PDL 650

Acoustic PD fault localization in high-voltage equipment

Identifying problems within steel walls

As a result of increased demand for power, high voltage equipment is being subjected to ever greater stress. Careful inspections are therefore essential, both for the initial on-site acceptance test and throughout the many years during which the equipment is used. Any faults present can be localized using acoustic partial discharge measurement.

Electrical equipment must meet tough requirements

With only 1 % to 2 % failures per year, transformers are generally classed as extremely reliable. However, just like other electrical components, the risk of a failure is far greater at the start and the end of their useful life cycle. The most common reason for this is a reduction in insulating capability at specific points.

Reacting before something happens

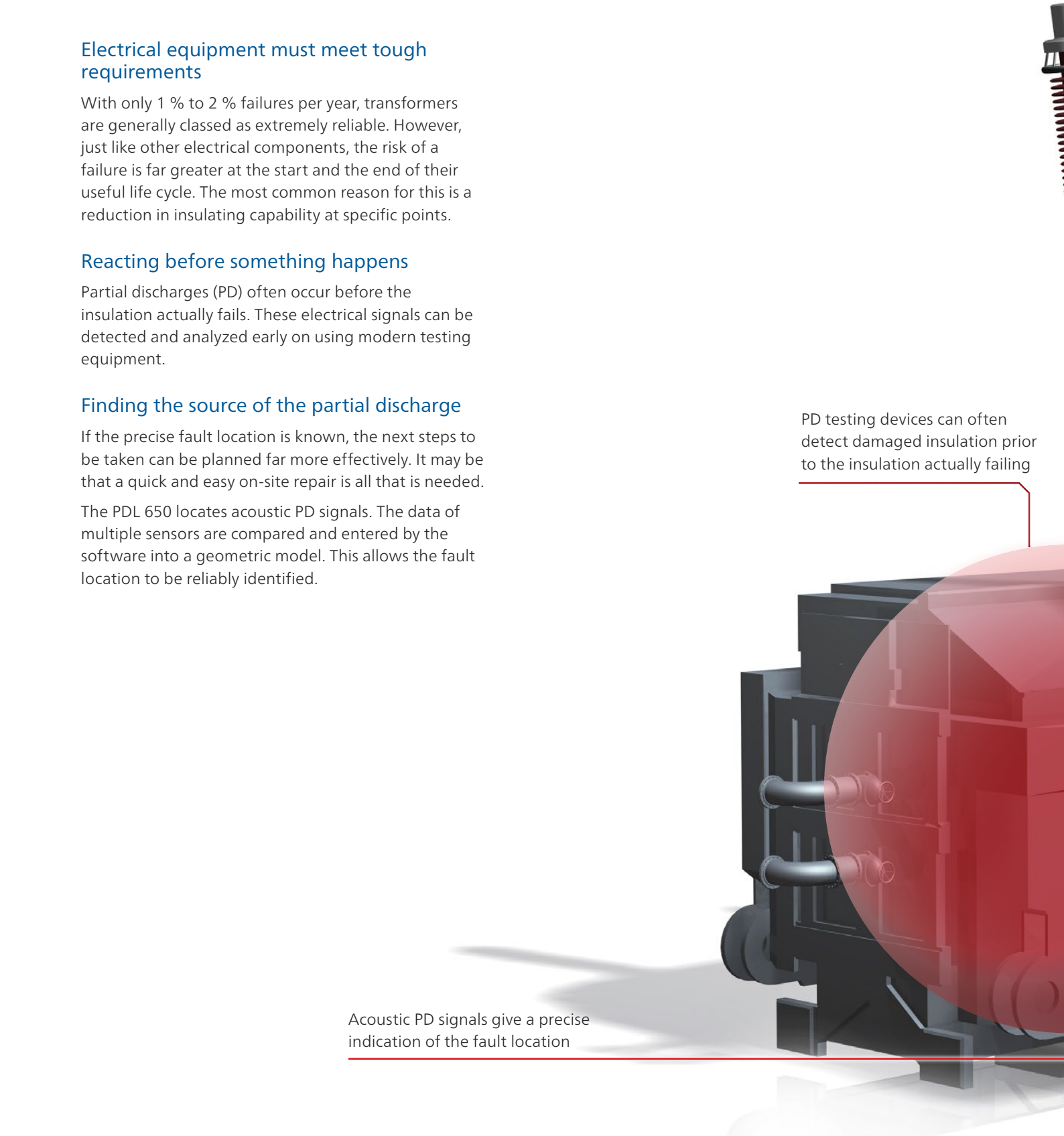
Partial discharges (PD) often occur before the insulation actually fails. These electrical signals can be detected and analyzed early on using modern testing equipment.

