



Standard  
Drives

*New 1LG cast iron  
energy-saving motors,  
frame sizes 180M - 315L*



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# Reduce operating costs and environmental stressing

Standard  
Drives



A ray of light for the environment



New 1LG cast-iron  
energy-saving  
motors, frame sizes  
180M to 315L



Our energy-saving motors operate  
to enhance your profit

# Energy-saving motors – when purchasing motors, take special note of the efficiency classes!

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## Analyze the potential

Today, anybody purchasing a new motor or wishing to overhaul a used motor, should make some shrewd calculations: Isn't an energy-saving motor more favorable?

Generally, this is the case as the power costs can be most effectively reduced.



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# Energy-saving motors – It makes commercial sense!

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## Cost saving - day in, day out

Procurement, installation and maintenance represent together approx. 3% of the total cost of a motor when used 3000 hours p.a. over 10 years. Power costs alone represent over 97%.

If customers save here, they save with every revolution the motor makes - truly revolutionary saving.

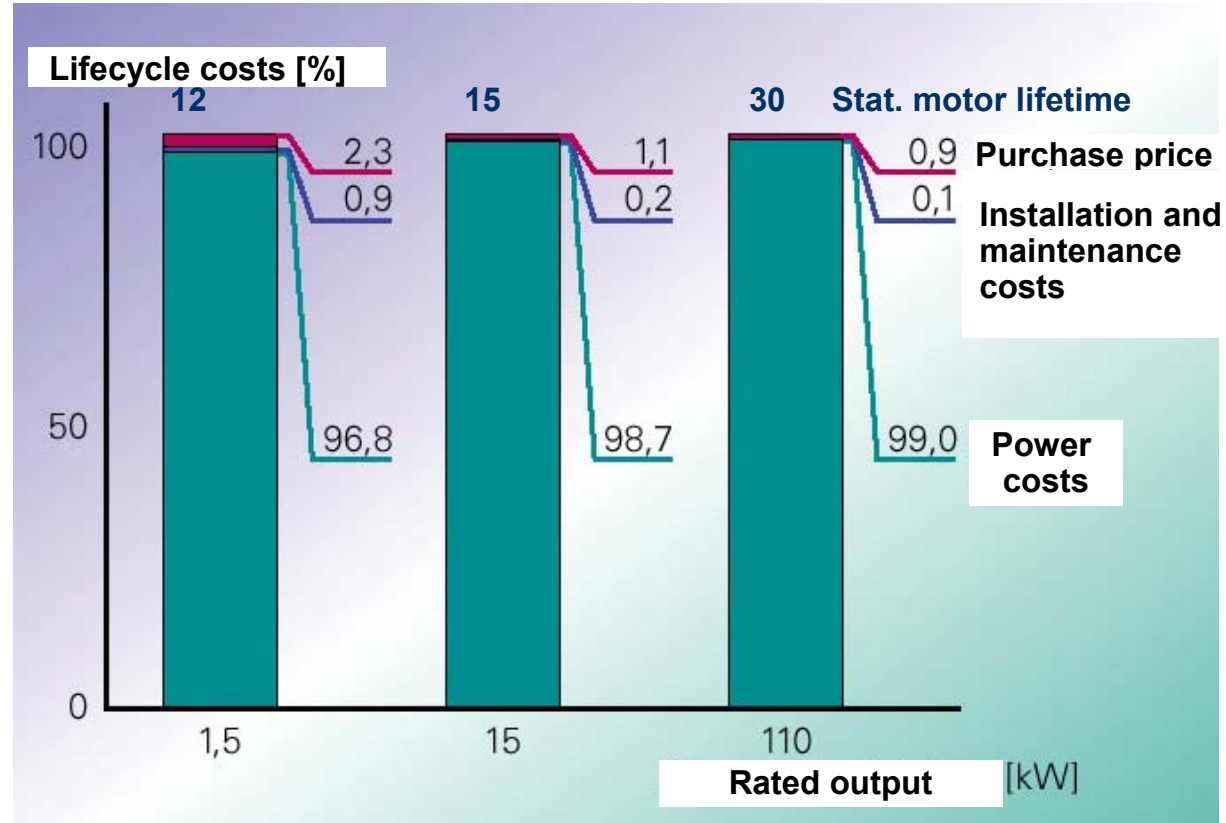


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# The operating costs are the most important costs! Lifecycle costs for a motor operating 3000 hours p.a.

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# Energy-saving motors – The environment benefits from each and every energy-saving motor!

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## Perceptibly reduce environmental stressing

### The calculation isn't purely commercial:

This is because electric motors use 70% of the power used in industry. A ZVEI study indicates that the cost-saving potential for drive systems in Germany alone - is approximately 20 TWh per year which corresponds to the output from 8 fossil fuel-powered stations; and not only this, 11 million tons of carbon dioxide emission less.



A ray of light for the environment

# Why was the new 1LG motor series developed?

## Reasons for the new development

- Secure our competitive lead - optimize costs
- Maintain the EFF2/ EFF1 efficiencies according to CEMEP
- Replace the old 1LA6 and 1LA2 series (these were introduced in 1984)
- Unified modular mounting concept up to frame size 315L
- Respond to market demands and customer requirements

# Product spectrum: New 1LG4/6 energy-saving motors – shaft heights 180 – 315:

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## Overview of the type spectrum

- 2-pole: 22 – 90 kW; EFF2 (1LG4) /EFF1 (1LG6)
- 2-pole\*: >90 – 200 kW; Improved Efficiency (1LG4) /High Efficiency (1LG6)
- 4-pole: 18,5 – 90 kW; EFF2 (1LG4) /EFF1 (1LG6)
- 4-pole\*: >90 – 200 kW; Improved Efficiency (1LG4) /High Efficiency (1LG6)
- 6-pole\*: 15 – 160 kW; Improved Efficiency (1LG4) /High Efficiency (1LG6)
- 8-pole\*: 11 – 132 kW; Improved Efficiency (1LG4) /High Efficiency (1LG6)

