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MK2007

Remote alarm indicator and test combination for medically used rooms

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MK2007

Remote alarm indicator and test combination for medically used rooms

MK2007

Device features

- Status indications and fault messages in accordance with IEC60364-7-710:2002
- Two 7-segment displays for insulation resistance and load current
- Bus technology for easy installation and low fire load
- Acknowledgeable audible alarm
- Types available for flush, cable-duct and cavity mounting
- Front panel with text or pictograms

Approvals

Product description

The MK2007 alarm indicator and test combination is used in accordance with IEC60364-7-710 for visual and audible indication of operating statuses and fault messages and for testing insulation monitoring in conjunction with an ISOMETER® 107TD47 or isoMED427P.
The 7-segment displays indicate the following:

- The insulation resistance in kΩ
- The ratio of the instantaneous load current to the maximum permissible secondary-load current I in %.

LEDs indicate:

- Readiness for operation (green)
- Insulation faults (yellow)
- Overcurrent (yellow)
- Overtemperature (yellow)
- Device fault MK2007CBM(T) and insulation monitoring device

The connection between the MKs and the switchover and monitoring modules/ ISOMETER® 107TD47 or isoMED427P is implemented with bus technology.

Description of functions

On 7-segment displays and LEDs the MK2007CBM shows the alarm messages and measurements output by 107TD47 or isoMED427P insulation monitoring devices, via the BMS bus. In addition, an alarm message can also be displayed from any other insulation monitoring device for operating theatre lamp circuits. The MK2007 can not only be used as a single indicator but also as a parallel indicator. If there is an alarm message, the appropriate alarm LEDs light up. At the same time there is an audible signal (acknowledgeable). If, while one message is waiting, a further message occurs, there will be another audible signal.

The “Test” button is used to check operation of ISOMETER® 107TD47 or isoMED427P. A message is only output on the MK2007 where the test button has been pressed.

When wiring up, one must bear in mind that if supply voltage is also incorporated a 4-wire cable (2x bus, 2x U_S) with an appropriate cross-section will be required.

Ordering information

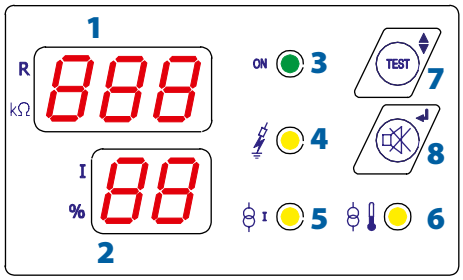
Designation	Type	Art. No.
Alarm indicator and test combination (front foil with symbols)	MK2007CBM	B 923 813
Alarm indicator and test combination (front foil with text)	MK2007CBMT	B 923 801

Accessories

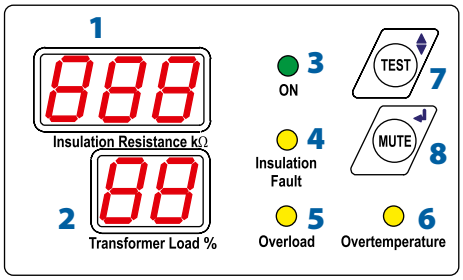
Designation	Art. No.
Flush-mounting enclosure	B 923 710
Panel mounting kit	B 923 780
Dry wall installation kit	B 923 711

Operating and display elements

MK2007CBM



MK2007CBMT

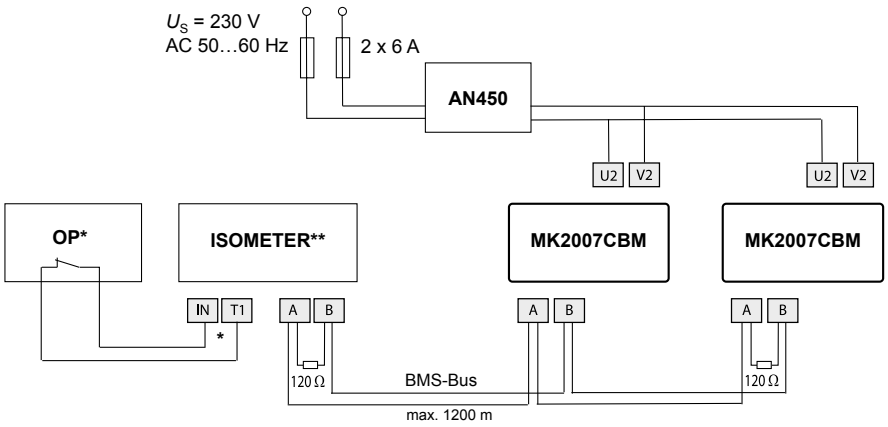


1 -	Display “R”	Indication of the monitored insulation resistance in kΩ
2 -	Display “I”	Indication of the measured isolating transformer load in %
3 -	Operation-LED “On”	Power ON indication
4 -	Alarm-LED “Insulation fault”	Alarm message: insulation fault in the system being monitored
5 -	Alarm-LED “Overload”	Alarm message: overload IT system transformer
6 -	Alarm-LED “Overtemperature”	Alarm message: overtemperature IT system transformer
7 -	Button “Test”	Initiating the self test and the test for the connected insulation monitoring device
8 -	Button	Alarm buzzer mute