Finding the source of the partial discharge

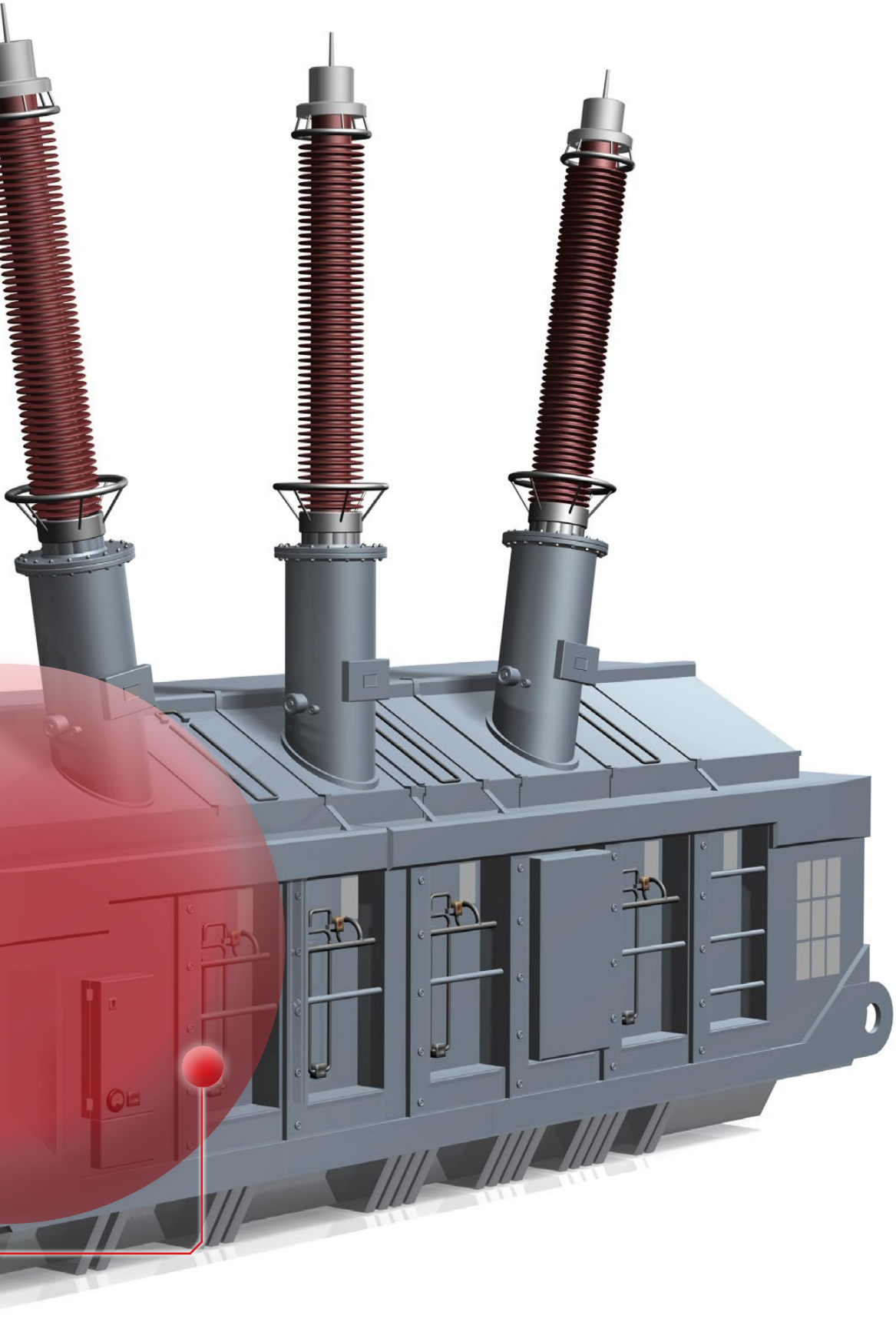
If the precise fault location is known, the next steps to be taken can be planned far more effectively. It may be that a quick and easy on-site repair is all that is needed.

