— optics11.com



OptiFinder *ExpertHub*

Rapid acoustic PD localization for transformer factory acceptance testing

OPTICS11®

Localize partial discharge during FAT within *one working shift.*

OptiFinder ExpertHub reduces repeated testing and test-bay delays when PD is detected during FAT. Test engineers pinpoint the PD source to within 15 cm, transforming PD detection into actionable diagnostics that support faster engineering decisions and improve FAT efficiency.



OPTIMAL WORKFLOW
Localize PD in one single deployment, without sensor repositioning.

RELIABLE DATA
EMI-immune sensors for greater confidence in PD measurements.

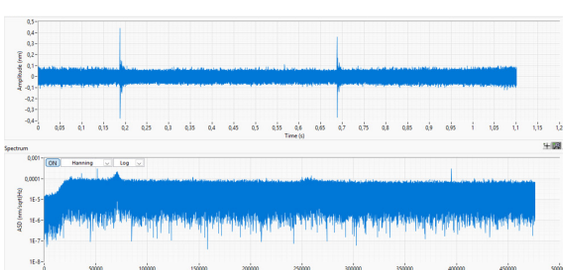
15 CENTIMETER ACCURACY
Pinpoint the source of PD activity to within 15cm under validated conditions.

From PD detection to root cause in an *optimal workflow.*

Turn a detected PD event into a defined repair area. OptiFinder ExpertHub replaces the repeated cycle of energizing, de-energizing and moving sensors with a planned 16- or 32-sensor arrangement, acquired simultaneously, analyzed using a local windows platform.

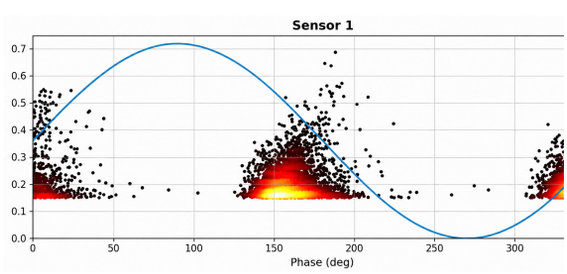
01 MEASURE

Partial discharge activity is identified during FAT, but its physical source is unknown. OptiFinder ExpertHub is deployed to capture the acoustic activity in one sweep.



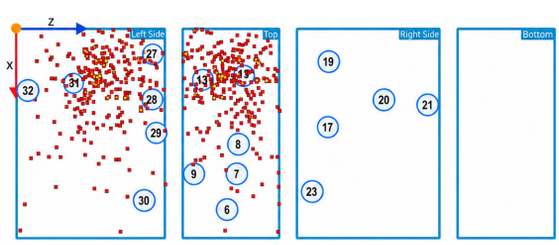
02 VERIFY

Review current and accumulated phase-resolved PD patterns, and inspect raw acoustic waveforms, to confirm the activity is repeatable.



03 LOCALIZE

OptiFinder ExpertHub will combine the transformer dimensions, measured sensor positions (16 or 32 sensors) and accumulated data to calculate an X, Y, Z position of the PD source.



04 ACT

Using OptiFinder ExpertHub PRPD, localization data and generated report, test teams can be directed to the location for repair and keep FAT on schedule.

Transformer PD Localization Report

Test information	*Global Information*
Test date: 11/08/2026	Order nr.: 123456
Test time: 15:38	Serial nr.: 654321
Test leader: Engineer Name Example	Customer: Customer Example
	SW Version:2.4.7
	Algorithm Version:

DESIGNED FOR TRANSFORMER OEMS, FIELD SERVICE TEAMS AND FACTORY TEST MANAGERS.

TRANSFORMER OEM FAT

Investigate and localize PD activity identified during the factory test programme.

SITE ACCEPTANCE TESTING (SAT)

Localize PD activity identified during on-site acceptance testing.

SPOT CHECKS & TROUBLESHOOTING

Direct engineering and production teams toward a defined area.

Engineering-grade detail *behind every result.*

Measurement, review, localization and reporting in one local Windows environment — no cloud connection required for FAT operation.



PRPD VIEW

View live and cumulative phase-resolved PD activity and compare individual sensors across the arrangement.

DETAILED ANALYSIS

Inspect raw time-domain waveforms, frequency content and event information, with locally stored TDMS data for detailed analysis.

THREE-DIMENSIONAL LOCALIZATION

X, Y and Z source coordinates with transformer-face heat maps, localization histograms, uncertainty information and a 3D view.

PD DATA & LOCALIZATION REPORT

One consistent PDF record – test context, localization result and supporting evidence – for test management, engineering and repair teams.

Power-free sensing through passive fiber optic technology. *Optimized for factory and field.*

Fiber optic sensing technology keeps the sensing location completely passive — no power, no electronics — which enables a safe operation in high-voltage environments.



ORPD 040 SENSOR

Passive
No electrical power required at the sensing location.

