HVB 10

High-voltage bridge for cable fault location, sheath testing, sheath fault prelocation and pinpointing

- **Automated test sequence execution**
- **Bi-polar prelocation for the elimination of external influences**
- **Detects and highlights wrong connections**
- **Touchscreen and rotary encoder**
- **Only one HV connection cable required**
- **Completely independent of the auxiliary line parameters**
- **Safe operation via connection box**

DESCRIPTION

Megger's HVB 10 is a highly accurate high-voltage bridge designed to locate cable and sheath faults, perform sheath testing, and pinpoint sheath faults. It is especially suited for long HV cables.

The HVB 10 is an indispensable tool for all utilities that want to reduce downtime and facilitate the repair of cables including power, pilot and communication lines. It is a superior instrument thanks to:

- A high resolution screen
- Intermittent fault detection functionality
- Load adaptation for faster cable charging

Why HVB 10?

Why do you need an HV bridge when you already have ARMbased prelocation?
The HVB 10 overcomes limitations such as long subsea cables that restrict the functionality of otherwise-reliable reflection based technology.

- TDR reflection technology use multiple reflections on crossbonded cables, which make them unsuitable for longer ranges.
- Reflection measurements are based on an impedance measurement, while the HVB 10 measures resistance. Hence, resistance and impedance changes across the cable do not influence the test results.

Cable fault location

The HVB 10 accurately prelocates cable interruptions as well as open or short-circuit faults; it also detects high-resistance conductor faults that cannot be pre-located through impulse reflection based methods alone.

The HV bridge is equipped with a strong discharge unit, which allows cables with a capacity of ≤25 µF to be safely discharged. Prior to each test, a capacity measurement ensures that the expected discharge energy does not exceed this maximum capacity and damage the HVB 10. This makes the unit suitable for the parameters of very long cables.

Sheath testing

Healthy sheath insulation is essential for safe cable operation. Sheath faults allow water to enter into the cable, cause insulation deterioration, joint faults and other corrosion-based damages, and reduce the life expectancy of power cables and the transmission quality of communication cables.

The HVB 10 performs sheath testing based on the DC voltage method. The value of the applied DC voltage depends on the cable type and the material of the outer cable sheath.

Sheath fault prelocation
Sheath fault prelocation takes place automatically. The only parameters which need to be entered are the peak test voltage and the cable length.

If the cable length is not available, the fault distance is displayed as a percentage of the cable length. The HVB 10 evaluates all measurements automatically, providing the user with a report of the test results and an evaluation of the sheath condition.

Sheath fault pinpointing
The HVB 10 provides two possibilities for sheath fault pinpointing:

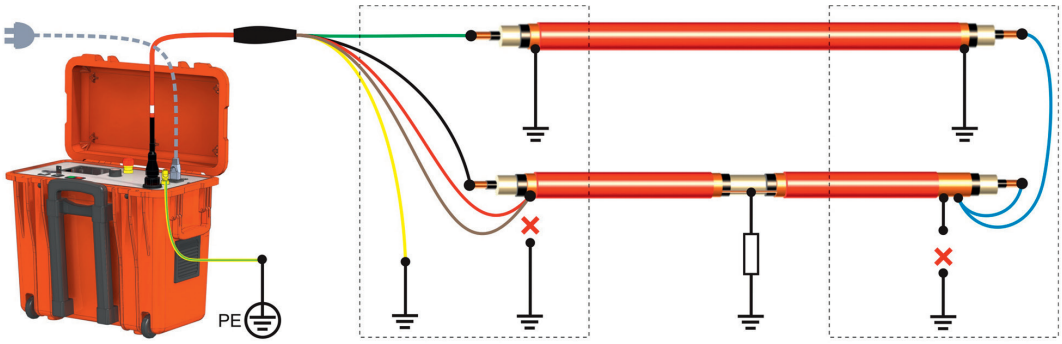
- By means of the standard pulsed DC and the step voltage method (in combination with an earth fault probe such as our ESG NT)
- By means of a 3 or 4.8 Hz signal and an A-frame

The HVB 10 can also be equipped with an audio frequency module. In addition to the step voltage, this module generates an audio frequency signal of 8.44 kHz for simultaneous tracing and fault pinpointing.

