OMICRON

Primary Test Manager™

Testing and management software for
medium- and high-voltage assets

One solution for comprehensive diagnostic testing, condition asses

The Primary Test Manager™ (PTM) is the ideal software tool for diagnostic testing and condition assessment of medium- and high-voltage assets.

Combined with numerous OMICRON test systems, you can test circuit breakers, rotating machines, grounding systems, instrument and power transformers as well as associated equipment such as bushings and on-load tap changers (OLTC).

PTM assists test engineers, as well as maintenance and asset managers, in testing and assessing your equipment in accordance with applicable international IEEE and IEC standards and guidelines, while keeping testing time to a minimum.

All test and assessment results are automatically stored in a structured and easily accessible database. PTM also provides you with powerful reporting functionalities.

TESTRANO 600

CIBANO 500

CPC 100

TEST SETS

FEATURES

EXECUTION OF DIAGNOSTIC TESTS

RESULT ANALYSIS AND REPORTING

DATA MANAGEMENT AND SYNCHRONIZATION

ssment and easy data management

- FRANEO 800
- DIRANA
- HGT 1

APPLICATIONS

- GROUNDING SYSTEMS
- ROTATING MACHINES
- CIRCUIT BREAKER
- VOLTAGE/POTENTIAL TRANSFORMER
- CURRENT TRANSFORMER
- POWER TRANSFORMER

Your benefits

- Asset specific test plan generation including wiring diagram
- Automatic assessment according to industry standards
- Comprehensive reporting, including templates for all standard and advanced tests
- Import and export interfaces for data exchange
- Integrated asset data management in a local and client/server database

www.omicronenergy.com/PTM

Guided and manual testing depending on your needs and application

Depending on the connected test system and the asset under test, you can choose between various guided and manual tests:

> Manual testing for full flexibility, for example, define test procedures and test settings according to your specific needs.

> Guided testing, the software guides you step by step through the entire test procedure and provides test settings data.

	CPC 100	TESTRANO 600	DIRANA	FRANEO 800	CIBANO 500
Power transformer testing					
Power factor/dissipation factor and capacitance	■[1]	■[1]	■	–	–
Exciting current	●	■	–	–	–
Short-circuit and zero sequence impedance	●	■	–	–	–
Transformer turns ratio	●	■	–	–	–
DC winding resistance	●	■	–	–	–
Dynamic OLTC Scan (DRM)	●	■	–	–	–
Demagnetization	●	■	–	–	–
Frequency response of stray losses (FRSL)	●	■	–	–	–
Power loss at low voltage	–	▲	–	–	–
Dielectric (frequency) response analysis	–	–	■[2]	–	–
Insulation resistance	–	–	■	–	–
Polarisation index and dielectric absorption ratio	–	–	■	–	–
Sweep frequency response analysis (SFRA)	–	–	–	■	–
Vibro Acoustic Measurment (VAM)	–	●[4]	–	–	–
Cooldown	–	▲	–	–	–
Vector group check	–	▲	–	–	–
Circuit breaker testing					
Power factor/dissipation factor and capacitance	■[1]	–	■	–	–
Contact resistance	●	–	–	–	■
Motor current	–	–	–	–	■
Timing (including VTM & CSM)	–	–	–	–	■
Dynamic contact resistance	–	–	–	–	■
Minimum pickup	–	–	–	–	■
First trip	–	–	–	–	■
Under-voltage Release	–	–	–	–	■
Overcurrent Release	–	–	–	–	■
CT demagnetization	–	–	–	–	▲
Grounding system testing					
Step and touch voltage	●[3]	–	–	–	–
Ground impedance	●[3]	–	–	–	–

• included for guided testing ▲ included for manual testing ■ included for guided and manual testing – not included

