Manual

Insulation Tester IS 1885P

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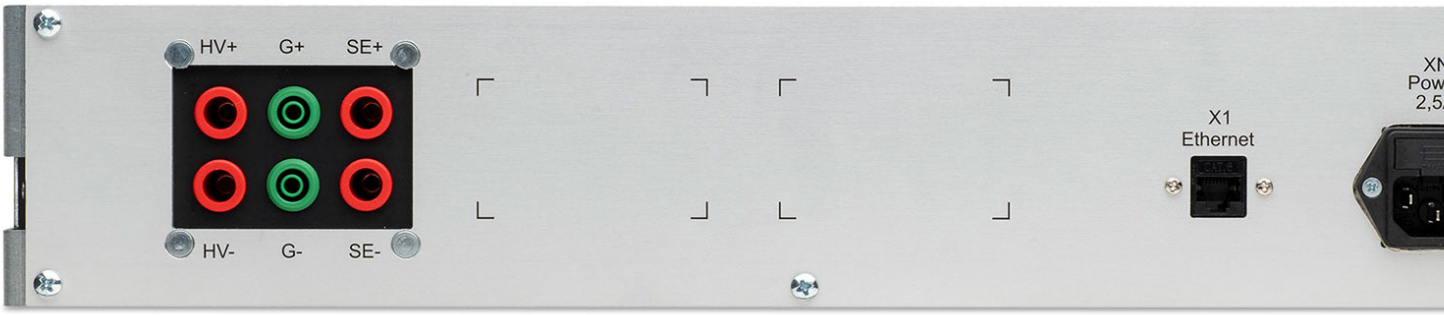

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Contents

1 Hardware Description

1.1 Device functions

The insulation testers IS 1885P are precision measuring devices and enable high-voltage and insulation tests with high accuracy.
The devices are designed for use in automatic test systems. The devices are fully controlled using the convenient DAT3805 remote software via a connected PC. Manual operation of the devices is not possible.

Highlights:

- Fully electronic high voltage generator
- test voltage 100 VDC – 6000 VDC
- potential free up to 4000 VDC
- regulated output voltage
- Current measurement 0 – 10 mA
- 4-wire-measurement for contact monitoring (optional)
- With Guard technique for enhanced precision
- WINDOWS surface DAT3805 for user-oriented operation

1.2 Design and functions

1.2.1 Front panel

Bild 1: Front view IS 1885P: Automatic device without controls, with power indicator light

