

# QUESTIONS AND ANSWERS

FV400

**tyco**  
Gas & Flame  
Detection



## QUESTION

What are common applications for flame detection?

## ANSWER

Applications are numerous, including:

- Oil & gas storage, distribution, and manufacturing operations
- Aircraft fueling
- LNG liquification and distribution terminals - Helicopter landing areas
- Airplane Hangars
- Offshore production platforms
- Tanker and cargo ships
- Ports of entry
- Refineries
- Production facilities
- Compressor stations
- Turbine enclosures
- Powder coating processes

## QUESTION

Why would I use the FV400 IR3 flame detector over lower cost UV/IR detectors?

## ANSWER

The FV400 detectors implement a well proven concept for eliminating nuisance false alarms from modulated blackbody sources. The false alarms are more prevalent in UV/IR detectors. The design incorporates a novel optical filter which enables a single electronic infrared sensor to measure the radiated energy present in two separate wavebands placed on either side of the flame detection waveband, at 3.8um and 4.8um respectively.

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## QUESTION

How does Scott's FV400 IR3 detector have better immunity to solar radiation than other IR3 flame detectors?

## ANSWER

Modulated radiation from direct or reflected sunlight, as well as modulated radiation from strong sources of artificial lighting can produce an unwanted response from triple IR flame detectors. To counter this possibility, the FV400 detectors look for the flame in a very narrow waveband where most of the sun radiation is absorbed by CO2 gases in the atmosphere.

## QUESTION

What types of flames can be detected by the FV400?

## ANSWER

The FV400 series of detectors are intended for the protection of high-risk areas where combustion produces carbon dioxide, such as:

- flammable liquids, including petroleum products, alcohol and glycol, etc.
- flammable gases, including methane
- paper wood and packing materials
- coal
- plastics

Note: The detectors are not designed to respond to flames emanating from fuels which do not contain carbon, for example hydrogen, ammonia and metals.

## QUESTION

Do the FV400 detectors have the ability to connect to the MXZ addressable fire control panels?

## ANSWER

Yes, the FV400 detectors connect to the MX range of addressable fire control panels via the MX Loop Interface. The FV400 detectors connect directly to the MX loop and the main power is provided from the loop. The detector must be configured with an address using an MX programming tool. The range and delay options can either be set locally in the detector with the DIP switch settings or remotely from the fire panel using the MX configuration software.

### QUESTION

What other outputs are available for me to use?

### ANSWER

Each FV400 detector as standard is also equipped with Fire and Fault relays that can be configured as Normally Open (NO) or Normally Closed (NC), Latching or Unlatching. The relay contacts are rated at 30 Volts, 2 Amp. There is also an analog 4 to 20 mA current loop output that can be dip switch set to be Current Source or Current Sink. A MODBUS protocol is available via an RS485 connection with 32 nodes and selectable baud rate. Also a two wire conventional interface is available to operate on any typical conventional fire detection controller providing a regulated 20Vdc current monitoring loop.

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### QUESTION

How often should I inspect and test the FV400 flame detector?

### ANSWER

At regular intervals of not more than 3 months, detectors should be visually inspected to confirm that no physical damage has occurred, the detector windows has physical obstructions and that the alignment of the detectors has not been disturbed. At intervals of not more than 1 year, each detector should be checked for correct operation.

### QUESTION

Is there a tool to use when testing the FV400 detectors?

### ANSWER

Yes, the WT300 Walk-Test tool is a portable, handheld and battery powered tool that can be used in hazardous areas to activate the alarm test, window test and reset the FV400 detectors. It uses the IR signals to communicate with the detector to activate commands and has a range of 6m. This means that the Walk-Test Tool can activate tests on the FV400 detectors from the ground without needing poles or any other means to reach the detector.

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### QUESTION

What is NTSC and PAL?

### ANSWER

NTSC is the video system or standard used in North America and most of South America. In NTSC, 30 frames are transmitted each second. Each frame is made up of 525 individual scan lines. PAL is the predominant video system or standard mostly used overseas. In PAL, 25 frames are transmitted each second. Each frame is made up of 625 individual scan lines.