	CPC 100	TESTRANO 600	DIRANA	FRANEO 800	CIBANO 500
Current transformer testing					
Power factor/dissipation factor and capacitance	■[1]	–	■	–	–
Ratio	●	–	–	–	–
Winding resistance	●	–	–	–	–
Excitation charateristics	●	–	–	–	–
Burden	●	–	–	–	–
Composite error	●	–	–	–	–
Dielectric (frequency) response analysis	–	–	■[2]	–	–
Insulation resistance	–	–	■	–	–
Polarisation index and dielectric absorption ratio	–	–	■	–	–
Polarity check	●	–	–	–	–
Voltage/Potential transformer testing					
Power factor/dissipation factor and capacitance	■[1]	–	■	–	–
Ratio	●	–	–	–	–
Burden	●	–	–	–	–
Dielectric (frequency) response analysis	–	–	■[2]	–	–
Insulation resistance	–	–	■	–	–
Polarisation index and dielectric absorption ratio	–	–	■	–	–
Polarity check	●	–	–	–	–
Rotating machine testing					
Power factor/dissipation factor and capacitance	■[1]	–	■	–	–
Dielectric (frequency) response analysis	–	–	■	–	–
Insulation resistance	–	–	■	–	–
Polarisation index and dielectric absorption ratio	–	–	■	–	–
DC Winding Resistance	●[1]	–	–	–	–
Partial Discharge HV Source	●[5]	–	–	–	–
Electromagnetic Core Imperfection Detection	●[6]	–	–	–	–

[1] Additional accessory CP TD12/15 required
[2] Including moisture analysis for oil-paper-insulated assets
[3] Additional accessories CP CU1 and HGT1 required
[4] Requires VAM1 package
[5] Additional MPD 600 or MPD 800 and MPDsuite required
[6] Requires the Stator Core Measurement Upgrade Option for CPC 100

Execution of diagnostic tests

Define your asset

In order to assist you during testing, PTM helps you in defining your asset with specific nameplate views. It indicates mandatory and recommended parameters, making data entry fast and easy.

You can enter information about the location as well as nameplate parameters, such as serial number, vector group, or voltage and current ratings.

Alternatively, you can import data about location or asset from other systems, for example ERP, maintenance or asset management systems.

Once the data is entered, it can be re-used for all future tests.

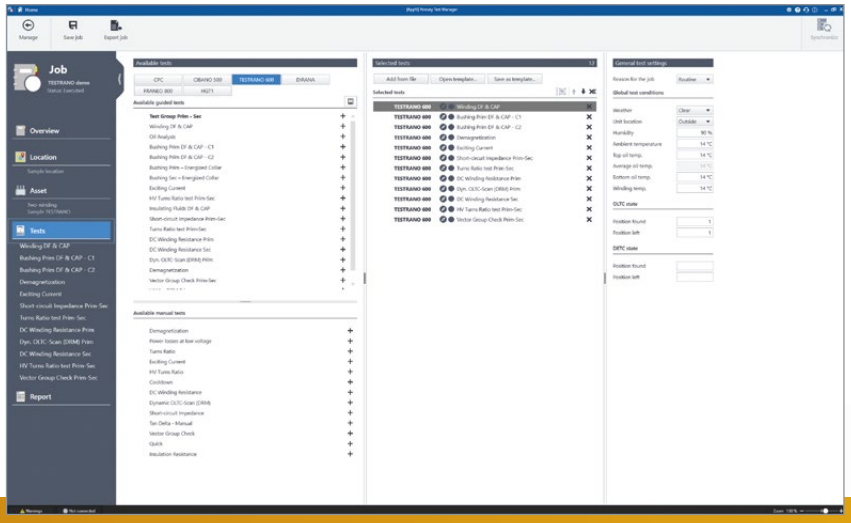
Create your test plans

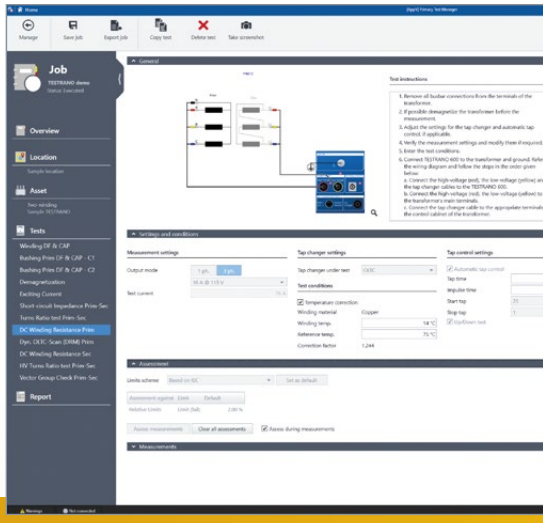
PTM offers you different ways to receive your ideal test plan.

