บริษัท ไทนามิก จำกัด

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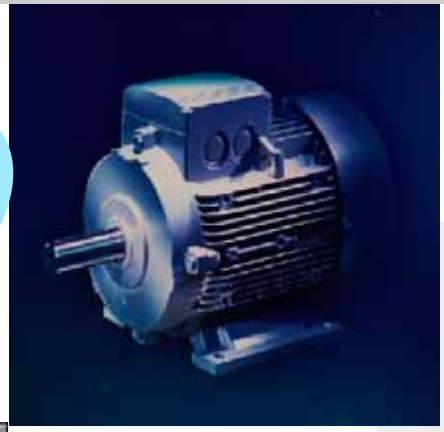
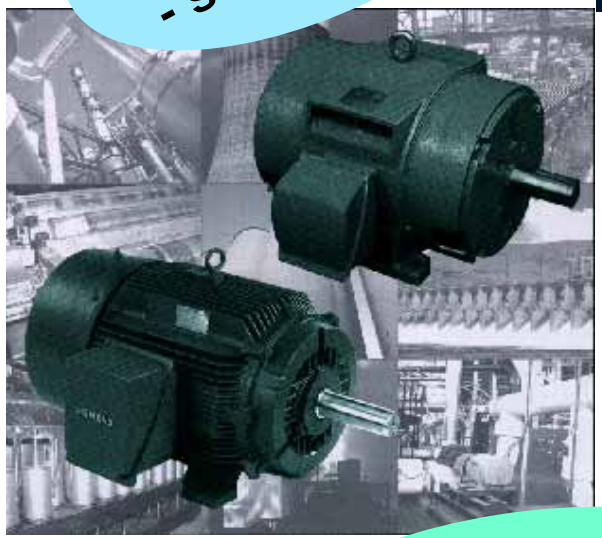
Welcome to the Tinamics Co.,Ltd.

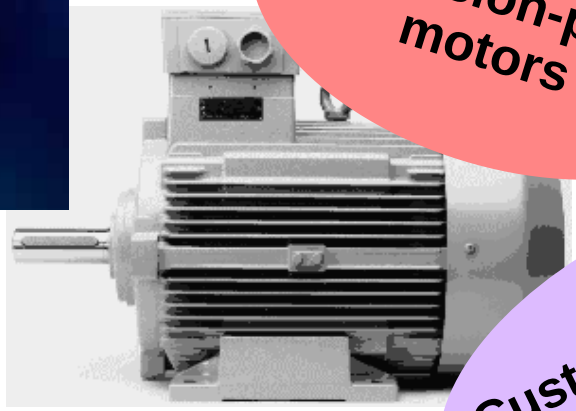
Standard Motors – “Motors for the future”

IEC and NEMA - standard motors

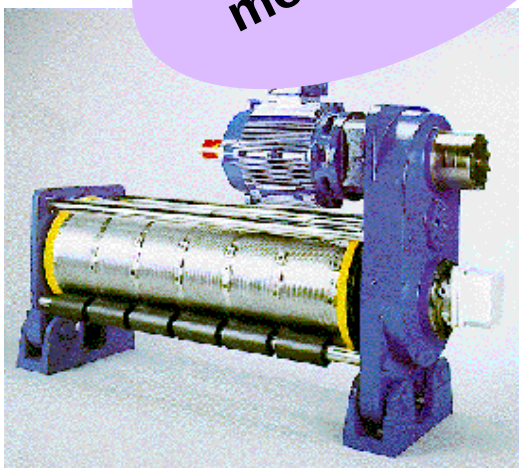




Explosion-proof motors



Customer-specific motor designs



Energy saving motors

One Product Range for every Application

- **Standard motors with IEC or NEMA dimensions** with aluminum or cast-iron enclosure
- **Ex**plosion-proof **motors** **"increased safety"** and "**explosion-proof enclosure"**
- **Single-phase motors** for industrial applications
- **Customer-specific motors**
- **Product news: energy-saving motors** for the European market, also complying with EPACT (US Federal Law, October 97)

Rated output: 1kW to 1,000 kW

Voltage: ≤ 1000 V

Frame size: 56 ... 450 mm

(Shaft Hight)

