

# VAX 020

## High voltage amplifier



- **Separate high voltage amplifier enables capacitance and dissipation factor measurements at 2 kV test voltage**
- **True and proven DFR/FDS technology for highest performance**
- **Large frequency range, DC to 1 kHz**
- **Compact design, weight < 5 kg**

### DESCRIPTION

VAX 020 expands the IDAX test voltage range from 200 V to 2 kV. This improves the capability to perform accurate measurements in extreme high-interference environments, e.g. HVDC substations.

Besides 50/60 Hz capacitance and dissipation factor (power factor) measurements, the application gives valuable information about the general condition of any high voltage insulation by measuring its dielectric response. The technique is also capable of assessing the moisture content in oil/paper insulation systems.

### Test system

The IDAX line of insulation diagnostic instruments measures capacitance and dissipation factor in electric insulation systems at 50/60 Hz, as well as over a wide frequency range, typically from mHz to kHz. The variable frequency technique is called Dielectric Frequency Response measurements (DFR) or Frequency Domain Spectroscopy (FDS). The very first field instrument using this technique, IDA and VAX high voltage amplifier, was developed 15 years ago and soon became the standard test system for DFR measurements on transformers, bushings and cables.

### APPLICATION

**Capacitance and dissipation factor measurements of:**

- Power transformers
- Bushings
- Instrument transformers (CT/VT)
- Generators and motors
- Insulating oil

### International standards and recommendations for DFR/FDS

CIGRE brochure 414: 2010 recognizes DFR/FDS as the preferred method for measuring moisture content in the cellulose insulation in power transformers.



IDAX-300 Insulation Diagnostic Analyzer

## FEATURES AND BENEFITS

- Dielectric response measurements is a powerful tool for evaluating insulation properties. In particular, DFR/FDS measurements is the preferred method for moisture assessment in oil-immersed power transformers. Megger instruments use true AC DFR/FDS, which is a worldwide proven method for insulation diagnostics.
- The Megger IDAX analyzers with the VAX series of high voltage amplifiers offer the widest measurement range in terms of frequency and output voltage. IDA/IDAX/VAX are the original instruments for field measurements of dielectric response and have been used all over the world for more than 15 years.
- IDAX is designed for field use in substation environment and is resistant to high electrical interference. With VAX020 high voltage amplifier, the capability to withstand interference conditions is further increased and allows measurement of any transformer or bushing correctly even under the severest interference conditions, e.g. in HVDC substations.



The test system: IDAX-300 and VAX020

## INCLUDED ACCESSORIES



Ground cable, GC-30070



Control cable, GC-30601



Interlock, AF-90010



HV cable, GC-30350

## SPECIFICATIONS VAX020

Specifications are valid at nominal input voltage and an ambient temperature of +25°C, (77°F). Specifications are subject to change without notice.

### Environment

#### Application field

The instrument is intended for use in medium and high voltage substations and industrial environments.

#### Ambient temperature

Operating -20°C to +55°C (-4°F to +131°F)  
Storage -40°C to +55°C (-40°F to +131°F)

#### Humidity

< 90%RH, non-condensing

### CE-marking

LVD 2006/95/EC

EMC 2014/30/EC

RoHS 2011/65/EC

### Classifications and standards

Category CAT 1

IP class IP21

### General

Mains voltage 100 – 240 V AC, 50 / 60 Hz

Power consumption 120 VA (max)

### Dimensions

Instrument 335 x 300 x 99 mm (17.7" x 6.3" x 16.1")

Transport case 520 x 430 x 220 mm (20.5" x 17" x 8.7")

### Weight

4.4 kg (9.7 lbs) without accessories

### Interface

#### CONTROL

Connects VAX020 with IDAX. VAX020 can be used together with the following IDAX systems: IDAX-206, IDAX-206 FR, IDAX300 and IDA200

#### INTERLOCK

Connection for the interlocking device

#### OUTPUT

##### Voltage

2 kV (peak)

##### Current

50 mA (peak) above 50 Hz  
derating linearly to 30 mA below 10 Hz

##### Frequency range

DC – 1 kHz

##### Capacitive load capability

0 – 20 µF, 80 nF at 2 kV, 50 Hz

## ORDERING INFORMATION

Item	Cat. No.
<b>VAX020</b>	AF-59090

### Included accessories

Mains cable  
Ground cable, GC-30070  
Control cable, 1 m (3 ft) GC-30601  
for connecting to IDAX  
High voltage cable, 20 m (65 ft) GC-30350  
Interlocking device, AF-90010  
Transport case, GD-30055

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**VAX020\_DS\_en\_V04a**  
ZI-AF02E • Doc. AF0002DE • 2019  
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