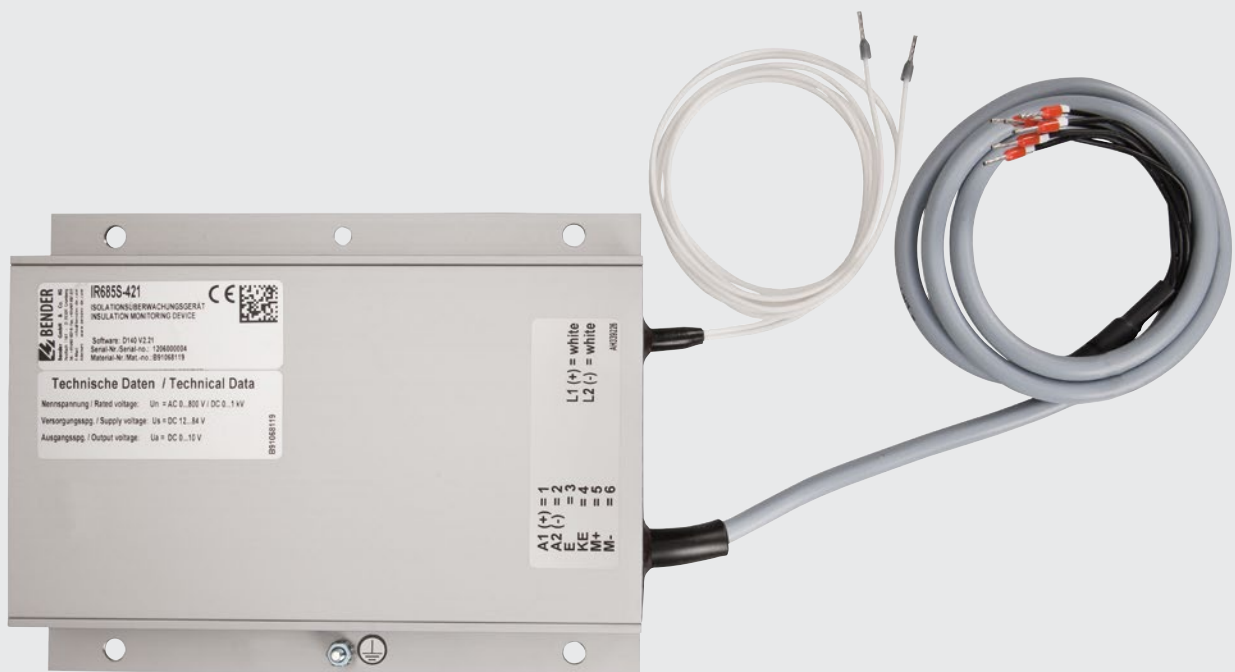


ISOMETER® IR685, IR685S

Insulation monitoring device for IT AC and DC systems
for integration into rectifier systems



ISOMETER®

IR685, IR685S

Insulation monitoring device
for IT AC and DC systems



IR685

Device features

- For IT AC systems up to AC 800 V, for IT DC systems up to DC 1000 V
- Voltage output 0...10 V
- For extreme mechanical loads
- High temperature range
- Especially for electric vehicles

Product description

The ISOMETER®s IR685 and IR685S monitor the insulation resistance of unearthed AC/DC main circuits (IT systems) AC, AC/DC 0...800 V or DC 0...1000 V.

Insulation faults downstream of directly connected rectifiers are detected correctly if the rectifier valves carry a current of 5...10 mA for insulation faults > 10 kΩ and approx. 100 mA for insulation faults < 10 kΩ. The devices are therefore suitable for integration into rectifier systems.

Application in modern supply systems

- Electric vehicle technology
- UPS systems
- Charging stations

Measuring principle



The devices IR685-421 and IR685S-421 use the AMP measurement method. Thereby, safe monitoring of modern supply systems is ensured.

Standards

The ISOMETER®s IR685 and IR685S comply with the regulations DIN EN 61557-8 (DIN VDE 0413 Part 8), DIN EN 61557-8, IEC 61557-8 and ASTM F 1669 M-96.

