BIFRÖST
High-performane high voltage measurement bridge

- **Field-ready design, IP43**
- **Software-based user interface with single “turn & click” rotary knob control**
- **Cable segmentation via cable editor, incl. segment temperature**
- **Prelocation of main insulation faults: 20 kV DC high voltage bridge utilising voltage drop method, well-known 4-wire meaurement with 1 or 2 auxiliary wires**
- **For challenging assets such as HVAC and HVDC cables up to 550 kV, incl. subsea cables and interconnectors**
- **Very robust and fast-switching internal 750 µF discharge unit designed for very long cables**
- **Complete sheath testing functionality: sheath fault testing (DC test), sheath fault prelocation (HV bridge) and sheath fault pinpointing (voltage gradient method and pulsed DC)**

DESCRIPTION

The Bifröst is a 20 kV DC high voltage measuring bridge for professional use in challenging, long cable systems. It utilises the principle of the voltage drop method and the classical four-wire method with either 1 or 2 auxiliary wires. The instrument is weather-resilient and rainproof due to its protection class of IP43, intended and capable for outdoor use.

A very powerful internal discharging and earthing unit is integrated as well. It can safely and repeatably discharge 150 kJ of energy which equates to a capacitance of 750 µF charged to 20 kV DC. Bifröst has already been used successfully on the world’s longest cable, the Viking Link interconnector with 761 km length.

For difficult faults or when in need to convert faults, burn currents up to 850 mA are available generated by a high frequency burner which is significantly better than conventional burn transformer-rectifier solutions.

ALL FEATURES AT A GLANCE

- Large 25 cm sunlight readable touchscreen colour display
- Easy to operate because of its straightforward piechart interface
- 20 kV DC high voltage bridge based on the voltage drop method for best accuracy and most convenient measurement
- Well-established 4-wire measurement with one auxiliary wire or two auxiliary wires
- Bridge measurement is independent from the contact resistance of the HV test leads and the resistance of the auxiliary wires
- Cable segmenting via the cable editor, input of segment temperature possible
- Accuracy better than 1 % of the cable length
- 750 µF internal discharge unit (150 kJ), robust and fast-switching
- High frequency burn mode with up to 850 mA burn current
- Visualisation of voltage and current, clear indication of measurement results
- USB port for export/import data transfer and protocol printing via Reporting Edition software package
- Many different language versions available
- HV lead sets available, lengths upon factory request and review by our project team

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TECHNICAL DATA*

Protection class	IP43, weather-resilient and rainproof
Weight	Device 90 kg + accessories
Operating temperature	-20 °C … + 55 °C (-4 °F … +131 °F)
	Relative humidity 93 % non-condensing at 30 °C
Built-in functions	Fault identification: Insulation test, DC breakdown test, DC sheath test
	Fault prelocation: 4-wire bridge measurement using the voltage drop method
	Fault pinpointing: Sheath fault pinpointing using pulsed DC and the voltage gradient method
	Fault conversion: High frequency burning
Display	25 cm (10.1 inch) industrial-grade TFT colour panel with LED backlight
	1280 x 800 (WXGA), 16:10, 1000 nits, anti-glare touchscreen
User interface	„Turn & click" rotary knob, touchscreen
Safety	F-Ohm safety interlock, temperature monitoring, lockout-tagout key switch
Output voltage	0 … 20 kV DC, in measuring ranges of 5/10/20 kV
Output current	max 850 mA (5 kV range), max 400 mA (10 kV range), max 200 mA in (20 kV range)
Pinpointing	3/5/10/20 kV pulsed DC from the HV DC source
Pulse rates	0,5:1; 1:2
Accuracy	Better than 1 % of the total cable length
Protocolling	MeggerBook Lite (after USB data export)
Mains Supply	110 … 230 V AC +/- 10% , 2.5 kVA, 1-phase, 50/60 Hz
Discharge capability	150 kJ or 750 µF at 20 kV DC, discharge time constant < 1 sec
Storage temperature	-40 °C … +70 °C (-40 °F … +158 °F)
Dimensions (L x W x H)	710 x 740 x 1080 mm (27.9 x 29.1 x 42.5 inch)

ORDER INFORMATION

BIFRÖST high voltage measuring bridge (unit itself)	**1015364**
Mandatory items to order: Set of connection leads upon factory request and review by our project team Set of connection leads consists of options for 1. HV leads to set up 4-wire bridge measurement, 2. far-end jumper cables, 3. Kelvin and earthing clamps, etc.	**Contact factory**

MAINS INPUT

EU	Europe	Power cord 230 V AC, Type F Schuko, 3 m	90028780
UK	United Kingdom	Power cord 220 V AC, Type G UK, 3 m	90034588
US	North America	Power cord 220 V AC, Type B NEMA5, 2.5 m	90034589
O	Do it yourself	Power cord with open end, no plug attached, 3 m	90034997

SAFETY

External Safety Device for the BIFRÖST	Relevant for CENELEC countries in accordance with EN 50191:2010	2012574

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SALES OFFICE

Megger Germany GmbH
Dr.-Herbert-Iann-Str. 6
D-96148 Baunach
Germany
T +49 9544 68-0
E team.international@megger.com

Bifroest_DS_EN_V01b

www.megger.com

ISO 9001

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