CDAX 605

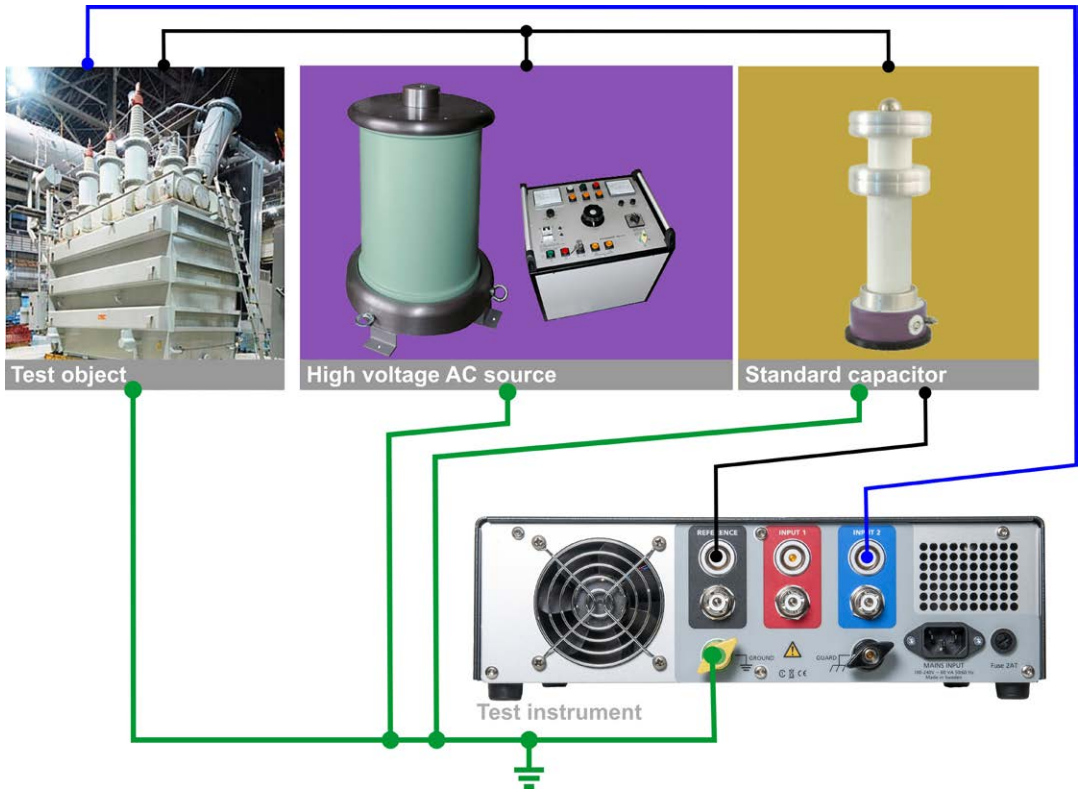
High-precision capacitance and dissipation factor measurement instrument

- **High accuracy and wide measurement range**
- **Fast and automatic measurement process**
- **Measures capacitive, resistive or inductive test objects**
- **High accuracy ratio measurements with direct reading of measured ratio**
- **Works with any standard capacitor or resistor value without any recalculations**
- **All standard UST and GST configurations**

Description

CDAX 605 is a capacitance and dissipation factor test set to be used with an external power source/generator. It is a precision instrument using a combination of bridge and direct (vector) measurements and is capable of measuring capacitive, resistive and inductive loads.

CDAX 605 is designed for laboratory, production line or field testing of electrical equipment insulation and insulating materials as well as e.g. calibration of CCVTs and other ratio devices. A test set with unique high accuracy for the most demanding applications.



CDAX605 together with a high voltage AC source and a standard capacitor forms a complete setup for insulation testing.

Megger

CDAX 605

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Application

In determining the quality of high-voltage equipment insulation, power frequency capacitance and dissipation factor are among the most frequently measured insulating characteristics. These two quantities can be measured as a receiving material quality control, during assembly and verification of electrical apparatus, at the time of installation or as a part of a maintenance program after the equipment is placed in service. The test is non-destructive and is used for verification, trending and comparison.

