

PHASE SEQUENCE RELAY

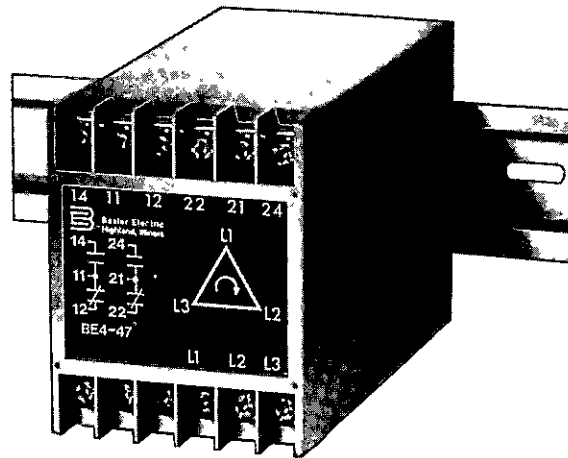
BE4-47

APPLICATION

The BE4-47 will detect reverse phase connection of lines, transformers, motors, and generators. The BE4-47 will protect polyphase ac machinery by preventing the start of the protected machine for open phase or reverse phase sequence conditions. The BE4-47 will trip for undervoltage and phase unbalance. The BE4-47 is recommended for all important busses supplying motor loads.

The BE4 Series Relays are back-of-panel mounted. They install in seconds with standard hardware, or snap onto standard DIN rail.

For applications with more stringent requirements see BE4-47N Phase Balance Relay.



BE4-25
Sync-Check

BE4-27
BE4-59
BE4-27/59
Voltage

BE4-27T
BE4-59T
Voltage with Time
Delay

BE4-32
Reverse Power

BE4-37
BE4-51
BE4-37/51
Current

BE4-47
Phase Sequence

BE4-47N
BE4-47N/27
Phase Balance

BE4-49R
Temperature
(3 RTD)

BE4-49R
Temperature
(6 RTD)

BE4-49T
Thermocouple
Temperature

BE4-74S
Millivolt
Sensing Alarm

BE4-74T
Milliamp
Sensing Alarm

BE4-81U
BE4-81O
BE4-81 O/U
Frequency

HOW TO ORDER:

Designate the Model Number followed by the complete Style Number:

BE4-47 Style Number

Complete the Style Number by selecting one feature from each column of the Style Identification Chart and entering its designation, letter or number, in the appropriate square.

Note: The description of a complete relay must include both Model Number and Style Number.

For UL and CSA on selected styles, see bulletin UFX.

STYLE IDENTIFICATION CHART

<input type="checkbox"/> 3	<input type="checkbox"/> A	<input type="checkbox"/> 4	<input type="checkbox"/> N	<input type="checkbox"/> 2
SENSING TYPE	NOMINAL INPUT	FREQUENCY	EXT. PWR.	OUTPUT TYPE
3 - Three Phase	A - 120V B - 240V C - 380V *S - Special Voltage	2 - 400 Hz 3 - 50 Hz 4 - 60 Hz	N - None	2 - De-energize to trip

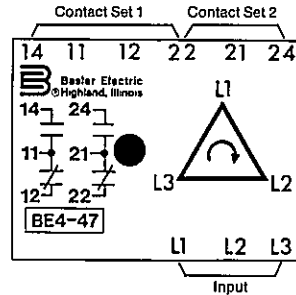
*For other voltage applications, contact the factory.

Example Style Number 3A4N2 has the following characteristics: Three phase (3) 120 volt (A), 60 Hertz input (4) and will not energize when improper phase sequence is applied and will de-energize on phase loss (2).

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BE4-47

RELAY CASE CONNECTIONS



Note: Relay contacts are shown in the de-energized state.

SPECIFICATIONS

Input

Voltage: 120V, 240V, or 416V
Frequency: 50 Hz or 60 Hz
Withstand: 1.2 times continuous
1.5 times for 10 seconds

Output Relay

Type: D.P.D.T.
Rating: AC - 240V, 5 A non-inductive
Mechanical Life: One million operations
Reset: Automatic

General

Dielectric Test: 2 KV RMS for 1 min. per IEC414
Surge Withstand: IEEE 472-1974
Operating Temperature: 0°C to +40°C*
Storage Temperature: -20°C to +70°C
Undervoltage Protection: 85% symmetrical
Case Size: TM2 (See Bulletin UFX for dimensions)
Weight: 0.88 lbs. (0.4 kg)
Operating Time: 400 m seconds

* 0° to +60°C operating temperature is available on standard product without UL and CSA.

THEORY OF OPERATION

The BE4-47 will energize the output relay with the correct phase sequence applied (L1, L2, L3). If an incorrect sequence is applied, the relay will remain de-energized. If there is a phase failure (i.e. one blown fuse), the output relay will de-energize if the voltage in the open phase is less than 70% of nominal. (For more sensitive protection see BE4-47N Phase Balance Relay.)