

SOURCETRONIC – Quality electronics for service, laboratory and production

## Manual

### Test dummy ST3010



## Function description:

The ST3010 test dummy can be used with all standard safety testing devices and test systems. By the Schuko plug, the dummy can be connected to the tester's DUT outlet. If there is no Schuko receptable on the test system, the dummy can be contacted through the L, N, and PE lab connectors. In that case, the Schuko plug has to be connected to the built-in Schuko socket which is fed by said connectors.

## Setting of the fault simulation

The different fault simulation components are switched on and off with the three toggle switches located on the front of the dummy.

**CAUTION: Only one toggle switch should be switched on at the same time!**

## High voltage test

During the high voltage test, the set test voltage at L and N will be short circuited to PE by gas discharge tubes. The test voltage should be set to at least 1000V.

**CAUTION: Depending on the test setup, the PE measuring brass contacts may carry a high voltage during this test!**

## Insulation resistance test

An 1M $\Omega$  resistor for each L and N to PE is used for the insulation resistance test. The limit of the test should therefore be set to approximately 1,5M $\Omega$ .

## Leakage current test

A 50k $\Omega$  resistor for each L and N to PE is used for the leakage current test. The limit of the test should therefore be set to  $\geq 5$ mA.

**CAUTION: The maximum load for the resistors is 1W each. Therefore, measuring with more than 230V<sub>eff</sub> resp. 5mA<sub>eff</sub> per resistor is permitted for short periods of time only.**

## Protective earth test

When using the protective earth test, the dummy can be contacted directly through the brass contacts located at the front of the dummy for resistance values of 50m $\Omega$  and 200m $\Omega$ . The resistance value of 50m $\Omega$  was chosen to ensure the effective cumulative resistance of the resistors, the cabling (+20m $\Omega$ ) and the Schuko plug (+5m $\Omega$ ) including tolerance margins is below 100m $\Omega$ .

The limit for the test should therefore be set to 100m $\Omega$ , so that the measurement at the 50m $\Omega$  contact is detected as GOOD and at the 200m $\Omega$  contact as BAD.

## Technical specifications

### Dimensions, weight, and performance data

#### Dimensions

- Width: 160mm
- Depth: 120mm
- Height: 90mm

#### Weight

- Gross weight: 1kg

#### Insulation resistance

- Measuring resistance:  $2 \times 1\text{M}\Omega / 1\text{W}$
- Tolerance: 1,5%

#### Leakage current resistance

- Load resistance:  $2 \times 50\text{k}\Omega / 1\text{W}$
- Tolerance: 1,5%

#### Gas discharge tubes

- Triggering voltage: approx. 750V AC and 1000V DC

#### Protective earth test

- Measuring resistance GOOD:  $50\text{m}\Omega \pm 10\text{m}\Omega / 200\text{W}$
- + internal wiring:  $+ 20\text{m}\Omega \pm 5\text{m}\Omega$
- Total resistance Schuko plug:  $70\text{m}\Omega \pm 15\text{m}\Omega$
- + Schuko/lab socket adaptor:  $\pm 5\text{m}\Omega \pm 5\text{m}\Omega$
- Total resistance lab sockets:  $\pm 75\text{m}\Omega \pm 20\text{m}\Omega$
- Measuring resistance BAD:  $200\text{m}\Omega \pm 10\text{m}\Omega / 100\text{W}$
- + internal wiring:  $+ 20\text{m}\Omega \pm 5\text{m}\Omega$
- Total resistance Schuko plug:  $220\text{m}\Omega \pm 15\text{m}\Omega$
- + Schuko/lab socket adaptor:  $\pm 5\text{m}\Omega \pm 5\text{m}\Omega$
- Total resistance lab sockets:  $\pm 225\text{m}\Omega \pm 20\text{m}\Omega$

**CAUTION:** Due to the additional resistance of the measuring leads and, if used, the integrated Schuko adapter, the measured PE resistance is increased by the amounts listed above. The values are only valid for well-established contact of the Schuko plug. The measuring leads of your safety tester add even more transfer resistance. Make sure there is sufficient contact pressure to the brass contacts. Bad contact can result in a transfer resistance which is higher than the resistance intended to be measured.

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