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

September, 1990
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Mailed to: E, D, C/41-100B

2 Phases and Ground
Device Number: 50

CIRCUIT SHIELD®

Type 50B Fault Current Detector Relay

Application

The Type 50B fault current detector relay provides 2 phase and ground overcurrent detection. It finds application in breaker failure and other schemes where an instantaneous overcurrent relay must be self-resetting and have a high dropout to pickup ratio. The pickup settings for the phase and ground units are continuously adjustable over a 10 to 1 range. The dropout to pickup ratio is 98%.

"Torque control" is provided as a standard feature. To torque control the relay, remove the link between terminals 9 and 10 (see Figure 1). Connect the controlling contact across terminals 9 and 10 in place of the link.

A companion timing relay, Type 62B, was designed especially for use with the Type 50B in breaker failure schemes.

Features

- 98% dropout to pickup ratio
- Built-in test
- Seismic capability to 6g ZPA
- Transient immunity
- 2 year warranty

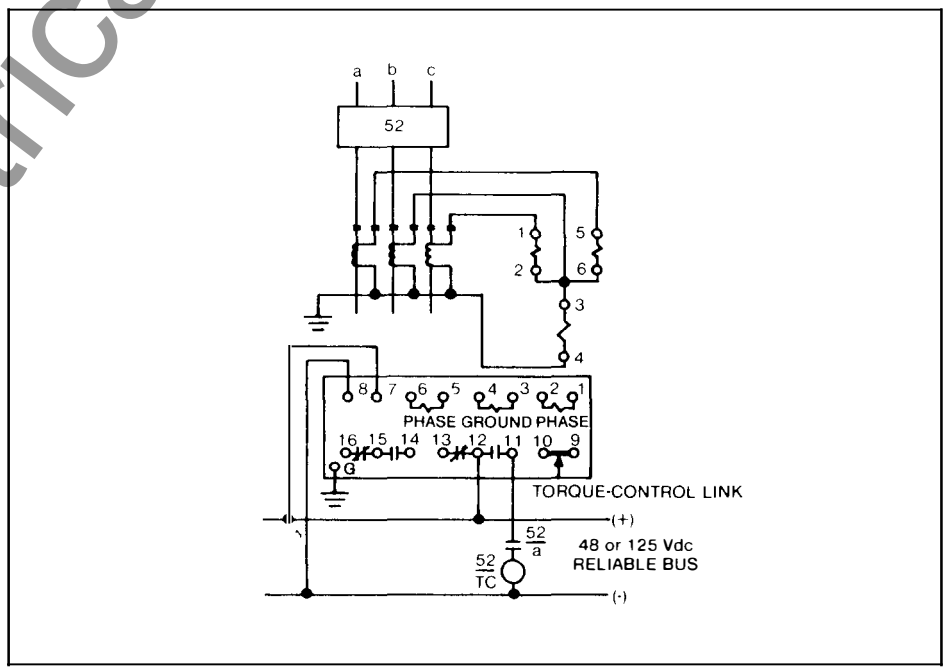

Figure 1. Typical Connections

Specifications

Pickup:	Continuously adjustable phase unit – 2 to 20A, or 0.8 to 8A ground unit – 0.2 to 2A
Input Circuit Rating:	One second – 200A Continuous: 0.8A phase unit; 16A 2.0A phase unit; 20A ground unit; 4A
Burden:	less than 5 VA at 3X pickup, 1.0 pf
Control Power:	Dual rated 48/125 Vdc @ 0.05A; 250 Vdc @ 0.05A
Output Circuit:	2 Form C Contacts
Output Circuit Rating:	Each contact at 125 Vdc 30 amps, Tripping Duty 5 amps, Continuous 1 amp, Opening Resistive 0.3 amp, Opening Inductive
Temperature Range:	Minus 20° to Plus 70°C.
Seismic Capability:	More than 6g ZPA biaxial broadband multifrequency vibration without damage or malfunction (ANSI/IEEE C37.98)
Transient Immunity:	More than 2500 V, 1 MHz bursts at 400 Hz repitition rate, continuous (ANSI C37.90.1 SWC); Fast transient test; EMI test.
Dielectric:	2000 Vac RMS, 60 seconds all circuits to ground.
Weight:	Unboxed – 4.2 lbs. (1.9 kg) Boxed – 4.75 lbs. (2.2 kg)
Volume:	Boxed – 0.26 cubic feet