Wide acoustic range
1 kHz to 475 kHz.

Built for the tank wall
IP68 rated sensor.
Magnetic clamp or strap mounting; operating temperature –40 to 140 °C.



OPTIFINDER INTERROGATOR

16 or 32 optical channels
1 MS/s, 16-bit, true simultaneous acquisition across all configured channels.

Fits the test bay
19-inch rack, 6U; operates –5 to 50 °C.

Powered by the factory mains
110–120 VAC or 220–240 VAC; the mains supply provides the phase reference.

CHOOSE YOUR CONFIGURATION

OPTIFINDER EXPERTHUB 16

16 sensors, clamps and splice boxes. Broad simultaneous coverage. Best for regular OEM FAT, medium-sized transformers and service-team applications.

OPTIFINDER EXPERTHUB 32

32 sensors, clamps and splice boxes. Maximum coverage for large or complex tanks; repositioning normally unnecessary. Best for large units, high-value FAT programmes and high-throughput factories.

Environmental and protection values are component-specific. IP68 and NEMA 6P performance is internally validated for the ORPD 040 sensor component.

Three steps to keep *your FAT & SAT on schedule.*

Synchronized acoustic evidence and 3D localization give test teams a defined physical area for inspection and repair.



Reduce number of test cycles

Deploy the sensors once, and reduce the number of test cycles required compared to conventional systems.



Focus repair planning

Give engineering teams a calculated physical area to within 15 cm accuracy for focused investigation of the partial discharge source.

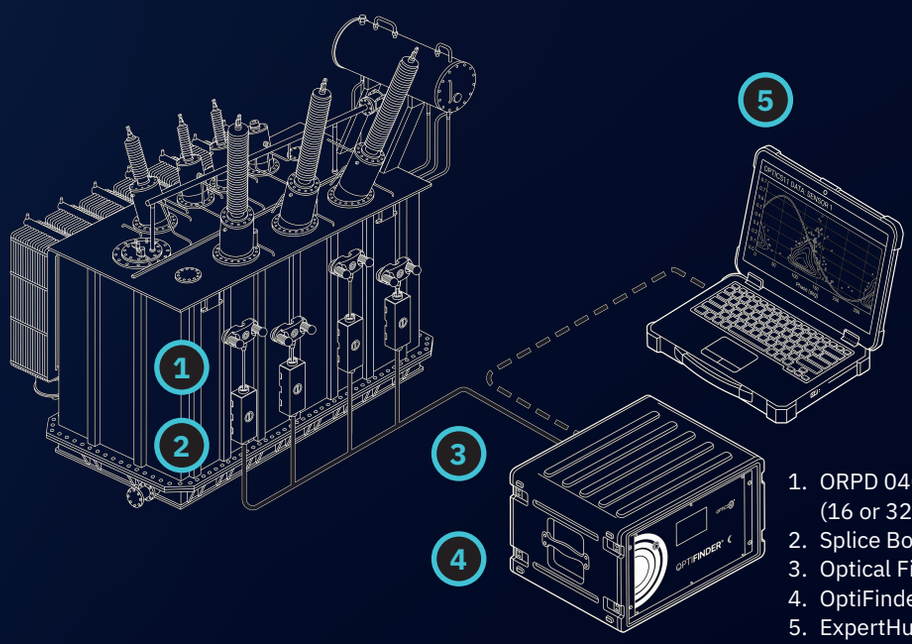


Minimize test-bay delay

Move from an unidentified source to a targeted repair area with fewer test interruptions.



System Architecture
and Equipment supplied.



1. ORPD 040 V5 Sensor Assembly (16 or 32) + Sensor Clamp
2. Splice Box
3. Optical Fiber Cable
4. OptiFinder Interrogator
5. ExpertHub Software

SYSTEM SUPPLIED

Common equipment:

- OptiFinder ExpertHub interrogator
- OptiFinder ExpertHub software licence
- Optical and multifiber cabling
- Optical-interface cleaning equipment
- Acoustic-couplant equipment
- Cable-management equipment
- Rugged transport cases
- Power-distribution equipment
- Power cords

Configuration-dependent equipment:

- 16 or 32 ORPD 040 sensors,
- Sensor clamps and splice boxes.

Additional-cost option:
A Windows laptop configured for OptiFinder ExpertHub operation.

QUALIFICATION NOTES

- The working-shift claim applies after installation of the planned sensor arrangement.
- Localization accuracy of up to 15 cm applies under validated conditions.
- Environmental and protection values are component-specific.
- IP68 and NEMA 6P performance is internally validated for the ORPD 040 sensor component.
- OptiFinder ExpertHub provides acoustic PD detection and localization; it is not an IEC 60270 electrical partial-discharge measurement instrument.
- OptiFinder products are currently marketed publicly under the name “OptiFender.”



Bring OptiFinder ExpertHub to your next FAT.

Scan the QR code and book a demonstration with our team today.
A full technical specifications available on request.

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