

□ **IFS-710-W6**
Insulation Fault Detection Device



Product Information

1 Application

The insulation fault detection device IFS-710-W6 is an integral component of insulation fault detection systems, especially for applications in medical locations as stipulated by DIN VDE 0100-710 (VDE 0100 Part 710):2002-11.

The IFS-710-W6 with integrated current transformers is used for detecting insulation faults in IT systems. Insulation fault detection systems can be implemented with the following devices:

- Multifunctional change-over and monitoring device UEI-710-V.5
- Insulation fault detection device IFS-710-W6

alternatively, with:

- Insulation, load and temperature monitoring device ILT-107-V.4
- Test signal generator IFS-710-PSG for detection of insulation faults
- Insulation fault detection device IFS-710-W6

The main characteristics of the IFS-710-W6 are:

- Quick and automatic identification of faulty circuits during operation
- No user intervention necessary
- No time-consuming manual troubleshooting
- Reporting and storage of faults
- Communication via standard field bus (CAN = Controller Area Network) with all initialised devices from the system HospEC®
- Connection options for building services control systems (BSCS)

The insulation fault detection device IFS-710-W6 ensures the following:

- Test current detection with six integrated current transformers
- Parallel data capture and processing (no multiplexing)
- Communication and power supply via standard field bus (CAN)

2 Principle sequence of an insulation fault detection

The insulation, load and temperature monitoring device ILT-107-V.4 and the multifunctional change-over and monitoring device UEI-710-V.5 detect and permanently monitor the insulation resistance in the IT system. If the insulation resistance falls below a specified value, the test signal generator (IFS-710-PSG / integrated in UEI-710-V.5) will start a fault detection process.

This feeds a test signal (limited to 1 mA) into the IT system. The insulation fault detection devices (IFS-710-W6) detect the test signal by their integrated current transformer (one for each outgoing circuit). The test signal generator or the UEI-710-V.5 evaluates the fault detection and transfers the evaluation via field bus (CAN).

Corresponding messages are shown on the insulation monitoring device (ILT-107-V.4 / UEI-710-V.5) and peripheral display devices. The messages contain detailed information about the faulty circuit and are stored for later analyses.

All devices communicate with each other using the standard field bus (CAN).

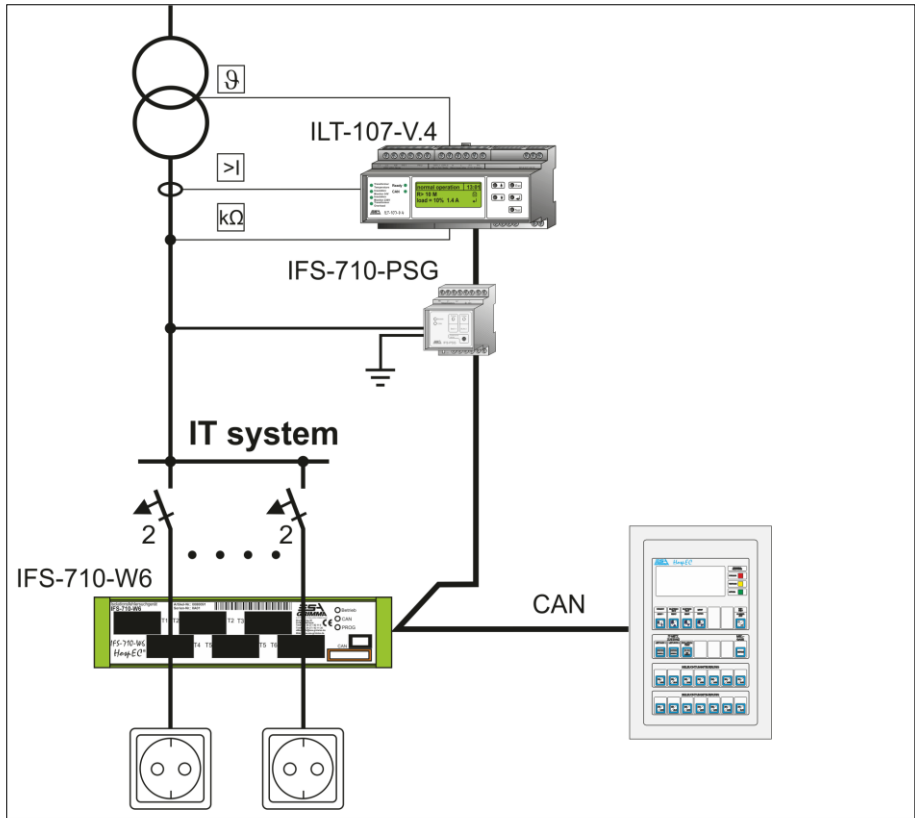


Figure 1: Schematic diagram of an insulation fault detection system with ILT-107-V.4, IFS-710-PSG and IFS-710-W6