ENERGY-SAVING MOTORS
The cost-saving green machine

Benefit of ENERGY-SAVING MOTORS

Output	1kW – 160 kW
Voltage	230 / 400 / 500 / 690 V

- Reduces operating costs
- High efficiency, Saves energy
- Less CO_2 emissions reduce the environmental stressing
- Power loss reduced by up to 45%
- High overload reserve in continuous operation
- IEC/NEMA dimensions
- Can be flexibly used, Many options
- Integrated in T.I.A. through the inverter

1LA7 - A motor to fulfill every requirement

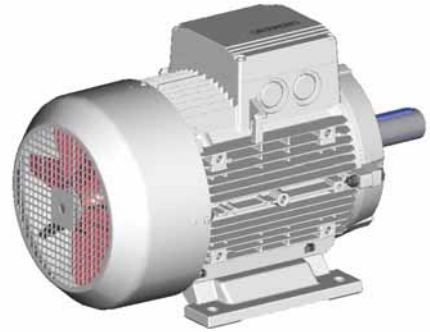
F *lexible - with options, modules*

F *avourably-priced-high efficiency*

R *obust -shock & vibration resistant*

N *ew pulses - easy encoder mounting*

R *educes costs -mechanical brake to be added to standard motor*



F *resh wind - fan module*

F ast - *60,000 motors in Central German Stock and in Thailand*

1LA7 - Power ratings

- **1LA7** cover the range of 1 kW to 15kW / 4poles
- Insulation class **F** utilized according to thermal class **B**
- Available design for number of poles: **2,4,6,8**
- **Tropicalized** winding system

1LA7 with IEC 38 winding design

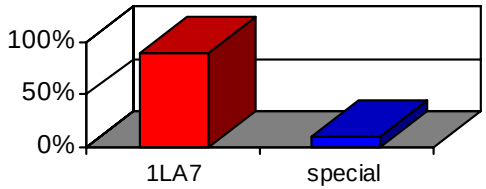
Code	Voltage	Freq.	Phase	Power Range
1	230V D/400V Y ±10% 460V Y±10%	50Hz 60Hz	3	1 - 15 kW
6	400V D/690V Y ±10% 460 V D±10%	50Hz 60Hz	3	1 - 15 kW

1LA7 with DIN/VDE winding design

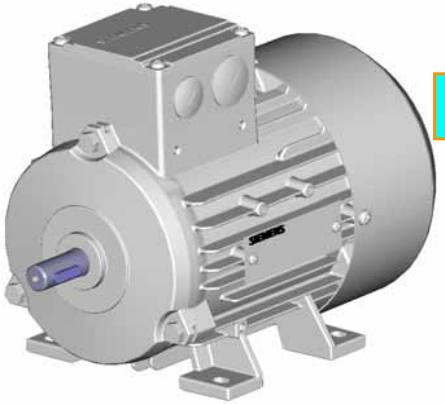
Code	Voltage	Freq.	Phase	Power Range
9	220V D/380V Y ±5%	60Hz	3	1 - 15 kW
5	500V D ±5%	50Hz	3	1 - 15 kW
3	500V Y ±5%	50Hz	3	1 - 15 kW

1LA7 Squirrel Cage AC Motors

- 1LA7 Standard Motors AC motors are designed for general purpose as well as special applications.

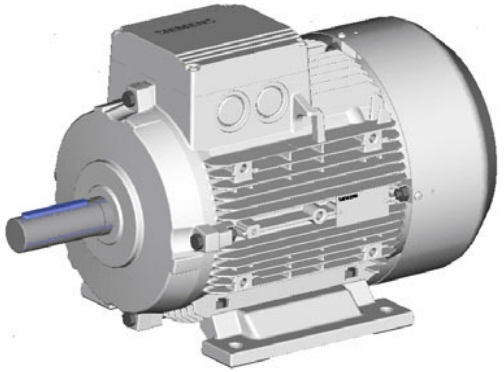


- Typical standard applications are pumps, blowers, fans, conveyors and general machinery, special applications are cranes, spinning machines, fibre lines, elevators, paper and positioning machines
- 1LA7 are designed to be high efficient
- DURIGNIT ® IR 2000 insulation system in thermal class F insulation, utilization to class B IR = Inverter Resistant



