2883 MIDAS micro

Mobile Insulation Diagnosis & Analysing System

C AND TAN δ (POWER FACTOR)

VARIABLE FREQUENCY TAN δ (POWER FACTOR)

TIP-UP TEST

FEATURES AND BENEFITS

- ☑ Capacitance, dissipation / power factor testing
- ☑ Compact one-box design with only 25 kg / 55 lb
- ☑ 12 kV high voltage source
- ☑ Variable frequency 15 – 400 Hz
- ☑ Accuracy of 0.3% (capacitance) and $1x10^{-4}$ (tan δ)
- ☑ Safe operation with interlock, emergency stop, safety checks and HV ground surveillance
- ☑ 7” color touch screen for easy operation
- ☑ Three operating modes: basic, guide, advanced

APPLICATIONS

Capacitance and power / dissipation factor testing of:

- Power Transformers
- Instrument Transformers
- Bushings
- Capacitors
- Circuit Breakers
- Surge Arrestors

■ The MIDAS micro 2883 is the smallest and most compact insulation diagnosis set on the market. The weight of only 25 kg / 55 lbs and the one box design makes it the ideal tool for power / dissipation factor / tan δ and capacitance testing in the field and in the factory.

State-of-the art electronic design, advanced digital filtering and sophisticated calculation algorithms ensure highly stable results even under adverse conditions.

The three main operating modes offer the user a choice. For quick and straight-forward measurements the basic mode is used, where only the essential information is shown. For advanced tests such as variable frequency or voltage (tip up) measurements the guide mode is available. The user is guided through the measurements with safety and connection instructions shown on the colour touch screen. And the advanced mode offers additional flexibility for special test sequences.

The MIDAS micro 2883 is completed with extensive safety features. Hand and foot interlock switches, easily accessible emergency stop button and built in safety checks ensure safe operation under all circumstances.

ONE BOX – RUGGED AND EASY TO TRANSPORT

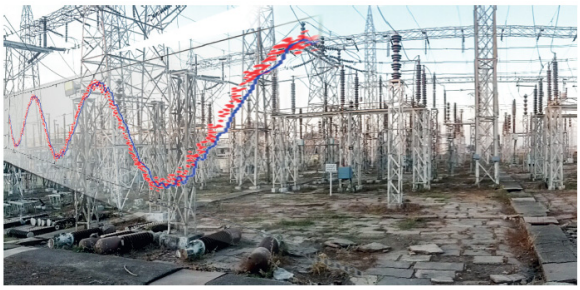
The complete instrument is built in one ruggedized case and has a total weight of only 25 kg / 55 lb. With the integrated casters transportation is convenient and test objects in remote locations can be reached easily.

The MIDAS micro 2883 has run through extensive type testing to simulate the rough environment a product can face during its lifetime. Fulfilling the MIL-STD-810G standard, MIDAS micro 2883 assures you the highest quality and reliability in operation.

Included are a variety of accessories all packed in a robust transportation bag which can be attached to the case. The measurement and high voltage cables are rolled on cable drums which make connection and storing convenient and quick.

RELIABLE RESULTS - ALWAYS

Accurate measurements in substations can be difficult because of strong electrical fields generated by high voltage transmission lines. The MIDAS micro detects that interference is present and switches to the appropriate noise suppression mode, if necessary.



State-of-the-art digital signal processing is used to filter out the interfering signals. This results in stable and repeatable values under all conditions.

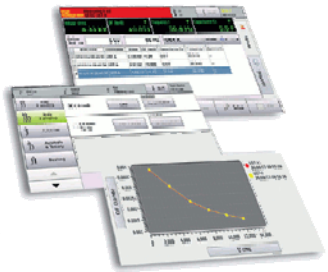
SAFE OPERATION

The MIDAS micro 2883 includes several features that ensure safety of the personnel and material. It is equipped with an open ground detection which allows high voltage to be switched on only when a proper ground connection has been made to the unit. In addition to an emergency stop button, the unit is equipped with an external dead-man type safety switch which must be held down prior to testing to allow for high voltage to be turned on. The warning sound and a warning lamp bar located on the top side of the display provide visual and audible warning signals. Additionally an external optional strobe light can be connected.

THE FEATURES YOU NEED

The instrument includes all the features needed to perform tests on various high voltage components. The 12 kV voltage source delivers a clean signal, independent of the mains. The variable frequency source (15 – 400 Hz) allows for advanced measurements such as bushing analysis over a frequency range. A gas filled standard capacitor is used as an internal reference. This guarantees repeatable results and long term stability. With the USB interface and integrated thermal printer, reporting of results is easy.