> Automatic generation
Based on the nameplate values of the tested asset, PTM automatically generates a comprehensive test plan according to current standards and guidelines.

> PTM test plan templates
You can also use one of the provided PTM test plan templates in order to thoroughly assess the condition of your asset.

> Processing test plan templates
You can adapt jobs to your needs and save them as your own templates. This is particularly useful for repeated routine tests as you only need to define the performed tests once.





Get the PTMate app free of charge in the App Store and Google Play Store!

Connect your test set

In order to set up the test set in the correct way, PTM assists you with pre-configured wiring diagrams, depending on the selected asset and test set.

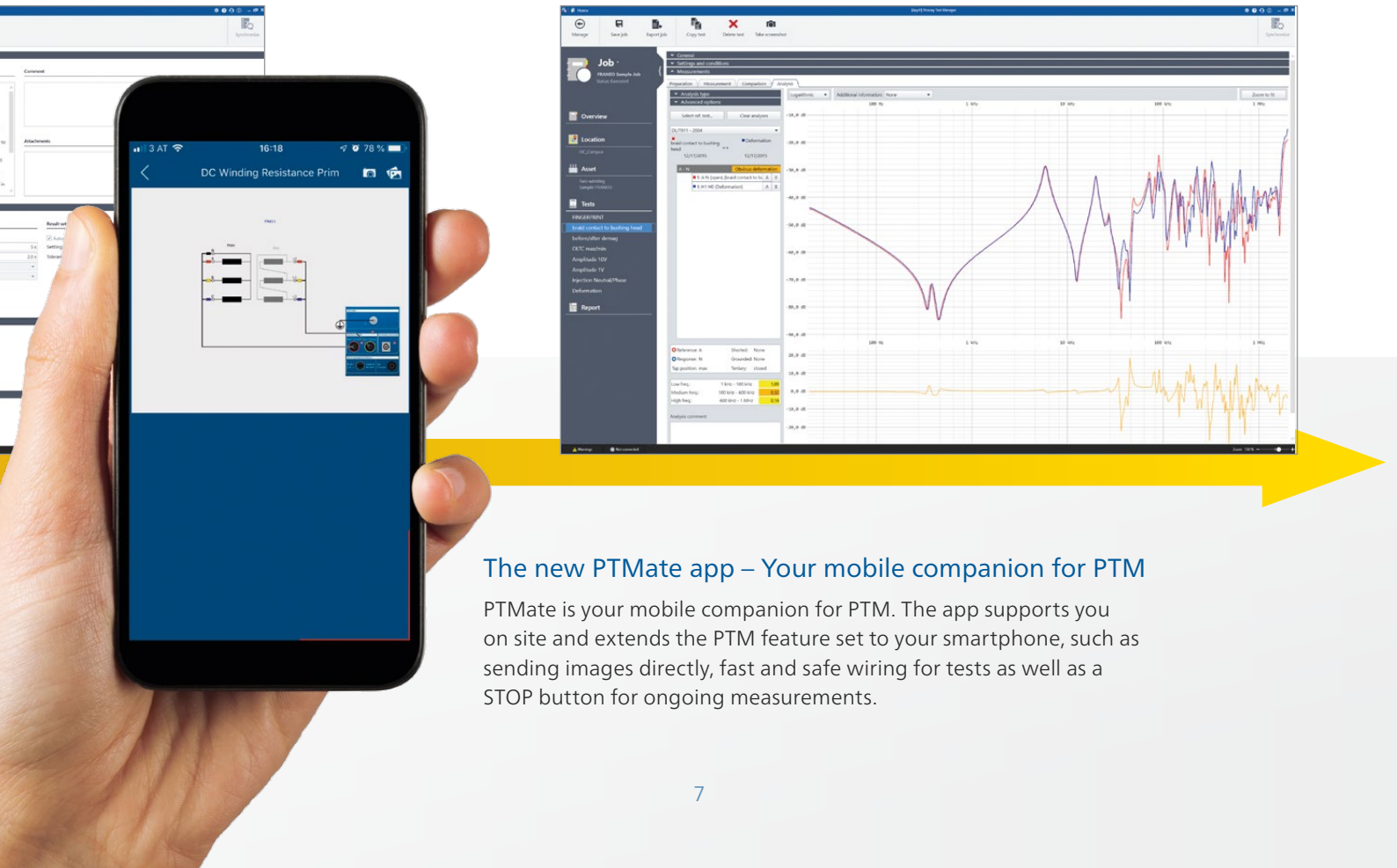
This minimizes the likelihood of measurement errors, speeds up your testing process and obtains accurate test results even faster.

