



NLM – TYPE 1

A00031
A00032
A00309
A00461
A01067

Neutral Link Monitor

Revision B

Operation Manual

Neutral Link Monitor Manual

Part number: A00031
A00032
A00309
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Version B
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Overview

1. Application

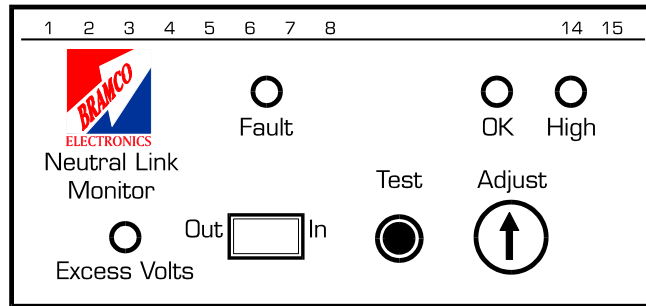
The Bramco Neutral Link Monitor relay is designed to continuously monitor on a supply transformer, the connection to earth of the transformer secondary star point or neutral, either directly or through a current limiting resistor.

2. Features

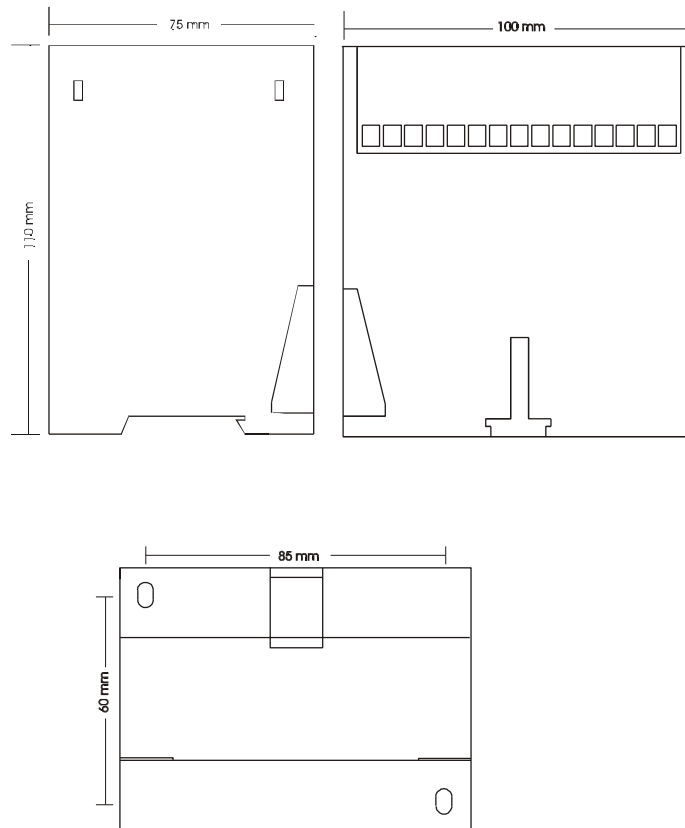
- NLM Module interfaces to the current limiting resistor with a special NLM coupling transformer.
- LED indication of Power On, Resistance OK or High, and Fault status.
- Test push button.
- Fault indicated if coupling transformer not connected.
- Monitor Module and Special coupling transformer factory matched for the specified current limiting resistor value and system voltage.
- Where a latching relay is required the NLM may be used in conjunction with a Bramco Flag Relay.
- High impact PVC housing.
- Convenient Din Rail Mounting.

3. NLM Module

3.1. Front Panel View



3.2. Physical Layout



3.3. Terminal Connections

Terminal Number	Description
1	Control Voltage
2	Control Voltage
3	CR1 Com
4	CR1 N/C
5	CR1 N/O
6	CR2 Com
7	CR2 N/O
8	CR2 N/C
9	
10	
11	
12	
13	
14	
15	To NLM Coupling Transformer
16	To NLM Coupling Transformer

3.4. Setup

- Connect the NLM module and Special Coupling transformer across the limiting resistor as per the Typical Connection diagram.

NOTE: Do not connect the NLM relay contacts to the external circuits until the following set-up is successfully completed.

- Connect the control voltage to the NLM Module.
- The OK Led should be ON. The FAULT Led should be OFF.
 - This OK Led indicates the NLM is calibrated for the limiting resistor and special coupling transformer which are connected.
 - The NLM relay will now be healthy with its changeover contacts in a non-energised state.
- The following Tests should cause a Fault and the CR relay to open.

Test 1:

- Disconnect one of the leads 14 or 15. (Transformer open detection.)
- The HIGH and FAULT Leds should come ON.
- Reconnect lead.

Test 2:

- Disconnect the Star/Neutral connected end of the coupling transformer. (Resistor open detection.)
- The HIGH and FAULT Leds should come ON.
- Reconnect lead.

Connect the NLM relay contacts to external circuits as required.

Choose the IN position for the excess volts function. Select OUT to defeat excess voltage trip.

3.5. Adjustment

Adjustment may be required, if the OK LED is not illuminated when the correct limiting resistor and coupling transformer are connected.

Adjustment Procedure:

- 1) Rotate the ADJUST knob slowly clockwise if the HIGH Led is ON, till the OK Led is ON.
- 2) Rotate the ADJUST knob 1 complete turn beyond this point.

4. Specifications

4.1. NLM Monitor Supply

- 110V AC 50-60Hz
- 240V AC 50-60Hz
- 24-48V AC/DC

4.2. Fault Limit Resistor

- Up to 650 ohms depending on system voltage and limiting current required. Consult the Factory for your system needs.

4.3. System Voltages

- 415/440V
- 1000/1100V

4.4. Trip Tolerance

- -50/+150%

4.5. Operating Time

- 200mS

4.6. Relay Contacts

- 2 pole changeover 5A 240vAC

4.7. NLM Coupling Transformer

- System phase voltage rated

NOTE 1: NLM Module and Coupling Transformer are supplied as a factory matched PAIR.

NOTE 2: When ordering please provide the following information.

To specify the Coupling transformer we need:

1. System voltage: ie 1kV/635V
2. Neutral Resistor value: ie 127R

To specify the NLM module we need:

1. System voltage: ie 1kV/635V
2. Neutral Resistor value: ie 127R ohms
3. Control voltage ie 110VAC

5. Typical Connection Diagram

NLM Type 1 Connection Diagram

