

Optical Flame Detector Troubleshooting Guide



Symptom	Possible Root Cause(s)	Actions to Confirm or Resolve
Fault/Trouble Condition	<ol style="list-style-type: none">1. Dirty Optical lens surface or COPM Reflector obstruction2. Loss or Low DC power to unit3. Improper or loose wiring terminations4. Electronic module failure	<ol style="list-style-type: none">1. Clean optics and COPM reflector per instruction manual. Consider installation of optics protection accessories such as rain guard.2. Measure DC voltage at the unit. Ensure DCV is within specification as found in the manual.3. Inspect and tighten all wiring terminations and connectors.4. Replace electronic module with known good module and commission with test lamp.
Nuisance or False Alarm Signal Outputs	<ol style="list-style-type: none">1. Non-fire radiant energy is present within field of view2. Distant radiant energy is reflected into field of view3. Exposure to high levels of vibration or shock4. Electromagnetic interference (EMI) induced into detector or signal cabling5. Improper time delay, sensitivity, or logic solver settings	<ol style="list-style-type: none">1. Identify non-fire radiation sources and work to eliminate or re-aim. Reduce detector sensitivity setting if acceptable in application.2a. Identify distant energy source & relocate/re-aim detectors to avoid. Reduce detector sensitivity setting if acceptable.2b. Confirm false alarm ceases with detector optics completely blocked utilizing a solid plastic bag or bucket. If false alarms continue, then see step 4.3. Eliminate or dampen vibration levels using vibration isolators. Relocate detector to a different install location with reduced vibration/shock level.4a. Inspect cabling for proper routing away from high EMI sources; confirm proper cable shielding and terminations.4b. Confirm proper grounding: no ground faults, ground loops, or abnormal ground voltages.5a. Additional diagnostic information may be available by monitoring detector's analog 4-20mA output signal while problems occur.5b. Consult with factory for other recommendations.
Intermittent or No Alarm Response from TL105 Test Lamp	<ol style="list-style-type: none">1. Insufficient battery charge on TL1052. Improper selection setting on TL1053. Too far away from flame detector being tested4. Partially fouled optics on detector being tested	<ol style="list-style-type: none">1. Ensure full battery charge with Green LED displayed on TL105.2. Identify and ensure proper detector selection setting on TL105 via internal rotary switch.3. Move closer to the specific flame detector being tested and ensure proper alignment/aiming.4. Clean optics on detector being tested.

Note: These general troubleshooting tips can be applied to all MSA Safety flame detectors. Additional guidance on specific model or application troubleshooting may be available from MSA Safety Technical support. Please contact them at 1-800-672-4678 for details.