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**Ярославль** (4852)69-52-93

**Россия** +7(495)268-04-70

**Казахстан** +7(7172)727-132

**Киргизия** +996(312)96-26-47

сайт: [www.honeywell.nt-rt.ru](http://www.honeywell.nt-rt.ru) || эл. почта: [hwn@nt-rt.ru](mailto:hwn@nt-rt.ru)

# ПРОГРАММЫ

## Технические характеристики на HART

# 1. INTRODUCTION

## 1.1 Scope

The Fire Sentry FS24X Flame Detector with HART® complies with HART® Protocol Revision 7.0. This document specifies device features and HART® protocol implementation details. The functionality of this Field Device is described sufficiently to allow its proper application in a process and its complete support in HART-capable Host Applications.

## 1.2 Purpose

This specification is designed to complement other documentation (e.g., the FS24X *Installation Guide and Operating Manual*) by providing a complete, unambiguous description of this Field Device from a HART communication perspective.

## 1.3 Who should use this document?

The specification is designed to be a technical reference for HART®-capable host application developers, system integrators and knowledgeable end-users. It also provides functional specifications used during Field Device development, maintenance, and testing. This document assumes the reader is familiar with HART® Protocol requirements and terminology.

## 1.4 Abbreviations and definitions

<b>IR</b>	Infrared
<b>PV</b>	Primary Variable
<b>EEPROM</b>	Electrically-Erasable Read-Only
<b>ROM</b>	Memory Read-Only Memory

## 1.5 References

- *HART Smart Communications Protocol Specification*. HCF\_SPEC-12. Available from the HCF.
- *FS24X Installation Guide and Operating Manual*, Document 6178-001. Available from Honeywell Analytics .

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## 2. DEVICE IDENTIFICATION

<b>Manufacturer Name:</b>	Honeywell Analytics	<b>Model Name(s):</b>	FS24X
<b>Manufacture ID Code:</b>	210 (D2 Hex)	<b>Device Type Code:</b>	130 (82
<b>HART Protocol</b>	7.0	<b>Hex) Device Revision:</b>	1
<b>Number of Device Variables Revision</b>	None		
<b>Physical Layers</b>	FSK		
<b>Supported Physical</b>	Sensor and Transmitter		

### Device Category

The FS24X HART® module is identified by a serial number that begins with “24X-“. This serial number will be visible on the module circuit card, along with a bar code containing the same information.

The FS24X is designed to detect fire in a hazardous area. This device should be mounted so as to avoid areas that contain non-fire radiant energy sources (such as radiant heaters, high intensity lamps, etc.) in close proximity to the detector’s field of view. FS24X detectors should be mounted so that they look downward with minimum twenty degree (20°) angle. Avoid mounting the detectors in areas where temperatures are outside the specified operating temperature range (-40°C to +85°C). Refer to the FS24X manual (SECTION 2: INSTALLATION) for mounting instructions.

## 3. PRODUCT OVERVIEW

The FS24X is a Multi-Spectrum Flame Detector. A HART® communication module is required for HART® communication.

## 4. PRODUCT INTERFACES

### 4.1 Process Interface

#### 4.1.1 Sensor Input Channels

Fire Sentry multi-spectrum and multi-spectral infrared Flame Detectors are sophisticated, state of the art, electro-optical digital radiant energy transducers that sense Wideband Infrared radiant energy emitted by fire’s combustion processes that include molecular emissions and hot particulate blackbody emissions. Additionally, the FS24X Detectors sense the specific WideBand 4.3 IR “Triple IR” region from approximately 3 to 5 microns.

FS24X Detectors also utilize additional spectral regions, the Visible Band and Near Band Infrared wavelengths, to aid in discrimination against non-fire false alarm sources.

### 4.2 Host interface

#### 4.2.1 Analog Output 1: Loop Current

Loop current is the only output from this transmitter, representing the presence of flame in the range of the instrument, as well as fault status. This output corresponds to the Primary Variable. Refer to the section 4.3.3 for connection details.

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## **4.3 Local Interfaces, Jumpers and Switches**

### **4.3.1 Local Controls and Displays**

This device has no external local controls.

