

GSC57 - GSC53N - ZG47**INTEGRATED INSTRUMENTS FOR ELECTRIC TESTS, MAINS ANALYSES ON SINGLE-PHASE AND THREE-PHASE SYSTEMS AND ENVIRONMENTAL PARAMETER MEASUREMENTS**

GSC53N, GSC57 and ZG47 are strong evolution equipment designed to perform complete test, to verify electrical installations according to the most common safety standards (IEC 61557, VDE 0100, BS7671, etc.) and to carry out power quality analysis on general electric networks. Flexibility of these meters permits their use by installers, technicians, engineers and testers of electrical plants and equipment. GSC53N, GSC57 and ZG47 measure, among the other things, a fault Loop Impedance with high resolution (0.1 mOhm) near power transformers thanks to the use of IMP57 as optional accessory. As power quality analysers, the instrument can record all values of electrical parameters (Voltage, Current, Power, Power Factor, Energy, etc.), perform harmonic analysis of voltage and current (up to 49-th order) and permit voltage quality analysis according to EN50160 standards. With optional probes, GSC53N, GSC57 and ZG47 can also perform measures and recordings of environmental parameters as temperature, humidity, illumination (Lux) and leakage current which are very important for troubleshooting problem of RCDs wrong tripping. Each measure can be stored inside instrument memory, recalled on instrument display and transferred to PC using the management software to create a professional relation which will improve the work quality.

GENERAL CHARACTERISTICS

- Double insulation
- Weight and size:
GSC57: 1700g - 225x165x105 mm
GSC53N: 1200g - 225x165x105 mm
ZG47: 1200g - 225x165x105 mm
- RS232/USB optical output
- Compliance with electromagnetic compatibility standards for measuring instruments
- Power supply through batteries and external supply
- Graphic display to optimize the information displayed in one screen only, with backlighting for carrying out measurements also in poorly lit environments
- Simple use
- Multilanguage messages directly shown on the instrument's display

TECHNICAL SPECIFICATIONS

- Verifications on Civil and Industrial Electric Systems in compliance with Standards IEC/EN 61557, VDE 0100, BS 7661 17th issue

- CONTINUITY TEST ON PROTECTIVE CONDUCTORS
- test voltage with open circuit $DC\ 4 < U_o < 24\ V$
- test current $> 0.2A\ (R < 5)$
- measuring range 0.01-99.9
- basic precision $\pm 2\%$ reading
- compensation of test cable resistance

INSULATION RESISTANCE MEASUREMENT

- test voltage 50, 100, 250, 500, 1000VDC
- measuring ranges:
- 0.01 ÷ 99.99 MΩ for test voltage 50VDC
- 0.01 ÷ 199.9 MΩ for test voltage 100VDC
- 0.01 ÷ 499 MΩ for test voltage 250VDC
- 0.01 ÷ 999 MΩ for test voltage 500VDC
- 0.01 ÷ 1999 MΩ for test voltage 1000VDC
- basic precision $\pm 2\%$ reading

VERIFICATION OF TRIPPING TIME AND CURRENT OF DIFFERENTIAL PROTECTIVE DEVICES (A, AC, GENERAL AND SELECTIVE TYPE)

- tripping current 10-30-100-300-500mA
- tripping current ramp from:
- 0.5 ÷ 1.4 I_{dn} for AC type
- 0.5 ÷ 2.0 I_{dn} for A type
- tripping time measure: 1/2IDN-IDN-2IDN-5IDN and automatic
- basic precision $\pm 10\%$ reading

MEASUREMENT OF LINE IMPEDANCE AND OF FAULT LOOP WITH CALCULATION OF THE ASSUMED SHORT-CIRCUIT CURRENT AND VERIFICATION OF THE COORDINATION OF PROTECTIONS IN TT and TN SYSTEMS

- measuring range for phase-phase, phase-neutral line impedance 0,01÷199,9Ω
- measuring range for phase-earth fault loop impedance 0,01÷1999Ω
- possibility of measuring the phase-earth fault loop without the differential switch's tripping
- indication of the measured values of Z_s, I_{sc}
- basic precision $\pm 5\%$ reading
- resolution 0.1mΩ (with optional IMP57)

MEASURING EARTH RESISTANCE AND GROUND RESISTIVITY

- meas. earth resistance by means of the auxiliary pins 0.01 ÷ 1999Ω
- measuring ground resistivity by means of the 4 pins (Wenner method) 0.01 ÷ 199.9kΩm
- measuring earth resistance from the socket of a TT system
- by voltage drop

- basic precision $\pm 2\%$ reading

Phase sequence

- voltage 100 ÷ 400V

Direct measurement of leakage current to earth

- by means of amperometric clamps in a range of 0 ÷ 1A; resolution=1mA
- precision $\pm 2\%$ reading