*\* No EFF Class specified, as CEMEP does not classify 6 and 8-pole motors.*

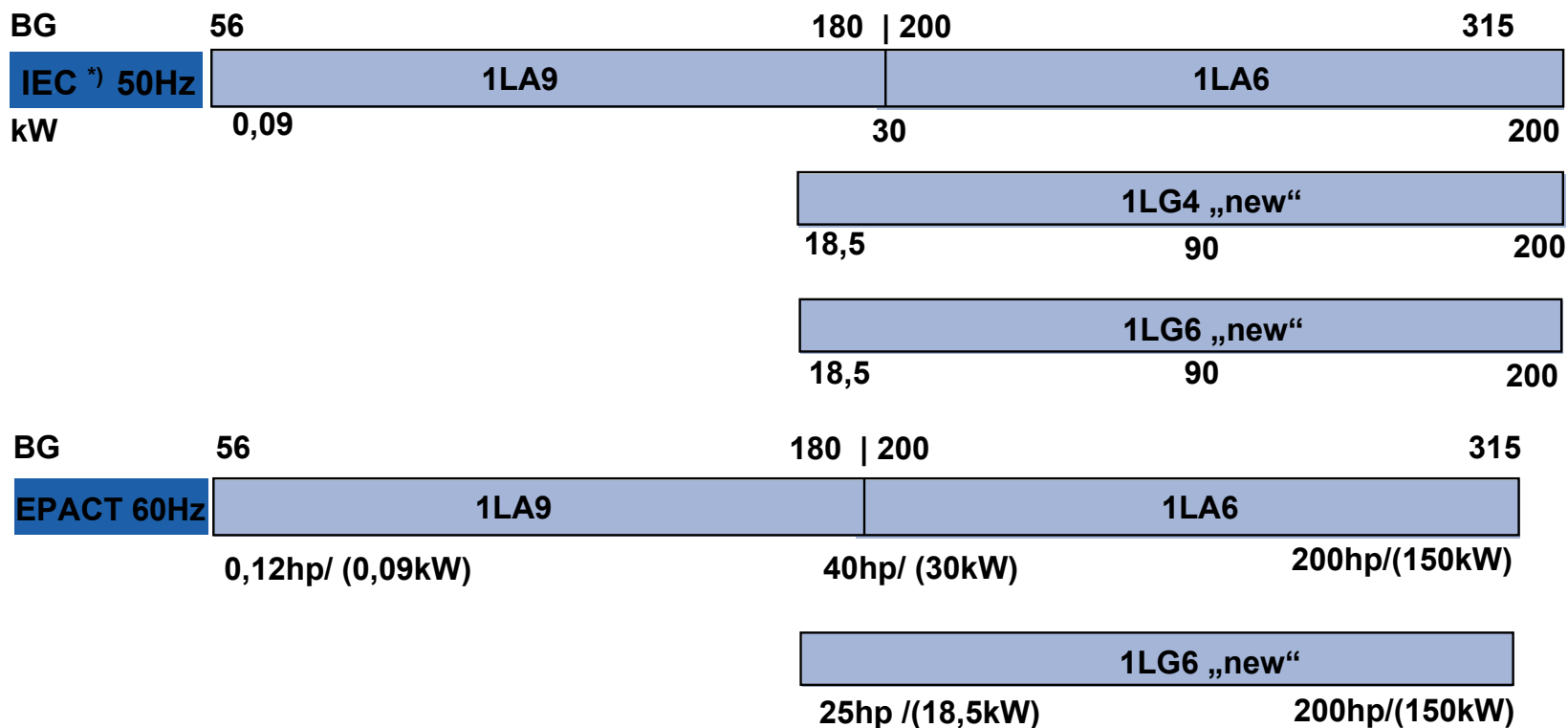
The new 1LG series will be introduced frame size-for-frame size.

1LA6 motors will still be kept in the appropriate frame size for 6 months.



# Product spectrum, energy-saving motors: old – new

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Efficiency Classes (CEMEP) on the rating plate up to 90kW, only for pole numbers 2 and 4.  
For pole numbers 6 and 8, no efficiency class is specified as CEMEP does not classify these.

# Output, ambient temperature

## Output

The rated output is valid for continuous duty in compliance with EN 60034-1 at 50 Hz up to an installation altitude 1000 m above sea level and a 40°C cooling-medium temperature.

The output can be increased for 60 Hz:

- Pole number 2 + 12 %
- Pole number 4 + 15 %
- Pole numbers 6 and 8 + 20 %

## Operating temperature

	Cooling-medium temperature	Temperature rise class	Utilized according to temperature rise class
<b>1LG4</b>	-30 to +40	F	B
	>40 to +55	F	F
<b>1LG6</b>	-30 to +50	F	B
	>50 to +60	F	F

Alternatively, for  $K_T = 40^\circ\text{C}$  Service Factor SF

**1LG4:** SF = 1.1 Temperature rise class F, utilized to F

**1LG6:** SF = 1.15 Temperature rise class F, utilized to F

Output adapted for different operating situations/ambient temperature

# Voltage, drive inverter operation, insulating system

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## Voltage



Rated voltage in compliance with EN600034-1:  
230 V $\Delta$  / 400 VY 50 Hz – 460 VY 60 Hz  
400 V $\Delta$  / 690 VY 50 Hz – 460 V $\Delta$  60 Hz  
500 V $\Delta$  50Hz

Double rating plate 50/60 Hz (up to FS 315M)

Tolerances acc. to EN600034-1, Range A, with the exception of 500V

## Drive converter/ inverter operation



Drive converter/inverter-proof  $\leq$  500 V, 690 V operation on request

## Insulating system



DURIGNIT<sup>®</sup> IR 2000 (drive converter/inverter-proof),  
temperature rise class F  
Voltage front time for PWM inverter/converter operation -  
 $t_s > 0.1 \mu\text{s}$  at the motor terminals.

# Comparison of electrical data, frame size 180M – 4-pole 1LA2, 1LA6, 1LG4, 1LG6

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## Basic version: 400 / 690 D/Y V, 50Hz, 18.5 KW

Type desig. Order No. (MLFB)	Rated speed  RPM	Eff- iciency  %	Eff- iciency Class  EU	Power factor cos phi	Rated current  at 400 V  A	Rated torque  Nm	Starting current	Starting torque	Stalling torque	Torque charac- teristic  KL	Weight  kg	Moment of inertia  kgm <sup>2</sup>	Sound pressure level at rated output  dB(A)
1LA2 183-4AA..	1465	90,8	EFF2	0,86	34	121	7,2	2,3	2,9	16	155	0,142	65
1LA6 183-4AA..	1460	90,5	EFF2	0,84	35	121	7,5	2,3	3	16	165	0,130	63
1LG4 183-4AA..	1465	90,4	EFF2	0,84	35	121	6,8	2,4	3,1	16	145	0,122	65
1LG6 183-4AA..	1470	92,6	EFF1	0,83	35	120	6,8	2,5	3	16	185	0,154	60

Tolerances according to DIN EN 60 034

# Comparison of electrical data, frame size 180M – 4-pole 1LA2, 1LA5, 1LA6, 1LG4, 1LG6

**Backup**Standard  
Drives

## Basic version: 400 / 690 D/Y V, 50Hz, 18.5 KW

Type desig. Order No. (MLFB)	Rated speed  RPM	Eff- iciency  %	Eff- iciency Class  EU	Power factor cos phi	Rated current  at 400 V  A	Rated torque  Nm	Starting current	Starting torque	Stalling torque	Torque charac- teristic  KL	Weight  kg	Moment of inertia  kgm2	Sound pressure level at rated output  dB(A)
1LA2 183-4AA..	1465	90,8	EFF2	0,86	34	121	7,2	2,3	2,9	16	155	0,142	65
1LA5 183-4AA..	1460	90,5	EFF2	0,83	35	121	7,5	2,3	3	16	112	0,130	63
1LA6 183-4AA..	1460	90,5	EFF2	0,84	35	121	7,5	2,3	3	16	165	0,130	63
1LG4 183-4AA..	1465	90,4	EFF2	0,84	35	121	6,8	2,4	3,1	16	145	0,122	65
1LG6 183-4AA..	1470	92,6	EFF1	0,83	35	120	6,8	2,5	3	16	185	0,154	60

**Tolerances according to DIN EN 60 034**



# Degree of protection, type of construction, balancing, vibration severity stage, ISO 9001

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**Degree of protection**



IP 55, optional IP56 and IP65

**Type of construction**



Type of construction according to EN 60034-7, flange acc. to DIN 42948; can be mounted either horizontally or vertically, whereby different limit values apply regarding the load distribution at the shaft end.

