



Complete power supply solutions for medical locations with the regulation and control system *HospEC®*

The Equipment

Requirements

The focal point of a hospital or medical facility is the patient. An interruption in the power supply could result in a critical situation of treatment and thus in extreme cases endanger the health of the patients.

Medical locations therefore deserve the most modern and secure electrical supply facilities. Under these provisions, the *HospEC®* regulation and control system was developed by ESA Elektroschaltanlagen Grimma GmbH for the safe supply of hospitals. We therefore fulfil the high requirements on the reliability of the power supply in medical locations in accordance with IEC 60364-7-710 and DIN VDE 0100 Part 710.

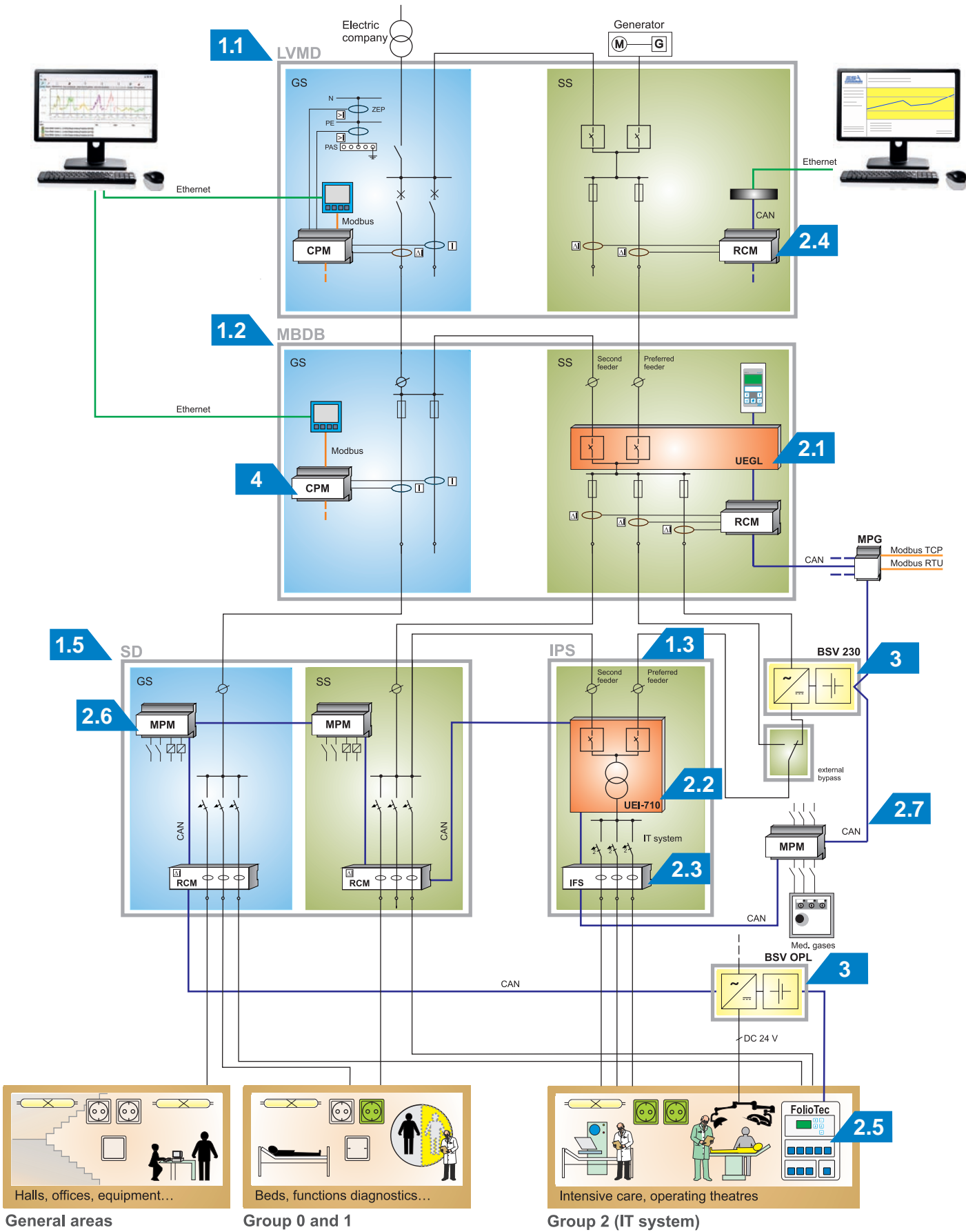
Our Solution *HospEC®* - One system

The *HospEC®* regulation and control system is a holistic system solution for secure, comfortable and economical power supply of hospitals. With our technology, we optimally realize all necessary regulation, monitoring and control tasks of a hospital or medical facility.

