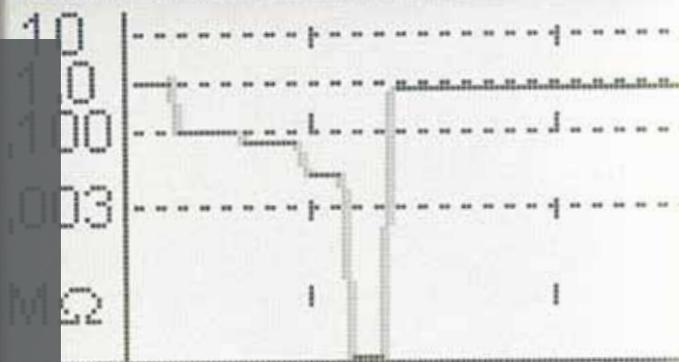


 **BENDER iso685**
ISOMETER®

 ON

Data - isoGraph 2



ISOMETER®

iso685

Electrical safety for
man and machine

SERVICE
ALARM 1
ALARM 2



1 / 3

Innovative **insulation monitoring** for maximum system availability

Do you want to save costs and further increase the safety level of your system? The variants of the insulation monitoring device iso685 provide you with the right equipment for each application and offer you the advantage of easy operation with high reliability and innovative measurement methods.

Insulation monitoring devices continuously monitor the insulation of a system against earth. In addition, the iso685 is state of the art with its voltage, frequency and capacitance measurement. All variants feature permanent coupling monitoring, a buffered real-time clock with history memory and the isoGraph for representation of the insulation resistance over time. What makes the device especially easy to configure are the preset measurement profiles for different applications.





Early detection enhances operational safety and maintenance planning possibilities

- Insulation fault analysis with scalable history memory
- Insulation fault detection without shutting down

Other advantages

- High adaptability to systems with different properties
- Simple and efficient communication interface

Cost benefits

- No additional devices required
- Intuitive commissioning of a system
- Comprehensively configurable
- Easy to operate
- Multilingual user interface
- Fast and competent assistance when service is required

Features

- isoGraph
- Web server
- Continuous coupling monitoring
- Modbus TCP
- Measurement U/f/C
- Predefined measurement profiles
- Configurable inputs and outputs

iso685-D-P ADDR. 3

Overview

Menu

▶ Alarm Settings

▶ EDS

▼ Data Meas. Values

IsoGraph

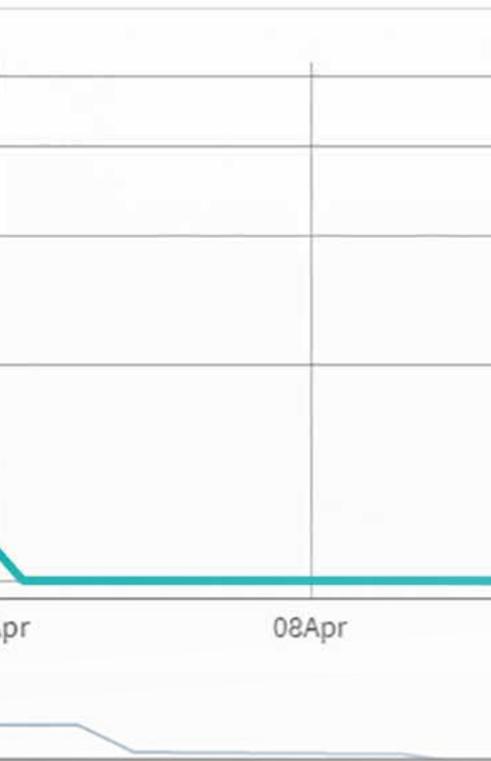
isoGraph



Safe

commissioning,

simple analysis



Web server

The devices of the iso685 product family feature an integrated web server. This enables easy access to all device parameters via PCs or mobile devices as well as an analysis of the data recorded by the iso685.

Interfaces

The integrated Ethernet interface supports data exchange within the Bender product portfolio (BCOM) and with third-party devices or software packages (Modbus TCP). Configurable inputs and outputs allow easy exchange of status information or measured values. Sensors for insulation fault location (EDS) are integrated via a serial interface.

Commissioning wizard

All device variants feature a commissioning wizard, which requests the most important settings directly after the device has been switched on for the first time. The appropriate measurement method and the associated parameters can be easily preselected by means of predefined profiles:

System type 1.3 <ul style="list-style-type: none"> <input checked="" type="radio"/> DC <input type="radio"/> AC <input type="radio"/> 3AC 	Coupling 1.4 <ul style="list-style-type: none"> <input checked="" type="radio"/> None <input type="radio"/> AGH150W-AK16C <input type="radio"/> AGH204S-AK80 <input type="radio"/> AGH204S-AK160 <input type="radio"/> AGH520S <input type="radio"/> AGH676S-4 	Language 5.1 <ul style="list-style-type: none"> <input type="radio"/> Deutsch <input checked="" type="radio"/> English <input type="radio"/> Español <input type="radio"/> Français <input type="radio"/> Norsk
Commissioning 5.6 <p>Please set response value for R(an1) for Alarm1.</p>	Profile 5.2.7 <ul style="list-style-type: none"> <input checked="" type="radio"/> Power circuits <input type="radio"/> Control circuits <input type="radio"/> Generator <input type="radio"/> High capacitance <input type="radio"/> Inverter >10 Hz <input type="radio"/> Inverter <10 Hz 	Alarm 2 5.6.9 <p style="text-align: center;">10 kΩ</p> <p>min. 1kΩ max. 10MΩ</p>

