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 ARM-based 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.

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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 
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
IP 53 (with closed lid)

**IEC 60529**

**ORDERING INFORMATION**

**Product**

<table>
<thead>
<tr>
<th>Product</th>
<th>Order no.</th>
</tr>
</thead>
<tbody>
<tr>
<td>HV Test Bridge-System</td>
<td>1004037</td>
</tr>
<tr>
<td>HV Test bridge</td>
<td>1004820</td>
</tr>
<tr>
<td>Software EasyProt</td>
<td>890017185</td>
</tr>
<tr>
<td>Velcro bag, black</td>
<td>820008838</td>
</tr>
<tr>
<td>Set of cables</td>
<td>1004032</td>
</tr>
<tr>
<td>External Emergency Switchbox</td>
<td>893024147</td>
</tr>
<tr>
<td>HV Test Bridge-System AF</td>
<td>1004038</td>
</tr>
<tr>
<td>(with Audio Frequency Generator)</td>
<td></td>
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<tr>
<td>HV Test bridge AF</td>
<td>1004821</td>
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<tr>
<td>Software EasyProt</td>
<td>890017185</td>
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<td>893024147</td>
</tr>
</tbody>
</table>

**Optional:**

- HV connection set for HV accessories 1003344
- Connection cable VK67 820003129
- HV test cable HSK HSK 36-10, 10 m 118307484

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

<table>
<thead>
<tr>
<th>Ø mm²</th>
<th>25</th>
<th>150</th>
<th>240</th>
<th>300</th>
<th>630</th>
<th>1.200</th>
</tr>
</thead>
<tbody>
<tr>
<td>CU conductor</td>
<td>670 MΩ</td>
<td>110 MΩ</td>
<td>69 MΩ</td>
<td>55 MΩ</td>
<td>26 MΩ</td>
<td>13 MΩ</td>
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<tr>
<td>AL conductor</td>
<td>1 GΩ</td>
<td>176 MΩ</td>
<td>110 MΩ</td>
<td>88 MΩ</td>
<td>42 MΩ</td>
<td>22 MΩ</td>
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</tbody>
</table>

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

<table>
<thead>
<tr>
<th>Ø mm²</th>
<th>25</th>
<th>150</th>
<th>240</th>
<th>300</th>
<th>630</th>
<th>1.200</th>
</tr>
</thead>
<tbody>
<tr>
<td>CU conductor</td>
<td>132 MΩ</td>
<td>22 MΩ</td>
<td>13 MΩ</td>
<td>11 MΩ</td>
<td>5,2 MΩ</td>
<td>2,7 MΩ</td>
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<tr>
<td>AL conductor</td>
<td>209 MΩ</td>
<td>34 MΩ</td>
<td>21 MΩ</td>
<td>17 MΩ</td>
<td>8,3 MΩ</td>
<td>4,3 MΩ</td>
</tr>
</tbody>
</table>

* We reserve the right to make technical changes.