FLUKE®

# 1672/1673 FC/1674 FC

## Multifunction Tester

## Product Specifications

BC
6/2024 Rev. 3, 10/2025 (English)
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# General Specifications

| | |
|---|---|
| Maximum voltage between any terminal and earth ground | 600 V |
| Dimensions | 26.25 cm x 14.19 cm x 11.93 cm (10.3 in x 5.6 in x 4.7 in) |
| Weight (with battery) | 1.6 kg (3.5 lb) |
| Battery | BP290, Li-ion, 10.8 V, 2500 mAh, 27 Wh (or equivalent approved by Fluke) |
| ⚠ Fuses (x2) | T 3 A 600 V, IR 20 kA |
| Temperature | |
| Operating | 0 °C to 40 °C (32 °F to 104 °F) |
| Storage | -20 °C to 60 °C (-4 °F to 140 °F) limited by battery specification |
| Relative Humidity | 85 % RH @ 10 °C to 35 °C (50 °F to 95 °F)<br>70 % RH @ 35 °C to 40 °C (95 °F to 104 °F) |
| Altitude | |
| Operating | 2000 m |
| Storage | 12 000 m |
| Vibration | MIL-PRF-28800F: Class 2 |
| Safety | |
| General | |
| IEC 61010-1 | Pollution Degree 2 |
| IEC 61010-2-034 | CAT IV 300 V/CAT III 600 V |
| Performance | |
| IEC 61557-1 | General Requirements |
| IEC 61557-2 | Insulation Resistance |
| IEC 61557-3 | Loop Impedance |
| IEC 61557-4 | Resistance of Earth and Bonding |
| IEC 61557-5 | Earth Resistance |
| IEC 61557-6 | RCD and Voltage Drop |
| IEC 61557-7 | Phase Sequence |
| IEC 61557-8 | Insulation Monitoring Devices for Insulated-Terra Power Distribution Network (IT Systems) |
| IEC 61557-10 | Combined Measuring Equipment |

Accessories..... IEC 61010-031
TP165X Remote Probe with cap ..... CAT IV 600 V, CAT III 1000 V, 10 A
TP165X Remote Probe without cap..... CAT II 1000 V, 10 A
TL-L1, TL-L2, TL-L3 Test Leads ..... CAT IV 600 V, CAT III 1000 V, 10 A
Test Probes with cap ..... CAT IV 600 V, CAT III 1000 V, 10 A
Test Probes without cap ..... CAT II 1000 V, 10 A
AC285 Alligator Clip ..... CAT IV 600 V, CAT III 1000 V, 10 A
Country-Specific Mains Cord..... CAT II 250 V, 1000 V dc
Ingress Protection..... IEC 60529: IP40

Electromagnetic Compatibility (EMC)

*Some mobile devices (for example, handheld transceivers) that transmit RF energy can transmit levels that exceed 3 V/m and can damage sensitive electronic circuits. To ensure the best performance, do not allow a device that transmits RF energy in >3 V/m to be within 30 cm of the Product while in use.*

International ..... IEC 61326-1: Portable CISPR 11: Group 1, Class A

*Group 1: Equipment has intentionally generated and/or uses conductively-coupled radio frequency energy that is necessary for the internal function of the equipment itself.*

*Class A: Equipment is suitable for use in all establishments other than domestic and those directly connected to a low-voltage power supply network that supplies buildings used for domestic purposes. There may be potential difficulties in ensuring electromagnetic compatibility in other environments due to conducted and radiated disturbances.*

*Caution: This equipment is not intended for use in residential environments and may not provide adequate protection to radio reception in such environments.*

*Emissions that exceed the levels required by CISPR 11 can occur when the equipment is connected to a test object.*

Wireless Radio with Adapter

Frequency Range..... 2400 MHz to 2483.5 MHz
Output Power ..... <100 mW

## SIMPLIFIED EU DECLARATION OF CONFORMITY

Hereby, Fluke declares that the radio equipment contained in this Product is in compliance with Directive 2014/53/EU. The full text of the EU declaration is available at the following Internet address: www.fluke.com/red.

