Technical data

MPD 500

Input

Center frequency range	0 Hz ... 2.5 MHz	
Input frequency bandwidth	100 kHz, 300 kHz, 1 MHz (RIV package: 9 kHz)	
Input frequency range	V input:	DC, 0.1 Hz ... 2.1 kHz
	PD input:	0 Hz ... 2.5 MHz
Input impedance	V input:	1 MΩ, in parallel 1 µF
	PD input:	50 Ω
Input voltage (max)	V input:	60 V_{rms}
	PD input:	10 V_{rms}
Dynamic range	V input:	102 dB,
	PD input:	132 dB (overall)

PC requirements

Hardware (minimum)	Pentium® 4 or later, Athlon® 64 or later / 1 GB RAM / USB 2.0
PC operating system	Windows 7™, Windows 8™, Windows 8.1™, Windows 10™

Accuracy

PD event time resolution	< 2 ns	
Input channels	PD level:	± 2 % of calibrated PD value
	Voltage:	± 0.05 % of calibrated voltage
	Frequency:	± 1 ppm (typical)

Dimensions and ambient condition

Humidity	5 % ... 95 %, non condensing	
Ambient temperature	Operating:	0 °C ... 55 °C / 32 °F ... 89 °F
	Storage:	-10 °C ... 70 °C /14 °F ... 158 °F
Dimension (W × D × H)	110 × 44 × 190 mm / 4.3 × 7.5 × 1.7 in	
Weight	600 g /1.3 lb	
Power supply	8 ... 12 V DC via ext. power supply or MPP 600 Li-Poly battery	

MCU Fiber Optic Bus Controller

Technical Data	MCU 502
Dimensions (W × H × D)	110 × 30 × 180 mm / 4.3 × 1.2 × 7.1 in
Weight	590 g / 1.3 lb
Connectors	
USB 2.0 type B (with USB cable, 2 m)	1 ×
Fiber optical network (600 series)	2 ×

MPP 600 – Lithium-Ion Power Pack with Battery Charger

Technical Data

Dimensions (W × H × D)	110 x 30 x 170 mm / 4.3 x 1.2 x 6.7 in
Weight	780 g / 1.719 lb
Power Rating	11.1 V nominal, 8.7 Ah
Nominal energy	96.5 Wh

Accessories

1 CAL – Charge calibrator/injector

The CAL 542 charge calibrator is used to inject a defined charge into and verify the measurement circuit.

Technical Data	CAL 542
Pulse repetition frequency	300 Hz
Pulse rise time	< 4 ns*
Dimensions (W × H × D)	110 × 30 × 185 mm / 4.3 × 1.2 × 7.3 in
Weight (incl.battery)	520 g / 1.2 lb
Output connector	1 × BNC (with BNC adapter, cables and connection clamps)
Power supply	Lithium Battery 9 V, Lifetime > 10 years

* Typical value for version A and version B

2 RIV1 – RIV Test calibrator

The RIV1 calibrator enables the reliable calibration of the MPD system for PD measurement based on Radio Influence Voltage (RIV) according to NEMA and CISPR standards.

Technical Data	RIV1-NEMA	RIV1-CISPR
Frequency range	100 kHz ... 2 MHz (50 kHz steps)	100 kHz ... 2 MHz (50 kHz steps)
Magnitude	10 µV ... 10 mV	10 µV ... 10 mV @300 Ohm
Magnitude Accuracy	<2%	<2%
Output Impedance	<2 Ohm	20 kOhm
Standards met	NEMA 107 - 1987, IEEE C57.12.90-2008	IEC 60437, CISPR 18-2 (2)
Accessory (Quadripole)	CPL 542 NEMA 0.5A, CPL 542 NEMA 1.2A	CPL 542 CISPR 0.5A, CPL 542 CISPR 1.2A

Connectors	1 × BNC
Dimensions (W × H × D)	120 × 40 × 183 mm / 4.72 × 1.57 × 7.20 in
Weight	680 g / 1.5 lb
Material	Extruded aluminum
Operating temperature	0 °C ... 50 °C / -4 °F ... 122 °F
Storage temperature	-20 °C ... 70 °C / 4°F ... 158 °F
Humidity	10 ... 95 %, non-condensing

3 CPL – Measuring impedance

The CPL quadripoles are an external measuring impedance for PD measurements. Both include an integrated 90 V_{Peak} overvoltage protection device.