**Balancing**



Half-key balancing

**Vibration severity stage**



N, optional R

**ISO 9001**



Motors are certified according to DIN EN ISO 9001

# Bearing system, grease lifetime (frame sizes 180M – 315L)

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Drives

## Bearing system



Pre-loaded play-free deep-groove ball-bearings with bearing clearance C3

- bearing series 02, optional bearing series 03 or NU, locating bearing at the NDE (for frame sizes 180M – 250M, 2, 4, 6, 8 pole, frame sizes 280S – 315L, 2 pole)
- bearing series 03 or NU, locating bearing at the NDE (for frame size 280S – 315L, only 4, 6, 8 pole)


## Improved bearing lifetime as a result of a longer grease lifetime

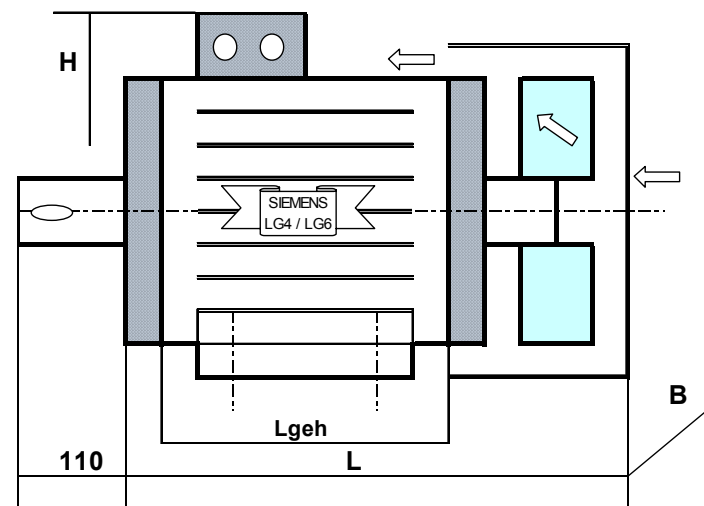
Lubrication: Standard grease Esso Unirex N3	operating hours (h)		1LA2 frame size 180M/200L only
	1LG4 / 1LG6	1LA2 / 1LA6	
Nominal bearing lifetime (L10h) (horizontal mounting and coupling outdrive without supplementary load)	100 000	40 000	
Grease lifetime at 50 Hz. (KT40)			
Pole number 2	20 000	10 000	
Pole numbers 4, 6, 8	40 000	20 000	
Re-lubrication intervals at 50 Hz (KT40) Option K40: Re-lubrication device			
Pole number 2	4 000 (3000)	2 000	FS 180 – 280 (BG 315)
Pole numbers 4, 6, 8	8 000 (6000)	4 000	FS 180 – 280 (BG 315)

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# Deviation of the envelope dimensions as a comparison: 1LG, 1LA2, 1LA6

Standard  
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Dim.	1LA6	1LA2-short	1LA2-long	1LG-short	1LG-long	
L	610	562	600	551 / 559*	602 / 610*	
Lgeh	365	344	382	310	361	
H	455	449		442		
B	354	364		354		
<p style="text-align: center;"><i>Type assignment</i></p> <div style="text-align: center; margin: 10px 0;">  <p><b>FS180</b></p> </div> <p style="text-align: center;"><i>FS = Frame size</i></p>				↓	↓	
				LG4 183-2	LG6 183-2	
				LG4 183-4	LG6 186-4	
				LG4 186-4	LG6 186-6	
				LG4 186-6	LG6 186-8	
				LG4 186-8		
					LG4 188-2	
					LG4 188-4	
					LG6 183-4	LG4 188-6
						LG4 188-8
<i>Types per housing</i>		LG4	5	4		
		LG6	1	4		
<i>Types, total:</i>				14		

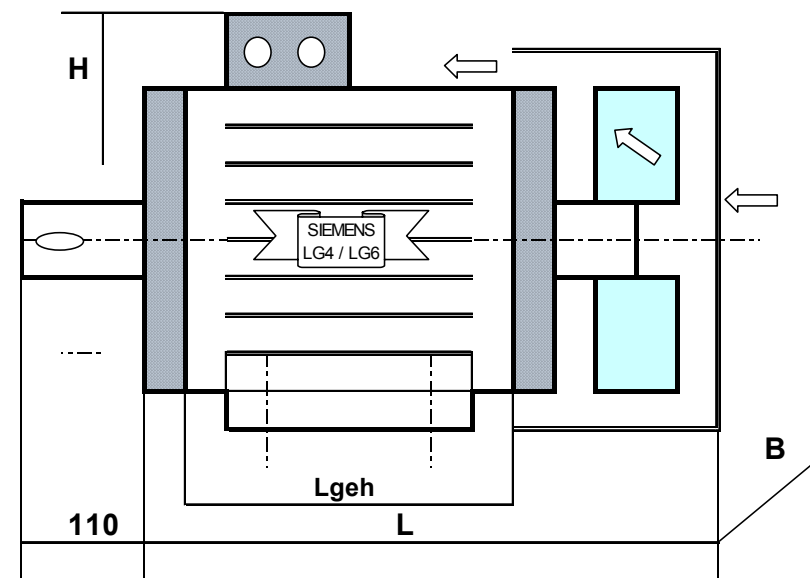


\* with plastic shroud

# Deviation of the envelope dimensions as a comparison: 1LG, 1LA2, 1LA6

Standard  
Drives


Dim.	1LA6	1LA2	1LG-short	1LG-long
L	665	667	602 / 610*	659 / 667*
Lgeh	415	437	350	407
H	510	506	500	
B	392	404	392	
<p><i>Type assignment</i></p> <div style="text-align: center; margin: 20px 0;"> <div style="background-color: orange; width: 60px; height: 60px; display: inline-block; border: 1px solid gray; margin: 0 auto;"></div> <p>FS200</p> </div>			↓	↓
			LG4 206-2	LG6 207-2
			LG4 207-2	LG6 207-6
			LG4 207-4	LG6 208-4
			LG4 208-4	
			LG4 206-6	
			LG4 207-6	
			LG4 207-8	
			LG4 208-8	
			LG6 206-2	
			LG6 207-4	LG4 208-2
			LG6 206-6	LG4 208-6
			LG6 207-8	
			<i>Types per housing</i>	LG4
	LG6	4	3	
<i>Types, total:</i>	17			

