



# Trip Circuit Supervision for M-Family Relays

GE Publication No.: GET-8465A

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## DESCRIPTION

The GE Multilin M-Family of relays can be used to monitor trip circuit integrity (the MIF relay must be ordered as Option 2 to include input/output and logic configurability). The supervision circuit is essentially a Voltage Monitor connected to contact 52a that continuously monitors the voltage level. The circuit shown in the following figures is designed to monitor the complete trip circuit. It includes the tripping coil of the breaker and the trip circuit, the wiring between the relays, and the circuit breaker.

An alarm can be issued when the circuit is open. The figure below shows the typical wiring that provides trip circuit monitoring while the circuit breaker is closed.

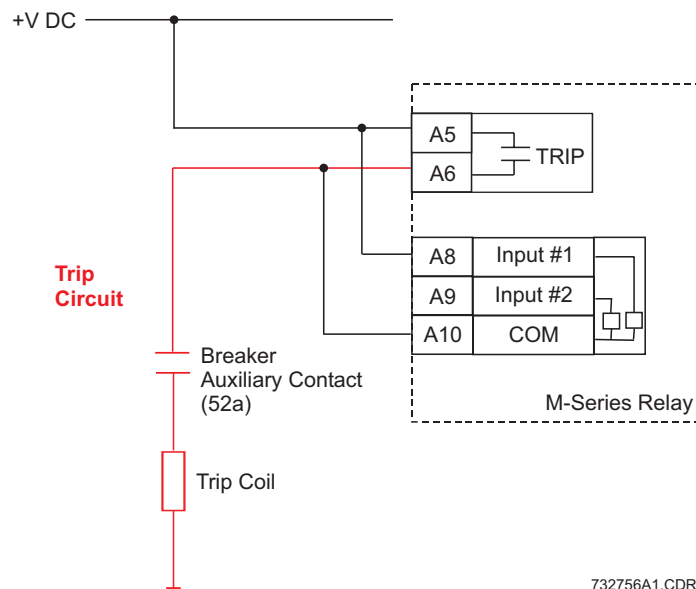
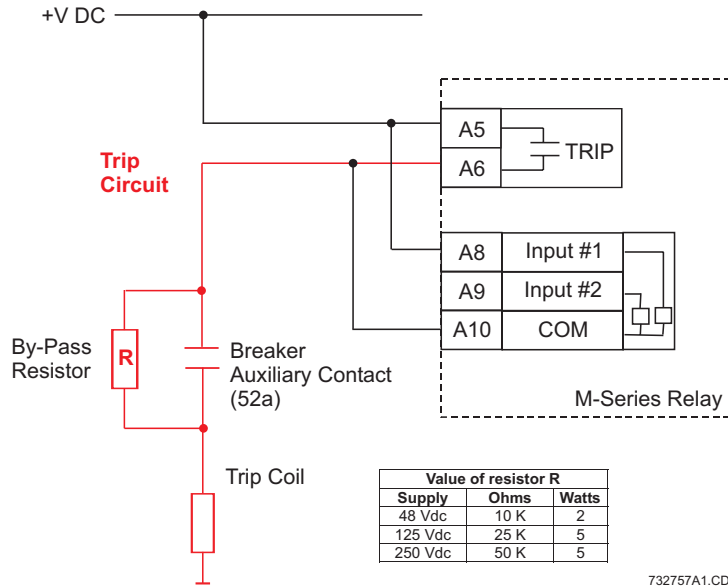


FIGURE 1. Trip Circuit Monitoring for a Closed Breaker

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For continuous monitoring of the trip circuit (this is, while the breaker is open as well as closed), a by-pass resistor must be added in parallel to the 52a contact as shown below. This technique maintains current flow through the circuit when the breaker is open.



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**FIGURE 2. Continuous Trip Circuit Monitoring using a By-Pass Resistor**

**SETTINGS AND CONFIGURATION**

The M+PC settings and configuration related to this function are described in the following procedure:

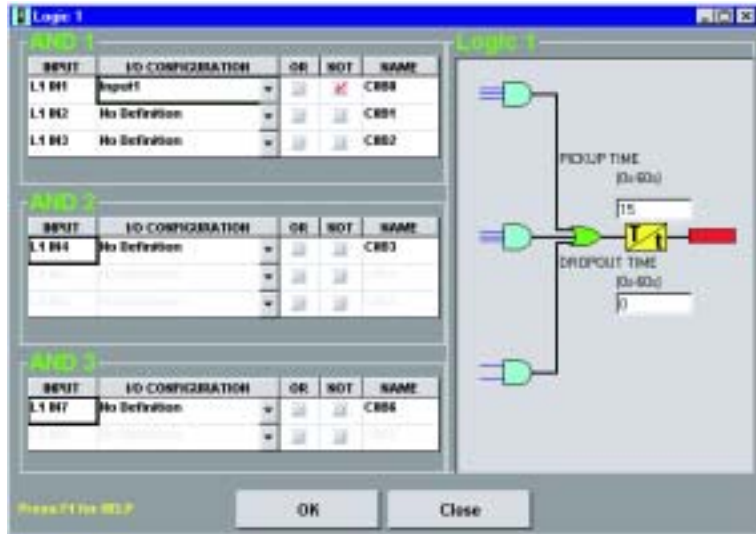
1. Under **I/O Configuration**, the **Input #1** setting must be configured as “General Input”. It will be used to monitor the permanent presence of voltage.



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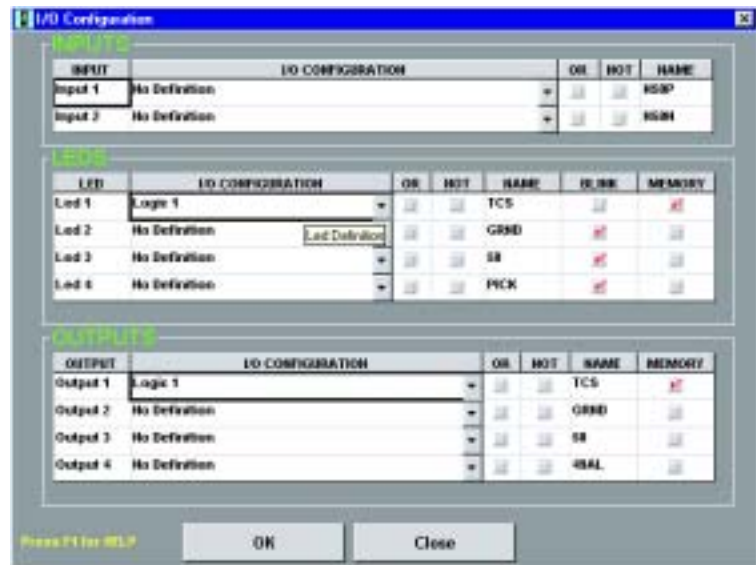
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- Under **Logic Configuration**, select **Logic 1** then Invert Input #1 and set the timer to the required time delay to produce the Trip Circuit Supervision Alarm (for example 15 seconds).



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- Configure LEDs and outputs as required in the **I/O Configuration** window. In this example, **LED 1** and **Configurable Output 1** are configured to operate when a Trip Circuit failure is detected. They are also configured to have memory, so they will remain active even if the Trip Circuit failure disappears.



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