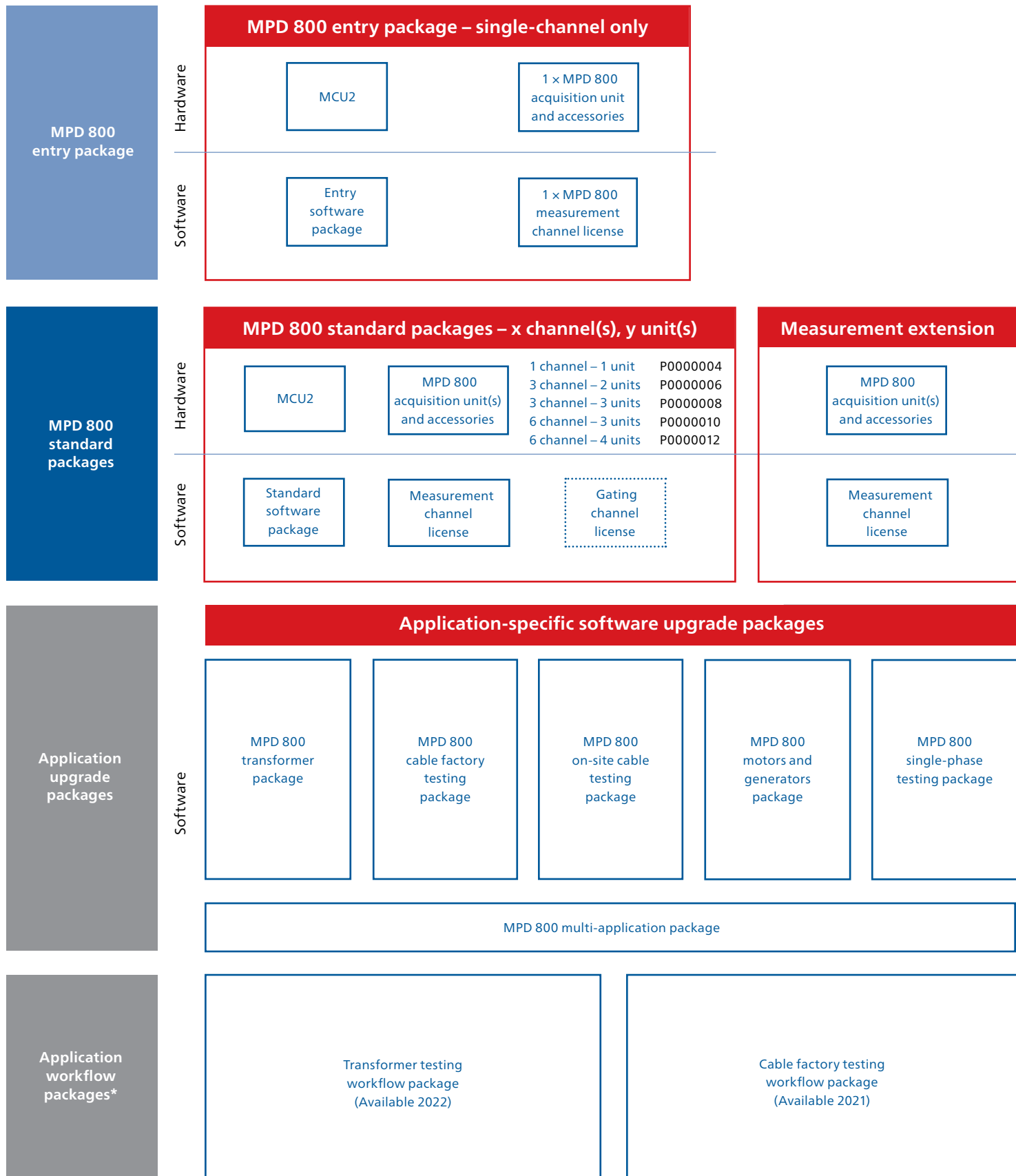


MPD 800

Ordering information



How to configure the MPD 800 system



MPD add-ons

Automation / integration interface

Gating extension

1 × MPD 800 acquisition unit and accessories

Gating channel license extension

Individual components

1 × MPD 800 acquisition unit and accessories

Measurement channel license

Gating channel license extension

MPD add-ons*

Automation / integration interface

3FREQ

DC testing
(Available soon)