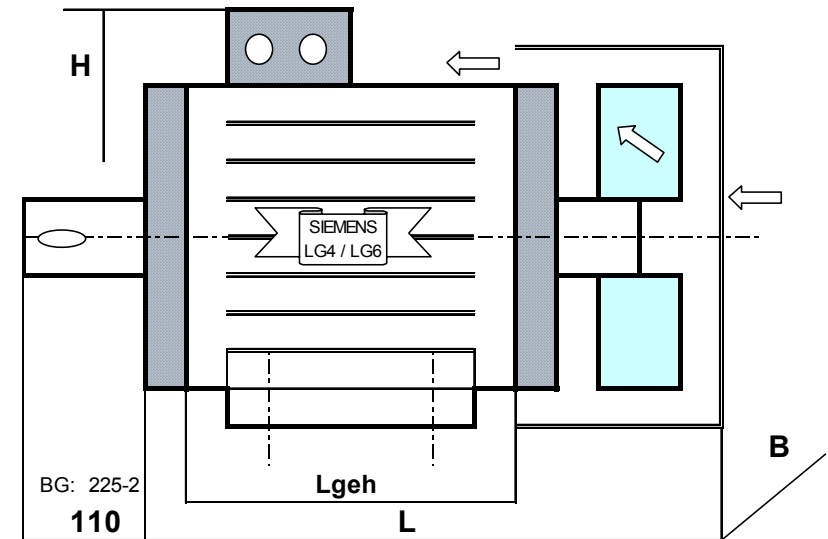


\* with plastic shroud

# Deviation of the envelope dimensions as a comparison: 1LG, 1LA6

Standard  
Drives

Dim.	1LA6		1LG-short	1LG-long
L	695		638 / 648*	698 / 708*
Lgeh	430		370	430
H	560		550	
B	440		442	
<p><i>Type assignment</i></p> <div style="text-align: center; margin: 20px 0;">  <p><b>FS225</b></p> </div>			↓	↓
			LG4 223-2	LG6 223-2
			LG4 220-4	LG6 223-4
			LG4 223-4	LG6 223-6
			LG4 223-6	LG6 223-8
			LG4 220-8	
			LG4 223-8	
				LG4 228-2
				LG4 228-4
				LG6 220-4
	LG6 220-8	LG4 228-8		
<i>Types per housing</i>	LG4	6	4	
	LG6	2	4	
<i>Types, total:</i>			16	



\* with plastic shroud

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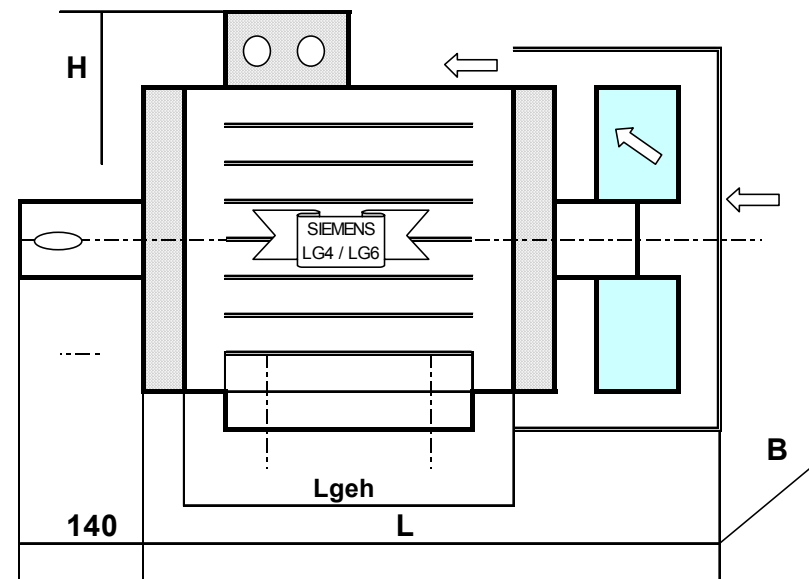


# Deviation of the envelope dimensions as a comparison : 1LG, 1LA6

Standard  
Drives

Dim.	1LA6	1LG-short	1LG-long
L	790	740 / 750*	810 / 820*
Lgeh	495	440	510
H	680	640	
B	488	490	
<i>Type assignment</i>		↓	↓
		LG4 253-2	LG6 253-4
		LG4 253-4	LG6 258-2
		LG4 253-6	LG6 258-4
		LG4 253-8	LG6 258-6
		LG4 258-2	LG6 258-8
		LG4 258-6	LG6 259-2
		LG4 258-8	
		LG6 253-2	
		LG6 253-6	LG4 258-4
	LG6 253-8	LG4 259-2	
<i>Types per housing</i>	LG4	7	2
	LG6	3	6
<i>Types, total:</i>		18	

FS250

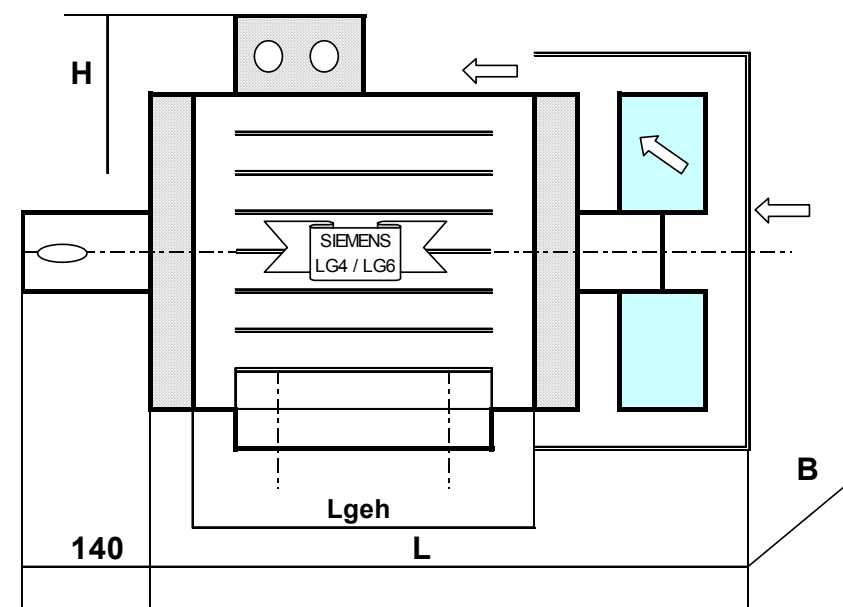


\* with plastic shroud

# Deviation of the envelope dimensions as a comparison : 1LG, 1LA6

Standard  
Drives

Dim.	1LA6		1LG-short	1LG-long
L	875		810 / 820*	920 / 930*
Lgeh	555		495	605
H	735		715	
B	557		540	
<p><i>Type assignment</i></p> <div style="background-color: orange; width: 50px; height: 50px; display: flex; align-items: center; justify-content: center; margin: 10px auto;"> <span style="color: white; font-weight: bold;">FS280</span> </div>			↓	↓
			LG4 280-2	LG6 283-2
			LG4 283-2	LG6 283-4
			LG4 280-4	LG6 288-2
			LG4 283-4	LG6 288-4
			LG4 280-6	LG6 288-6
			LG4 283-6	LG6 288-8
			LG4 280-8	
			LG4 283-8	
			LG4 288-6	
			LG4 288-8	
			LG6 280-2	
			LG6 280-4	
			LG6 280-6	
			LG6 280-6	
			LG6 280-8	LG4 288-2
LG6 280-8	LG4 288-4			
<i>Types per housing</i>	LG4	10	2	
	LG6	6	6	
<i>Types, total:</i>	24			