Execute your test plans

PTM enables you to control the connected test set and to execute the defined test directly from a computer.

You are prompted wherever a user interaction is needed, otherwise the execution of the tests is fully automatic.

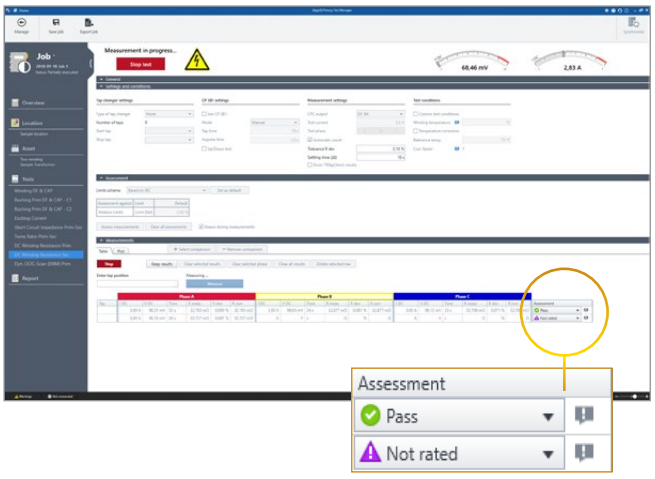
A real-time overview of the test results is given during the measurement, including a progress update with an indication of any open tasks.



The new PTMate app – Your mobile companion for PTM

PTMate is your mobile companion for PTM. The app supports you on site and extends the PTM feature set to your smartphone, such as sending images directly, fast and safe wiring for tests as well as a STOP button for ongoing measurements.

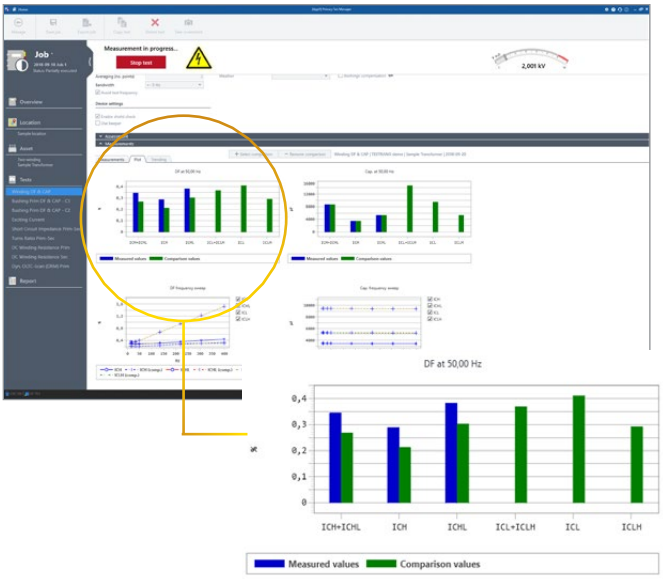
Result analysis and reporting



Automatic assessment

You can select limit values according to applicable IEEE and IEC standards and guidelines. Alternatively, you can adapt them based on manufacturer specifications or your individual limit profiles.

An instant “pass/fail” assessment of the test results is displayed based on specified limit values. In addition, a tooltip informs you which test parameters should be further investigated.