Overview of fault messages/alarm indication

Fault messages	Buzzer	LED Insulation fault	LED overload	LED over-temp.	LED “ON”	Displays “R”, “I”
Insulation fault (107TD47)	on	on	-	-	-	value
Insulation fault operating theatre lamp	on	on	-	-	-	“I”:“OP”
Excessive load current	on	-	on	-	-	value
Overtemperature isolating transformer	on	-	-	on	-	value
ISOMETER® doesn’t respond or ISOMETER® signals: Device fault	on	flashing	off	off	flashing	“Er”
No connection to BMS bus Master (MK2007CBM(T) in slave mode)	on	flashing	flashing	flashing	flashing	“Er”
Data collision on the BMS bus, e.g. because address has been assigned twice	off	flashing	flashing	flashing	flashing	“Er”

Wiring diagram



* 107TD47 only: Optionally additional insulation monitoring device for operating theatre lamp circuits

** Isometer = 107TD47 or isoMED427P

Technical data

Insulation coordination in accordance with IEC 60664-1:

Rated insulation voltage	AC 250 V
Rated impulse withstand voltage/contamination level	4 kV/ 3

Voltage ranges

Supply voltage U_S	AC/DC 24 V
Frequency range U_S	0, 50…60 Hz
Operating range U_S	12 … 28 V
Power consumption	≤ 2.5 W

Indicating and operating elements

Display *R*, three-digit	Insulation resistance in kΩ
Display range for isoMED427P	10…999 kΩ
Display at $R < 10$ kΩ	0 (Insulation fault)
Display at $R \geq 999$ kΩ	999
Display I, two-digit	Transformer load in %
LEDs	ON, insulation fault, overload, over temperature
Buttons	Isometer test, buzzer mute
Buzzer alarm	with buzzer mute function
Buzzer repeat factor	adjustable

Interface

Interface/Protocol	RS485/BMS
Baud rate	9.6 kBit/s
Cable length	≤ 1200 m
Cable (twisted pair, shielded, shield connected to PE on one side)	recommended: J-Y(St)Y min. 2x0.8
Terminating resistor	120 Ω (0.5 W)
Device address, BMS-Bus	1…90
Factory setting device address	1 (Master)

Environment/EMC

EMC immunity	according to IEC 61000-6-2
EMC emission	according to IEC 61000-6-4
Classification of climatic conditions IEC 60721	
Stationary use	3K5
Transport	2K3
Storage	1K4
Operating temperature	-5 … +55 °C
Classification of mechanical conditions IEC 60721	
Stationary use	3M4
Transport	2M2
Storage	1M3

Connection

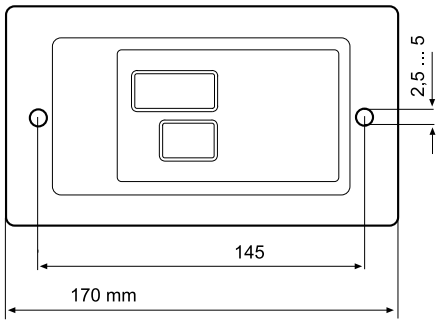
Connection details	plug-in terminals
Connection properties	
rigid/flexible/AWG	0.2…2,5/0.2…2.5 mm²/AWG 24…12
flexible, with ferrule without/with plastic sleeve	0.25 … 2.5/0.25 … 2.5 mm²
Two conductors with the same cross section	
rigid/flexible	0.2 … 1/0.2 … 1.5 mm²
flexible, with ferrule without plastic sleeve	0.25 … 1 mm²
flexible, TWIN ferrules with plastic sleeve	0.5 … 1.5 mm²

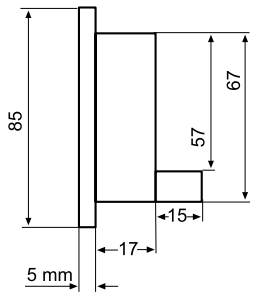
Other

Operating mode	continuous operation
Mounting position	any position
Degree of protection, build-in (EN 60529)	IP 50
Degree of protection, terminals (EN 60529)	IP 20
Enclosure	flush-mounting type
Mounting type	flush-mounting, cable-duct, switch board
Flammability class	UL94 V-0
Weight	≤ 150 g

Dimension diagram

Dimensions in mm





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