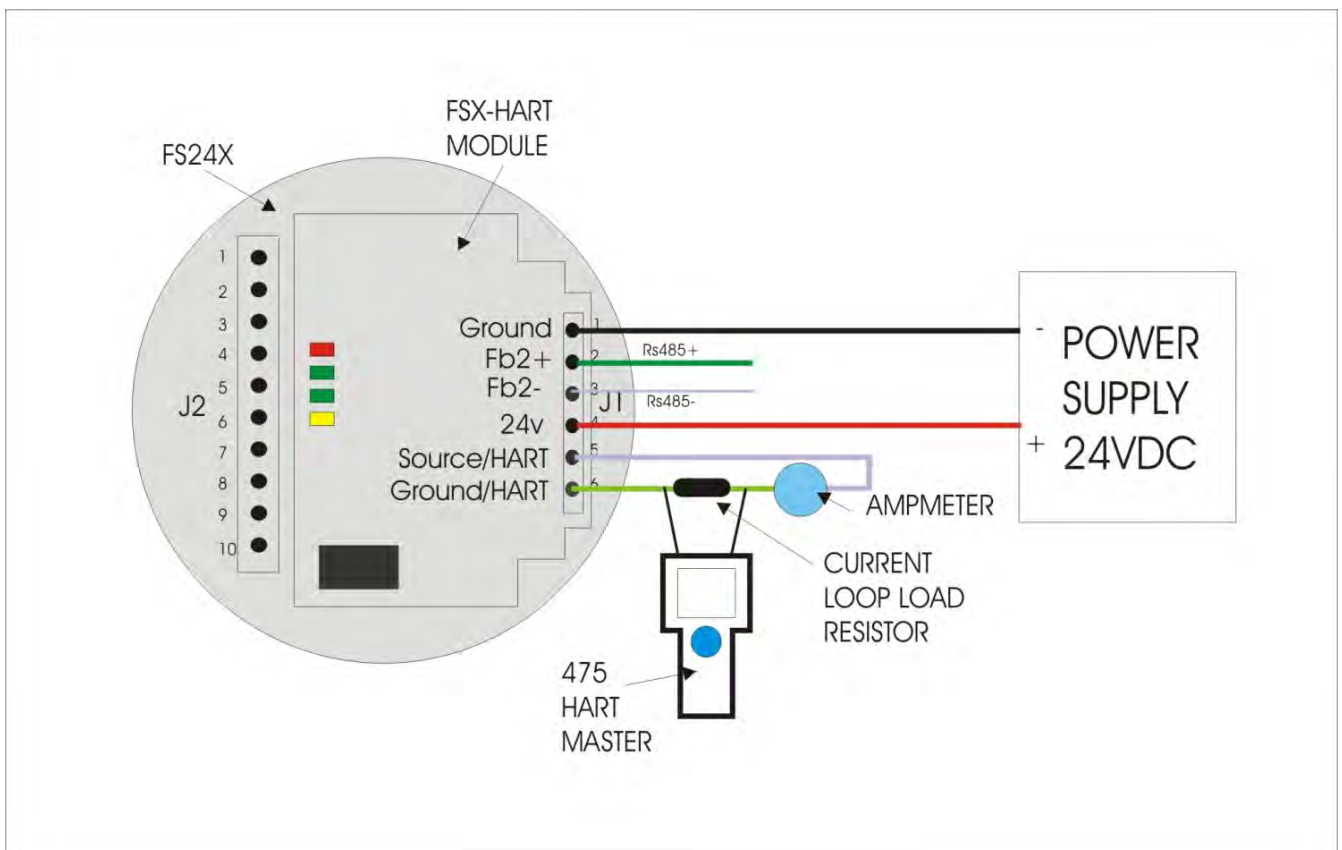
The indication of a detected malfunction is shown by reducing the loop current output to 1 mA. The FS24X Flame Detector uses three (3) separate, bright LED's to indicate the Detector's status. The Blue or Green LED blinks (flashes) once every ten (10) seconds to indicate a Normal, safe operational condition (i.e. no Faults and no Alarms). The Blue or Green LED is OFF when no external 24 VDC input power is applied to the Detector. The Red LED turns ON when a fire is detected. The Yellow LED blinks (flashes) when the window lens is dirty. The dirty-lens condition also results in a loop current of 2 ma. For all other Fault conditions, the Yellow LED will turn ON.

