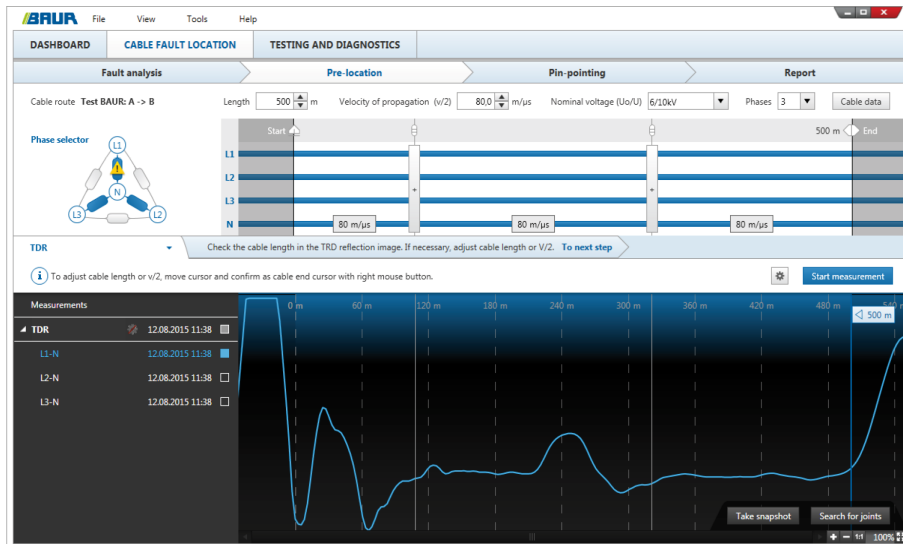


# IRG 4000 and system software for cable fault location

## BAUR time domain reflectometer



The figure is illustrative.

## Reliable cable fault location with minimum effort

- Easy operation thanks to intuitive operational concept
- Maximum precision with high resolution and sampling rate
- Precise fault location methods for every type of fault

The IRG 4000 time domain reflectometer is integrated in BAUR cable fault location systems and is used in combination with the system software for locating cable faults in single and three-phase cable systems.

Thanks to the novel operational concept, cable faults can be located more rapidly and easily with IRG 4000. The high-performance industrial PC and improved measurement parameters allow for a precise cable fault location in all cable types.

The well-proven and continuously enhanced methods are available for the cable fault location as well as the newly developed Conditioning SIM/MIM\*\* method which makes it even more effective and quick to locate wet cable faults that are difficult to detect. The SIM/MIM technology with 20 reflection measurements per HV pulse allows for selecting the best reflection image for a very precise determination of the fault distance.

### Fault location methods\*

- Insulation resistance measurement up to 1,000 V
- TDR: time domain reflectometry (1- and 3-phase)
- Envelope curve display for intermittent faults – even small changes in impedance are made visible and saved.
- SIM/MIM: secondary/multiple impulse method with surge voltage or in DC mode  
**NEW:** 20 reflection measurements per HV pulse
- Conditioning-SIM/MIM\*\*:  
fault conditioning with subsequent SIM/MIM measurement
- ICM: impulse current method with surge voltage or in DC mode
- Decay method
- 3-phase current coupling methods\* for the fault location in branched networks

### Features

- 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\*
- Voltage-proof up to CAT II/600 V  
In combination with TDR connection cable\* up to CAT IV/600 V
- Can be combined with BAUR cable testing and diagnosis systems (for installation in the cable test van)

**Note:** The availability of individual methods depends upon the system configuration. An overview of available Options can be found on page 3