# Electrical Measurement Specifications

The specification for accuracy is defined as ±(% reading +digit counts) at 23 °C ±5 °C, ≤80 % RH. Between 0 °C and 18 °C and between 28 °C and 40 °C, accuracy specifications may degrade by 0.1 x (accuracy specification) per °C. The specifications apply up to one year from the date of calibration.

*Note*

*Accuracy indicates the intrinsic uncertainty according to IEC 61557.*

## Voltage Measurement (V)

| Range | Resolution | Accuracy 45 Hz to 66 Hz | Input Impedance | Overload Protection |
|---|---|---|---|---|
| 600 V | 0.1 V | 0.8 % + 3 | 320 kΩ | 660 V rms |
| Note: The display shows if dc voltage is detected. | | | | |

## Insulation Resistance Measurement ($R_{ISO}$)

| Test Voltage | | Accuracy |
|---|---|---|
| Model 1672 | Model 1673 FC/1674 FC | |
| 100-250-500-1000 V | 50-100-250-500-1000 V | +10 %, -0 % |

| Test Voltage | Insulation Resistance Range | Resolution | Test Current | Accuracy |
|---|---|---|---|---|
| 50 V | 10 kΩ to 50 MΩ | 0.01 MΩ | 1 mA @ 50 kΩ | ±(3 % + 3 digits) |
| 100 V | 10 kΩ to 20 MΩ | 0.01 MΩ | 1 mA @ 100 kΩ | ±(3 % + 3 digits) |
| | 20 MΩ to 100 MΩ | 0.1 MΩ | | ±(3 % + 3 digits) |
| 250 V | 10 kΩ to 20 MΩ | 0.01 MΩ | 1 mA @ 250 kΩ | ±(1.5 % + 3 digits) |
| | 20 MΩ to 200 MΩ | 0.1 MΩ | | ±(1.5 % + 3 digits) |
| 500 V | 10 kΩ to 20 MΩ | 0.01 MΩ | 1 mA @ 500 kΩ | ±(1.5 % + 3 digits) |
| | 20 MΩ to 200 MΩ | 0.1 MΩ | | ±(1.5 % + 3 digits) |
| | 200 MΩ to 500 MΩ | 1 MΩ | | ±10 % |
| 1000 V | 100 kΩ to 200 MΩ | 0.1 MΩ | 1 mA @ 1 MΩ | ±(1.5 % + 3 digits) |
| | 200 MΩ to 1000 MΩ | 1 MΩ | | ±10 % |
| Note: The number of insulation tests with full-charge battery is >2000. | | | | |

| | |
|---|---|
| **Auto Discharge** | Discharge time constant <0.5 second for C = 1 µF or less. |
| **Live Circuit Detection** | Inhibits test if terminal voltage >30 V prior to initiation of test. |
| **Maximum Capacitive Load** | Operable with up to 5 µF load. |
| **Insulation Safety Pretest (1674 FC)** | Connections from the Tester to L, N, and PE are required. |

## SPD (Surge Protection Device) Insulation RAMP Test (Varistor Test) IEC 61643-11

| Test Voltage | Voltage Range | Resolution | Test Current | Accuracy |
|---|---|---|---|---|
| 500 V | Step Ramp 0 V to 500 V | 1 V | 1 mA | ±(1.5 % + 3 digits) |
| 1000 V | Step Ramp 0 V to 1000 V | 1 V | 1 mA | ±(1.5 % + 3 digits) |

## Continuity Test ($R_{LO}$)

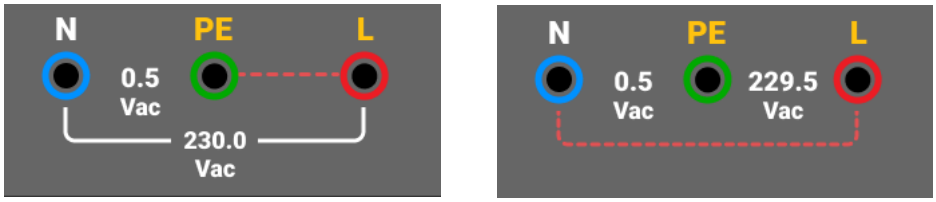
| Range (Autoranging) | Resolution | Open Circuit Voltage | Accuracy |
|---|---|---|---|
| 20 Ω | 0.01 Ω | >4 V | ±(1.5 % + 3 digits)[1] |
| 200 Ω | 0.1 Ω | >4 V | ±(3 % + 3 digits) |
| 2000 Ω | 1 Ω | >4 V | ±(3 % + 3 digits) |
| Note: The number of 250 mA @ 1 Ω continuity tests with full-charge battery is >1500. | | | |
| [1] For 10 mA, add 3 digits. | | | |