CDAX 605 is a measurement instrument that is used with an AC power source and a standard capacitor to form a complete measurement setup. Testing can be performed at almost any voltage level pending on the rating of the equipment, the power source and the capacitor. The unit will accept a test current up to 5 A from the insulation under test which can be increased by using an external current transformer.

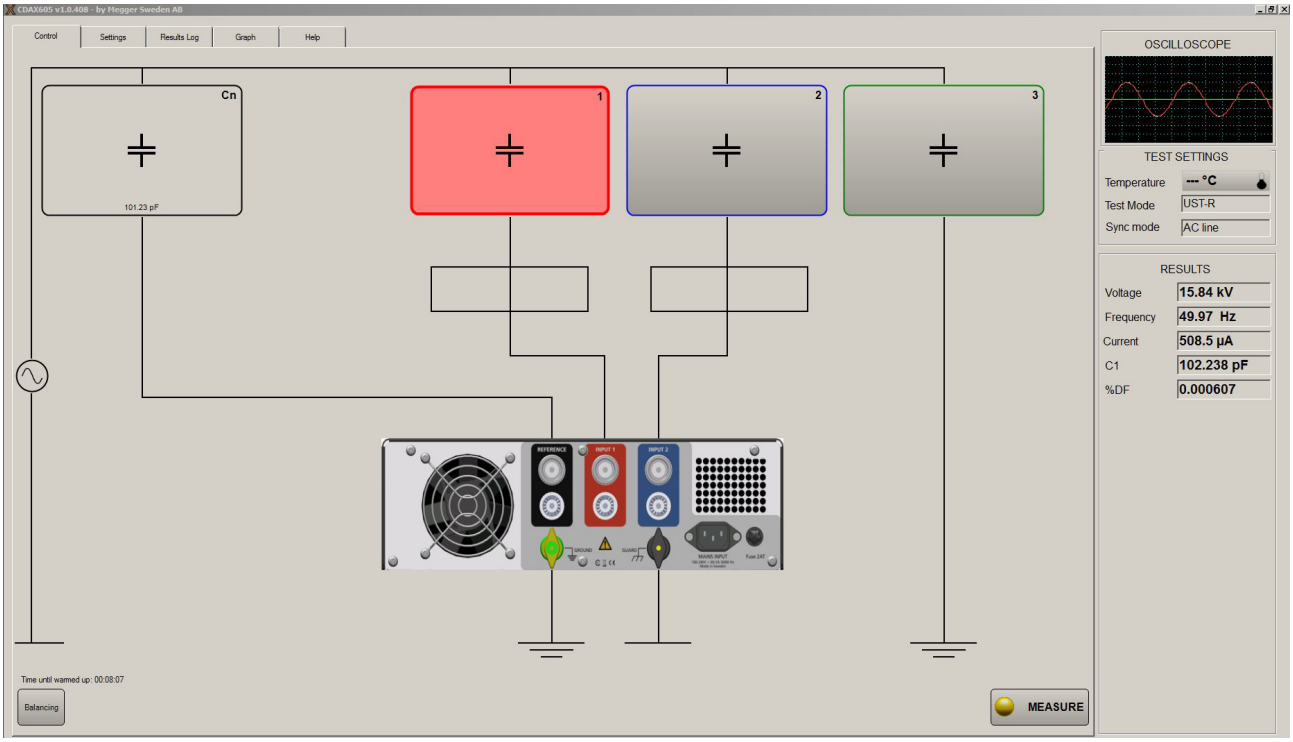
Traditional bridge methods can only measure and compare capacitive currents and since calibrated standard capacitors are typically available in the 100 to 1000 pF range, precision measurements on e.g. CCVTs and other devices with a high ratio are difficult to perform. With the new technology in CDAX 605, the input voltage to the device can be measured with a traditional reference capacitor while the secondary low voltage can be measured with a calibrated resistive divider that can be designed to give appropriate measurement current.