Technical Data	CPL 542	CPL 543
Max. currents	0.5 A or 1.2 A / 2 A	5 A
Frequency range (PD output)	20 kHz ... 5 MHz 0.2 ... 1.5 MHz (CISPR) 0.85 ... 1.15 MHz (NEMA)	29 kHz ... 5 MHz
Low-arm capacitance	30 µF (for 0.5 A) 120 uF (for 2 A or 1.2 A)	272 µF
Input connectors	2 × 4 mm terminals[5] 1 × GND	2 × 4 mm terminals[5] 1 × GND
Output connectors	2 × BNC (PD & V), 1 × BNC (TTL signal)	2 × BNC (PD & V)
Dimensions (W × H × D)	150 × 60 × 100 mm / 5.9 × 2.4 × 4.0 in	150 × 60 × 100 mm / 5.9 × 2.4 × 4.0 in
Weight	700 g / 1.5 lb	700 g / 1.5 lb

[5] For connecting coupling capacitor

4 MCC – Coupling capacitor

The coupling capacitor connects the MPD 600 to the high-voltage test object. Different MCC coupling capacitors are available for various voltage levels. The MCC 112, MCC 117-C and MCC 124-C coupling capacitors are designed for direct connection to the MPD 600. The MCC 210 is designed with a built-in quadripole measuring impedance with 4 µF low-arm capacitance. The MCC 210L is available without the quadripole.

Technical Data	MCC 112	MCC 117-C	MCC 124-C	MCC 210 / MCC 210L
U_{pr8} (phase-to-ground)	12 kV	17.5 kV	24 kV	100 kV
$C_{Nominal}$	1.2 nF (± 20%)	2 nF (+/- 15 %)	1.2 nF (+/- 20%) Option C: 1.0 nF (+/- 15%)	1.0 nF (± 10%)
Withstand Voltage (1 min)	28 kV	38 kV	50 kV	120 kV
Q_{PD}	< 2 pC @ 13.2kV	< 2 pC @ 20.7 kV	< 2 pC @ 26.4 kV	< 1 pC @ 100 kV
Weight	4.5 kg / 9.9 lb	2.3 kg / 5.1 lb	6 kg / 13.2 lb Option C: 3.2 kg / 7.05 lb	10 kg / 22.1 lb
Dimensions (W × H × D)	182 × 158 × 182 mm / 7.2 × 6.2 × 7.2 in	104 × 150 × 165 mm / 4.1 × 5.9 × 6.5 in	182 × 238 × 182 mm / 7.2 × 9.4 × 7.2 in Option C: 150 × 219 × 150 mm / 5.9 × 8.6 × 5.9 in	450 × 766 × 450 mm / 17.5 × 30.15 × 17.5 in
Scope of delivery	Adapter (TNC to BNC) BNC connection cable	Adapter (TNC to BNC) BNC connection cable	Adapter (TNC to BNC) BNC connection cable	BNC connection cable

5 Bushing adapters

The following BTA kits consist of a BTA adapter that connects to the specific measurement tab and includes a gas discharge tube. The kits also include a BTA to BNC adapter and a coaxial cable that connects either via CPL or directly to the MPD system.

Technical Data

BTA3 kit	G ¾" inside thread, 4mm female connector for: e.g. ABB / Micafil standard, RTKF, RTKG
BTA6 kit	2¼" – 12 UN outside thread, 8mm female connector for: IEEE Standard bushing measurement tab, ABB O Plus C
BTA7 kit	M30 ×1.5 outside thread, 4mm female connector for: e.g. HSP Type SETF
BTA9 kit	¾" – 14 NPSM outside thread, spring contact interface for: e.g. ABB Type T
BTA14 kit	M24 inside thread, 4 mm male connector for: e.g. F&G or HSP Type EKTF

6 MCT 120 – High frequency CT

The MCT 120 is a high-frequency current transformer (HFCT), which picks up partial discharge signals in moderate heights and at a safe distance from high-voltage.

Technical Data

Frequency Range (-6 dB)	80 kHz ... 40 MHz (0 mm gap)
Inner hole dimensions	ø ~53.5 mm (2.11 in.)
Outer dimensions	114 × 154 × 62 mm (4.49 × 6.07 × 2.45 in.)
Ferrite core	Split
Connector	BNC, 50 Ohm, female
Weight	1.2 kg (2.65 lbs.)
Operating temperature	-20 °C ... 55 °C (-4 °F ... 130 °F)