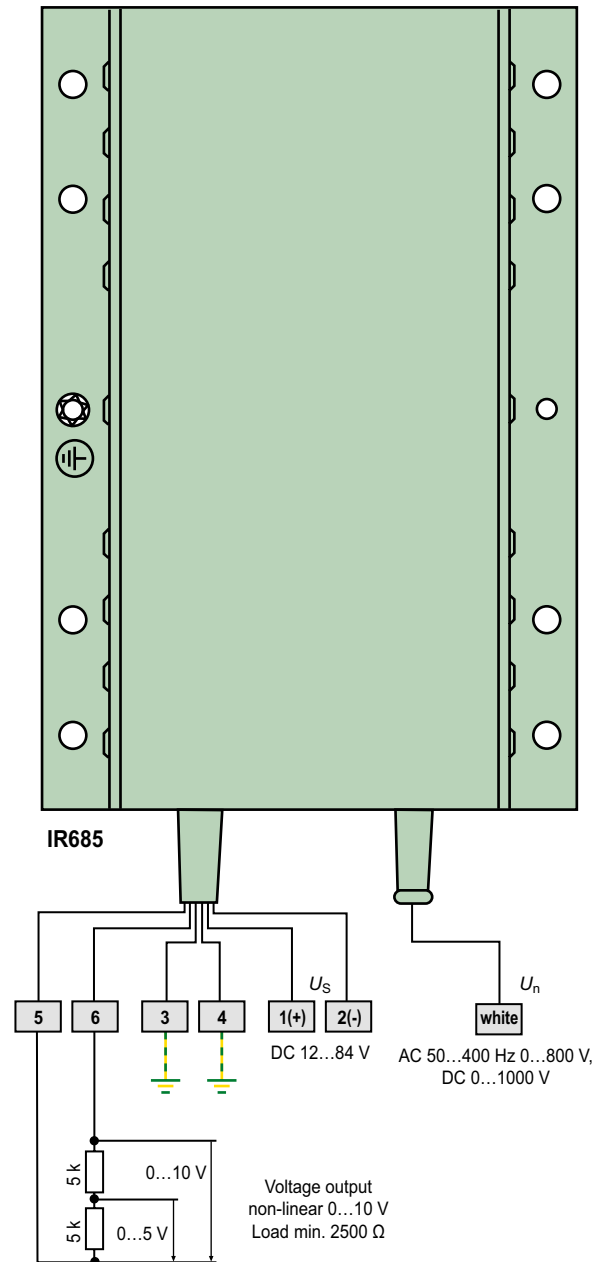
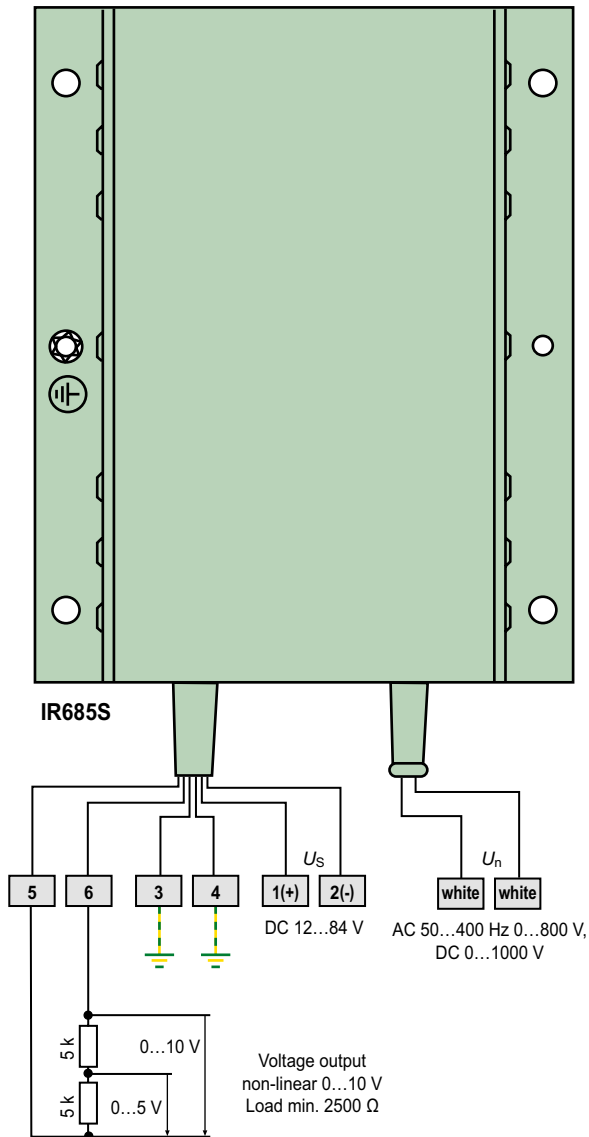
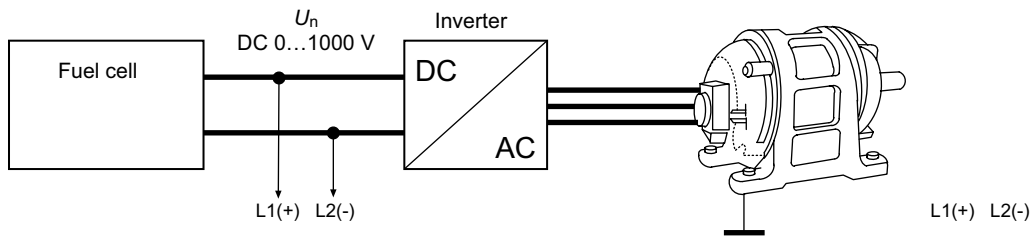
IR685 and IR685S also meet the requirements of DIN VDE 0100 Part 410 regarding insulation monitoring devices in IT systems.