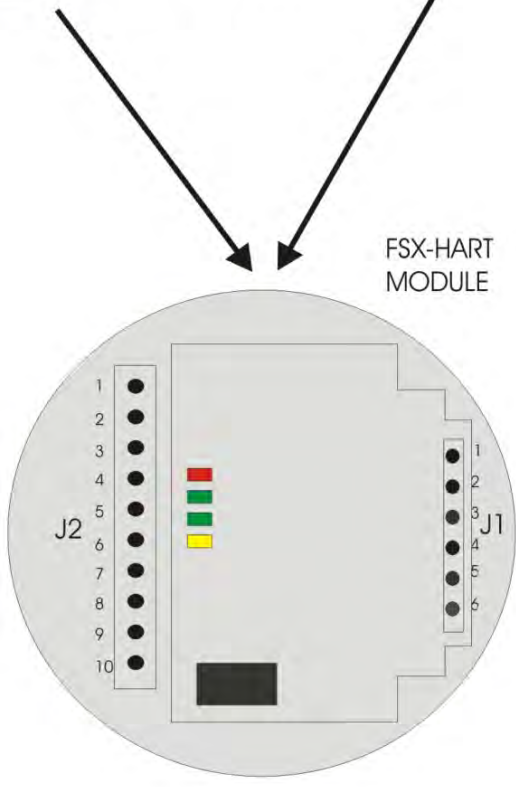
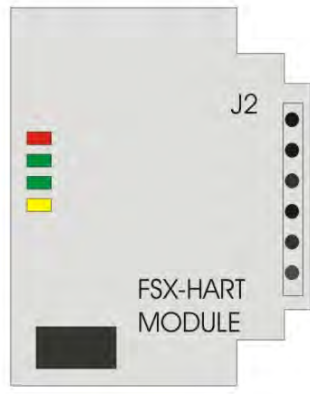
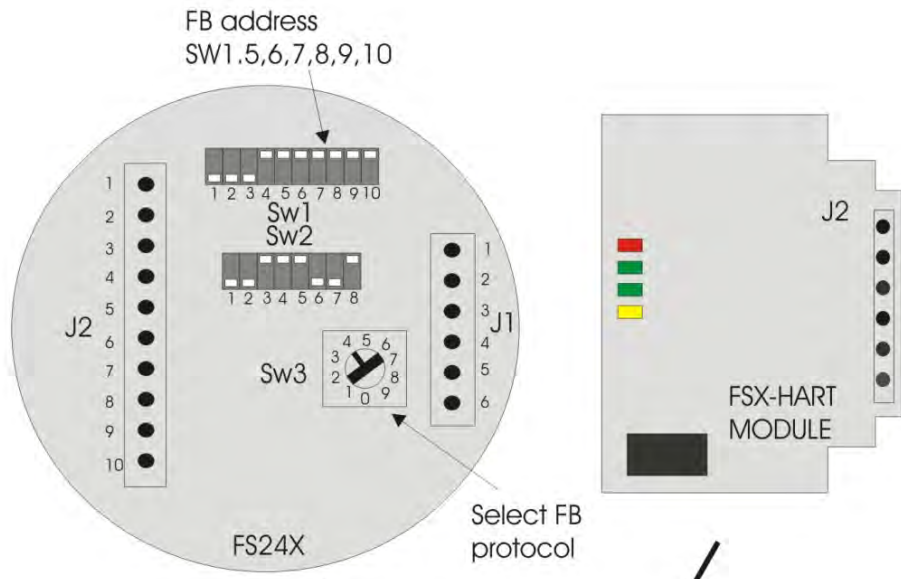
### **4.3.2 Internal Jumpers And Switches**

There are no jumpers or switches on the HART® module. Refer to the FS24X Installation Manual for information relating to switch selections on the detector. **Write Protection** Not Supported.

### 4.3.3 Connection Summary

The diagrams below provide connection detail. The first shows how the FS24X Flame Detector plus the HART module connect to the outside world. The second diagram shows how the detector and the module mate together.





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**Казахстан** +7(7172)727-132

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