequency mentioned in "option" part, 11 position of MLFB should be changed to "9".

³⁾ Code "8" is only applicable to 1LG0 motor from FS 250 ~ 355, 1LG0 motor with FS 250 ~ 355, IMV1 without canopy; for 1LG0 motor with the other frame sizes, IMV1 without canopy, the 12th position is "1".

Options

Option Code	Description	Application Scope
Special voltage and frequency		
L1C	415VY 50Hz, 50Hz output	FS 80 ~ 355
L1D	415VD 50Hz, 50Hz output	FS 80 ~ 355
L1U	400VD 50Hz, 50Hz output	FS 80 ~ 355
L2B	220VD / 380VY 60Hz, 60Hz output	FS 80 ~ 355
L2D	380VD / 660VY 60Hz, 60Hz output	FS 80 ~ 355
L2E	460VY 60Hz, 60Hz output	FS 80 ~ 355
L2F	460VD 60Hz, 60Hz output	FS 80 ~ 355
Electrical design		
A11	Motor protection with PTC thermistors with three embedded temperature sensors for tripping	FS 80 ~ 355
A12	Motor protection with PTC thermistors with six embedded temperature sensors for alarm and tripping	FS 80 ~ 355
A60	Installation of 3 PT100 resistance thermometers	FS 100 ~ 355
A61	Installation of 6 PT100 resistance thermometers	FS 180 ~ 355
A72	Installation of 2 PT100 screw-in resistance thermometers for bearings	FS 180 ~ 355
K45	Anti-condensation heater for 220Vac (spaces heater)	FS 80 ~ 355
W04	Temperture class 155 (F), used acc. to 130 (B) with service factor 1.15	FS 80 ~ 355
Mechanical design		
K09 ¹⁾	Terminal box on RHS (view from drive end)	FS 80 ~ 355
K10 ¹⁾	Terminal box on LHS (view from drive end)	FS 80 ~ 355
K11 ¹⁾	Terminal box on top, cable entry on right (view from drive end)	FS 80 ~ 355
K83	Rotation of terminal box by 90°, inserted from drive end	FS 80 ~ 355
K84	Rotation of terminal box by 90°, inserted from non-drive end	FS 80 ~ 355
K85	Rotation of terminal box by 180°	FS 80 ~ 355
K16 ²⁾	Second standard shaft-extension	FS 80 ~ 355
K40	Regreasing device	FS 180 ~ 280
W01	SKF bearings	FS 80 ~ 355
W02	NSK bearings	FS 80 ~ 355
W03	Motor shaft DE equipped with Oil seal	FS 80 ~ 132
Paint		
Y53	Finish in other colours - please specify RAL7032 or RAL9006	FS 80 ~ 355
M94 ³⁾	Sea air resistant special finish	FS 80 ~ 355
Testing certificate		
B02	Acceptance test certificate 3.1 according to EN 10204	FS 80 ~ 355

¹⁾ Indication of terminal box position is not necessary for motor with flange. For motor with K10, the connection box is close to NDE.

²⁾ Motor without feet and with flange on the end-shield (DE), and with canopy on non-driven end should not be associated with this option.

³⁾ Recommendate for indoor or outdoor installations exposed to enviromental conditions. Industrial enviroment with moderate SO2, inshore maritime climate but not offshore.

Technical data

Table 1

Frame Size	Type	Rated Output	Rated speed	Efficiency at (50Hz) 4 / 4 load	Efficiency at (50Hz) 3 / 4 load	Power factor	Rated current	Rated torque
		P _{rated}	n _{rated}	η _{rated}	η _{rated}	cos φ _{rated}	I _{rated}	T _{rated}
		kW	rpm	%	%		A	Nm
3000rpm 2-pole								
		220VD / 380VY 50Hz						
80M	1LG0 080-2AA..	0.75	2845	76	75.1	0.83	1.81	2.5
80M	1LG0 083-2AA..	1.1	2840	77.4	80	0.84	2.57	3.7
90S	1LG0 090-2AA..	1.5	2840	79	79.2	0.84	3.43	5
90L	1LG0 096-2AA..	2.2	2840	81.1	81.8	0.85	4.85	7.4
100L	1LG0 106-2AA..	3	2860	83	83.2	0.88	6.31	10
		380VD / 660VY 50Hz						
112M	1LG0 113-2AA..	4	2880	85	85.8	0.88	8.1	13.3
132S	1LG0 130-2AA..	5.5	2900	86	87.1	0.88	11	18.1
132S	1LG0 131-2AA..	7.5	2900	87	88.7	0.88	14.9	24.7
160M	1LG0 163-2AA..	11	2930	88.4	88.6	0.89	21.2	35.9
160M	1LG0 164-2AA..	15	2930	89.4	90	0.89	28.6	48.9
160L	1LG0 166-2AA..	18.5	2930	91	91	0.9	34.3	60.3
180M	1LG0 183-2AA..	22	2940	91.2	90.2	0.89	41.2	71.5
200L	1LG0 206-2AA..	30	2950	91.4	91.2	0.9	55.4	97.1
200L	1LG0 207-2AA..	37	2950	92	92.2	0.9	67.9	120
225M	1LG0 223-2AA..	45	2960	92.5	92.6	0.9	82.1	145
250M	1LG0 253-2AB..	55	2965	93	92.8	0.9	100	177
280S	1LG0 280-2AB..	75	2970	93.6	93	0.9	135	241
280M	1LG0 283-2AB..	90	2970	93.9	93.7	0.91	160	289
315S	1LG0 310-2AC..	110	2975	94	93.2	0.91	195	353
315M	1LG0 313-2AC..	132	2975	94.5	93.9	0.91	233	424
315L	1LG0 316-2AC..	160	2975	94.6	94	0.92	279	514
315L	1LG0 317-2AC..	200	2975	94.8	94.9	0.92	348	642
355M	1LG0 353-2AC..	220	2987	94.8	94.8	0.92	383	703
355M	1LG0 354-2AC..	250	2987	95.2	94.9	0.9	444	799
355L	1LG0 356-2AC..	280	2987	95.2	95.1	0.9	497	895
355L	1LG0 357-2AC..	315	2987	95.4	95.4	0.9	558	1007

Penultimate position:						
Voltage Identifier No.						
220VD / 380VY 50Hz	380VD / 660VY 50Hz	230VD / 400VY 50Hz	400VD / 690VY 50Hz	E-Voltage / Frequency		
2	7	1	6	9		

Rated Output	Rated speed	Efficiency	Power factor	Rated current	Rated torque	Starting current	Starting torque	Max torque	Moment of inertia J	Weight
P_{rated}	n_{rated}	η_{rated}	$\cos \phi_{rated}$	I_{rated}	T_{rated}	I_{LR} / I_{rated}	T_{LR} / T_{rated}	T_B / T_{rated}		
kW	rpm	%		A	Nm				kgm ²	kg
440VY 60Hz										
0.86	3450	76.0	0.83	1.79	2.38	6.1	2.3	2.7	0.0008	14
1.3	3430	79.0	0.84	2.57	3.62	7	2.3	2.5	0.0009	15
1.75	3440	80.0	0.84	3.42	4.86	6.9	2.3	2.3	0.0012	22
2.55	3440	82.0	0.85	4.80	7.08	6.9	2.3	2.8	0.0014	24
3.45	3460	84.0	0.87	6.19	9.52	6.9	2.3	2.8	0.0039	33
440VD 60Hz										
4.6	3480	86.0	0.88	8.0	12.6	7.2	2.3	2.8	0.0055	38
6.3	3500	86.0	0.88	10.9	17.2	7.5	2.3	2.8	0.0109	58
8.6	3500	87.0	0.88	14.7	23.5	7.4	2.3	2.8	0.013	63
12.6	3520	89.5	0.89	20.8	34.2	7.5	2.5	2.6	0.038	105
17.3	3520	90.0	0.895	28.2	46.9	7.3	2.5	2.9	0.045	115
21.3	3520	90.5	0.905	34.1	57.8	7.2	2.5	2.8	0.055	128
24.5	3540	90.0	0.90	39.7	66.1	7.5	2.3	2.9	0.075	165
33.5	3540	91.2	0.90	53.6	90.4	6.9	2.2	2.9	0.124	225
41.5	3540	92.0	0.90	65.8	112	7.1	2.3	2.9	0.139	246
51	3550	92.8	0.91	79.2	137	7.3	2.5	2.9	0.233	296
62	3560	92.5	0.90	98	166	7.5	2.5	2.9	0.312	390
84	3560	93.0	0.90	132	225	7.5	2.3	2.9	0.597	504
101	3560	93.8	0.91	155	271	7.5	2	2.3	0.675	536
123	3570	94.0	0.91	189	329	7.1	1.8	2.2	1.18	865
148	3570	94.5	0.91	226	396	7.1	1.8	2.2	1.55	960
180	3570	94.6	0.92	271	482	7	1.9	2.5	1.76	1035
224	3570	94.8	0.92	337	599	7.1	1.8	2.2	2.02	1160
246	3580	94.8	0.92	370	656	7.1	1.4	2.2	3.02	1545
280	3580	95.3	0.92	419	747	7.1	1.4	2.2	3.56	1650
314	3580	95.3	0.92	470	838	7.1	1.4	2.2	3.84	1650
353	3580	95.6	0.92	527	942	7.1	1.4	2.2	4.16	1790

	Final position			
	Type of construction Identifier No.			
	With feet and without flange on the end-shield	Without feet and with flange on the end-shield	With feet and with flange on the end-shield	Without feet and with flange on the end-shield, and with Canopy on non-driven end
	0	1 8 ¹⁾	6	4

¹⁾ Code "8" is only for FS 250 ~ 355 1LG0 motor with mounting type "IMV1 without canopy" ;
for FS 80 ~ 225 1LG0 motor with mounting type "IMV1 without canopy", the 12th position is "1".

