

## IRG 4000 portable BAUR time domain reflectometer



Figure and screenshot are illustrative

### Reliable cable fault location with minimum effort

- Portable time domain reflectometer, particularly suitable for offshore use
- Creation of TDR fingerprints
- Easy operation thanks to the intuitive operational concept
- Maximum precision with high resolution and sampling rate

The IRG 4000 portable time domain reflectometer is used in combination with the BAUR system software for cable fault location, especially on long land and submarine cables.

Thanks to the proven operational concept, cable faults can be located more rapidly and easily with the IRG 4000 portable. The BAUR Software 4 is intuitive to operate and supports the operator in isolating faults. Using the IRG 4000 portable, TDR fingerprints of cables can be created that allow comparisons against existing reference measurements. Changes in the cable can therefore be detected immediately.

For increased safety and more convenient operation, the IRG 4000 portable can be operated with the laptop via Wi-Fi from a safe distance and from a protected location.

The IRG 4000 portable is a field-compatible time domain reflectometer that can be used as a portable standalone device or in combination with BAUR cable fault location systems. An optionally available HV connection cable set also enables you to work on HV cable terminations up to 10 metres high.

#### Fault location methods

- TDR: time domain reflectometry (1- and 3-phase)
- Insulation resistance measurement up to 1,000 V (option)
- Envelope curve display for intermittent faults – even small changes in impedance are made visible and saved.
- Further fault location methods possible in combination with other BAUR devices and systems

#### Features

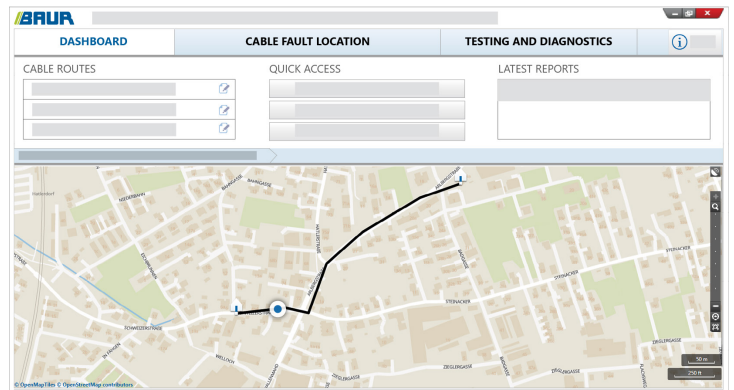
- Remote control and data transmission by removable laptop via Wi-Fi or Ethernet connection
- Everything needed for the measurement combined in one case – time domain reflectometer, laptop, connection cables
- Transport case with wheels and trolley handle – easy to move, dustproof, shockproof and weatherproof according to IP67
- Automatic detection of cable end and fault position
- Automatic saving of all measurement data
- Storage for more than 100,000 measurements
- Interface to GIS databases (option)
- Measurement category CAT II/600 V  
In combination with the optional TDR connection cable up to CAT IV/600 V

# IRG 4000 portable

## Time domain reflectometer for mobile cable fault location

### The intuitive operational concept

- Intuitive modern user interface in multiple languages – no long introduction or familiarisation period is required
- Integration of road maps\*:
  - Unique combination of road maps, including the cable route
  - Cable routes and cable faults displayed on the map
- Cable Mapping Technology CMT: Overview of cable accessories and faults in relation to the cable length
- All data on the cable route such as geographic position\*, voltage level, joints, all measured values, etc. are automatically saved and can be accessed at any time.
- Quick and easy compilation of clear and precise measurement logs – with freely selectable company logo, comments and figures of the traces.



### Easy and convenient to operate

- Safe and weather-protected operation by remote control and data transmission from the IRG 4000 portable via Wi-Fi or Ethernet connection
- Proven Windows operating system
- Standard data interfaces on the laptop for connecting additional equipment, e.g. printer or external data carriers
- GIS interface\* enables an exchange of cable data between your GIS database and the BAUR software.

### Online system

- Online support via the Internet
  - With your permission, BAUR’s customer service department can access your laptop, identify your problem and quickly find a solution.
  - During the fault location, your engineers can share the desktop with the test engineer on site and support him in the analysis of the measurement results (where applicable, a licence for a desktop-sharing program may be required).

\* Option

Screenshot is illustrative

## Technical data

Pulse reflectometry	
Pulse voltage	20 – 200 V
Pulse width	20 ns – 1.3 ms
Output impedance	8 – 2,000 Ohm
Input signal gain	Dynamic range 107 dB (-63 to +44 dB)
Display range	10 m – 1,000 km (at $v/2 = 80 \text{ m}/\mu\text{s}$ )
Accuracy	0.1% relating to the measurement result
Data rate	400 MHz
Resolution	0.1 m (at $v/2 = 80 \text{ m}/\mu\text{s}$ )
Velocity of propagation ( $v/2$ )	20 – 150 m/ $\mu\text{s}$ , adjustable
Measurement modes	<ul style="list-style-type: none"> <li>▪ Automatic measurement mode</li> <li>▪ Differential measurement</li> <li>▪ Mean value calculation</li> <li>▪ Continuous measurement</li> <li>▪ Stop after recording the change</li> <li>▪ Envelope curve display for the location of intermittent faults</li> </ul>

BAUR Software 4 – system requirements	
Operating system	Windows 10
.NET-Framework	4.8
Memory	4 GB RAM Recommended: 8 GB RAM
Display	Resolution min. 1280 x 1024 pixels Recommended: 1920 x 1080 pixels

Insulation resistance measurement (option)	
Voltage	up to 1,000 V
Measurement range	0 ohm – 5 GOhm

General	
Storage capacity	> 100,000 measurements (hard disk limit)
Export format for report	PDF
Power supply	100 – 240 V, 50/60 Hz
Max. power consumption	150 VA (without laptop)
Voltage-proof up to	400 V, 50/60 Hz
Measurement category	CAT II/600 V In combination with the optional TDR connection cable up to CAT IV/600 V
Degree of protection	
Case opened	IP54
Case closed	IP67
Dimensions (W x H x D)	Approx. 624 x 297 x 500 mm
Weight	Approx. 19.1 kg (without laptop)
Ambient temperature	0°C to +50°C
extended temperature range*	-20°C to +60°C
Storage temperature	-20°C to +60°C
Safety and EMC	CE-compliant in accordance with Low Voltage Directive (2014/35/EU), EMC Directive (2014/30/EU), EN 60068-2-ff Environmental testing

\* Limited display performance possible

### Standard delivery

- IRG 4000 portable time domain reflectometer in transport case, incl.
  - Mains supply cord, 2.5 m
  - Earth cable, 5 m, with earth terminal
  - 3-phase connection cable, 3 m, with connection clips and fuses
  - Ethernet cable, 10 m
  - User manual
- Laptop incl.
  - pre-installed Windows operating system
  - pre-installed BAUR Software 4 (cable fault location)
  - Carrying bag

### Accessories and options

- HV connection cable set, incl.
  - HV connection cable, 15 m, with connection clip
  - Earth cable, 10 m, with earth terminal
  - Earth cable, 5 m, with earth terminal
- Transport case for HV connection cable set
- TDR connection cable, 3-phase, 25 m, on hand cable drum, incl. earth cable, 5 m
- TDR connection cable, 3-phase, 50 m, on hand cable drum, incl. earth cable, 5 m
- BAUR Software 4 for office PC (office installation)

### Optional software functions

- Insulation resistance measurement
- GIS interface
- Mapping (available countries on request)

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