Visualization and comparison of test results

The measurement result can be visualized in tables and plots for easy review and assessment.

Additionally, they can be compared side-by-side in one diagram, for example with reference values of the name-plate, or previous results of the same or similar asset.

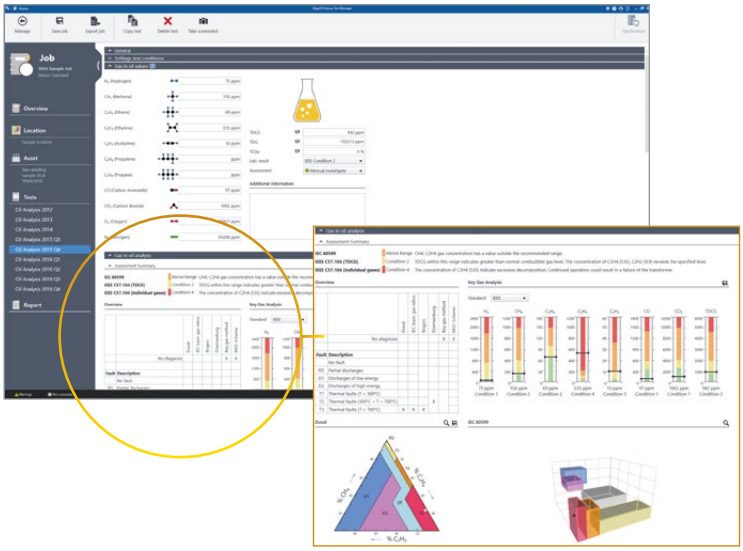
This allows further in-depth analysis.

Compatible with third party test data

PTM also supports you in importing test results which were generated by various third party test sets, for example, for sweep frequency response analysis, power factor/ dissipation factor, dielectric (frequency) response analysis, insulation resistance and dissolved gas-in-oil analysis (DGA).

This allows you to build a comprehensive test result database for your assets including all diagnostic results and their history.

For DGA, PTM additionally provides a comprehensive assessment and visualization according to IEEE C57.104 and IEC 60599 standards.

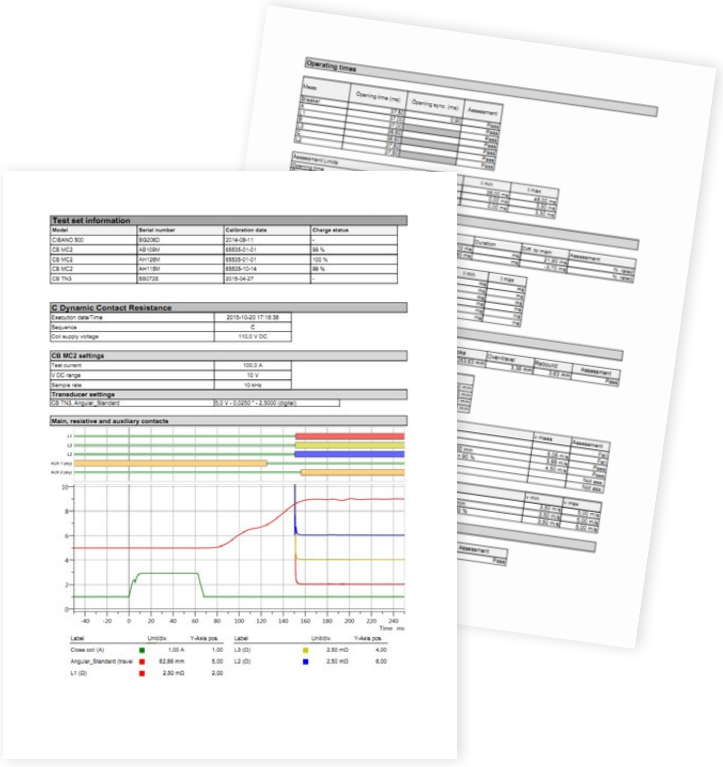


Customized reports

PTM automatically generates reports including all asset-related information and performed tests. This gives you an comprehensive overview of the test object, test results and assessment.