\* Option

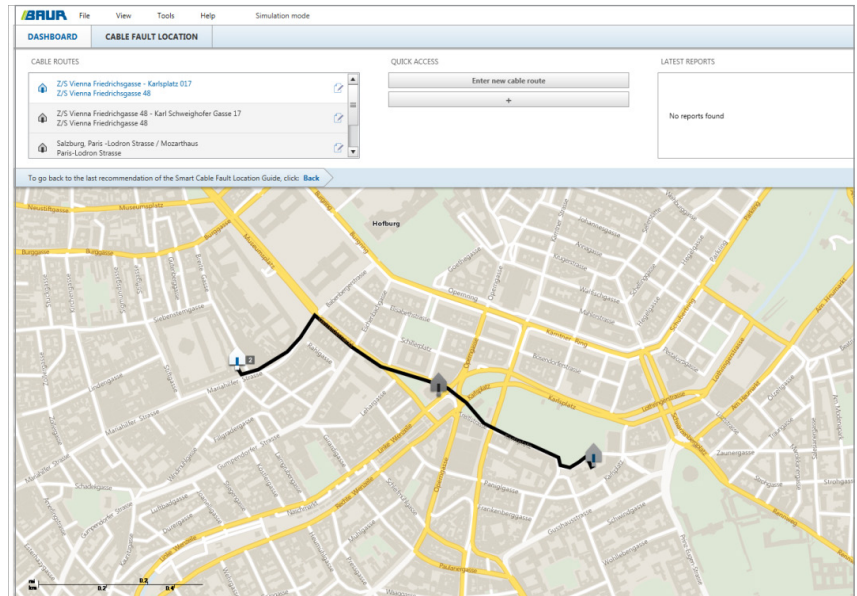
\*\* Only available for titron® systems

# IRG 4000

## Time domain reflectometer for cable fault location systems

### The new intuitive operational concept

- Intuitive modern user interface – no long introduction or familiarisation period is required
- Optimal operator support during cable fault location provided by the Smart Cable Fault Location Guide\*\*
- BAUR GeoBase Map\*:
  - Unique combination of road maps, including the cable route
  - GPS-based system location determination
  - 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 records – with freely selectable company logo, comments and figures of the traces.



### Easy and convenient to operate

- Standard, convenient operation by means of a mouse and keyboard
- Proven operating system (Windows 7 or higher)
- Installation of office software, e.g. MS Office programs, company-internal ERP systems, GIS and web applications, is possible.
- Printers, laptops and data carriers can be connected via standard connections.
- GIS interface enables an exchange of cable data between your GIS database and the BAUR system software.\*

### Online system

- Online support via the Internet
  - With your permission, BAUR's customer service department can access your system computer, 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

\*\* Only available for titron® systems For further information on the advantages of the titron® automatic cable test van, please refer to the titron® data sheet.

## Technical data

Pulse reflectometry		General	
Pulse voltage	20 – 200 V	Operating system	Windows 7 Ultimate 32-bit (or higher)
Pulse width	20 ns – 1.3 ms	Memory	4 GB RAM
Data rate	400 MHz	Storage capacity	> 100,000 measurements (hard disk limit)
Output impedance	8 – 2,000 ohm	Hard disk	SSD industry standard
Input signal gain	Dynamic range 107 dB (-63 to +44 dB)	Display	TFT monitor acc. to offer
Resolution	0.1 m (at v/2 = 80 m/μs)	User interface languages	user interface available in 22 languages
Velocity of propagation (v/2), adjustable	20 – 150 m/μs	Data export format	PDF
View range	10 m – 1,000 km	GIS interface*	Export/import GIS data
Accuracy	0.1% relating to the measurement result	BAUR GeoBase Map*	Full version
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>	Data synchronisation	USB
<b>Insulation resistance measurement</b>		Power supply	100 – 240 V, 50/60 Hz
Voltage	up to 1,000 V	Max. power consumption	150 VA
Measurement range	0 ohm – 5 Gohm	Voltage-proof	400 V, 50/60 Hz; up to CAT II/600 V In combination with TDR connection cable* up to CAT IV/600 V
		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

\* Option

\*\* Limited display performance possible

## Standard delivery

- IRG 4000 Time domain reflectometer, incl. BAUR system software
- Other standard delivery components depend on cable fault location system and offer

## Options

	titron®	transcable 4000	Syscompact 4000
BAUR GeoBase Map	Option	Option	Option
Interface for GIS data export/import	Option	Option	Option
BAUR Remote App (for remote control of the surge voltage generator)	Option	–	–
Insulation resistance measurement	✓	Option	Option
3-phase current coupling methods	Option	Option	–
Control via laptop	Option	–	–
BAUR system software 4 for installation on office PC	Option	Option	Option

✓ = included in the standard delivery

Option = available as an optional extra

– = not available