VLF testing
(Available 2021)

* For standard and upgrade packages

Package descriptions

MPD 800 entry package

The MPD entry package is ideal for routine tests in a high-throughput environment. It supports one PD measurement channel for standard compliant pass/fail testing, including the PD inception and extinction voltage. The software package contains digital filters for charge measurements according to IEC or IEEE standards.

The automation interface is offered as an MPD entry package add-on for the integration of the MPD 800 into existing software environments.

The MPD 800 Entry package can be upgraded by software license to the MPD 800 standard package.

Entry Package Key Features

1. Multi-language support
2. Meter view
3. PD assessment
4. Reporting
5. Standard-compliant measurements

MPD 800 standard package

The MPD standard package includes the entry package features and contains in addition a large feature set.

With this package, the user gains from the usability improvements such as the additional and flexible displays and customizable user profiles for simplified PD testing.

The implemented diagrams such as PRPD, Q(U), trending, scope and FFT view offer support for further PD analysis. Also included in the package is simultaneous RIV testing according to NEMA and CISPR standards.

The dataset recording and replay functionality enables the assessment of the measurement after testing. The synchronous multi-channel PD measurement capability reduces the testing time for rotating machines, power transformers or on-site cable testing.

The phase-amplitude gating tool and the optional channel gating tool assist the user to reduce the influence of disturbances.

The MPD 800 standard package can be upgraded by software either with application specific packages or software add-ons.

Standard Package Key Features

1. Includes all entry package features
2. PRPD view
3. Phase-amplitude gating
4. RIV measurement
5. Customizable user profiles
6. Recording and replay
7. Additional PD filters
8. Synchronous multi-channel measurements
9. H(Q), Q(U), trending and system overview diagrams
10. Scope and FFT view
11. Two additional displays for measurement and replay
12. Channel gating (requires additional license)

MPD 800 upgrade options overview

The MPD Suite software upgrade options are application-focused PD testing packages. All packages include either the 3PARD three-phase filtering tool or the 3FREQ single-phase filtering tool. Both are used to reduce the influence of disturbances or to separate PD sources for detailed analysis.

For greater flexibility during PD testing, additional broadband IEC- and IEEE-compliant filters can be added. With the synchronous RIV and Q_{IEC} support, you can save time during every PD test. For the application of TEV testing as well

as the assessment of motors & generators, the mV-PRPD feature can be added in the MPD Suite software.

All required features for PD testing on cables, such as very broadband filters for localization (STDR), PD filters to eliminate negative supposition, the TDR localization feature and VLF support (available 2021), can also be added.

Key Feature Overview	Transformer testing	Motors & generators testing	Single-phase testing	Cable factory testing	Cable on-site testing	Multi-application
1. 3FREQ	—	—	■	■	■	■
2. 3PARD	■	■	—	—	■	■
3. Synchronous RIV and Q_{IEC} support	■	—	■	—	—	■
4. mV-PRPD (Available late 2020)	—	■	■	—	■	■
5. IEEE & IEC PD filters	■	■	■	■	■	■
6. Optical & electrical trigger (e.g. for PDL 650)	■	—	—	—	■	■
7. PD cable localization feature set	—	—	—	■	■	■