Example: FS 71 - 90

Example: FS 100-160



1LA7 - A motor to fulfill every requirement

Advantages of 1LA7:

- **High Efficiency**
- Advanced Insulation system - DURIGNIT® IR 2000 (IR = Inverter Resistant)
- Operating temperatures between **- 30 and + 60°C**
- **Spacious** conduit box for easy connection
- **Compact** construction by integrated terminal box (FS 100 onwards)
- Modular concept - now also applicable on stock motors (fan and encoder) (FS 100 onwards)
- Silent motor series: Low noise in standard design

Certified in accordance with DIN EN ISO 9001, CE-Mark

New 1LG cast iron energy-saving motors, frame sizes 180M - 200L

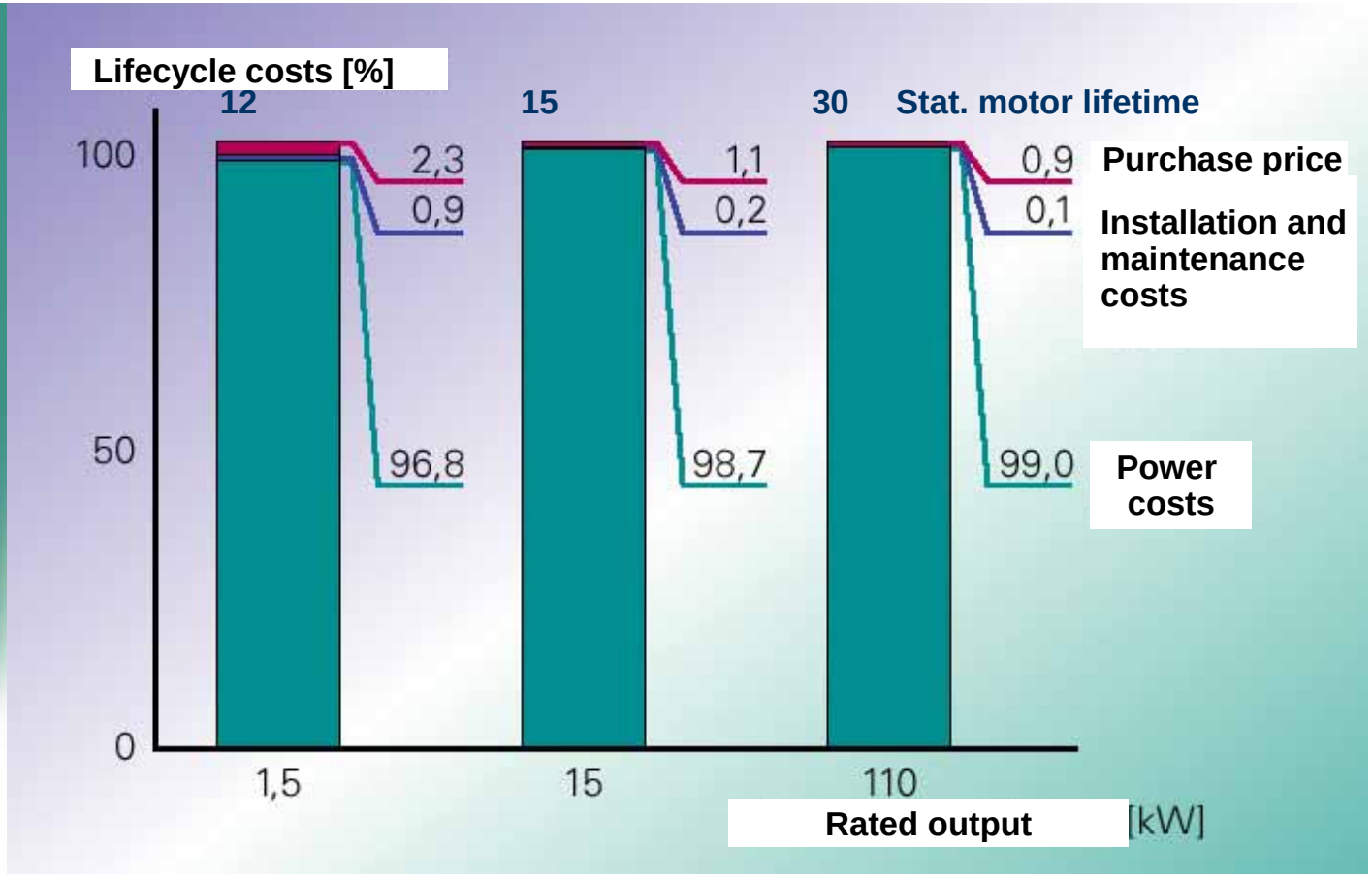
Reduce operating costs and environmental stressing

