

## RCD METER

### MRP-201

CAT IV  
300V  
IP 67



Wireless data  
transmission to a computer.  
Radio USB interface included!

- **Testing RCD breakers of AC, A and B types.**
  - testing of general, short delay and selective RCDs for the rated current values  $I_{\Delta n}$  = 10, 30, 100, 300 and 500 mA,
  - simultaneous measurement of triggering current  $I_A$  and disconnection time  $t_A$ , for currents  $0,5I_{\Delta n}$ ,  $1I_{\Delta n}$ ,  $2I_{\Delta n}$ ,  $5I_{\Delta n}$ ,
  - ability to measure touch voltage  $U_B$  and earth resistance  $R_E$  without triggering,
  - AUTO RCD test function.
- **AC voltage and frequency measurement.**
- **PE lead connection check using a touch electrode.**
- **Built-in memory for up to 990 cels of measurement results.**
- **Wireless radio communication interface.**
- **Professional software for reading data and creating reports.**

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## RCD trigger test and response time measurement $t_A$

Measurement range according to IEC 61557: 0ms...the upper limit of the displayed value

| Measurement range according to IEC 61337-1: 0ms...the upper limit of the displayed value |                                     |           |            |                                         |  |
|------------------------------------------------------------------------------------------|-------------------------------------|-----------|------------|-----------------------------------------|--|
| RCD type                                                                                 | Rated Current Multiplication Factor | Range     | Resolution | Accuracy                                |  |
| General or short delay                                                                   | $0,5 \cdot I_{\Delta n}$            | 0...300ms | 1ms        | $\pm 2\%$ m.v. + 2 digits <sup>1)</sup> |  |
|                                                                                          | $1 \cdot I_{\Delta n}$              |           |            |                                         |  |
|                                                                                          | $2 \cdot I_{\Delta n}$              | 0...150ms |            |                                         |  |
|                                                                                          | $5 \cdot I_{\Delta n}$              | 0...40ms  |            |                                         |  |
| Selective                                                                                | $0,5 \cdot I_{\Delta n}$            | 0...500ms |            |                                         |  |
|                                                                                          | $1 \cdot I_{\Delta n}$              |           |            |                                         |  |
|                                                                                          | $2 \cdot I_{\Delta n}$              | 0...200ms |            |                                         |  |
|                                                                                          | $5 \cdot I_{\Delta n}$              | 0...150ms |            |                                         |  |

<sup>1)</sup> for  $I_{\Delta n} = 10\text{mA}$  and  $0,5 I_{\Delta n}$  accuracy is  $\pm 2\% \text{ m.v.} + 3 \text{ digits}$

- residual current setting accuracy:
  - for  $1 \cdot I_{\Delta n}$ ,  $2 \cdot I_{\Delta n}$  and  $5 \cdot I_{\Delta n}$ : 0...8%,
  - for  $0,5 \cdot I_{\Delta n}$ : -8...0%,
- nominal voltage  $U_n$ : 220V, 230V, 240V,
- work voltage range: 180...270V,
- nominal frequency  $f_n$ : 50Hz, 60Hz,
- work frequency range: 45Hz...65Hz.

## RCD disconnecting current measurement for a sine AC test current ( $I_A$ )

Measurement range according to IEC 61557: (0,3...1,0)  $I_{\Delta n}$

| Selected rated RCD current | Range        | Resolution | Measurement current                               | Accuracy            |
|----------------------------|--------------|------------|---------------------------------------------------|---------------------|
| 10mA                       | 3,3...10,0mA | 0,1mA      | 0,3 x I <sub>Δn</sub><br>...1,0 x I <sub>Δn</sub> | ±5% I <sub>Δn</sub> |
| 30mA                       | 9,0...30,0mA |            |                                                   |                     |
| 100mA                      | 33...100mA   | 1mA        |                                                   |                     |
| 300mA                      | 90...300mA   |            |                                                   |                     |
| 500mA                      | 150...500mA  |            |                                                   |                     |

- start of measurement from the positive or negative half sine period of the test current
- test current flow time - max. 7510ms at  $f=50,0\text{Hz}$ .

## RCD disconnecting current measurement for unidirectional pulsed residual current and unidirectional pulsed current with a 6mA DC offset ( $I_A$ )

Measurement range according to IEC61557:

(0,15...1,4)  $I_{\Delta n}$  for  $I_{\Delta n} \geq 30\text{mA}$  and (0,15...2)  $I_{\Delta n}$  for  $I_{\Delta n} = 10\text{mA}$

| Selected rated RCD current | Range        | Resolution | Measurement current                                         | Accuracy                |  |  |
|----------------------------|--------------|------------|-------------------------------------------------------------|-------------------------|--|--|
| 10mA                       | 1,5...20,0mA | 0,1mA      | $0,15 \times I_{\Delta n}$<br>... $2,0 \times I_{\Delta n}$ | $\pm 10\% I_{\Delta n}$ |  |  |
| 30mA                       | 4,5...42,0mA |            | $0,15 \times I_{\Delta n}$<br>... $1,4 \times I_{\Delta n}$ | $\pm 10\% I_{\Delta n}$ |  |  |
| 100mA                      | 15...140mA   | 1mA        |                                                             |                         |  |  |
| 300mA                      | 45...420mA   |            |                                                             |                         |  |  |

