

BF3 3-Phase Breaker Failure Relay

The BF3 provides a definite time breaker fail (50BF) function based on three phase current inputs. The BF3 senses if the three phase input current is above the set level I1. If so, it starts the timer T1. When the T1 timer expires the trip output contacts are operated and a breaker fail condition is indicated. A 52a contact input from the circuit breaker is required by the BF3. The initiation of the current level detection begins as soon as the breaker's 52a contact opens.

A separate output contact associated with the pickup of the I1 element is also provided.

OPERATION

Settings are made on the front panel by means of two 4-pole DIP SWITCHES for:

- Trip level of the 50BF element
- Trip time delay of the 50BF element

Targeting is provided as follows:

- 1 Green LED is provided to indicate the presence of auxiliary power supply and normal relay operation.
- 1 Red LED for 50BF trip targeting.

TEST SWITCH

A three position spring lever switch is provided for testing. When operated it simulates a current flow equal to 5 times the rated input current and allows for the complete functional check of the relay and of the trip time delays. In one position the test function does not operate the output relays; in the other it also operates the output relays.

After tripping, output relays and LEDs may be reset by depressing the RESET pushbutton on the relay's front panel.

OUTPUT RELAYS

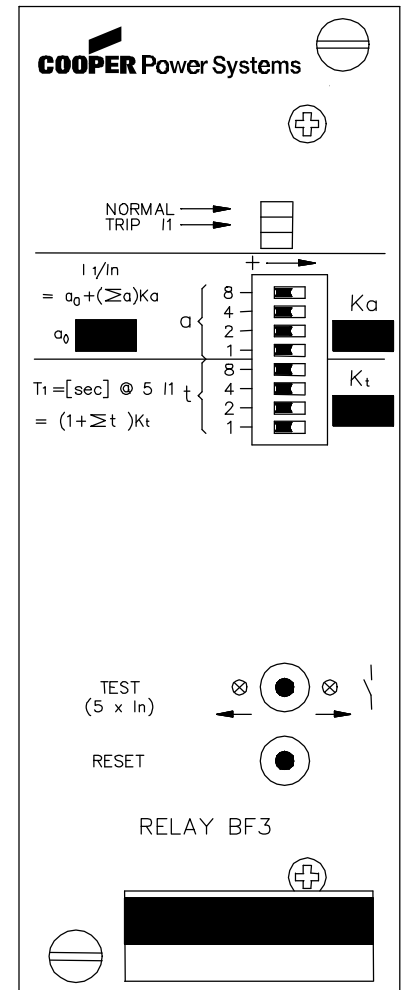
Two output relays are provided:

- R1 time delayed trip
- R2 instantaneous trip

The BF3 is available with the following choice of output contact arrangements:

- 1 NO+1 NC (standard version)
- 2 NO or 2 NC (on request)

The output relays are normally de-energized and are energized on tripping.



ORDERING INFORMATION

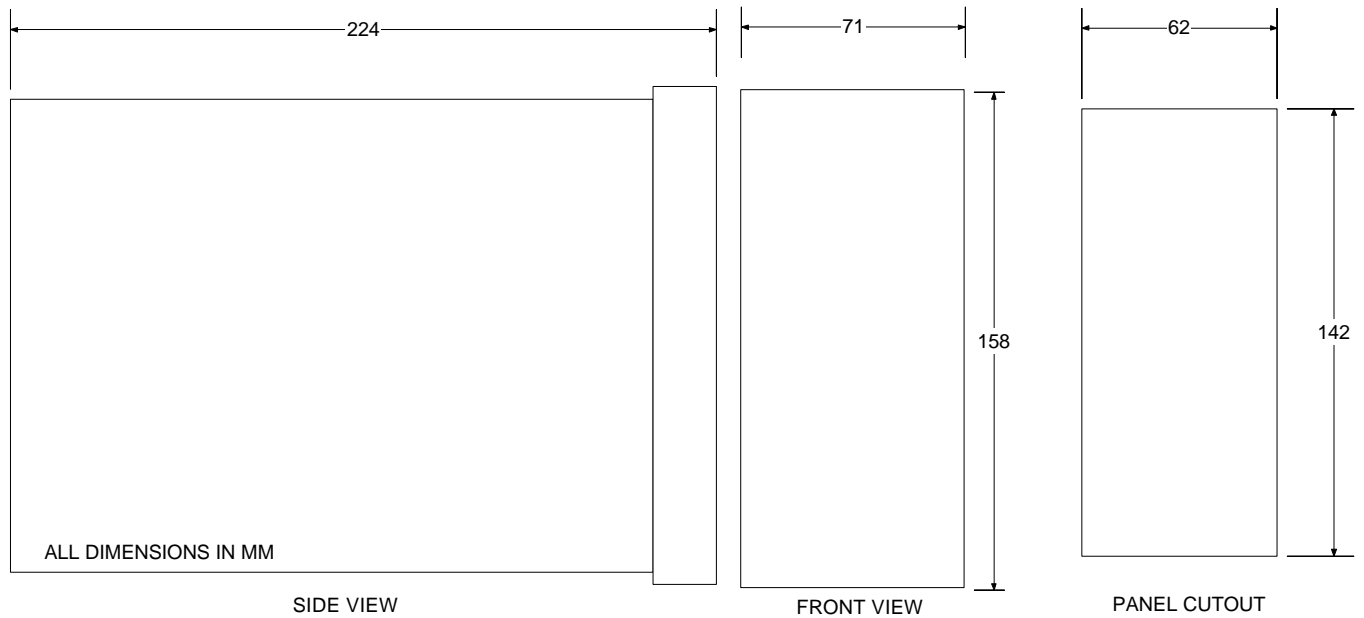
The following information is required when ordering the BF3 relay:

- Rated input current (1A or 5A)
- Auxiliary power supply range
- Setting range
- Output relay configuration

STANDARD SETTING RANGE (Others available upon request.)

FUNCTION SETTING	CURRENT SETTING	step of	TIME	step of
BF3	$I1 = [a_0 + (1 + \sum a)] \times K_a$		$T1 = [1 + (1 + \sum t)] \times K_t$	
50BF-Definite time	$K_a = 0,1 : I1 = 0,1 - 1,6 \times I_n$	$0,1 \times I_n$	$K_t = 0,05 : T1 = 0,05 - 0,8 \text{ sec.}$	0,05sec.

DIMENSIONS



ELECTRICAL CHARACTERISTICS

Rated input current: 1A or 5A

Auxiliary power supply:

Type 1 - 24-110 V D.C./A.C. $\pm 20\%$ permanent

Type 2 - 90-220 V D.C./A.C. $\pm 20\%$ permanent

Burden on current input: 0,02VA at $I_n = 1A$

0,2VA at $I_n = 5A$

Burden on supply voltage: 3 W (D.C.); 6 VA (A.C.)