The safety instructions included in the scope of delivery must be observed when installing the device!

Ordering information

Mechanical version	Type	Art. No.
Aluminium enclosure with encapsulation	IR685S-421	B 9106 8119
Aluminium enclosure without encapsulation	IR685-421	B 9106 8124

Wiring diagram



Technical data

Insulation coordination acc. to IEC 60664-1

Rated insulation voltage	AC 1000 V
Rated impulse voltage/pollution degree	8 kV/2

Voltage ranges

Supply voltage U_S	DC 12...84 V
Nominal voltage U_n	AC 0...800 V, 50...400 Hz, DC 0...1000 V
Power consumption max.	3 VA

Response value

Max. permissible system leakage capacitance C_e	20 μ F
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Measuring circuit

Measuring voltage U_m	± 30 V
Internal resistance R_i	200 k Ω

Outputs

non-linearised potential-free voltage output
with 0...10 V corresponds to 5 M Ω ... 0 Ω

Type tests

Electromagnetic compatibility (EMC) test:	
Immunity	acc. to IEC 61326
Emission	acc. to IEC 61326
Emissions acc. to EN 55 011/CISPR11	limit value class A 1)

Mechanical test IR685S

Vibration	3 axes, 10...1500 Hz with 5 g
Shock	1/2 sine amplitude with 50 g

Mechanical test IR685, IR685S

Shock resistance acc. to IEC 60255-5	15 g/11 ms
Bumping acc. to IEC 6068-2-29	40 g/6 ms
Vibration resistance acc. to IEC 6068-2-6	10...150 Hz/0.15 mm - 2 g

