INSTRUCTIONS
FOR
REVERSE POWER RELAYS
BE3-32

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INTRODUCTION

BE3-32 reverse power relays monitor the direction of power flow from ac generators. Single phase or three-phase, three-wire units are available. If current flow from the generator becomes reversed and exceeds the adjustable setting, the relay will trip. BE3-32 relays can prevent generator motoring due to a loss of prime mover torque. An adjustable DELAY control is provided to avoid tripping caused by transients encountered during synchronization. A RELAY LED is provided to indicate output relay status. The POWER LED indicates the condition of the power supply.

ELECTRICAL SPECIFICATIONS

U.L. Listed, CSA Certified, C.E. Compliant

INPUT

All units are self powered. Nominal voltage - 120 Vac, 240 Vac, 380 Vac, 480 Vac. For other nominal voltages, contact Basler Electric.

Nominal Current	5 amperes

Frequency

50/60 Hz or 400 Hz

Burden

Voltage	Less than 3 VA
Current	Less than 0.5 VA

Overload

Voltage	1.5 times nominal continuously. 2 times nominal for 3 seconds.
Current	2 times nominal continuously. 10 times nominal for 3 seconds.

SETPOINT

Range	Adjustable 2% to 20% of reverse current
Repeatability	Better than 0.5% of full span
Time Delay	Adjustable 0 to 20 sec
Hysteresis	1% of nominal

OUTPUT

Relay Type	D.P.D.T.
AC Rating	250 V, 5 A, non-resistive, 1200 VA
DC Rating	125 V, 1 A, resistive, 120 watts
Mechanical Life	5 million operations

PHYSICAL SPECIFICATIONS

Operating Temperature	0° C (+32° F) to +60° C (+140°F)
Functional Temperature	-25° C (-13° F) to +70° C (158° F)
Storage Temperature	-40° C (-40° F) to +70° C (+158° F)
Temperature Coefficient	0.03% per °C (200 ppm/°C)
Relative Humidity	95% non-condensing
Mounting	DIN rail 1.38“ by 0.29" (35 mm by 7.5 mm)
Case	Complies with IEC 529, DIN 40050, BS 5490
Weight	1.32 lbs. (0.6 kg)
Size	3.94" wide (100 mm)
Case Material	Complies with UL 94VO

OPERATION

The BE3-32 reverse power relays have two external, user adjustable controls marked SET and DELAY. The SET control adjusts the point at which the relay trips when reverse current flow is detected. The SET control is adjustable from 2% (0.1 A) to 20% (1.0 A) of nominal (5 A). When the reverse power setting is exceeded, the output relay energizes and the red RELAY LED lights. The green POWER LED indicates the condition of the power supply. The DELAY control adjusts the time between when the reverse power set-point is exceeded and the output relay energizes. The DELAY control setting range is zero to 20 seconds.

Setting Example

A BE3-32 relay has the following settings:

SET - 10%

DELAY - 10 seconds

The relay will begin timing toward a trip when 0.5 A of reverse current flow is detected. The output relay will trip 10 seconds after the reverse current threshold is exceeded.

INSTALLATION

BE3 reverse power relays are designed for mounting on standard DIN rails that comply to DIN-EN 50022. Mounting involves hooking the top edge of the cutout on the base of the case over one edge of the DIN rail. The opposite side of the cutout containing the release clip is then pushed over the opposite side of the DIN rail. To remove or reposition the relay, lever the release clip and move the relay as required. BE3 relays should be installed in a dry, vibration free location where the ambient temperature does not exceed the operating temperature range. Connections to the relay should be made using wire that meets applicable codes and is properly sized for the application. Figure 1 shows the terminal connections for the BE3-32 relay.

CALIBRATION

The calibration marks on the face plate have a maximum error of 10% and are provided only as guides. Proper calibration requires using an accurate meter to monitor the current. Use the following procedure to calibrate your relay.

SETPOINT

1. Adjust the SET control fully clockwise and the DELAY control fully counterclockwise.
2. Apply nominal input voltage to the relay. Apply the desired value of trip current to the relay. The connections for the current should be reversed to simulate reverse power.
3. Slowly adjust the SET control counter-clockwise until the relay trips.

DELAY

1. Set the DELAY control at the desired time setting.
2. Apply nominal input voltage to the relay.
3. Apply a value of reverse current that is greater than the relay trip point. Measure the time from when the current is applied until the relay trips.
4. Compare the measured time to the desired time delay and adjust the DELAY control accordingly.
5. Repeat Steps 3 and 4 as required.

MAINTENANCE

BE3 relays are solid-state devices that require no maintenance. In the event that your relay requires repair, contact Basler Electric, Highland, IL, USA for return authorization.

BE3 REVERSE POWER RELAYS

Figure 2 shows the BE3 reverse power relay style numbers.