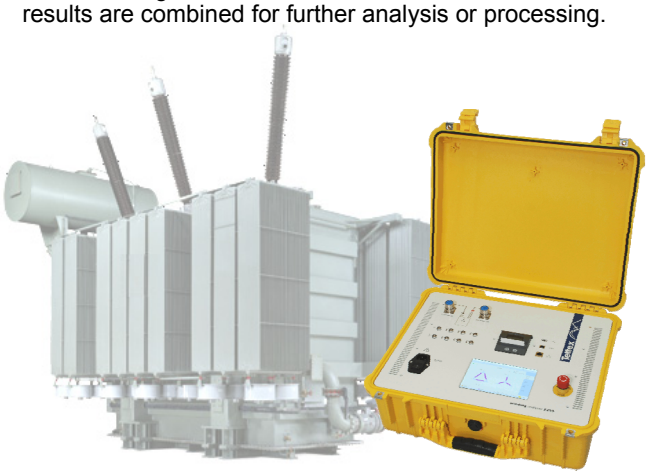
QUICKLY TO THE RESULTS YOU WANT



Three operating modes are built in, to suit your needs. Use the basic mode for quick and straight forward measurements where only essential displays and controls are shown. Or allow the Guide Mode to walk you through the measurements - from basic insulation diagnosis to advanced tip-up and variable frequency bushing analysis. The advanced mode offers even greater flexibility for special test sequences.

THE PERFECT COUPLE FOR TRANSFORMER TESTING

Combine the MIDAS micro 2883 with the Winding Analyzer 2293 for an entire test solution on transformers. With 2293 tests like winding resistance, transformer turns ratio and magnetic balance measurements can be done with one single connection. Compatible file formats allow data exchange between the two units and measurements results are combined for further analysis or processing.



TECHNICAL SPECIFICATIONS

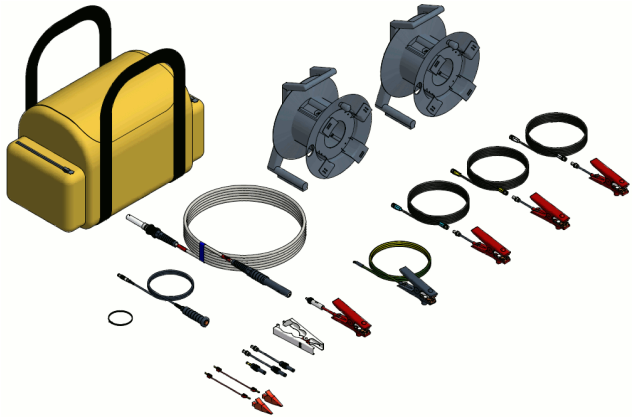
Dimensions			
Size	54.6 x 34.7 x 24.7 cm	(21.5" x 13.66" x 9.72")	
Weight			
Instrument	24.9 kg (single case)	(55 lb)	
Cable / Accessory Bag	16.2 kg	(35.7 lb)	
Environment			
Operating Temperature	-10 .. 50°C	(14..122° F)	
Storage Temperature	-20 .. 70°C	(-4..158° F)	
Relative Humidity	5 .. 95 % r.h. non-condensing		
Standards			
Safety	IEC 61010-1 (2010)	EN 61010-1:2001(ZEK 01.4-08)	
EMC	EN 61000-3-2 (2006)	EN 61000-3-3 (2008)	EN 61000-4-2 (2009)
	EN 61000-4-3 (2010)	EN 61000-4-4 (2004)	EN 61000-4-5 (2006)
	EN 61000-4-6 (2007)	EN 61000-4-11(2004)	EN 55011 +A1(2009)
Drop Test	IEC 60068-2-31 Edition 4.0 (face, corner, free fall)		
Shock & Vibration	IEC 60068-2-64 Edition 2.0	IEC 60068-2-27	MIL-STD-810G
Aging Cycle	MIL-T-28800		
Inputs			
Power	90 .. 264 VAC 50/60 Hz, 800 W, active PFC (acc. IEC61000-3-2)		
Measurement	≤ 180 mA $_{RMS}$		
Output			
Voltage	100 .. 12'000 V $_{RMS}$ (@ 45 .. 70 Hz)		
Frequency	15 .. 400 Hz (Voltage ≤ 5 kV)		
Current	± 180 mA $_{RMS}$		
DUT Capacitance	max. 47 nF @ 12 kV $_{RMS}$ @ 50 Hz, max. 39 nF @ 12 kV $_{RMS}$ @ 60 Hz		