Environment/EMC

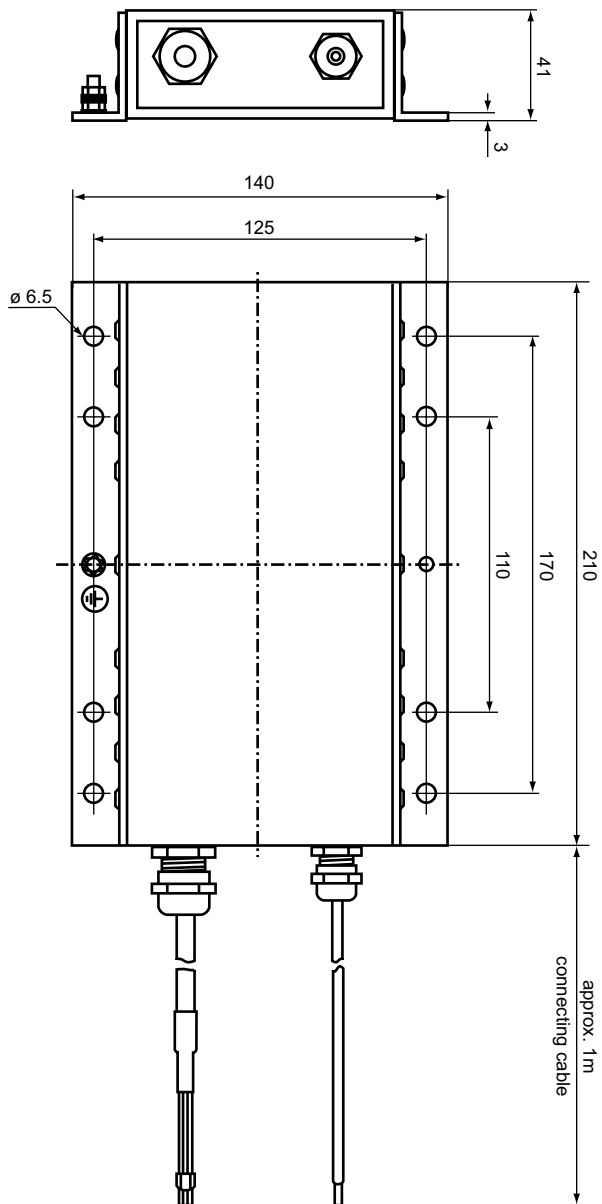
EMC	IEC 61326
Operating temperature	-21...+55 °C
Classification of climatic conditions acc. to IEC 60721	
Stationary use (IEC 60721-3-3)	3K5 (except condensation and formation of ice for IR685)
Transport (IEC 60721-3-2)	2K3 (except condensation and formation of ice for IR685)
Long-term storage (IEC 60721-3-1)	1K4 (except condensation and formation of ice for IR685)
Classification of mechanical conditions acc. to IEC 60721	
Stationary use (IEC 60721-3-3)	3M4
Transport (IEC 60721-3-2)	2M2
Long-term storage (IEC 60721-3-1)	1M3

Other

Operating mode	continuous operation
Mounting	any position
Connection type	cables
Protection class acc. to DIN EN 60529	
IR685	40
IR685S	64
Dimensions	
IR685	140 x 210 x 41 mm
IR685S	140 x 180 x 41 mm
Weight approx.	
IR685	1100 g
IR685S	1800 g

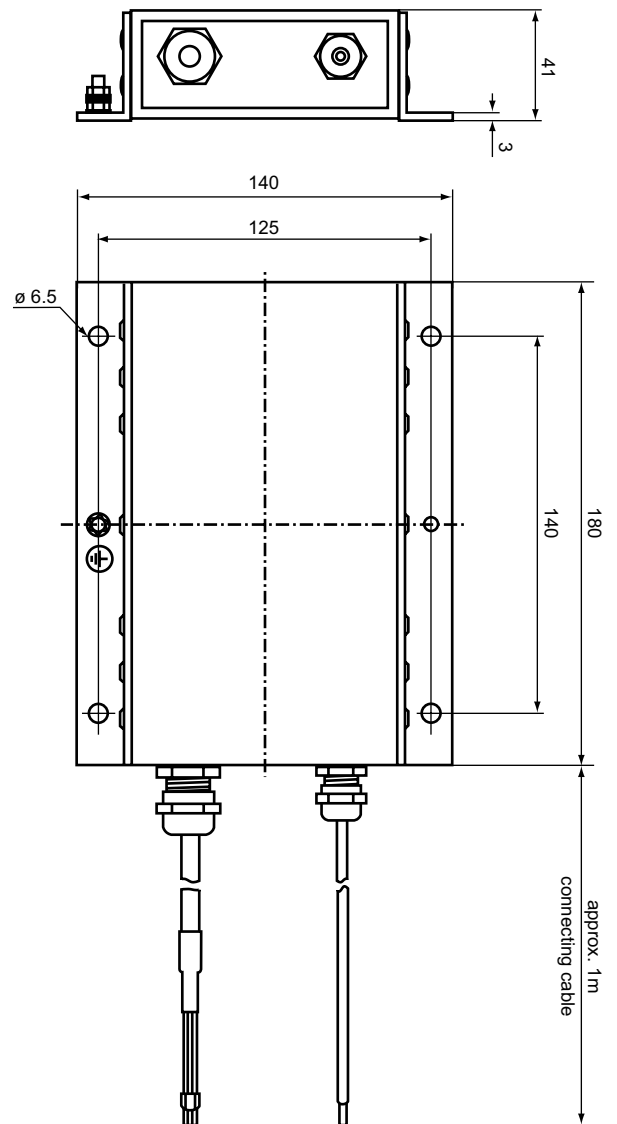
Dimension diagram IR685

Dimensions in mm



Dimension diagram IR685S

Dimensions in mm





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