

Technical Note

Fire Alarm versus Fire Verification

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FSX and SS4 Flame Detectors have two Fire Alarm outputs:

- Fire Alarm (1st level)
- Fire Verify (2nd level)

In some cases, these Detectors are fast enough to Alarm to a Flash Fire. A Flash Fire consumes all the fuel and self-extinguishes, as there is not enough energy to sustain combustion. When an Optical Flame Detector Alarms to a Flash Fire, it is not necessary to activate suppression. Therefore, Honeywell FSX and SS4 Flame Detectors provide a second output that requires the Fire to be burning for a preset amount of time. This preset time is called the ‘Verify Time’.

Fire Alarm is the immediate indication that a fire is present. By ‘immediate’, I mean the typical Fire Alarm Relay (1st level) response of 2 to 5 seconds to a 1 sq. ft. heptane fire within the Detectors Field of View and the rated distance per the Sensitivity Setting. When the Fire Alarm Relay is activated, the Verify Timer is started (assume a 5 second Verify Time has been selected). When the Verify Time is complete and the Fire has continued to burn throughout the entire Verify Time, the Auxiliary or Fire Verify Relay (2nd level) will activate.

If the Fire is extinguished before the Verify time is completed, the Verify Timer will reset itself, and the Auxiliary or Fire Verify Relay will not activate. In the case of a re-flash, the Detector treats this as a new Fire Event and the process of Fire Verification begins again. When the Fire is extinguished the Fire Alarm and Auxiliary (Fire Verify) relays will reset within six seconds, unless the Relay outputs have been set to the ‘Latching’ mode of operation.

The Auxiliary or Fire Verify Relay (and not the Fire Alarm Relay) should be used for executive action such as notification, suppression activation, etc.

The SS4 Fire Alarm Relay De-Energizes when the Fire Verify Relay Activates. This operation on the SS4 is different than with the FS20X & FS24X.

These Detectors provide settings, whereby the user can specify the length of the Verify Time:
SS4 – Verify time can be 0, 5, 10, 15, 20, 25, or 30 seconds
FS24X and FS20X – Verify Time can be 0, 5, 10, or 20 seconds

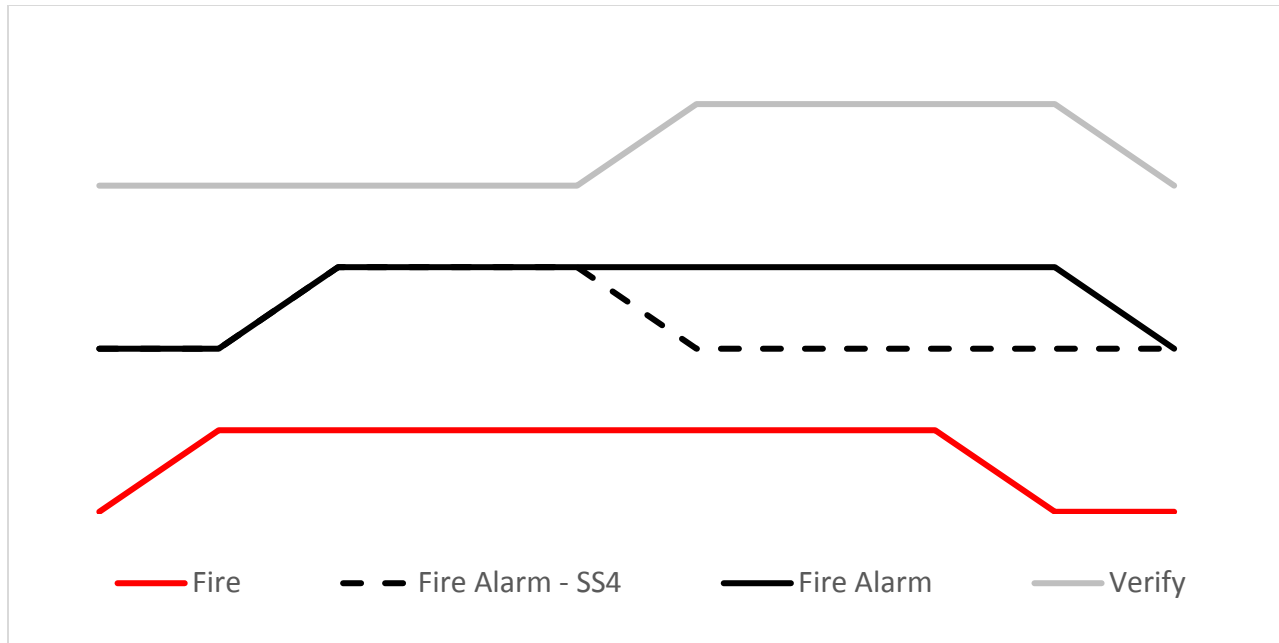
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The graphic below illustrates:

RED - when the Fire begins and ends

BLACK – when the Fire Alarm Relay activates

GRAY – when the Auxiliary (Fire Verify) Relay activates



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Find out more:

www.honeywellanalytics.com

www.raesystems.com

Contact Honeywell Analytics:

Europe, Middle East, Africa

Life Safety Distribution GmbH
Javastrasse 2
8604 Hegnau
Switzerland
Tel: +41 (0)44 943 4300
Fax: +41 (0)44 943 4398
gasdetection@honeywell.com

Customer Service:

Tel: 00800 333 222 44 (Freephone number)

Tel: +41 44 943 4380 (Alternative number)

Fax: 00800 333 222 55

Middle East Tel: +971 4 450 5800 (Fixed Gas Detection)

Middle East Tel: +971 4 450 5852 (Portable Gas Detection)

Americas

Honeywell Analytics Distribution Inc.
405 Barclay Blvd.
Lincolnshire, IL 60069
USA
Tel: +1 847 955 8200
Toll free: +1 800 538 0363
Fax: +1 847 955 8210
detectgas@honeywell.com

RAE Systems by Honeywell

Phone: 408.952.8200

Toll Free: 1.888.723.4800

Fax: 408.952.8480

Asia Pacific

Honeywell Industrial Safety
7F SangAm IT Tower,
434, Worldcupbuk-ro, Mapo-gu,
Seoul 03922,
Korea

Tel: +82 (0) 2 6909 0300

Fax: +82 (0) 2 2025 0328

India Tel: +91 124 4752700

China Tel: +86 10 5885 8788 3000

analytics.ap@honeywell.com

Technical Services

EMEA: HAexpert@honeywell.com

US: ha.us.service@honeywell.com

AP: ha.ap.service@honeywell.com

Technical Services

ha.us.service@honeywell.com

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