Technical data

Table 2

Frame Size	Type	Rated Output	Rated speed	Efficiency at (50Hz) 4 / 4 load	Efficiency at (50Hz) 3 / 4 load	Power factor	Rated current	Rated torque
		P _{rated}	n _{rated}	η _{rated}	η _{rated}	Cos φ _{rated}	I _{rated}	T _{rated}
		kW	rpm	%	%		A	Nm
1500rpm 4-pole								
		220VD / 380VY 50Hz						
80M	1LG0 080-4AA..	0.55	1390	71	71.9	0.75	1.57	3.8
80M	1LG0 083-4AA..	0.75	1380	73	74.7	0.76	2.05	5.2
90S	1LG0 090-4AA..	1.1	1390	76.2	75	0.76	2.89	7.6
90L	1LG0 096-4AA..	1.5	1390	78.5	75.8	0.79	3.67	10.3
100L	1LG0 106-4AA..	2.2	1410	81	78.8	0.8	5.16	14.9
100L	1LG0 107-4AA..	3	1410	82.8	80.9	0.81	6.8	20.3
		380VD / 660VY 50Hz						
112M	1LG0 113-4AA..	4	1435	84.5	84	0.82	8.8	26.6
132S	1LG0 130-4AA..	5.5	1440	86	85.9	0.82	11.8	36.5
132M	1LG0 133-4AA..	7.5	1440	87.2	87.4	0.84	15.6	49.7
160M	1LG0 163-4AA..	11	1460	89	88.5	0.83	22.6	72
160L	1LG0 166-4AA..	15	1460	90	89.7	0.84	30.1	98.1
180M	1LG0 183-4AA..	18.5	1470	90.6	91.2	0.86	36.1	120.2
180L	1LG0 186-4AA..	22	1470	91.4	91.6	0.86	42.5	143
200L	1LG0 206-4AA..	30	1470	92.1	92.3	0.86	57.5	195
225S	1LG0 220-4AA..	37	1475	92.6	92.7	0.87	69.8	240
225M	1LG0 223-4AA..	45	1475	92.8	93.2	0.87	84.7	291
250M	1LG0 253-4AA..	55	1480	93	93.3	0.87	103	355
280S	1LG0 280-4AA..	75	1480	93.8	93.6	0.87	140	484
280M	1LG0 283-4AA..	90	1480	94.3	94.1	0.87	167	580
315S	1LG0 310-4AB..	110	1480	94.6	94	0.88	201	710
315M	1LG0 313-4AB..	132	1480	94.9	94.4	0.88	240	852
315L	1LG0 316-4AB..	160	1480	95.1	94.8	0.89	287	1032
315L	1LG0 317-4AB..	200	1480	95.3	94.9	0.89	358	1291
355M	1LG0 353-4AB..	220	1490	95	95.3	0.89	395	1410
355M	1LG0 354-4AB..	250	1490	95.2	95.3	0.87	459	1602
355L	1LG0 356-4AB..	280	1490	95.2	95.4	0.87	514	1794
355L	1LG0 357-4AB..	315	1490	95.2	95.4	0.87	578	2019

Penultimate position:						
Voltage Identifier No.						
220VD / 380VY 50Hz		380VD / 660VY 50Hz	230VD / 400VY 50Hz	400VD / 690VY 50Hz	E-Voltage / Frequency	
2		7	1	6	9	

Rated Output	Rated speed	Efficiency	Power factor	Rated current	Rated torque	Starting current	Starting torque	Max torque	Moment of inertia J	Weight
P_{rated}	n_{rated}	η_{rated}	$\cos \phi_{rated}$	I_{rated}	T_{rated}	I_{LR} / I_{rated}	T_{LR} / T_{rated}	T_B / T_{rated}		
kW	rpm	%		A	Nm				kgm ²	kg
440VY 60Hz										
0.63	1690	73.0	0.75	1.51	3.56	5	2.4	2.6	0.002	14
0.86	1680	75.0	0.76	1.98	4.89	5.8	2.4	2.6	0.002	15
1.3	1680	77.0	0.77	2.88	7.39	5.8	2.3	2.5	0.0021	21
1.75	1680	79.0	0.79	3.68	9.95	5.8	2.4	2.8	0.003	23
2.55	1710	81.0	0.81	5.10	14.2	6	2.4	2.3	0.007	31
3.45	1710	83.0	0.82	6.65	19.3	6	2.3	2.8	0.007	33
440VD 60Hz										
4.6	1730	85.0	0.82	8.7	25.4	6.2	2.3	2.8	0.0095	44
6.3	1740	85.5	0.85	11.4	34.6	6.5	2.3	2.8	0.0214	61
8.6	1740	87.0	0.84	15.4	47.2	7	2.5	2.8	0.0296	71
12.6	1750	89.0	0.85	21.9	68.8	7	2.4	2.9	0.075	110
17.3	1750	89.5	0.85	29.8	94.4	7.5	2.5	2.9	0.092	132
21.3	1760	91.0	0.86	35.7	116	7	2.3	2.9	0.139	164
24.5	1760	91.5	0.865	40.6	133	7	2.4	2.9	0.158	180
33.5	1760	92.5	0.86	55.3	182	7	2.3	2.8	0.262	225
41.5	1770	92.8	0.87	67.4	224	6.9	2.2	2.7	0.406	285
51	1770	93.0	0.87	82.7	275	6.9	2.2	2.3	0.469	305
62	1770	93.5	0.875	99	335	7.1	2.4	2.8	0.66	400
84	1780	93.8	0.88	134	451	6.8	2.3	2.8	1.12	553
101	1780	94.3	0.88	160	542	7.2	2.4	2.8	1.46	582
123	1780	94.5	0.88	194	660	6.2	2.3	2.8	3.11	900
148	1780	94.8	0.88	233	794	6.1	2.2	2.8	3.29	995
180	1780	94.9	0.89	280	966	6.5	2.2	2.8	3.79	1070
224	1780	95.0	0.89	348	1202	6.4	2.1	2.8	4.49	1220
246	1780	95.0	0.89	382	1320	6.9	1.6	2.2	4.82	1645
280	1780	95.3	0.90	428	1502	6.9	1.6	2.2	5.67	1685
314	1780	95.3	0.90	480	1685	6.9	1.6	2.2	6.13	1780
353	1780	95.6	0.90	538	1894	6.9	1.6	2.2	6.66	1890

	Final position			
	Type of construction Identifier No.			
	With feet and without flange on the end-shield	Without feet and with flange on the end-shield	With feet and with flange on the end-shield	Without feet and with flange on the end-shield, and with Canopy on non-driven end
	0	1 8 ¹⁾	6	4

¹⁾ Code "8" is only for FS 250 ~ 355 1LG0 motor with mounting type "IMV1 without canopy"; for FS 80 ~ 225 1LG0 motor with mounting type "IMV1 without canopy", the 12th position is "1".

Technical data

Table 3

Frame Size	Type	Rated Output	Rated speed	Efficiency at (50Hz) 4 / 4 load	Efficiency at (50Hz) 3 / 4 load	Power factor	Rated current	Rated torque
		P _{rated}	n _{rated}	η _{rated}	η _{rated}	cos φ _{rated}	I _{rated}	T _{rated}
		kW	rpm	%	%		A	Nm
1000rpm 6-pole								
		220VD / 380VY 50Hz						
80M	1LG0 083-6AA..	0.55	885	65	67.3	0.72	1.79	5.9
90S	1LG0 090-6AA..	0.75	910	69	70.2	0.72	2.29	7.9
90L	1LG0 096-6AA..	1.1	910	72	74.5	0.73	3.18	11.5
100L	1LG0 106-6AA..	1.5	920	76	78.2	0.75	4	15.6
112M	1LG0 113-6AA..	2.2	935	80	81.3	0.75	5.6	22.5
132S	1LG0 130-6AA..	3	960	81.5	82.2	0.76	7.4	29.8
		380VD / 660VY 50Hz						
132M	1LG0 133-6AA..	4	960	82	83.9	0.76	9.8	38.2
132M	1LG0 134-6AA..	5.5	960	84.4	86.3	0.77	12.9	52.5
160M	1LG0 163-6AA..	7.5	970	86	87.9	0.77	17.2	71.6
160L	1LG0 166-6AA..	11	970	87.5	89.1	0.78	24.5	105.1
180L	1LG0 186-6AA..	15	970	89	89.6	0.83	30.9	143
200L	1LG0 206-6AB..	18.5	980	90	90.1	0.81	38.6	177
200L	1LG0 207-6AB..	22	980	90	91.1	0.83	44.7	210
225M	1LG0 223-6AB..	30	980	91.7	92.3	0.84	59.2	287
250M	1LG0 253-6AB..	37	980	92	92.1	0.86	71	353
280S	1LG0 280-6AB..	45	980	92.5	92.6	0.86	86	430
280M	1LG0 283-6AB..	55	980	92.8	93.2	0.86	105	525
315S	1LG0 310-6AB..	75	989	93.5	93.8	0.86	142	724
315M	1LG0 313-6AB..	90	989	93.8	94.1	0.86	170	869
315L	1LG0 316-6AB..	110	989	94.3	94.5	0.86	206	1062
315L	1LG0 317-6AB..	132	989	94.6	94.8	0.87	244	1274
355M	1LG0 353-6AB..	160	989	94.5	94.2	0.88	292	1609
355M	1LG0 354-6AB..	185	989	94.5	94.4	0.88	338	1861
355M	1LG0 355-6AB..	200	989	94.7	94.6	0.88	365	2012
355L	1LG0 356-6AB..	220	989	94.7	94.7	0.88	401	2213

