UNIKS

RAPID PRO

Limited Edition

DATASHEET V1.0

INTRODUCTION

Congratulations on your purchase of the RAPID PRO Limited Edition the pocket-sized multifunction for electrical installations verification produced in only 500 numbered examples **MADE IN ITALY.**
The Rapid Pro LE represents a new frontier in verification instruments for electrical installations, and thanks to the UNIKS Digitaloop™ patent, it has evolved to include measurements in both **civil and industrial** settings. In addition to being used as a multimeter in TRMS and Receptacle Test, it enables electrical safety tests (RCD, LOOP L-Pe - L-N) in accordance with the STANDARDS IEC61557-3 and IEC61557-6.
It is equipped with a 1.77" TFT Display. , of internal memory and a SUPERCAP to power it even when disconnected from the mains.

PRECAUTIONS AND SAFETY MEASURES

Caution: Follow the instructions in the manual; improper use could cause damage to the instrument or create dangerous situations for the operator.

High Voltage Hazard: electrical shock hazards

The instrument is designed in accordance with IEC/EN61010-1, relating to electronic measuring instruments. To avoid damaging the instrument, carry out the procedures described in this manual.

- Do not make measurements in humid environments.
- Do not make measurements in the presence of explosive, combustible gases or materials, or in dusty environments.
- Avoid contact with the circuit under test if you are not making measurements. Avoid contact with exposed metal parts, unused measurement terminals, etc.
- Do not make any measurement if any abnormality is found in the instrument such as, deformation, breakage, spillage, missing display, etc.

The maximum input AC voltage is 440V . Do not measure voltages that exceed the limits given in this manual and printed on the instrument. Exceeding the voltage limits could cause electrical shock to the user and damage to the instrument.

GENERAL DESCRIPTION

The RAPID PRO LIMITED EDITION performs the following measurements:

1. L-N Voltage in TRMS or Three Phase Voltage with Accessory
2. Frequency of Line Voltage
3. RCD Testing (RCD) A, AC and F up to 1A
4. General and Selective RCD Testing
5. Test Current IΔn 30mA, 100mA, 300mA, 500mA, 650mA and 1A
6. RCD AUTO test modes.
7. RCD RAMP testing A, AC and F only 30mA
8. Measurement of Contact Voltage Uc
9. Z LOOP L-PE No-trip earth loop impedance test
10. IPEFC Prospective Earth Fault Current.
11. Z LINE Impedance Z L-N or Z L-L three-phase impedance
12. ISC prospective short-circuit current
13. Assumed Short Circuit Current Isc
14. Voltage harmonics up to the 50th
15. Voltage THD% (Line Harmonic Distortion)
16. Fundamental frequency and all harmonics
17. Socket Test (socket wiring)

Each of these functions can be selected by a special button. There are also function keys, to change measurement parameters or scroll through harmonics. The instrument is also equipped with an AUTO POWER function via an internal SUPERCAP that allows the RAPID PRO to be kept on even when it is not connected to the grid.
Normally charging can take about 45 seconds when the SUPER CAP is fully charged.
This function makes it possible to read the value of the differential trip time after the trip or to conveniently read the values on the display by disconnecting the instrument from the power supply.
All measurement outcomes are indicated with OK and NO OK result through a **GREEN** or **RED** bar in the center of the Display.
The Socket Test function detects common wiring problems such as missing connection to EARTH (NO PE) or reversed PHASE and NEUTRAL.
The 'inverted PHASE and NEUTRAL error will be indicated in the VOLT Display, and the RAPID PRO LE will allow you to make all measurements even without inverting the instrument in the socket.
It will also continue to be indicated in RCD and LOOP measurements by the symbol

The Auto Power function is disabled in the LOOP L-Pe and LOOP Line L-N functions.

