



SPECTRA™ BC11 IR and BC11 UV Flame Sensor

FOR SINGLE APPLICATIONS: INCINERATORS, PROCESS HEATERS, FURNACES,
AND BOILERS



FLAME SENSOR

The SPECTRA™ BC11 Flame Sensors provide maximum performance and reliability using advanced solid-state design and high performance optical detectors.

SPECTRA™ BC11 Flame Sensor is extremely robust and compact. It offers a host of features that make it suitable for a wide variety of fuels. Its robust design meets or exceeds rigorous test standards. It's 100% solid-state. There are no tubes or shutters to fail. Its high-temperature electronics enables the sensor to function at elevated operating temperatures.

The SPECTRA™ BC11 Flame Sensor helps improve burner efficiency, reduce NOx emissions and improve operating safety.

Available in both infrared and ultraviolet models, the SPECTRA™ BC11 Flame Sensor is compatible with a full range of industrial fuels: natural gas, kerosene, diesel, oil, and coal. In addition to flame ON/OFF indication, the 4-20mA output provides real time flame intensity needed for burner management systems.

INSTALLATION

The SPECTRA™ BC11 Flame Sensor is easily mounted using a standard 1 inch NPT internal thread. Simplifying installation, the unit is a two-wire loop powered transmitter requiring a single twisted pair cable.



FEATURES AND BENEFITS

- Fuel Versatility — performance with natural gas, fuel oils, coal and waste gas
- Wavelength Sensitivity — UV, VIS and IR
- Rapid Response Time — enables immediate system shutdown on flame out
- Reliability — indicates flame ON/OFF condition
- Burner Efficiency — 4-20mA output proportional to flame intensity
- Flexibility — mounts on any burner with standard NPT pipe fittings
- Simplicity — two-wire loop powered installation
- Certifications — meets FM requirements for Flame Standard and Class I Div. 2 electrical safety



SPECIFICATIONS

Inputs

- IR or UV flame energy, 2° field of view

Outputs

- 4-20 mA into 250 ohm max.

Signal Processing

- Flame on/off response time <25 milliseconds

Mounting

- 1 inch NPT internal thread

Power

- 24 VDC, 100mA max

Wiring Connections

- Mil-C-D38999 Series 1 Connector
 - PIN A +24 VDC nominal
 - PIN B 4-20 mA current return
 - PIN C Case ground
 - PIN D No connection
 - PIN E No connection

Power

- Loop powered: 20-30VDC, 24VDC nominal, 25mA max

Environmental

- Operating temperature -40° to 257°F (-40° to 125°C) continuous operation
- Weight: ~ 1.4 lbs. (0.6 kg)

Enclosure Rating

- NEMA 4X

Materials

- Anodized aluminum construction
- Stainless steel military style connector
- Optical grade fused silica lense/view-port

Certifications

- Factory Mutual approved for industrial burner applications, according to:
- 7610 Standard, Combustion Safeguards and Flame Sensing

- 3611 Standard, Class 1 Division 2 Electrical Equipment Groups A, B, C, and D
- CE Approved

OPTIONAL ACCESSORIES

Electrical Cable, P/N 8TL41AAA1

- 10 feet long
- Straight connector

Analog / Relay Outputs

- SC-7402 uses 4-20mA input and provides a configurable relay contact output
- SC-7404 same as SC-7402 with 2 independently settable relay contact outputs
- SC-7405 same as SC-7404 plus configurable analog output