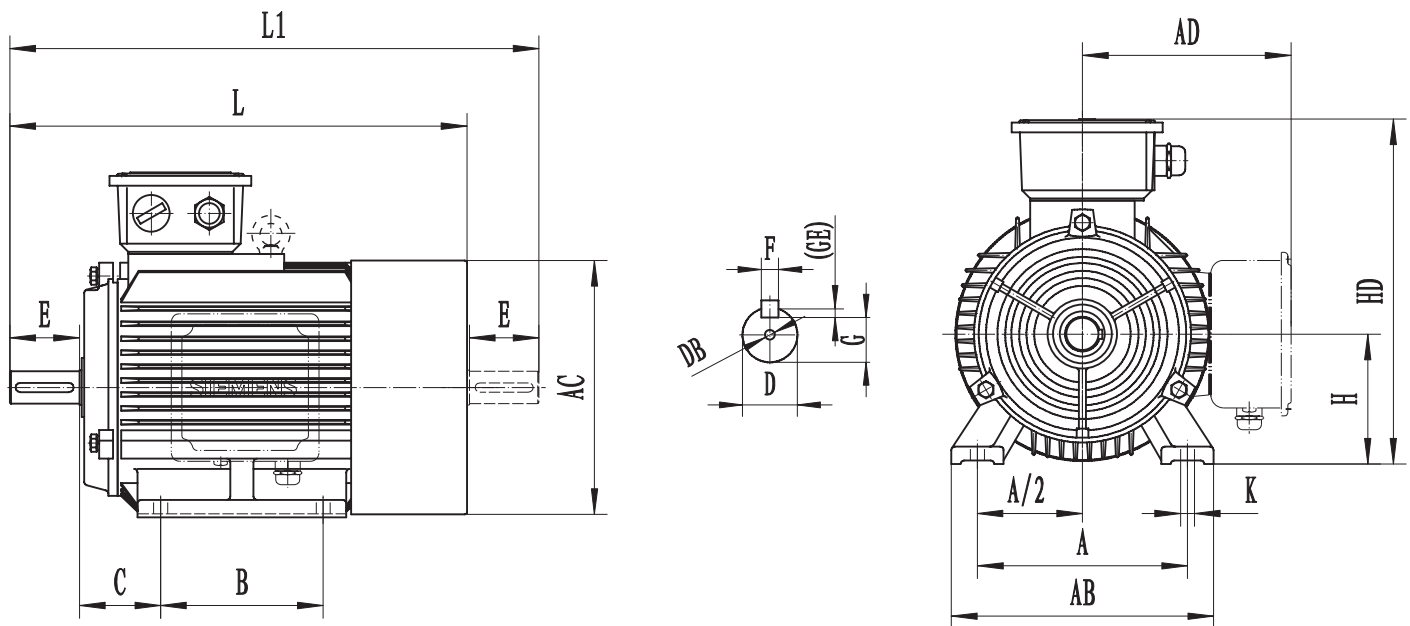
Penultimate position:					
Voltage Identifier No.					
220VD / 380VY 50Hz	380VD / 660VY 50Hz	230VD / 400VY 50Hz	400VD / 690VY 50Hz	E-Voltage / Frequency	
2	7	1	6	9	

Rated Output	Rated speed	Efficiency	Power factor	Rated current	Rated torque	Starting current	Starting torque	Max torque	Moment of inertia J	Weight
P_{rated}	n_{rated}	η_{rated}	$\cos \phi_{rated}$	I_{rated}	T_{rated}	I_{LR} / I_{rated}	T_{LR} / T_{rated}	T_B / T_{rated}		
kW	rpm	%		A	Nm				kgm ²	kg
440VY 60Hz										
0.63	1080	66.0	0.72	1.74	5.57	4.7	1.9	2.1	0.003	16
0.86	1100	71.0	0.72	2.21	7.47	5	2	2.3	0.0029	20
1.3	1100	73.5	0.73	3.18	11.3	5	2.1	2.3	0.0035	23
1.75	1110	78.0	0.75	3.93	15.1	5	2.2	2.4	0.0069	31
2.55	1130	81.0	0.76	5.4	21.6	5	2.4	2.4	0.0138	40
3.45	1160	82.0	0.76	7.3	28.4	6	2.1	2.6	0.0286	56
440VD 60Hz										
4.6	1160	83.0	0.76	9.6	37.9	6	2.1	2.8	0.036	68
6.3	1160	86.0	0.77	12.5	51.9	6.4	2.1	2.8	0.045	75
8.6	1160	87.5	0.78	16.5	70.8	6.5	2	2.7	0.088	104
12.6	1160	88.5	0.78	24.0	104	6.5	2	2.9	0.116	127
17.3	1170	90.0	0.82	30.8	141	6.5	2.2	2.7	0.207	167
21.3	1170	90.5	0.82	37.7	174	6.5	2.2	2.8	0.315	210
24.5	1170	91.0	0.835	42.3	200	6.5	2.1	2.6	0.36	223
33.5	1170	92.0	0.85	56.2	273	6.5	2	2.6	0.547	290
41.5	1170	92.0	0.87	68	339	6.9	2.1	2.8	0.834	375
51	1180	92.5	0.86	84	413	7	2.2	2.8	1.39	492
62	1180	93.0	0.865	101	502	7	2.1	2	1.65	530
84	1186	93.8	0.86	137	676	7	2.3	2.8	4.11	820
101	1186	93.8	0.86	164	813	6.2	2	2.7	4.28	895
123	1186	94.0	0.86	200	990	6.2	2	2.6	5.45	1010
148	1186	94.5	0.87	236	1192	6.5	2	2.8	6.12	1080
180	1180	94.5	0.88	284	1457	6.7	1.9	2	8.85	1590
207	1180	94.5	0.88	327	1675	6.7	1.9	2	8.98	1660
224	1180	94.7	0.88	353	1813	6.7	1.9	2	9.55	1730
246	1180	94.7	0.88	387	1991	6.7	1.9	2	10.09	1835

	Final position									
	Type of construction Identifier No.									
	With feet and without flange on the end-shield		Without feet and with flange on the end-shield			With feet and with flange on the end-shield			Without feet and with flange on the end-shield, and with Canopy on non-driven end	
	0		1 8 ¹⁾			6			4	

¹⁾ Code "8" is only for FS 250 ~ 355 1LG0 motor with mounting type "IMV1 without canopy" ;
for FS 80 ~ 225 1LG0 motor with mounting type "IMV1 without canopy", the 12th position is "1".

Dimension drawings



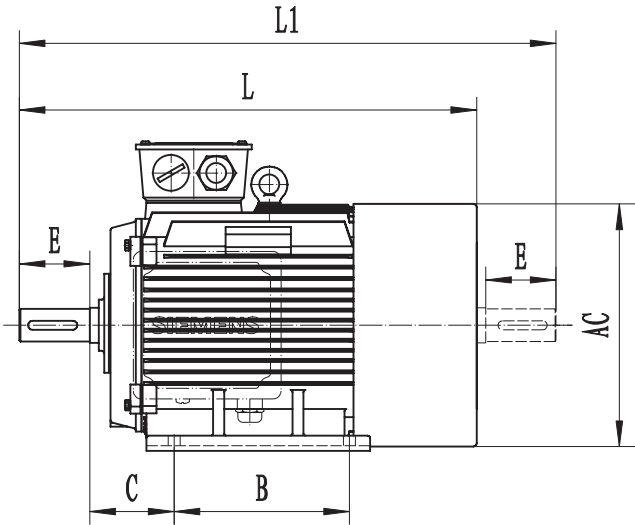
FS 80 ~ 132 (1LG0080...1LG0134)
Note: FS 80 ~ 90 motor without eyebolts

Table 1 Frame with feet and without flange on the end shield

Frame size		Poles	Mounting Dimensions and Tolerance													
			A	A/2	B	C		D		E		F				
80M	1LG0080...1LG0083	2, 4, 6	125	62.5	100	50	±1.5	19	+0.009 -0.004	40	±0.310	6	0 -0.030			
90S	1LG0090		140	70	100	56		24		50		8	0 -0.036			
90L	1LG0096				125											
100L	1LG0106...1LG0107		160	80	140	63	±2.0	28	60	±0.370	10			0 -0.036		
112M	1LG0113		190	95	140	70		38				80				
132S	1LG0130...1LG0131		216	108	140	89	42		+0.018 +0.002				110		±0.430	12
132M	1LG0133...1LG0134				178			108		121	±3.0	48		55		
160M	1LG0163...1LG0164		254	210	108	±4.0	60									
160L	1LG0166			254				241	121	65			140		±0.500	18
180M	1LG0183		279	139.5	279			60			140	±0.500		18		
180L	1LG0186				318	159	305		133							
200L	1LG0206...1LG0207		4	356	178	311	149		±4.0	60			140		±0.500	18
225S	1LG0220							2			406	203		349		
225M	1LG0223	4, 6														
250M	1LG0253	2	406	203	349	168	65									
		4, 6														

¹⁾ G=D-GE, GE limit deviations for frame size 80M (1LG0080...1LG0083) are ($+0.10$), for other frame size ($+0.20$).
²⁾ K hole's positional tolerance is based on the central line of shaft extension.

Dimension drawings

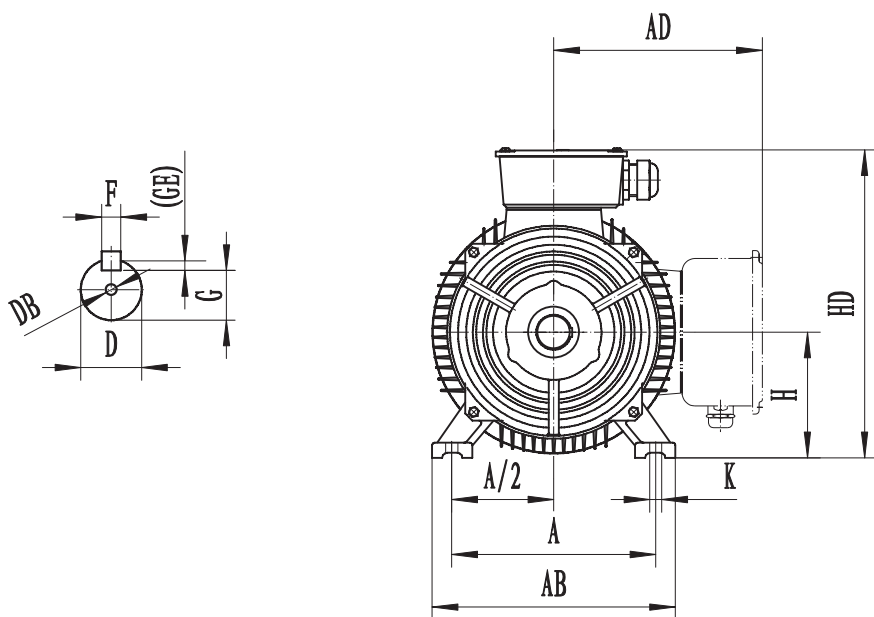


FS 280 ~ 355 (1LG0280...1LG0357)

