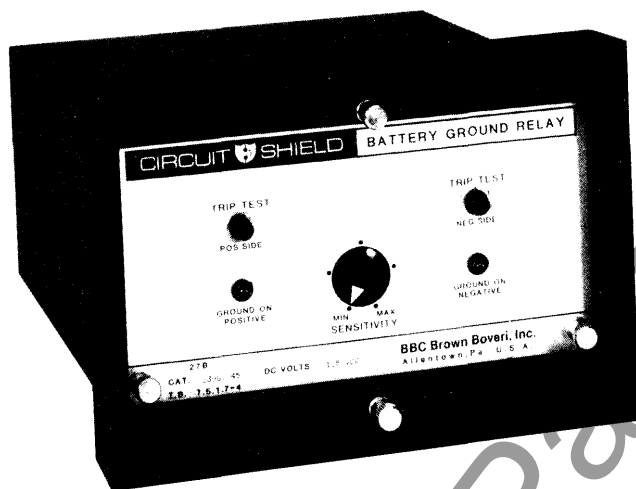


September 1995  
Supersedes Descriptive Bulletin 41-232S,  
pages 1-2, dated September 1990  
Mailed to: E, D, C/41-200B

Device Number: 27

## CIRCUIT SHIELD<sup>®</sup> Type 27B Battery Ground Detector Relay



### Application

The Type 27B is used to detect grounds on the normally ungrounded DC control power bus, and to indicate whether the ground is on the positive or negative conductor. This is accomplished by measuring the difference in potential between ground and the midpoint voltage. A sensitivity adjustment is provided on the front panel for the relay.

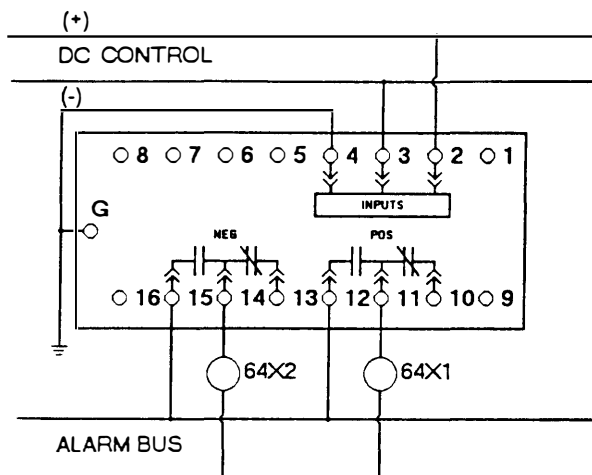
For a 125 Vdc system, a fault resistance from the positive or negative conductor to ground of 50,000 ohms or less can be detected.

When a ground is alarmed, action should be taken immediately to locate and remove it in order to preserve the reliability of the control power system.

Inherently high seismic capability makes the relay attractive for nuclear applications.

### Features

- Built-in test
- Seismic capability to 6g ZPA
- Transient immunity
- Drawout construction
- LED operation indicator
- 2 year warranty



64x1 – auxiliary relay or annunciator; alarm for ground on positive.

64x2 – auxiliary relay or annunciator; alarm for ground on negative.

Figure 1 — Typical Connections

## Specifications

<b>Input Circuit Rating:</b>	100-140 Vdc (125 Vdc nominal unit) 88-125 Vdc (110 Vdc nominal unit) 38-58 Vdc (48 Vdc nominal unit)
<b>Output Circuit Rating:</b>	Each contact at 125 Vdc 30 amps, Tripping Duty 5 amps, Continuous 1 amp, Opening Resistance 0.3 amps, Opening Inductive
<b>Input Circuit Burden:</b>	50 ma. maximum
<b>Operating Time:</b>	Approximately 75 ms. for solid ground condition.
<b>Temperature:</b>	Minus 20°C to Plus 70°C
<b>Seismic Capability:</b>	More than 6g ZPA either axis biaxial multifrequency vibration without damage or malfunction (ANSI/IEEE C37.98).
<b>Transient Immunity:</b>	More than 3000V, 1 MHz bursts at 60 Hz repetition rate, continuous (ANSI 37.90a SWC); Fast transient test; EMI test.
<b>Dielectric:</b>	2000 Vac RMS, 1 minute, all circuits to ground.
<b>Weight:</b>	Unboxed — 3.2 lbs. (1.4 Kg) Boxed — 3.9 lbs. (1.7 Kg)
<b>Volume:</b>	0.26 cubic feet

## How To Specify

Relay shall be Asea Brown Boveri Type 27B or approved equal. Relay shall be capable of withstanding 6g ZPA seismic stress without malfunctions. Operations indicator shall be provided to allow operational test without additional equipment.

