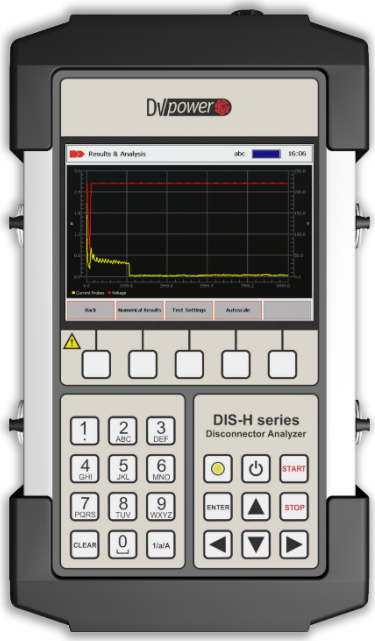
DISCONNECTOR ANALYZER

DIS-H

- Disconnectors and earthing switches motors testing
- Motor current, voltage and power consumption measurement
- Motor operating time measurement
- Compact and ergonomic design - only 1,4 kg (3.1 lbs.)
- Internal battery power supply (user replaceable)
- Battery operation for up to 8 hours
- Touch-screen color display, 145 mm (5.7 in)



Description

DIS-H is a handheld, battery- powered disconnector analyzer that is ideal for recording motors operating time, voltage, current and power consumption. It is a digital instrument for condition assessment of HV/MV disconnectors in electric utilities and industrial facilities.

The application of the disconnector analyzer can improve the operation and extend the life of the disconnecting motor drive.

Before the start of the test, the DC current clamp needs to be connected to the output channel of the motor. The recording starts when the motor begins with opening or closing the corresponding disconnector.

The hooked DC current clamp measures the current through the motor depending on the previously defined operation settings.

DIS-H will measure the following parameters:

- DC supply voltage
- Motor current, voltage and power consumption
- Motor operating time

DIS-H displays numerical and graphical results (it can overlay up to 4 records in graphical form). This enables quick onsite analysis of potential defects by comparing the obtained test results.

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Features

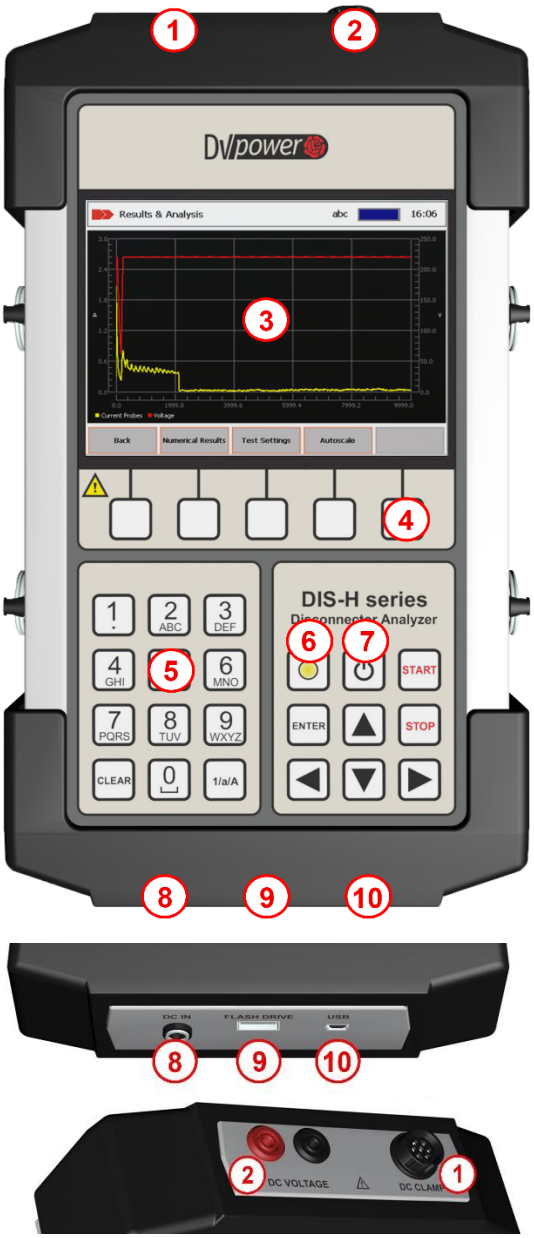


Figure 1. *DIS-H handset front, top, bottom view*

1 - DC current clamp input
Used for a DC coil current recording and measurement.

