CIRCUIT SHIELD

Type 32D
Dual Polarized
High Speed
Directional Relay

Application

The Type 32D may be used as the directional
unit in conjunction with any of the Type 51
time-overcurrent relays. This combination pro-
vides directional, time overcurrent protection
against ground faults. Device 67N.

The maximum torque angle of the relay is
adjustable on the front panel from 10° lag Vpol
between 0 and 90 degrees. See connections
for relative polarities.

Any of the time-current characteristics available
in the Type 51 series may be used, and the
torque control provisions on these relays are
supplied as standard.

When instantaneous as well as time-overcur-
cent protection is required, specify a standard
Type 51 with instantaneous attachment. This
relay is provided with shorting links between
terminals 9 and 10, and between 10 and 11.
For directional control of both time and instan-
taneous, connect as shown in Figure 1, with
both links removed. For directional time, and
non-directional instantaneous, do not remove
the link between 9 and 10, and omit the wired
jumper from 9 to 11.

For special applications an optional sector
width adjustment can be provided, allowing the
trip sector to be set anywhere from 180° down
to 30° wide. Some of these applications are
described in the Application Notes. (See Fur-
ther Information.)

Features

- Adjustable torque angle
- Optional sector width control
- Low burden
- Built-in test
- Seismic capability to 6g ZPA
- Transient immunity
- 2 year warranty
Specifications

Input Circuit Ratings:
- Potential: 120V, nominal
- 210V, maximum continuous
- Current: 5A, nominal
- 10A, Maximum continuous
- 390A, one second

Burden:
- Potential: 0.3VA at 120V
- Current: 0.7VA at 5A

Sensitivity:
- 0.02A at 2.0V
- 0.02A at 120V

Maximum Torque Angle:
- Adjustable 0 to 90 degrees for lag Vpol

Installation Settings:
- For line protection: 45°
- Optional Sector Control: Adjustable 30° to 180°
- Control Power: 24/32 Vdc, 48/125 Vdc, 250 Vdc @ 0.05A drain
- Output Circuit: 2 Normally Open Contacts — Standard
- Output Circuit Rating:
  - Units with Tripping Contacts @ 125Vdc
  - 30 amps, Tripping
  - 5 amps, Continuous
  - 1 amp, Opening Resistive
  - 0.3 amp, Opening Inductive
  - Other models available specifically for controlling Types 51, -50H, -50D -mu51, MMCO Overcurrent Relays.

Operating Time:
- Pickup: Approximately 1 cycle
- Dropout: Approximately 1 cycle

Operating Temperature:
- Minus 20° to plus 70° C

Seismic Capability:
- More than 6g ZPA either AXIS biaxial broadband multifrequency vibration without damage or malfunction, ANSI/IEEE C37.98

Transient Immunity:
- More than 2500V, 1 MHz bursts at 400 Hz repetition rate, continuous (ANSI C37.90a SWC); Fast Transient Test, EMI test.

Weight:
- Unboxed: 4.5 lbs. (2.0 kg)
- Boxed: 5.2 lbs. (2.3 kg)
- Volume: 0.26 cubic feet

How To Specify

Relay shall be Asea Brown Boveri Type 32D or equal. Maximum torque angle adjustment shall be provided. Relay shall be capable of with- standing up to 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 directional relays, see TD 41-025.

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

Further Information

List Prices: PL 41-020
Technical Data: TD 41-025
Instruction Book: IB 18.8.7-4
Application Notes: AN-2, AN-8, AN-9
Other Protective Relays:
Application Selector Guide, TD 41-016

Printed in U.S.A.
June 1993
Type 32D
Dual Polarized
High Speed Directional Relay

<table>
<thead>
<tr>
<th>Type</th>
<th>Protection</th>
<th>Maximum Torque Angle</th>
<th>Sector Width</th>
<th>Sensitivity</th>
<th>Contacts</th>
<th>Internal Connections</th>
<th>Control Voltage</th>
<th>Catalog Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>32D</td>
<td>Ground-Fault</td>
<td>Adjustable</td>
<td>30° - 180°</td>
<td>0.02 A at 2 V</td>
<td>☀</td>
<td>16D425B</td>
<td>24/32 Vdc</td>
<td>425D1090</td>
</tr>
<tr>
<td></td>
<td>Polarized</td>
<td>0 to 90°</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>48/125 Vdc</td>
<td>425D1070</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>250 Vdc</td>
<td>425D1050</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>24/32 Vdc</td>
<td>425D1091</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>48/125 Vdc</td>
<td>425D1071</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>250 Vdc</td>
<td>425D1051</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>24/32 Vdc</td>
<td>425D1093</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>48/125 Vdc</td>
<td>425D1073</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>24/32 Vdc</td>
<td>425D1176</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>180°</td>
<td>0.4 A at 1 V</td>
<td>☑</td>
<td></td>
<td>48/125 Vdc</td>
<td>425D1097</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>48/125 Vdc</td>
<td>425D1077</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>48/125 Vdc</td>
<td>425D1096</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>48/125 Vdc</td>
<td>425D1076</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>30° - 180°</td>
<td>0.02 A at 2 V</td>
<td>☑</td>
<td></td>
<td>48/125 Vdc</td>
<td>425D1096</td>
</tr>
</tbody>
</table>

① For 50 cycle applications, change letter in catalogue number from D to K for Type 32D.
② This model preferred when directional relay will be used to control a Type 51 Relay as in directionally controlled overcurrent relay schemes. This model includes self-resetting indicator lamp.
③ This model required when directional relay will be used to operate lockout relay or trip circuit breaker, as in reverse power schemes. When specified, a normally closed contact between terminals 15 and 16 will be supplied in addition to the standard (2) normally open contacts. When wiring to terminal 16, observe proper clearance of the wire termination to the ground stud terminal "G". This model includes manually reset target.
④ This model required when directional relay will be used to operate lockout relay or trip circuit breaker, as in reverse power schemes. When specified, a normally closed contact between terminals 15 and 16 will be supplied in addition to the standard (2) normally open contacts. When wiring to terminal 16, observe proper clearance of the wire termination to the ground stud terminal "G". This model includes self-resetting indicator lamp.

Internal Connection Diagram

16D425B Type 32D Directional Relay Drawout Test Case

① HC CONTACT 15-16 SUPPLIED ONLY ON UNITS WITH TRIPPING CONTACTS.