\* with plastic shroud

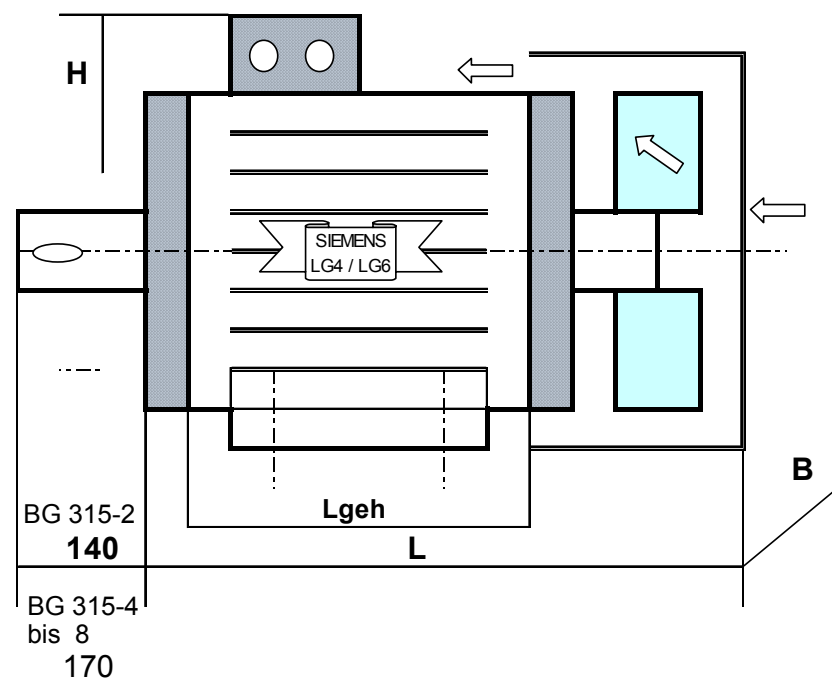
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# Deviation of the envelope dimensions as a comparison : 1LG, 1LA6

Standard  
Drives

Dim.	1LA6 sh./lo.	1LG-short	1LG-med.	1LG-long
L	980/1120	925/935*	1085/1095*	1225/1235*
Lgeh	625/765	570	730	870
H	830	815		
B	628	610		
Type assignment		↓	↓	↓
		LG4 310-2	LG4 316-2	LG4 318-2
		LG4 313-2	LG4 317-2	LG4 318-4
		LG4 310-4	LG4 316-4	LG4 318-6
		LG4 313-4	LG4 317-4	
		LG4 310-6	LG4 316-6	
		LG4 313-6	LG4 317-6	
		LG4 310-8	LG4 316-8	
		LG4 313-8	LG4 317-8	
			LG4 318-8	
			LG6 313-2	
			LG6 313-4	LG6 317-2
			LG6 313-6	LG6 318-2
		LG6 310-2	LG6 316-2	LG6 317-4
		LG6 310-4	LG6 316-4	LG6 317-6
		LG6 310-6	LG6 316-6	LG6 318-4
		LG6 310-8	LG6 316-8	LG6 318-6
	LG6 313-8	LG6 317-8	LG6 318-8	
Types per housing	LG4	8	9	3
	LG6	5	8	7
Types, total:		40		

FS315



\* with plastic shroud

# Design and materials used

Standard  
Drives

**Housing, bearing shield, terminal boxes**



Cast iron,  
Either aluminum - optional, (BG 180M – BG 225M)  
cast iron terminal boxes (FS 250M – FS 315L)

**Motor feet**



Cast - optional, bolted-on

**External fan**



Plastic, suitable for both directions of rotation - optional, metal

**Fan shroud**



Glass-fiber re-enforced plastic - optional, sheet steel

**Rating plate**



Stainless steel rating plate

**Paint finish**



2 component paint finish, RAL 7030 color; can be painted over - optional colors are available; suitable for "Moderate" climatic group, optionally "worldwide" acc. to DIN IEC 721

# 1LG rating plate

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Drives

SIEMENS											EFF 2		CE			
3~MOT. 1LG4 186-4AA60-Z 180L UC 0006/012783001 IM B3 Th.Cl. F																
V	Hz	A	kW	cos $\varphi$	1/min	I <sub>A</sub> /I <sub>N</sub>	t <sub>E</sub> s	Certif.No	IP							
400 Δ	50	41,5	22	0,84	1465				55							
690 Y		24														
460 Δ	60	41,5	25,30	0,84	1765											
EN 60 034											n <sub>max</sub> =4500 1/min		Gew./Wt.160 kg		DEW0234	
380-420 VΔ,43-41,5 A;660-725 VY,25-24 A,50 Hz																
440-480 VΔ,43-41,5 A,60 Hz																

EFF 1

EFF 2




*Siemens specifies the motor efficiency class on the rating plate.*

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# Motor selection data: Improved Efficiency (EFF2) – Shaft heights 180 / 315; 2, 4, 6, 8 pole

Standard  
Drives

Rated output  kW	Frame size	Order No.  Order No. supplement for voltage and construction refer to the table below	Efficiency class	Operating values at rated power					Locked torque with direct switching as a multiple factor of the rated torque	Locked current	Break-down torque	Torque class KL	Moment of inertia J kg m <sup>2</sup>	Weight Type of constr. IM B 3 Approx. kg	Sound pressure level Lp(A) dB(A)	
				Rated speed rpm	Efficiency $\eta$ at 4/4-load %	Power factor $\cos \varphi$	Rated current at 400 V A	Rated torque Nm								
<b>Energy-saving motor – CEMEP "Improved Efficiency" EFF2, IP 55, 2- and 4-pole, 50 Hz</b>																
																
<b>3000 rpm, 2-pole, 50 Hz</b>																
22	180 M	1LG4 183-2AA ..	2	2945	91.4	91.4	0.86	40.5 <sup>1)</sup>	71	2.5	7.0	3.4	16	0.07	145	69
30	200 L	1LG4 206-2AA ..	2	2950	91.7	91.5	0.88	54	97	2.3	6.9	3.0	16	0.13	205	73
37	200 L	1LG4 207-2AA ..	2	2950	92.4	92.2	0.89	65 <sup>1)</sup>	120	2.5	7.3	3.3	16	0.15	225	73
45	225 M	1LG4 223-2AA ..	2	2960	93.4	93.7	0.88	79 <sup>1)</sup>	145	2.4	6.9	3.1	16	0.22	285	73
55	250 M	1LG4 253-2AB ..	2	2970	93.6	93.8	0.88	96	177	2.1	6.9	3.0	13	0.40	375	77
75	280 S	1LG4 280-2AB ..	2	2975	94.3	94.0	0.88	130	241	2.5	7.5	3.0	13	0.72	500	78
90	280 M	1LG4 283-2AB ..	2	2975	94.8	94.7	0.89	154 <sup>1)</sup>	289	2.5	7.6	3.0	13	0.86	540	78
110	315 S	1LG4 310-2AB ..		2982	94.6	93.8	0.88	190	352	2.3	7.2	3.0	13	1.20	720	79
132	315 M	1LG4 313-2AB ..		2982	95.1	94.8	0.90	225 <sup>1)</sup>	423	2.3	7.2	3.0	13	1.40	775	79
160	315 L	1LG4 316-2AB ..		2982	95.4	95.2	0.90	270	512	2.4	7.2	3.0	13	1.60	900	79
200	315 L	1LG4 317-2AB ..		2982	95.9	95.8	0.91	330	641	2.3	7.2	3.0	13	2.20	1015	79
<b>1500 rpm, 4-pole, 50 Hz</b>																
18.5	180 M	1LG4 183-4AA ..	2	1465	90.4	90.6	0.84	35 <sup>1)</sup>	121	2.4	6.8	3.1	16	0.10	140	65
22	180 L	1LG4 186-4AA ..	2	1465	90.8	91.3	0.84	41.5 <sup>1)</sup>	143	2.5	6.9	3.2	16	0.12	155	65
30	200 L	1LG4 207-4AA ..	2	1465	91.6	92.0	0.85	56	196	2.5	6.9	3.4	16	0.19	205	66
37	225 S	1LG4 220-4AA ..	2	1475	92.2	92.5	0.85	68 <sup>1)</sup>	240	2.5	6.9	3.0	16	0.35	265	66
45	225 M	1LG4 223-4AA ..	2	1475	93.1	93.4	0.86	81 <sup>1)</sup>	291	2.6	7.2	3.2	16	0.52	300	66
55	250 M	1LG4 253-4AA ..	2	1480	93.3	93.6	0.85	100	355	2.5	6.3	2.8	16	0.69	390	68
75	280 S	1LG4 280-4AA ..	2	1485	94.2	94.0	0.85	136	482	2.5	7.4	3.0	16	1.29	535	70
90	280 M	1LG4 283-4AA ..	2	1485	94.6	94.6	0.86	160 <sup>1)</sup>	579	2.5	7.4	3.0	16	1.47	580	70
110	315 S	1LG4 310-4AA ..		1488	94.7	94.5	0.84	200	707	2.5	6.4	2.8	16	2.00	730	70
132	315 M	1LG4 313-4AA ..		1488	95.2	95.0	0.85	235 <sup>1)</sup>	848	2.6	6.8	2.9	16	2.46	810	70
160	315 L	1LG4 316-4AA ..		1488	95.7	95.6	0.86	280	1028	2.6	6.8	2.9	16	3.01	955	70
200	315 L	1LG4 317-4AA ..		1486	95.9	95.7	0.87	345	1285	2.6	7.0	2.9	16	3.91	1060	70