- start of the measurement from the positive or negative half sine period of the test current
- test current flow time - max. 14710ms at  $f=50\text{Hz}$

## RCD response time measurement for the residual DC current ( $I_A$ )

Measurement range according to IEC61557: (0,2...2)  $I_{\Delta n}$

| Measurement range according to IEC 60361 (25mm²) I <sub>Δn</sub> |              |            |                                                   |                      |
|------------------------------------------------------------------|--------------|------------|---------------------------------------------------|----------------------|
| Selected rated RCD current                                       | Range        | Resolution | Measurement current                               | Accuracy             |
| 10mA                                                             | 2,0...20,0mA | 0,1mA      | 0,2 x I <sub>Δn</sub><br>...2,0 x I <sub>Δn</sub> | ±10% I <sub>Δn</sub> |
| 30mA                                                             | 6...60mA     | 1mA        |                                                   |                      |
| 100mA                                                            | 20...200mA   |            |                                                   |                      |
| 300mA                                                            | 60...600mA   |            |                                                   |                      |

- measurement possible for positive or negative residual current
- test current flow time - max. 4500ms at  $f=50\text{Hz}$

## Touch voltage measurement referred to the rated residual current ( $U_0$ )

Measurement range according to IEC61557: 10,0...99,9V

| Range        | Resolution | Measurement current       | Accuracy                                                  |
|--------------|------------|---------------------------|-----------------------------------------------------------|
| 0...9,9V     | 0,1        | $0,4 \times I_{\Delta n}$ | $0...10\% I_{\Delta n} \text{ m.v.} \pm 5 \text{ digits}$ |
| 10,0...99,9V |            |                           | $0...15\% I_{\Delta n} \text{ m.v.}$                      |

## Earthing resistance measurement ( $R_E$ )

| Selected rated RCD current | Range                            | Resolution     | Measurement current | Accuracy                                      |
|----------------------------|----------------------------------|----------------|---------------------|-----------------------------------------------|
| 10mA                       | 0,01k $\Omega$ ...5,00k $\Omega$ | 0,01k $\Omega$ | 4mA                 | $0...+10\% \text{ m.v.} \pm 8 \text{ digits}$ |
| 30mA                       | 0,01k $\Omega$ ...1,66k $\Omega$ |                | 12mA                | $0...+10\% \text{ m.v.} \pm 5 \text{ digits}$ |
| 100mA                      | 1 $\Omega$ ...500 $\Omega$       | 1 $\Omega$     | 40mA                | $0...+5\% \text{ m.v.} \pm 5 \text{ digits}$  |
| 300mA                      | 1 $\Omega$ ...166 $\Omega$       |                | 120mA               |                                               |
| 500mA                      | 1 $\Omega$ ...100 $\Omega$       |                | 200mA               |                                               |

## Voltage measurement

| Range        | Resolution | Accuracy                                   |
|--------------|------------|--------------------------------------------|
| 0,0...299,9V | 0,1V       | $\pm(2\% \text{ m.v.} + 6 \text{ digits})$ |
| 300...500V   | 1V         | $\pm(2\% \text{ m.v.} + 2 \text{ digits})$ |

- frequency range: 45...65Hz

## Frequency measurement

| Range          | Resolution | Accuracy                                    |
|----------------|------------|---------------------------------------------|
| 45,0...65,0 Hz | 0,1Hz      | $\pm(0,1\% \text{ m.v.} + 1 \text{ digit})$ |

- voltage range 50...500V

### Electric security:

- type of insulation double, according to EN 61010-1 and IEC 61557
- measurement category CAT IV 300V (III 600V) acc. to EN 61010-1
- protection class IP67

### Other technical data:

- power supply alkaline batteries LR6 (AA) (4 pcs.)

### Rated operational conditions:

- operating temperature -10...+50°C
- storing temp. -20...70°C
- humidity 20...80%

## Standard accessories of MRP-201 meter:

- Adapter UNI-SCHUKO (WS-05)
- Test lead with banana plug; 1,2m; yellow
- Test lead with banana plug; 1,2m; red
- Test lead with banana plug; 1,2m; blue
- "Crocodile" clip K02; yellow
- Pin probe with banana connector; red
- Pin probe with banana connector; blue
- Carrying case M6
- hanging straps
- Receiver - interface for radio transmission OR-1 (USB)
- handle to suspend the meter
- R6 batteries - 4pcs.
- operation manual
- calibration certificate

## Optional accessories of MRP-201 meter:

- Test lead with banana plug 5m; red
- Test lead with banana plug 10m; red
- Test lead with banana plug 20m; red
- Probe with START button with UNI-SCHUKO (WS-01)
- Software for creation of documentation from electrical measurements "SONEL Reports"

WAADAWS05  
WAPRZ1X2YEBB  
WAPRZ1X2REBB  
WAPRZ1X2BUBB  
WAKROYE20K02  
WASONRE0GB1  
WASONBU0GB1  
WAFUTM6  
WAPQZSZE4  
WAADAUSB0R1  
WAPQZUCH1

WAPRZ005REBB  
WAPRZ010REBB  
WAPRZ020REBB  
WAADAWS01  
WAPROSONPE4