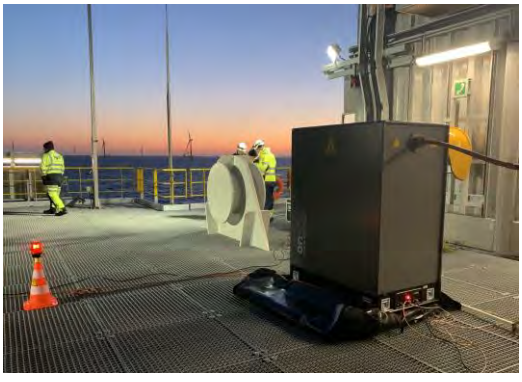
onsite HIGH VOLTAGE

Damped AC System HV110os

For Testing and Diagnostics of 66 kV Inter-Array Cables at Offshore Wind Farms

realDAC® HIGH VOLTAGE



Efficient, integrated testing and diagnostics, comprehensive results

- ✓ Powerful PD monitored damped AC voltage withstand testing with application of IEEE, IEC, CENELEC and Cigré recommendations
- ✓ High sensitive PD measurement and diagnosis with automatic real-time PD localisation
- ✓ Fully integrated dissipation factor (DF) measurement at DAC voltages
- ✓ Very compact and lightweight, built into a special offshore housing
- ✓ All in one onsite testing and diagnosis at 2.0 x U_0 of complete inter-array 66 kV power cables
- ✓ Applicable for on-site testing and diagnosis of long length 66 kV power cables
- ✓ Produces complete finger print for quality control by after-installation testing and for condition assessment by maintenance testing
- ✓ Extended Power version (EP) able to test cable capacitances up to 15 µF.
- ✓ Optional dual sided PD measurement and localisation, for long cables (ds version)

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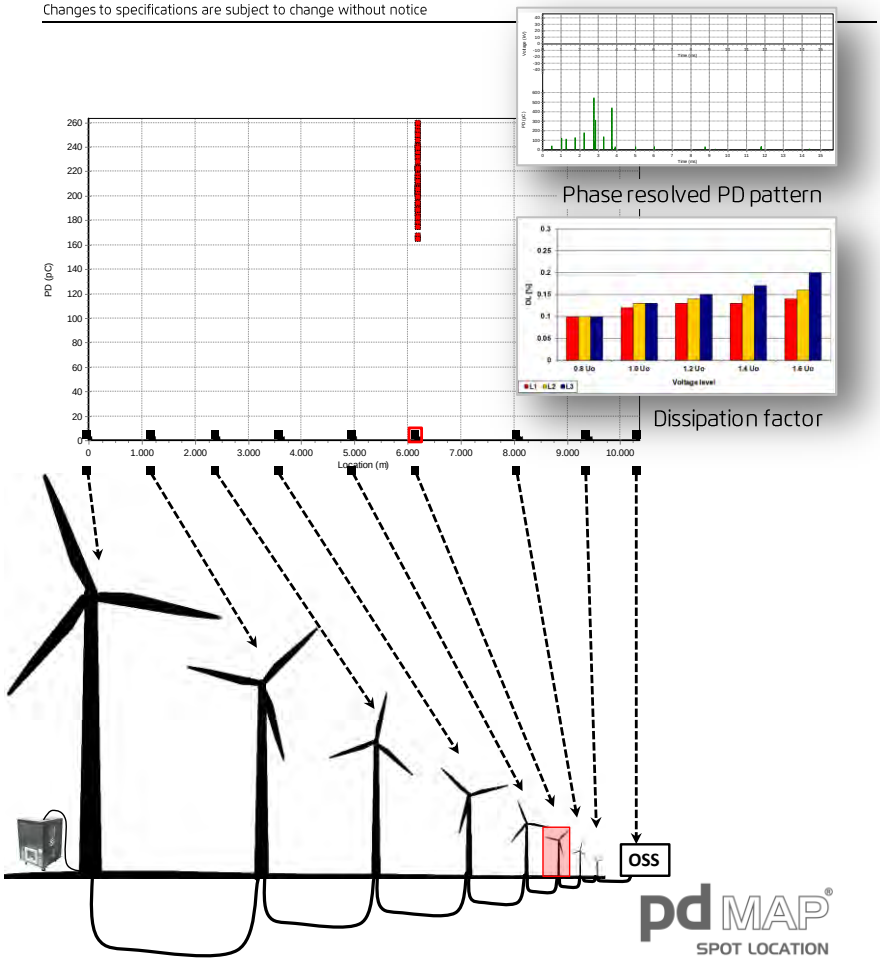
Technical Data: HV110os, HV110osEP, HV110osEPds

For cable systems	Up to 66 kV
Max. output voltage	110 kV_{peak} /78 kV_{rms} Precision +/- 1 % Resolution 0.1 kV
Frequency range damped AC	20 Hz … 800 Hz
DAC Test object capacitance range	0.03 … 12uF, 15 µF EP version
HV energizing current	12 mA, 24 mA EP version
PD measuring range	10 pC … 150 nC
PD measuring bandwidth	Acc. to IEC 60270
PD localisation bandwidth	150 kHz … 50 MHz
PD measuring resolution	1 pC
PD localisation accuracy	<1 % of cable length, +/- 6 m for ds version
TDR joint localisation in calibration mode	Integrated
Dissipation Factor (DF)measurement	0.10 … 10.00 %
Analysis software	DAC Explorer software, viewing, processing, analysing, reporting
Power supply	1 phase 220 … 240 VAC 48 … 63 Hz, 2500 VA, 5000 VA for EP version
Net weight	approx. 189 kg, 210 kg for EP version
Dimension (W x D x H)	110 x 80 x 150* cm

* without feet
Changes to specifications are subject to change without notice



DAC PD mapping from a PD measurement of a complete string, indicating the location of the PD defect in the string (cable termination) at WTG 6 (6190 meter from the measurement location WTG1). The measurement can be performed either from the WTG side or from the OSS side.

Applications

- An effective after-laying testing technology for off-shore cable testing
- To ensure a reliable operation of the inter-array cables
- Providing contractors, the basis for lowering the risks during the warranty period
- To enable service providers during operation a good basis for condition-based maintenance
- Capable of performing all necessary onsite measurements on all types of inter-array power cables up to 66 kV
- PD monitored voltage withstand testing and non-destructive diagnostic testing
- Finger printing by voltage testing, PD and tan δ during whole installation and operation process
- Testing in line with IEC 60840, IEEE 400, IEEE 400.4 and CENELEC HD 620
- Comprehensive PD measurement capabilities according to IEC 60270, IEC 60885-3, IEEE 400.3

Features

- one single test can localise multiple defects in cable insulation, terminations and joints
- Compact DAC system in an off-shore housing suitable for testing complete inter-array cables
- PD monitored withstand test by applying DAC voltage excitations up to 2.0 x Uo for 66 kV cables
- Measurement of PD level, PD inception and PD extinction voltage and Phase resolved PD analysis
- Online "Live" PD Mapping
- Extended diagnosis with tip-up DF (Tanδ) values at DAC voltages
- Wireless controlled calibrator, for simple and fast calibration
- Calibration by cable length or propagation velocity
- Automatic breakdown detection function during charging and testing
- Optional Extended Power (EP) version for extra-long MV cables with capacitances up to 15 µF.
- Expandable with double-sided measuring systems (ds series). With a PD detector at both cable ends. This allows PD to be located even on very long cables, and the location accuracy is significantly higher

onsite high voltage group
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