The flexibility of *HospEC®* allows it to be used rationally in a wide variety of individual application cases. The system impresses with complex functionality, simple planning and installation. It also provides significant cost advantages for operation and maintenance, as well for expansions or changes.

Your Benefits

- Safe monitoring, archiving, control and display of the operating status of the system in accordance with IEC 60364-7-710 and DIN VDE 0100 Part 710
- Holistic concept with open system structure
- Compatibility with external facilities by linking with other bus systems via digital I/O-device and bus coupler
- Easy expansion or adaptation due to its modular structure
- All the information is also available outside of sterile locations
- Implementation of energy, capacity and cost optimization
- Time and cost advantages for planning, installation and operation
- High availability and reliability due to mutual monitoring of all system components
- Competent service and maintenance



HospEC® – Schematic diagram of switchgear systems and functional systems in the hospital

Products and systems for the power supply of medical locations according to IEC 60364-7-710 and DIN VDE 0100-710

- 1 Low-voltage switchgear and controlgear combinations
- 1.1 Low-voltage main distribution board LVMD
- 1.2 Main building distribution board MBDB with change-over module *UEGL*
- 1.3 IT system distribution board *IPS* for Group 2 areas with change-over and monitoring module *UEI-710* and *IFS* insulation fault detection system
- 1.4 Complete battery supported IPS system specifically designed for safe power supply of medical treatment centres, clinics and medical practices
- 1.5 SD subdistributors for Group 0 and 1 areas as well as for the supply of general areas
- 2 *HospEC®* regulation and control systems
- 2.1 Change-over module for main building distribution board MBDB *UEGL*
- 2.2 Change-over and monitoring module for *UEI-710*, *UEI-710* IT system distribution boards
- 2.3 *IFS* insulation fault detection system
- 2.4 Residual and operating current monitoring with monitoring system *WedViz-EC®*
- 2.5 Display and operating system
- 2.6 Lighting control/interfacing third-party systems with *MPM* digital I/O-devices
- 2.7 Standard field bus CAN
- 3 BSV - Battery supported power supply
- 4 Energy management system
- 5 Regulation and control devices *HospEC®*

Requirements

Any insulation faults in IT systems are immediately reported by insulation monitoring devices; however, the IT system will continue to be operated. A rapid localization and elimination of the insulation fault is now required. Localization and reporting of the affected outlet circuit should be indicated comfortably by an insulation fault detection system, without a system shutdown or separation of consumers. Maintenance and repair work is therefore limited to a minimum.

2.3 The solution

With our insulation fault detection system (IFS), faulty outgoing circuits are automatically detected without shutdown of the IT system. This is done without any measures being required by the technical department or the medical staff. A message is output and a clear text display of the name of the fuse or the location of the faulty circuit, as well as the measured insulation resistance. Time-consuming manual troubleshooting is thus no longer necessary.

Implementation of the insulation fault detection system by:

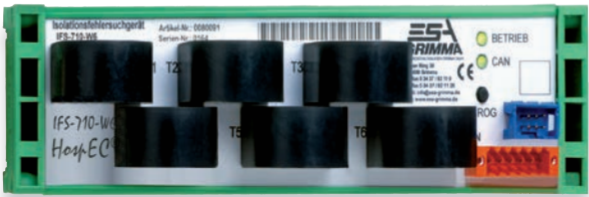
- Multi-functional change-over and monitoring device UEI-710-v.5
- Insulation fault detection device IFS-710-W6

Or with:

- Insulation, load and temperature monitoring device ILT-710-V.5
- Insulation fault detection device IFS-710-W6

Display of messages, e.g. on:

- Multifunctional change-over and monitoring device UEI-710-V.5
- Insulation, load and temperature monitoring device ILT-710-V.5
- Operating and annunciator terminal for IT systems BMTI S
- Operating and annunciator terminals FolioTec, Touch Control, Kombi



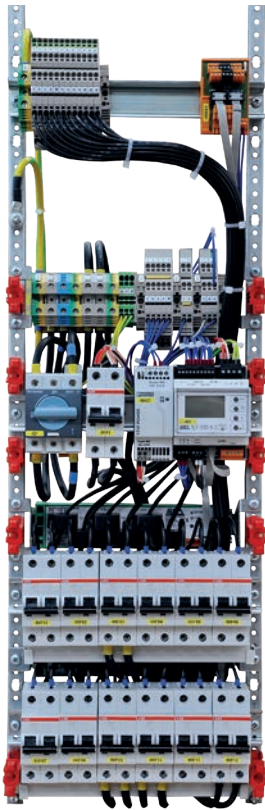
Insulation fault detection device IFS-710-W6

Your benefits

- Fast and automatic localization of faulty circuits during running operation
- No operator actions required
- No time-consuming manual search for faults
- Optimization of maintenance
- Increase in plant safety
- Reporting and storage of the fault
- An integral part of the HespEC® system
- Communication via CAN bus with all devices from the HespEC® system
- Can be connected to building control technology