Table 1 (Continuous) Frame with feet and without flange on the end shield

Frame size		Poles	Mounting Dimensions and Tolerance														
			A	A/2	B	C		D		E		F					
280S	1LG0280	2	457	228.5	368	190	±4.0	65	+0.030 +0.011	140	±0.500	18	0 -0.043				
		4, 6						75					20	0 -0.052			
280M	1LG0283	2			419			65					18	0 -0.043			
		4, 6						75					20	0 -0.052			
315S	1LG0310	2	508	254	406	216		65					18	0 -0.043			
		4, 6						80					170	22	0 -0.052		
315M	1LG0313	2			457			65					140	18	0 -0.043		
		4, 6						80					170	22	0 -0.052		
315L	1LG0316...1LG0317	2			508			508				65		140	18	0 -0.043	
		4, 6										80		170	22	0 -0.052	
355M	1LG0353...1LG0355	2			610			305	560			254	75		140		20
		4, 6											95		+0.035 +0.013		170
355L	1LG0356...1LG0357	2	630	630		75			+0.030 +0.011	140			20				
		4, 6				95			+0.035 +0.013	170			25				

¹⁾ G=D-GE, GE limit deviations for frame size 80M (1LG0080...1LG0083) are ($+0.10$), for other frame size ($+0.20$).
²⁾ K hole's positional tolerance is based on the central line of shaft extension.

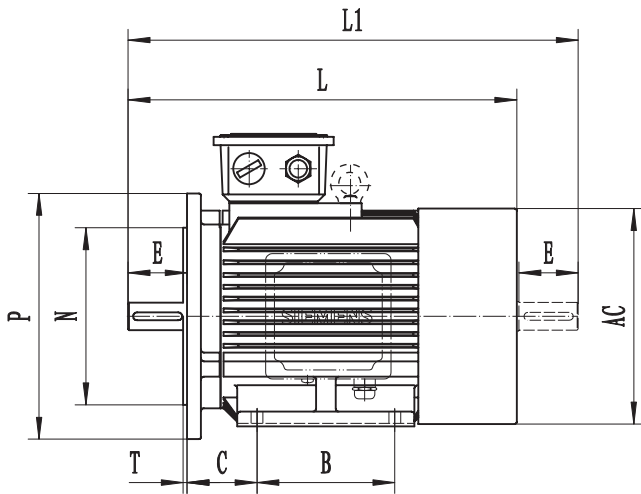


FS 280 ~ 355 (1LG0280...1LG0357)

mm

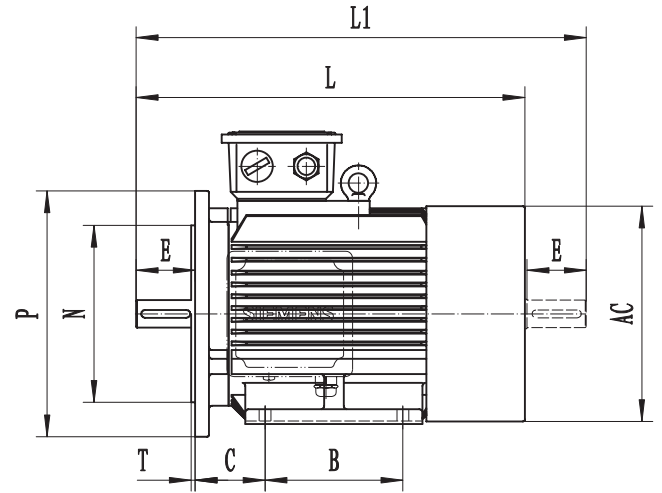
								Contour Dimensions									
	G ¹⁾		H		K ²⁾			DB	AB	AC	AD	HD	L	L1			
	58	0 -0.20	280		24			M20	550	566	410	680	960	1105			
	67.5												980	1125			
	58												1010	1156			
	67.5												1030	1176			
	58		315	0 -1.0					635	639	530	845	1190	1330			
	71												1220	1390			
	58												1300	1440			
	71												1330	1500			
	58												1300	1440			
	71												1330	1500			
	67.5												1500	1640			
	86						M24	1530					1700				
	67.5		355					M20	730	718	655	1010	1500	1640			
	86							M24					1530	1700			

Dimension drawings



FS 80 ~ 132 (1LG0080...1LG0134)

Note: FS 80 ~ 90 motor without eyebolts



FS 160 ~ 250 (1LG0163...1LG0253)

Table 2 Frame with feet and with flange (with through holes) on the end shield

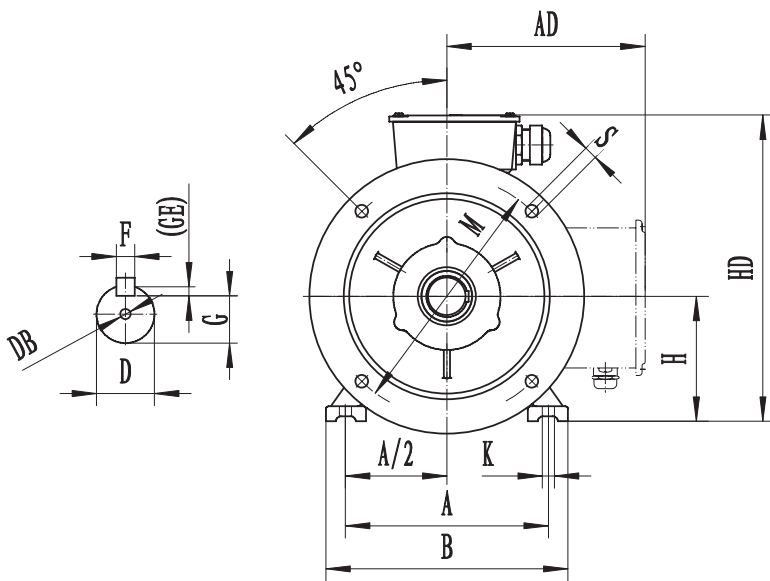
Frame size		Flang number	Poles	Mounting Dimensions and Tolerance																						
				A	A/2	B	C		D		E		F		G ¹⁾		H									
80M	1LG0080...1LG0083	FF165	2, 4, 6	125	62.5	100	50	±1.5	19	+0.009 -0.004	40	±0.310	6	0 -0.030	15.5	0 -0.10	80	0 -0.5								
90S	1LG0090			140	70	100	56		24		8		0 -0.036	20	90											
90L	1LG0096				125	±2.0		28				60				±0.370	10		33	112						
100L	1LG0106...1LG0107	160		80	140		63		80	±0.430	12		37	160												
112M	1LG0113	190		95	140		70	42				+0.018 +0.002			14	42.5	180									
132S	1LG0130...1LG0131	FF265		216	108	140	89		38	110	±0.430		16	0					49	200						
132M	1LG0133...1LG0134					178		±3.0				48			121	140	+0.030 +0.011				110	±0.430	16	53	225	
160M	1LG0163...1LG0164	FF300		254	127	210	108		42	110	±0.430		14	42.5					180							
160L	1LG0166					254						279			139.5	241	121			48	140	±0.430	16	53	250	
180M	1LG0183			FF350	318	159	279	305	133	55	140		±0.500	18		53			250							
180L	1LG0186	FF400					4					356			178		286			149	60	+0.030 +0.011	140	±0.500	18	58
200L	1LG0206...1LG0207						2										406									
225S	1LG0220		4, 6	FF500	2	406	203	349	168	65	140		±0.500	18		58										
225M	1LG0223	2	FF500									2			406			203	349	168	65	140	±0.500	18	58	
250M	1LG0253	4, 6															FF500									2

¹⁾ G=D-GE, GE limit deviations for frame size 80M (1LG0080...1LG0083) are ($+0.10$), for other frame size ($+0.20$).

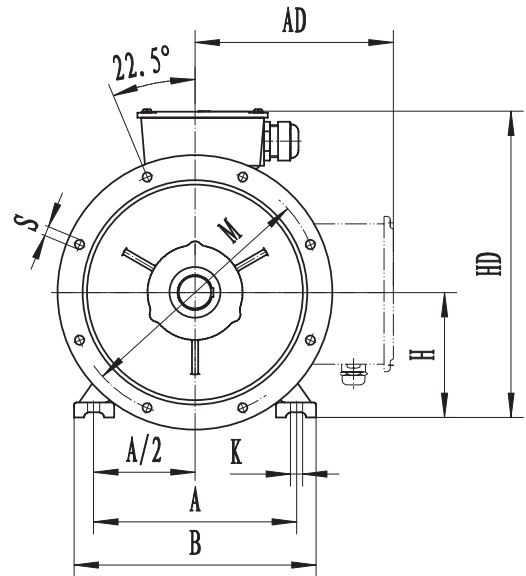
²⁾ K hole's positional tolerance is based on the central line of shaft extension

³⁾ Dimension of P is the maximum limit

⁴⁾ R is the distance from the flange the flange to the drive shaft end.