1) Parallel feeders required for 230 V supply.

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# Motor selection data: Improved Efficiency (EFF2) – Shaft heights 180 / 315; 2, 4, 6, 8 pole

Standard  
Drives


Rated output  kW	Frame size	Order No.  Order No. supplement for voltage and construction refer to the table below	Efficiency class	Operating values at rated power				Locked torque with direct switching as a multiple factor of the rated torque	Locked current	Break-down torque	Torque class KL	Moment of inertia J kg m <sup>2</sup>	Weight Type of constr. IM B 3 Approx. kg	Sound pressure level Lp(A) dB(A)		
				Rated speed rpm	Efficiency $\eta$ at 4/4- load %	Power factor $\cos \varphi$	Rated current at 400 V A								Rated torque Nm	
<b>Energy-saving motor – CEMEP “Improved Efficiency” EFF2, IP 55, 6- and 8-pole, 50 Hz</b>																
<b>1000 rpm, 6-pole, 50 Hz</b>																
15	180 L	1LG4 186-6AA ..		970	88.9	90.0	0.83	29.5	148	2.3	5.5	2.5	16	0.18	150	62
18.5	200 L	1LG4 206-6AA ..		975	89.8	90.2	0.81	36.5	181	2.5	5.8	2.5	16	0.24	195	59
22	200 L	1LG4 207-6AA ..		975	90.3	91.0	0.81	43.5	215	2.6	5.9	2.6	16	0.29	205	59
30	225 M	1LG4 223-6AA ..		978	91.6	92.3	0.83	57 <sup>1)</sup>	293	2.7	5.9	2.5	16	0.49	280	59
37	250 M	1LG4 253-6AA ..		982	92.3	93.0	0.83	70	360	2.6	6.0	2.3	16	0.81	370	62
45	280 S	1LG4 280-6AA ..		985	92.4	92.8	0.85	83	436	2.5	6.4	2.5	16	1.17	475	64
55	280 M	1LG4 283-6AA ..		985	92.7	93.4	0.86	100	533	2.5	6.4	2.5	16	1.53	510	64
75	315 S	1LG4 310-6AA ..		988	93.3	93.1	0.84	138	725	2.4	6.5	2.8	16	2.20	685	65
90	315 M	1LG4 313-6AA ..		988	93.9	93.9	0.84	164	870	2.5	6.8	2.9	16	2.65	750	65
110	315 L	1LG4 316-6AA ..		988	94.3	94.6	0.86	196	1063	2.5	6.9	2.9	16	3.35	870	65
132	315 L	1LG4 317-6AA ..		988	94.8	95.0	0.85	235	1276	2.5	7.0	3.0	16	4.20	980	65
160	315 L	1LG4 318-6AA ..		988	95.0	95.1	0.86	285	1547	2.7	7.2	2.9	16	4.80	1105	65
<b>750 rpm, 8-pole, 50 Hz</b>																
11	180 L	1LG4 186-8AB ..		720	87.5	88.3	0.73	25	146	1.7	4.6	2.1	13	0.17	150	67
15	200 L	1LG4 207-8AB ..		725	87.7	88.3	0.76	32.5	198	2.1	5.1	2.6	13	0.29	205	57
18.5	225 S	1LG4 220-8AB ..		730	89.1	90.1	0.78	38.5	242	2.2	5.6	2.8	13	0.48	270	58
22	225 M	1LG4 223-8AB ..		730	89.7	90.6	0.79	45	288	2.2	5.6	2.7	13	0.55	290	58
30	250 M	1LG4 253-8AB ..		732	91.4	92.2	0.81	58	391	2.2	5.5	2.4	13	0.84	385	58
37	280 S	1LG4 280-8AB ..		735	92.0	92.4	0.81	72	481	2.1	5.5	2.1	13	1.23	475	60
45	280 M	1LG4 283-8AB ..		735	92.4	93.0	0.81	87	585	2.1	5.5	2.1	13	1.44	515	60
55	315 S	1LG4 310-8AB ..		738	92.7	93.0	0.81	106	712	2.1	5.8	2.6	13	2.20	680	64
75	315 M	1LG4 313-8AB ..		738	93.1	93.6	0.83	140	971	2.2	5.8	2.6	13	2.52	745	64
90	315 L	1LG4 316-8AB ..		738	93.2	93.7	0.83	168	1165	2.2	5.8	2.7	13	3.21	855	64
110	315 L	1LG4 317-8AB ..		738	93.9	94.3	0.83	205	1423	2.3	6.1	2.8	13	4.16	1020	64
132	315 L	1LG4 318-8AB ..		738	94.2	94.5	0.83	245	1708	2.4	6.5	2.9	13	4.70	1100	64

1) Parallel feeders required for 230 V supply.