2 - DC voltage channel input
Used for a voltage measurement of an analog signal.

3 - Touchscreen display
Touchscreen color display 5.7 in.

4 - Soft keys
Used for selecting preferred (test) settings (options/menus) as an alternative to touchscreen.

5 - Alphanumeric keypad
Used for entering breaker data, test data and control functions.

6 - Power ON/OFF indicator
Indicates if the instrument is turned ON/OFF.

7 - Power ON/OFF button
Used for turning ON/OFF the instrument turning.

8 - DC power supply
12 V DC, 3 A
DC adapter 90-264 V AC (47-63 Hz) / 12 V DC

9 - Flash drive
Used for a direct download of test results on a USB memory stick.

10 - PC communication
USB interface for PC.

Application

The list of the instrument applications includes:

- Offline testing of disconnectors.
- Motor current, voltage and power consumption measurement
- Measurement of the motor operating time
- Evaluating the state of the disconnecting motor by graphically and numerically showing the voltage and current values of the disconnector motor drive.

Motor test

The motor test is important to determine the condition of the Disconnector motor drive and provide us with essential information, how would the disconnector operate in a real-life situation, where a specified service is needed.
A disconnector is usually used in cases where a service or maintenance is needed on the power system, it ensures that the complete electrical circuit is de-energized and grounded. HV disconnectors are mostly used within electrical substations in order to isolate electrical equipment such as circuit breakers and transformers. Disconnectors must be motorized and the motor has to be capable of being controlled either remotely or locally on the disconnector.

The DC current flowing through the motor is measured by a DC Current Clamp which provides the motor current waveform.

Before the start of the test, the DC current clamp needs to be connected to the DC clamp input connector. The recording starts when the motor begins with opening or closing of a certain disconnector since the motor measurement is triggered with the occurrence of current at the moment when the disconnector is being operated.

The DC Voltage measurement provides a clear indication of the DC station battery condition or other power source and associated wiring. DC Voltage sense cables with banana plugs are connected to the DC VOLTAGE input of the DIS-H device and in parallel to the station battery or any other power supply and are used to measure the disconnector motor DC voltage supply (station battery or other power source).

