

Programma

B10E AC/DC Voltage Power Supply



- **Reliable and stable power supply for circuit breaker testing**
- **Continuously variable 24-250 V AC or DC output**
- **Separate outputs for close coil, trip coil and spring charging motor voltage**
- **Direct triggering for minimum trip voltage testing**

DESCRIPTION

A variable DC voltage is needed to test a circuit breaker. Substation batteries should not be used since this entails considerable risk for testing personnel, testing equipment and also for the equipment being tested. The best way to ascertain whether or not solenoids and protective mechanisms are sluggish or working properly is to perform a test at minimum tripping voltage. The minimum trip voltage test is described in international and national standards such as IEC 62271-100, ANSI C37.09 etc.

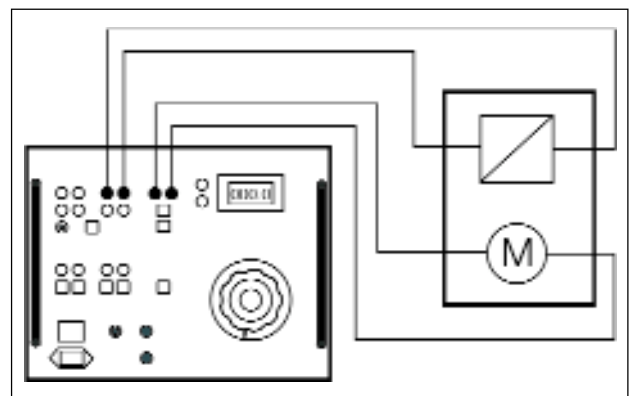
B10E can be used to test breaker coils in this manner. It provides a ripple-free variable DC voltage that can easily accommodate a high, variable load.

Since there is a separate output for supplying spring-charging motors, the B10E is ideal for testing circuit breakers where auxiliary voltage is not connected or available.

The compact Power Supply Unit B10E provides reliable assistance to those who do maintenance on high-voltage breakers. The control panel's intuitive layout makes it easy to operate, and the built-in thermal cutout and overload protector make it safe to use. The B10E has been developed in collaboration with breaker manufacturers and testing personnel.

APPLICATION

The B10E is a portable self contained test set designed specifically for use in substations and industrial locations. The B10E is intended for testing medium voltage power circuit breakers. Using the latest technology the B10E uses a ripple free variable DC voltage to operate breaker coils, and charging motors to ascertain the condition of these devices with respect to the manufacturer's original specifications.



Application example: testing the minimum trip voltage of a breaker.

FEATURES AND BENEFITS

- B10E can be operated with a breaker analyzer for efficiency in testing sequence.
- Digital voltage readout display for voltage selection.
- Discrete button for turning on spring-charging motor voltage.
- Changeover switch used to select either coil outputs or spring-charging motor outputs.
- Output for AC/DC voltage supplied to closing/breaking (tripping) coil
- No need for customer-owned power supply for testing electrical operation of medium voltage breakers.

SPECIFICATIONS

Specifications are valid at nominal input voltage and an ambient temperature of +25° C, (77° F). Specifications are subject to change without notice.

Environment

Application field	The instrument is intended for use in high-voltage substations and industrial environments.
Temperature	
Operating	0° C to +50° C (32° F to +122° F)
Storage & transport	-40° C to +70° C (-40° F to +158° F)
Humidity	5% – 95% RH, non-condensing

CE-marking

EMC 89/336/EEC	EMC Directive 89/336/EEC am. by 91/263/EEC, 92/31/EEC and 93/68/EEC
LVD	Low Voltage Directive 73/23/ EEC am. by 93/68/EEC

General

Voltage	115/230 (135/250) V AC, 50/60 Hz
Power consumption	1500 VA continuous
Protection	Thermal cut-outs, +80° C (+176° F) Short-circuit protectors at DC outputs

Dimensions

Instrument	350 x 270 x 220 mm (13.8" x 10.6" x 8.7")
Transport case	610 x 290 x 360 mm (24.0" x 11.4" x 14.2")
Weight	20.8 kg (45.8 lbs) 29.3 kg (64.6 lbs) with accessories and transport case
Test lead set, with 4 mm stackable safety plugs	2 x 0.25 m (0.8 ft), 2.5 mm ² 2 x 0.5 m (1.6 ft), 2.5 mm ² 8 x 2 m (6.6 ft), 2.5 mm ²
Display	LCD

Measurement section

Voltmeter – digital

Range	0 – 300 V DC, 0 – 300 V AC
Resolution	0.1 V
Accuracy	±1% of displayed value, DC ±2.5% of displayed value, AC
Current shunt	5 A/50 mV ±0.5% (built-in)

Outputs (DC), CATII Coil, Closing/Tripping

Output voltage	24-250 V DC
Load interval	Max 1 s (at currents over ~50 mA)
Ripple	2% peak-to-peak of the preset voltage

No-load voltage (V)	Current (A)	Load dependency
24	10	< 6 %
48	10	< 3 %
110	7.9	< 2 %
250	3	< 2 %
300	1.25	< 2 %

Outputs (AC), CATII Coil, Closing/Tripping

Output voltage	24-300 V AC
Load current	Max 5 A
Load interval	Max 30 min

Outputs (DC), CATII Motor

Open circuit voltage (V)	Current (A)	Load voltage (V)	Max load interval (s)
44	18	24	20
48	12	40	60
48	18	30	20
120	12	90	60
120	18	70	20
240	6	200	60
240	9	185	20

Max Voltage: Terminals to protective earth (ground)

Terminal	Voltage
Coil closing, AC & DC	300 V AC
Coil breaking, AC & DC	300 V AC
Motor	250 V AC
Shunt	250 V AC
Trigger Closing	250 V AC
Trigger Breaking	250 V AC



Test lead set

CONTROL PANEL OF B10E



1. Button for turning on spring-charging motor voltage.
2. Changeover switch used to select either coil outputs or spring-charging motor outputs.
3. Outputs for DC voltage supplied to closing/breaking coil.
4. Output for AC voltage supplied to closing/breaking coil.
5. Changeover switch used to select either DC or AC coil outputs.
6. 4 A fuse for AC outputs.
7. DC voltage outputs for spring-charging motor. Provide unsmoothed, half-wave rectified DC ranging up to 18 A.
8. Button for manual triggering pulse via coil outputs. (Switch 9 set to voltage position.)
9. Changeover switch used to select either contact sensing or voltage sensing at the trig input.
10. Input for external trig signal or short-circuiting jumper.
11. Reset button for thermal, overload and/or time-limit cutouts.
12. Master ON/OFF switch.
13. Inlet for mains power.
14. 7 A miniature circuit breaker for DC spring-charging motor.
15. Grounding terminal.
16. Changeover switches (A) and (B) for incoming power 115/230/135/250 V AC.
17. Current shunt used to measure external current in coils or spring-charging motor.
18. Voltmeter.
19. Variable transformer.

ORDERING INFORMATION

Item (Qty)	Cat. No.
B10E AC/DC Voltage Power Supply	BG-29092
Included Accessories	
Cable set	GA-00032
Transport case	GD-00182