SPECIFICATIONS

MODELS 700AC and DC

ELECTRICAL

Input Power: 700AC: 85-265VAC, 50-60Hz, 0.07A MAX. fused (with either VH Connected)

700DC: 22VDC-26VDC, 250 mA MAX fused (with either VH connected)

OUTPUTS

Flame Relay: 2 form C contacts

Self-Checking Relay: 1 form C contact

Relay Contact Ratings: 5A at 125 VAC, 277 VAC, 30 VDC; 1/8 HP 125 & 250 VAC.

Analog Flame Signal: isolated 0 to 20 mA or 4 to 20 mA output for remote meters or DCS, 360 ohms maximum resistance.

Power to Viewing Head: 24VDC, 50mA

ENVIRONMENTAL

Ambient Temperature: 0°C to 50°C (32°F to 122°F)

MODEL 800

ELECTRICAL

Input Power: 85-265VAC, 50-60Hz 0.10A max, fused (with either VH connected)

OUTPUTS

Flame Relay: 2 form A contacts

Contact Ratings: 5A at 125 VAC, 277 VAC, 30 VDC

Self-Checking Relay: 1 form A contacts

Contact Ratings: 0.4A at 110 VDC, 125 VAC; 2A at 30VDC.

Analog Flame Signal: non-isolated 0 to 20 mA or 4 to 20 mA output for remote meters, 100 ohm maximum resistance.

Power to Viewing Head: 24VDC, 50 mA

ENVIRONMENTAL

Ambient Temperature: 0ºC to 60ºC (32ºF to 140ºF)

MODELS 700 and 800 Series Viewing Heads

ELECTRICAL

Input Power: 22 VDC to 26 VDC, 150 mA MAX from Model 700DC, 700AC or Model 800 Signal Processor

ENVIRONMENTAL

Viewing Head Sealing: NEMA TYPE 4/4X rated when the molded connector is used and is tightened with pliers and UV protection is provided for the cable.

Ambient Temperature: -40°C to 85°C (-40°F to 185°F)

IR DETECTOR SPEC

(S702, S702-PF, S702-HF, S702-HF-PF, S802, S802-PF): Germanium photodiode with spectral response 1110 to 1660nm (1/2 intensity points)

High Pass Filter Pickup: 33 Hz standard, 155 Hz High Freq. option (-HF)

IR OPTICAL

Angle of View: 1 degree (1.45” dia. at 6 ft.)

UV DETECTOR SPEC

(S706 & S706-PF, S806): UVtron with spectral response 185 to 260nm

UV OPTICAL

Angle of View: 5 degrees (1 inch per foot)

CABLE & CONNECTOR

(Signal Proc. to V.H.) Standard: C330, 4 Conductor, 18 ga., shielded, 90°C, Sunlight Resistant, 15 ft. long, with ITC rating for US and CIC rating for Canada.

With PF option: 4 conductor, 22 ga. or larger with overall braided shield, 95% coverage, or with shield over the signal line. Tie shield to ground at both ends. (Cable must be protected by a conduit in hazardous locations)

For more information, please contact:

Honeywell

Honeywell

FLAME MONITORING SYSTEM

MODELS 700DC, 700AC and 800 SIGNAL PROCESSORS

MODELS 700 and 800 SERIES VIEWING HEADS

WORLD LEADER IN FLAME MONITORING

GENERAL DESCRIPTION

The Model 700DC, Model 700AC and Model 800 flame monitors are ultraviolet or infrared based detection systems using state-of-the-art technology for monitoring flames in all types of boilers, furnaces, and process heaters. Each system consists of a Viewing Head and a Signal Processor. The Viewing Head is mounted on the burner front and connected to the Signal Processor with a four-conductor cable. The Signal Processor contains a power supply, signal processing circuitry, a remote meter drive, a multi-contact Flame Relay, and a Self-Checking Relay.

Four different Viewing Heads are available for use with each of these systems. Two are UV intensity based and two are IR sensitive and flicker intensity based. The Model 700 Signal Processor is available in both AC (**Model 700AC**) or DC (**Model 700DC**) powered versions. The Model 800 Signal Processor is AC powered.

These Signal Processors make use of a RISC (reduced instruction set computer) embedded processor. The RELAY ON and RELAY OFF set points are easy to setup in either manual or automatic mode. The manual mode can be used with the flame on, but in the automatic mode measurements are made automatically with the flame on and the flame off. From these measurements the processor determines the optimum BURNER ON and BURNER OFF set points.

