

## GSC57

● **CONTINUITY TEST ON PROTECTIVE AND EQUALIZING CONDUCTORS**  
(modes: AUTO, RTimer+, RTimer-)

Range [Ω]	Resolution [Ω]	Accuracy*
0.01 ÷ 9.99	0.01	±(2% reading + 2 dgt)
10.0 ÷ 99.9	0.1	

\* after cable calibration (which eliminates the cable resistance)

Test current > 200mA DC for R≤13Ω (after calibration)  
Current measurement resolution: 1mA  
Open-circuit voltage:  $4V \leq V_o \leq 24V$

● **INSULATION RESISTANCE (modes: MAN, TIMER)**

Test voltage [V]	Range [MΩ]	Resol. [MΩ]	Accuracy
50	0.01 ÷ 9.99	0.01	±(2% reading + 2 dgt) if V/R>1μA
	10.0 ÷ 49.9	0.1	
	50.0 ÷ 99.9	0.1	
100	0.01 ÷ 9.99	0.01	±(2% reading + 2 dgt) if V/R>1μA
	10.0 ÷ 49.9	0.1	
	100.0 ÷ 199.9	0.1	
250	0.01 ÷ 9.99	0.01	±(2% reading + 2 dgt) if V/R>1μA
	10.0 ÷ 49.9	0.1	
	200 ÷ 249	1	
500	0.01 ÷ 9.99	0.01	±(2% reading + 2 dgt) if V/R>1μA
	10.0 ÷ 49.9	0.1	
	200 ÷ 499	1	
1000	0.01 ÷ 9.99	0.01	±(2% reading + 2 dgt) if V/R>1μA
	10.0 ÷ 49.9	0.1	
	200 ÷ 999	1	
	1000 ÷ 1999	1	±(5% reading + 2 dgt) if V/R≤1μA

Open-circuit voltage: 1.3 x nominal test voltage  
Short circuit current: <6.0mA at 500V testing voltage  
Nominal test current: >2.17mA on 230kΩ load  
500V  
others >1mA on 1kΩ\*V<sub>nom</sub>

● **RCD**

Nominal tripping currents (I<sub>AN</sub>) 10mA, 30mA, 100mA, 300mA, 500mA  
RCD type AC, A General and Selective  
Phase-Earth voltage 100V ÷ 255V 50 Hz

● **TRIPPING TIME OF GENERAL, SELECTIVE, A AND AC RCDs**

**Tripping time t<sub>AN</sub>**

Range [ms]	Resol. [ms]	Accuracy
½ I <sub>AN</sub> , I <sub>AN</sub> 0÷999	1	±(2% reading+2dgt)
2 I <sub>AN</sub> 0÷200 general		
0÷250 selective		
5 I <sub>AN</sub> RCD 0÷50 general		
0÷160 selective		

**Contact voltage U<sub>i</sub>**

Range [V]	Resolution [V]	Accuracy
0 ÷ 2U <sub>lim</sub>	0.1	- 0%, +(2% reading + 2 dgt)

U<sub>lim</sub> (U<sub>i</sub>): 25V o 50V

**Earth resistance R<sub>A</sub> without tripping of RCDs**

Range [Ω]	Resolution [Ω]	Accuracy I <sub>AN</sub>
1 ÷ 1999	1	- 0%, +(5% reading + 2 dgt)

Test current 0.5 I<sub>AN</sub> set for U<sub>i</sub> test  
15mA for R<sub>A</sub> 15mA test

● **TRIPPING CURRENT OF GENERAL, A AND AC RCDs**

**I<sub>AN</sub> ≤ 10mA**

RCD	Range I <sub>AN</sub> [mA]	Resolution [mA]	Accuracy I <sub>AN</sub>
AC	(0.5 ÷ 1.4) I <sub>AN</sub>	0.1 I <sub>AN</sub>	- 0%, +5% I <sub>AN</sub>
A	(0.5 ÷ 2.4) I <sub>AN</sub>	0.1 I <sub>AN</sub>	- 0%, +5% I <sub>AN</sub>

**I<sub>AN</sub> > 10mA**

RCD	Range I <sub>AN</sub> [mA]	Resolution [mA]	Accuracy I <sub>AN</sub>
AC	(0.5 ÷ 1.4) I <sub>AN</sub>	0.1 I <sub>AN</sub>	- 0%, +5% I <sub>AN</sub>
A	(0.5 ÷ 2) I <sub>AN</sub>	0.1 I <sub>AN</sub>	- 0%, +5% I <sub>AN</sub>

● **FREQUENCY**

Range (Hz)	Resolution (Hz)	Accuracy
47.0 ÷ 63.6	0.1	±(0.1% reading+1 dgt)

Loop and RCD measurements are active only at 50Hz

● **VOLTAGE**

Range [V]	Resolution [Ω]	Accuracy
0 ÷ 460	1	± (3% reading + 2 dgt)

