5002-01NC ULTRAVIOLET SCANNER
Product Overview

Description
The Quanta-Flame Series 5002 is intended for monitoring all gas, oil and coal-fired burners. The control is the basis for industrial or commercial burner management systems using microprocessors, PLC or relay-based hardware. All essential circuits are supervised.

- 5002-01NC interfaces with Preferred, Fireye, Honeywell, and PCI flame safeguard controllers or it is available with contact closure and 4-20 mA outputs interface with PLC-based and DCS-based flame safeguard systems
- High quality fused silica quartz lens
- Machined alloy housing with seals
- Replacement scanner can be installed without disturbing wiring
- No scheduled replacement parts
- Status LEDs
- Flame intensity
- Output On indicator
- Self-Check indicator

LED Indicators
A Flame Status LED and Flame Relay LED provide useful diagnostic information on the front of the scanner.

Flame Status LED
The Flame Status LED (FSL) is a dual color LED that acts as a multifunctional indicator. When a flame is detected, the FSL will illuminate with a red color. This light will vary in intensity proportional to the level of flame signal (flame strength) detected.

Flame Relay LED
The Flame Relay LED (FRL) is a single-color LED. When a flame of sufficient intensity is detected, the 5002 control will activate the output signal. This output may be any one of the possible output forms described above.

Internal Wiring and Typical Field Wiring of the 5002-01-NC-120-C-x-x Ultraviolet Scanner.
### 5002-01NC ULTRAVIOLET SCANNER

**Product Overview**

While the output is activated, the FRL will illuminate. Should the flame signal fall below the minimum threshold, or should one of the internal circuits or sensing elements tests fail, the output will deactivate, and the FRL will shut off.

**Specifications:**

**Mechanical**
- **Length Overall:** 3.5” (88.9 mm)
- **Diameter:** 2.25” (57.2 mm)
- **Housing:** Machined 5052 Aluminum Alloy
- **Finish:** Clear
- **Sight Tube Entrance:** 1/2” Pipe Thread

**Electrical**
- **Supply Voltage:** 120 VAC 50/60 Hz, 24 VDC (depending on model)
- **Required power:** 2 VA
- **Output Contact Rating:** 230 VAC, 1 A
- **Available Outputs:** (-C Models) Relay Contact & 4 to 20 mA
- **Specifications for 4 to 20 mA output (two-wire current loop)**
  - **Span error:** 1%
  - **Non-linearity:** 0.1%
  - **Supply required to the loop:** 12 to 30 VDC
- **Brand:** Preferred Instruments
- **Model:** 5004-890 Flame Safeguard Controller
- **Manufacturer:** Preferred Mfg
- **UL file number:** E233069

**Environmental**
- **Class:** NEMA 4
- **Temperature:** 0° F to 140° F.
- **Optical**
  - **Lens Material:** Fused Silica
  - **Spectral Sensitivity UV:** 180-230 nanometers

**Specifications**
- **Suitable for:** Interfacing with Preferred and other flame safeguard amplifiers. (see wiring examples)

---

**Typical Wiring Schematic:** UV Scanner to Preferred Instruments 5004-85 Flame Safeguard Controller

---

**Typical Wiring Schematic:** UV Scanner to Preferred Instruments 5004-890 Flame Safeguard Controller
5002-01NC ULTRAVIOLET SCANNER

Typical Wiring

Typical Wiring Schematic: UV Scanner to Honeywell 7800 Series Flame Safeguard Controllers

Typical Wiring Schematic: UV Scanner to Fireye Flame Safeguard Controllers

Typical Wiring Schematic: UV Scanner to PCI Flame Safeguard Controllers

Typical Wiring Schematic: UV Scanner to Siemens LMV Flame Safeguard Controllers
**5002-01NC ULTRAVIOLET SCANNER**

**Suggested Specification**

**Typical Wiring Schematic 5002-01NC Scanner to Eclipse Veriflame Controllers**

### Suggested Specifications

1. **UV Scanner**
   - Flame scanner shall be U.L. recognized. Scanner housing shall be made of rugged anodized aluminum, have two status LEDs, and connect by means of a military-style, "quick-disconnect" fitting.

2. **Physical Description**
   - Scanner shall be made of high strength anodized aluminum and mount by means of industry standard 1/2" NPTF connection including:
     - 3/8" Purge connection
     - 5 Pin military-style quick disconnect cable fitting

3. **Electrical Characteristics**
   - Scanner shall be powered by 120 VAC, 230 VAC, or 24 VDC input power. A 120/230 VAC relay contact shall be provided to prove flame while a 4-20 mA output shall correspond to flame signal strength (-C models). Alternatively, the 5002-01-(120 or 240)-0-xx shall interface with most existing flame amplifiers.

4. **Manufacturer**
   - Scanner shall be model 5002-01NC manufactured by Preferred Instruments of Danbury, CT.