| Range Setting | Display Range | Test Current[1] |
|---|---|---|
| 250 mA | 0.2 Ω to 2.0 Ω | 250 mA |
| | 2 Ω to 160 Ω | 250 mA to 50 mA |
| | 160 Ω to 800 Ω | 10 mA |
| | 800 Ω to 2000 Ω | 2 mA |
| 10 mA | 0 Ω to 800 Ω | 10 mA |
| | 800 Ω to 2000 Ω | 2 mA |
| [1] All test currents ±10 %. | | |

| | |
|---|---|
| **Test Probe Zeroing** | Select **ZERO** to zero the test probe.<br>Can subtract up to 3 Ω of lead resistance.<br>Error message for >3 Ω. |
| **Live Circuit Detection** | Inhibits test if terminal voltage >10 V ac detected before initiation of test. Does not apply in point-to-point continuous mode. |

## Mains Wiring Indicator

Icons indicate if L-PE or L-N terminals are reversed.




Loop and RCD tests are inhibited and an error message is generated if the input voltage is not between 100 V and 500 V. The UK Loop and RCD tests are inhibited if the L-PE or the L-N terminals are reversed.

## Loop and Line Impedance ($Z_l$, No Trip incl. EV No Trip, and Hi Current)

| | |
|---|---|
| **Mains Input Voltage Range** | 50 V ac to 600 V ac (45 Hz to 66 Hz) |
| **Input Connection (softkey selection)** | Loop Impedance: phase-to-earth |
| | Line Impedance: phase-to-neutral |
| **Limit on Consecutive Tests** | Auto-shutdown when the temperature of internal components is too high. |
| **Maximum Test Current @ 600 V** | 30 A sinusoidal for 10 ms |
| **Maximum Test Current @ 400 V** | 20 A sinusoidal for 10 ms |
| **Maximum Test Current @ 230 V** | 12 A sinusoidal for 10 ms |

| Range Setting | Resolution | Accuracy[1] |
|---|---|---|
| 10 Ω[2] | 0.001 Ω | Hi Current mΩ mode: ±(2 % + 35 digits) |
| 20 Ω | 0.01 Ω | No Trip mode: ±(3 % + 6 digits) |
| | | Hi Current mode: ±(2 % + 4 digits) |
| 200 Ω | 0.1 Ω | No Trip mode: ±(3 %) |
| | | Hi Current mode: ±(2 %) |
| 2000 Ω | 1 Ω | ±6 %[3] |

[1] Valid for resistance of neutral circuit <20 Ω and up to a system phase angle of 30 °. Test leads must be zeroed before testing.
[2] 1674 FC model only.
[3] Valid for mains voltage >200 V.
*Note: EV non-trip is not available in 128 Hz mode*

## Voltage Drop (ΔV)

| Measurement Range | Resolution | Accuracy |
|---|---|---|
| 0.0 % to 99.9 % | 0.1 % | Consider accuracy of line impedance measurements. |

## Prospective Earth Fault Current (PEFC) Prospective Short Circuit Current (PSC)

| | | |
|---|---|---|
| **Computation** | Prospective Earth Fault Current (PEFC/$I_K$) or Prospective Short Circuit Current (PSC/$I_K$) determined by dividing measured mains voltage by measured loop (L-PE) resistance or line (L-N) resistance, respectively. | |
| **Range** | 0 kA to 50 kA | |
| **Resolution** | **Range** | **Resolution** |
| | $I_K$ <1000 A | 1 A |
| | $I_K$ ≥1000 A | 0.1 kA |
| **Accuracy** | Determined by accuracy of loop resistance and mains voltage measurements. | |

## RCD Tests

**RCD Types Tested**

Limit on consecutive tests: Automatic shutdown for RCD tests when the temperature of internal components is too high.