FS 80 ~ 200 (1LG0080...1LG0207)

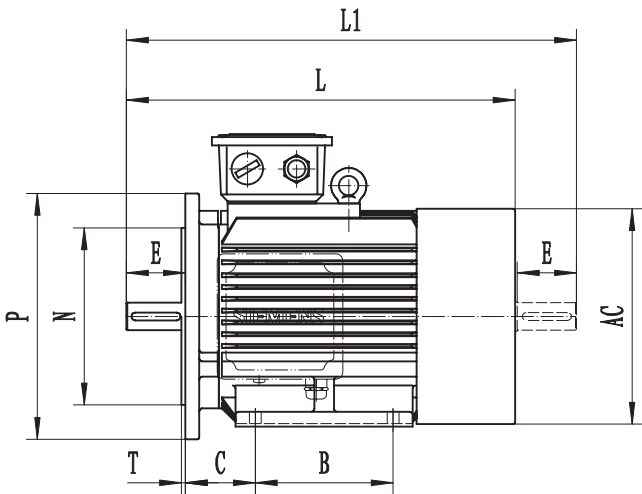


FS 225 ~ 250 (1LG0220...1LG0253)

mm

															Contour Dimensions																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
K ²⁾				M	N		P ³⁾	R ⁴⁾		S ²⁾			T		Flange hole number	DB	AB	AC	AD	HD	L	L1																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
10	+0.360 0	φ 1.0 (M)	165	130	+0.014 -0.011	200	0	±1.5	12	+0.430 0	φ 1.0 (M)	3.5	0 -0.120	4	M6	165	164	145	220	295	335																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
			215	180		250									M8	180	184	155	250	320	375																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
265	230				300			±2.0	15			4				M10	205	204	180	270	385	445																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																		
			300	±3.0		19									+0.520 0		φ 1.5 (M)	5	8	M12	230	228	190	300	400	465																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																														
350	±4.0				24			+0.520 0	φ 2.0 (M)	500	450	±0.020				550					M16	270	267	210	345	470	555																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																													
			385	445		510									593		615	735	665	779		700	810																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																	
400	450	470			555		570	690	720	840	880	965	990			1060					1060																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
			420	480		520									580		620	680	740	800		860	920	980	1040	1100	1160	1220	1280	1340	1400	1460	1520	1580	1640	1700	1760	1820	1880	1940	2000	2060	2120	2180	2240	2300	2360	2420	2480	2540	2600	2660	2720	2780	2840	2900	2960	3020	3080	3140	3200	3260	3320	3380	3440	3500	3560	3620	3680	3740	3800	3860	3920	3980	4040	4100	4160	4220	4280	4340	4400	4460	4520	4580	4640	4700	4760	4820	4880	4940	5000	5060	5120	5180	5240	5300	5360	5420	5480	5540	5600	5660	5720	5780	5840	5900	5960	6020	6080	6140	6200	6260	6320	6380	6440	6500	6560	6620	6680	6740	6800	6860	6920	6980	7040	7100	7160	7220	7280	7340	7400	7460	7520	7580	7640	7700	7760	7820	7880	7940	8000	8060	8120	8180	8240	8300	8360	8420	8480	8540	8600	8660	8720	8780	8840	8900	8960	9020	9080	9140	9200	9260	9320	9380	9440	9500	9560	9620	9680	9740	9800	9860	9920	9980	10040	10100	10160	10220	10280	10340	10400	10460	10520	10580	10640	10700	10760	10820	10880	10940	11000	11060	11120	11180	11240	11300	11360	11420	11480	11540	11600	11660	11720	11780	11840	11900	11960	12020	12080	12140	12200	12260	12320	12380	12440	12500	12560	12620	12680	12740	12800	12860	12920	12980	13040	13100	13160	13220	13280	13340	13400	13460	13520	13580	13640	13700	13760	13820	13880	13940	14000	14060	14120	14180	14240	14300	14360	14420	14480	14540	14600	14660	14720	14780	14840	14900	14960	15020	15080	15140	15200	15260	15320	15380	15440	15500	15560	15620	15680	15740	15800	15860	15920	15980	16040	16100	16160	16220	16280	16340	16400	16460	16520	16580	16640	16700	16760	16820	16880	16940	17000	17060	17120	17180	17240	17300	17360	17420	17480	17540	17600	17660	17720	17780	17840	17900	17960	18020	18080	18140	18200	18260	18320	18380	18440	18500	18560	18620	18680	18740	18800	18860	18920	18980	19040	19100	19160	19220	19280	19340	19400	19460	19520	19580	19640	19700	19760	19820	19880	19940	20000	20060	20120	20180	20240	20300	20360	20420	20480	20540	20600	20660	20720	20780	20840	20900	20960	21020	21080	21140	21200	21260	21320	21380	21440	21500	21560	21620	21680	21740	21800	21860	21920	21980	22040	22100	22160	22220	22280	22340	22400	22460	22520	22580	22640	22700	22760	22820	22880	22940	23000	23060	23120	23180	23240	23300	23360	23420	23480	23540	23600	23660	23720	23780	23840	23900	23960	24020	24080	24140	24200	24260	24320	24380	24440	24500	24560	24620	24680	24740	24800	24860	24920	24980	25040	25100	25160	25220	25280	25340	25400	25460	25520	25580	25640	25700	25760	25820	25880	25940	26000	26060	26120	26180	26240	26300	26360	26420	26480	26540	26600	26660	26720	26780	26840	26900	26960	27020	27080	27140	27200	27260	27320	27380	27440	27500	27560	27620	27680	27740	27800	27860	27920	27980	28040	28100	28160	28220	28280	28340	28400	28460	28520	28580	28640	28700	28760	28820	28880	28940	29000	29060	29120	29180	29240	29300	29360	29420	29480	29540	29600	29660	29720	29780	29840	29900	29960	30020	30080	30140	30200	30260	30320	30380	30440	30500	30560	30620	30680	30740	30800	30860	30920	30980	31040	31100	31160	31220	31280	31340	31400	31460	31520	31580	31640	31700	31760	31820	31880	31940	32000	32060	32120	32180	32240	32300	32360	32420	32480	32540	32600	32660	32720	32780	32840	32900	32960	33020	33080	33140	33200	33260	33320	33380	33440	33500	33560	33620	33680	33740	33800	33860	33920	33980	34040	34100	34160	34220	34280	34340	34400	34460	34520	34580	34640	34700	34760	34820	34880	34940	35000	35060	35120	35180	35240	35300	35360	35420	35480	35540	35600	35660	35720	35780	35840	35900	35960	36020	36080	36140	36200	36260	36320	36380	36440	36500	36560	36620	36680	36740	36800	36860	36920	36980	37040	37100	37160	37220	37280	37340	37400	37460	37520	37580	37640	37700	37760	37820	37880	37940	38000	38060	38120	38180	38240	38300	38360	38420	38480	38540	38600	38660	38720	38780	38840	38900	38960	39020	39080	39140	39200	39260	39320	39380	39440	39500	39560	39620	39680	39740	39800	39860	39920	39980	40040	40100	40160	40220	40280	40340	40400	40460	40520	40580	40640	40700	40760	40820	40880	40940	41000	41060	41120	41180	41240	41300	41360	41420	41480	41540	41600	41660	41720	41780	41840	41900	41960	42020	42080	42140	42200	42260	42320	42380	42440	42500	42560	42620	42680	42740	42800	42860	42920	42980	43040	43100	43160	43220	43280	43340	43400	43460	43520	43580	43640	43700	43760	43820	43880	43940	44000	44060	44120	44180	44240	44300	44360	44420	44480	44540	44600	44660	44720	44780	44840	44900	44960	45020	45080	45140	45200	45260	45320	45380	45440	45500	45560	45620	45680	45740	45800	45860	45920	45980	46040	46100	46160	46220	46280	46340	46400	46460	46520	46580	46640	46700	46760	46820	46880	46940	47000	47060	47120	47180	47240	47300	47360	47420	47480	47540	47600	47660	47720	47780	47840	47900	47960	48020	48080	48140	48200	48260	48320	48380	48440	48500	48560	48620	48680	48740	48800	48860	48920	48980	49040	49100	49160	49220	49280	49340	49400	49460	49520	49580	49640	49700	49760	49820	49880	49940	50000	50060	50120	50180	50240	50300	50360	50420	50480	50540	50600	50660	50720	50780	50840	50900	50960	51020	51080	51140	51200	51260	51320	51380	51440	51500	51560	51620	51680	51740	51800	51860

Dimension drawings

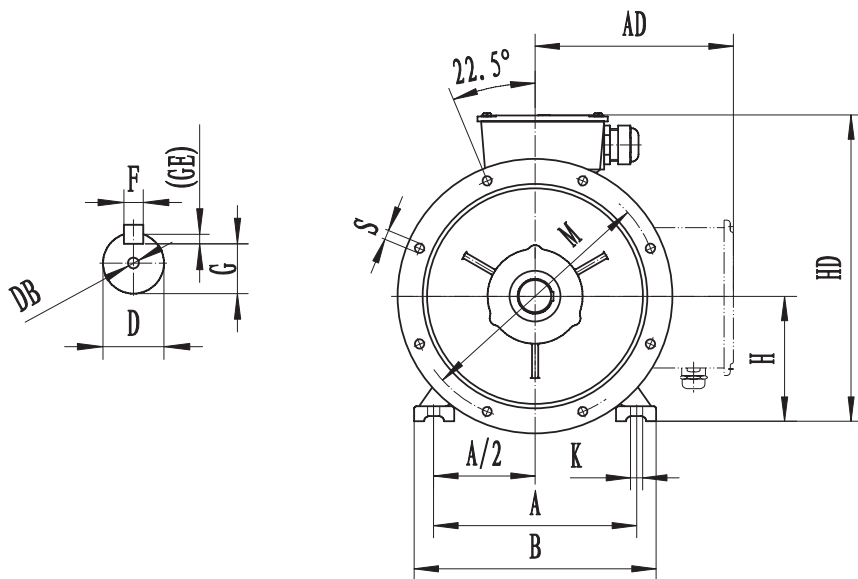


FS 280 ~ 355 (1LG0280...1LG0357)

Table 2 （Continuous） Frame with feet and with flange (with through holes) on the end shield

Frame size		Flang number	Poles	Mounting Dimensions and Tolerance														
				A	A/2	B	C		D		E		F		G ¹⁾		H	
280S	1LG0280	F500	2	457	228.5	368	190		65		140		18	0 -0.043	58		280	
			4, 6						75				20	0 -0.052	67.5			
280M	1LG0283		2			419			65				18	0 -0.043	58			
			4, 6						75				20	0 -0.052	67.5			
315S	1LG0310	FF600	2	508	254	406	216	±4.0	65	+0.030 +0.011	170	±0.500	18	0 -0.043	58	0 -0.20	315	0 -1.0
			4, 6						80				22	0 -0.052	71			
315M	1LG0313		2			457			65		140		18	0 -0.043	58			
			4, 6						80		170		22	0 -0.052	71			
315L	1LG0316...1LG0317		2			508			65		140		18	0 -0.043	58			
			4, 6						80		170		22	0 -0.052	71			
355M	1LG0353...1LG0355	FF740	2	610	305	560	254		75	+0.035 +0.013	170		20	0 -0.052	67.5		355	
			4, 6						95				25		86			
355L	1LG0356...1LG0357		2			630			75		+0.030 +0.011		140		20			67.5
			4, 6						95		+0.035 +0.013		170		25			86

¹⁾ G=D-GE, GE limit deviations for frame size 80M (1LG0080...1LG0083) are ($\begin{smallmatrix} +0.10 \\ 0 \end{smallmatrix}$), for other frame size ($\begin{smallmatrix} +0.20 \\ 0 \end{smallmatrix}$).
²⁾ K hole's positional tolerance is based on the central line of shaft extension
³⁾ Dimension of P is the maximum limit
⁴⁾ R is the distance from the flange the flange to the drive shaft end.

