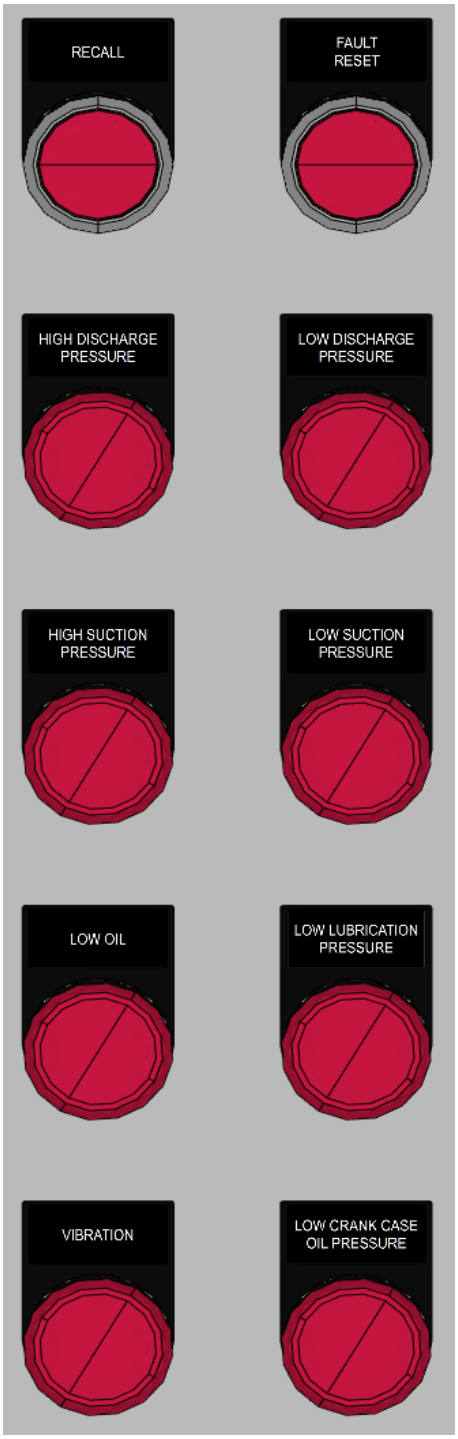
North American Electric

Murphy Switch Interface



1.0 Description

A Murphy Switch Interface is a mechanism that is designed to provide individual fault signals to the system. North American Electric's Murphy Switch Interface displays each signal using individual pilot lights and records the five most recent Murphy fault occurrences.

2.0 Wiring

Each Murphy fault has its own dedicated terminal block inside the panel and is configured for a N.O. (normally open) dry contact closure. Refer to the drawings included with the panel for the terminal connections.

3.0 Operation

While the HOA is in HAND or OFF mode, if a Murphy fault is triggered, the respective light will blink as a warning. If the panel is in operation (i.e., motor running), a Murphy fault will NOT stop the motor.

While the HOA is in AUTO mode and the motor is NOT running, the interface will behave the same as HAND or OFF mode. If the HOA is in AUTO mode and the motor is running, a Murphy fault occurrence will stop the motor. Each Murphy fault has one of two fault conditions; these conditions are defined in the table below.

Table 1 - Murphy Fault Conditions

Murphy Faults	Conditions
High Discharge Pressure	Faults immediately
Low Discharge Pressure	Faults only after motor has ramped to full speed plus a 15-second delay
High Suction Pressure	Faults immediately
Low Suction Pressure	Faults only after motor has ramped to full speed plus a 15-second delay
Low Oil Level	Faults immediately
Low Lubrication Level	Faults immediately
Vibration	Faults only after motor has ramped to full speed plus a 15-second delay
Low Crank Case Oil Level	Faults immediately

If a Murphy fault occurs and the conditions above are met, the system will stop the motor by the coast-to-stop (free-run) method. On the Murphy interface, the specific fault that stopped the system will change from a blinking light to solid and the Fault Reset button will start blinking. All other triggered Murphy faults will stop blinking until the current Murphy fault is reset. To reset the Murphy fault, press the Fault Reset button. If the Murphy fault stops the system while it is running, the Murphy fault will be stored in the system's memory and can be recalled using the Recall button.

4.0 Recall

NAE's Murphy Switch Interface is equipped with a Recall button that can be used to view the five most recent Murphy faults that have occurred. These Murphy faults are stored even if the panel's power is lost. Pressing the Recall button once will cause the Recall button to blink once in a sequence, and the most recent Murphy fault will light up solid. Pressing the Recall button a second time will cause the RECALL button to blink twice in a sequence, and the second most recent Murphy fault will light up. Continuing to press the Recall button will add another blink to the Recall button sequence and show the third, fourth, and fifth most recent Murphy faults that occurred. If the RECALL button is pressed a sixth time, the recall sequence is ended. Pressing the Fault Reset button during the recall sequence will also end the recall sequence. While the recall sequence is active, the Murphy fault(s) that are currently triggered will not blink. If a Murphy fault occurs while the recall sequence is active, the recall sequence will be automatically ended to allow the current fault to be viewed.

5.0 Common Issues

1. The panel is running, a Murphy fault has been triggered, and the light is blinking, but the panel continues to run and does not stop the motor.
    a. Be sure the panel is running in AUTO mode. The Murphy fault will not stop the panel while in HAND mode.
    b. Check the Murphy Fault Conditions table for the specific fault. Certain Murphy faults have a delay that must elapse before the fault occurs and stops the panel.
2. I am pressing the Fault Reset button, but the fault will not reset.
    a. If the panel is in AUTO mode and is setup to run immediately, and a Murphy fault occurs that is conditioned to fault immediately, then the Murphy fault will not clear until the HOA switch is placed in the OFF position, or the Murphy fault itself has cleared.
3. The panel is faulted and will not run, but there are no Murphy faults.
    a. The panel has been faulted due to other, non-Murphy issues. These issues can be either a VFD fault, external fault due to a protection device, or some other fault condition. Check the VFD and refer to the customer documentation for other faulting conditions.

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