VIDAR
Vacuum interrupter tester

Megger

- **Tests the integrity of vacuum interrupters quickly, safely and easily**
- **User defined voltage selection**
- **Extensive voltage range**
- **Easy to operate. Follows ANSI/IEEE standardized DC test methods**
- **Lightweight and portable**

DESCRIPTION

When a vacuum circuit breaker is commissioned or undergoes routine tests, it is very important to be able to ascertain whether or not the vacuum interrupter is intact before putting it back into operation.

VIDAR enables you to check the integrity of the vacuum interrupter quickly and conveniently by means of the known relationship between the flashover voltage and the integrity of the vacuum interrupter. A suitable test voltage (DC) is applied to the interrupter, and the result is known immediately.

VIDAR permits you to select among test voltages from 10 to 60 kV DC. One of these voltages is customized and specified by the customer when ordering. A green lamp indicates approval of the interrupter. A red lamp indicates that it is defective. Two-hand control and a high-voltage warning lamp enhances safety.

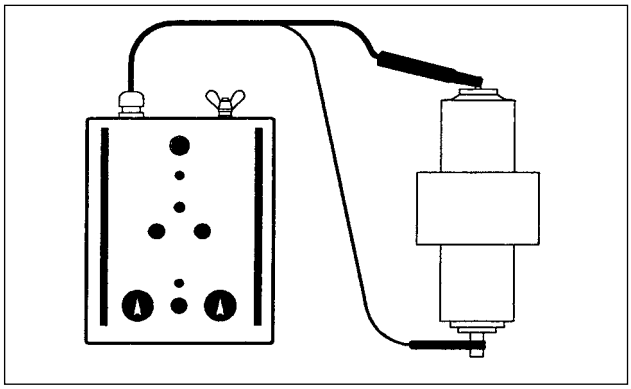
VIDAR has been developed in close collaboration with leading manufacturers of vacuum circuit breakers. It weighs only about 7 kg (15 lbs), and it is easy to use since vacuum chambers do not have to be dismounted for testing. VIDAR is therefore ideal for use in the field or shop floor applications.

APPLICATIONS

The VIDAR vacuum interrupter tester is used to test the ability of the vacuum chamber to inhibit flashovers. The rugged, lightweight, compact and portable VIDAR is ideal for field work and shop floor applications.

The internal pressure of vacuum chambers do not last forever. Leakage starts after years or decades and the interrupters fill with air making the breaker unreliable. In most cases, the leakage process is rapid once it has started. In addition to leakage, dirt on the poles and on the exterior surface of the vacuum chamber can make it unsafe during operation. The mechanics of the breaker can become misaligned so that the distance between the poles no longer is adequate.

Flashover threshold voltage



Connection diagram for the VIDAR

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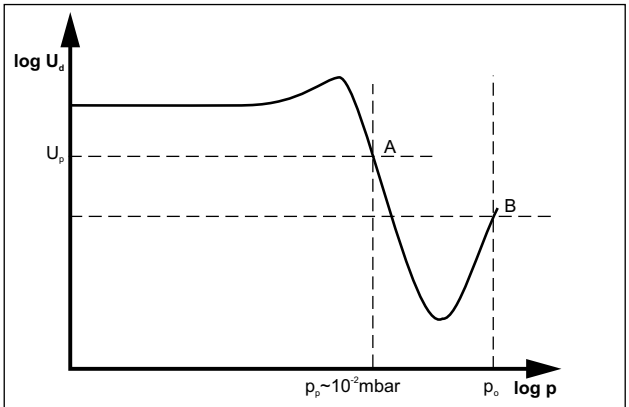
The curve shown in figure below illustrates the relationship between the internal pressure of the vacuum chamber and its ability to inhibit flashover. This relationship permits the vacuum to be checked indirectly by measuring the voltage threshold. One special advantage of this method is that you do not need to disassemble the circuit breaker in order to test it.
The voltage shall be selected so that test point A is sufficiently far from point B (when the chamber is filled with air). However, the electric stress in the chamber must not be too high. In normal situations, the pressure is less than 10^{-2} mbar, this is determined by the manufacturer. The breaker manufacturer should usually have specified AC test voltage. If not specified, AC test voltage levels are described in standards.

The DC voltage applied for an equivalent test is equal in magnitude to the peak of the AC voltage required. The DC method is described in IEEE C37.20.3 standard.