| RCD Type[1] | | 1672 | 1673 FC | 1674 FC |
|---|---|---|---|---|
| AC[2] | G[3] | ● | ● | ● |
| AC | S[4] | ● | ● | ● |
| A[5], F[6] | G | ● | ● | ● |
| A, F | S | ● | ● | ● |
| B, B+[7] | G | | ● | ● |
| B, B+ | S | | ● | ● |
| RDC-DD, A/EV, B/Mi[8] | G | | ● | ● |
| GFCI | G | ● | ● | ● |

[1] RCD test inhibited for V >265 ac
RCD tests permitted only if the selected current, multiplied by earthing resistance, is <50 V
[2] AC – Responds to ac
[3] G – General, no delay
[4] S – Time delay
[5] A – Responds to ac and pulsed signal
[6] F – responds to ac, pulsed, and high frequency
[7] B, B+ – Responds to ac, pulsed, high frequency, and smooth dc
[8] RDC-DD, A/EV, B/Mi – Responds to dc residual currents >6 mA

### Test Signals

| Type | Test Signal Description |
|---|---|
| RCD type AC (sinusoidal) | The waveform is a sinewave starting at zero crossing, polarity determined by phase selection (0 ° phase starts with low to high zero crossing, 180 ° phase starts with high to low zero crossing). The magnitude of the test current is $I_{\Delta N}$ x Multiplier for all tests. |
| A (half-wave) | The waveform is a half wave rectified sinewave starting at zero, polarity determined by phase selection (0 ° phase starts with low to high zero crossing, 180 ° phase starts with high to low zero crossing). The magnitude of the test current is 0.7 x $I_{\Delta N}$ (rms) x Multiplier for all tests where the multiplier is x0.5 (x1/2). The magnitude of the test current is 2.0 x $I_{\Delta N}$ (rms) x Multiplier for all tests where both the multiplier is ≥ x1 and $I_{\Delta N}$ = 0.01A. The magnitude of the test current is 1.4 x $I_{\Delta N}$ (rms) x Multiplier for all tests for all other settings. |
| B (DC) | This is a smooth dc current in accordance to EN61557-6 Annex A |

### RCD Tripping Indicator

The RCD ✓ symbol switches on as a good test indicator when testing the RCD trip time or RCD trip current if the trip time meets these conditions:

| RCD Type | $I_{\Delta N}$ | Trip Time Limits |
|---|---|---|
| G | x1 | <300 ms |
| S | x1 | >130 ms and <500 ms |
| G | x5 | <40 ms |
| S | x5 | >50 ms and <150 ms |

## RCD Tripping Time ($_{\Delta}$T)

| Test Function | RCD Current Selection | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| | 6 mA | 10 mA | 30 mA | 100 mA[1] | 300 mA[1] | 500 mA[1] | 1000 mA[2] | Var[3] |
| x ½, 1 | ● | ● | ● | ● | ● | ● | ● | ● |
| x 5 | ● | ● | ● | ● | | | | |
| Ramp | ● | ● | ● | ● | ● | ● | ● | ● |
| Auto | ● | ● | ● | ● | | | | |

Mains voltage 100 V – 265 V ac, 45/66 Hz

[1] Type B RCDs require mains voltage range of 195 V to 265 V.
[2] Type AC RCDs only.
[3] Type A RCDs are limited to 700 mA, not available for Type B RCDs.

| Current Multiplier | RCD Type | Measurement Range | | Accuracy |
|---|---|---|---|---|
| | | Europe | UK | |
| x ½ | G | 310 ms | 2000 ms | ±(1 % Reading + 1 ms) |
| x ½ | S | 510 ms | 2000 ms | ±(1 % Reading + 1 ms) |
| x 1 | G | 310 ms | 310 ms | ±(1 % Reading + 1 ms) |
| x 1 | S | 510 ms | 510 ms | ±(1 % Reading + 1 ms) |
| x 5 | G | 50 ms | 50 ms | ±(1 % Reading + 1 ms) |
| x 5 | S | 160 ms | 160 ms | ±(1 % Reading + 1 ms) |
| x 1 | RDC-DD, A/EV, B/Mi | 10 s | 10 s | ±(1 % Reading + 1 ms) |
| 350 mA | A | 10 ms | 10 ms | ±(1 % Reading + 1 ms) |