## How To Order

For a complete listing of available DC relays, see TD 41-025.

To place an order, or for further information, contact the nearest ABB Representative.

## Further Information

List Prices: PL 41-020  
Technical Data: TD 41-025  
Instruction Book: IB 7.5.1.7-4  
Other Protective Relays:  
Application Selector Guide, TD 41-016

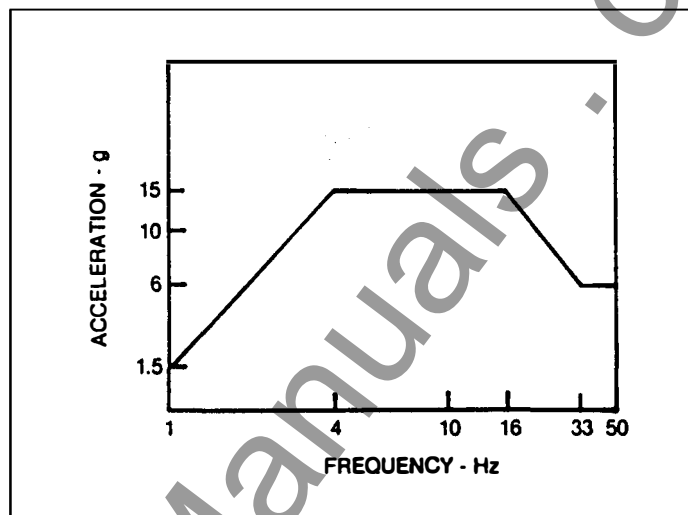


Figure 2 — Seismic Test Response Spectrum

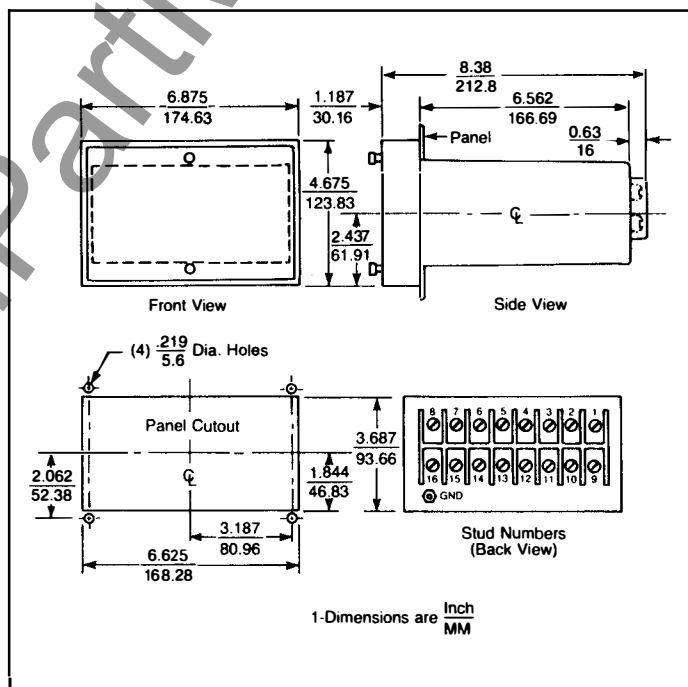


Figure 3 — Relay Outline



ABB Power T&D Company Inc.  
Relay Division  
Coral Springs, FL  
Allentown, PA

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CIRCUIT SHIELD<sup>®</sup>  
**Type 27B**  
**Battery Ground**  
**Detector Relay**

Type	Rated Voltage	Max. Cont. Voltage	Output Contacts	Catalog Numbers Drawout Test Case
27B	125 Vdc 110 Vdc 48 Vdc	140 Vdc 125 Vdc 58 Vdc	2 form C	439G0045 439G0005 439G0035

Internal Connections: 16D439C

### Internal Connection Diagram

16D439C      Type 27B  
Battery Ground Relay  
Drawout Test Case

