The PD-TaD 60 portable PD and tan δ diagnostics system is used in combination with a BAUR VLF generator for carrying out:

- Partial discharge measurement and location
- Dissipation factor measurement* (simultaneously with the PD test)

Thus, 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 a one-step 360° cable analysis with early detection and localisation of weak points through a PD test, in addition to the evaluation of dielectric ageing based on the dissipation factor values.

The ability to perform partial discharge and dissipation factor measurements simultaneously saves a lot of time and leads to increased efficiency during inspection of the entire cable network. The simultaneous monitoring of tan δ values and PD activities, also detects hidden faults (e.g. moist joints).

With the BAUR PD-TaD 60, the software-assisted measurement is performed automatically and the measurement results are visible immediately – precise and clear. A crucial advantage: the device is ready to use immediately, no intensive training is needed.

* With VLF generator with tan δ measurement function

NEW

- Parallel dissipation factor and partial discharge measurement
- At 17.5 kg, the lightest and most compact PD measuring device in the market
- Better overview of the cable condition with Full Monitored Withstand Test (VLF cable testing with parallel dissipation factor and partial discharge measurement)
- See page 2 for other available methods and combinations of methods
- Coupling capacitor incl. measurement impedance and PD measuring unit in one device
- PD phase resolving for classification of PD faults
- Integrated filter for suppressing noise signals from the VLF generator
- Stable data transmission and power supply via a PoE cable (PoE = Power-over-Ethernet)
- No battery required!

Features

- Partial discharge measurement and calibration of the measurement setup according to IEC 60270
- Detection of PD level, PD inception and extinction voltage as well as PD frequency
- Exact location of PD activities in cable insulation, joints and terminations
- Excellent noise suppression due to
  - compact structure
  - Galvanic isolation between PD measuring unit and laptop
  - Central power supply
- Reliable tan δ measurement results with frida TD or viola TD using proven BAUR technology
- Integrated device for detecting leakage currents for dissipation factor measurement
- Easy operation with the BAUR software – all-in-one software solution for measurement and evaluation
- Robust design and central power supply – specially developed for mobile use
Full Monitored Withstand Test
Combination of methods for more significant information

With the BAUR PD-TaD 60 combined with a BAUR VLF generator with tan δ measurement function, you can measure dielectric losses and test the cable route for partial discharges during the VLF cable test. This combination of methods is called **Full MWT** and delivers significantly more information than the cable test alone. While the cable test shows whether the cable system can withstand a load (e.g. 2 x Uo) over a specified test duration, the dissipation factor measurement enables an evaluation of the condition of the cable insulation. Moreover, a partial discharge measurement shows and precisely locates the PD faults. The highlight of MWT is the condition-based test duration: If allowed, the test duration can be shortened, which in turn lowers costs. In this way, the cable is only exposed to the increased test voltage for the required duration.