You can easily adapt test reports, for example, by choosing from different types of result tables and diagrams and by providing comments on every test.

Furthermore, you can incorporate your company logo, photos and other test results. The reports can be exported in Microsoft Word™, Microsoft Excel™ and PDF format.



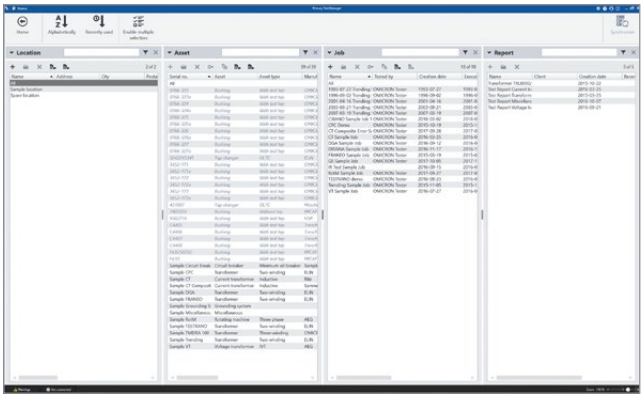
Data management and synchronization

Well-structured data management

The well-structured PTM database allows you to define and manage locations, assets, jobs and reports in an easy and fast way.

Once your asset data is entered, you can re-use it to generate new jobs or to add similar assets.

The comprehensive database helps you to find all asset-related data needed for the execution and assessment of tests. Additionally, you can also attach all kinds of files to the performed tests.



Open data exchange

You can easily exchange data between PTM and other software systems such as ERP, maintenance or asset management systems, or import data generated by various third party test systems:

- > Import and export of location and asset data in .csv format
- > Import of test data in .csv, .xml and formats of various common test sets
- > Export of test data in .csv, Micrsoft Excel™ and .xml format

In-depth data overview and evaluation

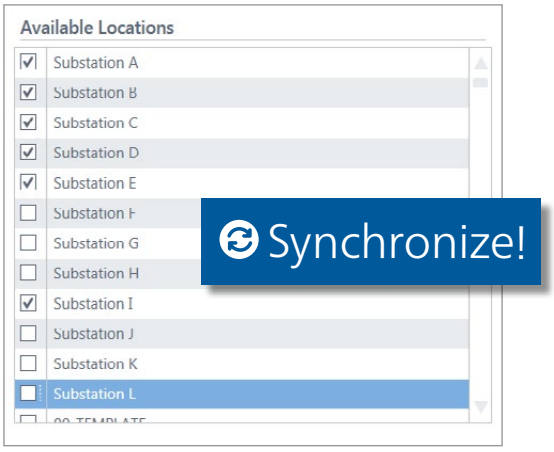
As user of DataSync “Web” you can get deeper insights into your assets and their testing condition with the additional PTM Data Analytics licence. Do this by using the dashboard in DataSync Manager or connect the data to the tool of your choice like Excel® or Power BI® for further analysis via the OData interface. The OData interface and the JSON asset import enable you as well to establish a data integration with your own software ECO-system.