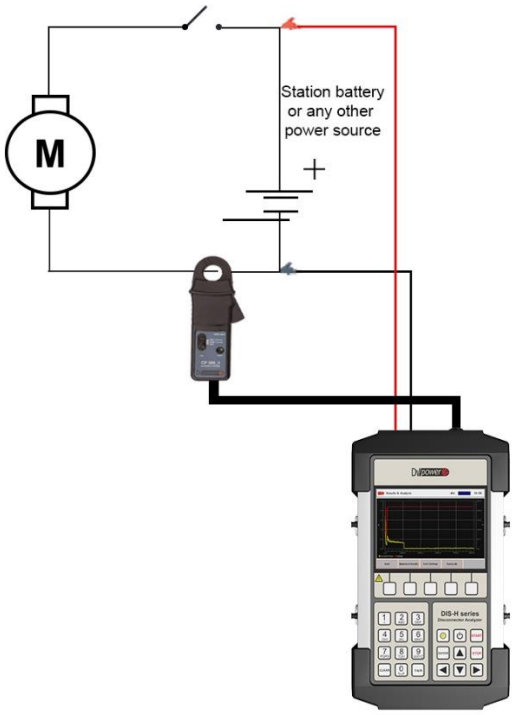
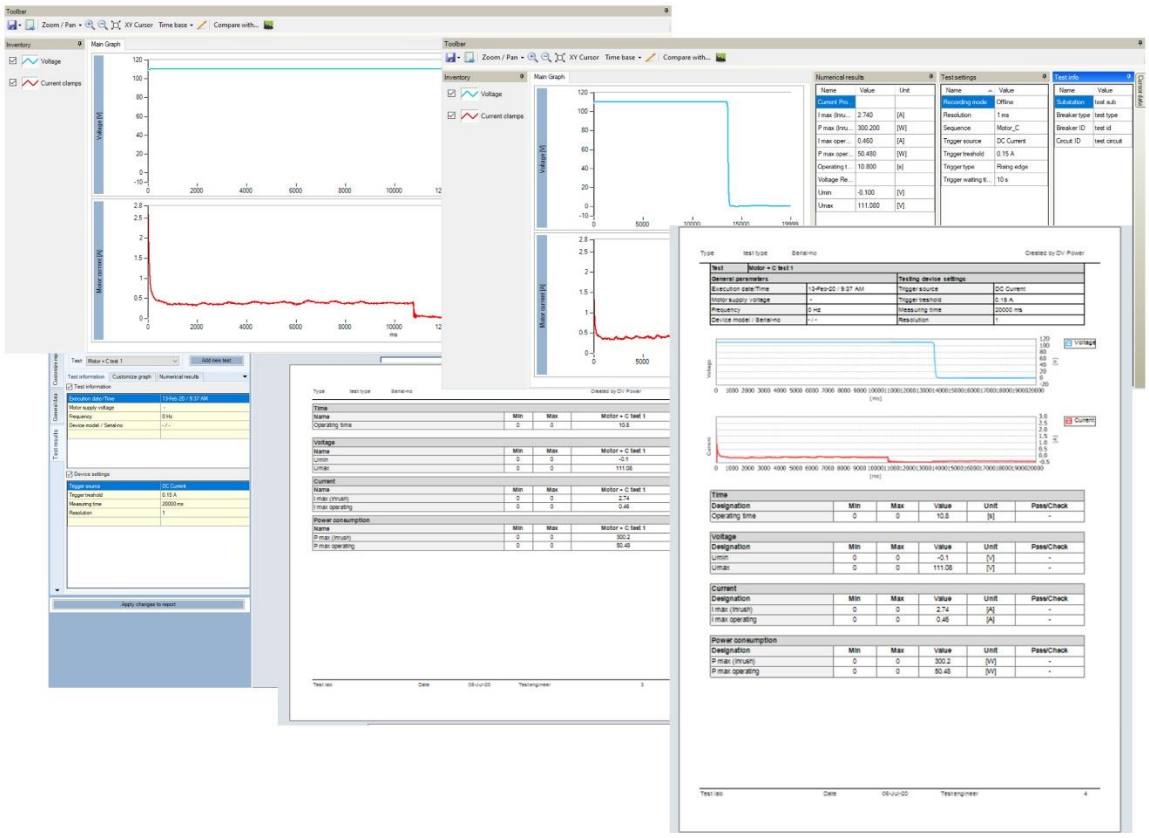


Figure 2. *DIS-H connection to the motor drive of the disconnector*

DV-Win software

DV-Win software provides acquisition and analysis of the test results. Graphical presentation of a variety of measurement test results uses cursors and powerful zoom functions for detailed analysis.

Colors, grids, scales and positioning of the test data are all controlled by the user. DV-Win supports an automatic unit conversion (e.g. cycles to seconds). The test records can be exported in ***.dish*** file format for further analysis.