■ included — not compatible

Get an overview about all MPD Suite software packages

MPD Suite software package	Entry	Standard	Multi-Application	Transformer testing	Motors & generators testing	Single-phase testing	Cable factory testing	Cable on-site testing	Available soon
MEASUREMENT AND VISUALIZATION									
Multi-language support	■	■	■	■	■	■	■	■	
Display of ellipse view	■	■	■	■	■	■	■	■	
Meter display (PD and test voltage value)	■	■	■	■	■	■	■	■	
PD assessment (inception and extinction voltage as well as pass-fail testing)	■	■	■	■	■	■	■	■	
Self check	■	■	■	■	■	■	■	■	
IEC performance check	■	■	■	■	■	■	■	■	■
Q _{IEC} measurement	■	■	■	■	■	■	■	■	
Entry PD filter set (bandwidth: 100kHz, 300kHz, 1MHz)	■	■	■	■	■	■	■	■	
Entry measurement frequency range (0Hz - 2.5MHz)	■	■	■	■	■	■	■	■	
Reporting (settings, diagrams, values, viewer tool with PDF and CSV export)	■	■	■	■	■	■	■	■	
RIV support	—	■	■	■	■	■	■	■	
Display of phase-resolved pattern (PRPD)	—	■	■	■	■	■	■	■	
Multi-channel PRPD view	—	■	■	■	■	■	■	■	
Additional Standard PD filter set (bandwidth: 4.5kHz, 9kHz, 30kHz, 600kHz, 2MHz)	—	■	■	■	■	■	■	■	
Full measurement frequency range	—	■	■	■	■	■	■	■	
Synchronous multi-channel measurement	—	■	■	■	■	■	■	■	
MPD system overview diagram	—	■	■	■	■	■	■	■	
Synchronous oscilloscopes and FFT function	—	■	■	■	■	■	■	■	
H(Q), Q(U)	—	■	■	■	■	■	■	■	
Additional statistical values	—	■	■	■	■	■	■	■	
PRPD pre-recording	—	■	■	■	■	■	■	■	
PRPD dithering	—	■	■	■	■	■	■	■	■
Customizable user profiles (lock, hide and limit features)	—	■	■	■	■	■	■	■	
Usability enhancements (quick access buttons, customizable and flexible display sizes)	—	■	■	■	■	■	■	■	
Additional display for parallel view of diagrams	—	■	■	■	■	■	■	■	
Filtered and unfiltered PRPD view for 3PARD / 3FREQ	—	□	■	■	■	■	■	■	
Additional replay diagram	—	■	■	■	■	■	■	■	
Additional IEC-compliant PD filters (bandwidth: 400kHz, 900kHz)	—	—	■	■	■	■	■	■	
Additional IEEE compliant filter (bandwidth: 200kHz)	—	■	■	■	■	■	■	■	
PRPD mV-View	—	—	■	—	■	■	—	■	■
Filtered and unfiltered PD peak mV value	—	—	■	—	■	■	—	■	■
Synchronous RIV and Q _{IEC} measurement	—	—	■	■	—	■	—	—	

	Entry	Standard	Multi-Application	Transformer testing	Motors & generators testing	Single-phase testing	Cable factory testing	Cable on-site testing	Available soon
MPD Suite software package									
TRENDING									
Standard trending of measured values	–	■	■	■	■	■	■	■	
Automatic PD event triggered trending	–	–	■	■	■	–	–	■	■
EXPORT FUNCTIONALITY									
Save pictures of diagrams (including PRPD)	–	■	■	■	■	■	■	■	■
Recording and replay ¹	–	■	■	■	■	■	■	■	
Dataset export, Matlab export, .csv file export	–	■	■	■	■	■	■	■	■
COMPATIBILITY									
MPD 600 stream / dataset support	–	■	■	■	■	■	■	■	■
PD SEPARATION AND NOISE SUPPRESSION									
Phase-amplitude window gating	–	■	■	■	■	■	■	■	
Digital lowpass gating filters	–	–	■	■	■	■	■	■	
Gating channel support ¹	–	■	■	■	■	■	■	■	
Real-time gating channel PRPD comparison	–	■	■	■	■	■	■	■	
3FREQ	–	–	■	–	–	■	■	■	
3PARD	–	–	■	■	■	–	–	■	
MBB1 support (requires add-on “Automation Interface”)	–	■	■	■	■	■	■	■	
PD CABLE LOCALIZATION									
Cable fault localization (TDR and STDR)	–	–	■	–	–	–	■	■	
PD filters to eliminate negative superposition	–	–	■	–	–	–	■	■	
PD filters for localization (bandwidth: 5 MHz, 10 MHz, 20 MHz)	–	–	■	–	–	–	■	■	
Time synced PD scopes	–	–	■	–	–	–	■	■	
PD cable localization map	–	–	■	–	–	–	■	■	■
TRIGGERING AND SYNCHRONIZATION									
Optical and electrical trigger (e.g. PDL 650)	–	–	■	■	–	–	–	■	
GPS synced PD datasets	–	–	■	–	–	–	–	■	■
SOFTWARE MODULES / ADD-ONS									
PD testing at VLF	–	□	■	□	□	□	■	■	■
PD DC measurement	–	□	□	□	□	□	□	□	■
Automation interface (Microsoft COM [®] and Web) ²	–	□	□	□	□	□	□	□	
3FREQ	–	□	■	□	□	■	■	■	

