

### Note on Engineering Details

**No:** DWM-HoBe-extern-002

**Title:** Transition period from IEC 61400-21 Ed. 1.0 (2001-12) to IEC 61400-21 Ed. 2.0 (2008-08)

**Ref.:** GL Wind "Guideline for the Certification of Wind Turbines", Edition 2003 with Supplement 2004.  
Section 10.4 "Electrical Characteristics"

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**Key Words:** Power quality, grid protection, voltage dip, flicker, grid code compliance, LVRT

With publication of the standard IEC 61400-21 Ed. 2.0 (2008-08): „Wind turbines - Part 21: Measurement and assessment of power quality characteristics of grid connected wind turbines“ by the IEC (International Electrotechnical Commission) the former version IEC 61400-21 Ed. 1.0 (2001-12) has been replaced. A transition period has not been constituted by the IEC.

Compared to edition 1 of the standard the new IEC 61400-21 Ed. 2.0 (2008-08) requires additional measurements, e.g. related to low voltage ride through capability (LVRT), grid protection and reconnection time. Since the introduction of the LVRT testing is a major change and may cause significant delays in the process of type testing and type certification, manufacturers of wind turbines are well advised to pay attention to this subject at an early stage of their project.

For type certification Germanischer Lloyd (GL) will accept measurement reports complying with IEC 61400-21 Ed. 1.0 (2001-12) or alternatively with IEC 61400-21 Ed. 2.0 (2008-08). The applicant is free to decide which of the a.m. standards shall be applied.

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