INPUT:

Measurement Category:	CAT III 300V to ground
Voltage Range:	190 TO 440V AC
Frequency Range	42 ÷ 69 Hz
Maximum current input:	<25mA
Input voltage fluctuation	10%

Standards:

Reference Standards:	IEC/EN61557-3
	IEC/EN61557-6
Safety Standards :	IEC/EN61010-1
	IEC/EN61010-2-030
EMC:	IEC/EN61326-1

Display and Memory:

Display:	TFT 1.77" Display
Memory Locations:	64

Environmental Conditions

Usage:	internal
Altitude:	0 ÷ 2000 m
Reference temperature:	0°C ÷ 23°C
Usage temperature:	0°C ÷ 40°C
Allowable relative humidity:	<80%RH
Storage temperature:	-20°C ÷ 60°C
Storage humidity:	<80%RH
Pollution degree:	2

Mechanical characteristics:

Dimensions:	(81.5 x 70 x 83) mm
Weight:	120g

TECHNICAL SPECIFICATIONS

TRMS VOLTAGE

TRMS voltage - Frequency 42Hz to 69Hz ± 5%

Range (V)	Resolution (V)	Accuracy
0÷440	1	±(1% + 1dgt)

Overload protections up to 440V
CAT III 300V

FREQUENCY

Range (Hz)	Resolution (Hz)	Accuracy
42÷69	0,1	±(2% + 1dgt)

VOLTAGE HARMONICS and THD%

1 to 50th

Range (V)	Resolution (V)	Accuracy
0,8÷440	0,1	±(3% + 5dgt)

Harmonics with intensity less than 0.8V will be reset to zero
THD% is calculated as

Socket Test for Wiring

L-PE voltage from 190V÷269V - Frequency 50Hz ± 5%

ERROR	Resolution (V)
NO PE	Lockout Use until problem resolution
Vc>50V	Lockout Use until problem resolution
LN inverted	All Tests can be performed without reversing
NO NEUTRAL	Lockout Use until the problem is resolved
L-PE inverted	Lockout Use until the problem is resolved

TECHNICAL SPECIFICATIONS

RCD TIME

L-PE voltage from 190V÷269V - Frequency 50Hz ± 5% - IEC/EN61557-6 STANDARD

Range (ms)	Resolution (ms)	Accuracy
0÷400 General	0,1	±(1ms + 2dgt)
0÷500 Selective	0,1	±(1ms + 2dgt)

Type of RCD AC, A and F
IΔn 30mA, 100mA, 300mA, 500mA, 650mA and 1A
Maximum Generation Time: 400ms for GENERAL RCDs and 500ms for SELECTIVE RCDs
1s for the X1/2 test

RCD RAMP

L-PE voltage from 190V÷269V - Frequency 50Hz ± 5% - IEC/EN61557-6 standard

Range (mA)	Resolution (mA)	Accuracy
0÷30 (AC Type)	0,1	±(2mA + 2dgt)
0÷42 (Type A, F)	0,1	±(2mA + 2dgt)

Type of RCD AC, A and F
IΔn only 30mA
Maximum Generation Time: 5s for GENERAL RCDs

RCD AUTO

L-PE voltage from 190V÷269V - Frequency 50Hz ± 5% - IEC/EN61557-6 standard

IΔn (mA)			1/2 IΔn (mA)			5 IΔn (mA)		
AC	A	F	AC	A	F	AC	A	F
30	42	42	15	10	10	150	212	212
100	141	141	50	33	33	500	707	707
300	424	424	150	100 166	100	-	-	-
500	707	707	250	216	166	-	-	-
650	919	919	325	333	216	-	-	-
1000	1410	1410	500		333	-	-	-

Maximum Generation Time: 400ms for GENERAL RCDs and 500ms for SELECTIVE RCDs
Sign - means that measures are not available
All current values generated include 0° and 180° polarity test

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TECHNICAL SPECIFICATIONS

LOOP Z L-PE

L-PE voltage from 190V÷269V - Frequency 50Hz ± 5% - IEC/EN61557-3 standard

Range (Ω)	Resolution (Ω	Accuracy
0,01÷9,99	0,01	±(5% + 8dgt)
10÷99,9	0,1	±(5% + 8dgt)
100÷999	1	±(5% + 8dgt)
LOW current of 7mA		±(8% + 12dgt)

LOOP Z L-N

Voltage L-N from 190V÷269V - Frequency 50Hz ± 5% - IEC/EN61557-3 standard

Range (Ω)	Resolution (Ω	Accuracy
0,01÷9,99	0,01	±(2% + 5dgt)
10÷99,9	0,1	±(2% + 5dgt)
100÷999	1	±(2% + 5dgt)

Overload protections up to 440V
Short Circuit Current Isc from 0.1A÷24KA Accuracy referred to Z LOOP.
CAT III 300V

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