Our Products

- Multifunctional change-over and monitoring device UEI-710-V.5
- Insulation, load and temperature monitoring device ILT-710-V.5
- Insulation fault detection device IFS-710-W6
- HespEC® regulation systems
 - Operating and annunciator terminal BMTI S, BMTI S+
 - Operating and annunciator terminals FolioTec, Touch Control, Kombi with data connection via standard field bus (CAN)



Section of an IT system distribution board IPS-ICU-710 with insulation fault detection system (IFS)

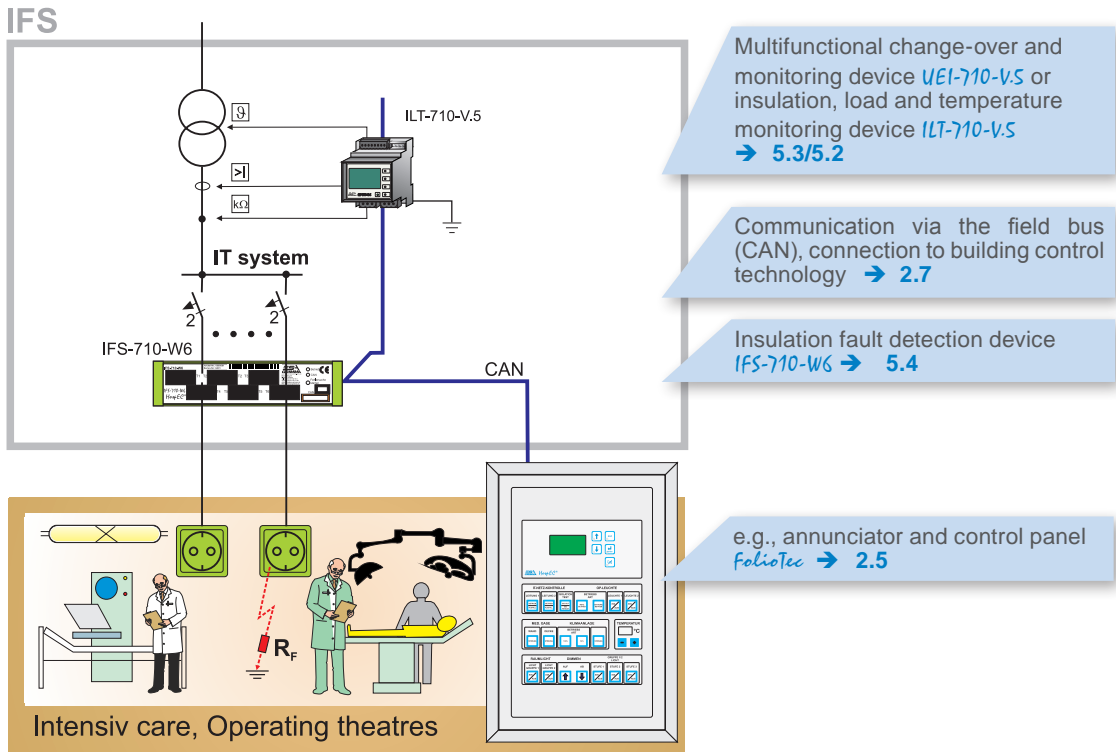
Basic sequence of an insulation fault detection

The insulation monitoring device (ILT-710-V.5/UEI-710-V.5) determines and constantly monitors the insulation resistance of the IT system. If the insulation resistance drops below a specified value, the detection process is started by the test signal generator (integrated into ILT-710-V.5 and UEI-710-V.5). This feeds a test signal (limited to 1 mA) into the IT system. The test signal is registered by the integrated converter (per outlet circuit) of the insulation fault detection device (IFS-710-W6) -

the faulty circuit is detected. The test signal generator evaluates the error search and transmits the evaluation on the field bus (CAN). Corresponding messages are now generated at the insulation monitoring device and the peripheral display devices. The operator receives detailed information on the faulty circuit, and messages can be saved for later evaluations. All devices communicate via the standard field bus (CAN).

Technical data of IFS

Number of measuring channels per IFS-710-W6	6 (measuring transformers integrated)
Number of measuring channels per IT system	Maximum 96
Troubleshooting time	Approx. 5 s for a maximum of 4 µF power leakage capacitance
Test signal is limited to	max. 1 mA
Measured value acquisition	Parallel (no multiplexing method)
Communication interface/protocol	CAN / CAN (2.0) as per ISO 11898
Messages at ILT-710-V.5/UEI-710-V.5	Designation of the faulty fuse circuit, insulation resistance
Messages to peripheral display devices (e.g. BMTI S, FolioTec)	Audible alarm, insulation resistance, freely configurable texts on the location and name of faulty circuits



Schematic representation of an insulation fault detection system IFS with UEI-710-v.5

Requirements

Information on the overall system - from the medical-technical right up to the building-technical side - must be assigned centrally, locally, and to individual areas, and made available to the user. Similarly, operator actions must be run from these locations. As especially in hospitals the staff has to deal with a flood of information at all times, this display and operating system must satisfy the principle of „show only as much as necessary“. If operator actions are required, these must be doable quickly, intuitively and at a glance.