Fast
**insulation
fault location**
during operation

 **BENDER** ED
ISOSCAN®

AC/DC 24...240 V 50/60 Hz

max. 110 mA @ 24 V

100 mA...10 A

2...10 mA

AC 250 V 5 A

ON

COM

SERVICE

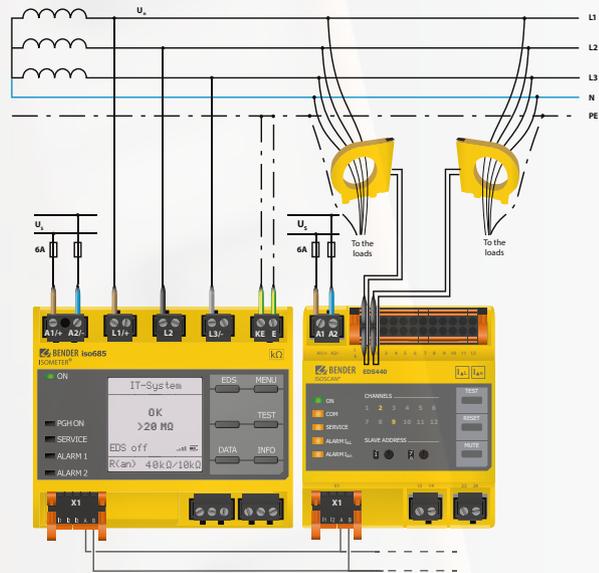
ALARM IΔL

ALARM IΔL

Fast and easy insulation fault location

The iso685-D-P insulation monitoring device variant features an integrated locating current injector. Like this, with insulation fault locators of the EDS44x series or the corresponding measuring current transformers an insulation fault location system can be easily set up.

Not only can the EDS systems easily be parameterised via the iso685-D-P, it also indicates the located insulation faults directly and clearly, since the customer can assign a specific name to each measuring channel.



Insulation fault location systems (EDS) quickly identify the faulty part of the installation. Insulation fault location takes place during operation, shutting down the installation is not necessary. The information regarding the fault location is indicated at a central point.

Permanently installed devices can be combined with portable insulation fault location systems (EDS3090/3091).

 BENDER FP200

 ON

IT system

OK

199k Ω

R(an)

40k Ω

Choose your

installation variant

Front · DIN rail ·

Combined



The **iso685 product family** offers you a choice of how to mount the device:

- Variants with an integrated display (identifier “-D”) allow DIN rail mounting or screw mounting.
- Variants with a remote display (identifier “-S”) allow mounting in the control cabinet door or a combination of a basic device on a DIN rail with an operator unit in the control cabinet door.

Installation variants with operator unit in the control cabinet door

All variants are also available with the same characteristics as variants without display combined with a remote display (FP200) for installation in control cabinet doors.



The display unit FP200 is mounted in the front using retaining clips and connected via a provided RJ45 connection cable to the basic devices without display. This installation variant makes it possible to install the display of the device in the control cabinet front without having to route the system connection with up to 1,000 V.

Insulation monitoring

As individual as your needs



Each electrical installation has its own requirements. The iso685 product family provides a suitable device for every need.

Increased climatic and mechanical requirements

The variants marked with W are suitable for extreme operating conditions from $-40\text{ }^{\circ}\text{C}$ to $+70\text{ }^{\circ}\text{C}$, with a climatic class of 3K5 and a mechanical class of 3M7 during operation.

Railway applications

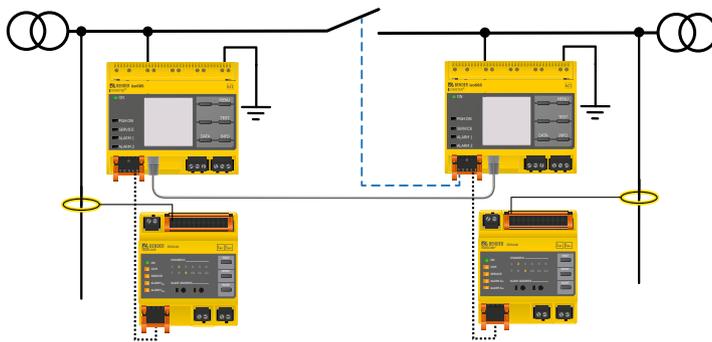
The variant isoRW685W was specifically tailored for rolling stock railway applications. It is additionally tested according to DIN EN 50155 and is also suitable for operating temperatures from $-40\text{ }^{\circ}\text{C}$ to $+70\text{ }^{\circ}\text{C}$, but at a climatic class of 3K7 and a mechanical class of 3M7 during operation. The isoRW685W-D variant completely fulfils the necessary requirements concerning EMC, temperature, climatic classes and mechanical stress for use in railway applications.



Standard-compliant insulation monitoring in coupled systems

The variants with identifier “-B” or “-P” are suited for use in coupled systems. Via an internal system isolating switch the iso685 can actively and independently separate itself from the monitored system. This allows several insulation monitoring devices to be used in a coupled system without influencing each other in case of closed coupling switches. This function, called ISONet by Bender, corresponds to the REDC (Remote enabling and disabling command).

All iso685 devices operating in ISONet mode are interconnected via Ethernet and regulate the measurement sequence automatically. This allows up to 20 coupled IT systems in one ISONet operation. The EDSsync function allows insulation faults to be quickly located even in large coupled systems. The ISOloop function ensures that at least one device is actively measuring in a device interconnection. This guarantees measurement in ring systems.



Schematic circuit diagram of a coupled IT system

Normative background

According to IEC 61557-8, only one insulation monitoring device may be used in an un-earthed system (IT system); due to the measurement procedure, several insulation monitoring devices may interfere with each other.



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