Data synchronization and back-up

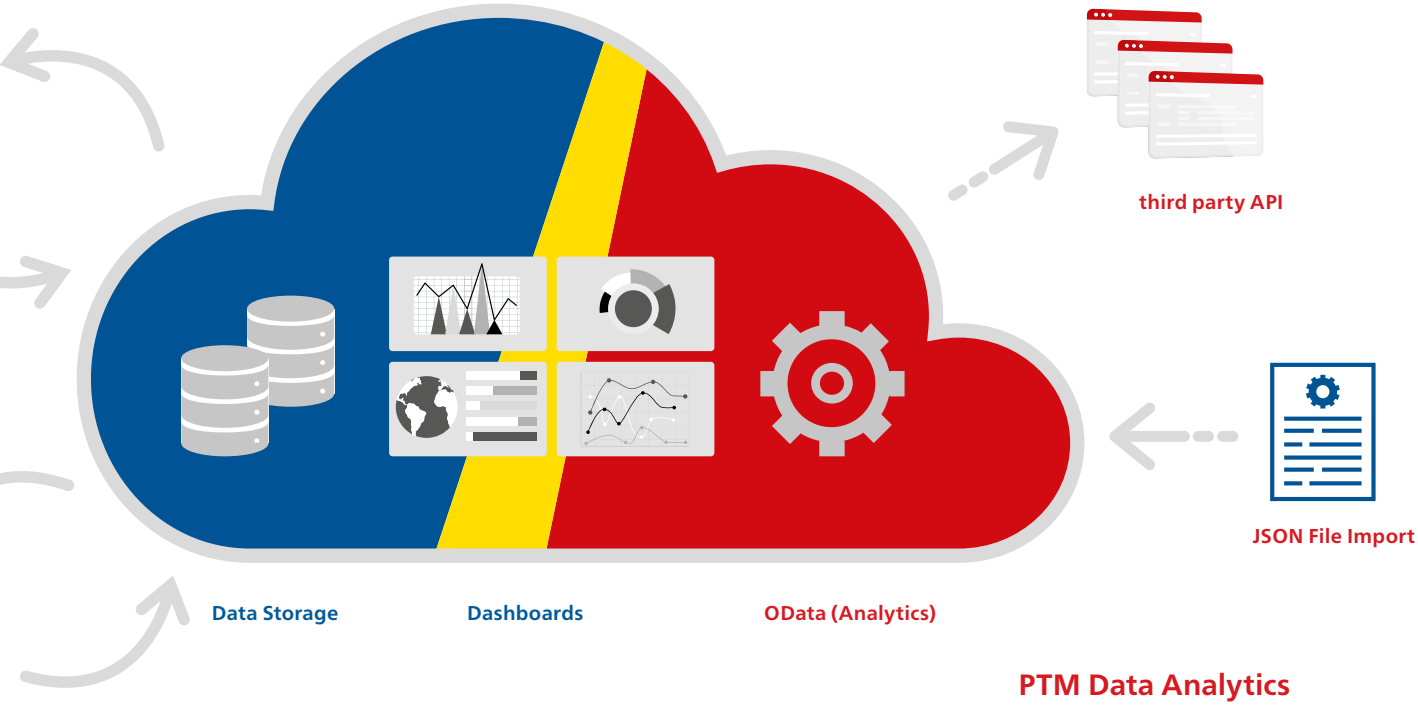
Often multiple testing teams generate new test data simultaneously working offline in remote substations.

The ‘PTM DataSync’ module allows easy and comfortable data synchronization and back-up. Based on your preferences, a central database can be hosted on premises or in the cloud.

With just one single click, you can download all required and actual data on your PC. In order to keep the local database small, you can also restrict synchronizaton and just select the relevant locations. After testing it is equally easy: You just have to click ‘Synchronize’ to upload all newly generated local data to the central server.



PTM DataSync



Technical Data and Ordering Information

Licensing of PTM Standard and Advanced

	Guided workflow	Customized test plans	Automatic assessment	Graphical comparison	Manual control mode	Attachments	Reporting	PTM database	Ordering No.
PTM Standard									
For CPC 100/80 and TESTRANO 600	–	–	–	–	■	■	■	■	included
PTM Advanced									
For CPC 100	■	■	■	■	■	■	■	■	P0006792
For CPC 80	■	■	■	■	■	■	■	■	P0001259
For TESTRANO 600	■	■	■	■	■	■	■	■	P0006797
For CIBANO 500, FRANEO 800 and DIRANA	■	■	■	■	■	■	■	■	included
For HGT1	■	■	■	■	■	■	■	■	P0006562