[1] G – General, no delay / S – Time delay

## RCD Tripping Current ($I_{\Delta N}$) Measurement/Ramp Test

| Current Range | Step Size | Dwell Time | | Measurement Accuracy |
|---|---|---|---|---|
| | | Type G | Type S | |
| 30 % to 110 % of RCD-rated current[1] | 10 % of $I_{\Delta N}$[2] | 300 ms/step | 500 ms/step | ±5 % |

[1] Specified trip current ranges (IEC 61008-1):
30 % to 150 % for Type A $I_{\Delta N}$ >10 mA
30 % to 210 % for Type A $I_{\Delta N}$ = 10 mA
20 % to 210 % for Type B
50 % to 100 % for Type AC
35 % to 140 % for Type A (>10 mA)
35 % to 200 % for Type A (≤10 mA)
50 % to 200 % for Type B
[2] 5 % for Type B

## Insulation Monitoring Devices (IMD) IEC 61557-8

| Range | Resolution | Note |
|---|---|---|
| 1 kΩ to 10 kΩ | 1 kΩ | >1 MΩ only available with voltages >100 V |
| 10 kΩ to 100 kΩ | 10 kΩ | |
| 100 kΩ to 3 MΩ | 100 kΩ | |

| Maximum Time[1] | Resolution | Note |
|---|---|---|
| 600.0 s | 0.1 s | Manual timing with TEST button TEST |

[1] The maximum test time duration may be reduced due to heat development when low resistance values are used in combination with high voltages.

## Phase Sequence Test

| | |
|---|---|
| **Icon** | icon. Phase Sequence indicator is active. |
| **Display of Phase Sequence** | Displays “1-2-3” in digital display field for correct sequence. Displays “3-2-1” for incorrect phase. Dashes in place of a number indicate a valid determination could not be made. |
| **Mains Input Voltage Range (phase-to-phase)** | 185 V to 600 V |

## Earth Resistance Test ($R_E$)

1673 FC and 1674 FC only

| Range | Resolution | Accuracy |
|---|---|---|
| 200 Ω | 0.1 Ω | ±(2 % + 5 digits) |
| 2000 Ω | 1 Ω | ±(3.5 % + 10 digits) |

| Range: RE + $R_{PROBE}$[1] | Test Current |
|---|---|
| 2200 Ω | 3.5 mA |
| 16 000 Ω | 500 µA |
| 52 000 Ω | 150 µA |
| [1] Without external voltages. | |

| Freqency | Output Voltage |
|---|---|
| 128 Hz | 25 V |

| | |
|---|---|
| **Live Circuit Detection** | Inhibits test if terminal voltage >10 V ac is detected before the start of the test. |

## Auto Test Sequence

Models 1673 FC and 1674 FC only.

Meets the specifications of the individual tests.

## Operating Ranges and Uncertainties (IEC 61557)

The maximum permissible error shows as a percent of reading plus a number of digits when all uncertainty influence factors E1-E10 are counted.