For guidance on test voltage refer to IEC 62271-1 and IEEE C37.06 standards.

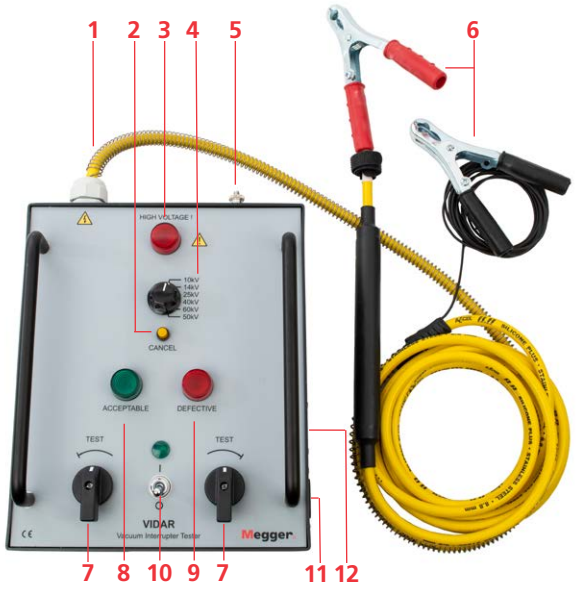


p	Interrupter pressure	U_d	Breakdown voltage
p_o	Atmos. pressure	U_p	Test voltage
P_p	Max. pressure on passing voltage test		

Flashover threshold voltage plotted against pressure in vacuum chamber.

FEATURES AND BENEFITS

1. **High voltage cable.** For connection of the test voltage and ground to the vacuum breaking chamber Note! The cable can have another color than yellow.
2. **CANCEL lamp**. Lights up when:
   - the test interval has exceeded one minute.
   - you try to conduct a one minute test less than two minutes after the latest test.
   - the HIGH-VOLTAGE indicator malfunctions.
3. **HIGH-VOLTAGE warning lamp.** Shows that the high voltage is applied.
4. **Test voltage selector.** 10 to 60 kV DC. One of these voltages is customized and specified by the customer when ordering.
5. **Protective earth** (ground) terminal.
6. **Large test clip connectors**. Provides for quicker connection and more efficient testing process
7. **TEST Safety control knobs**. Both knobs must be turned simultaneously to apply high voltage to the test object.
8. **ACCEPTABLE green lamp**. Lights up when the breaking chamber test result is positive.
9. **DEFECTIVE red lamp.** Lights up when the breaking chamber test result is negative, when the flashover threshold voltage is too low.
10. **I/O** Power ON/OFF
11. **Mains inlet**
12. **Slide switch** for mains,115V/230VAC 70VA, 50 -60Hz



SPECIFICATIONS

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.
Personal safety	Maximum permissible transient. Current through the external load is 12 mA. Maximum discharge time for internal high-voltage circuit is 0.3 s.
Temperature	
Operating	-10°C to +50°C (14°F to +122°F)
Storage & transport	-40°C to +70°C (-40°F to +158°F)
Humidity	5% – 95% RH, non-condensing

CE-marking

LVD	2014/35/EU
EMC	2014/30/EU
RoHS	2011/65/EU

General

Mains voltage	115/230 V AC (switchable), 50/60 Hz
Power consumption	69 VA (max)
Dimensions	
Instrument	250 x 210 x 125 mm (9.8" x 8.3" x 4.9")
Transport case	500 x 410 x 230 mm (19.6" x 16.1" x 9.1")
Weight	6.9 kg (15.5 lbs) 8.4 kg (18.5 lbs) with accessories and transport case

Measurement section

Indicators

Green lamp	Indicates an approved breaking chamber
Red lamp	Indicates a defect breaking chamber, lights up if the current exceeds 0.3 mA
Yellow lamp	Indicate that the test was interrupted

Output

Standard voltages, switchable	10, 14, 25, 40 and 60 kV DC
Accuracy	0 to -15%
Customized voltage	Between 10 and 60 kV DC. Determined at the factory. Default voltage is 50 kV.
Ripple	Max 3%

ORDERING INFORMATION

Item	Part. No.
VIDAR	BR-29090
Included accessories: Permanently mounted cable set 5 m (16 ft), ground cable and transport case (GD-00030)	

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