The solution

With our display and control devices, we provide the user with a system that integrates all the necessary monitoring and control functions and that also meets the typical requirements in a hospital:

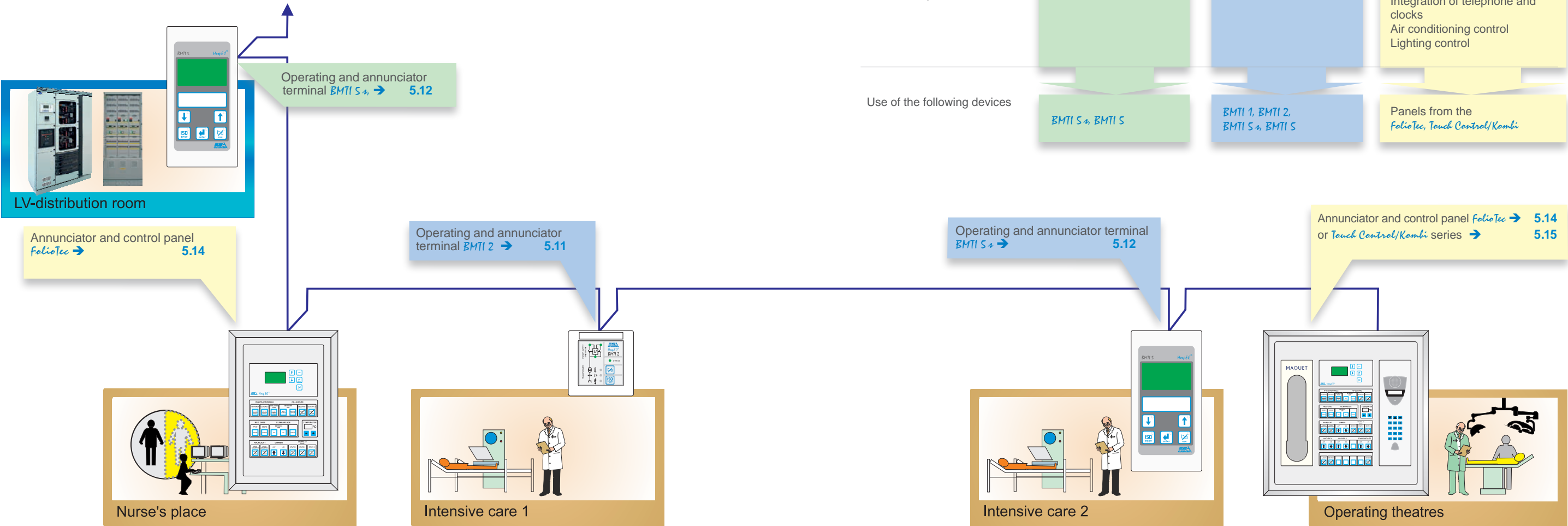
- Simple handling using fewer control buttons and a simple menu structure

Your benefits

- Specially designed for the use in medical locations
- Designed for quick acquisition of all necessary messages
- Simple, clear and intuitive operation possible
- Transparent button and display elements back-lit by multi-coloured LED
- Closed, multi-layered and permanently stable foil surface that is resistant to cleaning agents and disinfectants, UV-resistant
- High degree of protection of the user interfaces (IP54)
- Communication via standard field bus (CAN) with all devices from the *HayEC®*-system
- Problem-free integration into the building control technology
- Control and monitoring function connections also for third-party systems
- General processing of system data, not set to predefined warning messages and operating messages

Our Products

- Operating and annunciator terminal *BMTI 1* -> 5.10 for the display of alarms from monitored IT systems with ISO-test function
- Operating and annunciator terminal *BMTI 2* -> 5.11 for the display of alarms from change-over and monitoring modules with ISO-test function
- Operating and annunciator terminal *BMTI S* and *BMTI 5* -> 5.12/5.13 e.g. for display of status and error messages of the IT system in medical locations, messages and measured values from other devices from the *HayEC®* system, messages from external facilities, with ISO-test function.
- Annunciator and control panel series *FolioTec* -> 5.14 with touch display: *Touch Control/Kombi* -> 5.15 e.g. for display of status and error messages of the IT system, change-over modules, messages and measured values from other devices from the *HayEC®* system, for messages from external facilities, for operating theatre table control, integration of linguistic communication, shutter/blind control, air conditioning control, representation and control of additional processes of the overall system.



