
Diagnostics

115 VAC/125 VDC Isolated I/O blocks perform the following diagnostic checks. The block reports all faults to the Hand-held Monitor, and takes appropriate corrective action.

Individual circuits can be configured not to send diagnostic messages to the CPU if a fault occurs. If the CPU requests diagnostic information from the block using Read Diagnostic datagrams, the block returns current diagnostics for all circuits, including any with CPU fault reporting disabled.

Loss of I/O Power Diagnostic

An Isolated I/O block operates as long as power is supplied to terminals 5 and 6. The Loss of I/O Power diagnostic, which is unique to these blocks, indicates that one pair of circuits is disconnected from field power.

If either circuit of the pair is an input, the block sets it to 0. If either circuit is an output, the block turns it off. The block automatically sends a Loss of I/O Power diagnostic message to the Hand-held Monitor. However, the message is not sent to the CPU unless the block is Pulse Tested. The Unit OK LED does *not* blink. When I/O power is restored, the circuits begin operating as soon as power reaches the minimum level.

If I/O power to the block itself is lost, the block cannot send diagnostic messages to the CPU. The bus controller responds as it would to any other loss of block condition.

Overtemperature Diagnostic

Each circuit has a built-in thermal sensor. If the block's internal temperature exceeds 100C, the block sends an OVERTEMPERATURE message and turns off the circuit to protect its internal electronics. This diagnostic is always performed for both inputs and outputs.

Short Circuit Diagnostic

Automatic output diagnostic. Output circuits are always protected by a short circuit level sensor at the switching device. An output will turn off within several microseconds after the instantaneous current exceeds 25 amps at turn-on, or 15 amps after 2 cycles AC or 10mS for DC. The block will try to restart the load; if several attempts are unsuccessful, the output circuit is forced off and the block sends a SHORT CIRCUIT message. To restore normal operation, the cause of the current surge must be removed, then the diagnostic must be cleared from the HHM or the CPU.