

PD30-E

Partial Discharge Diagnostics System



The b2 electronic GmbH PD30E Partial Discharge (PD) Diagnostics System allows (in combination with a b2 HVA VLF generator) PD measurement and location on medium voltage cables, rotating machines and transformers.

- **Partial Discharge and extendable with Tan Delta Diagnostics (optional)**
- **Diagnostics according IEEE.2-2013 and IEC 60270**
- **Very powerful high voltage generators (optional) for very long cables.**

PD diagnosis on medium and high voltage cable offers the possibility of early detection of vulnerabilities through a precise localization of PD faults in cables and their connections (joints and terminations), often caused by mechanical damage or a faulty installation process.

Features

- Small, light and portable units
- b2 Suite® - comprehensive diagnostic software and database
- Very simple and clear measurement process
- Manual and automatic diagnostics mode
- Exact PD localization (PD mapping)
- Phase-resolved PD display (PD Pattern)
- PD Magnitude
- PD inception and extinction
- PD rate
- High noise suppression by filtering
- Extensive reporting
- Test setup according to IEC 60270
- PD measurement unit in battery operation
- Extendable with Tan Delta Diagnostics (optional)
- Display of cable route on OpenStreetMap®

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- The only in IEEE 400.2-2013 described VLF voltage shape (sinus) for PD and TD Diagnostics (optional)
- PD mapping - precise localization of partial discharge
- TE-phase resolution (PD pattern) to categorize type of fault
- Inception and extinction voltage
- Load-independent frequency

b2 electronic diagnostics system PD30E (combined with VLF generator¹) provides a pure sinusoidal output voltage with stable frequencies. This is a pre-condition of direct comparison of PD diagnostics results across cables of different lengths. The characteristics at ever-changing frequencies and varying output voltage waveforms provide no basis for reliable comparisons. Pure sinusoidal output voltage is recommended by standards (such as IEEE400.2-2013) and therefore clear guidelines and test procedures are provided.

The comprehensive control and diagnostics software b2 Suite[®] makes the process of diagnostics easy as never before, guiding the operator step by step through the entire process. The b2 Suite[®] Data Base allows your data to be processed, stored and made available for future reference in just a few clicks.



HVA28TD

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¹ VLF (0.1 Hz) high voltage generator (required) with integrated Tan Delta Diagnostics (option) is not in scope of delivery.



Compact, lightweight and portable solutions

From small portable units for on-site use (e.g. off-shore) to built-in solutions for „test van“ versions.



Automatic Mode

In addition to the manual, incremental, and self-explanatory menu, the system also offers an automatic measurement mode.



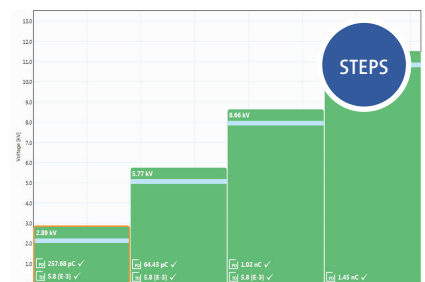
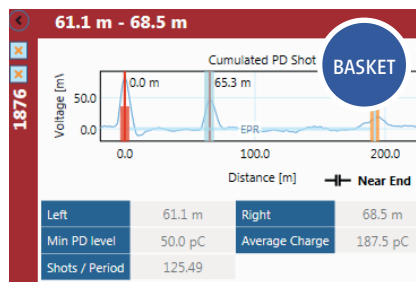
b2 Suite[®] software

b2 Suite[®] provides a comprehensive „all-in-one“ software solution for testing, diagnosis and management with a comprehensive database.

b2 Suite[®]

Diagnostics and Data Base Software

- Automatic or manual modes for testing and PD diagnostics
- Precise location of PD events on cable insulation, terminations and joints
- Presentation of PD events over total cable length
- Phase-resolved presentation (pattern) of PD
- PD inception- and extinction voltage
- Guided Diagnostics Process - **leads the operator through diagnostics step by step**
- Automatic & manual gain and trigger setting
- Comprehensive Data Base
- Sets or recommends measuring parameters
- Reporting by a mouse-click
- Algorithms for PD detection
- Recommended by Standards (CENELEC & IEEE), with guidance for interpretation in literature
- Analog and digital frequency filters
- Direct Mapping of cable trace in OpenStreetMap[®]
- PD mapping
- Measurement in as little as 15 min incl. reporting
- True sinusoidal voltage form and constant frequency for comparable results
- Display of parasitic frequencies (bandpass and bandstop for parasitic frequencies)



Algorithms for detection of PD activities

The b2 Suite[®] distinguishes between valid and invalid PD signals, and then separates them. This facilitates easy interpretation of results for the user.



Database

Comprehensive b2 Suite[®] database enables easy analysis and evaluation of the PD measurement. A fast search function for archived measurements and easy reproducibility of a measurement are among the key features.



Reporting

Reporting by a mouse click – simple or comprehensive. Individual design for reporting and easy integration of data and files.

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Partial Discharge Diagnostics (PD)		
Article number		SH0234
Input supply voltage		110 / 240 V AC, 50/60Hz
Operating voltage	sine wave	1 - 24 kV rms / 34 kV peak
	frequency	0.01 - 0.1 Hz in steps of 0.01 Hz (default 0.1 Hz) - auto frequency
Capacitance	HV Coupling Capacitor	~ 1 nF
	HV Filter	4 nF
Dimensions		L 300 x W 250 x H 486mm
Weight		29 kg
Filter		analog & digital
Velocity Range (v/2)		10 - 150 m/μs
Measuring Range		100 km
PD background level		< 10 pC
PD localization	accuracy	1%
PD resolution		0.1 pC 0.1 m
Sample rate		200 MS/s
Bandwidth		100 MHz analog filter
Signal Amplification		0 - 52 dB (1 channel) 0 - 72 dB (2 channel)
Environmental conditions	storage	- 20°C to + 65°C
	operating	- 5°C to + 45°C

Control and Diagnostics Software b2 Suite®	
Features	<ul style="list-style-type: none"> • Automatic or manual modes for PD Diagnostics • Guided Diagnostics Process • Comprehensive Data Base
Control	b2 VLF generator control and b2 Suite® Software
Measurement	Cable length with PD activities, PD Location, PD Mapping, Background Noise, PD Magnitude, Sine Wave Imposed display, PDIV and PDEV, etc...
System requirements	Windows 8 & 10, 64 Bit Operating System
Scope of delivery	Unit , Calibrator, HV Cable, Power and earthing cable, Corona Shields, Transport Boxes (2), b2 Suite Software (1 licence), Operating Manual, Data Base
NOT in scope of delivery of delivery	Computer/PC, VLF (0.1 Hz) Generator (Voltage Source)

Please note: VLF (0.1 Hz) high voltage generator (required) is not in scope of delivery.

DHV1309 Rev03 - ENGLISH - Subject to alternations. Errors excepted. Illustrations are not binding.