HayEC® - display and operating system in the hospital

5.1

Areas of application

As a control and monitoring device for the change-over between the general supply (GS) and safety supply (SS) in automatic change-over modules (type [UEGL](#)) according to DIN VDE 0100-710.

Product description

- Monitoring of all voltages in single or three-phase networks for compliance with the tolerance limits preselected on the device:
 - Voltage monitoring of the preferred feeder, the second feeder as well as for undervoltage and overvoltage after the change-over module
- Interruption monitoring of the N-conductor in three-phase networks (also where there is a symmetrical network load)
- Change-over control for load switch with motor drive (other versions on request)
- Monitoring of the overall change-over module:
 - Internal intrinsic device monitoring
 - Wire breakage monitoring of the control circuits
 - The correct switching states and switching times of load switching devices



SPR-107-V.4

- Voltage supply of the control circuits with control voltage switching device [STU-107-V.3](#)
- LED display of the operating states
- Text display (full-graphic display) for detailed information and view menu
- Operation via buttons on the device
- Configuration via password-protected, user-friendly menu, e.g.:
 - Response values of the voltage monitoring
 - Switching delay times
 - Activation times of the load switching devices

Technical data

Monitored system	1/N AC 0...290 V / 3/N AC 0...500 V / 2 AC 0...500 V / each 50...60 Hz
Configurable values	
Undervoltage response	230/400 V system: 150...230 V / 260...400 V
Overvoltage response	230/400 V system: 230...260 V / 400...460 V
Triggering delay time Tv _h	0...20 s in 0.5 s steps
Release delay time Tv _r	0...20 s in 0.5 s steps
No-load time (pause time) T _{nu}	0...20 s in 0.5 s steps
Control time for load switching devices	0.10...4 s in 0.02 s steps
Operation	5 buttons
Configuration	Via menu
Displays	Full-graphic display (backlit) and LED
Messages	Plain text display / LED / alarm relay / externally via field bus (CAN) e.g. at the BMTI S
Communication interface/protocol	CAN / CAN (2.0) as per ISO 11898
Supply voltage U _s	24 V DC (PELV)
Internal consumption	Approx. 7 W
Dimensions (H x W x D in mm) / Installation	90 x 160 x 73 (9 TE) / top hat rail according to DIN EN 60715

Detailed information is provided in the technical documentation for the device.

Areas of application

The [ILT-710-V.5](#) is used as a monitoring device for IT systems according to IEC 60364-7-710 and DIN VDE 0100-710. With integrated test signal generator to setup an insulation fault detection system with insulation fault detection devices [IFS-710-W.6](#).

Product description

- Monitoring of:
 - Insulation resistance of a single-phase 230 V AC IT system
 - Load current of the transformer and the converter via
 - Temperature of the transformer (via PTC or NC contact)
- Monitoring of all measurement connection lines in accordance with DIN VDE 0100-710
- Internal intrinsic device monitoring
- Can be expanded in conjunction with at least one [IFS-710-W.6](#) (insulation fault detection device) as an insulation fault detection system. The faulty outgoing circuit (fuse name) is then displayed on the device and on peripheral display devices (e.g. [BMTI S](#), panels)

Technical data

Monitored IT system	1 AC 50/60 Hz 110...250 V, DC 110...250 V
Configurable values	
Response value of insulation monitoring 230 V	50...250 kΩ
Response value of load current monitoring	0...50 A with transformer ILT-W
Temperature monitoring response value / release value	Fixed: 120 °C, 4 kΩ/1.5 kΩ
Permissible system leakage capacitance	max. 4 μF
Max. number of insulation fault detection devices IFS-710-W.6	16 (96 channels)
Test signal (test current)	Limited to 1 mA
Operation	4 buttons
Configuration	Via menu
Displays	Full-graphic display (backlit) and LED (status)
Messages	Plain text display / LED / 2 OptoMos relays / externally via field bus (CAN) e.g. at the BMTI S / acoustic signal generator
Communication interface/protocol	CAN / CAN (2.0) as per ISO 11898 RS 485 / Modbus®-RTU
Supply voltage U _s	AC 50/60 Hz 110...250 V / DC 110...250 V
Internal consumption	Approx. 8 W
Dimensions (H x W x D in mm) / Installation	90 x 71 x 73 (4 TE) / top hat rail according to DIN EN 60715

Detailed information is provided in the technical documentation for the device.

5.2



ILT-710-V.5

- Complete documentation of faults using the past events memory, RTC integrated
- Text display (full-graphic display) for detailed information and view menu
- Operation via buttons on the device
- Configuration via password-protected, user-friendly menu, e.g.:
 - Response values of the insulation monitoring
 - Response values of the load current monitoring

Insulation, load and temperature monitoring device [ILT-710-V.4](#)

The [ILT-710-V.4](#) device (not shown) has the same properties as the [ILT-710-V.5](#). However, it has no test signal generator and is used when no insulation fault detection system is to be installed.