| Function | Display Range | IEC 61557 Measurement Range Operating Uncertainty | Nominal Values |
|---|---|---|---|
| V | 0.0 V ac to 600 V ac | 50 V ac to 600 V ac<br>±(2 % + 2 digits) | $U_N$ = 230/400 V ac<br>f = 50/60 Hz |
| $R_{LO}$<br>IEC 61557-4 | 0.00 Ω to 2000 Ω | 0.2 Ω to 2000 Ω<br>±(10 % + 2 digits) | 4.0 V dc <$U_Q$ <24 V dc<br>$R_{LO}$ ≤2.00 Ω $I_N$ ≥200 mA |
| $R_{ISO}$<br>IEC 61557-2 | 0.00 MΩ to 1000 MΩ | 1 MΩ to 200 MΩ<br>±(10 % + 2 digits)<br>200 MΩ to 1000 MΩ<br>±(15 % + 2 digits) | $U_N$ = 50 / 100 / 250 / 500 / 1000 V dc<br>$I_N$ = 1.0 mA |
| $Z_I$<br>IEC 61557-3 | $Z_I$ (No Trip)<br>0.00 Ω to 2000 Ω | 0.4 Ω to 2000 Ω<br>±(15 % + 6 digits) | UN = 230/400 V ac<br>f = 50/60 Hz<br>$I_K$= 0 A to 10.0 kA |
| | $Z_I$ (Hi Current)<br>0.00 Ω to 2000 Ω | 0.2 Ω to 200 Ω<br>±(10 % + 4 digits) | |
| | $Z_I$ (Hi Current, Hi Res)<br>0 mΩ to 9999 mΩ | 100 mΩ to 9999 mΩ<br>±(8 % + 20 digits) | |
| | RE<br>0.00 Ω to 2000 Ω | 10 Ω to 1000 Ω<br>±(10 % + 2 digits) | |
| ΔT, $I_{ΔN}$<br>IEC 61557-6 | ΔT 0.0 ms to 2000 ms | 25 ms to 2000 ms<br>±(10 % + 1 digits) | ΔT @ 10 / 30 / 100 / 300 / 500 / 1000 / Var mA |
| | $I_{ΔN}$ 3 mA to 550 mA<br>(Var 3 mA to 700 mA) | 3 mA to 550 mA<br>±(10 % + 1 digits) | $I_{ΔN}$ = 10 / 30 / 100 / 300 / 500 / 1000 / Var mA |
| $R_E$<br>IEC 61557-5 | 0.0 Ω to 2000 Ω | 10 Ω to 2000 Ω<br>±(10 % + 2 digits) | f = 128 Hz |
| Phase<br>IEC 61557-7 | --- | --- | 1 : 2 : 3 |
| IMD<br>IEC 61557-8 | 0 s to 600 s | --- | user-defined manual timer |

## Operating Uncertainties (IEC 61557)

The Operating Uncertainty shows the maximum permissible uncertainty as a percent of reading when all uncertainty influence factors E1-E10 are counted.

| | Volts | $R_{LO}$[1] | $R_{ISO}$[2] | $Z_I$[3] | $_{\Delta}T$[4] | $I_{\Delta N}$[4] | $R_E$[5] |
|---|---|---|---|---|---|---|---|
| Intrinsic Uncertainty A | 0.80 % | 1.50 % | 10.00 % | 6.00 % | 1.00 % | 5.00 % | 3.50 % |

[1] IEC 61557-4
[2] IEC 61557-2
[3] IEC 61557-3
[4] IEC 61557-6
[5] IEC 61557-5

| Influence Quantity | Volts | $R_{LO}$[1] | $R_{ISO}$[2] | $Z_I$[3] | $_{\Delta}T$[4] | $I_{\Delta N}$[4] | $R_E$[5] |
|---|---|---|---|---|---|---|---|
| E1 Position | 0.00 % | 0.00 % | 0.00 % | 0.00 % | 0.00 % | 0.00 % | 0.00 % |
| E2 Supply voltage | 0.50 % | 3.00 % | 3.00 % | 3.00 % | 3.00 % | 2.75 % | 2.00 % |
| E3 Temperature | 0.50 % | 3.00 % | 3.00 % | 3.00 % | 3.00 % | 2.25 % | 1.50 % |
| E4 Series interferences voltage | --- | --- | --- | --- | --- | --- | 2.00 % |
| E5 Resistance of the probes and auxiliary earth electrodes | --- | --- | --- | --- | --- | --- | 4.60 % |
| E6.2 System phase angle | --- | --- | --- | 1.00 % | --- | --- | --- |
| E7 System frequency | 0.50 % | --- | --- | 2.50 % | --- | --- | 0.00 % |
| E8 System voltage | --- | --- | --- | 2.50 % | 2.50 % | 2.50 % | 0.00 % |
| E9 Harmonics | --- | --- | --- | 2.50 % | --- | --- | --- |
| E10 D.C. quantity | --- | --- | --- | 2.50 % | --- | --- | --- |

[1] IEC 61557-4
[2] IEC 61557-2
[3] IEC 61557-3
[4] IEC 61557-6
[5] IEC 61557-5

# Maximum Display Values

The following tables can be used for the determination of maximum or minimum display values considering maximum instrument operating uncertainty per EN61557-1.