■ included □ compatible and optional accessory – not compatible

¹ Included if license was purchased

² Feature set depends on packages

Ordering information

MPD 800 entry package

The MPD 800 entry package includes one MPD 800 acquisition unit, the rechargeable RBP1 battery pack, the fiber-optical controller MCU2, and all required accessories such as CPL, cables, adapters and clamps. It also includes the entry software package of the MPD Suite software.

	Description	Ordering No.
MPD 800 entry package	PD entry package to perform routine tests in a high-throughput environment and for fixed installations. The package is limited to one PD measurement channel. For additional channels, upgrade to the standard software package of the MPD Suite software.	P0000002

MPD 800 standard packages

All MPD 800 standard packages include the desired number of MPD 800 acquisition units, the rechargeable RBP1 battery pack, the fiber-optical controller MCU2, and all required accessories such as CPLs, cables, adapters and clamps. It also includes the standard software package of the MPD Suite software.

	Description	Ordering No.
MPD 800 standard package (1 channel, 1 unit)	General package for single-phase PD testing, using one channel and one MPD 800 devices. It is applicable on all assets and applications, including a comprehensive diagnostic tool set for simplified, customized testing, analysis and reporting.	P0000004
MPD 800 standard package (3 channels, 2 units)	Typical package for three-phase PD testing, using three channels and two MPD 800 devices. It is ideal for motors, generators and large transformers, as well as for on-site cable PD testing.	P0000006
MPD 800 standard package (3 channels, 3 units)	Enhanced package for three-phase PD testing, using three channels and three MPD 800 devices. It is ideal for motors, generators and transformers, as well as for on-site cable PD testing.	P0000008
MPD 800 standard package (6 channels, 3 units)	Typical package for three-phase PD testing, using six channels and three MPD 800 devices. This is ideal for transformers or on-site cable PD testing.	P0000010
MPD 800 standard package (6 channels, 4 units)	Enhanced package for three-phase PD testing, using six channels and four MPD 800 devices. This is ideal for large transformers or on-site cable PD testing.	P0000012

MPD 800 extension packages

	Description	Ordering No.
MPD 800 measurement extension package	Measurement extension package to expand your existing MPD 800 system by one additional PD measurement channel. It includes 1 × MPD 800 unit, 1 × measurement channel license and accessories.	P0000014
MPD 800 gating extension package	Gating extension package to enhance disturbance/noise suppression in noisy environments for your MPD system. It includes 1 × MPD 800 unit, 1 × gating channel license and accessories.	P0000016
MPD 800 unit	1 × MPD 800 unit to expand your existing MPD 800 system by one additional MPD 800 unit. A measurement channel license must be ordered separately.	P0000018

MPD 800 license extensions

	Description	Ordering No.
MPD 800 PD measurement channel license extension	Software license upgrade to activate one additional PD channel for measurements.	P0000020
MPD 800 gating channel license extension	Software license upgrade to perform channel gating on one additional PD channel for disturbance suppression in noisy environments.	P0000021
MPD 800 gating to measurement upgrade license	Software license upgrade from MPD 800 Gating channel license to Measurement channel license	P0000235

MPD 600 compatibility and integration into MPD 800 system

	Description	Ordering No.
MPD 600 compatibility upgrade option	This upgrade option allows you to integrate and continue to use your existing MPD 600 PD measurement devices with the new MPD 800 PD measurement and analysis system.	P0000035

Ordering information

MPD Suite software application upgrade options

The MPD Suite software upgrade options are application-focused PD testing packages.

