

PD-TaD 62, PD-TaD 80

BAUR portable PD diagnostics system

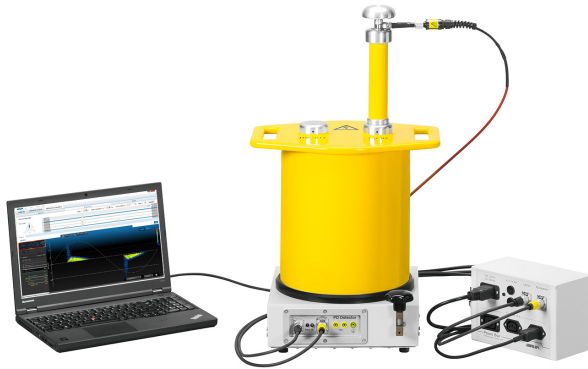


Figure: PD-TaD 62 with laptop and Power Box

A new dimension in cable condition evaluation

- Better decisions based on a comprehensive condition evaluation of the cable network
- Saves time on site thanks to automated sequences and report generation
- Suitable for mobile use or system integration

The PD-TaD portable PD diagnostics system is used in combination with a BAUR VLF HV generator to perform partial discharge measurement and location.

When the VLF HV generator is equipped with a dissipation factor measurement function, two effective and proven methods for evaluating the ageing condition of medium-voltage cables and cable accessories, namely PD measurement and dissipation factor measurement, can be combined. The result is a one-step cable analysis with early detection and location of weak points through PD measurement, in addition to the assessment of dielectric ageing based on the dissipation factor values.

The ability to perform PD and dissipation factor measurements simultaneously saves a lot of time and leads to increased efficiency during inspection of the entire cable network. The simultaneous analysis of dissipation factor values and PD activities also helps detect hidden fault locations (e.g. moist joints).

Light, robust, and portable: the PD-TaD 62 is ideal for mobile use in the field. The PD-TaD 80 is particularly suitable for integration in cable test vans.

- PD measurements up to $44 \text{ kV}_{\text{rms}}$ or $57 \text{ kV}_{\text{rms}}$
- Excellent precision thanks to high coupling capacitance and sensitivity ($\leq 1 \text{ pC}$)
- Light and compact

Functions

- PD measurement and calibration of the PD measuring system according to IEC 60270
- Location of PD activities in cable insulation, joints, and terminations
- Measurement of
 - PD level and frequency
 - PD inception and extinction voltages
 - PD phase resolving for classification of PD fault locations
- Parallel dissipation factor and PD measurement*
- Cable testing with parallel PD measurement
- Cable testing with parallel dissipation factor measurement*
- Full Monitored Withstand Test*

Features

- Coupling capacitor incl. measurement impedance and PD measuring unit in one device
- Integrated filter for suppressing noise signals
- Stable data transmission and power supply via Power over Ethernet (PoE); no batteries needed
- Excellent noise suppression due to
 - compact design
 - galvanic isolation between PD measuring unit and laptop
 - central power supply
- Easy test assembly: identical test assembly for PD and dissipation factor measurement
- Integrated device for detecting leakage currents for dissipation factor measurement
- Intuitive user interface in multiple languages adapted to the work flow

* A VLF HV generator with dissipation factor measurement function is required

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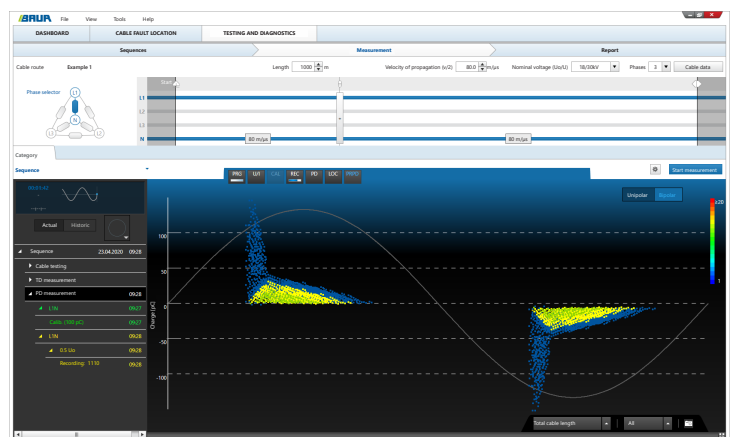
Available methods and combinations of methods