The PDL 650 locates acoustic PD signals. The data of multiple sensors are compared and entered by the software into a geometric model. This allows the fault location to be reliably identified.

PD testing devices can often detect damaged insulation prior to the insulation actually failing



Acoustic PD signals give a precise indication of the fault location



Replacing intuition with empirical evidence

Network operators and manufacturers often wish to have necessary repairs performed directly on site. However, this requires knowing the precise location of the fault.

Tracking down the fault

Making precise partial discharge measurements is one step closer to determining fault locations. Depending on the test object and environment, OMICRON offers the MPD 800 and MPD 600 for these electrical measurements.

MPD systems measure and analyze partial discharges both precisely and reliably. They can be combined with various advanced methods, such as UHF and acoustic partial discharge measurements.

Getting to the heart of the matter

Acoustic partial discharge measurements are performed with the PDL 650. The PDL 650 records the measured values of multiple acoustic sensors simultaneously. The software then calculates the fault location based on the time difference between the incoming signals.

For even more accurate results the acoustic PD-measurement can be combined with the MPD 800 or MPD 600 and even with UHF measurements. This way the electrical partial discharge signals trigger the acoustic evaluation, making it more easy to locate the PD failure.

Safe operation

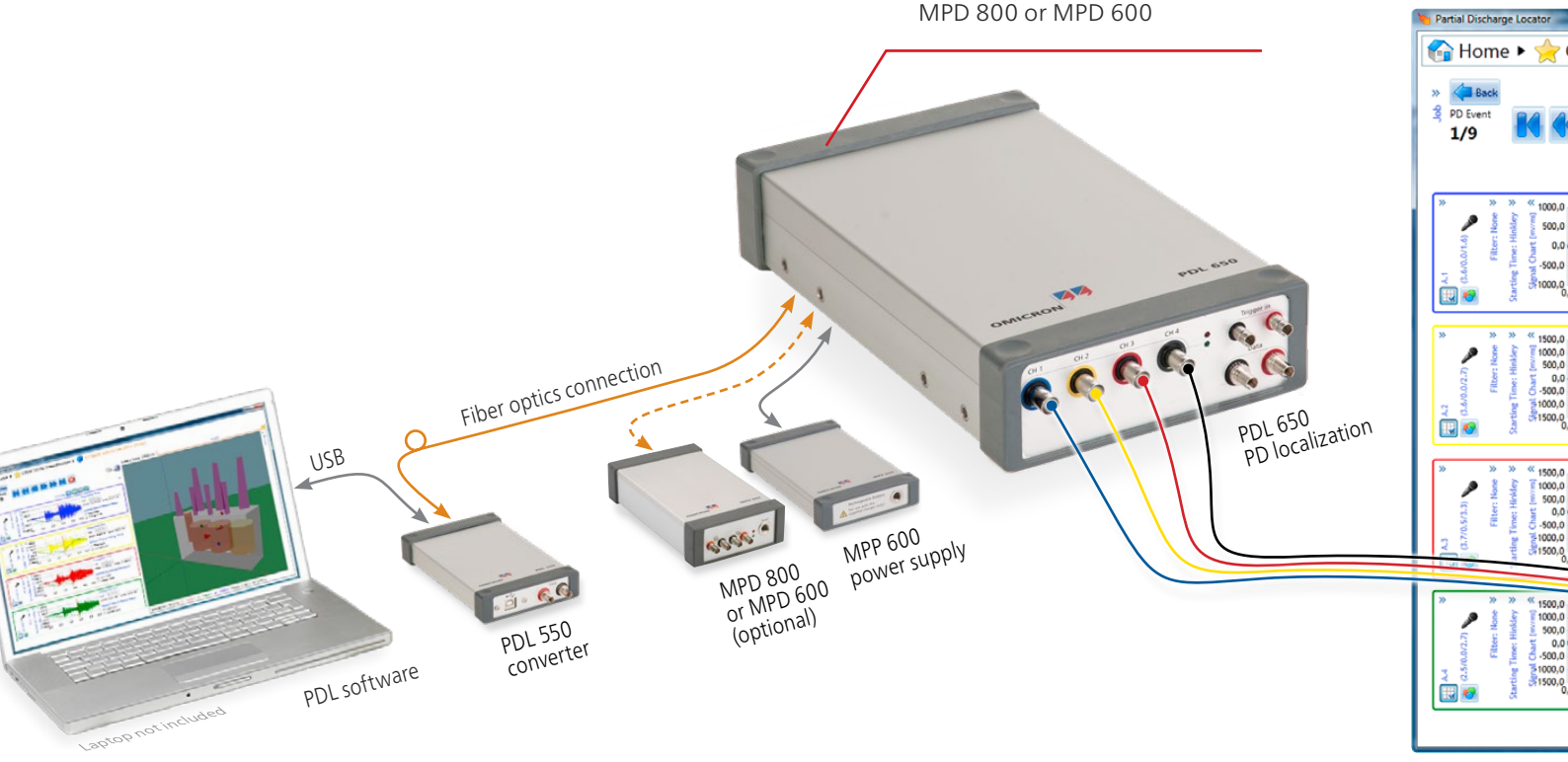
The PDL 650 transfers all data to the PC using fiber optics. This means that the operator is electrically isolated from the high voltage. Magnetic and electric fields are also incapable of interfering with this connection.

