



## Features

- Lightweight, hand-held design
- Easy-to-read LCD display
- Simple operation
- High accuracy peak reading circuit
- Wide 10-1000 V test range
- Precise auto-sensing shutoff

## Applications

Suitable for testing:

- Gas tubes
- Carbon gaps
- MOVs
- Zener and avalanche diodes
- Thyristor devices
- Finished product

# 4010-01 - Surge Protector Test Set

## Description

Bourns® 4010-01 Surge Protector Test Set is a hand-held, battery-operated tester designed to measure the clamping voltage and dc breakdown voltage of most surge protective devices. The 4010-01 is suitable for testing gas tubes, carbon gaps, MOVs, Zener and avalanche diodes and thyristor devices, both as components and as complete protectors.

The 4010-01 is a true slow-rise tester because it does not use a pulse transformer. It contains unique test circuitry and a precise 1mA detector. As soon as 1mA is conducted through clamping type devices, such as MOVs and avalanche diodes, the control circuits removes the test voltage from the output terminals and displays the clamping voltage on the meter. A low energy capacitive circuit will discharge through crowbar type protectors, such as gas tubes and carbon blocks, and trigger the detector. The breakdown voltage will be displayed and the test voltage removed.

## Operation

Internal switches for ramp speed and discharge circuit type are accessed by removing the back cover. They are to be set for the intended application: 200 V/s for laboratory tests or QC type approvals; 1000 V/s for high-speed testing or sorting. The IEEE discharge circuit permits gas tubes to conduct in the arc mode, while the ITU circuit generally allows only glow currents to flow.

Pushing the test button applies a linear ramp to the device under test. Sensing circuitry automatically terminates the test when either the dc breakdown or 1mA clamping voltage is reached. The test value is maintained on the LCD display until the test button is released.

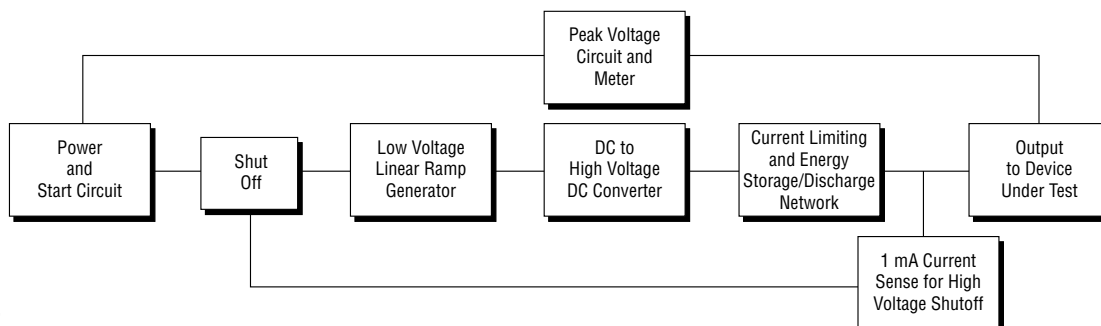
## Specifications

|                                         |                                        |
|-----------------------------------------|----------------------------------------|
| Open Circuit Voltage Rate of Rise ..... | 200V/s or 1000 V/s                     |
| Maximum Output Voltage .....            | 1000 V                                 |
| Useable Measuring Range .....           | 10-1000 V                              |
| Test Current for Clamping Devices ..... | 1 mA $\pm$ 10 %                        |
| Test Current for Crowbar Devices .....  | >1 A                                   |
| Operating Temperature .....             | 0 to +50 °C                            |
| Storage Temperature .....               | -10 to +60 °C                          |
| Measurement Accuracy .....              | 0.5 %                                  |
| Power Source .....                      | 3 lithium batteries - NEMA type 5024LC |
| Battery Life                            |                                        |
| 200 V/s .....                           | Up to 10,000 tests                     |
| 1000 V/s .....                          | Up to 50,000 tests                     |
| Shipping Weight .....                   | 2 lbs.                                 |
| Warranty .....                          | 2 years                                |

## Notes:

- For P-type thyristor protectors, breakdown voltage  $V_{BO}$  occurs at the device zener voltage  $V_Z$ . Therefore, the tester will measure actual  $V_{BO}$ .
- For N-type thyristor protectors, breakover voltage  $V_{BO}$  is higher than the zener voltage  $V_Z$ . For these devices, the tester will measure  $V_Z$ .