	Description	Ordering No.
MPD 800 entry to standard upgrade option	Software license upgrade to benefit from the standard feature set of the MPD 800 software for general single-phase PD testing.	P0000003
MPD 800 standard to multi-application upgrade option	Software license upgrade to benefit from the combined feature set for multi-application PD testing, including 3PARD, 3FREQ, PD localization and the VLF testing add-on.	P0000028
MPD 800 standard to transformer testing upgrade option	Software license upgrade to get all the features needed to perform multi-phase PD measurements on power transformers, including 3PARD and the synchronous Radio Influence Voltage (RIV) and charge measurement functionality.	P0000022
MPD 800 standard to motors & generators testing upgrade option	Software license upgrade to get all the features needed to perform multi-phase PD measurements on motors & generators, including 3PARD.	P0000023
MPD 800 standard to single-phase testing upgrade option	Software license upgrade to perform single-phase PD measurements on various high-voltage assets and components, such as instrument transformers, bushings, capacitors, insulators and switchgear. It includes 3FREQ and the synchronous RIV and charge measurement functionality.	P0000024
MPD 800 standard to cable factory testing upgrade option	Software license upgrade to get all the features needed to perform PD cable localization with dedicated filters, VLF testing support and 3FREQ.	P0000025
MPD 800 standard to cable on-site testing upgrade option	Software license upgrade to get all the features needed to perform on-site PD testing and commissioning at multiple measurement points, such as cable joints and terminations. It includes 3PARD, cable PD localization tools with dedicated filters and VLF testing support.	P0000026

MPD Suite software upgrade options

Software license upgrade options are available for you to benefit from the multi-application feature set of the MPD Suite software, including 3PARD, 3FREQ, PD localization, and the add-on "VLF testing" module.

	Ordering No.
MPD 800 transformer testing to multi-application upgrade option	P0000030
MPD 800 motors & generators testing to multi-application upgrade option	P0000031
MPD 800 single-phase testing to multi-application upgrade option	P0000032
MPD 800 cable factory testing to multi-application upgrade option	P0000033
MPD 800 cable on-site testing to multi-application upgrade option	P0000034

MPD Suite software add-ons

These MPD 800 software add-ons are dedicated application packages. They can be added to the MPD 800 standard license and software upgrade options.

	Description	Ordering No.
MPD 800 "DC testing" add-on	Software license upgrade to perform PD testing in HVDC applications.	P0000038 (Available soon)
MPD 800 "Automation/Integration interface" add-on	Software license upgrade to enable automation of the MPD system in existing test environments.	P0000039
MPD 800 "3FREQ" add-on	Software license upgrade to enable 3FREQ. It is mainly used for single-phase filtering of PD for PD cluster and disturbance separation.	P0000037
MPD 800 "VLF testing" add-on	Software license upgrade to perform PD testing in VLF applications.	(Available 2021)

MPD 800 application workflows

These MPD 800 factory testing workflows can be added to the MPD 800 standard license and software upgrade options.

