

# DMI 552

Digital Measuring Instrument  
for AC and DC

*Datasheet*



## HAEFELY

Current and voltage – our passion

Designed by



# General Description

High Voltage measurements are done by connecting a specialized voltmeter (like the DMI 552) to the secondary unit of a voltage divider or to a current to voltage transducer (like a shunt).

**The DMI 552 has been developed to measure, record and visualize events during dielectric and breakdown tests in high voltage applications according to IEC 61083-3:2020.**

Measured values are shown as large digits on the computer screen using Haefely CaMS software. In addition, for pass/fail criteria during dielectric tests, Peak by  $\sqrt{2}$  voltage is recorded & last value before breakdown is shown.

Graphical indications as scope function, FFT, datalogger or flash detection are included.

To facilitate easy comprehension, voltage divider ratio or shunt conversion factor (A/V) can be incorporated in the calculation to display parameters directly in kV or A

Fiber optic connection guarantees galvanic isolation between the operator and high voltage test lab, increasing safety.

The DMI can generate reports based on templates which can be printed or saved as PDF. Snapshots of the display or charts can be easily included in the reports.

Features	Advantages
<ul style="list-style-type: none"> <li>Designed to measure voltage and current in high voltage applications.</li> </ul>	<ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> <b>Approved for dielectric tests as per IEC 61083-3</b> – as Peak/<math>\sqrt{2}</math> is the required measured parameter.</li> </ul>
<ul style="list-style-type: none"> <li>Measures AC voltage and currents as RMS, Peak and Peak/<math>\sqrt{2}</math> among others</li> </ul>	<ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> <b>The Peak/<math>\sqrt{2}</math> required value</b> during dielectric test is measured and recorded.</li> </ul>
<ul style="list-style-type: none"> <li>Measures DC voltage and currents as Mean, Peak and ripple.</li> </ul>	<ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> <b>One device, 2 applications</b>, same device can be used for AC and DC application.</li> </ul>
<ul style="list-style-type: none"> <li>Flash detection with voltage indication</li> </ul>	<ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> <b>Exact voltage just before failure is recorded and shown</b> – if a failure arise during the test, failure indication, voltage measured before the flash and waveshape during the flash is shown and recorder for further analysis.</li> </ul>
<ul style="list-style-type: none"> <li>Real time scope and Frequency analysis FFT.</li> </ul>	<ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> <b>Waveshape quality</b> of the signal is continuously shown in the screen.</li> </ul>
<ul style="list-style-type: none"> <li>Additional AC/DC current channel (optional).</li> </ul>	<ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> <b>Voltage and current readings in one single device</b> – values can be simultaneously shown and recorded.</li> </ul>
<ul style="list-style-type: none"> <li>Computer controlled with Haefely CaMS graphical user interface</li> </ul>	<ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> <b>Reduced training time</b> - Modern SW makes the use of the device easier than ever. Operators can start using the device in minutes.</li> </ul>
<ul style="list-style-type: none"> <li>Optically decoupled from computer</li> <li>Compact, reliable, and EMC hardened design, IP50</li> </ul>	<ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> <b>The galvanic isolation ensures the full safety of the operating personnel.</b> With the DMI 552, there is no electrical connection between the control room and the high voltage test room.</li> </ul>
<ul style="list-style-type: none"> <li>Mains powered</li> </ul>	<ul style="list-style-type: none"> <li><input checked="" type="checkbox"/> <b>Connect and forget</b> - no battery pack or recharge of batteries needed.</li> </ul>

# Applications

- High voltage laboratories
- On site high voltage test
- Calibration laboratories

# Scope of Supply

- DMI 552 measuring device
- FiberLink – Harting to USB
- 20m Harting fiber optic cable
- Connection accessories set - per channel.
- USB stick with software
- Manual (English)
- Quick start guide

# Technical Data

## Measured Values Voltage & Current<sup>(1)</sup>

AC	Amplitude	$\pm$ Peak, $\pm$ Peak/ $\sqrt{2}$ , RMS <sub>fund</sub> , Peak <sub>AVG</sub> , RM, RM <sub>Corr</sub> , Mean, Peak Factor, Rate of Rise
	Frequency	Fundamental frequency
	Harmonics	1...20 <sup>th</sup> individual (Amplitude, Phase, Ratio), THC, THD
	Peak-hold values	Peak Flash, RMS Flash, Rate of Rise Flash
DC	Amplitude	Mean, Ripple, f <sub>Ripple</sub> , Peak, Rate of Rise
	Peak-hold values	Peak Flash, RM <sub>Corr</sub> Flash, Rate of Rise Flash

(1) (External shunt not included)

## AC & DC Measurement

Input voltage	0...400 V <sub>pk</sub>
Input impedance	1 M $\Omega$    3 pF
Frequency	DC, 10...600 Hz (Fundamental , 20 <sup>th</sup> Harmonic ; 12 kHz)
Accuracy AC <sup>(1)</sup>	$\pm$ (0.1 % +10 0 $\mu$ V)
Accuracy DC <sup>(1)</sup>	$\pm$ (0.1 % +1 mV)
Averaging	100 ms...10 s (selectable)
Sampling rate	48.8 kS/s
ADC resolution	24 bits
Recording depth	500 kpoints of data stream

<sup>(1)</sup> Over full temperature range

## Interfaces

2 Voltage inputs	2 x BNC 50 Ohm (one enabled in standard supply).
Fiber link adapter	Fiber-optic, HARTING connector to Ethernet 10/100 (data) and USB 2.0 (power/data)
Computer connection	USB 2.0 (in Fiber Link).
Digital outputs control	Ethernet port (at Fiber Link Adapter) to control an external digital I/O (not included) to generate hardware trigger signals after events (Flash, Trip).

## Indicators in CaMS™ Software

Meters	Selectable number of meters (Measured values)
Charts	Scope (Waveshape), FFT, Data logger
Graphical	Flash (Breakdown), Trip (Overvoltage)

## Environmental, Mechanical and Power Supply

Operating temperature	-20 °C...+55 °C
Storage temperature	-40 °C...+85 °C
Humidity	5...95 % r.h., non-condensing
Dimensions (W x D x H)	342 x 315 x 86 mm (13.5 x 12.4 x 3.4 in)
Weight	6 kg (13.2 lb)
Protection class	IP 50
Power supply spec.	90...140; 195...265 VAC, 50/60 Hz, 25 VA

## PC, Screen Resolution and Operation System Requirements

PC configuration	Minimum: Intel Core i5 (3 <sup>rd</sup> Gen) or better, 4 GB RAM, Ethernet / USB 2.0 Recommended: Intel Core i7 (10 <sup>th</sup> Gen) or better, 16 GB RAM, Ethernet / USB 2.0
Operation system	Windows™ 11, 64-bit

## Applicable Standards

General	IEC 61083-3 , IEC 60060.
CE conformity	EMC Directive 2014/30/EU and RoHS Directive 2011/65/EU

## Global Presence

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# HAEFELY

Current and voltage – our passion



HIGH VOLTAGE



INSTRUMENTS



EMC

precision.  
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