

PD-TaD 80

BAUR portable PD diagnostics system

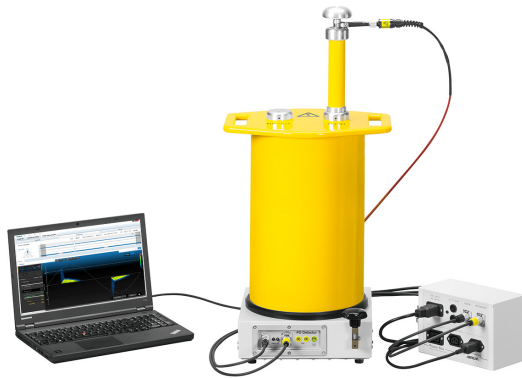


Figure: PD-TaD 80 with laptop and Power Box

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
- The lightest and most compact PD measuring device up to $80 \text{ kV}_{\text{peak}}$: Saves space and weight in the cable test van

The PD-TaD 80 portable PD diagnostics system is used in combination with a BAUR VLF HV generator for carrying out:

- Partial discharge testing and location
- VLF cable testing with parallel partial discharge testing
- Dissipation factor measurement*

With the partial discharge testing and the dissipation factor measurement, two effective and proven methods for evaluating the ageing condition of medium-voltage cables and cable accessories have been combined in a single compact and portable device. The result is comprehensive one-step cable diagnostics: early detection and localisation of weak points through a PD measurement, in addition to the evaluation of dielectric ageing based on the dissipation factor values.

Light, robust and portable: PD-TaD 80 is ideal for integration in cable test vans and, in combination with PHG portable, is also suitable for mobile use in the field.

* Available methods and BAUR equipment required for these, can be found on page 2.

- PD testing up to $57 \text{ kV}_{\text{rms}}$ / $80 \text{ kV}_{\text{peak}}$
- Excellent precision thanks to high coupling capacitance (8 nF) and sensitivity ($\leq 1 \text{ pC}$)

Functions and features

- 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 faults (option)
- Dissipation factor measurement*
- Partial discharge testing and calibration of the measurement setup according to IEC 60270
- At 21 kg, the lightest and most compact PD measuring device up to $80 \text{ kV}_{\text{peak}}$ in the market
- Excellent precision thanks to high coupling capacitance (8 nF) and sensitivity ($\leq 1 \text{ pC}$)
- Coupling capacitor incl. measurement impedance and PD measuring unit in one device
- Easy test setup: identical test setup for partial discharge testing and dissipation factor measurement
- 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 structure
 - galvanic isolation between PD measuring unit and laptop
 - central power supply
- Integrated device for detecting leakage currents for dissipation factor measurement*
- Intuitive user interface in multiple languages adapted to the work flow
- Time and cost saving for onsite measurement
- For integration into cable test vans
- Further details on dissipation factor and partial discharge measurement can be found in the BAUR Software 4 cable testing and diagnostics data sheet

Precise and reliable measurements

VLF truesinus® - A voltage shape for all methods and method combinations

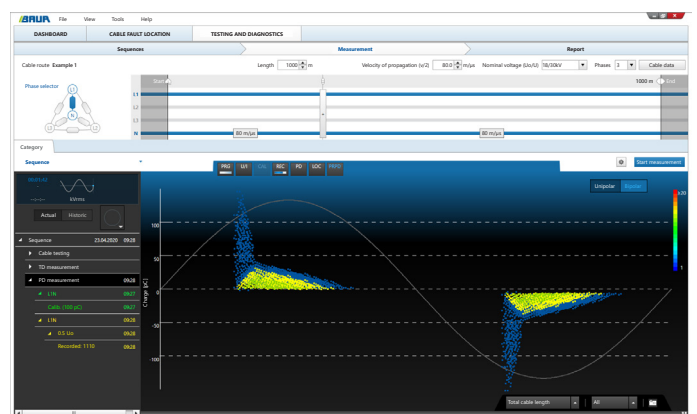
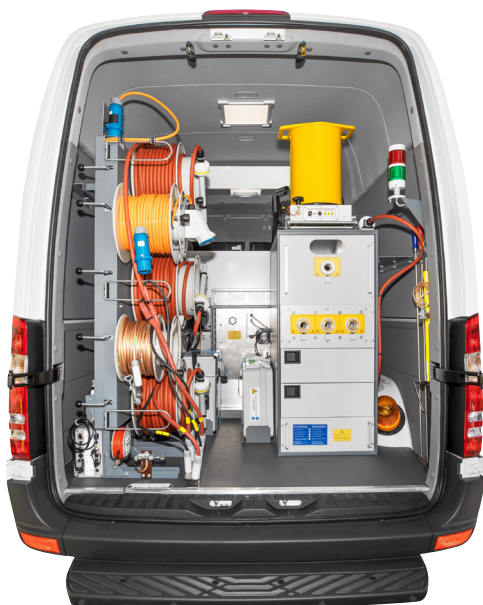
VLF truesinus® is the only voltage shape that enables both the reliable voltage tests as well as precise dissipation factor measurements and partial discharge testing. Unlike other voltage shapes, the VLF truesinus® voltage is load-independent, symmetrical and continuous. This is a prerequisite for high precision as well as reproducibility and comparability of measurement results.