● **LINE IMPEDANCE (phase to phase, phase to neutral)**

Range [Ω]	Resolution [Ω]	Accuracy
0.01 ÷ 19.99	0.01	±(5% reading + 3 dgt)
20.0 ÷ 199.9	0.1	

Maximum peak current at the test voltage: 100V 3.17A  
230V 6.64A  
400V 11.5A

Test voltage phase-neutral/phase-phase: 100÷255V/100÷440V 50Hz

● **FAULT LOOP IMPEDANCE (phase to earth)**

Range [Ω]	Resolution [Ω]	Accuracy
0.01 ÷ 19.99	0.01	±(5% reading + 3 dgt)
20.0 ÷ 199.9	0.1	
200 ÷ 1999	1	

Maximum peak current at the test voltage 100V 3.17A  
230V 6.64A

Test voltage phase-earth: 100÷255V 50Hz

● **FAULT LOOP IMPEDANCE WITHOUT RCD's TRIPPING**  
(phase to earth R<sub>g</sub> 15mA)

Range [Ω]	Resolution [Ω]	Accuracy
1 ÷ 1999	1	±(5% reading + 3 dgt)

Test current 15mA  
Test voltage phase-earth: 100÷255V 50Hz

● **EARTH RESISTANCE WITH RODS**

Range R <sub>E</sub> [Ω]	Resolution [Ω]	Accuracy
0.01 – 19.99	0.01	±(5% reading + 3 dgt)
20.0 – 199.9	0.1	
200 – 1999	1	

Test current <10mA - 77.5Hz  
No-load voltage <20V RMS

● **EARTH RESISTIVITY**

Range ρ (*)	Resolution	Accuracy
0.60 ÷ 19.99 Ωm	0.01 Ωm	±(5% reading + 3 dgt)
20.0 ÷ 199.9 Ωm	0.1 Ωm	
200 ÷ 1999 Ωm	1 Ωm	
2.00 ÷ 99.99 kΩm	0.01 kΩm	
100.0 ÷ 125.5 kΩm	0.1 kΩm	

(\*) with distance = 10m

Distance setting range: d: 1÷10m  
Test current <10mA - 77.5Hz  
Open-circuit voltage <20V RMS

● **CONTINUITY TEST ACCORDING TO EN60204-1**

Range [Ω]	Resolution [Ω]	Accuracy
0.001 ÷ 0.999	0.001	±(1% reading + 2 dgt)

Test current > 10A AC per R ≤ 0.45Ω  
Current measurement resolution: 0.1A  
Open-circuit voltage between 6 and 12V~  
Power supply voltage: 230V~ 50Hz

● **CONTINUITY TEST ACCORDING TO EN60204-1**

Range [V]	Resolution [V]	Accuracy
0.01 ÷ 9.99	0.01	±(1% reading + 2 dgt)

Test current > 10A AC per R ≤ 0.45Ω  
Current measurement resolution: 0.1A  
Open-circuit voltage >12V~  
Power supply voltage: 230V~ 50Hz

● **REFERENCE STANDARD FOR SAFETY TESTS**

VDE 413 German safety tests standard  
EN 61008 RCDs without breakers  
EN 61009 RCDs with breakers  
EN60204-1 chapter 19.2 resistance of protective conductor  
EN60439-1 (CEI17/13) test on protective conductors  
EN 60947-2 point B 4.2.4.1.

● **GENERAL INFO ON ACCURACY**

Accuracy is indicated as [% reading + no. of digits].

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## ● VOLTAGE – SINGLE- AND THREE-PHASE SYSTEMS (AUTORANGE)

Range [V]	Resolution [V]	Accuracy	Input impedance
15 ÷ 310	0.2	±(0.5% reading + 2 dgt)	300kΩ (phase to neutral) 300kΩ (phase to phase)
310 ÷ 600	0.4		

## ● VOLTAGE ANOMALIES – SINGLE- AND THREE-PHASE SYSTEMS (MANUAL selection of RANGE)

Range [V]	Resolution [V]	Resolution (Time)	Accuracy	Accuracy (ref. 50Hz) (Time)	Input impedance
15 ÷ 310	0.2	½ period (10ms)	±(1.0% reading + 2 dgt)	± 10ms	300kΩ (phase to neutral) 300kΩ (phase to phase)
30 ÷ 600	0.4				

## ● CURRENT (with external clamp) – SINGLE- AND THREE-PHASE SYSTEMS

Full range (*)	Resolution [mV]	Accuracy	Input impedance	Protection against overloads
0.005 ÷ 0.26V	0.1mV	±(0.5% reading + 2 dgt)	200kΩ	5V
0.26 ÷ 1V	0.4mV			

(\*): Example: by using a clamp whose range is 1000A/1V, the instrument measures currents higher than 5A