Application areas

- Transformers
- Power cables
- Bushings
- Capacitors
- Insulating materials

Features and benefits

- Direct readings of capacitance, dissipation factor, inductance and ratio. No balancing or calculation required
- Inaccuracy capacitance 0.02%, dissipation factor 0.002%
- 0-360° phase measurements
- Reference objects can be a capacitor and/or a resistor
- Works with any reference value without any recalculations
- Test object currents can be capacitive, resistive or inductive in any combination
- UST-R, UST-B, UST-RB, GST-GND, GSTg-R, GSTg-B, GSTg-RB configurations using 3 measurement inputs
- Low weight, only 4.4 kg
- Easy to use graphical user interface designed for both standard PC and touch screen operation
- Optional LabView and C# computer interfaces



CDAX Control

Megger

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Specifications CDAX 605

Environmental

Application field	The instrument is intended for use in high-voltage test rooms and laboratories as well as in substations and industrial environments.
Ambient temperature	
Operating	-20°C to +55°C (-4°F to +131°F)
Storage	-40°C to 70°C (-40°F to +158°F)
Humidity	< 90%RH, non-condensing

CE-marking

LVD	2004/108/EC
EMC	2006/95/EC

General

Mains voltage	100 – 240 V AC, 50/60 Hz
Power consumption	60 VA (max)
Dimensions	
Instrument	335 x 300 x 99 mm (17.7" x 16.1" x 6.3")
Transport case	520 x 430 x 220 mm (20.5" x 17.0" x 8.7")
Weight	4.4 kg (9.7 lbs) (instrument only)

Software

CDAX 605 Control

- Reference capacitance and/or reference resistor data entry
- Voltage measurements
- Current measurements
- Capacitance measurements
- Resistance measurements
- Inductance measurements
- Dissipation factor measurements
- Power factor measurements
- Phase measurements
- Ratio measurements
- Data log/storage in general format

PC requirements

- Pentium 500 MHz/512 Mb or better
- Ethernet or USB communication
- Windows XP, Vista, Win 7

Measurement

Channels	2
Inputs	4 connectors, Cn, Cx1, Cx2 and Ground BNC and UHF connectors
Measurement range	
Test frequency	5 – 400 Hz
Test voltage	Unlimited (pending reference capacitor or resistor value only)
Capacitance	>1 pF [1]
Inductance	< 1000 kH [1]
Dissipation factor	0–100
Current	0-5 A (Can be increased by using input transformer)
Phase	0-360°
Accuracy [2]	
Capacitance	±0.02% at 15 µA to 300 mA measurement current ±0.1% at 300 mA to 1 A measurement current
Inductance	±0.02% at 15 µA to 300 mA measurement current ±0.1% at 300 mA to 1 A measurement current
Voltage/current	±0.1% of reading
Dissipation factor	±(0.05% of reading + 0.002%) at 15 uA to 300 mA measurement current ±(0.05% of reading +0.005%) at 300 mA to 1A measurement current
Phase	±0.02 mRad at 15 uA to 300 mA measurement current ±0.05 mRad at 300 mA to 1 A measurement current
Calibration	Automatic self-calibration using an internal ratio-arm bridge. Note: Recommended full calibration interval < 2 years.
Max resolution	
Capacitance	0.001 pF
Inductance	0.1 mH
Dissipation factor	$1x10^{-6}$
Phase	$1x10^{-6}$
Measurement time	Selectable, default 2 s/measurement
Warm-up time	15 minutes for full accuracy

1) Range limit is determined by test current and test voltage/power source

2) Accuracy values at 50/60Hz; THD of power source <10%; for detailed range dispersion and preconditions for accuracy values see user manual.

Ordering information

Item	Art. No.
CDAX 605	AI-19090

Included accessories

Mains cable
Ground cable
Ethernet cable
CDAX Control (PC SW)
Transport case
User's Manual

Optional accessories

Measuring cables	
9 m (30 ft) UHF to UHF	GC-30410
9 m (30 ft) Lemo to Lemo	GC-30420
9 m (30 ft) BNC to BNC	GC-30050
9 m (30 ft) BNC to clamp, red	GC-30324
9 m (30 ft) BNC to clamp, blue	GC-30334
18 m (60 ft) BNC to BNC	GC-30052
18 m (60 ft) BNC to clamp, red	GC-30326
18 m (60 ft) BNC to clamp, blue	GC-30336

Other cables/connector configurations on request

CRD605	
High voltage resistor, max 2 kV	
20 Mohm	AI-90020
2 Mohm	AI-90022
CDB605	
Demo box for CDAX	AI-90010

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