ICM*compact*
Stand-alone PD detector

- **Allows factory acceptance tests (FAT) and measurements according to IEC 60270**
- **User-friendly setup**
- **Available in three housing versions (half 19 inch desktop version, 19 inch rack mountable version, robust outdoor Explorer case)**
- **High modularity and robustness**

DESCRIPTION

The ICM*compact* is a digital compact partial discharge (PD) measuring device for the condition evaluation of medium and high voltage insulation. It is typically used for quality assurance and quality control, including factory acceptance tests (FAT), end-of-line testing, and post repair. It is also suitable for field use.

The ICM*compact* is primarily intended for the following assets:

- Factory acceptance tests for MV and HV assets
- Distribution transformers
- Instrument transformers (voltage transformers and current transformers)
- MV and HV cables
- Electronic components (i.e., insulated-gate bipolar transistors)

The ICM*compact* is available in three housing types, depending on your main purpose:

- Desktop version
- In-house device (integrated into a test bench)
- Portable version (Explorer)

YOUR ADVANTAGES

- Reducing failures and risks of total breakdowns
- Ensure quality assurance
- Flexible configuration with accessories and additional functions

OPTIONAL FEATURES

It is possible to equip the ICM*compact* with extras and additional functions:

- PD spectrum analysis
- PD fault location for cables with digital storage oscilloscope (DSO) function
- Radio influence voltage (RIV) measurement
- High voltage measurement (HVM)
- Analogue gating
- Four- or twelve-channel multiplexer
- Battery-operated and cordless device with up to three hours operation time (Explorer case only)
- LAN and fibre optic serial link
- Auxiliary inputs for recording additional data such as power and temperature
- PC or laptop and control software
- Rugged case ICM*outlande*r for outdoor use under demanding conditions

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SPECIFICATIONS

Mains supply	90–264 V AC, 50/60 Hz (automatic)
Line fuse	1.6 A (time-lag)
Power requirements	Approx. 40 VA
Battery (optional)	3 hours continuous operation
Display	Backlit LCD
Display size	120 mm x 64 mm
Display resolution	128 x 240 pixels b/w
Standard display modes	PD charge meter, oscilloscope-like display, phase-resolved PD pattern (PRPD)
Operation	5 menu supported buttons, 5 fixed function buttons (with multi-channel version) or remote controlled via software
Recorder output	0–10 V with R_o=100 Ω (re-converted analogue value of the meter reading)
Operation temperature	10–40 °C (non-condensing)
Input impedance	50 Ω II 50 pF (AMP IN)
A/D converter (PD)	8 bits (unipolar) / ±7 bits (bipolar)
Size (W x D x H)	250 x 320 x 160 mm³ (desktop model, exclusive BNC connectors) 305 x 144 x 270 mm³ (Explorer case, closed) 305 x 360 x 270 mm³ (Explorer case, open) 482.5 x 133 x 345/310 mm³ (19 inch rack mountable version)
Weight	~ 4 kg (½ 19 inch model) ~ 4.4 kg (Explorer case)

Standard PD mode

Lower cut-off (-6 dB)	40, 80, or 100 kHz (software-controlled)
Upper cut-off (-6 dB)	250, 600, or 800 kHz (software-controlled)
Input sensitivity	< 500 µV RMS/5 pC (without preamplifier)
Gain range	1, 2, 4, 8, 10, 20, …, 200, 400, 800

Pre-amplifier

Input impedance:

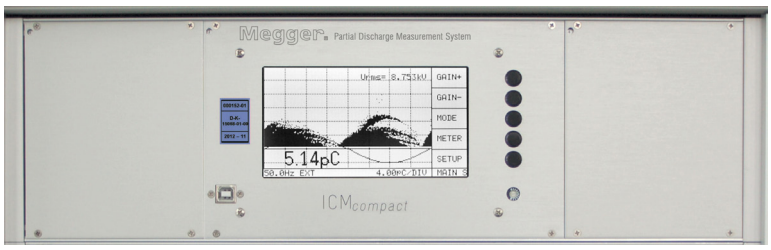
RPA1/RPA1D	10 kΩ ‖ 50 pF
RPA1L/RPA1H	1 kΩ ‖ 50 pF
RPA2	50 Ω ‖ 50 pF