	Description	Ordering No.
MPD 800 "Transformer factory testing workflow"	Software license upgrade to benefit from a guided transformer testing workflow. This is ideal for transformer manufacturers.	(Available 2022)
MPD 800 "Cable factory testing workflow"	Software license upgrade to benefit from a guided cable testing workflow. This is ideal for cable manufacturers.	(Available 2021)

Ordering information

MPD 800 transport accessories

	Description	Ordering No.
MPC1	The MPC1 is the universal MPD 800 protection case for outdoor usage and rough industrial environments. It offers several configuration options for flexible usage.	P0000066
MTC1	The MTC1 is universal MPD transport case and can contain up to a 5 MPD 800 units, one UHF 800, one RIV and one IEC calibrator, a controller and batteries. Alternatively, the MTC1 can include a 3-unit MPD 800 system, 3 CPLs, one UHF 800, a controller, two calibrators (IEC, RIV) and batteries.	P0000067
MTC2	The MTC2 is the MPD flight case. It can contain up to 3 unit MPD 800 units, an UHF 800, one calibrator, MCU2 controller and batteries.	P0000068

MPD 800 extensions and accessories for UHF application

	Description	Ordering No.
UCS1	This sensor performs PD measurements in UHF ranges on cable terminations.	VEHZ4144
UHF 800	The UHF 800 is an ideal PD measurement solution for measuring power transformers and gas-insulated substations (GIS). It measures in the very high frequency (VHF) and ultra-high frequency (UHF) ranges.	(Available 2021)
UHT1	The UHT1 is a hatch-type sensor used for detecting PD inside power transformers in the ultra-high frequency (UHF) range. It is installed permanently on the surface of a tank of oil-paper-insulated power transformers, which do not have oil drain valves for a UVS 610.	VMON0194
UPG 620	The UPG 620 generates very fast slope pulses and is mainly used to verify the measurement circuit in the UHF range.	VE004242
UVS 610	The UHF valve sensor allows PD measurements in high-frequency ranges in power transformers with liquid insulation. It is inserted through the oil drain valve (DN 50 and DN 80).	VEHZ4131

Rechargeable external battery

	Description	Ordering No.
RBP1	The RBP1 is the external rechargeable battery which supplies power to the MPD 800 or UHF 800 units. > RBP1 Package (battery, charger, cable) > RBP1 Battery cable > RBP1 External (battery, cable, without charger) > Standard 24 W battery charger	VEHZ4147 VEHK0605 VEHZ4146 VEHZ4143

Fiber Optical Cables

	Description	Ordering No.
Duplex fiber optical cables	Three different types of fiber optical cables are offered for fixed installations with a small head (slim), a easy to use standard cable and a rugged version for on-site testing and rough environments. > Duplex fiber optical cable, 3 m / 10 ft > Rugged duplex fiber optical cable 5 m / 16 ft > Duplex fiber optical cable, 20 m / 65 ft > Slim Duplex fiber optical cable, 20 m / 65 ft > Rugged duplex fiber optical cable 50 m / 165 ft (drum)	P0000070 P0000071 P0000072 P0000073 P0000074