SIEMENS

# Motor selection data: High Efficiency (EFF1) – shaft heights 180 / 315; 2, 4, 6, 8 pole

Standard  
Drives


Rated output  kW	Frame size	Order No.  Order No. supplement for voltage and construction refer to the table below	Efficiency class	Operating values at rated power				Locked torque with direct switching as a multiple factor of the rated torque	Locked current as a multiple factor of the rated current	Break-down torque	Torque class KL	Moment of inertia J kg m <sup>2</sup>	Weight Type of constr. IM B 3 Approx. kg	Sound pressure level Lp(A) dB(A)	
				Rated speed rpm	Efficiency $\eta$ at 4/4-3/4-load %	Power factor $\cos \varphi$	Rated current at 400 V A								Rated torque Nm
<b>Energy-saving motor – CEMEP "High Efficiency" EFF1, IP 55, 2- and 4-pole, 50 Hz</b>															
<b>3000 rpm, 2-pole, 50 Hz</b>															
22	180 M	1LG6 183-2AA ..	1	2955	93.6 93.9	0.88	38.5 <sup>1)</sup>	71	2.4	7.4	3.4	16	0.09	180	67
30	200 L	1LG6 206-2AA ..	1	2960	93.5 93.1	0.89	52	97	2.4	7.2	3.3	16	0.15	240	72
37	200 L	1LG6 207-2AA ..	1	2960	94.1 94.0	0.89	64 <sup>1)</sup>	119	2.5	7.3	3.3	16	0.18	270	72
45	225 M	1LG6 223-2AA ..	1	2965	94.7 94.9	0.89	77 <sup>1)</sup>	145	2.5	7.3	3.2	16	0.27	355	70
55	250 M	1LG6 253-2AA ..	1	2975	95.1 95.1	0.90	93	177	2.4	7.2	2.9	16	0.52	380	74
75	280 S	1LG6 280-2AB ..	1	2975	95.3 95.1	0.89	128	241	2.5	7.6	3.0	13	0.86	530	78
90	280 M	1LG6 283-2AB ..	1	2978	95.7 95.6	0.89	152 <sup>1)</sup>	289	2.5	7.7	3.0	13	1.01	615	78
110	*315 S	1LG6 310-2AB ..		2982	96.0 95.8	0.91	182	352	2.3	7.6	2.8	13	1.40	765	76
132	*315 M	1LG6 313-2AB ..		2982	96.2 95.7	0.91	220 <sup>1)</sup>	423	2.3	7.7	2.9	13	1.70	910	76
160	*315 L	1LG6 316-2AB ..		2982	96.4 96.0	0.92	260	512	2.6	7.6	2.9	13	2.10	1055	76
200	*315 L	1LG6 317-2AB ..		2982	96.5 96.3	0.92	325	641	2.6	7.5	2.7	13	2.60	1220	76
<b>1500 rpm, 4-pole, 50 Hz</b>															
18.5	180 M	1LG6 183-4AA ..	1	1470	92.6 93.0	0.83	34.5 <sup>1)</sup>	120	2.5	6.8	3.0	16	0.12	155	60
22	180 L	1LG6 186-4AA ..	1	1470	93.0 93.3	0.83	41 <sup>1)</sup>	143	2.5	6.9	3.1	16	0.14	180	60
30	200 L	1LG6 207-4AA ..	1	1470	93.3 93.4	0.85	55	195	2.6	6.9	3.2	16	0.23	225	63
37	225 S	1LG6 220-4AA ..	1	1480	94.0 94.4	0.85	67 <sup>1)</sup>	239	2.6	7.2	3.0	16	0.40	290	60
45	225 M	1LG6 223-4AA ..	1	1480	94.5 94.7	0.86	80 <sup>1)</sup>	290	2.6	7.2	3.0	16	0.49	330	60
55	250 M	1LG6 253-4AA ..	1	1485	95.0 95.2	0.87	96	354	2.6	7.4	3.0	16	0.92	460	64
75	280 S	1LG6 280-4AA ..	1	1485	95.2 95.3	0.86	132	482	2.5	7.3	3.0	16	1.53	575	67
90	280 M	1LG6 283-4AA ..	1	1485	95.6 95.6	0.86	158 <sup>1)</sup>	579	2.5	7.4	3.0	16	1.83	675	67
110	*315 S	1LG6 310-4AA ..		1490	95.9 95.7	0.87	190	705	2.5	7.1	2.8	16	2.48	775	67
132	*315 M	1LG6 313-4AA ..		1490	96.0 96.0	0.88	225 <sup>1)</sup>	846	2.5	7.4	2.8	16	3.10	945	67
160	*315 L	1LG6 316-4AA ..		1490	96.3 96.3	0.88	275	1026	2.7	7.4	2.9	16	3.66	1050	67
200	*315 L	1LG6 317-4AA ..		1490	96.4 96.3	0.88	340	1282	2.9	7.6	3.0	16	4.69	1205	67

- Available from February 2002, data subject to change.
- 1) Parallel feeders required for 230 V supply.

SIEMENS

# Motor selection data: High Efficiency (EFF1) – shaft heights 180 / 315; 2, 4, 6, 8 pole

Standard  
Drives

Rated output  kW	Frame size	Order No.  Order No. supplement for voltage and construction refer to the table below	Efficiency class	Operating values at rated power					Locked torque  with direct switching as a multiple factor of the rated torque	Locked current	Break-down torque	Torque class  KL	Moment of inertia  J  kg m <sup>2</sup>	Weight  Type of constr. IM B 3  Approx. kg	Sound pressure level Lp(A)	
				Rated speed  rpm	Efficiency $\eta$ at 4/4-load  %	Power factor $\cos \varphi$	Rated current at 400 V  A	Rated torque  Nm								
<b>Energy-saving motor – CEMEP “High Efficiency” EFF1, IP 55, 6- and 8-pole, 50 Hz</b>																
																
<b>1000 rpm, 6-pole, 50 Hz</b>																
15	180 L	1LG6 186-6AA ..		975	90.8	91.6	0.81	29.5	147	2.3	6.0	2.4	16	0.20	175	57
18.5	200 L	1LG6 206-6AA ..		978	91.4	91.8	0.81	36	181	2.4	5.9	2.4	16	0.29	210	59
22	200 L	1LG6 207-6AA ..		978	92.1	92.6	0.82	42	215	2.4	5.8	2.4	16	0.36	240	59
30	225 M	1LG6 223-6AA ..		980	93.0	93.6	0.83	56 <sup>1)</sup>	292	2.7	6.8	2.9	16	0.63	325	55
37	250 M	1LG6 253-6AA ..		985	93.8	94.1	0.83	69	359	2.8	7.0	2.5	16	1.02	405	63
45	280 S	1LG6 280-6AA ..		986	94.2	94.4	0.85	81	436	2.9	7.2	2.7	16	1.53	505	62
55	280 M	1LG6 283-6AA ..		988	94.7	94.8	0.85	99	532	2.9	7.4	2.9	16	1.87	555	62
75	*315 S	1LG6 310-6AA ..		990	95.1	95.2	0.84	136	723	2.4	7.3	3.0	16	2.65	710	62
90	*315 M	1LG6 313-6AA ..		990	95.4	95.5	0.85	160	868	2.5	7.4	2.9	16	3.35	880	62
110	*315 L	1LG6 316-6AA ..		990	95.7	95.8	0.85	196	1061	2.7	7.5	3.0	16	4.20	990	62
132	*315 L	1LG6 317-6AA ..		990	95.9	96.0	0.85	235	1273	2.7	7.6	3.0	16	4.80	1110	62
160	*315 L	1LG6 318-6AA ..		990	96.0	96.1	0.85	285	1543	2.9	7.8	3.1	16	5.54	1200	63
<b>750 rpm, 8-pole, 50 Hz</b>																
11	180 L	1LG6 186-8AB ..		725	88.7	89.6	0.76	23.5	145	1.9	5.0	2.2	13	0.21	165	66
15	200 L	1LG6 207-8AB ..		725	89.3	89.8	0.78	31	198	2.3	5.3	2.6	13	0.37	235	66
18.5	225 S	1LG6 220-8AB ..		730	90.9	91.4	0.81	36.5	242	2.2	5.6	2.6	13	0.55	295	54
22	225 M	1LG6 223-8AB ..		730	91.3	91.8	0.81	43	288	2.3	6.0	2.6	13	0.66	335	59
30	250 M	1LG6 253-8AB ..		735	92.5	93.2	0.82	57	390	2.5	6.3	2.7	13	1.19	435	57
37	280 S	1LG6 280-8AB ..		738	92.9	93.3	0.81	71	479	2.2	6.0	2.3	13	1.53	500	60
45	280 M	1LG6 283-8AB ..		738	93.3	93.5	0.81	86	582	2.3	6.2	2.4	13	1.76	550	60
55	*315 S	1LG6 310-8AB ..		740	93.9	94.1	0.83	104	710	2.3	6.3	2.8	13	2.52	700	66
75	*315 M	1LG6 313-8AB ..		740	94.2	94.4	0.83	138	968	2.5	6.4	2.9	13	3.21	780	66
90	*315 L	1LG6 316-8AB ..		740	94.5	94.8	0.83	164	1161	2.4	6.3	2.8	13	4.16	970	66
110	*315 L	1LG6 317-8AB ..		740	94.6	94.9	0.83	200	1420	2.4	6.3	2.8	13	4.70	1050	66
132	*315 L	1LG6 318-8AB ..		740	94.8	95.1	0.84	240	1704	2.5	6.5	2.8	13	5.42	1190	66