Available methods and combinations of methods

| Method | Significance and benefits | Required equipment* |
|--|--|--|
| PD testing | <ul style="list-style-type: none"> ▪ Diagnostics of local weak points ▪ Location of faults in the cable insulation | PD-TaD 80 & PHG 70 / PHG 80 / PHG 70 portable / PHG 80 portable / viola |
| VLF cable testing with parallel PD testing | <ul style="list-style-type: none"> ▪ Intelligent withstand voltage test ▪ Diagnostics of local weak points ▪ Location of faults in the cable insulation | PD-TaD 80 & PHG 70 / PHG 80 / PHG 70 portable / PHG 80 portable / viola |
| Dissipation factor measurement | <ul style="list-style-type: none"> ▪ Evaluation of the dielectric condition of the insulation ▪ Indication of PD, water trees, humidity in joints, etc. | PD-TaD 80 and PHG 70 TD / PHG 80 TD / PHG 70 portable with TD module / PHG 80 portable with TD module / viola TD |

*If you already have a VLF generator, please ask BAUR GmbH or your nearest BAUR representative whether your VLF generator is equipped for all measurement methods with PD-TaD 62.

Example of integration in a cable test van



Example: PD testing – phase-resolved PD presentation, PRPD

Technical data

| PD-TaD 80 | |
|---|---|
| HV coupling unit: | |
| Input voltage | 57 kV _{rms} / 80 kV _{peak} |
| Capacitance of coupling capacitor | 8 nF |
| PD measuring unit: | |
| Power supply and data transmission | Via Power Box (Power over Ethernet) |
| Signal gain | 0 – 75 dB |
| Degree of protection | IP54 |
| Dimensions (W x H x D) | Approx. 410 x 593 x 369 mm |
| incl. HF filter | Approx. 410 x 798 x 369 mm |
| Weight | Approx. 21 kg |
| incl. HF filter | Approx. 21.5 kg |
| Calibrator | |
| Electrical charge (pulses) | |
| 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 |
| Partial discharge location | |
| Theoretical measurement range | 10 – 12,800 m (at v/2 = 80 m/μs) |
| Velocity of propagation | 50 – 120 m/μs |
| Sampling rate | 100 MSamples/s (10 ns) |
| PD measurement range | 1 pC – 100 nC |
| Accuracy | Approx. 1% of cable length |
| Resolution | 0.1 pC / 0.1 m |
| Dissipation factor measurement | |
| Automatic detection and compensation of leakage currents | Integrated |
| For more details, see the data sheet for the respective VLF HV generator | |
| Power Box | |
| Input voltage | 90 – 264 V, 47 – 63 Hz |
| Power consumption | Max. 3,500 VA |
| Max. current | 16 A |
| PD-TaD 80 interface | Ethernet (PoE) |
| Dimensions (W x H x D) | 160 x 120 x 240 mm |
| Weight | Approx. 1.7 kg |
| BAUR Software 4 | |
| Details about the BAUR Software 4 and the system requirements can be found in the data sheet for the BAUR Software 4. | |
| General | |
| Ambient temperature (operational) | -10°C to +50°C |
| Storage temperature | -20°C to +60°C |
| Rel. humidity | Non-condensing |
| 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 |
| Transport case: Weight and dimensions (W x H x D) | |
| Transport case 1 with PD-TaD 80 | Approx. 42 kg; 800 x 581 x 482 mm |
| Transport case 2 with accessories | Approx. 22.5 kg; 627 x 497 x 303 mm |

Standard delivery

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 acc. to quotation with pre-installed Windows 10 Ultimate and BAUR Software 4, incl. carrying bag

Standard delivery for integration into cable test vans acc. to quotation

Accessories and options

- CAL1B calibrator
- CAL1E calibrator

Optional software functions

- Dissipation factor measurement in combination with PHG portable VLF test system* with TD module
- BAUR GeoBase Map (countries available on request)
- GIS interface

* not included in the standard delivery of the PD-TaD 80

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