### Available methods and combinations of methods

<table>
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<th>Method</th>
<th>Measurement sequence</th>
<th>Significance and benefits</th>
<th>BAUR equipment</th>
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</thead>
<tbody>
<tr>
<td>VLF test</td>
<td><img src="image" alt="VLF Test" /></td>
<td>• Easy voltage test (Verdict: Pass/Fail)                                                                直接电压测试（判决：通过/不通过）</td>
<td>frida / viola</td>
</tr>
<tr>
<td>tan δ measurement</td>
<td><img src="image" alt="tan δ measurement" /></td>
<td>• Evaluation of the dielectric condition of the insulation, indication of PD                                                                                             绝缘的电介质条件的评估，示意图显示 PD 的存在</td>
<td>frida TD / viola TD</td>
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<tr>
<td>PD test</td>
<td><img src="image" alt="PD Test" /></td>
<td>• Diagnosis of local weak points and their location</td>
<td>PD-TaD 60 &amp; frida / viola</td>
</tr>
</tbody>
</table>
| Simultaneous tan δ and PD test | ![Simultaneous tan δ and PD Test](image) | • Combination of statements of a tan δ measurement and PD test  
• Shorter test duration with simultaneous tan δ and PD measurement  
• Better detection of hidden faults (e.g. moist joints) through the conditioning of weak points and simultaneous monitoring of tan δ values and PD activities | PD-TaD 60 & frida TD / viola TD |
| MWT with tan δ       | ![MWT with tan δ](image) | • Evaluation of the dielectric condition of the insulation, indication of PD  
• Intelligent withstand voltage test  
• Shorter test duration for cables in good condition | frida TD / viola TD |
| MWT with PD          | ![MWT with PD](image) | • Location of faults in the cable insulation  
• Intelligent withstand voltage test  
• Shorter test duration for cables in good condition | PD-TaD 60 & frida / viola |
| Full MWT             | ![Full MWT](image)   | • Evaluation of the dielectric condition of the insulation, indication of PD  
• Location of faults in the cable insulation  
• Intelligent withstand voltage test with shorter test duration for cables in good condition  
• Shorter test duration with simultaneous tan δ and PD measurement  
• Better detection of hidden faults (e.g. moist joints) through the conditioning of weak points and simultaneous monitoring of tan δ values and PD activities | PD-TaD 60 & frida TD / viola TD |
Standard delivery includes

- PD-TaD 60 incl. laptop
- BAUR system software
- Connection set incl. connection cable, CAL18 calibrator and HF filter
- Power Box
- Mains supply cord
- Transport case for all PD-TaD 60 components
- User manual

Technical data

HV coupling + PD measuring unit

HV coupling:
- Input voltage: 42.5 kV\text{rms} / 60 kV\text{peak}
- Capacitance of coupling capacitor: 8 nF

PD measuring unit:
- Power supply: Via Power Box (PoE cable)
- Signal amplification: 0 – 75 dB
- Dimensions (W x H x D): 410 x 497 x 320 mm incl. HF filter 410 x 702 x 320 mm
- Weight: Approx. 17.3 kg incl. HF filter Approx. 17.9 kg

Calibrator CAL18
- Pulse charging: 0.1 / 0.2 / 0.5 / 1 / 2 / 5 / 10 nF
- Power supply: 9 V block battery, DIN/IEC 6F22

BAUR software
- Multilingual user interface: In 23 languages
- For more details, see the data sheet for BAUR software PD measurement

Partial discharge location
- Theoretical measurement range: 10 to 12,800 m (at 80 m/μs)
- Propagation speed: 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 & MWT
- Automatic detection and compensation of leakage currents: Integrated
- Measurement control: With BAUR VLF generator frida TD or viola TD
- For more details, see the data sheet for the respective VLF generator

Laptop
- Lenovo ThinkPad T540 or according to offer
- Processor: Intel Core i5
- Operating system: Microsoft Windows 7 Professional
- Integrated graphics: Intel HD Graphics 4600 1 GB
- Display: 15.6", LED background lighting
- Working memory: 4 GB
- Hard disk: 500 GB HDD / 7200 rpm
- Ports and interfaces:
  - USB 3.0 (4)
  - Mini-display port
  - VGA
  - Headphones / microphone combi-port
  - SD card reader

Power Box
- Input voltage: 90 – 264 V, 47/63 Hz
- Power rating:
  - VLF generator: 3500 W
  - Laptop: 500 W
- Max. current: 16 A
- Dimensions (W x H x D): 160 x 120 x 240 mm
- Weight: 1.7 kg
- Data interface: PoE injector
- Connection cable:
  - Power Box – laptop (Ethernet und power supply): 2.5 m
  - Power Box – HV generator: 2.5 m
  - Power Box – power supply: 2.5 m
  - Power Box – HV coupling (PoE): Galvanic isolation: 4 kV Length: 10 m Optional 25 m, 50 m, 80 m

General
- Ambient temperature (operational): -10 °C to +50 °C
- Storage temperature: -20 °C to +60 °C
- Humidity: Non-condensing
- Height above sea level: 2000 m