A ray of light for the environment

New 1LG cast-iron energy-saving motors, frame sizes 180M to 200L

Our energy-saving motors operate to enhance your profit

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



Product spectrum:
New 1LG4/6 energy-saving motors - shaft heights 180/200:

Overview of the type spectrum

- 2-pole: 22 – 37 kW; EFF2 (1LG4) / EFF1 (1LG6)
- 4-pole: 18,5 – 30 kW; EFF2 (1LG4) / EFF1 (1LG6)
- 6-pole*: 15 – 22 kW; Improved Efficiency (1LG4) / High Efficiency (1LG6)
- 8-pole*: 11 – 15 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.

Output, ambient temperature

Power 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 power 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
1LG4	-30 to +40	F	B
	>40 to +55	F	F
1LG6	-30 to +50	F	B
	>50 to +60	F	F

Alternatively, for KT = 40°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

Voltage

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

Double rating plate 50/60 Hz

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

Drive converter/ inverter operation

Drive converter/inverter-proof ≤ 500 V, 690 V operation on request

Insulating system

DURIGNIT® IR 2000 (drive converter/inverter-proof), temperature rise class F
Voltage front time for PWM inverter/converter operation - ts >0.1 µs at the motor terminals.

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

Degree of protection	IP 55, optional IP56 and IP65
Type of construction	Type of construction according to EN 600034-7, 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

Design and materials used

Housing, bearing shield, terminal boxes	Cast iron, Either aluminum - optional, cast iron terminal boxes
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

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

Innovative features	Customer benefits
Optimized efficiency	• Operating costs are reduced • Environmental stressing is reduced - less CO_2 emission
Improved grease quality *(standard grease, Esso Unirex N3)* *Increased grease volume* *(bearing series 02 to 50% compared with 1LA6)*	• 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)
Modular mounting concept	• Flexible, simple mounting: Brake, pulse encoder, separately-driven fan - Customer can mount these on-site