Repeat playback of measurements at any time

Every measurement can be recorded. These recordings can be retrieved at a later date with all associated data for further analysis, as if the measurement is currently being performed.

Additionally, printable test reports can be created at one click of a mouse.

- Easy to use, lightweight and battery operated
- Up to 16 measurement channels
- Test reports at the click of a mouse
- Can be combined with MPD 800 or MPD 600



Technical data

Measurement bandwidth	10 kHz ... 400 kHz
Amplification	0, 20, 36 dB
Sensors	Active, supplied via PDL 650
Battery life	> 4 h
Mains supply	110 V ... 240 V, 50 Hz ... 60 Hz

Mechanical data

Dimensions (W × H × D)	170 x 61 x 300 mm 6.7 x 2.4 x 11.8 in
Weight	2.0 kg / 4.5 lbs
Ambient temperature	Operation: 0 °C ... 45 °C 32 °F ... 113 °F Storage: -10 °C ... 70 °C 14 °F ... 158 °F
Weight of complete system	< 20 kg / 45 lbs (including carry case, cables, etc.)

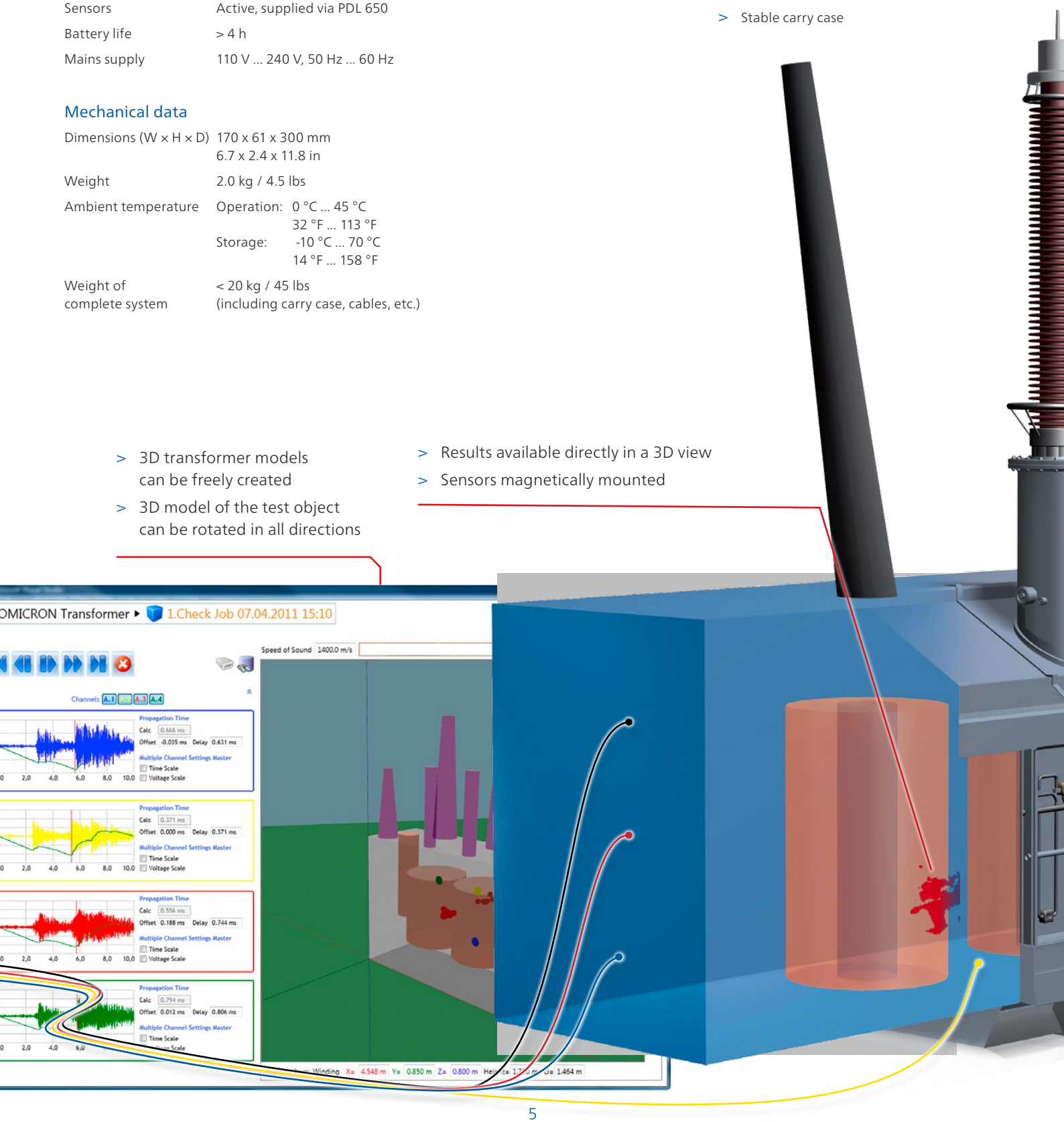
Ordering number

P0006443

Set consisting of:

- PDL 650, PDL 550
- MPP 600 battery and charger
- Four sensors with bracket
- Connection cables
- Stable carry case

- 3D transformer models can be freely created
- 3D model of the test object can be rotated in all directions
- Results available directly in a 3D view
- Sensors magnetically mounted



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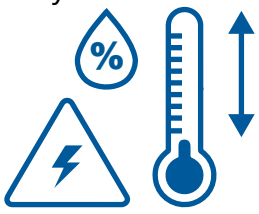
Quality

We always want you to be able to rely on our testing solutions. This is why our products have been developed with experience, passion and care and are continually setting ground-breaking standards in our industry sector.

You can rely on the highest safety and security standards

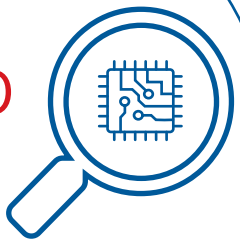
Superior reliability with up to

72



hours burn-in tests before delivery

100%



routine testing for all test set components

