AIA*compact*
Portable insulation analyser

PD •
by Megger®

Power Diagnostix Systems

- Acoustic and electric UHF partial discharge (PD) measurements without interrupting assets in operation

- Cordless measurements on gas-insulated switchgears (GIS), gas-insulated lines (GIL), transformers, and cable accessories

- Reliable identification of bouncing particles in GIS/GIL and the severity of their activity

- Effective noise cancelling in environments with high frequency (HF) disturbances

- Can be used with a variety of piezoelectric acoustic sensors

DESCRIPTION

The AIA*compact* is a portable instrument for in-service acoustic and electric (UHF) partial discharge measurements on high voltage assets such as:

- Gas-insulated switchgears (GIS)
- Gas-insulated lines (GIL)
- Power transformers
- Distribution transformers
- Cable accessories

To be suitable for all these applications, the instrument adapts to a variety of piezoelectric acoustic sensors and pre-processing units. It can be used with acoustic sensors and external ultra high frequency sensors as well as embedded UHF sensors of the tested asset.

Because of its built-in battery and its standalone capability the AIA*compact* can even be used for on-site testing in environments where no mains supply is available.

For a convenient remote control of the device, the USB interface allow the connection to a PC or laptop with the optional AIA*compact* software installed.

Every AIA*compact* comes with a built-in four-channel multiplexer, which allows switching between four input channels. Buttons at the panel of the instrument enable you to directly select one of the four signal sources. Thereby,

the partial discharge signal and the voltage signal are split and can be selected separately. All settings, e.g., input and display mode, are stored individually for each channel.

YOUR BENEFITS

- Prevention of asset breakdowns and system failures by early identification of insulation defects

- Mobile testing on demand thanks to battery operation for up to three hours

- Quick operational readiness due to user-friendly set-up and simple operation, even when working on-line

STANDARD FEATURES

- Three different housing models
- Built-in four-channel multiplexer
- External infrared synchronisation box IRS1B
- Analogue gating for capturing disturbance signals via an external signal processing unit
- Output for the connection of a paper recorder or similar instrument
- Built-in speaker for the audible indication of detected PD signals
- Four possible ways of synchronising the instrument

OPTIONAL FEATURES

The AIA*compact* comes with a range of optional features that allow it to be tailored to your specific requirements, enabling it to work seamlessly into your measurement environment. Available options are:

- Twelve-channel multiplexer for the Explorer case and 19-inch enclosure models
- Software for convenient control and management of the instrument via laptop or PC

ACCESSORIES

To perform a measurement, the AIA*compact* requires accessories. Which accessories depends on your testing purpose and environment. The following accessories are recommended:

- Ultra-sonic (acoustic) PD sensors
- UHF sensors
- Sensor fixtures
- Preamplifiers of RPA series
- Frequency converter units
- Input protection units
- Disturbance antennas
- DAkkS certified calibration impulse generators
- Robust transportation case

For more details, as well as ordering information on our accessories, please refer to our accessories catalogue.
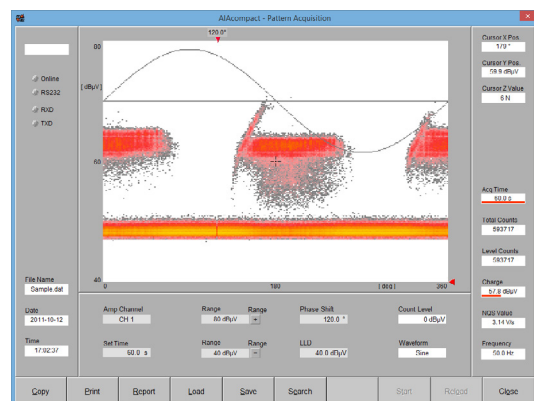
SOFTWARE

Captured patterns and displays can be transferred to a PC or laptop via USB connector using the AIA*compact* software.

The main panel shows an image of the instrument's LCD, and the acquired data is constantly refreshed.
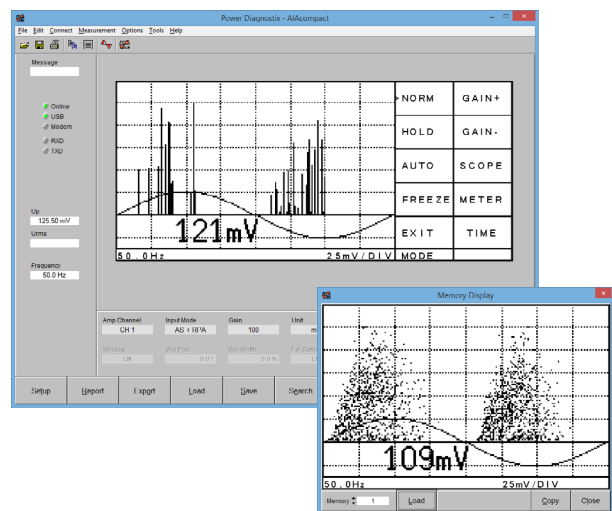
The ten menu buttons on the LCD can be used in the same manner as the physical ones on the instrument. These allow the unit to be controlled remotely, even over long distances. Additionally, the software allows the acquisition of coloured PD patterns that show more in-depth information than black and white patterns. These patterns can then be exported as bitmap files.

TECHNICAL DATA

Mains supply	85–264 V AC, 47–440 Hz (automatic)
Line fuse	1.6 A, (time-lag)
Power requirements	Approx. 20 VA
Memory	7 addresses ($<$ firmware version 3.0) 120 addresses ($\geq$ firmware version 3.0)
Lower cut-off (-6 dB)	40 kHz
Upper cut-off (-6 dB)	800 kHz
Synchronisation	Line (internal), BNC (external), infrared (with automatic change of the synchronisation type)
Synchronisation frequency:	20–310 Hz ($<$ firmware version 3.0) 10–520 Hz ($\geq$ firmware version 3.0)
Input voltage at the ext. synchronisation input	200 V_{peak} or 100 V RMS
Input impedance	1 MΩ $\|\|$ 200 pF
Recorder output	0–10 V with $R_O=100$ Ω
Display	Backlit LCD
Display resolution	128 x 240 pixels b/w
Operation	Two rows of five menu supported buttons, one power button
Operation temperature	10–40 °C (non-condensing)
Remote connection	USB
Dimensions (W x H x D)	236 x 133 x 301 mm^3 (half 19-inch enclosure, incl. BNC connectors) 450 x 133 x 295 mm^3 (19-inch enclosure, incl. BNC connectors) 305 x 144 x 270 mm^3 (Explorer version, closed)
Weight	Approx. 4.6 kg (desktop model) Approx. 5.5 kg (Explorer case)

ORDERING INFORMATION

Product	Order no.
AIA*compact*, half 19-inch desktop housing	PX10508
AIA*compact*, 19-inch desktop housing	PX10510
AIA*compact*, Explorer case model	PX10509
Cable set for AIA*compact*	PX17032

Options	Order no.
Control software	PX19018
Twelve-channel multiplexer	PX10116
Transportation case for instruments in Explorer case and accessories	PX18121
Transportation case for instruments with desktop housing and accessories	PX18122
High transportation case for instruments in Explorer case and accessories	PX18133
High transportation case for instruments with desktop housing and accessories	PX18126
IP65 protected rugged outdoor case ICM*outlander*	PX10381

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

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