



General

Series ET covers totally enclosed, self ventilated machines with Ex d flameproof casing and built in air to air heat exchanger. The heat exchanger consists of a bank of corrosion resistant steel tubes which are situated around the stator core. Ambient air is forced through the tubes by an external shaft mounted fan. Two internal shaft mounted fans circulate the primary (internal) cooling air through the active parts of the motor and the tube bank. The tubes are carefully assembled and sealed to meet the required standards for flame proof applications.

Flameproof Casing

The casing on the ET series machines is cylindrical in order to improve internal resistance to over pressure in case of explosions. Rugged, fabricated end shields are bolted to the frame.

These act as support for the bearings. The overall design has been carefully studied to guarantee (in the event of an internal explosion) that neither flames nor sparks pass into the external environment. All joints in the structure, whether permanently closed or designed to be opened from time to time, meet relevant standards in terms of the length of flame paths and gap according to the Group specifications for which the machine must be certified. Standard degree of protection is IP 54.

As a general standard our machines are certified for Group IIB + H2 classified areas. Extreme environments are not a problem for us. We have designed a vast array of machines to operate in environmental temperatures $< -20^{\circ}\text{C}$ as well as for environments where temperatures exceed 40°C up to 60°C .

Terminal Boxes

All terminal boxes (line and auxiliary) have been fully certified as flameproof in compliance with the applicable IEC Standards.

Mounting Arrangements

Our standard for this machine is IM 1001 for the horizontal version and IM 4011 for the vertical version.

Testing and Certification

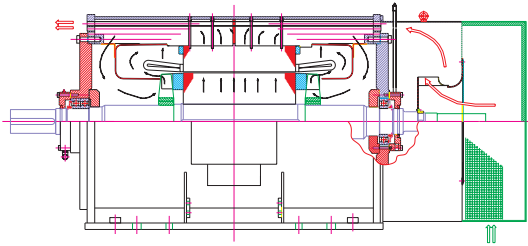
All series ET machines have been certified by CESI (Centro Elettrotecnico Sperimentale Italiano).



The Electric Motors and Generators Business Unit is certified

ISO
9001

ISO
14001



Power rating:

150 - 3,000 kW

Voltage:

up to 13,8 kV

Frequency:

50 Hz, 60 Hz, and variable frequency with converter

Mass:

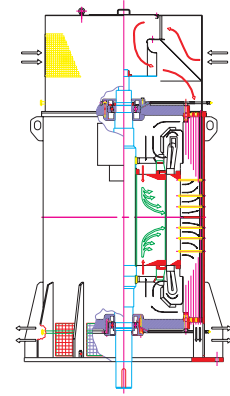
3,000 - 25,000 kg

Frame size:

400 mm to 800 mm (*)

Number of poles:

2 - 12



The following table shows typical values per size range for the series ET machines in 2 - 4 - 6 pole configurations. For further details please contact our Sales Office (See address below)

N° OF POLES	kW	r/min	efficiency			power factor			rated torque	4 x WR ²	Mass	Bearings
			4/4	3/4	2/4	4/4	3/4	2/4				
2 POLE												
400	225	2978	94.3	93.9	92.5	0.89	0.88	0.82	721	13	1960	RG
450	500	2980	95.7	95.4	94.5	0.90	0.89	0.83	1602	24	3030	RG
500	800	2980	96.2	96.1	95.4	0.90	0.89	0.85	2564	44	4050	RG
560	1120	2981	95.9	95.6	94.6	0.90	0.89	0.86	3588	78	5480	RG
630	1600	2982	96.4	96.0	95.1	0.90	0.89	0.87	5124	130	7310	RG
710	2000	2983	96.3	95.9	94.8	0.90	0.89	0.86	6402	200	9930	SF
800	2500	2987	96.3	95.7	94.3	0.90	0.89	0.85	7992	280	14500	SF
4 POLE												
400	225	1482	94.6	94.5	93.6	0.89	0.86	0.80	1450	19	2090	RG
450	400	1484	95.4	95.3	94.5	0.89	0.88	0.83	2574	40	2800	RG
500	710	1485	96.0	95.9	95.4	0.89	0.88	0.83	4566	80	4010	RG
560	1000	1486	95.8	95.5	94.6	0.89	0.88	0.84	6426	130	5600	RG
630	1600	1488	96.3	96.1	95.3	0.89	0.89	0.86	10268	298	7310	RG
710	2250	1489	96.4	96.2	95.3	0.89	0.88	0.86	14430	384	10150	RG
800	3150	1489	96.5	96.2	95.3	0.89	0.88	0.87	20202	712	14230	RG
6 POLE												
450	315	986	94.4	94.2	93.2	0.87	0.86	0.79	3051	55	2950	RG
500	500	987	94.7	94.5	93.4	0.86	0.82	0.74	4838	106	4000	RG
560	800	989	95.5	95.2	94.3	0.87	0.85	0.78	7724	203	5675	RG
630	1120	990	96.0	95.8	95.0	0.88	0.86	0.80	10803	336	7010	RG
710	1600	991	96.2	95.9	95.1	0.88	0.86	0.80	15418	505	10300	RG
800	2500	992	96.8	96.6	96.0	0.88	0.87	0.81	24066	1040	13860	RG

(*) Larger sizes also available

Table applies to machines with the following characteristics:

Rated Voltage: **6 kV ±5%**
 Frequency: **50 Hz ±2%**
 Ambient Temperature: **40 °C**
 Altitude: **≤/ = 1000 m above sea level**

Insulation Temperature Class: **F/B**
 Degree of Protection: **IP 54**
 Mounting Arrangement: **IM 1001**
 Rotor: **Aluminium squirrel cage**
 Cooling: **IC 511**

Bearings: see table

R = Rolling Bearing
S = Sleeve Bearing
N = Self Lubricated (oil)
F = Forced Lubricated (oil)
G = Grease Lubricated