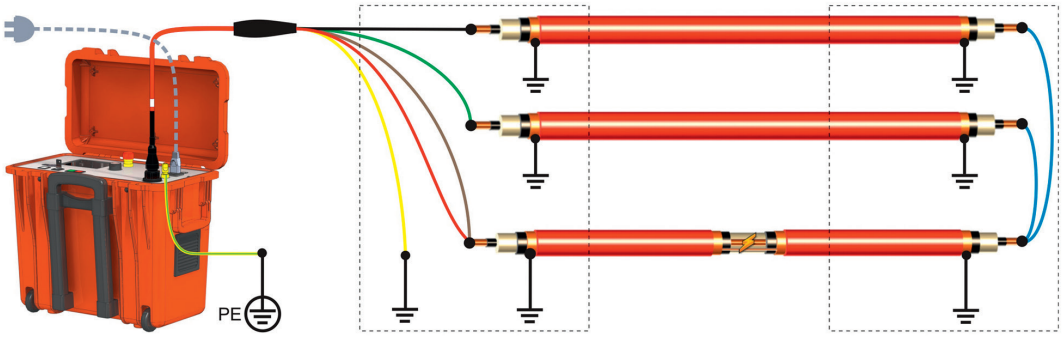
The power can be supplied either from the mains, via the wide range AC input from 88 V to 264 V, or by using the integrated rechargeable battery for a minimum of 2 hours operation. This battery can also be charged by a 12/24 DC input.

With the Megger easyGo principle, almost no operational steps are required. Basic settings can be made in the easiest way possible, by using the rotary encoder.

easyGO



Connection principle sheath fault location



Connection core-to-screen or to core fault location

TECHNICAL DATA*

HVB 10

Output voltage	0 … 10 kV DC, bi-polar
Output current	200 mA @ 0.5 … 1.5 kV, 60 mA @ 5 kV, 30 mA @ 10 kV
Max. test object capacity	25 µF
Test voltage	0 … - 10 kV
Prelocation	
Method	Voltage drop method (automatic.)
Accuracy	± 0,1 %
Pinpointing	
Voltage	0 … - 10 kV DC, pulsed
Pulse rate	0.5:1 / 1:2 / 1.5:0.5 / 1.5:3.5
Option AF	3 and 4.8 Hz for A-frame 8.44 kHz, Uo = 100 V_{rms}, P = 7 W_{peak} (500 Ω)
Supply voltage	88 V … 264 V, 50/60 Hz
DC Supply (charge only)	12/24 V DC
Battery	Int. NiMH battery (340 Wh)
Battery operating time	approx. 2 hours
Power consumption	max. 500 VA
Display	320 x 240 pixel LCD, LED rear light
Interfaces	USB port
Storage	2 GB Flash memory for System and data
Data logging	by USB stick
Operating temperature	- 25° C ... + 55° C / max. 93 % rel. humidity
Storage temperature	- 40° C ... + 70° C
Dimensions (W x H x D)	500 x 457 x 305 mm
Weight	25 kg
Protection class acc. IEC 61140	I (Protective earthing)
Protection class acc. IEC 60529	IP 53 (with closed lid)

ORDERING INFORMATION

Product	Order no.
HV Test Bridge-System	**1004037**
HV Test bridge	1004820
Software EasyProt	890017185
Velcro bag, black	820008838
Set of cables	1004032
External Emergency Switchbox	893024147
HV Test Bridge-System AF (with Audio Frequency Generator)	**1004038**
HV Test bridge AF	1004821
Software EasyProt	890017185
Velcro bag, black	820008838
Set of cables	1004032
External Emergency Switchbox	893024147
Optional:	
HV connection set for HV accessories	**1003344**
Connection cable VK67	**820003129**
HV test cable HSK HSK 36-10, 10 m	**118307484**

HVB 10 clamps

Max. fault resistance @ 10 kV with a 1 km cable with defined cross section. Fault position @ 50 % of cable length:

Ø mm²	25	150	240	300	630	1.200
CU conductor	670 MΩ	110 MΩ	69 MΩ	55 MΩ	26 MΩ	13 MΩ
AL conductor	1 GΩ	176 MΩ	110 MΩ	88 MΩ	42 MΩ	22 MΩ

Max. fault resistance @ 10 kV with a 1 km cable with defined cross section. Fault position between 10 % and 90 % of cable length:

Ø mm²	25	150	240	300	630	1.200
CU conductor	132 MΩ	22 MΩ	13 MΩ	11 MΩ	5,2 MΩ	2,7 MΩ
AL conductor	209 MΩ	34 MΩ	21 MΩ	17 MΩ	8,3 MΩ	4,3 MΩ

* We reserve the right to make technical changes.

SALES OFFICES

Megger GmbH

Obere Zeil 2
D-61440 Oberursel
Germany
T 0049 6171 92987-0
E info@megger.de

Seba Dynatronic
Mess- und Ortungstechnik GmbH
Dr.-Herbert-Iann-Str. 6
96148 Baunach
Germany
T 0049 9544 68-0
E team.international@megger.de

HVB10_DS_EN_V01

www.megger.com
ISO 9001