

**Transformer**

Type	Liquid filled
Max Current	7.11 kA + harmonics at nominal voltage ± 10 %
Nominal voltage	30/0.69 kV
Frequency	50 Hz
Impedance voltage	9.5% ± 8.3% at ref. 6.5 MVA
Tap Changer	±2x2.5% (optional)
Loss (P <sub>0</sub> /P <sub>k75°C</sub> )	4.77/84.24 kW
Vector group	Dyn11
Standard	IEC 60076 ECO Design Directive

**Transformer Cooling**

Cooling type	KFWF
Liquid inside transformer	K-class liquid
Cooling liquid at heat exchanger	Glystantin

**Transformer Monitoring**

Top oil temperature	PT100 sensor
Oil level monitoring sensor	Digital input
Overpressure relay	Digital input

**Transformer Earthing**  
Star point ..... The star point of the transformer is connected to earth

**Nominal output and grid conditions**

Nominal power	6600 kW
Nominal voltage	690 V
Power factor correction	Frequency converter control
Power factor range	0.9 capacitive to 0.9 inductive at nominal balanced voltage

**Grid Capabilities Specification**

Nominal grid frequency	50 or 60 Hz
Minimum voltage	85 % of nominal
Maximum voltage	113 % of nominal
Minimum frequency	92 % of nominal
Maximum frequency	108 % of nominal
Maximum voltage imbalance (negative sequence of component voltage)	≤ 5 %
Max short circuit level at controller's grid	82 kA

**Generator**

Type	DFIG Asynchronous
Maximum power	6750 kW @20°C ext. ambient
Nominal speed	1120 rpm-6p (50Hz) 1344 rpm-6p (60Hz)

**Power Consumption from Grid (approximately)**

At stand-by, No yawing	10 kW
At stand-by, yawing	50 kW

**Generator Protection**

Insulation class	Stator H/H Rotor H/H
Winding temperatures	6 Pt 100 sensors
Bearing temperatures	3 Pt 100
Slip Rings	1 Pt 100
Grounding brush	On side no coupling

**Controller back-up**

UPS Controller system	Online UPS, Li battery
Back-up time	1 min
Back-up time Scada	Depend on configuration

**Generator Cooling**

Cooling system	Air cooling
Internal ventilation	Air
Control parameter	Winding, Air, Bearings temperatures

**Transformer Specification**

Transformer impedance requirement	8.5 % - 10.5%
Secondary voltage	690 V
Vector group	Dyn 11 or Dyn 1 (star point earthed)

**Frequency Converter**

Operation	4Q B2B Partial Load
Switching	PWM
Switching freq., grid side	2.5 kHz
Cooling	Liquid/Air

**Earthing Specification**

Earthing system	Acc. to IEC62305-3 ED 1.0:2010
Foundation reinforcement	Must be connected to earth electrodes
Foundation terminals	Acc. to SGRE Standard

**Main Circuit Protection**



Short circuit protection	Circuit breaker
Surge arrester	varistors

**Peak Power Levels**

10 min average	Limited to nominal
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A	EMMISSIONE PER COMMENTI	29/09/2023	3E	ESPOSITO	CLERICI
REV. N°	DESCRIZIONE	DATA	PREPARATO	CONTROLLATO	APPROVATO



 SITO/LOCALITA' **IGLESIAS**

N° Contratto: Questo documento è di proprietà della Società che tutelerà i propri diritti secondo la Legge

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SCALA /

DATA 29/09/2023

**ATTIVITA' DI PROGETTAZIONE PIPELINE WIND SARDEGNA SCHEMI FUNZIONALI DEI SINGOLI AEROGENERATORI**

DISEGNO N°	HH0694A-IG-PD-EE-02	REV. A	FG. Sht. 1	DI of 1
UNITA' DI MISURA	SCALA DI PLOTTAGGIO			