

# MODEL DC-1/10/20B

## Digital Spark Tester

- Split electrode design for easy string-up
- DSP based voltage regulation and differentiation of four fault-types
- LED display viewable up to 200 feet away
- Customizable front panel password security
- Voltage Watchdog
- Percent load meter
- Automatic calibration with Clinton STCAL system
- Communications: Modbus RTU via RS-485  
Optional: Analog, Ethernet/IP, Modbus TCP, Profibus, PROFINET, DeviceNET

DC-1/10/20B/BD-12S with RC Control



The Clinton model DC-1/10/20B DC Spark Tester combines the latest in technology and innovative features for DC spark testing of wire and cable.

Using DSP based fault typing the DC-B can differentiate between four fault conditions: pinhole, direct metal contact, multi-pinhole and gross bare wire.

The new BD-12S, BD-13S and BD-14S split electrode designs provide an easy way to string-up wire through the electrode, guaranteeing precise center alignment for the most effective and reliable testing. The bead chain assemblies are positioned to eliminate gaps between bead rows, providing the best coverage around the product at all times.

The DC-B can be quickly configured for extrusion or re-spooling or operations through a simple configuration menu on the alphanumeric display. During spark testing, critical data such as test voltage, percent load, and counts for particular fault types can be easily accessed. Additionally, descriptive codes inform the operator when there is an error. For example, when the protective electrode cover is open.

The display module can be mounted to the unit as shown, or can be installed up to 200 feet away, with an optional longer interconnecting cable.

The DC-B can connect easily to a PLC with Modbus RTU via RS-485 full duplex. Optional Analog, DeviceNET, Ethernet/IP, PROFINET, Profibus, and Modbus TCP communications are available.

Wiring and setup are done externally; there is no need to open the unit. One form C and three form A relay contacts are located on the rear panel for easy connection to external alarms, lights, or machinery controlled by the spark tester.

Relay function may be selected from options including: high voltage ON indication, fault alarm, bare wire alarm, and voltage watchdog (when enabled, the equipment will alert when a preset upper or lower voltage is exceeded).

The DC-B features a flexible front panel password security, locking out unauthorized changes to test voltage and other settings. The unit also monitors output voltage at the electrode and notifies the operator if voltage at the electrode should become disconnected.

The DC-B spark tester series offers standard electrodes that meet UL, CSA, and all known international standards for wire products and production line speeds. Specifically designed electrodes are available to accommodate a wide range of product sizes and shapes.

The DC-B can be automatically calibrated for voltage to IEC/CEI 62230, EN 50356, UL, and NEMA standards with the Clinton Instrument Company's STCAL system.

**Clinton**  
INSTRUMENT COMPANY

# DC-B

## SPECIFICATIONS

### Voltage Test Range:

DC-1B	50 Volts to 1kV DC
DC-10B	500 Volts to 10kV DC
DC-20B	500 Volts to 20kV DC

### Voltage Accuracy

+/- 2% of reading

### Output Power

DC-1B	2.0 mA maximum
DC-10B	1.5 mA maximum
DC-20B	0.75 mA maximum

### Fault Indication

White 3-digit 20.32mm high LED display, amber fault indicating LED

### Fault Resolution

Variable with electrode length or directly configurable from 1 millisecond to 2 seconds  
Conforms to IEC 62230

### Detection Sensitivity

### Operating Modes

Continuous HV/remove voltage on fault, momentary process control/latch until reset  
1 Form C, 3 Form A / Configurable Functionality  
Relay contacts rated 1A max @ 240VAC or 2A max @ 120VAC for both NO and NC circuits. Front panel or external reset. In non-latch modes, closure time is adjustable in 10 millisecond increments from 50 milliseconds to 2 1/2 seconds

### Power Requirements

100 to 240VAC 49-61 Hz. Power supply self-adjusting

### Safety

Designed to IEC-1010

### Communications

Modbus RTU via RS-485

### Optional

Analog, Ethernet IP, Modbus TCP, Profibus,

### Communications

Profinet, DeviceNET

# DC-B

## ELECTRODES

### Bead Chain Assemblies

BD-12S	Bead Chain Assembly 3/4" Product Diameter, 2" along the wire line.
BD-13S	Bead Chain Assembly 3/4" Product Diameter, 3" along the wire line.
BD-14S	Bead Chain Assembly 3/4" Product Diameter, 4" along the wire line.
BD-15	Bead Chain Assembly 3/4" Product Diameter, 5" along the wire line.
BD-22S	Bead Chain Assembly 2" Product Diameter, 2" along the wire line.

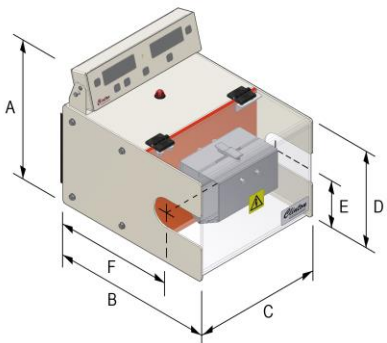
### Brush Assemblies

BR-1A	Brush Assembly Phosphor Bronze 1" Product Diameter.
BR-1ALZ	Brush Assembly Phosphor Bronze 1" Product Diameter, 10kV max.
BR-3A	Brush Assembly Phosphor Bronze 3" Product Diameter.
BR-3ALZ	Brush Assembly Phosphor Bronze 3" Product Diameter, 10kV max.
BRTC-6LZ	Brush Assembly Tape Cable 6", 10kV max.
BRTC-12LZ	Brush Assembly Tape Cable 12", 10kV max.
FB-12	Fiberlite Brush Assembly.

### Roller Assemblies

R-46	Roller Assembly .2" (6mm) max. Product Thickness, 6" (152mm) Product Width.
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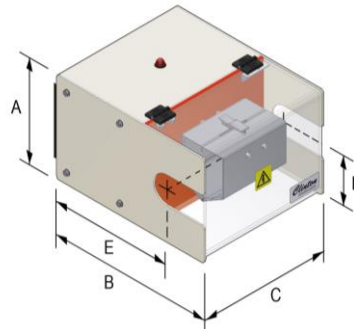
### Dimensions for DC-1/10/20B with RC Display Mounted



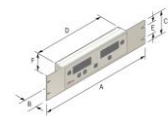
#### Wireline Center

	A	B	C	D	Wireline Center	
					Vertical	Horizontal
BD-12S, 13S, 14S, BR-1A, BR-1ALZ, FB-12	11.3" [287 mm]	13.9" [353 mm]	11.5" [293 mm]	7.5" [190 mm]	3.8" [95 mm]	10.0" [254 mm]
BD-22S	12.3" [312 mm]	15.4" [391 mm]	11.6" [294 mm]	8.5" [216 mm]	4.3" [109 mm]	11.0" [279 mm]
BD-15	13.2" [335 mm]	16.3" [414 mm]	12.5" [318 mm]	9.4" [240 mm]	4.8" [120 mm]	11.5" [290 mm]
BR-3A, BR-3ALZ	13.2" [335 mm]	17.8" [452 mm]	13.5" [343 mm]	9.4" [240 mm]	Call factory for details	
BRTC-6	13.2" [335 mm]	19.1" [485 mm]	12.5" [318 mm]	9.4" [240 mm]	Call factory for details	

### Dimensions for DC-1/10/20B with no Display



### Rack Mounted RC



A	19.0" [483 mm]
B	1.8" [46 mm]
C	3.5" [89 mm]
D	11.2" [285 mm]
E	1.8" [45 mm]
F	3.1" [79 mm]

#### Wireline Center

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