DET-TRONICS

Technical Bulletin

X3301 Optical Integrity Procedure

The X3301 Protect•ir technology **does not** require a test torch for operational testing of window cleanliness or alarm operation. The following statements apply to the Detector Electronics Corporation Multispectrum IR Flame Detector known as the X3301.

The X3301 is **a self – testing device**, which has been developed by Detector Electronics Corporation. The Technical Bulletin provides an overview and background of the development and implementation of this new capability.

The X3301 optical integrity test is built on the patented design concepts of the optical integrity (Oi) feature, and new supervisory operations. The X3001 flame detector factory default setting for the optical integrity is one test on each sensor per minute, and will generate a fault with 3 consecutive failures. The detectors calibrated optical test parameters are evaluated to factory set values for verification that greater than 50% of the detection range remains.

The optical integrity test also evaluates each sensors present sensitivity level and compares this to the other sensor's values. A fault is generated for under-sensitivity as well as over -sensitivity drift.

The X3301 optical integrity provides fast identification of **ALL** possible fault conditions leaving **NO UNDISCLOSED failure modes.**

Optional optical integrity settings are selectable through the detector programming software. The number of tests can be increased to as high as 15 test periods and 15 consecutive failures before a fault condition is signalled by the detector.

When the test interval and consecutive failures are extended to the maximum the fault condition time is increased to 16 minutes.

Detector Electronics only recommend optical integrity modification when detectors are subject to extensive levels of rain or blizzard like snow conditions.

Even with the success of this automatic test per minute development there are instances when site engineers wish to prove the detectors using a manual test method. The manual Oi test performs the same calibrated test as the automatic optical integrity and will generate an alarm condition when greater than 50% of the detection range remains.

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The following options are available with the X3301.

Option 1:
Connect the manual Oi line thought a PLC, addressable module or simply hardwire a switch to activate by taking terminal 1 to zero voltage. Result: Detector will go into alarm mode and the output will be activated and the LED will show red when greater than 50% of the detection capability remains.

Option 2:
Use a test magnet at the MAG Oi location on the detector; this will select the manual Oi optical integrity test to be performed. The detector will go into alarm mode and the output will be activated and the LED will show red when greater than 50% of the detection capability remains.

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