ISO 9001
TÜV & EMAS
ISO 14001
OHSAS 18001

Compliance with international standards

Innovation

Thinking and acting innovatively is something that's deeply rooted in our genes. Our comprehensive product care concept also guarantees that your investment will pay off in the long run – e.g. with free software updates.

... a product portfolio tailored to my needs

More than

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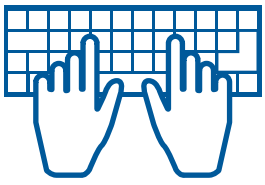

developers keep our solutions up-to-date

More than

15%

of our annual sales is reinvested in research and development

Save up to

70%

testing time through templates, and automation

OMICRON is an international company that works passionately on ideas for making electric power systems safe and reliable. Our pioneering solutions are designed to meet our industry's current and future challenges. We always go the extra mile to empower our customers: we react to their needs, provide extraordinary local support, and share our expertise.

Within the OMICRON group, we research and develop innovative technologies for all fields in electric power systems. When it comes to electrical testing for medium- and high-voltage equipment, protection testing, digital substation testing solutions, and cybersecurity solutions, customers all over the world trust in the accuracy, speed, and quality of our user-friendly solutions.

Founded in 1984, OMICRON draws on their decades of profound expertise in the field of electric power engineering. A dedicated team of more than 900 employees provides solutions with 24/7 support at 25 locations worldwide and serves customers in more than 160 countries.

For more information, additional literature, and detailed contact information of our worldwide offices please visit our website.

www.omicronenergy.com

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