

# Agricultural industry totally enclosed three-phase asynchronous motors

## General information



**Totally enclosed three-phase asynchronous motors, LS series**, in accordance with IEC 60034, 60038, 60072.

- Single speed: powers 0.25 to 11 kW, frame size 80 to 132 mm, 2, 4 and 6 poles, 230/400 V or 400 V  $\Delta$ , 50 Hz. Higher powers: consult us.
- Two speed: consult us.

### Protection

Protection index IP 55 or IP 56

### Operation

These motors are designed for use in harsh environments and may be subjected to liquid hosing under pressure. Their reinforced protection provides a perfect solution to the demands imposed by various applications of the food industry such as:

- frequent cleaning of motors,
- permanent humidity,
- contact with aggressive liquids.

### Finish

Assembled with stainless steel screws and mounting rods.

Special epoxy or polyurethane finishing paint.

Protection of the flange and shaft end against atmospheric corrosion.

Individual anti-shock packaging.

### Mains supply

- Standard according to IEC 60038:
    - 230/400 V +10% -10% at 50 Hz.
- Standard construction suitable for the following mains supplies:
- 220/380 V +5% -5% at 50 Hz,
  - 230/400 V +10% -10% (IEC 60038) at 50 Hz,
  - 240/415 V +5% -5% at 50 Hz,
  - 265/460 V +5% -5% at 60 Hz.
- Voltages for powers equal or greater than 3kW:
- 380 V  $\Delta$  +5% -5% at 50 Hz,
  - 400 V  $\Delta$  +10% -10% at 50 Hz,
  - 415 V  $\Delta$  +5% -5% at 50 Hz,
  - 460 V  $\Delta$  +5% -5% at 60 Hz.
- Construction allows Y/ $\Delta$  starting.



## Description of the (F)LS three-phase motors for Food and beverage application, finish IA or IAW (non ventilated)

Component	Materials	Remarks
Housing	Cast iron or aluminium alloy	- with bolt-on or cast foot, or without foot <ul style="list-style-type: none"> <li>• 6 or 8 mounting holes for the foot housings</li> </ul> - optional earth terminal
Stator	Insulated low carbon magnetic steel laminations Electrolytic copper	- the low carbon content guarantees long term stability of the characteristics - assembled sheet metal - semi-enclosed slots - insulation system class F
Rotor	Insulated low carbon magnetic steel laminations Aluminium	- inclined slots - squirrel cage pressure die cast in aluminium (or alloy for special applications) - mounted on the shaft by heat shrinking - dynamically balanced rotor, class A - 1/2 key
Shaft	Steel or stainless steel	- shaft end fitted with screw and washer - closed keyway
End shields	Cast iron	- front and rear
Bearings and lubrication		- ball bearings - ZZ types or 2RS lubricated for life - rear preloaded bearings
Labyrinth seals Lipseals	Technopolymer Synthetic rubber	- front jet deflector or lipseals for all flange motors - lipseals, jet deflector or labyrinth seals for foot motor
Fan	Composite material or aluminium alloy	- 2 directions of rotation: straight blades
Fan cover	Composite material	- removal of the fan for the non ventilated version IC410 - removal of the cover for the non ventilated version IC410
Terminal box	Composite material or aluminium alloy	- IP 55 or IP 66 - rotatable in 4 directions, mounted opposite to foot position - includes as standard a 6 steel terminal board (brass as an optional extra) - delivered fitted with cable gland IP 68 and lipseals (optionally without cable glands) - 1 earth terminal in all terminal boxes

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## Adaptation possibilities

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

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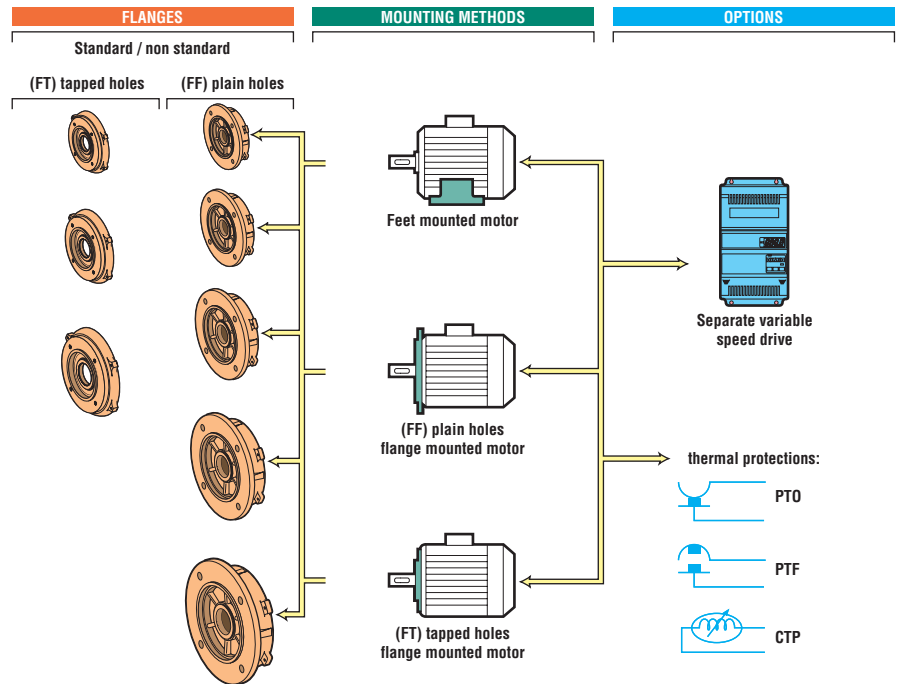
The LS three-phase motors may be associated to:

- gearboxes
- electronic variable speed drives<sup>1</sup>

The options:

- thermal protections
- non standard flanges

<sup>1</sup> Conforming to the regulations of use as indicated by the standard IEC 34-17.



## Selection

Range	Frame size mm	Power kW	Polarity
Ventilated motors	80 to 132	0.75 to 11	2 p
IP 55 S1 duty	80 to 132	0.55 to 9	4 p
(F)LS iA tolerance	80 to 132	0.37 to 5.5	6 p
Non ventilated motors	80 to 132	0.37 to 4	4 p
IP 66 S1 duty	90 to 132	0.37 to 2.2	6 p
(F)LS iAW tolerance			

## Dimensions

See the dimensions of the series LS pages A2.41 to A2.46 or FLS pages A4.20 to A4.25.