Areas of application

5.3

As a control and monitoring device for the change-over between the general supply (GS) and safety supply (SS) in automatic change-over modules (type **UEI-710**) and their connected IT systems With integrated test signal generator to setup an insulation fault detection system with insulation fault search devices **IFS-710-W6**.



UEI-710-V.5

Product description

- Monitoring of all voltages in single phase networks for compliance with the tolerance limits preselected on the device:
 - Voltage monitoring of the preferred feeder, the second feeder as well as for undervoltage and overvoltage after the change-over module
- Change-over control for motor-driven switch disconnectors
- Monitoring of the overall change-over module:
 - Internal intrinsic device monitoring
 - Wire breakage monitoring of the control circuits
 - The correct switching states and switching times of load switching devices
- Implementation of the voltage supply of the control circuits (with integrated control voltage switchover)
- Monitoring of
 - Insulation resistance of a single-phase 230 V AC IT system
 - Load current of the IT transformer using converter
 - Temperature of the transformer (via PTC or NC contact)
- Monitoring of all measurement connection lines in accordance with DIN VDE 0100-710
- Integrated test signal generator, together with **IFS-710-W6** (insulation fault detection devices), the implementation of a complete insulation fault detection system
- Complete documentation of faults using the past events memory, RTC integrated
- Monitoring of the periodic inspection and triggering of „silent alarm“ in the case of overshoot
- Complete plug-in connection contacts - device can be replaced without switching off the consumers

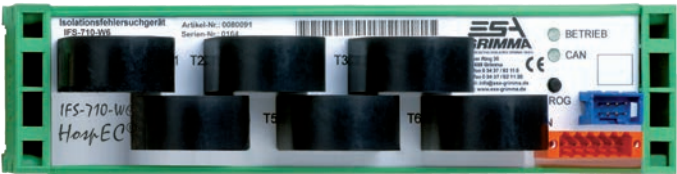
Technical data

Monitored system (voltage)	1/N AC 0...290 V / 50...60 Hz
Monitored IT system	AC 120...265 V / 50...60 Hz
Configurable values	
Undervoltage response	150...230 V
Overvoltage response	230...260 V
Triggering delay time Tv	0...20 s in 0.2 s steps
Release delay time Tvr	0...20 s in 0.2 s steps
No-load time (pause time) Tnu	0...20 s in 0.2 s steps
Response value of insulation monitoring 230 V	50...250 kΩ
Response value of load current monitoring	5...50 A with transformer ILT-W
Temperature monitoring response value / release value	Fixed: 120 °C, 4 kΩ/1.5 kΩ
Insulation fault detection system	With IFS-710-W6, outgoing circuit-related error detection, max. 96 channels
Test current limited to a maximum of	1 mA
Operation	Buttons
Configuration	Via menu
Displays	Full-graphic display (backlit) and LED
Messages	Plain text display / LED / alarm relay / externally via field bus (CAN) e.g. at the BMT S
Communication interface/protocol	CAN / CAN (2.0) as per ISO 11898
Supply voltage Us	230 V AC 50 Hz
Internal consumption	Approx. 5 W
Dimensions (H x W x D in mm) / Installation	90 x 160 x 73 (9 TE) / top hat rail according to DIN EN 60715

Detailed information is provided in the technical documentation for the device

Areas of application

To setup an insulation fault detection system in IT systems for medical locations; insulation fault detection system in accordance with DIN EN 61557-9 (VDE 0413-9). The devices always form a functional unit with a test signal generator, integrated in the insulation, load and temperature-monitoring device (**ILT-710-V.5**) or in the multifunctional change-over and monitoring device (**UEI-710-v.5**).



IFS-710-W6

5.4

Product description

- Test current detection with integrated current transformers
- 6 measuring channels
- Parallel acquisition and processing of measuring values, no multiplex procedure
- Compact design
- Internal intrinsic device monitoring
- Communication with the associated test signal generator (**ILT-710-V.5** / **UEI-710-V.5**) via standard field bus (CAN)
- Can be configured using devices **ILT-710-V.5** or **UEI-710-V.5**

Technical data

Number of measuring channels	6 (measuring transformers integrated)
Number of measuring channels for each IT system	Max. 132 (96 with UEI-710-V.5 and ILT-710-V.5)
Measured value acquisition	In parallel, no multiplex procedure
Troubleshooting time	Approx. 3 s
Response value of the test current	0.5 mA
Monitored system	
Rated voltage	AC 20...265 V
Rated frequency	45...400 Hz
Displays	LED
Messages	LED / field bus (CAN)
Communication interface/protocol	CAN / CAN (2.0) as per ISO 11898
Supply voltage Us	24 V DC (PELV) via CAN bus
Internal consumption	Approx. 2.6 W
Dimensions (H x W x D in mm) / Installation	46 x 190 x 60 (11 TE) / top hat rail according to DIN EN 60715

Detailed information is provided in the technical documentation for the device

Areas of application

The device is used to display error messages of monitored power supply systems for medical locations according to IEC 60364-7-710 and DIN VDE 0100-710 (device type *ILT*). The device also enables the triggering of the test function of connected IT system-monitoring devices (device type *ILT*). Communication is via the standard CAN field bus.



