

1. ELECTRICAL SPECIFICATIONS

Accuracy is calculated as $\pm$ [% readings + (no. of digits*resolution)] at 23°C $\pm$ 5°C, relative humidity <80%RH

SAFETY TEST

DMM – DC Voltage

Range [V]	Resolution [V]	Accuracy
3 ÷ 1500	1	$\pm$ (1.0%rdg + 2dgt)

DMM – AC TRMS Voltage

Range [V]	Resolution [V]	Accuracy
3 ÷ 1000	1	$\pm$ (1.0%rdg + 3dgt)

Frequency range: 42.5Hz ÷ 69Hz ; Voltage zeroed for measured values <3V

Insulation Resistance (M Ω) – DUAL Mode

Test voltage DC [V]	Range [M Ω]	Resolution [M Ω]	Accuracy (*)
250, 500, 1000, 1500	0.1 ÷ 0.99	0.01	$\pm$ (5%rdg + 5dgt)
	1.0 ÷ 19.9	0.1	
	20 ÷ 100	1	

(*) Accuracy indicatec for VPN $\geq$ 240V, Rfault $\geq$ 10 Ω . Accuracy of Rp and R(+) not declared if R(+) $\geq$ 0.2M Ω and R(-) <0.2M Ω
Accuracy of Rp and R(-) not declared if R(+) < 0.2M Ω and R(-) $\geq$ 0.2M Ω

Open voltage <1.25 x nominal test voltage
Short circuit current <15mA (peak) for each test voltage
Nominal measured current >1mA on R = 1k Ω x Vnom (with VPN, VPE, VNE= 0)

Insulation Resistance (M Ω) –TMR Mode

Test voltage DC [V]	Range [M Ω]	Resolution [M Ω]	Accuracy
250, 500, 1000, 1500	0.01 ÷ 9.99	0.01	$\pm$ (5.0%rdg+ 5dgt)
	10.0 ÷ 99.9	0.1	

Open voltage <1.25 x nominal test voltage
Short circuit current <15mA (peak) for each test voltage
Nominal measured current >1mA on R = 1k Ω x Vnom (with VPN, VPE, VNE= 0)
Setting timer: 3s ÷ 999s

Continuity of protection conductors (RPE)

Range [Ω]	Resolution [Ω]	Accuracy
0.00 ÷ 9.99	0.01	$\pm$ (2%rdg + 2dgt)
10.0 ÷ 99.9	0.1	
100 ÷ 1999	1	

Test current: >200mA DC up to 5 Ω (included cables), Resolution 1mA, Accuracy $\pm$ (5.0%rdg + 5dgt)
Open voltage 4 < V₀ < 10V

GFL (Ground Fault Locator) function

Test voltage DC [V]	Range [M Ω]	Resolution [M Ω]	Accuracy (*)	Position accuracy
250, 500, 1000, 1500	0.1 ÷ 0.99	0.01	$\pm$ (5%rdg + 5dgt)	$\pm$ 1module (NMOD $\leq$ 35) $\pm$ 3module (NMOD>35)
	1.0 ÷ 19.9	0.1		
	20 ÷ 100	1		

(*) Accuracy indicatec for VPN $\geq$ 240V, Rfault $\geq$ 10 Ω . Accuracy of Rp and R(+) not declared if R(+) $\geq$ 0.2M Ω and R(-) <0.2M Ω
Accuracy of Rp and R(-) not declared if R(+) < 0.2M Ω and R(-) $\geq$ 0.2M Ω

Open voltage <1.25 x nominal test voltage
Short circuit current <15mA (peak) for each test voltage
Nominal measured current >1mA on R = 1k Ω x Vnom (with VPN, VPE, VNE= 0)
Set limit threshold on measure 0.05M Ω , 0.1M Ω , 0.23M Ω ; Number of set modules (NMOD): 4 ÷ 60

The GFL function allows obtaining correct results with the following conditions:

- > Test carried out with Vtest $\geq$ Vnom on a single string disconnected from the inverter, from possible arresters and from earth connections
- > Test performed upstream of any blocking diodes
- > Single fault of low insulation located at any position in the string
- > Insulation resistance of the single fault <0.23M Ω
- > Environmental conditions similar to those in which the fault was reported

FUNCTIONALITY TEST (IVCK)

DC Voltage @ OPC

Range [V]	Resolution [V]	Accuracy
3.0 ÷ 1500.0	0.1	$\pm(1.0\%rdg+2dgt)$

Minimum VPN voltage to start the test: 15V

IDC Current @ OPC

Range [A]	Resolution [A]	Accuracy
0.10 ÷ 40.00	0.01	$\pm(1.0\%rdg+2dgt)$

DC Voltage @ STC

Range [V]	Resolution [V]	Accuracy
3.0 ÷ 1500.0	0.1	$\pm(4.0\%rdg+2dgt)$

IDC Current @ STC

Range [A]	Resolution [A]	Accuracy
0.10 ÷ 40.00	0.01	$\pm(4.0\%rdg+2dgt)$



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VOLTMAG



2. GENERAL SPECIFICATIONS

DISPLAY AND MEMORY

Features:	240x240pxl custom LCD with backlight
Memory:	max 999 test
Internal database for PV modules:	max 64 saving modules

POWER SUPPLY

Internal power supply:	6x1.5V alkaline batteries type LR6, AA or 6x1.2V rechargeable NiMH batteries type LR6, AA (External adapter needed for NiMH batteries recharging)
Battery life (@Temp = 20°C):	RPE: >500 Test ($RPE \geq 0.1\Omega$) GFL, MΩ: >500 test ($Riso \geq 1k\Omega \times VTest$) IVCK: >500 test (no SOLAR03)
Auto Power OFF:	after 5 minutes of idleness

OUTPUT INTERFACE

PC communication port:	optical/USB and WiFi
Interface with SOLAR03:	Bluetooth BLE communication (up to 100m/328ft in free space)

MECHANICAL FEATURES

Dimensions (L x W x H):	235 x 165 x 75mm
Weight (batteries included):	1.2kg
Mechanical protection:	IP40

ENVIRONMENTAL CONDITIONS

Reference temperature:	23°C ± 5°C
Working temperature:	-10°C ÷ 50°C
Working humidity:	<80%RH (without condensation)
Storage temperature:	-10°C ÷ 60°C
Storage humidity:	<80%RH (without condensation)
Max height of use:	2000m

REFERENCE GUIDELINES

Safety:	IEC/EN61010-1, IEC/EN61010-2-030 IEC/EN61010-2-033, IEC/EN61010-2-034
EMC:	IEC/EN61326-1, IEC/EN61326-2-2
Safety of measurement accessories:	IEC/EN61010-031
IVCK measurements:	IEC/EN62446-1, IEC/EN60891, IEC/EN60904-1-2-5
MΩ measurement:	IEC/EN61557-2
RPE measurement:	IEC/EN61557-4
Insulation:	double insulation
Pollution degree:	2
Radio:	ETSI EN300328, ETSI EN301489-1, ETSI EN301489-17
Measurement category:	CAT III 1000VAC, CAT III 1500VDC to ground Max 1000VAC, 1500VDC between inputs

This instrument complies with the requirements of the European Low Voltage Directives 2014/35/EU (LVD), EMC directive 2014/30/EU and RED 2014/53/EU directive
This instrument satisfies the requirements of 2011/65/EU (RoHS) directive and 2012/19/EU (WEEE) directive