



Smart solutions.  
Strong relationships.

# SMOKE EXTRACTION MOTORS

Three Phase LV AC Induction Motors



*We put all our energy into saving yours !*

# SMOKE EXTRACTION MOTOR

CG Smoke extraction motors are designed for stringent operating conditions during fire / high temperature ambient conditions. Smoke extraction motor ensures the air circulation in closed environment.

Our smoke extraction motor complies with latest standards BS EN 12101-3:2015.

Smoke extraction motor is a dual function motor.

- 1) S1 Duty (In normal conditions)
  - Operation under standard conditions
- 2) S2 Duty (In case of fire)
  - Removal of smoke and hot gases from accidental fire zones
  - Supporting firefighting by creating smoke free zone
  - Protecting devices and equipments
  - Reducing thermal stresses of components in case of fire
  - Minimizing secondary damages by extracting thermal bi-products and hot gases

## Special features

- Smoke extraction motors are provided with the state of the art insulation system which can withstand the high temperatures during accidental fire conditions
- Motors are provided with flying leads for easy connections
- They are provided with bearings which will work reliably even at high temperatures
- Painting materials are selected such that the paint is durable & protects the motors during high temperature & corrosion due to chemical contents of smoke
- The system is generally designed so that the fans provide standard ventilation in normal working conditions and smoke extraction in emergencies
- Special insulation and impregnation process adapted to the respective temperature/time classes. Maximum thermal utilisation to temperature class
- Special lead wire, Terminal block and gasket are used for particular application
- Oil seal or V seal is provided

## Smoke extraction motors

Range	
Output	0.75 kW to 37 kW
Frames	80 to 200L
Poles	2,4,6,8 or dual speed on request
Efficiency class	IE1 / IE2 / IE3
Mounting	Foot / Flange / Foot cum flange
Material of construction	Cast iron / Aluminum
Construction	TEFC or TEAO
Starting	VFD / DOL

## Standard product specification

Voltage - 415 V (10%) ,  
 Frequency - 50 Hz (5%) ,  
 Three phase squirrel cage induction motors  
 Ambient under normal conditions: 50°C  
 Temperature rise under normal conditions: 70°C

Temperature during accidental conditions are as per below table:

Class	Temperature °C, Time	Starting
F200-120	200°C, 120 min	DOL, VSD
F250-120	250°C, 120 min	DOL, VSD
F300-60	300°C, 60 min	DOL, VSD
F300-120	300°C, 120 min	DOL, VSD

## Applications :

Smoke extraction motor are used where great concentration of people is present. Our certified smoke motors with latest standards have been engineered for following applications:

- Tunnels
- Shopping malls
- Air ports
- Theatres
- Underground stations
- Enclosed passages & stair cases
- Parking area
- Warehouses
- Factories
- Places with great concentration of people
- Others

## Reference standards - Rotating electrical machine

Standards	Description
IEC 60034-1:2010	Rating & Performance
IEC 60034-30:2008	IE code for efficiency
IEC 60034-2-1:2007	Determination of losses and efficiency
IEC 60034-5:2006	Degrees of protection
IEC 60034-9:2007	Noise limits
IEC 60034-14:2007	Vibration limits
IEC 60072-1:1991	Dimension
IS 1231:1974	Dimension foot mounted
IS 2223-1983	Dimension flange mounted
BS EN 12101-3:2015	Smoke extraction motor

# SMOKE EXTRACTION MOTORS

# SPECIFICATION

Specification	Standard Product	Option
Output	0.75 kW to 37 kW	
Frames	80 to 200L	
Voltage range	Upto 3kW 415 V $\Delta$	220V up to 440V
	Above 3kW 415 V $\Delta$	220V up to 440V
Frequency	50 Hz	60 Hz
Voltage variation	10%	
Frequency variation	5%	
Combined variation	10% absolute sum	
Frame dimensions	As per IEC 60072-1	
Class of insulation	H - Temperature rise limited to Class B	
Ambient temperature	50°C / 70°C	
Altitude	Maximum of 1000 meter from MSL	
Relative humidity	Up to 95%	
Rating/Duty	S1 in normal condition & S2 during accidental fire.	
Degree of protection	IP55	IP56 and IP66 as per IEC 60034-5
Mounting reference	B3	B5, V1, B14 etc. as per IEC 60034-7.
Type of enclosure	Totally enclosed fan cooled	Totally enclosed air over
Terminal box	Cast Iron / Aluminium / Sheet metal cover	
Type of cooling	Externally fan cooled IC411 as per IEC 60034-6.	
Position of terminal box	TOP (Motors with flying leads 1metre.)	RHS / LHS
Terminal box rotation	Terminal box is suitable to rotate in steps of 90	
Type of starting	Direct on line Up to & including 3 kW	Star Delta Starting 3.7kW & above.
Type of Coupling	All types of direct/flexible couplings.	
Direction of rotation	Bi-directional.	
Bearings	Metallic shielded ZZ type	Online greasing arrangement
Certification	Conforming to EN 12101-3	
Shaft seal	V-seal / Oil seal	
Vibration level	As per IEC 60034-14 grade A	
Noise level	As per IEC 60034-9	
Paint shade	RAL 7032 (Pebble gray)	



Underground stations



Shopping malls



Parking area



Our All India Service Centre Toll Free No : 1800-267-0505

Regional sales offices :

North : 6th floor, Vatika City point, MG Road, Gurgaon, Haryana - 122 002 | Phone : 0124-4392045  
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West : Kanjur Marg (E), Mumbai - 400 042 | Phone : 022-6755 8632, 33, 36 & 6755 8000  
South : 3-A, MGR Salai (K.H. Road), Nungambakham, Chennai - 600 034 | Phone : 044-4224 7525

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Due to continuous product improvements and its incorporation, CG reserves the right to change the design, technical specifications and dimensions without prior notice.

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