1.2.2 Rear panel

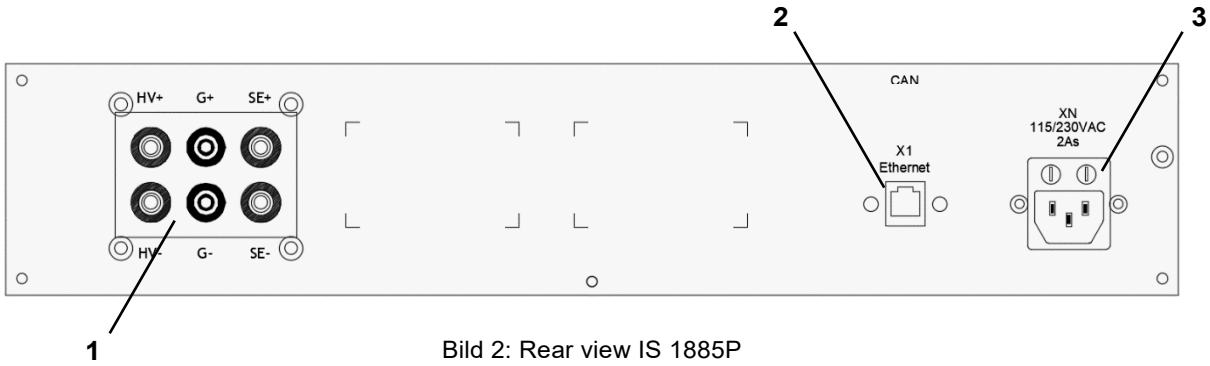


Bild 2: Rear view IS 1885P

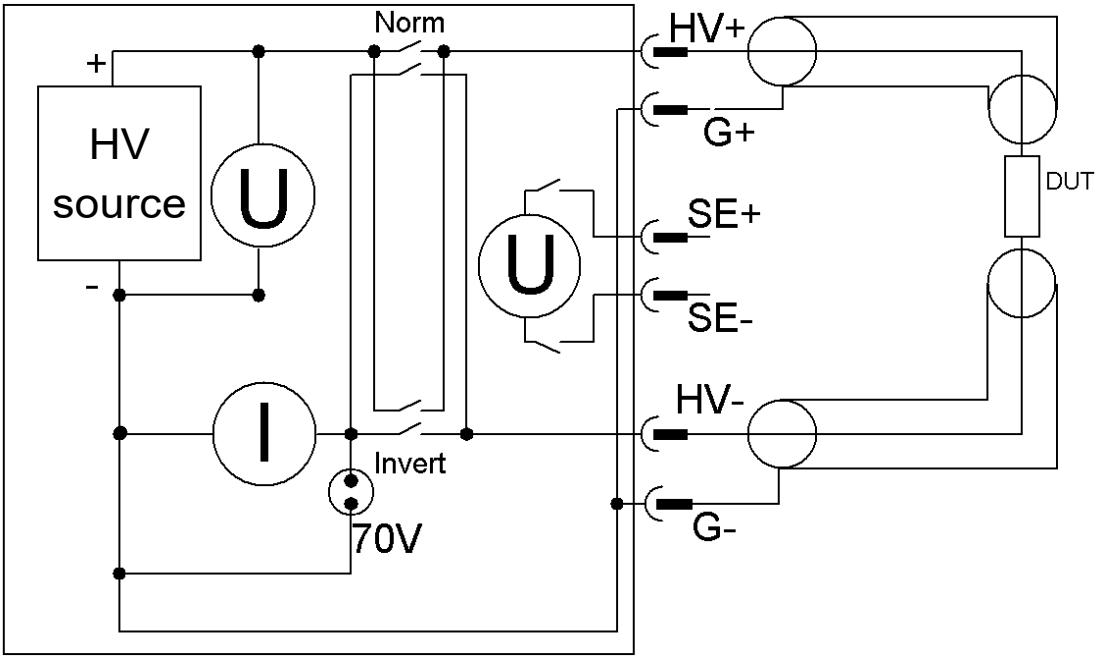
1 Connection field for testing lines:
- HV^+ / HV^- : connectors for HV test voltage
- SE^+ / SE^- : connectors for sense lines **(optional)**
- G^+ / G^- : connectors for guard lines

2 X1: Ethernet connector for connection of remote PC with DAT3805 Software

3 XN: IEC socket for power cord, with fuses (115V: 4A / 230V: 2A , slow-fuses)

1.3 DUT Connection Schemes

1.3.1 Schematic representation of the connection assignment



HV⁺ / HV⁻ : Plus potential and minus potential of the test voltage.
For increased measurement accuracy, shielded measuring lines should be used!

G⁺ / G⁻ : For particularly precise measurements, the Guard technology can be used to divert fault currents on the measuring lines. For this purpose, the guard connections must be connected to the shield of the respective measuring line.

Optional device equipment:

SE⁺ / SE⁻ : For four-wire measurement in high-voltage testing (contact monitoring). The sense lines and the test voltage should be connected to the same connection point at the DUT. The parallel measurement is used to check whether the DUT is actually correctly contacted. (Otherwise, if a DUT is not or not correctly contacted, the high voltage test would be rated as “good” because of I = almost-zero).

2 Description of the Software

**See operating manual "Remote Software DAT3805"
resp. present custom System Software.**

Annex

A Technical Data

Measurements and weights	
Width / depth / height	ca. 480 / 426 / 89 mm (19" / 2 HU)
weight	ca. 80 N (8.0 kg)

Ambient	
temperature	operation: 15 °C – 40 °C (allowed for general operation) storage: 5 °C – 60 °C
Air humidity	max. 70 % (non-condensing) (allowed for general operation)
ambient conditions to comply with the stated technical specifications	23 °C (± 5 °C) and max. 50% relative air humidity (not condensing)

Connection data	
Power supply	Wide range 90 - 253 VAC / 50-60 Hz
Mains fuse	2 x 2 At (slow)
Power input	max. 70 VA, typ. 16 VA