MODEL 700DC, 700AC SIGNAL PROCESSOR

These Signal Processors are housed in compact, DIN-rail mounted packages. Each Signal Processor occupies only 3" of space along the DIN rail. The front panel dimensions without the connector plugs inserted, are 3" by 5.50". It consists of a keypad, four LEDs and a two-digit numeric LED display. The keypad employs an environmentally sealed switch at each of the 12 push-button locations.

Power and signal connections to the Signal Processor are made with plug-in connectors along the upper and lower edges of the Signal Processor. The Model 700AC accepts 85 VAC to 265 VAC line voltages, 50 or 60 Hz. The Model 700 DC accepts 22 to 28 VDC power.

Both models have connections for +24V battery backup. This arrangement permits immediate transfer of power to battery backup power if the normal power input is lost.

The output Flame Relay has two sets of Form C contacts. The Self-Checking relay has a single set of Form C contacts.

A floating and isolated 0 to 20mA or 4 to 20mA current is available at the output terminals. The selection between these two outputs is made from the keypad.

MODEL 800 SIGNAL PROCESSOR

The Model 800 Signal Processor, together with the Model S802 (IR) or S806 (UV) Viewing Head provides a truly compact din rail mounted (1 1/2" wide x 3" high x 3 1/2" deep), programmable, single channel flame monitoring system.

The output Flame Relay has two sets of Form A contacts. The Self-Checking relay has a single set of Form A contacts.

A non-isolated 0 to 20mA or 4 to 20mA current output is available at the output terminals.

Settings can be changed from the factory defaults, by using the available software or by using the terminal communications program that is supplied with Windows.

Programming is accomplished by using a Windows based laptop or desktop computer via an RS232 cable which connects to the mini jack program port located on the front of the unit.

VIEWING HEADS

The Model 700 and 800 series Viewing Heads are compact cylindrical units that are secured to their Delrin mounting blocks by means of over centre latches on the model 700 series, or by a friction twist lock on the model 800 series Viewing Heads. A 1/2" NPT female pipe thread on the mounting block provides connection to a 1/2" sight pipe or swivel mount. A 1.5" hex nut is built into the end of the mounting block to provide a means of tightening it to its mounting.

Provision for purge air is by means of a 1/4" female pipe thread on the side of the mounting block. A continuous flow of purge air is required for cooling.

A 15 ft. length of four conductor shielded cable (C330) with a right angle connector is included with each Viewing Head. The connector also houses a green and an orange LED. The green LED is used to assist in sighting the Viewing Head; it flashes at a rate proportional to the UV or IR flicker Signal strength. The relative Signal strength can easily be adjusted to a maximum by observing the flash rate of the green LED. The orange LED indicates that the self-check Signal is reaching the connector.

The Model 700 Viewing Head is also available with a 1/2" NPT pipe fitting for use with a conduit. This viewing head is connected by pigtails with a standard length of 20".

Accommodation for an orifice plate and snap ring is provided in the Viewing Head mounting block. An optional conduit connector, which attaches to the Viewing Head connecter plug is also available.

Also a full range of accessories is available fo for the 700/800 series Viewing Heads, some of which are shown here.

DISCRIMINATION

The Model 700 and Model 800 Flame monitoring systems are capable of handling the two worst-case situations in a multiburner furnace. It properly discriminates between the weakest "flame on" signal and the strongest "flame off" (background) signal. Once a good ratio between these two signal levels is obtained, the Signal Processor in the flame monitor can then be setup with RELAY ON and RELAY OFF set points appropriate to those signal levels.

The weakest flame on signal will be obtained when the burner being monitored is the only burner in the furnace that is on and it is operating at low fire. The highest flame off or background signal will be obtained when the burner being monitored is off but all the other burners are on at high fire.

APPROVALS and CERTIFICATION

The Model 700 Signal Processors and Models S702, S702-HF, S702-PF, S702-HF-PF, S706, S706-PF, S802, S802-HF, and S806 Viewing Heads have Factory Mutual (FM) Approval for Combustion Safety and Canadian Standards Association (CSA) Certification with added National Recognized Testing Laboratories (NRTL/C) Certification.

In addition, the above Viewing Heads are approved and certified by Factory Mutual and CSA for use in hazardous locations, Class I, Division 2, Groups A, B, C, and D. The Viewing Heads are approved as sealed and corrosion resistant to NEMA 4 and NEMA 4X by Factory Mutual.

700ACC Viewing Head Air Cooler with Vortex Tube attached

700RAA Right Angle Adapter

700-1 Swivel Adapter

700CRLT Viewing Head Cable Restraint