## Insulation Resistance (RISO)

| 50 V | | 100 V | | 250 V | | 500 V | | 1000 V | |
|---|---|---|---|---|---|---|---|---|---|
| **Limit Value** | **Maximum Display Value** | **Limit Value** | **Maximum Display Value** | **Limit Value** | **Maximum Display Value** | **Limit Value** | **Maximum Display Value** | **Limit Value** | **Maximum Display Value** |
| 1 | 1.12 | 1 | 1.12 | 1 | 1.12 | 1 | 1.12 | 1 | 1.3 |
| 2 | 2.22 | 2 | 2.22 | 2 | 2.22 | 2 | 2.22 | 2 | 2.4 |
| 3 | 3.32 | 3 | 3.32 | 3 | 3.32 | 3 | 3.32 | 3 | 3.5 |
| 4 | 4.42 | 4 | 4.42 | 4 | 4.42 | 4 | 4.42 | 4 | 4.6 |
| 5 | 5.52 | 5 | 5.52 | 5 | 5.52 | 5 | 5.52 | 5 | 5.7 |
| 6 | 6.62 | 6 | 6.62 | 6 | 6.62 | 6 | 6.62 | 6 | 6.8 |
| 7 | 7.72 | 7 | 7.72 | 7 | 7.72 | 7 | 7.72 | 7 | 7.9 |
| 8 | 8.82 | 8 | 8.82 | 8 | 8.82 | 8 | 8.82 | 8 | 9.0 |
| 9 | 9.92 | 9 | 9.92 | 9 | 9.92 | 9 | 9.92 | 9 | 10.1 |
| 10 | 11.02 | 10 | 11.02 | 10 | 11.02 | 10 | 11.02 | 10 | 11.2 |
| 20 | 22.02 | 20 | 22.2 | 20 | 22.2 | 20 | 22.2 | 20 | 22.2 |
| 30 | 33.02 | 30 | 33.2 | 30 | 33.2 | 30 | 33.2 | 30 | 33.2 |
| 40 | 44.02 | 40 | 44.2 | 40 | 44.2 | 40 | 44.2 | 40 | 44.2 |
| 45 | 49.52 | 50 | 55.2 | 50 | 55.2 | 50 | 55.2 | 50 | 55.2 |
| | | 60 | 66.2 | 60 | 66.2 | 60 | 66.2 | 60 | 66.2 |
| | | 70 | 77.2 | 70 | 77.2 | 70 | 77.2 | 70 | 77.2 |
| | | 80 | 88.2 | 80 | 88.2 | 80 | 88.2 | 80 | 88.2 |
| | | 90 | 99.2 | 90 | 99.2 | 90 | 99.2 | 90 | 99.2 |
| | | | | 100 | 110.2 | 100 | 110.2 | 100 | 110.2 |
| | | | | 180 | 198.2 | 200 | 232 | 200 | 232 |
| | | | | | | 300 | 347 | 300 | 347 |
| | | | | | | 400 | 462 | 400 | 462 |
| | | | | | | 430 | 497 | 500 | 577 |
| | | | | | | | | 600 | 692 |
| | | | | | | | | 700 | 807 |
| | | | | | | | | 800 | 922 |
| | | | | | | | | 850 | 980 |

## Continuity (RLO)

| Limit Value | Maximum Display Value |
|---|---|
| 0.2 | 0.16 |
| 0.3 | 0.25 |
| 0.4 | 0.34 |
| 0.5 | 0.43 |
| 0.6 | 0.52 |
| 0.7 | 0.61 |
| 0.8 | 0.70 |
| 0.9 | 0.79 |
| 1 | 0.88 |
| 2 | 1.78 |

| Limit Value | Maximum Display Value |
|---|---|
| 3 | 2.68 |
| 4 | 3.58 |
| 5 | 4.48 |
| 6 | 5.38 |
| 7 | 6.28 |
| 8 | 7.18 |
| 9 | 8.08 |
| 10 | 8.98 |
| 20 | 17.98 |
| 30 | 26.8 |