Measurement	**Resolution**	**Accuracy**
Dissipation / Power Factor tan δ/ cos φ	0.0001	± 0.5 % rdg ± 0.0001 @ 50..60Hz
	0.01 %	± 0.01 % rdg ± 0.5 % @ 50..60Hz
Capacitance	0.01 pF	± 0.3 % rdg ± 0.3 pF
Test Voltage	1 V	± 0.3 % rdg ± 1V
Test Current	0.1 µA	± 0.3 % rdg ± 1 µA
Watts / Power	0.1 mW, mVA, mVAR	± 0.8 % rdg ± 1 mW, mVA, mVAR
Quality Factor	0.0001	± 0.5 % rdg ±0.0001

Internal Reference	100 pF Reference Capacitance, tan δ < 0.00001 Temperature coefficient < 0.01 % / K, Capacitance ageing < 0.01 % / year			
Safety Features	Open Ground Detection Security handheld switch, foot switch (optional) internal warning indicator, external warning lamp (optional) audible warning signal			
Interfaces	USB 2.0 for Memory Stick, Ethernet, Thermal Printer			
Display	7" TFT , 800 x 480, Colour Touch Screen			
Data Formats	XML, CSV			
Record Values	DF (tan δ)	DF (tan δ)$_{@20°C}$	DF%(tan δ)	DF%(tan δ)$_{@20°C}$
	PF (cos φ)	PF (cos φ)$_{@20°C}$	PF%(cos φ)	PF%(cos φ)$_{@20°C}$
	Capacitance Cx	Resistance Rx	Inductance Lx	Frequency f
	Test Current Ix	Mains frequency fm	Noise frequency fn	Apparent Power S
	Real Power P	Reactive Power Q	S/N Ratio	Quality Factor QF
	Ref Current In	Capacitance Cn	Current Imag (Lp)	Current Ife (Rp)
	Phase-angle φ (Zx)	Voltage U_{RMS}	Insulation Temp.	Temp.Corr.Factor K
	Conditions	Comments	Connection mode	Time/Date
	Settings			
Calibration Interval	2 years recommended			

SCOPE OF SUPPLY

- Measuring instrument MIDAS micro 2883 built in rugged case with casters
- Rugged transportation bag including:
  - High voltage cable, 20 m / 65 ft with clamp
  - 3 shielded measuring cables with clamps, 20 m / 65 ft
  - High voltage ground cable with clamp
  - 2 cable drums
  - Safety interlock hand switch, 10 m / 32 ft
  - 2 mini clamps with cables
  - 3 bushing tap adapters 4 mm
  - Extension clamp
  - Operating Manual
- Calibration Certificate with test results

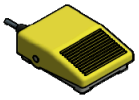


ACCESSORIES AND OPTIONS

2883/SAFE

Safety Strobe Light with magnetic base (e.g. for mounting on a transformer tank), providing visual warning of high voltage presence.

2283/FS interlock foot switch



Foot operated interlock switch as alternative to the included hand switch

288x TEMP

Temperature probe for surface mount (magnetic), 10 m cable

288x TEMP2

Laser infrared, contact-less thermo / hygrometer. For determination of tank (oil) temperature, air temperature and air humidity.

2283/WE2 and WE3

Warranty extension to two years (WE2) or three years (WE3). Standard warranty is 1 year.

MIDAS Office

Software for offline analysis of measurement data and creation of customized test sequences

2283/HOOK

Hook for high voltage connection (instead of included clamp)

2883/HCB

Set of flexible bands for hot collar tests or for guarding of leakage currents

2883/ALB

Adapter cable for standard capacitors (Lemo3 – BNC), i.e. Tettex type 3370 NK

6835 Oil test cell

Test cell for on-site measurements on liquid insulation samples, max. 10kV

OFFICES:

Europe
Haefely Test AG
Birsstrasse 300
4052 Basel
Switzerland
☎ + 41 61 373 4111
🖷 + 41 61 373 4912
sales@haefely.com

China
Haefely Test AG Representative Beijing Office
8-1-602, Fortune Street
No. 67, Chaoyang Road, Chaoyang District
Beijing, China 100025
☎ + 86 10 8578 8099
🖷 + 86 10 8578 9908
sales@haefely.com.cn

North America
Hipotronics, Inc.
1650 Route 22 N
Brewster, NY 10509
United States
☎ + 1 845 279 3644
🖷 + 1 845 279 2467
sales@hipotronics.com