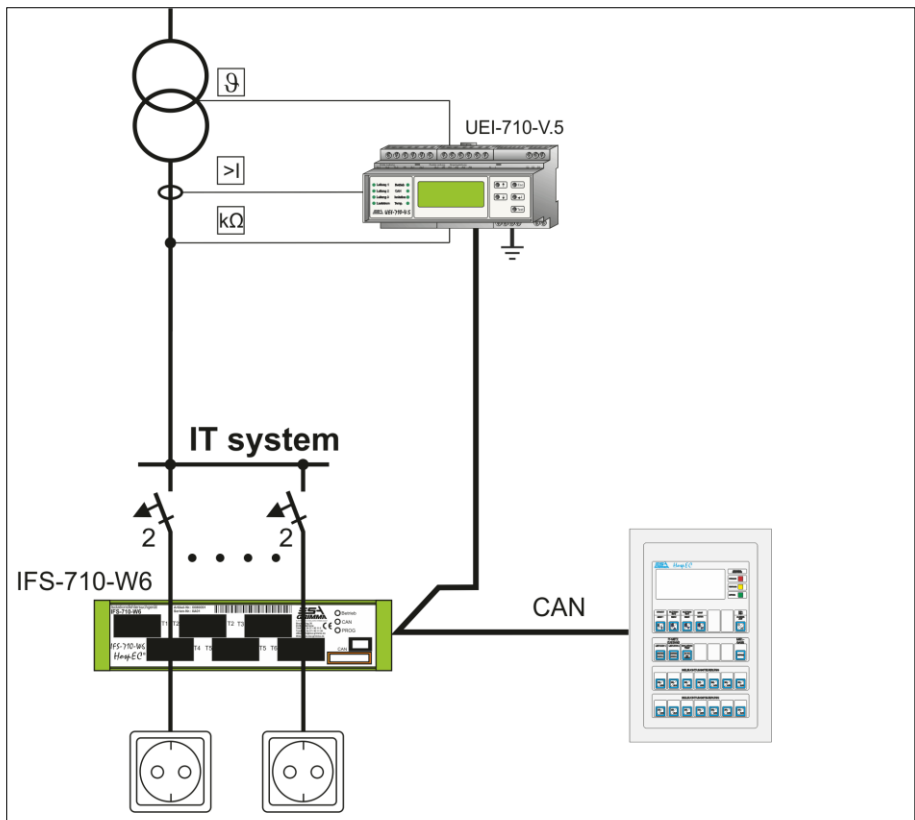


Figure 2: Schematic diagram of an insulation fault detection system with UEI-710-V.5 and IFS-710-W6

