

# BAUR Online PD Spot Tester liona



## Reliable, cost saving, easy to use

- › Automatic PD detection during normal mains operation (without switching off the cable route)
- › With DeCIfer® technology: PD identification based on 500 million measurement results
- › Precise online PD mapping with iPD transponder

liona is a portable online PD spot tester for measuring and locating partial discharges in cables and switchgear during normal mains operation.

liona allows the testing of cable systems and electrical equipment for partial discharge activities online and without having to switch off, and generates trend analyses. Even a spot test (duration: 5-10 minutes) is capable of reliably assessing the current status of your system. This keeps you constantly informed of when it is necessary to intervene and further maintenance is required, e.g. comprehensive offline diagnostic measurements.

Using the DeCIfer® algorithm by IPEC Ltd, the core of the technology, the unit is able to clearly differentiate between noise signals and partial discharges. liona therefore provides meaningful results even in environments with high noise levels.

With the iPD transponder - available as an optional extra - it is even possible to precisely locate partial discharges and determine the cable length during operation.

## Applications

- Online PD spot testing (typical 5 to 10 minutes per cable):  
Allows a large number of MV and HV plant items to be tested for PD activities
- Online PD mapping:  
Allows to identify the source of the PD along the cable with the iPD transponder during normal operation of the cable line
- Monitoring of PD activities during 24-hour commissioning test of MV and HV cables at normal operation voltage (according to IEC 60840)
- Periodically PD monitoring of critical cable lines (e.g. industrial plants) with fixed installed sensors where no direct access during normal operation is possible

## Features

- Measurement of partial discharges in MV and HV cables without interrupting mains operation
- Identifying and locating potential problems before faults occur
- Sensitive PD detection in high noise environments due the proven DeCIfer® algorithm
- 4 simultaneous measurement channels
- Automatic PD detection and analysis
- Accurate cable PD mapping for defect location
- Integrated cable length measurement in combination with the iPD transponder
- Easy reporting
- Integrated battery or mains operation
- Compact, lightweight device that is easy to transport

Technical data

PD spot testing	
Cable PD range	5 pC ... 1,000 nC
Types of analysis	<ul style="list-style-type: none"> <li>• PRPD (PD pattern analysis)</li> <li>• Wave shape analysis</li> </ul>
Sampling rate	100 MS/s
Resolution	14 bit
Trigger sources	<ul style="list-style-type: none"> <li>• Mains (internal)</li> <li>• External (TTL)</li> <li>• Auto pulse (internal)</li> <li>• FM (Sync Transmitter)</li> </ul>
Analogue input voltage range	±1,0 V (resolution ±61 µV)
Software modes	<ul style="list-style-type: none"> <li>• PD Test mode: used for routine and repetitive testing</li> <li>• Scope mode: used for in-depth investigation</li> </ul>
Noise separation and PD classification	DeClFer® algorithm
Reporting	On screen, PDF
Data interfaces	USB 2.0, Ethernet
Safety und EMC	Conforms to CE in compliance with Low voltage guideline (2006/95/EG) and EMC guideline (2004/108/EG)
Input channels	
Number of channels	4
Sensor types	<ul style="list-style-type: none"> <li>• TEV</li> <li>• HFCT (calibrated)</li> </ul>
Spike protection	500 V

General	
Input voltage	90 ... 264 V, 50/60 Hz
Battery type	Lithium Polymer battery pack 8 Ah, DC 12.6 V, 96 Wh
Battery life	min. 3 hours
Ambient temperature (operation)	-10 ... +45°C
Storage temperature	-20 ... +60°C
Humidity	0 ... 90%, non-condensing
Dimensions (W x H x D)	approx. 550 x 350 x 225 mm
Weight	13.5 kg
Degree of protection	IP 67 when closed
Software available in	English, French, German, Portuguese, Russian, Spanish

iPD transponder (optional for PD mapping, cable length measurement)	
Pulse voltage	500 V
Trigger types	<ul style="list-style-type: none"> <li>• PD</li> <li>• LEVEL</li> <li>• AUTO</li> </ul>
Battery type	Lithium Polymer battery pack 8 Ah, DC 12.6 V, 96 Wh
Battery life	approx. 12 hours
Dimensions (W x H x D)	approx. 190 x 260 x 160 mm
Weight	4 kg

Standard delivery includes

- BAUR Online PD Spot Tester liona
- 4 x inductive HFCT sensor 100/50 mm
- 1 x inductive HFCT sensor 140/100 mm
- 2 x capacitive TEV sensor
- 4 x 2m RG58 coaxial cable with BNC terminations
- 4 x 5m RG58 coaxial cable with BNC terminations
- 8 x BNC connector
- Sync Transmitter (incl. batteries)
- Peli case for accessories and iPD transponder
- Earthing conductor
- Mains connection cable
- User manual

Options

- iPD transponder
- Charger (DC 12.6 V / 1.65 A)

Example of test report

**Online PD Test Report**

Asset Tested				
Substation	Asset Type	Panel Number	Circuit Name	Asset Details
512:1002	P123	AX-038		
	Voltage (kV)	Frequency (Hz)	Number of Joints	Cable Length (m)
	20	50		302
Test Details				
Test Date	Test Engineer	Start Time	End Time	
02/10/2012		10:52:38	10:53:52	
Ch 1 Sensor	Ch 2 Sensor	Ch 3 Sensor	Ch 4 Sensor	
HFCT	HFCT	HFCT		

Graphs showing Cable PD [nC] vs Time and Signal Voltage [mV] vs Time (µs).

Comments									
PD Detected		Channel 1		Channel 2		Channel 3		Channel 4	
Cable	Switchgear	Cable	Switchgear	Cable	Switchgear	Cable	Switchgear	Cable	Switchgear
1:38	0	1:38	0	2:15	0				
Avg PD per Power Cycle	0.14 pC	0 dBmV	0.18 pC	0 dBmV	0.17 pC	0 dBmV	0 dBmV		
Maximum PD Detected	4035 pC	0 dBmV	4035 pC	0 dBmV	4035 pC	0 dBmV	0 dBmV		