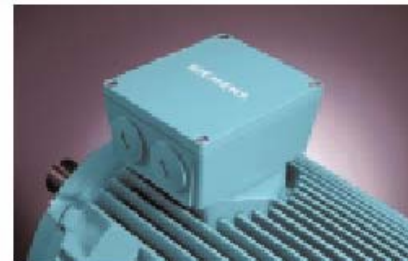
- Available from February 2002, data subject to change.
- 1) Parallel feeders required for 230 V supply.

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# Motor selection data: Order No. supplements

Standard  
Drives

Motor type	Penultimate: Voltage code					Last Position: Type of construction code				
	50 Hz		60 Hz			IM B 3	(extra charge)			
	230 VA / 400 VY	400 VA / 690 VY	500 VY	500 VA	460 VA		IM B 5	IM V 1 without canopy	IM V 1 with canopy	IM B 35
1LG6 186 to 1LG6 313	1	6	3	5	6	0	1	1	4	6
1LG6 316 to 1LG6 318	-	6	-	5	9 L2F	0	-	8	4	6



SIEMENS



# New 1LG energy-saving motors, convincing technology from every perspective!

Standard  
Drives

## Innovative features

*Optimized efficiency*

*Improved grease quality  
(standard grease, Esso Unirex N3)*

*Increased grease volume  
(bearing series 02 to 50% compared  
with 1LA6)*

*Modular mounting concept*

## Customer benefits

- Operating costs are reduced
- Environmental stressing is reduced - less CO2 emission
- Improved bearing lifetime
- Lower maintenance costs due to longer lubrication medium lifetime (20,000 to 40,000 h at KT40)
- Standard grease can be used down to -30°C ambient temperature (previously -20°C )
- Flexible, simple mounting: Brake, pulse encoder, separately-driven fan - Customer can mount these on-site

**SIEMENS**

# The new energy-saving motors distinguish themselves as a result of additional customer benefits!

Standard  
Drives

## Additional benefits - an overview

- Shorter delivery times than the 1LA6: Ex-stock motors (2, 4 and 6-pole)  
- 2 working days to German border
- Efficiency classes make it easier to select motors (EFF1/EFF2)
- Cast iron design - e.g. they can be used in aggressive environments
- High starting quality
- High quality level guarantees high operational safety and reliability
- 1LG4 motors weigh less than the corresponding 1LA2/ 1LA6
- All of the usual standards, specifications and approvals
- Integral component of Totally Integrated Automation (TIA) via AC drive converter/inverter with PROFIBUS-DP<sup>®</sup> coupling
- Worldwide sales and service network



# Sales objectives, introducing 1LG to the market



Standard Drives

## Sales objectives

- Profitable growth - focus on business value added
- Establish new markets, e.g. Asia, South Africa, South America
- Secure our competitiveness, cost optimization (factor costs) and customer benefits (response to market requirements, improved sales arguments) through innovation
- Improved image using an innovative series of motors
- Create a motivated team (adequate information, marketing tools and documents, advertising campaign)
- Secure our global leadership position in motors
- Introduce the new 1LG energy-saving motors quickly and successfully
- Replace standard motors by energy-saving motors

# Ordering/invoicing- 1LG4/6 (frame size 180M – 315L): Germany, Europe

Standard  
Drives

**Order form entry:**



From 01.08.2000, frame-size-by-frame-size,  
refer to general availability

**Order form receiver:**



EDP: ORG ID A1200159

**Product database info:**



From 01.08.2000, the product database (FDB) will  
contain the new products; these can be called-up per  
EDP, e.g. "product database info".

**Order administration:**



V-Reg / RG orders just as before using EDP

**SIEMENS**

# Ordering/invoicing 1LG4/6 (frame sizes 180M – 315L): America, Africa, Near and Middle East, Asia, Pacific

Standard  
Drives

## Order form entry:



From 01.08.2000, frame size by frame size, refer to general availability

## Order form receiver:



EDP: ORG ID A1200159  
or paper order form (BZ): A&D SD-FST

## Product database info:



From 01.08.2000, the product database (FDB) will contain the new products; these can be called-up per EDP, e.g. "product database info".

## Order administration:



RG orders just as before per EDP or paper order form (BZ) from A&D SD VKA

**SIEMENS**

# List prices: Energy-saving motors acc. to CEMEP

Standard Drives

## Improved Efficiency - EFF2

- 1LG4 = basic 1LA6 series <sup>1)</sup> (previously)

## High Efficiency -EFF1/ EPACT

- 1LG6 = 1LG4 + min. 5%

**Price list:**



Specified in the sales release 08/00 (FS180) 10/00 (FS 200), 01/01 (FS 225), 05/01 (FS 250), 09/01 (FS 280), 12/01 (FS 315 nur 1LG4) as well as in the Intranet under price lists

**Product database pricing info:**



From 01.08.2000, pricing information will be available in the product database (FDB)

<sup>1)</sup> Basis, FST 1LA6, Shaft heights 225 -280 (315)

# Scheduled availability, production locations

Standard  
Drives

## Scheduled availability:



- 180 shaft height 01.08.00 1LG4/1LG6
- 200 shaft height 01.12.00 1LG4/1LG6
- 225 shaft height 01.02.01 1LG4/1LG6
- 250 shaft height 01.05.01 1LG4/1LG6
- 280 shaft height 01.09.01 1LG4/1LG6
- 315 shaft height 01.12.01 1LG4
- 315AH 01.02.02 (scheduled) 1LG6

## Production location:



Frenstat (Czech Republic)