- Downloading the test results from the DIS-H to PC
- Acquisition and analysis of the test results
- The test results can be viewed, edited, saved, printed and exported
- Viewing and overlaying several graphs, for an easy test result comparison
- Selecting the measurement points and intervals using the two cursors
- Zoom and pan graph feature
- Specific test sequence setup
- Customized configuration of the test result graphs

Technical data

Time measurement

Time measurement resolution:

- 1 ms to 10 ms depending on test duration (sampling rate up to 10 kHz)
- Time accuracy: 0,05% of the reading ± resolution

DC Current Clamps

- Measuring ranges: 30/300 A
- Frequency range: DC to 20 kHz (-3 dB)

DC Voltage Measurement

- Range: ±300 V DC
- Typical accuracy: ±0,5% RDG ±0,5% FS
- Guaranteed accuracy: ±1% RDG ±1% FS

Handset and inline power supply

- 12 V DC, 3 A
- Input: 90 – 264 V AC, 50/60 Hz

Internal battery supply

- 2 x 3,7 V, 2900 mAh rechargeable and user replaceable Li-ion battery
- 8 hours under normal usage

Display

- Touch screen color display 145 mm (5.7 in)
- Graphic and numeric results

Applicable standards

- Safety:

  Low Voltage Directive: Directive 2014/35/EU (CE conform)

  Applicable standards, for a class I instrument, pollution degree 2,

  Installation category II: IEC EN 61010-1

- Electromagnetic Compatibility:

  Directive 2014/30/EU (CE conform)
  Applicable standard: EN 61326-1

- CAN/CSA-C22.2 No. 61010-1

Environmental conditions

- Operating temperature:
  -10 ºC to + 55 ºC / 14 ºF to +131 ºF
- Storage & transportation:
  -40 ºC to + 70ºC / -40 ºF to +158 ºF
- Humidity 5 % - 95 % relative humidity, non condensing

Dimensions and weight

- Dimensions (L x W x H):

  310 x 170 x 58 mm / 12.21 x 6.69 x 2.28 in

  Weight:

  1,4 kg / 3.1 lbs.

Warranty

- 3 years

All specifications herein are valid at ambient temperature of + 25 °C and recommended accessories.
Specifications are subject to change without notice.

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Accessories

Voltage sense cable set 2 x 5 m (16.4 ft) 2,5 mm² (13 AWG) with banana plugs

Current clamp 30/300 A power supplied from the instrument with extension 5 m (16.4 ft)

Test probe with grip jaws (red, black)

Dolphin clip (red, black)

Cable bag

Power supply adapter

Plastic transport case for DIS-H

Resistive touch pen

Order info

Instrument with included accessories	Article No
Disconnector Analyzer DIS-H with DV-Win software including USB stick and mini USB cable, Resistive touch pen and Plastic transport case	DISH000-N-00
Power supply adapter	

Recommended accessories	Article No
Current clamp 30/300 A power supplied from the instrument with extension 5 m	CACL-0300-06
Voltage sense cable set 2 x 5 m 2,5 mm2 with banana plugs	S2-05-02BPBP
Dolphin clip (black)	DOLPIN-CL-B0
Dolphin clip (red)	DOLPIN-CL-R0

Optional accessories	Article No
Voltage sense cable set 2 x 2 m 2,5 mm² with banana plugs	S2-02-02BPBP
Voltage sense cable set 2 x 10 m 2,5 mm² with banana plugs	S2-10-02BPBP
Test probe with grip jaws (black)	TESTPR-GJ-B0
Test probe with grip jaws (red)	TESTPR-GJ-R0
Test probe with split test clamps (black)	TESTPR-SC-B0
Test probe with split test clamps (red)	TESTPR-SC-R0
Resistive touch pen	RSTCH-PEN-00
Cable bag	CABLE-BAG-00
Plastic transport case for DIS-H	HARD-CASE-DH
Plastic transport case for accessories	PLAST-CAS-00
Power supply adapter EU 3 A	PWR-ADP3A-EU
Power supply adapter NA 3 A	PWR-ADP3A-NA
Power supply adapter UK 3 A	PWR-ADP3A-UK
Power supply adapter AU 3 A	PWR-ADP3A-AU

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