## Loop Tests ($Z_l$)

| Loop $Z_l$ Hi Current | | Loop $Z_l$ No Trip | | Loop $Z_l$ Hi Res | |
|---|---|---|---|---|---|
| **Limit Value** | **Maximum Display Value (Ω)** | **Limit Value** | **Maximum Display Value (Ω)** | **Limit Value** | **Maximum Display Value (mΩ)** |
| 0.20 | 0.14 | - | - | 0.20 | 180 |
| 0.30 | 0.23 | - | - | 0.30 | 280 |
| 0.40 | 0.32 | 0.40 | 0.28 | 0.40 | 370 |
| 0.50 | 0.41 | 0.50 | 0.37 | 0.50 | 460 |
| 0.60 | 0.50 | 0.60 | 0.45 | 0.60 | 550 |
| 0.70 | 0.59 | 0.70 | 0.54 | 0.70 | 640 |
| 0.80 | 0.68 | 0.80 | 0.62 | 0.80 | 740 |
| 0.90 | 0.77 | 0.90 | 0.71 | 0.90 | 830 |
| 1.00 | 0.86 | 1.00 | 0.79 | 1.00 | 920 |
| 1.10 | 0.95 | 1.10 | 0.88 | 1.10 | 1010 |
| 1.20 | 1.04 | 1.20 | 0.96 | 1.20 | 1100 |
| 1.30 | 1.13 | 1.30 | 1.05 | 1.30 | 1200 |
| 1.40 | 1.22 | 1.40 | 1.13 | 1.40 | 1290 |
| 1.50 | 1.31 | 1.50 | 1.22 | 1.50 | 1380 |
| 1.60 | 1.40 | 1.60 | 1.30 | 1.60 | 1470 |
| 1.70 | 1.49 | 1.70 | 1.39 | 1.70 | 1560 |
| 1.80 | 1.58 | 1.80 | 1.47 | 1.80 | 1660 |
| 1.90 | 1.67 | 1.90 | 1.56 | 1.90 | 1750 |
| 2.00 | 1.76 | 2.00 | 1.64 | 2.00 | 1840 |
| 3.00 | 2.66 | 3.00 | 2.49 | 3.00 | 2760 |
| 4.00 | 3.56 | 4.00 | 3.34 | 4.00 | 3680 |
| 5.00 | 4.46 | 5.00 | 4.19 | 5.00 | 4600 |
| 10.00 | 8.96 | 10.00 | 8.44 | 10.00 | 9200 |

## RCD/FI ($_{\Delta}T$, $I_{\Delta N}$)

| RCD/FI Time | | RCD/FI Current | |
|---|---|---|---|
| **Limit Value** | **Maximum Display Value** | **Limit Value** | **Maximum Display Value** |
| 25 | 22.4 | 0.5 | 0.49 |
| 30 | 26.9 | 0.6 | 0.49 |
| 40 | 35.9 | 0.7 | 0.59 |
| 50 | 44.9 | 0.8 | 0.69 |
| 60 | 53.9 | 0.9 | 0.79 |
| 70 | 62.9 | 1 | 0.89 |
| 80 | 71.9 | 2 | 1.79 |
| 90 | 80.9 | 3 | 2.69 |
| 100 | 89.9 | 4 | 3.59 |
| 200 | 179.9 | 5 | 4.49 |
| 300 | 269 | 6 | 5.39 |
| 400 | 359 | 7 | 6.29 |
| 500 | 449 | 8 | 7.19 |
| 600 | 539 | 9 | 8.09 |
| 700 | 629 | 10 | 8.99 |
| 800 | 719 | 20 | 17.99 |
| 900 | 809 | 30 | 26.9 |
| 1000 | 899 | 40 | 35.9 |
| 2000 | 1799 | 50 | 44.9 |
| | | 60 | 53.9 |
| | | 70 | 62.9 |
| | | 80 | 71.9 |
| | | 90 | 80.9 |
| | | 100 | 89.9 |
| | | 200 | 179.9 |
| | | 300 | 269.9 |
| | | 400 | 359.9 |
| | | 500 | 449.9 |

## Earth Tests ($R_E$)

| Limit Value | Maximum Display Value |
|---|---|
| 10 | 8.8 |
| 20 | 17.8 |
| 30 | 26.8 |
| 40 | 35.8 |
| 50 | 44.8 |
| 60 | 53.8 |
| 70 | 62.8 |
| 80 | 71.8 |
| 90 | 80.8 |
| 100 | 89.8 |

| Limit Value | Maximum Display Value |
|---|---|
| 200 | 179.8 |
| 300 | 268 |
| 400 | 358 |
| 500 | 448 |
| 600 | 538 |
| 700 | 628 |
| 800 | 718 |
| 900 | 808 |
| 1000 | 898 |
| 2000 | 1798 |