Input sensitivity:

RPA1/RPA1D	< 50 µV RMS/0,03 pC
RPA1L	< 15 µV RMS/0,02 pC
RPA1H	< 40 µV RMS/0,05 pC
RPA2	< 800 µV RMS/1 pC

Bandwidth:

RPA1/RPA1D	40–800 kHz
RPA1L/RPA1H	40 kHz–20 MHz
RPA2	2–20 MHz



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Synchronisation/HVM

Synchronisation frequency	5–505 Hz/VLF (0.02/0.05/0.1 Hz)
Maximum voltage	200 V_{peak} (140 V RMS), 100 V RMS nom.
Input impedance	10 MΩ
A/D converter	±15 bits
Precision	Typ. < 1.5 %

Spectrum-Funktion

Input sensitivity	< 5 µV RMS/0.5 pC (270 kHz bandwidth); < 1 µV RMS/2 pC (9 kHz bandwidth)
Maximum input voltage	120 mV RMS (270 kHz bandwidth) 5 mV RMS (9 kHz bandwidth) 2.5 mV RMS (RIV)
Frequency range	10 kHz–10 MHz (in steps of 10 kHz)
Bandwidth	9 kHz or 270 kHz
Precision	Typ. < 5 %

Available communication interfaces

USB
COM TTL (SUB-D male)
LAN (RJ45)

PD fault location on cables

Trigger	0–100 % of input signal (in steps of 3.125 %)
A/D converter	± 7 bits
Samples	100 MSamples/s (Tsample = 10 ns)
Reduced sample rates	50 MS, 25 MS
Displayed time window	200 ... 8000 samples (2 ... 80 µs at 100 MS / 8 … 320 µs at 25 MS)
Specimen cable length	0 to 5000 m (in theory), for 80 µs and v_c=140 m/µs (Note: Localisation on cables longer than 3000 m is not possible because of pulse attenuation)
Localisation precision	1 m + 0.1 % of cable length

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ACCESSORIES

The ICM*compact* can be combined with various accessories to perform an optimal measurement. The following accessories are recommended:

- Pre-amplifiers of RPA series
- Coupling capacitors
- Quadrupoles
- Current transformers
- Disturbance antenna DA1
- DAkkS certified calibration impulse generators

For more details, and ordering information on our accessories, please refer to our accessories catalogue.

ORDERING INFORMATION

Product	Order no.
One-channel ICM*compact*, half 19-inch desktop housing	PX10104
One-channel ICM*compact*, 19-inch rack mountable housing	PX10126
One-channel ICM*compact*, Explorer case	PX10127
Four-channel ICM*compact*, half 19-inch desktop housing	PX10129
Four-channel ICM*compact*, 19-inch rack mountable housing	PX10130
Four-channel ICM*compact*, Explorer case	PX10131
Cable set for ICM*compact* with one channel	PX17006
Cable set for ICM*compact* with four channels	PX17048

Software	Order no.
Standard control software	PX19001
Enhanced location software	PX19002
Update of standard control software to current revision	PX19034
Update of enhanced location software to current revision	PX19035

Options	Order no.
Spectrum analysis	PX10120
PD fault location for cables	PX10105

Options	Order no.
RIV measurement (incl. four-channel multiplexer, requires spectrum analysis option)	PX10121
Analogue gating	PX10102
High voltage measurement	PX10103
Gating input for fibre optic cable	PX10124
External twelve-channel multiplexer	PX10107
LAN interface	PX10122
COM TTL interface for fibre optic communication cables	PX10123
Four auxiliary inputs	PX10110
Remote control computer system	PX90000
IP65 protected rugged outdoor case ICM*outlander*	PX10381
Transportation case for instruments with desktop housing and accessories	PX18122
High transportation case for instruments with desktop housing and accessories	PX18126
High transportation case for instruments with desktop housing, coupling capacitor, and accessories	PX18127

Set of measuring cables is NOT included with the instrument and must be ordered separately.

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ISO 9001, ISO 14001,
ISO 17025, ISO 45001

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