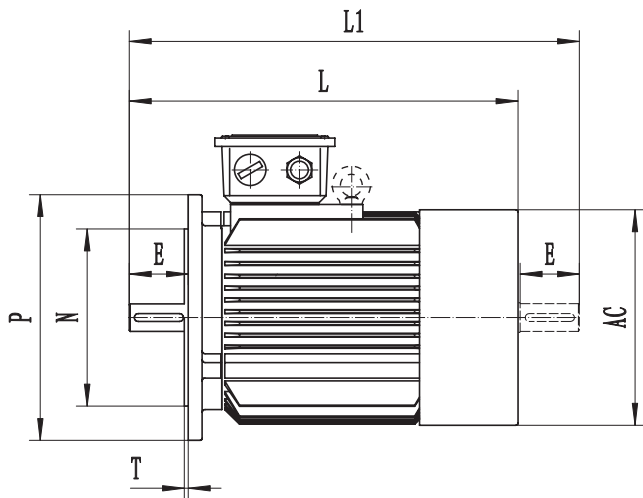


FS 280 ~ 355 (1LG0280...1LG0357)

mm

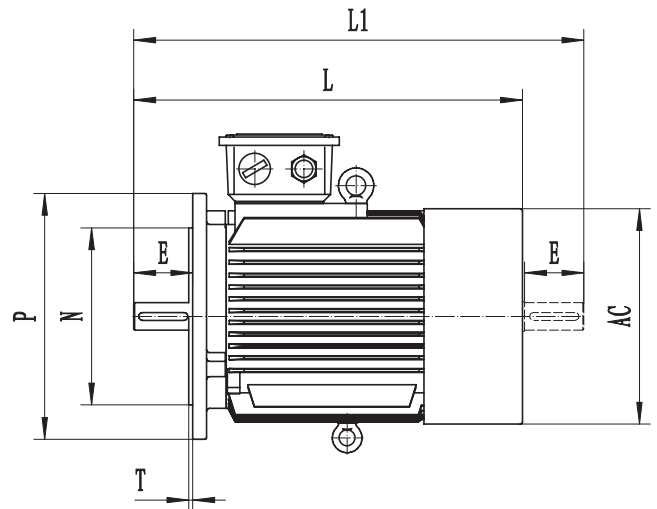
															Contour Dimensions									
	K ²⁾			M	N		P ³⁾	R ⁴⁾		S ²⁾		T		Flange hole number	DB	AB	AC	AD	HD	L	L1			
	24	+0.520 0	φ 2.0 (M)	500	450	0.020	550	0	±4.0	19	φ 1.5 (M)	5	0 -0.120	8	M20	550	566	410	680	960	1105			
				980	1125																			
				1010	1156																			
				1030	1176																			
	28			600	550	±0.022	660			24		φ 2.0 (M)				6	0 -0.150	M20	635	639	530	845	1190	1330
				1220	1390																			
				1300	1440																			
				1330	1500																			
				1300	1440																			
				1330	1500																			
				M24	1530	1700																		
				M20	1500	1640																		
M24	1530	1700																						

Dimension drawings



FS 80 ~ 132 (1LG0080...1LG0134)

Note: FS 80 ~ 90 motor without eyebolts



FS 160 ~ 180 (1LG0163...1LG0186)

Table 3 Frame without feet and with flange (with through holes) on the end shield

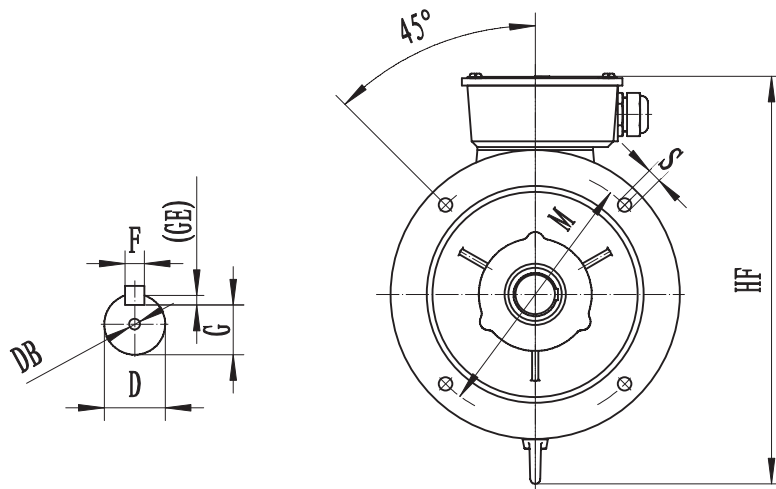
Frame size		Flang number	Poles	Mounting Dimensions and Tolerance									
				D		E		F		G ¹⁾			
80M	1LG0080...1LG0083	FF165	2, 4, 6	19	+0.009 -0.004	40	±0.310	6	0 -0.030	15.5	0 -0.10		
90S	1LG0090			24		50		8	0 -0.036	20	0 -0.20		
90L	1LG0096			28		60				24			
100L	1LG0106...1LG0107	FF215		±0.370	10	33							
112M	1LG0113							38					
132S	1LG0130...1LG0131	FF265						+0.018 +0.002	110	±0.430		12	0 -0.043
132M	1LG0133...1LG0134			42	48	14					42.5		
160M	1LG0163...1LG0164	FF300											
160L	1LG0166												
180M	1LG0183												
180L	1LG0186												

¹⁾ G=D-GE, GE limit deviations for frame size 80M (1LG0080...1LG0083) are ($+0.10$ -0), for other frame size ($+0.20$ -0).

²⁾ S hole's positional tolerance is based on the central line of shaft extension

³⁾ Dimension of P is the maximum limit

⁴⁾ R is the distance from the flange to the drive shaft end.

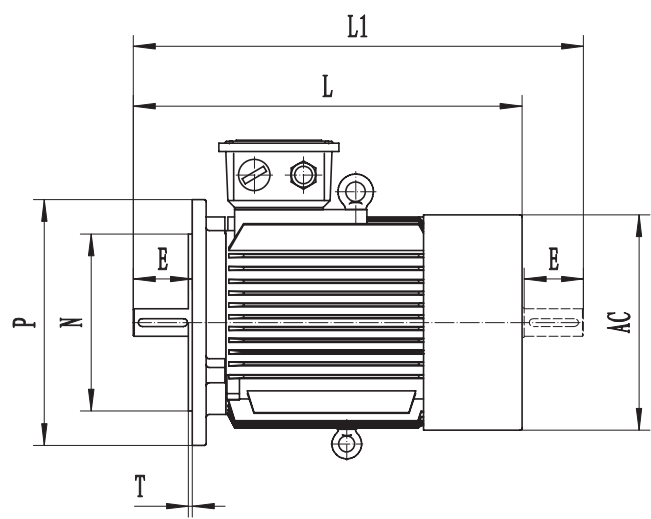


FS 80 ~ 180 (1LG0080...1LG0186)

mm

													Contour Dimensions						
M	N		P ³⁾	R ⁴⁾		S ²⁾			T		Flange hole number	DB	AC	HF	L	L1			
165	130	+0.014 -0.011	200	0	±1.5	12	+0.430 0	φ 1.0 (M)	3.5	0 -0.120	4	M6	164	235	295	335			
			250		±2.0	15		φ 1.5 (M)	4			M8	184	255	320	375			
												M10	204	290	385	445			
215	180	+0.016 -0.013	300		±3.0	19	+0.520 0	φ 1.5 (M)	5			M10	228	315	400	465			
265	230		350									M12	267	360	470	555			
												M16	325	480	615	735			
300	250	+0.016 -0.013	350		±3.0	19	+0.520 0	φ 1.5 (M)	5			0 -0.120	4	M16	366	510	700	810	
																	730	848	

Dimension drawings



FS 200 ~ 280 (1LG0206...1LG0283)

Table 3 （Continuous） Frame without feet and with flange (with through holes) on the end shield

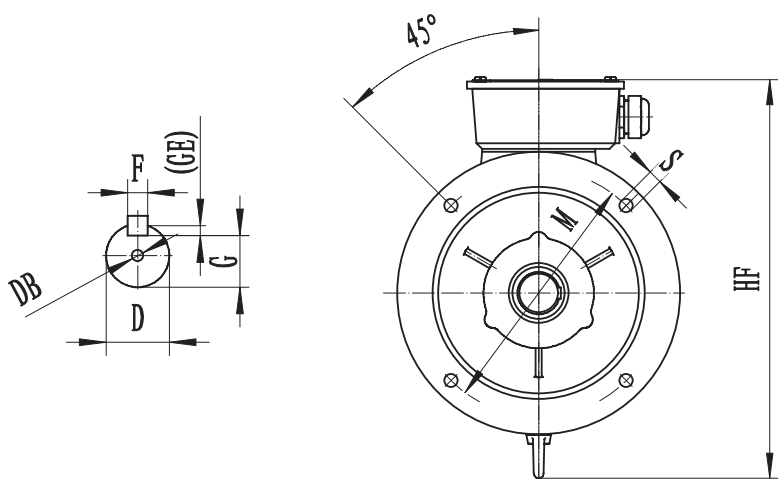
Frame size		Flang number	Poles	Mounting Dimensions and Tolerance								
				D		E		F		G ¹⁾		
200L	1LG0206...1LG0207	FF350	2, 4, 6	55	+0.030 +0.011	110	±0.430	16	0 -0.043	49	0 -0.20	
225S	1LG0220	FF400	4	60		140	±0.500	18		53		
225M	1LG0223		2	55		110	±0.430	16		49		
			4, 6	60		140	±0.500	18		53		
250M	1LG0253	2	65							20		0 -0.052
280S	1LG0280	4, 6		75				18	0 -0.043			
		2	65	20						0 -0.052		58
280M	1LG0283	4, 6	75					20	0 -0.052			67.5

1) G=D-GE, GE limit deviations for frame size 80M (1LG0080...1LG0083) are ($\begin{smallmatrix} +0.10 \\ 0 \end{smallmatrix}$), for other frame size ($\begin{smallmatrix} +0.20 \\ 0 \end{smallmatrix}$).