Verifications on Electric Systems in medical rooms (for GSC57 only)

- CONTINUITY TEST ON PROTECTIVE CONDUCTORS>
- test voltage with open circuit $U_o < 12V$
- test current = 10A
- measuring range 0.001 ÷ 0,999Ω
- basic precision $\pm 2\%$ reading
- measuring duration = 500 tests
- 4-wire measurement

Verification of the Electrical Service Quality in compliance with standard EN50160

- The instruments, suitable for carrying out measurements on single-phase and three-phase systems with or without neutral, both for balanced and unbalanced loads, show the following nominal values:
- measurable voltage up to 600 V
- current by amperometric clamps, output 1V
- frequency 50 ÷ 60 Hz
- precision (instrument) $\pm 0,5\%$ reading
- precision (transients) $\pm 1\%$ reading

THE INSTRUMENTS ALLOW MEASURING AND RECORDING:

- TRMS value of voltage
- TRMS value of current by means of amperometric clamps
- voltage frequency
- harmonic analysis (of voltages and currents) up to the 49th order
- voltage variations out of the set thresholds (dips and peaks) with a minimum resolution of 10ms
- active power
- reactive power
- apparent power
- active energy
- reactive energy
- power factor
- saving and storage of measures
- 40 days duration with 63 quantities and IP=15m
- Memory: 2 Mbyte

Environmental parameter analysis

- measuring and recording temperature by means of an adapter
- measuring and recording humidity by means of an adapter
- measuring and recording illuminance by means of an adapter

MEASUREMENT SELECTION:

- by means of a switch and selection keys.

MANAGEMENT SOFTWARE

The instrument's management software is compatible with common Micro-soft Windows operating systems. The minimum hardware includes:

- Pentium III - 500 MHz
- 512 Mbyte of RAM memory
- 100 Mbyte of mass memory (hard disk)
- Operative system Windows 7, WindowsXP, VISTA
- Windows-compatible mouse, RS-232 or USB port, CD-ROM drive.

ACCESSORIES	Code	GSC53N	GSC57	ZG47
Standard				
3-terminal cable with SHUKO plug	C2033X	•	•	•
Set of 4 cables + 4 alligator clips + 2 test leads	KITGSC5	•	•	•
Set of 4 cables + 4 metal earth probes	KITERRNE	•	•	•
Power supply cord for 10A continuity test	C5700		•	
Flexible clamp 3000A AC, diameter 174mm, 3 pcs	HTFLEX33D	•		•
Power supply adapter 230VAC/12VDC 50Hz	A0050	•	•	•
PC Windows software + optical /USB cables	TOPVIEW2006	•	•	•
Carrying bag	BORSA2051	•	•	•
ISO9000 calibration certificate		•	•	•
User manual		•	•	•
Optional				
Remote unit for PC connection with Bluetooth™ protocol	C2008	•	•	•
Flexible clamp 3000A AC, diameter 274 mm	HTFLEX35	•		•
Set of 3 flexible clamps 300-3000A /1V AC, diameter 174mm	HTFLEX3003	•	•	•
Set of 3 flexible clamps 1000A /1V AC, diameter 154mm	HTFLEX1000	•	•	•
Standard clamp 1-100-1000A/1V AC, diameter 54mm	HT96U	•	•	•
Standard clamp 10-100-1000A/1V AC, diameter 54mm	HT97U	•	•	•
Standard clamp 200-2000A/1V AC, diameter 70mm	HP30C2	•	•	•
Standard clamp 3000A/1V AC, diameter 70mm	HP30C3	•	•	•
Standard clamp 5 -100A/1V AC, diameter 20mm	HT4005N	•	•	•
Set of cables for 10A continuity test, 5m length	C7000/05		•	
Set of cables for 10A continuity test, 10m length	C7000/10		•	
Case 3x1-5A/1V for connection to external CTs	HT903	•	•	•
Temperature/Humidity probe	HT52/05	•	•	•
Illuminance (Lux) probe	HT53/05	•	•	•
Accessory for Loop impedance with high resolution	IMP57	•	•	•
Power supply adapter 110VAC/12VDC 60Hz	A0053	•	•	•
Set of straps for carrying belt	CN0050	•	•	•
Magnetic adapter	606-IECN	•	•	•
Safety flexible alligator clip	6007-IEC#	•	•	•



IMP57- Accessory for measuring Loop Impedance with high resolution



C2008 - Remote unit for PC connection with Bluetooth™ protocol



GSC57
HV000057-0210

GSC53N
HV000053-0210

ZG47
HV000047

Standards and directives

The instruments are designed to carry out measurements, verifications and analyses according to:
IEC/EN61557-1
VDE 0100
VDE 0413
EN 50160
IEC/EN61010-1
BS7661 17th issue