Method	Significance and benefits	Additional equipment
PD measurement	<ul style="list-style-type: none"> ▪ Diagnostics of local weak points ▪ Location of faults in the cable insulation 	BAUR VLF HV generator
Parallel dissipation factor and PD measurement	<ul style="list-style-type: none"> ▪ Combination of statements of a dissipation factor measurement and PD measurement ▪ Shorter measuring time with simultaneous dissipation factor and PD measurement ▪ Better detection of hidden fault locations (e.g. moist joints) and simultaneous analysis of dissipation factor values and PD activities 	BAUR VLF HV generator with dissipation factor measurement function
Cable testing with parallel PD measurement	<ul style="list-style-type: none"> ▪ Intelligent cable testing ▪ Diagnostics of local weak points ▪ Location of faults in the cable insulation 	BAUR VLF HV generator
Cable testing with parallel dissipation factor measurement	<ul style="list-style-type: none"> ▪ Intelligent cable testing ▪ Assessment of the dielectric condition of the insulation ▪ Indication of PD, water trees, moisture in joints, etc. 	BAUR VLF HV generator with dissipation factor measurement function
Full MWT	<ul style="list-style-type: none"> ▪ Combination of statements of a dissipation factor measurement and PD measurement ▪ Shorter measuring time with simultaneous dissipation factor and PD measurement ▪ Intelligent cable testing ▪ Better detection of hidden fault locations (e.g. moist joints) and simultaneous analysis of dissipation factor values and PD activities 	BAUR VLF HV generator with dissipation factor measurement function

Prerequisite: Availability of the corresponding software functions of the BAUR Software 4.



Example of integration in a cable test van



Example: PD measurement – phase-resolved PD presentation (PRPD)

Technical data

Partial discharge location		Power Box	
Theoretical measurement range	10 – 12,800 m (at v/2 = 80 m/μs)	Input voltage	90 – 264 V, 47 – 63 Hz
Velocity of propagation	50 – 120 m/μs	Power consumption	Max. 3500 VA
Sampling rate	100 MSamples/s (10 ns)	Max. current	16 A
PD measurement range	1 pC – 100 nC	PD-TaD interface	Ethernet (PoE)
Accuracy	Approx. 1% of cable length	Dimensions (W x H x D)	160 x 120 x 240 mm
Resolution	0.1 pC / 0.1 m	Weight	Approx. 1.7 kg
Calibrator		BAUR Software 4	
Electrical charge (pulses)		Information about the BAUR Software 4 and the system requirements can be found in the data sheet for BAUR Software 4 cable testing and diagnostics.	
CAL1B	0.1 / 0.2 / 0.5 / 1 / 2 / 5 / 10 nC		
CAL1E	0.5 / 1 / 2 / 5 / 10 / 20 / 50 nC		
Power supply	9 V block battery, DIN/IEC 6F22		

General	PD-TaD 62	PD-TaD 80
HV coupling unit:		
Input voltage	44 kV _{rms} / 62 kV _{peak}	57 kV _{rms} / 80 kV _{peak}
Capacitance of coupling capacitor	10 nF	8 nF
PD measuring unit:		
Power supply and data transmission	Via Power Box (Power over Ethernet)	Via Power Box (Power over Ethernet)
Signal gain	0 – 75 dB	0 – 75 dB
Ambient temperature (operational)	-10°C to +50°C	-10°C to +50°C
Storage temperature	-20°C to +60°C	-20°C to +60°C
Rel. humidity	Non-condensing	Non-condensing
Dimensions (W x H x D)	410 x 463 x 369 mm	410 x 593 x 369 mm
Incl. HF filter	410 x 668 x 369 mm	410 x 798 x 369 mm
Transport case 1	800 x 581 x 482 mm	800 x 581 x 482 mm
Transport case 2 (accessories)	627 x 497 x 303 mm	627 x 497 x 303 mm
Weight	Approx. 17 kg	Approx. 21 kg
Incl. HF filter	Approx. 17.5 kg	Approx. 21.5 kg
Transport case 1	Approx. 38 kg	Approx. 42 kg
Transport case 2 (accessories)	Approx. 22.5 kg	Approx. 22.5 kg
Degree of protection	IP54	IP54
Safety and EMC	CE-compliant in accordance with Low Voltage Directive (2014/35/EU), EMC Directive (2014/30/EU), EN 60068-2-ff Environmental testing	

Standard delivery

PD-TaD 62 or PD-TaD 80 portable PD diagnostics system

- Transport case 1
 - HV coupling unit with integrated PD measuring unit
 - HF filter
 - Mounting brackets
- Transport case 2
 - Power Box
 - CAL1B or CAL1E calibrator
 - HV connection set incl. adapters
 - Connection cable set
 - User manuals
- Laptop incl.
 - pre-installed Windows operating system
 - pre-installed BAUR Software 4 (cable testing, PD measurement)
 - Carrying bag

Accessories and options

- CAL1B calibrator
- CAL1E calibrator
- BAUR Software 4 for office PC (office installation)

Optional software functions

- Mapping (available countries on request)
- GIS interface
- TD measurement (dissipation factor measurement)
- TD || PD measurement (parallel dissipation factor and partial discharge measurement)

A VLF HV generator with dissipation factor measurement function is required for dissipation factor measurements.

Information on individual functions and the required system configuration can be obtained from your BAUR representative.

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