

WINDFACT®

Voltage Dips: A Solution for the Grid Code Compliance of Wind Farms in Operation

ENERTRON



GENERAL CHARACTERISTICS

- ➔ A Solution for wind farms with any kind of Squirrel-Cage wind turbines (*).
- ➔ Series Solution connected between wind farm and grid.
- ➔ No need of retrofit or substitution of existing wind turbines.
- ➔ A Solution installed and connected at substation level.
- ➔ A Solution which protects the mechanics of the wind turbine during the voltage recovery after the dip.
- ➔ No affection to the wind turbine manufacturer guaranties.
- ➔ No wind farm availability loses as a result of a system failure.
- ➔ System Start-up and maintenance without affecting the wind farm.

For any other kind of wind turbine generator, please contact us (*)

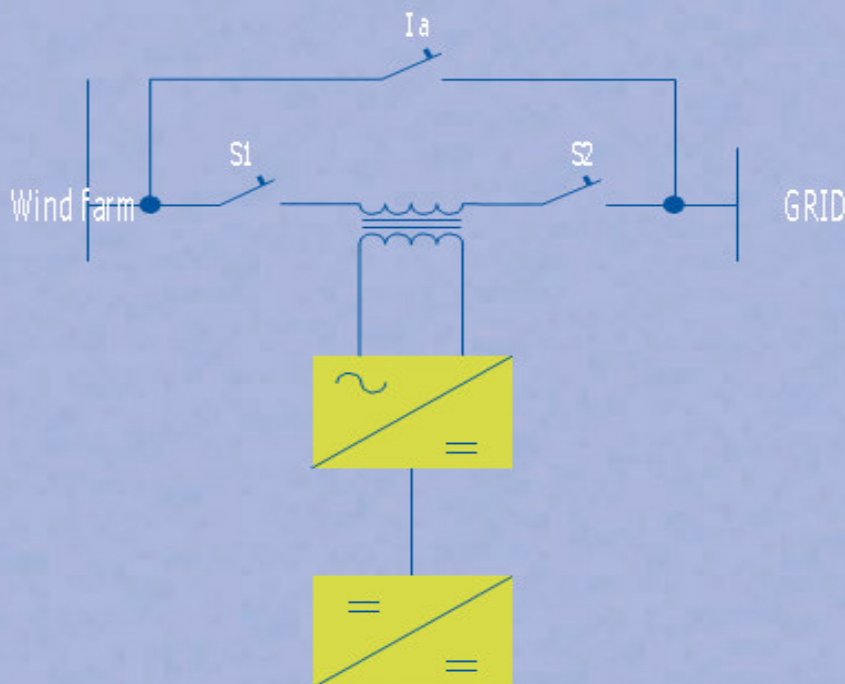


Fig. System connected at substation level.



SYSTEM OPERATION

- ▶ Operation in by-pass mode when there is no dip.
- ▶ Restores wind farm voltage during the voltage dip.
- ▶ During the voltage dip, wind turbines don't disconnect and keep working in the same conditions as they were doing in the previous moment before the dip.
- ▶ Avoids the torque stress which may damage the gearbox of the wind turbine during the voltage recovery period, after the dip.

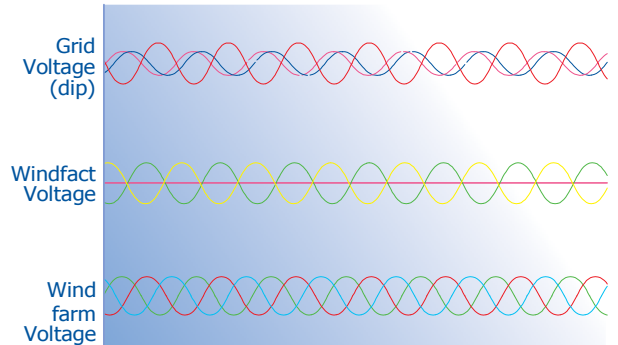


Fig. Two-phase voltage dip with phase shift of $\pm 26^\circ$

WINDFACT MODEL

WINDFACT® Model	Wind farm Power Range (MW)	Estimated Surface (m ²)
N20 / N30	<22,5	134
O20 / O30	22,50 - 32, 60	163
P20 / P30	32,70 - 43,50	221
Q20 / Q30	43,60 - 48,10	221
R20 / R30	48,20 - 51,75	221

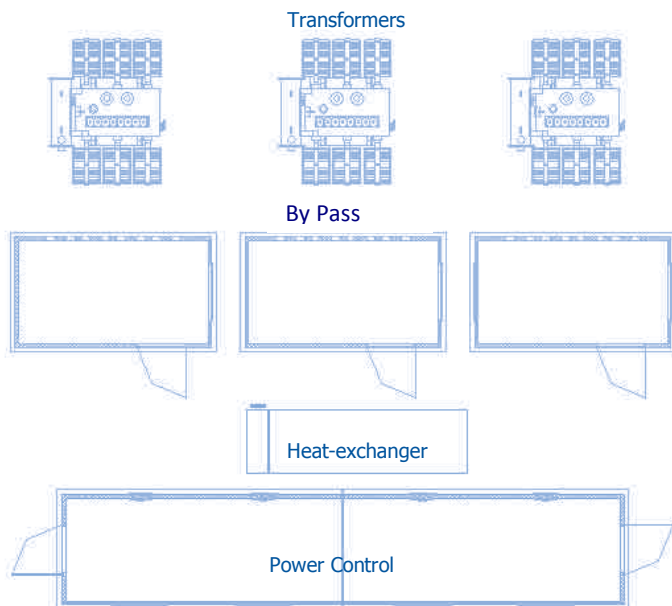


Fig. Layout WINDFACT® system.



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