NORWIN 47-ASR-750 kW

TECHNICAL DATA

Nominal electric power:	180/750 kW
Power regulation:	Active Stall Regulation (ASR)
Rotor size:	Diameter 47 m
Rotor speed:	25.5 rpm at full load
Rotor:	Three blades placed upwind of tower.
Swept area:	1735 m²
Tilt angle:	4°
Coning angle:	3.0° forward
Blades make:	LM 21.0 P
Tip speed:	63 m/s at full load
Pitch angle:	ASR
Pitch bearings:	4-point ball bearings
Air brake, normal:	Pitch to -20°, actuated by the ASR regulation system
Air brake, emergency:	Pitch to -85° fail safe, activated by accumulators in hub
Nominal pitch speed:	7.5°/sec.
Mechanical brake:	A fail-safe type disk brake
Brake torque:	1,8 times of nominal torque
RPM max. value:	1600 (50 Hz) or 1920 (60 Hz), observed on the high-speed shaft
Generator:	Closed, 4-pole, single wound, induction, IP54
Generator speed:	1000/1500 (50 Hz) or 1200/1800 (60 Hz) rpm synchronous
Loss in generator:	3%
Generator cut-in:	Thyristor controlled gradual cut-in
Grid connection:	50 Hz - 690 V or 60 Hz - 6000 V
Yaw motors:	4 pcs. With electrical brakes built in
Yaw brakes:	4 pcs. Hydraulic brakes of disk brake type
Yaw bearing:	4-point ball bearing
Tower type:	Conical steel tower (35-65 m hub hight)
Controller:	CC–Electronic / NORWIN A/S (Mitsubishi PLC)
Cut-in wind speed:	3-4 m/s, based on 10-min. average
Cut-out wind speed:	25 m/s, basen on 10-min. average
Mass of blade: (3)	6600 kg
Mass of hub:	8000 kg
Mass of nacelle:	24000 kg
Mass total, excl. tower:	38600 kg
Maximum noise level:	100 dBA

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