3 Connections

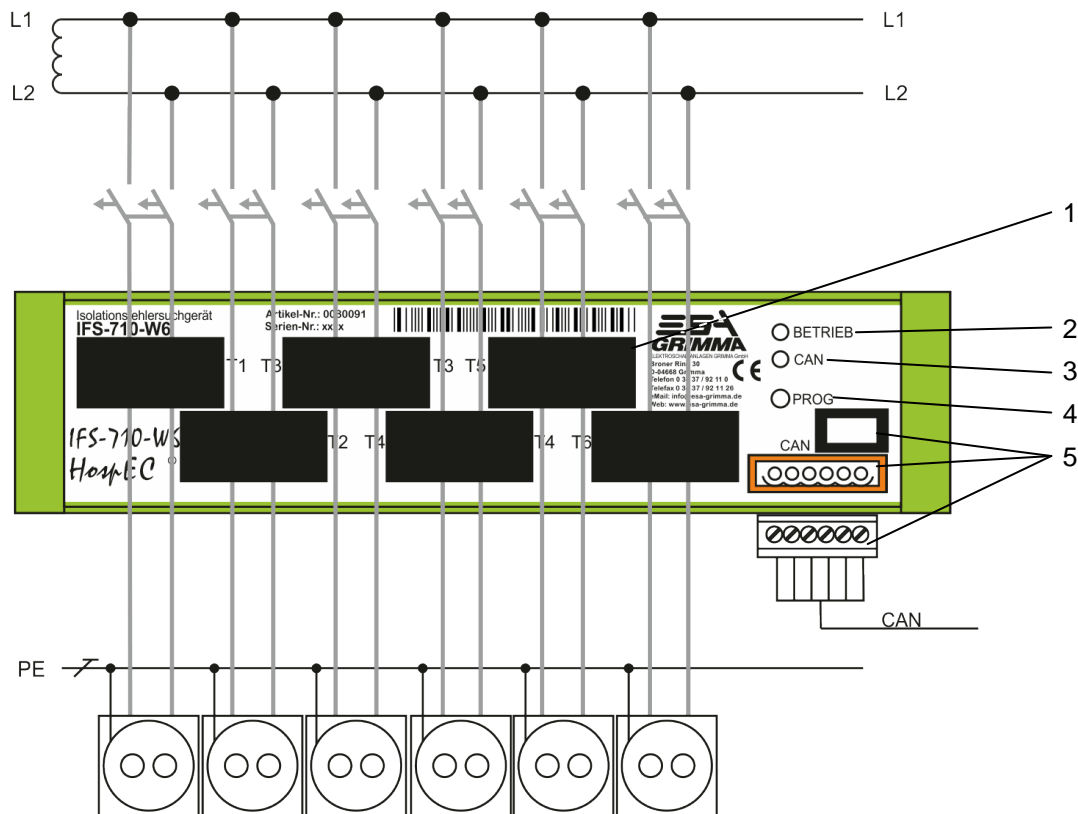


Figure 3: Connections of IFS-710-W6

- | | | | |
|---|--|---|---------------------------------|
| 1 | Current transformer (altogether six (6)) | 4 | Button "PROG" |
| 2 | Status LED "BETRIEB" | 5 | Port / contact plug for CAN bus |
| 3 | Status LED "CAN" | | |

4 Assembly, connection, start-up, maintenance and testing

The IFS-710-W6 is installed in distribution boards (DIN 43871) on top-hat rails (DIN EN 60715).

Assembly, connection and start-up of the IFS-710-W6 may only be carried out by qualified electricians. All relevant safety regulations and standards have to be observed.

The IFS-710-W6 is connected in accordance with the connection diagram and the individual connection specifications (see chapter 3). Observe the technical specifications of the device (see chapter 7 on page 7). A separate documentation is provided with information about the CAN bus.

The device automatically monitors all internal functions and the state of the communication interface. Regular maintenance is therefore not required.

5 Buttons and display

Status LED "BETRIEB" (Ready)

Off	No power supply
Green	Normal operation
Flashes red (high frequency)	An insulation fault was detected.
Red	Device fault

Status LED "CAN"

Flashes green	CAN bus is all right (communication is all right).
Red	CAN bus fault

Button "PROG"

NOTE: The button "PROG" is only required during the start-up phase with the ILT-107-V.4 and the IFS-710-PSG. Only authorised service technicians from ESA Elektroschaltanlagen Grimma GmbH are permitted to use this button for any other purposes.

6 Messages / communication interface

Messages are given by the two LED indicators on the IFS-710-W6 and are transmitted via CAN bus to any other connected devices for further evaluation.

Messages are indicated on the following:

- Multifunctional change-over and monitoring device UEI-710-V.5
- Insulation, load and temperature monitoring device ILT-107-V.4
- Operating and annunciator terminal BMTI 5
- Display and configuration device ANZ 05
- Annunciator and control panel series FolioTec

7 Technical specifications

Operation	
Rated voltage (insulation coordination acc. to IEC 60664-1)	250 V AC
Rated impulse withstand voltage	4 kV
Pollution degree	3
Supply voltage.....	via CAN 24 V DC (PELV)
Power consumption	approx. 1.5 W
Monitored system	
Transformer types / transformation ratio:	
Current transformer.....	1000/1
Current transformer rated voltage.....	20 ... 720 V AC
Current transformer rated frequency.....	50 ... 60 Hz
Current transformer rated current	50 A
Measuring channels	
Number of measuring channels	6
Number of measuring channels per IT system:	
with UEI-710-V.5	max. 96
with ILT-107-V.4 and IFS-710-PSG	max. 132
Measurement value logging.....	parallel (no multiplexing)
Evaluation range of leakage current	0.2 ... 2.5 mA
Displays and messages	
Displays.....	LED
Messages.....	via CAN bus
Inputs	
Interface	CAN
Communication interface / protocol	
Interface / protocol	CAN / CAN (2.0) acc. to ISO 11898
Electromagnetic compatibility (EMC)	
In accordance with DIN EN 61326-2-4:2006 (IEC 61326-2-4:2006)	
Emitted interference acc. to DIN EN 61543:2007-06 (IEC 61543:2005-11)	
Emissions acc. to EN 55014-1/CISPR14-1	
Environmental conditions	
Ambient temperature (operation) acc. to EN 61557-8: 1997	-10 ... +55°C
Ambient temperature (storage) acc. to EN 61557-8: 1997	-25 ... +70°C
Climatic conditions acc. to IEC 721	3K5, no condensation or icing
Installation specifications	
Installation position	vertical
Wire size / single-wire / fine-wire	0.2 ... 4 mm ² / 0.2 ... 2.5 mm ² (AWG 24-12)
Protection class acc. to EN 60259 for installations / terminals	IP30 / IP20
Flammability class.....	UL94V-0
Weight	approx. 313 g
Device dimensions in mm (H x W x D)	46 x 190 x 60 (11 TE)
Assembly.....	top-hat rail acc. to DIN EN 60715
Order information	
IFS-710-W6.....	Item no.: 0080091

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