BE3-32-1	Single-Phase Reverse Power
BE3-32-3	3-Phase Reverse Power

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9 3198 00 990	C	Basler Electric	Revised 04/99	1999

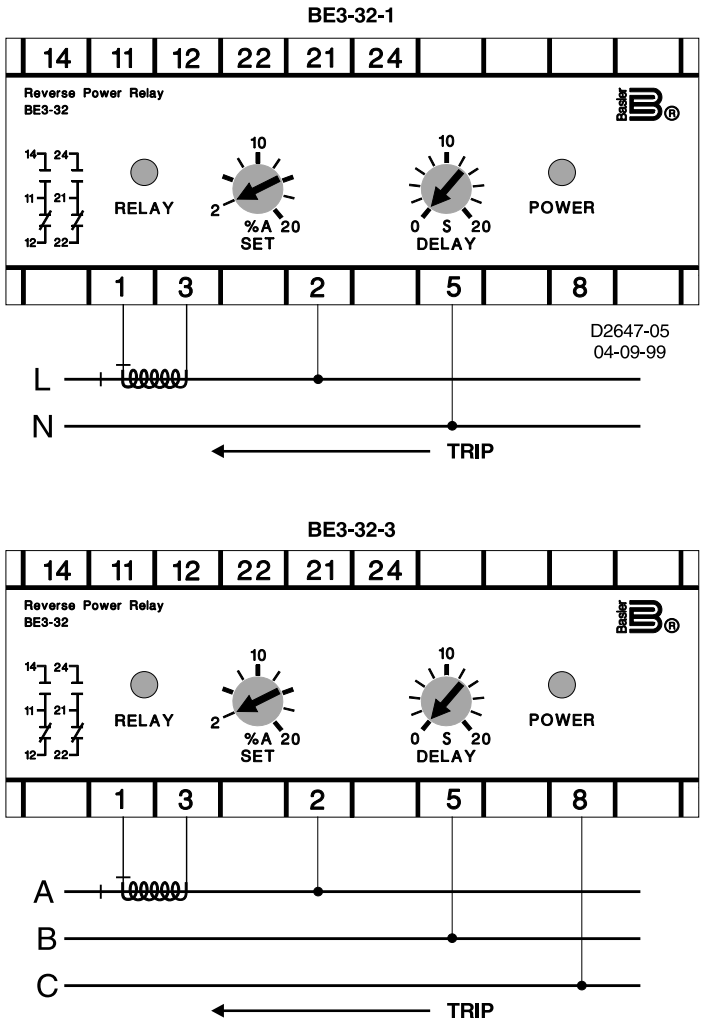

Figure 1. BE3-32-1, BE3-32-3 Reverse Power Relay Connections

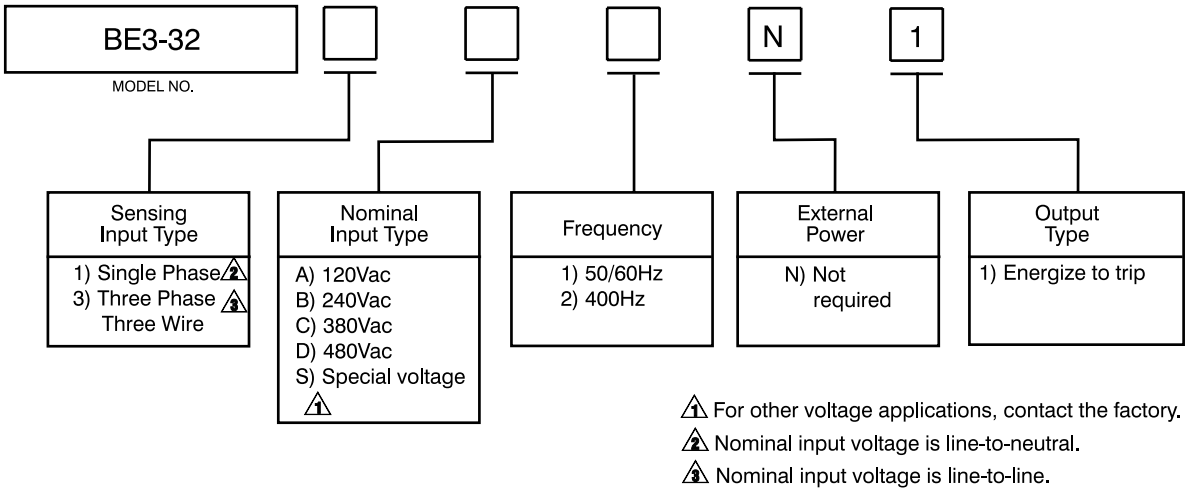

Figure 2. BE3-32-1, BE3-32-3 Style Number Identification Chart