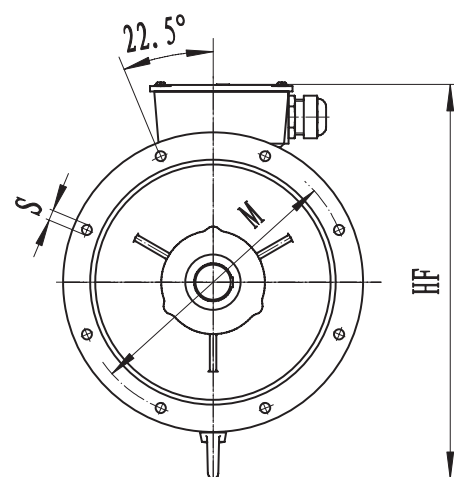
2) S hole's positional tolerance is based on the central line of shaft extension

3) Dimension of P is the maximum limit

4) R is the distance from the flange to the drive shaft end.



FS 200 (1LG0206...1LG0207)

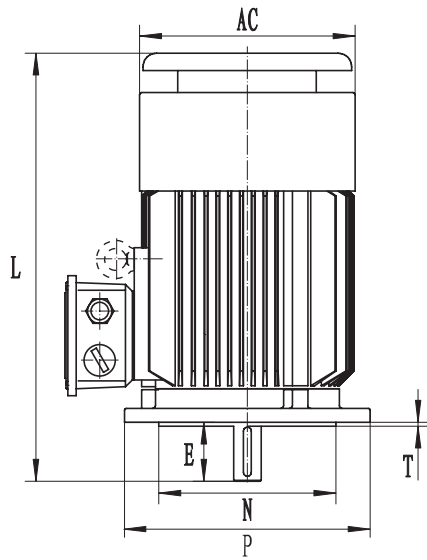


FS 225 ~ 280 (1LG0220...1LG0283)

mm

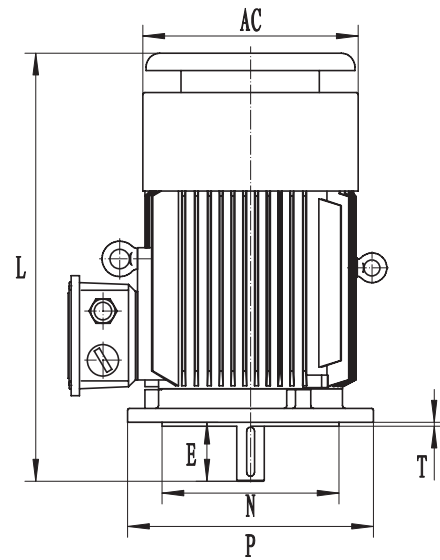
												Contour Dimensions													
M	N		P ³⁾	R ⁴⁾		S ²⁾			T		Flange hole number	DB	AC	HF	L	L1									
350	300	±0.016	400	0	±3.0	19	+0.520 0	ϕ 1.5 (M)	5	0 -0.120	4	M20	408	570	770	880									
400	350	±0.018	450																456	615	815	965			
																					820	935			
500	450	±0.020	550		±4.0															504	685	915	1060		
																						1060			
																						566	760	960	1105
																								980	1125
																								1010	1156
																					1030	1176			

Dimension drawings



FS 80 ~ 132 (1LG0080...1LG0134)

Note: FS 80 ~ 90 motor without eyebolts



FS 160 ~ 250 (1LG0163...1LG0253)

Table 4 Vertically-mounted, Frame without feet and with flange (with through holes) on the end shield, shaft extension downwards

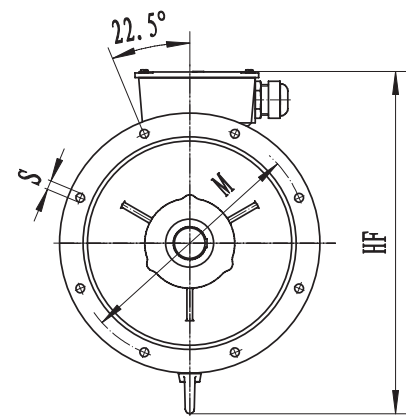
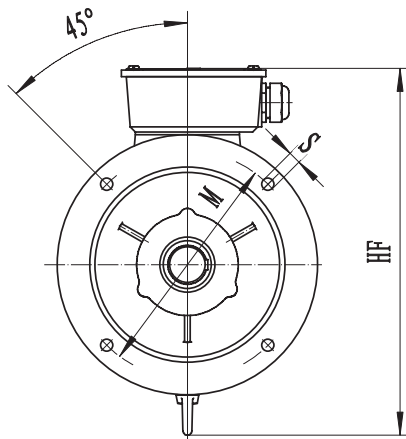
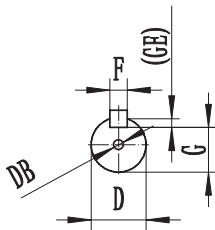
Frame size		Flang number	Poles	Mounting Dimensions and Tolerance								
				D		E		F		G ¹⁾		
80M	1LG0080...1LG0083	FF165	2, 4, 6	19	+0.009 -0.004	40	±0.310	6	0 -0.030	15.5	0 -0.10	
90S	1LG0090			24		50		8	0 -0.036	20	0 -0.20	
90L	1LG0096			FF215		28	60			±0.370		24
100L	1LG0106...1LG0107	FF265				38	80	10				33
112M	1LG0113			FF300		42	110	±0.430		12		37
132S	1LG0130...1LG0131	+0.018 +0.002			48	14			42.5			
132M	1LG0133...1LG0134					FF350		55	16	49		
160M	1LG0163...1LG0164				FF400		+0.030 +0.011	140	±0.500	18		53
160L	1LG0166							2	55	110		±0.430
180M	1LG0183	4, 6		60		140		±0.500	18	53		
180L	1LG0186	2			58							
200L	1LG0206...1LG0207	FF500		4, 6	65							
225S	1LG0220		4	60								
225M	1LG0223		2	55								
250M	1LG0253	FF500	2	60								
			4, 6	65								

¹⁾ G=D-GE, GE limit deviations for frame size 80M (1LG0080...1LG0083) are ($+0.10$), for other frame size ($+0.20$).

²⁾ K, S hole's positional tolerance is based on the central line of shaft extension

³⁾ Dimension of P is the maximum limit

⁴⁾ R is the distance from the flange to the drive shaft end.



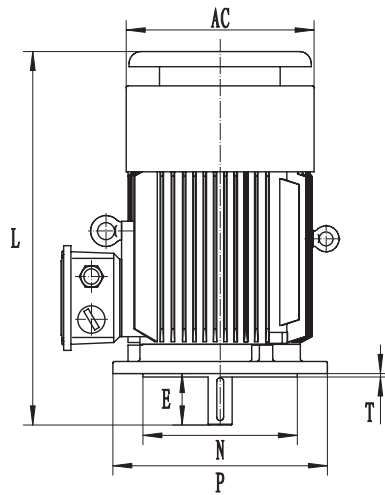
FS 80 ~ 200 (1LG0080...1LG0207)

FS 225 ~ 250 (1LG0220...1LG0253)

mm

											Contour Dimensions														
	M	N		P ³⁾	R ⁴⁾		S ²⁾			T		Flange hole number	DB	AC	HF	L									
	165	130	+0.014 -0.011	200	0	±1.5	12	+0.430 0	ϕ 1.0 (M)	3.5	0 -0.120	4	M6	164	235	355									
																	M8	184	255	380					
	215	180		250		±2.0	15			4				M10	204	290	445								
															228	315	460								
	265	230		300										M12	267	360	530								
																	570								
	300	250	+0.016 -0.013	350		±3.0			ϕ 1.5 (M)				5		M16	325	480	685							
																									735
	350	300	±0.016	400												366	510	770							
																		800							
															8	M20	408	570	840						
	400	350	±0.018	450		±4.0	19	+0.520 0											885						
																									915
	500	450	±0.020	550										504	685	995									

Dimension drawings



FS 280 ~ 355 (1LG0280...1LG0357)

Table 4 (Continuous) Vertically-mounted, Frame without feet and with flange (with through holes) on the end shield, shaft extension downwards

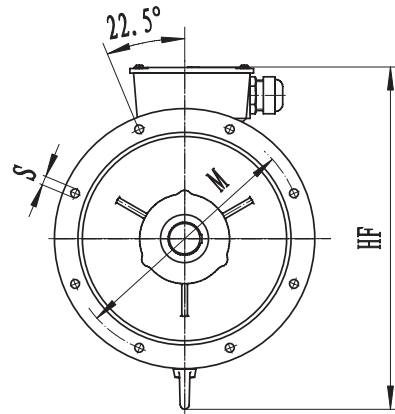
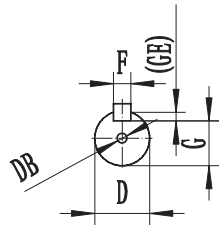
Frame size		Flang number	Poles	Mounting Dimensions and Tolerance							
				D		E		F		G ¹⁾	
280S	1LG0280	FF500	2		+0.030 +0.011	140	±0.500	18	0 -0.043	58	0 -0.20
			4, 6	75				20	0 -0.052	67.5	
280M	1LG0283		2	65				18	0 -0.043	58	
			4, 6	75				20	0 -0.052	67.5	
315S	1LG0310	FF600	2	65				18	0 -0.043	58	
			4, 6	80				22	0 -0.052	71	
315M	1LG0313		2	65		170		18	0 -0.043	58	
			4, 6	80		170		22	0 -0.052	71	
315L	1LG0316...1LG0317		2	65		140		18	0 -0.043	58	
			4, 6	80		170		22	0 -0.052	71	
355M	FF740	2	75	140	20	67.5					
		4, 6	95	+0.035 +0.013	170	25		86			
355L		1LG0356...1LG0357	2	75	+0.030 +0.011	140		20		67.5	
			4, 6	95	+0.035 +0.013	170		25		86	

¹⁾ G=D-GE, GE limit deviations for frame size 80M (1LG0080...1LG0083) are ($+0.10$), for other frame size ($+0.20$).