## Functional Block Diagram



REV. D, 09/03

Specifications are subject to change without notice.  
Customers should verify actual device performance in their specific applications.

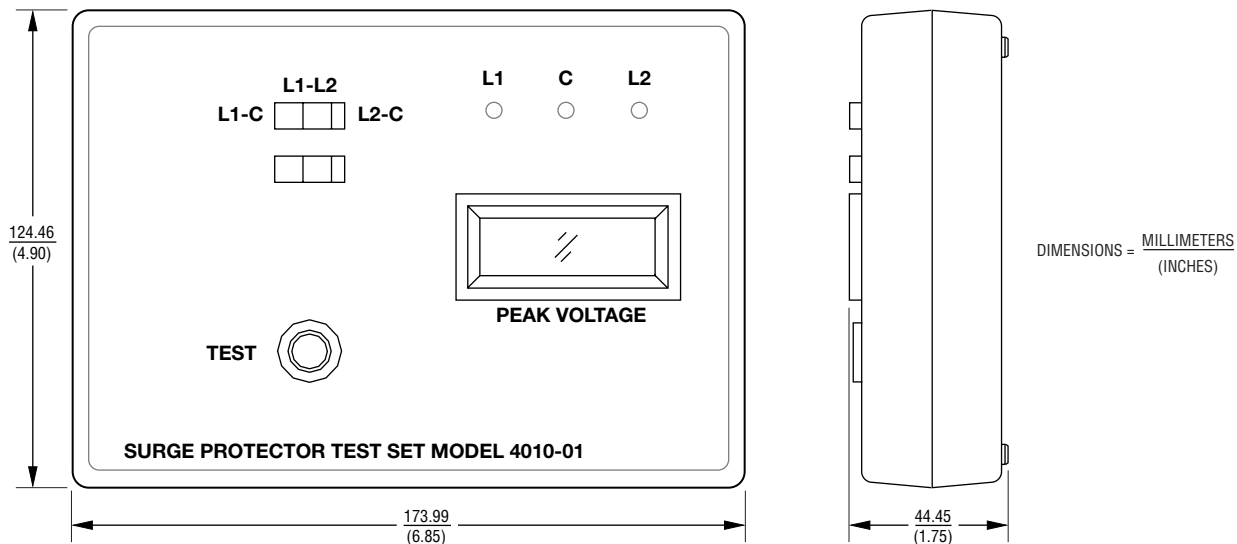
## Additional Features

- Selector switches for complete testing between all terminals and polarities
- Linear voltage ramp, selectable for 200 V/s or 1000 V/s operation
- Selectable IEEE or CCITT type discharge circuits
- Wide range of adapters for standard protector types

## 4010-01 - Surge Protector Test Set

**BOURNS®**

### Product Dimensions



### How To Order

| Part No.        | Accessories Included                                                                         | Part No.        | Available Separately                                                                                |
|-----------------|----------------------------------------------------------------------------------------------|-----------------|-----------------------------------------------------------------------------------------------------|
| 4010-01 .....   | No Accessories                                                                               | 30503-01 .....  | Test Cable w/Alligator Clip - Red                                                                   |
| 4010-01-A ..... | Nylon Carrying Case                                                                          | 30503-02 .....  | Test Cable w/Alligator Clip - Black                                                                 |
| 4010-01-B ..... | Nylon Case, 48-inch Leads w/Alligator Clips<br>(Suitable for Testing A.C. Arresters on Site) | 4020-00-A ..... | A.C. Power Adapter                                                                                  |
| 4010-01-C ..... | Nylon Case, P/N 72288 and 72289 Gas Tube<br>Adapters                                         | 72288 .....     | Adapter for 2-pole Gas Tubes, Fits 6 and<br>8 mm High Gas Tubes and Most Carbon<br>Block Protectors |
| 4010-01-D ..... | Nylon Case, P/N 72291 5-Pin Module<br>Adapter                                                | 72289 .....     | Adapter for 3-pole Gas Tubes with Leads on<br>4.4, 4.7 and 6.4 mm Centers                           |
|                 |                                                                                              | 72291 .....     | Adapter for Standard 300 Series 5-pin<br>Protector Module                                           |



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Электрон  
Связь**

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