MPD 800 accessories

	Description	Ordering No.
BTA kits	<p>The following Bushing Tap Adapter (BTA) kits consist of a BTA adapter that connects to a specific bushing measurement tap and includes a gas discharge tube:</p> <ul style="list-style-type: none"> > BTA3 kit > BTA6 kit > BTA7 kit > BTA9 kit > BTA14 kit 	<p>VEHZ4162 VEHZ4163 VEHZ4164 VEHZ4165 VEHZ4166</p>
CAL 542	<p>The CAL 542 charge calibrator is used to inject a defined charge to verify the measurement circuit.</p> <ul style="list-style-type: none"> > Version A (0.1 pC ... 10 pC) > Version B (1 pC ... 100 pC) > Version C (10 pC ... 1 000 pC) > Version D (0.1 nC ... 10 nC) 	<p>VE004200 VE004210 VE004220 VE004230</p>
CPL1	<p>The CPL1 extends the test current range up to 7A and acts as additional protection device for the MPD 800.</p> <ul style="list-style-type: none"> > CPL1 Option IEC > CPL1 Option NEMA/ANSI/IEC/CISPR > CPL1 Option CISPR/IEC 	<p>P0000058 P0000059 P0000060</p>
CPL2	<p>The CPL2 is designed for easy integration of the MPD 800 into existing high-voltage systems whenever a coupling capacitor is used for PD testing and to measure the voltage to control the high-voltage source. The different CPL types are necessary for standard-compliant measurements.</p> <ul style="list-style-type: none"> > CPL2 Option IEC > CPL2 Option NEMA/ANSI/IEC/CISPR > CPL2 Option CISPR/IEC 	<p>P0000061 P0000062 P0000063</p>
MBB1	<p>The MBB1 balanced measurement bridge is recommended by IEC 60270 and enables you to perform differential PD measurements in test environments with heavy interference.</p> <ul style="list-style-type: none"> > MBB1 Basic version > MBB1 Package (incl. CAL 542-D and CPL1) 	<p>VEHZ4149 P0000064</p>
MCC	<p>The MCC coupling capacitor connects the MPD system to the high-voltage test object. Different MCC coupling capacitors are available for various voltage levels.</p> <ul style="list-style-type: none"> > MCC 112: 12 kV, 1.2 nF > MCC 117C: 17kV, 2.0nF > MCC 124C: 24 kV, 1.0 nF > MCC 210: 100 kV, 1.0 nF 	<p>VEHZ4118 VEHZ4157 VEHZ4158 VEHZ4117</p>
MCT 120	<p>The MCT 120 is a high-frequency current transformer (HFCT), which picks up PD signals in moderate heights and at a safe distance from high-voltage.</p>	<p>VEHZ4148</p>
RIV1	<p>The RIV1 calibrator enables the reliable calibration for PD measurement based on Radio Influence Voltage (RIV) according to NEMA and CISPR standards.</p> <ul style="list-style-type: none"> > RIV1-NEMA: Output impedance = $\leq 2 \Omega$ > RIV1-CISPR: Output impedance = $20 \text{ k}\Omega$ 	<p>VE004250 VE004251</p>
V-to-AC adapter	<p>The V-to-AC adapter enables the compatibility of an CPL 542 or CPL 543 to new MPD 800 units.</p>	<p>P0000065</p>

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— Quality —

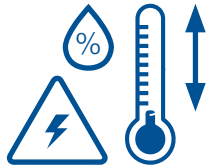
You can rely



on the highest
safety and security
standards

Superior reliability
through up to

72



hours burn-in tests before delivery

100%

routine testing of all
test set components



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TÜV & EMAS
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— Innovation —



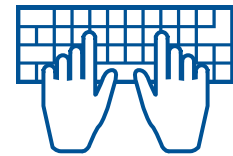
... a product portfolio geared
to my needs

More than

200

developers

keep our solutions up-to-date



More than

15%

of our annual sales gets reinvested
in research and development



Save up to

70%

testing time through templates,
and automation



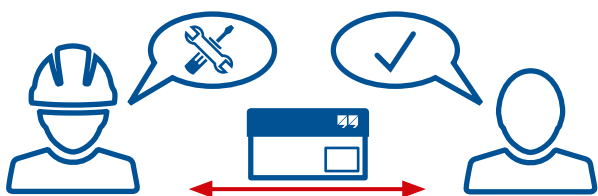
— Support —



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 —

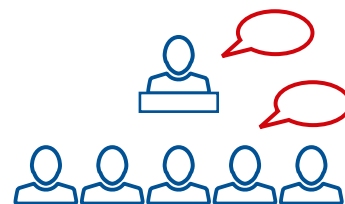
More than

300

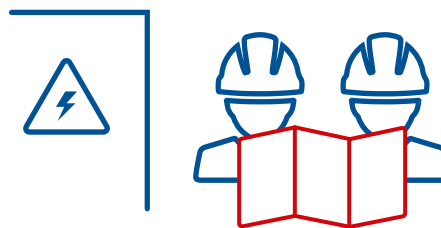


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The following publications provide more information about MPD 800:

- MPD 800 Universal Partial Discharge and Analysis System
- MPD 800 Technical Data
- MPD 800 Upgrade Information for MPD 600 Users

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