1LA6 Well proven Low-Voltage Motors

C ast iron design

A ll industrial applications

S tabil design

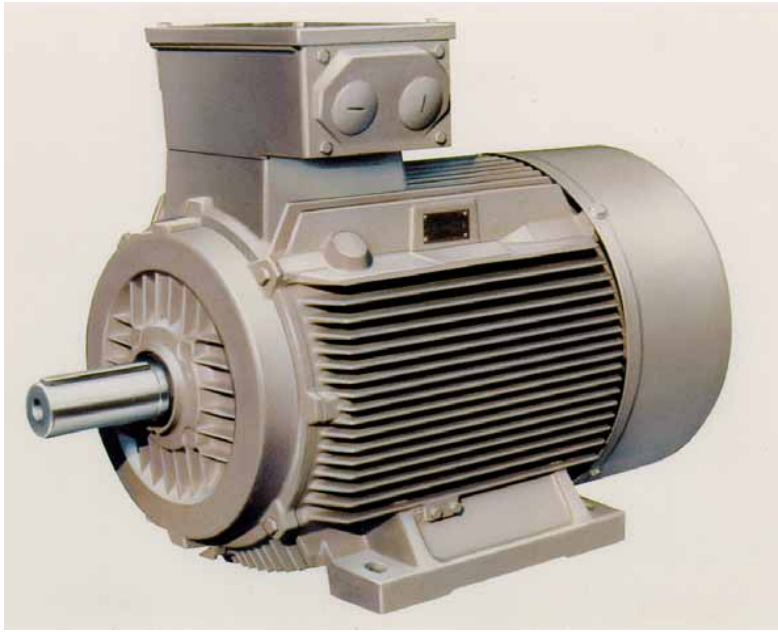
T echnology - Well proven

E fficient

C ompetitive

1LA6 Squirrel Cage AC Motors

- 1LA6 IEC Standard Motors AC motors are designed for general purpose as well as special applications.
- Typical standard applications are pumps, blowers, fans, conveyors, special applications are cranes, fibre lines, elevators, paper and packing machines
- 1LA6 are designed to be high efficient
- DURIGNIT ® 2000 insulation system in thermal class F insulation, utilization to class B
- All 1LA6 motors can be used on inverters in standard design.



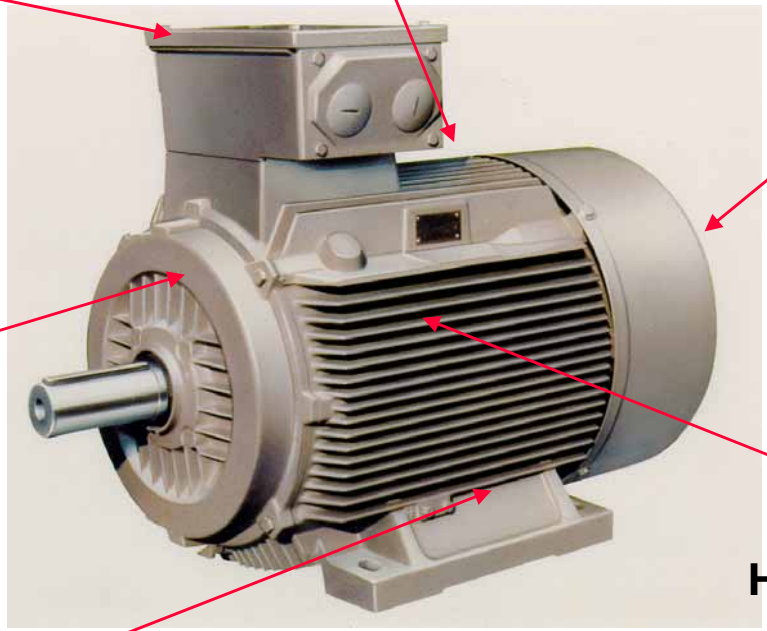
1LA6 - Materials

Lifting: 1 eyebolt in standard design, screwed in

1LA6 T-box in Cast iron

Fan: Thermoplast **suitable for both directions of rotation**

Fancowl: Reinforced thermoplastic



Nameplate: Stainless Steel

Endshield: Cast Iron

Housing of 1LA6 Cast iron

Feet are casted on **the frame, FS 315L bolted on**

1LA6 - CASTEC motors

Castec -Advantages of 1LA6:

- High Efficiency
- Advanced and well proven Insulationsystem - DURIGNIT® 2000
- Operatingtemperatures between - 20 and + 55 °C
- Spacious conduit box for easy connection
- Compact construction and sturdy stabile housing
- Silent motor series: Low noise in standard design
- Flexible cable entry location/Rotation of T-box: 4 x 90 Deg C
- All Castec motors have condensation drainholes closed with plastic plugs in the lowest part of the motor to remove condensation

Please visit us at the web: http://www.asi.siemens.de

1LA6 - Scope of delivery

Range of products in motor type 1LA6:

- 2, 4, 6 and 8 pole single-speed motors (10, 12 poles on request)
- frame size 250 -315, 55kW -200 kW (4poles)
- Pole-changing motors
- Available variations in design / options reflect market demands
- Other additional features on request

Outlook 1LA6 in special design:

- in 1LA6 design available also frame 180 to 225 (18.5 to 45kW)
- in 1MA6 EEx e II version (zone 1)
- in 1MJ6 EEx de IIC T4 version (zone 1)
- as 1LA6 in EEx nAII T3 design (zone 2)