²⁾ K, S hole's positional tolerance is based on the central line of shaft extension 0

³⁾ Dimension of P is the maximum limit

⁴⁾ R is the distance from the flange to the drive shaft end.

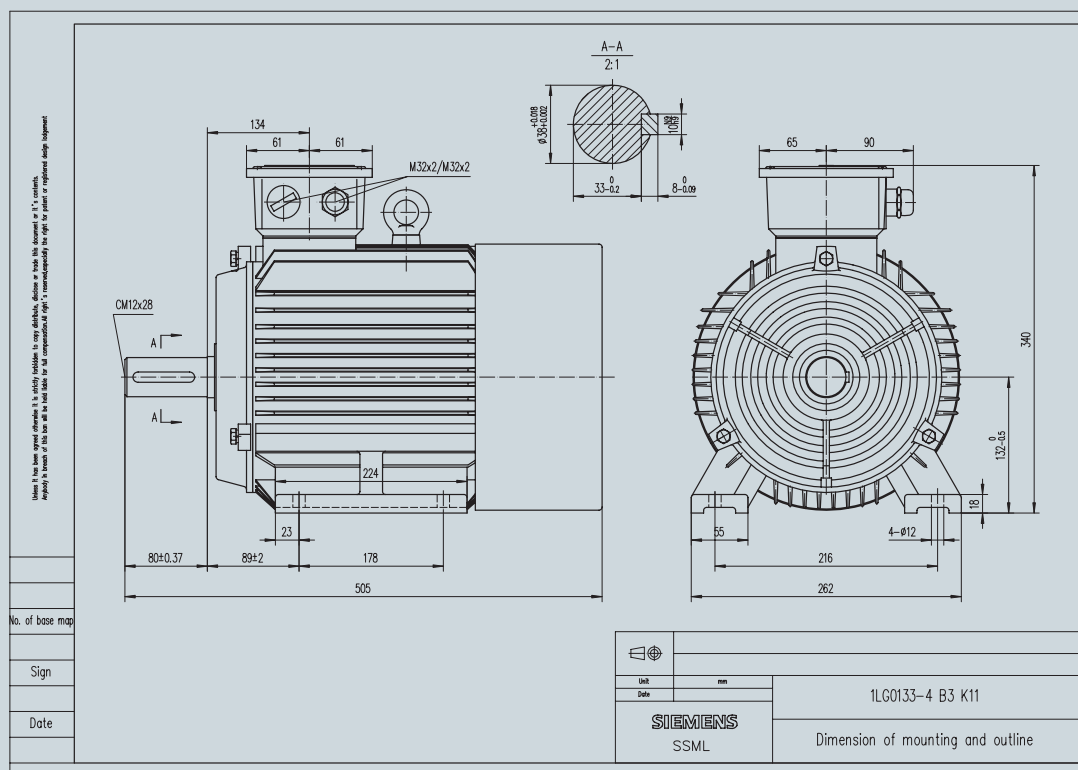


FS 280 ~ 355 (1LG0280...1LG0357)

mm

												Contour Dimensions							
	M	N		P ³⁾	R ⁴⁾		S ²⁾			T		Flange hole number	DB	AC	HF	L			
	500	450	±0.022	550	0	±4.0	19		ϕ 1.5 (M)	5	0 -0.120	8	M20	566	760	1040			
																1060			
																1090			
																1110			
	600	550	±0.022	660			24	ϕ 2.0 (M)	6	0 -0.150	M20			639	950	1270			
																1300			
																1380			
																140			
	740	680	±0.025	800										M24	718	1125	1380		
																	1440		
																	1580		
																	1610		
																			1580
																			1610

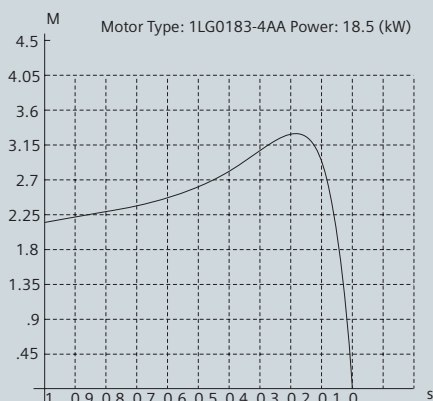
Technical supporting documentation



Dimensions Drawings

														Technical Specification according to EN 60034-1:2004													
Test Report (3.1) [1]														Page 1 of 1													
Supplier: Siemens Standard Motors Ltd.														Buyer: Siemens Limited China													
Address: NO.110,West Street,Qingshan Town,Yichang city Jiangsu Prov., P.R.C.														Customer:													
																											
3-MOT TLEGO B13-4AB66-2														LHM09G60000													
V		4007 690Y		142 50		A 228 132		KW 132		0.88		1480		Links		IM B3		Th.Cl.		F		IP					
																Certif.No						55					
4602		60		223		148		0.88		1780						Genw./Wt.		99%		kg							
BECEN 60 034																											
Measure		Mot. No.		Free quenz [Hz]		Speed [r/min]		Current [A]		Power [W]		Input P1 [W]		cos phi [1]		M [N.m]		Eff. [%]		UL [%]		Mj/M1 [%]		Poles [%]			
No load		008		50		400		75		1500		18500															
Locked rotor								100		285		23700															
Squine-cage rotor [11]														According to standard: EN 60034-1 IEC60034-1 [12]													
Insulation resistance:														(10M) (500V)													
Resistance between terminals [13]														U1-U2 0.1018 V1-V2 0.1918 W1-W2 0.1918													
High-voltage test passed [14]														Cooling air temp. max. °C [20] 40 Indication on nameplate [21]													
English/Chinese																											
[1] Test report		试验报告		[15] High-voltage test passed		耐压																					
[2] Reference		参考		[16] Number of poles		极数																					
[3] Frequency		频率		[17] Torque		转矩																					
[4] Stator		定子		[17] Efficiency		效率																					
[5] Voltage		电压		[18] Load		负载																					
[6] Current		电流		[19] Rotor test		转子试验																					
[7] Speed r.p.m		转速		[20] Cooling air temperature		冷却温度																					
[8] Output		输出		[21] for indication on name plate		铭牌指示温度																					
[9] Input		输入		[22] Starting current related to rated current		额定电流相关电流																					
[10] No load test		空载试验																									
[11] Squine-cage rotor		鼠笼转子		[23] Starting torque related to rated torque		额定转矩相关额定转矩																					
[12] Locked rotor		堵转试验																									
[13] Re. between terminals		电阻值																									
S I C I T S S M C M														Date: 200906													
														Signature:													
														Wase Jun													
														Quality Dept.													

Acceptance Test Certificates (Option code: B02)



Torque characteristic

Certificates



ATTESTATION OF CONFORMITY WITH EUROPEAN DIRECTIVE

Order No. 75053

A sample of the following product has been tested and is stated by Nemko to be in conformity with the applicable European safety- and EMC standards referred below.

Manufacturer	Siemens Standard Motors Ltd. 110 West Street, Qingshan Town Yizheng City P.R. CHINA
Product	Three-phase Induction Motors
Model/type	1LG0abc
Data	220/380V~ alt. 380/660V~, 50Hz or 440V~, 60Hz; 0.55kW-315kW
Other specification	IP55, 2/4/6P; Frame size 80-355mm
Standards applied	Safety std.: EN 60034-1:2004 EN 60034-5:2001 EMC std.: EMC is based on self-declaration by the manufacturer
Statement reference	75053

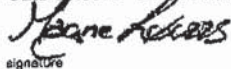
It may therefore be presumed that the tested sample of the product is in conformity with the technical provisions of the following European Directives including the latest amendments, and with national legislation implementing these Directives:

- Low Voltage Directive 73/23/EEC
- EMC Directive 89/336/EEC

On this basis, the manufacturer (or the European authorized representative), may draw up an EC/EEA Declaration of Conformity and affix the CE-marking as indicated below to each conforming product.

Additional information	Description of type reference: abc = frame size: 080-355
------------------------	---

Date of issue 02 November 2006


signature

Magne Løvaas
Head of section



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Enterprise number:

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NO 974404532

Certificates



THE INTERNATIONAL CERTIFICATION NETWORK

CERTIFICATE

IQNet and
CQC
hereby certify that the organization

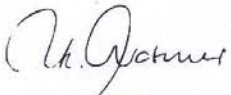
Siemens Standard Motors Ltd.

**No.110, West Street, Qingshan Town, Yizheng City, Jiangsu Prov.,
P.R.China**

For the following field of activities
**Design, Production and Service of Three-phase Asynchronous Motor
(H63-355)**

Has implemented and maintains a
Management System
Which fulfils the requirements of the following standard
ISO9001:2000

Issued on: Jul. 13, 2009
Validity date: Jul. 12, 2012
Registration Number: **00109Q19009R2L/3200**



René Wasmer
President of IQNet


Wang Kejiao
President of CQC



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Quality Austria Austria RR Russia SII Israel SIO Slovenia SIRIM OAS International Malaysia SOS Switzerland SRAC Romania

Siemens Ltd., China
Industry Sector
Industry Automation & Drive Technologies

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Order NO. E20001-A-0132-C600-X-7600
658-SH905830-02105

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