

General

The Ansaldo Sistemi Industriali production scope includes a complete series of “medium” sized synchronous generators, designed and manufactured in the Monfalcone plant. They are intended for installation in any type of generation or co-generation plant and for coupling to any type of prime mover, including steam and gas turbines, diesel and gas engines, hydro turbines and wind turbines. Their design meets the requisites for land, offshore and shipboard applications.

Type designation

The Ansaldo Sistemi Industriali series of synchronous generators covers different types of construction (the V suffix identifies vertical machines), degrees of protection and methods of cooling. Coding indications are in accordance with IEC and NEMA standards.

- **GSN/GSNV:** drip-proof, open loop, self ventilated generators. Standard protection: IP 23. Cooling: IC 01 (DP or WP type I).

- **GSCB/GSCBV:** totally enclosed, open loop, ventilated generators, with provisions to fit external air ducts. Standard protection: IP 44. Cooling: IC 31 (TEPV).

- **GSCR/GSCRV:** totally enclosed, closed loop self ventilated generators with air to water heat exchanger. Standard protection: IP 44. Cooling: IC 81W (TEWAC).

- **GSCT/GSCTV:** totally enclosed, closed loop, self ventilated generators with built on air to air heat exchanger. Standard protection: IP 44. Cooling: IC 611 (TEAAC).

Rotor design

Different rotor designs are provided according to both generator size and number of poles: **Clover leaf design** (used on smaller four pole generators) **Cylindrical rotor** (used on larger medium speed generators) **Solid pole rotor** (used on larger four pole generators) **Spider rotor**, either laminated or fabricated (used on all sizes of low speed generators).

Mounting arrangements

Standard frame sizes are 450 to 1250 (corresponding to the shaft heights in millimeters, IEC 60072). Larger frame sizes are identified with numbers 10, 11, 12, 13...

The most common types of construction are: IM 1001 for frame sizes 450 to 1000 coupled to gas turbines, hydro turbines, medium speed diesel engines; IM 7101, IM 7121, IM 7301, IM 7311 or IM 7321 for larger sizes. Generators coupled to hydro turbines are often in IM V1 configuration. Other types of construction and mounting arrangements are available on request.

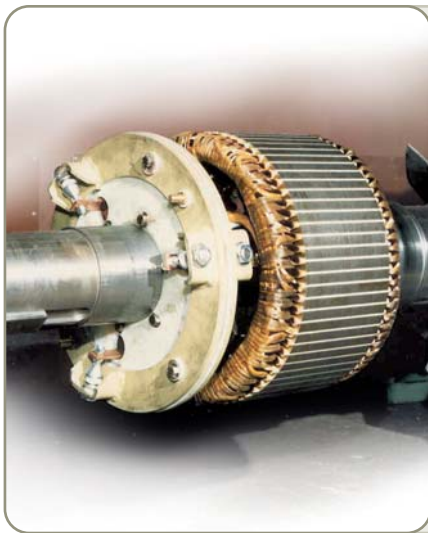
for further details on construction features and excitation system see technical sheets.



The Electric Motors and Generators Business Unit is certified

ISO
9001

ISO
14001



standard

Our standard brushless exciter is an alternator with rotating armature and stationary field. Rotating diodes can be connected in a single or double 3-phase bridge configuration. Diodes are protected by surge suppressors. We can also provide special systems upon request.



special

Control panel

Standard voltage regulation equipment can be supplied free standing or panel mounted for installation inside customer control cubicle.

Standard features:

- Automatic voltage regulator with better than 0.5% accuracy and built in under frequency/over excitation protection and precise reactive load sharing during parallel operation.

Manual voltage regulation loop for commissioning and back up.
Short circuit current support system for shunt type powered systems.

for further details on construction features and excitation system see technical sheets.



FRAME SIZE	kVA	power factor	efficiency @ 0.8 power factor			efficiency @ 1.0 power factor			4 x WR ² kgm ²	Mass max. in kg	Bearings Type-lubr.
			4/4	3/4	2/4	4/4	3/4	2/4			
4 pole											
500	1750	0.8	95.70	95.50	94.70	96.70	96.50	95.90	190	6460	R
560	3100	0.8	96.40	96.20	95.60	97.20	97.10	96.50	425	8840	R
630	4700	0.8	96.70	96.60	95.80	97.50	97.40	96.90	760	13320	S - N/F
710	6500	0.8	97.10	96.90	96.30	97.80	97.70	97.10	1390	15800	S - N/F
800	9500	0.8	97.40	97.10	96.50	98.00	97.90	97.40	2200	22100	S - F
900	17400	0.8	97.80	97.75	97.35	98.35	98.30	98.00	3860	33450	S - F
1000	25200	0.8	97.85	97.70	97.20	98.40	98.25	97.85	6880	44700	S - F
1120	32600	0.8	97.80	97.65	97.05	98.40	98.20	97.70	9650	56950	S - F
1250	40000	0.8	97.80	97.60	97.00	98.40	98.20	97.70	13400	66000	S - F

Table applies to machines with the following characteristics:

Rated Voltage: **6000 V ±5%**
Frequency: **50 Hz ±2%**
Ambient Temperature: **40 °C**
Altitude: **< /= 1000 m above sea level**

Insulation/Temperature Class: **F/B**
Degree of Protection: **> /= IP 23**
Mounting Arrangement: **IM 1001**
Rotor: **Clover leaf/cylindrical**
Cooling: **IC 01**

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