BMTI 1

Product description

5.10

- Display error messages from monitoring devices (with Device Type *ILT*) with multi-colour LED
- Triggering of the test function of the monitored IT system monitoring device (Device Type *ILT*) „ISO test“
- Acoustic signalling of messages („horn“)
- 5 LEDs and 2 operator buttons
- Closed, multi-layered and permanently stable foil surface that is resistant to cleaning agents and disinfectants, UV-resistant
- High degree of protection of the user interface (IP54)
- Prepared for installation in standard flush-mounting/hollow-wall socket

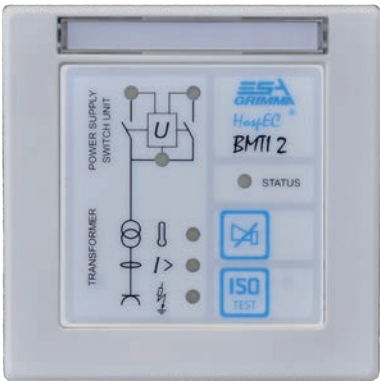
Technical data

Source of the messages	Insulation monitoring devices with device type <i>ILT</i>
Displays	5 LED
Buttons	2
Acoustic signalling	Horn
Messages	- Overtemperature IT system transformer - Overcurrent (load) IT system transformer - Insulation fault in the monitored IT system - Voltage in the IT system / device fault, type <i>ILT</i>
Configuration	On the device with the buttons (the <i>BMTI 1</i> is delivered pre-configured)
User interface	Closed, multi-layered and permanently stable foil surface that is resistant to cleaning agents and disinfectants, UV-resistant
Communication interface/protocol	CAN / CAN (2.0) as per ISO 11898
Supply voltage Us	24 V DC (PELV) via CAN bus
Internal consumption	Approx. 0.5 W
Dimensions (H x W x D in mm) / Installation	55 x 55 x 37 / standard flush-mounting or hollow-wall socket

Detailed information is provided in the technical documentation for the device.

Areas of application

BMTI 2 is used to display error messages of monitored power supply systems of medical locations according to IEC 60364-7-710 and DIN VDE 0100-710. The messages issued are from change-over and monitoring devices (device type *UEI-710*). The device also enables the triggering of the test function of connected IT system-monitoring devices (device type *UEI-710*). Communication is via the standard CAN field bus.



BMTI 2

Product description

- Status display and display of error messages from change-over and monitoring modules (with device type *UEI-710*) with multi-colour LED
- Triggering of the test function of the monitored IT system monitoring device (device type *UEI-710*) „ISO test“
- Acoustic signalling of messages („horn“)
- 7 LEDs and 2 operator buttons
- Closed, multi-layered and permanently stable foil surface that is resistant to cleaning agents and disinfectants, UV-resistant
- High degree of protection of the user interface (IP54)
- Prepared for installation in standard flush-mounting/hollow-wall socket

5.11

Technical data

Source of the messages	Change-over and monitoring modules with device type <i>UEI-710</i>
Displays	7 LED
Buttons	2
Acoustic signalling	Horn
Messages	- Overtemperature IT system transformer - Overcurrent (load) IT system transformer - Insulation fault in the monitored IT system - States of lines 1, 2 and 3
Configuration	On the device with the buttons (the <i>BMTI 2</i> is delivered pre-configured)
User interface	Closed, multi-layered and permanently stable foil surface that is resistant to cleaning agents and disinfectants, UV-resistant
Communication interface/protocol	CAN / CAN (2.0) as per ISO 11898
Supply voltage Us	24 V DC (PELV) via CAN bus
Internal consumption	Approx. 0.5 W
Dimensions (H x W x D in mm) / Installation	55 x 55 x 37 / standard flush-mounting or hollow-wall socket

Detailed information is provided in the technical documentation for the device.

Areas of application

The device is used for display of status and error messages of monitored power supply systems of medical locations according to IEC 60364-7-710 and DIN VDE 0100-710 (device type *SPR/ILT/UEI-710*) and of other devices from the *Hex-EC®* system, as well as of third-party systems. The device also enables the triggering of the test function of connected IT system-monitoring devices.



