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

HVB 10

- Automatic test sequence
- Bi-polar prelocation for the elimination of external influences
- Detection and indication of wrong connections
- Touchscreen and rotary encoder
- Only one HV connection cable
- Completely independent of the parameters of auxiliary lines

sebaKMT
A member of Megger Group

HVB 10 – unrivalled performance

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

With its top resolution, intermittent fault detetion function, and load adaptation for faster cable charging, the **HVB 10** is an indispensable tool for all utilities that want to reduce downtime and facilitate repair of power and for example pilot and communication cables.

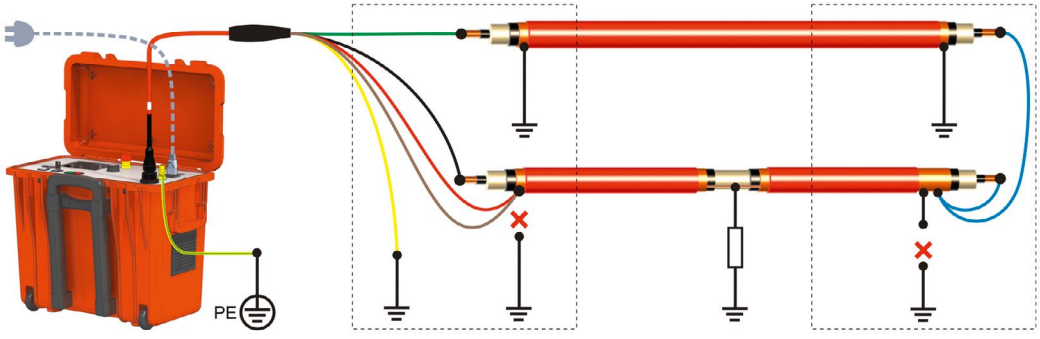
Why HVB 10?

Why do you need a HV bridge when you have ARM-based prelocation?

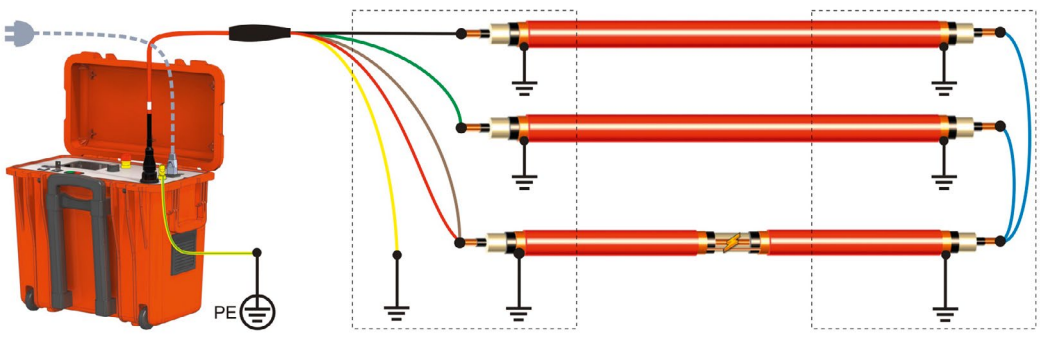
Because it locates faults where the otherwise perfect reflection based technologies have limits, for example on long cables as subsea cables.

- TDR reflection based technologies have very large reflections on crossbonded cables, which prevent longer ranges.
- Reflection measurements are based on an impedance measurement, while the **HVB 10** measures resistance. Resistance- and impedance values can be completely different while having the same cause.

Connection principle sheath fault location



Connection core-to-screen or to core fault location



Cable fault location

The **HVB 10** accurately prelocates cable interruptions and short-circuit faults, and detects high-resistance conductor faults that cannot be pre-located with impulse reflection based methods.

The HV bridge is equipped with a strong discharge unit which allows the safe discharge of cables with a capacity of up to 25 µF. Prior to each test, a capacity measurement ensures that the expected discharge energy does not exceed these parameters and damage the **HVB 10**. This makes it very suitable for very long cables and their parameters

Sheath testing

Healthy sheath insulation is of paramount importance for the safe operation of cables. Sheath faults allow water to ingress into the cable, cause insulation deterioration, joint faults and other corrosion-based damages, and reduce the life expectance 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 depends on the cable type and the material of the outer cable sheath.

Sheath fault prelocation

The prelocation of sheath faults 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 length.

The **HVB 10** evaluates all measurements automatically, providing the user with a report of the test results and a statement about 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, for instance)
- by means of a 3 or 4.8 Hz signal and an A-frame

Optionally, the **HVB 10** can 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 minimum of 2 hours operation. This battery can also be charged by a 12/24 DC input.

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

easyGO by sebaKMT

HVB 10

Technical data

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 Accuracy	 Voltage drop method (automatic.) ±0,1%
Pinpointing Voltage Pulse rate Option AF	 0 … - 10 kV DC, pulsed 0.5:1 / 1:2 / 1.5:0.5 / 1.5:3.5 3 and 4.8 Hz for A-frame 8.44 kHz, Uo = 100 Vrms, P = 7 W_{peak} (500 Ω)
Supply voltage	88 … 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	IP53 (with closed lid)

Scope of delivery

- HVB 10, high-voltage measuring bridge 10 kV
- USB-drive with software EasyProt
- KST 10, bag black
- Cable set for HVB 10
- 6 clamps
- Manual

Options

- Connection set for HV armatures

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	1200
	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	1200
	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

SebaKMT · Dr.-Herbert-Iann-Str. 6 · D-96148 Baunach
Tel. +49 (0) 95 44 - 6 80 · Fax +49 (0) 95 44 - 22 73
sales@sebakmt.com · www.sebakmt.com

A member of Megger Group