■ included – not included

Additional PTM Licenses

	Description	Ordering No.
PTM Inspection Test License	Visual on-site checks with PTM & PTMate (3 users)	P0000953
PTM Insulation Resistance Test License	Adding insulation resistance test results including PI, DAR calculation and assessment (3 users)	P0000954
PTM DGA Trending License	Trending of dissolved gas values over time (3 users)	P0000955
PTM DataSync "WEB" License*	Easy data synchronization with your personal PTM cloud, hosting partner Microsoft Azure, free choice of the Azure region, enables the DGA trending feature in PTM > For up to 3 users > For one additional user	P0006572 P0006794
PTM Data Analytics License for PTM DataSync Web users *	OData interface for connecting BI-tools or third party systems, Corporate license	P0006573
PTM DataSync "On Premises" License	Easy data synchronization with a PTM-server database, hosting by own IT-department > For up to 3 users > For one additional user	P0006571 P0006793
Circuit Breaker Testing library (CBTL)	> Pre-defined circuit breaker asset nameplates including assesment limits	P0007012
PTM Report designer	> create Excel™ based reports for circuit breakers	P0000940

* annual license fee, subscription valid for one year

Characteristic Requirement (*recommended)

Operating system	Windows 10 20H2 and later 64-bit Windows 11 64-bit
CPU	Multicore system with 2 GHz or faster*, single-core system with 2 GHz or faster
RAM	minimum 4 GB (8 GB)
Hard disk	minimum 5 GB of available space
Storage device	DVD-ROM drive
Graphics adapter	Super VGA (1280×768) or higher-resolution video adapter and monitor[1]
Interface	Ethernet NIC[2], USB 2.0[3]
Installed software	required for the optional Microsoft Office interface functions Microsoft 365*, Office 2019, Office 2016, Office 2013

1 We recommend graphics adapter supporting Microsoft DirectX 9.0 or later.
2 For testing with TESTRANO 600, CPC 100 and CIBANO 500. NIC = Network Interface Card. TESTRANO 600, CPC 100 and CIBANO 500 can be connected with RJ-45 connectors either directly to the computer or to the local network, for example, by using an Ethernet hub.
3 For testing with FRANEO 800

We create customer value through ...

Quality

You can rely on the highest safety and security standards

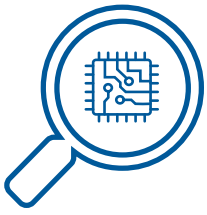
Superior reliability with up to

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

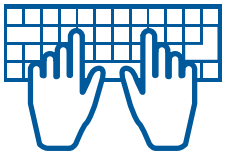
Innovation

... a product portfolio tailored to my needs

More than

200

developers keep our solutions up-to-date



More than

15%

of our annual sales is reinvested in research and development

Save up to

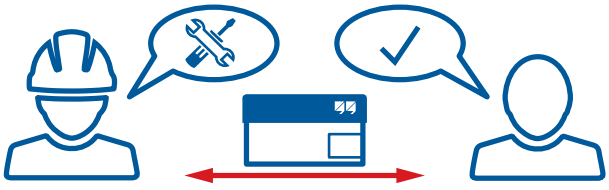
70%

testing time through templates, and automation

Support

Professional technical support at any time

Loaner devices help to reduce downtime



Cost-effective and straight-forward repair and calibration

offices worldwide for local contact and support

Knowledge

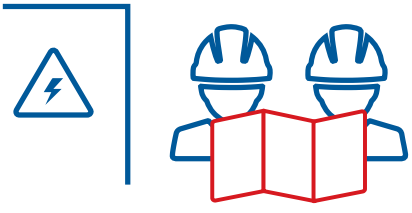
More than

300

Academy and numerous hands-on trainings per year

Frequently OMICRON hosted user meetings, seminars and conferences

to thousands of technical papers and application notes



Extensive expertise in consulting, testing and diagnostics

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.

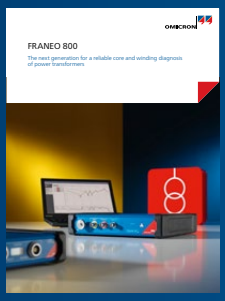
Founded in 1984, OMICRON draws on their decades of profound expertise in the field of electric power engineering. A dedicated team of more than 900 employees provides solutions with 24/7 support at 25 locations worldwide and serves customers in more than 160 countries.

The following publications provide further information on the solutions described in this brochure:

CPC 100
Brochure

TESTRANO 600
Brochure

CIBANO 500
Brochure



FRANEO 800
Brochure

DIRANA
Brochure

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

www.omicronenergy.com