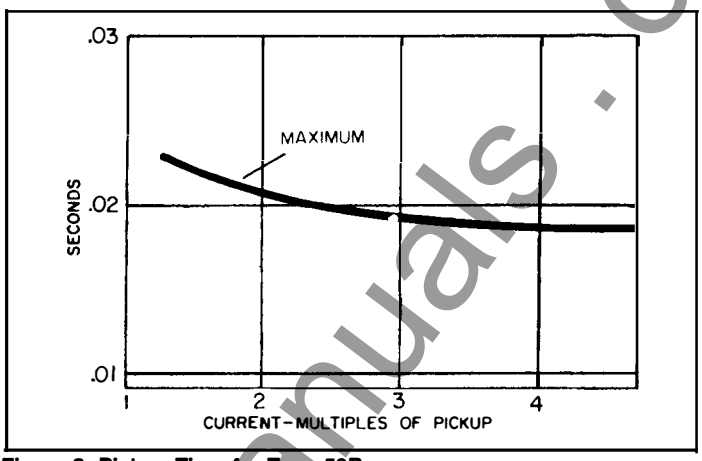

Figure 2: Pickup Time for Type 50B

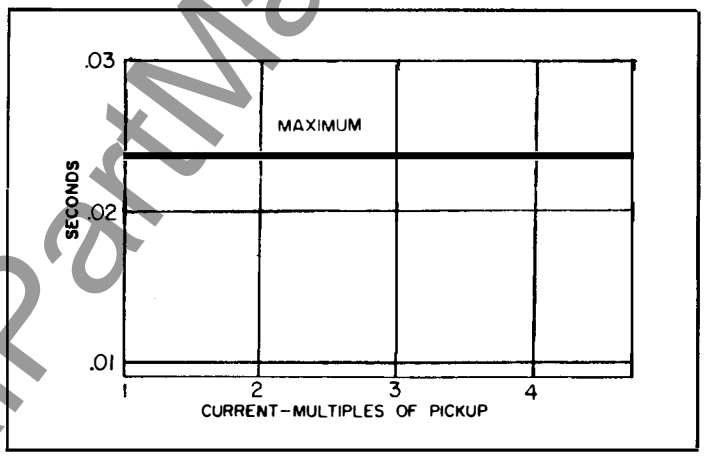

Figure 3. Dropout Time for Type 50B

How To Specify

Relay shall be Asea Brown Boveri Type 50B or equal. Relay shall have independent phase and ground pickup adjustments. Relay shall be capable of withstanding 6g ZPA seismic stress without malfunction. An operation indicator shall be provided. Built-in means shall be provided to allow operational tests without additional equipment.

How To Order

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

To place an order, or for further information, contact the nearest District Office.

Further Information

List Prices: PL 41-020
Technical Data: TD 41-025
Instruction Book (Type 50B): IB 7.2.1.7-3 ①
Instruction Book (Type 62B): IB 7.7.1.7-5 ①
Type 62B Relays: DB 41-527S
Other Protective Relays:
Application Selector Guide, TD 41-016

① Available upon request, only from Allentown Plant.

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2 Phases and Ground
Suitable for 50/60 Hz

CIRCUIT SHIELD ®

Type 50B Fault Current Detector Relay

Type	Continuous Rating Amperes		Pickup Range Amperes		Control Voltage	Catalog Number
	Phase Unit	Ground Unit	Phase Unit	Ground Unit		
50B	20	4	2-20	0.2-2.0	48/125 Vdc	468D5675
					250 Vdc	468D5655
	16	4	0.8-8.0	0.2-2.0	48/125 Vdc	468D5575
					250 Vdc	468D5555

Internal Connections: 16D468B

Internal Connection Diagrams

Note: Control Links must be in place for normal operation. Remove a link only when wiring an external contact to control the relay function. See the particular relay's instruction book for additional information on the use of the control links.

16D468B Type 50B Fault Current Detector Relay Drawout Test Case