IS Test (Insulation Test)			
Test voltage	free programmable from 100 up to 6000 V DC residual ripple DC: < 1% acc. VDE 0432 / EN 61180 potential free up to 4000 VDC	*(voltage range 100-199 V: tolerances not specified)*	
Short circuit current	< 12 mA DC, safety current limited acc. to EN 50191		
Voltage output *	Reproducibility of end value: 100 V – 6000 V: ± 1.5% ± 2 V		
Resistance measurement	**range** 250 kΩ – 10.0 GΩ / kV 10.0 GΩ – 100.00 GΩ / kV > 100.00 GΩ / kV	**accuracy** *(for pure ohmic load)* 5 % of meas. value 15 % of meas. value no rating	**significant bits** 3 (0.01 MΩ / 10.0 GΩ / 100 GΩ)
Voltage measurement	**range** 6000 V	**resolution** 1 V	**accuracy display** 1.5% of meas. value ± 2 V

** Maximum capacitive load should not exceed 1µF per second of ramp time. Otherwise there is chance for ringing (over-voltage).*

The total capacitive load must not exceed 10µF, otherwise correct discharge can not be guaranteed.

HV Test (High Voltage Test)			
Test voltage	free programmable from 100 up to 6000 V DC residual ripple DC: < 1% acc. VDE 0432 / EN 61180 potential free up to 4000 VDC	*(voltage range 100-199 V: tolerances not specified)*	
Short circuit current	< 12 mA DC, safety current limited acc. to EN 50191		
Voltage output *	Reproducibility of end value: 100 V – 6000 V: ± 1.5% ± 2 V		
Measuring range I	**range** 10 mA DC	**significant bits** 3 (10.0 mA / 0.01 µA)	**accuracy** 1.5% of meas. value ± 1.5 µA
Measuring range U	**range** 6000 VDC	**resolution** 1 V	**accuracy** 1.5% of meas. value ± 2 V

** Maximum capacitive load should not exceed 1µF per second of ramp time. Otherwise there is chance for ringing (over-voltage).*

The total capacitive load must not exceed 10µF, otherwise correct discharge can not be guaranteed.

Device Options	
SE+ / SE-	Input 4-wire-measurement, for contact monitoring (optional)

Technical Notes

- Test voltage is potential free up to 4000 VDC
- Overvoltage protection between HV- and GUARD to 70 V (gas unloader)HV- must not be grounded
- Only ungrounded test items may be connected between HV- and HV+
- For very high-resistance measurements, GUARD may be grounded
- Insulation in the measurement setup between HV- and GUARD should be at least 1 MOhm

- Capacitance allowed in insulation test: (to comply with the technical specifications)

Limit range resistance up to	Maximum allowable capacity
100 MΩ	1 µF
1 GΩ	100 nF
10 GΩ	10 nF
100 GΩ	1 nF
1 TΩ	100 pF

EU-Konformitätserklärung
EU Declaration of Conformity

Wir / *we* :

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Eugen-Bolz-Str. 8
D-74523 Schwäbisch Hall

erklären hiermit, dass das nachfolgend genannte Gerät den einschlägigen grundlegenden Sicherheitsforderungen der EU-Richtlinien entspricht.

declare, that the following unit complies with all essential safety requirements of the EU Directives.

Geräteart: *Description of device:*	Isolationstester *Insulation Tester*
Typ / *Type* :	IS 1885P

EU Richtlinien / *EU Directives:*

☐ EG Maschinenrichtlinie 2006/42/EG mit Änderungen
EC Directive for machinery 2006/42/EC with amendments

☒ EU Niederspannungsrichtlinie 2014/35/EU
EU Directive for low voltage 2014/35/EU

☒ EU Richtlinie Elektromagnetische Verträglichkeit 2014/30/EU mit Änderungen
EU Directive electromagnetic compatibility 2014/30/EU with amendments

Angewandte harmonisierte Normen:
Applicable harmonized standards:

- EN 61 000-3-2; EN 61 000-3-3; EN 61 326; EN 50 191

Angewandte nationale Normen und technische Spezifikationen:
Applicable national standards and technical specifications:

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12.01.2023
Datum / date:

Dipl. Ing. Johannes Geyer

Dieser Konformitätserklärung unterliegt grundsätzlich nur das von uns gelieferte oder in Betrieb genommene Gerät.
Für Änderungen und Erweiterungen ist der Betreiber verantwortlich und damit für die Sicherstellung der Übereinstimmung der veränderten Anlage mit der betreffenden EU-Richtlinie.

Subject to this declaration of conformity is the device as supplied or placed into operation by us.
The operator is responsible for subsequent alterations and extensions, and therefore has to ensure the altered unit complies with the corresponding EU directives.