## ● POWER – SINGLE- AND THREE-PHASE SYSTEMS

Type of measurement	Range	Accuracy	Resolution
ACTIVE POWER	0 ÷ 999.9W	±(1.0% reading + 2 dgt)	0.1W
	1 ÷ 999.9kW		0.1kW
1 ÷ 999.9MW	0.1MW		
1000 ÷ 9999MW	1MW		
REACTIVE POWER	0 ÷ 999.9VAR		0.1VAR
	1 ÷ 999.9kVAR		0.1kVAR
APPARENT POWER	1 ÷ 999.9MVAR		0.1MVAR
	1000 ÷ 9999MVAR		1MVAR
ACTIVE ENERGY (Class 2 EN61036)	0 ÷ 999.9VA		0.1VA
	1 ÷ 999.9kVA		0.1kVA
REACTIVE ENERGY (Class 3 IEC1268)	1 ÷ 999.9MVA	0.1MVA	
	1000 ÷ 9999MVA	1MVA	
ACTIVE ENERGY (Class 2 EN61036)	0 ÷ 999.9Wh	0.1Wh	
	1 ÷ 999.9kWh	0.1kWh	
REACTIVE ENERGY (Class 3 IEC1268)	1 ÷ 999.9MWh	0.1MWh	
	1000 ÷ 9999MWh	1MWh	
ACTIVE ENERGY (Class 2 EN61036)	0 ÷ 999.9VARh	0.1VARh	
	1 ÷ 999.9kVARh	0.1kVARh	
REACTIVE ENERGY (Class 3 IEC1268)	1 ÷ 999.9MVARh	0.1MVARh	
	1000 ÷ 9999MVARh	1MVARh	

## ● Cos φ - SINGLE- AND THREE-PHASE SYSTEMS

Cos φ	Resolution	Accuracy expressed in degrees (°)
0.20	0.01	0.6
0.50		0.7
0.80		1.0

## ● HARMONICS – SINGLE- AND THREE-PHASE SYSTEMS

Range	Basic accuracy	Maximum resolution
DC – 25H	±(5% + 2 dgt)	0.1V / 0.1A
26H – 33H	±(10% + 2 dgt)	
34H – 49H	±(15% + 2 dgt)	

## ● ENVIRONMENTAL PARAMETERS

Range	Accuracy	Resolution
-20°C ÷ 80 °C	±(2% reading + 2 dgt)	0.1 °C
0 ÷ 100% UR		0.1% UR
0.001Lux ÷ 20.00 Lux		0.001 ÷ 0.02 Lux
0.1Lux ÷ 2000 Lux		0.1 ÷ 2 Lux
1Lux ÷ 20 kLux		1 ÷ 20 Lux

## ● LEAKAGE CURRENT (with optional clamp)

Range [mA] (*)	Resolution [mA]	Accuracy	Input impedance	Protection against overloads
0.5 ÷ 999.9	0.1	±(5% reading + 4 dgt)	200kΩ	5V

(\*): While recording the instrument stores only current values > 5mA

## ● SINGLE/THREE-PHASE RECORDER

## RECORDABLE QUANTITIES:

Phase and delta voltages  
Phase currents, neutral current  
Phase and total three phase Active, reactive, apparent power  
Active energy (Class 2 EN61036), reactive energy (Class 3 IEC1268)  
Phase and total three phase Power factor Cosφ  
Harmonics (DC, 1, 2, ..., 49)  
Selectable quantities 63 or 3 AUX (Environment and/or leakage)  
Integration period 5 ÷ 3600 sec.  
Recording autonomy > 30 days with integration periods of 15 minutes  
Memory capacity 2Mbyte

## ● POWER MEASUREMENT REFERENCE STANDARDS

Features of voltage supplied by public utilities EN50160  
Active energy static counters for AC current (Class 2) EN61036  
Reactive energy static counters for AC current (Class 3) IEC1268

## ● DISPLAY AND MEMORY

Features Dot matrix with backlight  
Resolution 128x128  
Visible area 73mmx73mm  
Memory 999 misure

## ● MECHANICAL FEATURES

Dimensions 225x165x 105mm  
Weight (battery included) about 1,7kg

## ● POWER SUPPLY

Batteries 6 batteries 1.5-LR6-AA-AM3-MN 1500  
Cod. A0050 (only for AUX e ANALYSER functions)  
External power supply adapter  
Mains power supply: 230V~ 50Hz (only for LOWΩ10A function)

## ● WORKING ENVIRONMENTAL CONDITIONS

Reference temperature 23° ± 5°C  
Working temperature 0° ÷ 40°C  
Allowed relative humidity < 80%  
Storage temperature -10 ÷ 60°C  
Storage humidity < 80%

## ● GENERAL REFERENCE STANDARDS

Safety of measuring instruments EN 61010-1 + A2 (1997)  
Product type standard IEC61557-1, -2, -3, -4, -5, -6  
class 2  
Insulation class 2  
Pollution degree 2  
Overvoltage category 600V~ (CATII) / 350V~ to earth  
600V~ (CATIII) / 300V~ to earth  
Indoor use; max altitude: 2000m  
EMC EN61326-1 (1998) + A1 (1999)  
This instrument complies with the European Directive for CE marking.



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