BMTI 5

Product description

- Display of status, warning and fault messages of devices from the *Hex-EC®* system and third-party systems
- Connection of air-conditioning systems via Modbus® (with additional board)
- Text display (full-graphic display) for detailed information and display of menu, multi-coloured, backlit
- Fast detection of message priorities by a colour change on the display
- Operated by buttons on the device and intuitive menu control
- Preconfigured with standard message texts
- Display of up to 1000 different operating states
- Option of entering individual message texts
- Message memory for 500 messages in a zero-voltage (non-volatile) safe memory (EEPROM)
- Date and time with RTC
- Removable storage medium for history, firmware and configuration (microSD card)
- Configured via menu
- Closed, multi-layered and permanently stable foil surface that is resistant to cleaning agents and disinfectants, UV-resistant
- High degree of protection of the user interface (IP54)

Technical data

Source of the messages	All devices from the <i>Hex-EC®</i> system (with additional board also directly from third-party systems)
Number of different messages	Max. 1000 individual line texts
Display	Full-graphic display (multi-coloured, backlit)
Messages	Plain text display / display of the message priority by colour change on the display / horn
Message texts	Standard texts (preconfigured) / individual texts
Message memory	500 integrated, with date / time
Operation	Plastic foil keyboard
Test functions	For IT-system monitoring devices, "ISO Test"
Configuration	Via the menu / PC configuration software via the CAN bus / transfer of projects from the MicroSD card
Additional inputs/outputs	16 with additional board, can be configured as required as an input/output (open collector)
Special feature	Several BMTI 5's can be combined into groups for common acknowledgements, and mutually monitor each other's functions
Communication interface/protocol	1 x CAN / CAN (2.0) nach ISO 11898 RS485 / Modbus® RTU (mit Zusatzplatine)/ Modbus® als Gateway
User interface	Multi-layer foil surface that is resistant to cleaning agents and disinfectants
Supply voltage Us	24 V DC (PELV), via CAN bus by default
Internal consumption	Approx. 2.5 W
Degree of protection to DIN EN 60529	IP30 / IP20 (fixtures / terminals), IP54 (user interface)
Dimensions of front panel (H x W x D in mm) / Installation	171 x 86 (installation depth 54 mm) / hollow-wall / flush / surface

Detailed information is provided in the technical documentation for the device.

Areas of application

BMTI 5 is used for display of status and error messages of monitored power supply systems of medical locations according to IEC 60364-7-710 and DIN VDE 0100-710 (device type *SPR/ILT/UEI-710*) and of other devices from the *Hex-EC®* system, as well as of third-party systems. The device also enables the triggering of the test function of connected IT system-monitoring devices.



BMTI 5

Product description

- Display of status, warning and fault messages of devices from the *Hex-EC®* system and third-party systems
- Connection of air-conditioning systems via Modbus® (with additional board)
- Text display (full-graphic display) for detailed information and display of menu, multi-coloured, backlit
- Fast detection of message priorities by a colour change on the display
- Operated by buttons on the device and intuitive menu control
- Preconfigured with standard message texts
- Display of up to 1000 different operating states
- Option of entering individual message texts
- Message memory for 500 messages in a zero-voltage (non-volatile) safe memory (EEPROM)
- Date and time with RTC
- Removable storage medium for history, firmware and configuration (microSD card)
- Configured via menu
- Closed, multi-layered and permanently stable foil surface that is resistant to cleaning agents and disinfectants, UV-resistant
- High degree of protection of the user interface (IP54)

Technical data

Source of the messages	All devices from the <i>Hex-EC®</i> system (with additional board also directly from third-party systems)
Number of different messages	Max. 1000 individual line texts
Display	Full-graphic display (multi-coloured, backlit)
Messages	Plain text display / display of the message priority by colour change on the display / horn
Message texts	Standard texts (preconfigured) / individual texts
Message memory	500 integrated, with date / time
Operation	Plastic foil keyboard
Test functions	For IT-system monitoring devices, "ISO Test"
Configuration	Via the menu / PC configuration software via the CAN bus / transfer of projects from the MicroSD card
Relay output	1 change-over contact as general group alarm
Additional inputs/outputs	16 with additional board, can be configured as required as an input/output (open collector)
Special feature	- Several BMTI 5's can be combined into groups for common acknowledgements, and mutually monitor each other's functions - Gateway function for connection of two CAN bus segments
Communication interface/protocol	2 x CAN / CAN (2.0) as per ISO 11898 RS485 / Modbus® RTU (with additional board) / Modbus® as gateway
User interface	Multi-layer foil surface that is resistant to cleaning agents and disinfectants
Supply voltage Us	24 V DC (PELV), via CAN bus by default
Internal consumption	Approx. 2.5 W
Degree of protection to DIN EN 60529	IP30 / IP20 (fixtures / terminals), IP54 (user interface)
Dimensions of front panel (H x W x D in mm) / Installation	171 x 86 (installation depth 54 mm) / hollow-wall / flush / surface

Detailed information is provided in the technical documentation for the device.