



# Spectra™ GT30 Gas Turbine Flame Sensor

HIGH TEMPERATURE AND PRESSURE FOR ALL GAS TURBINE APPLICATIONS

**POWER  
& INDUSTRIAL**

## FLAME SENSOR

Eliminate false turbine trips and performance uncertainty with AMETEK's new Spectra™ GT30 Flame Sensor. The GT30 is an extremely robust, compact optical flame sensor that receives UV energy from the combustion process and transmits a 4-20 mA analog signal proportional to flame intensity. The GT30 operates continuously at 257°F (125°C) without cooling or at mounting temperatures up to 700°F (371°C) and an operating temperature of 400°F (204°C) with the use of an optional cooling coil. The GT30 can withstand combustion pressures up to 30 Bar (435 psi) so that no intermediate windows or pressure barriers are required.

## INSTALLATION

The Spectra™ GT30 is easily mounted directly to the turbine case or on a short standoff pipe via a 3/4 inch NPT internal thread. The two-wire, 24 VDC loop-powered solid-state sensor is fully self-contained, therefore it does not require a separate amplifier. AMETEK offers various cabling options depending on the application.

## RETROFITS AND UPGRADES

For turbine retrofits and upgrades, the sensor can be connected directly to a control system, through a relay module or with a frequency converter to mimic the older technology pulse output style.



## FEATURES AND BENEFITS

- Fuel Versatility—high output performance with natural gas, fuel oils, and waste gas
- Detects Wide UV Spectrum—provides strong output even during water or steam injection
- Hermetically Sealed—helps ensure sensor reliability and long life
- Flexibility—can be mounted to any gas turbine using standard NPT pipe thread
- Fast Response Time—ensures rapid fuel shutoff during flame out
- Brazed Window Assembly—protects sensor from extremely high process pressures
- High Temperature Electronics—enables sensor to function at higher operating temperatures
- Compact Design—enables sensor to fit in even the tightest locations
- Wide Dynamic Range—dual gain amplifier with saturation limiting circuitry
- Analog Output—no separate amplifier to worry about
- 100% Solid-State—no tubes or shutters to fail

**AMETEK®**

**POWER  
INSTRUMENTS**

*Experience the Power™*

## SPECIFICATIONS

### Input

- UV energy from flame
- 2 degree field of view
- 24 VDC nominal power input (20-30 VDC range)
- 25 mA maximum

### Output

- 4-20 mA ISA standard into 250 ohm maximum
- Flame on/off response time <25 milliseconds

### Operating Temperatures

- Without Cooling Coil: -40° to 257°F (-40° to 125°C) continuous operation
- With Cooling Coil: -40° to 400°F (-40° to 204°C) operating environment
- -40° to 700°F (-40° to 371°C) mounting temperature

### Operating Pressure

- Sensor window can withstand up to 30 Bar (435 psi)

### Weight

- ~ 2.1 lbs. (0.95 kg)

### Connections

- 3/4-14 inch NPT internal thread

### Materials

- 100% stainless steel construction

### Wire Connections

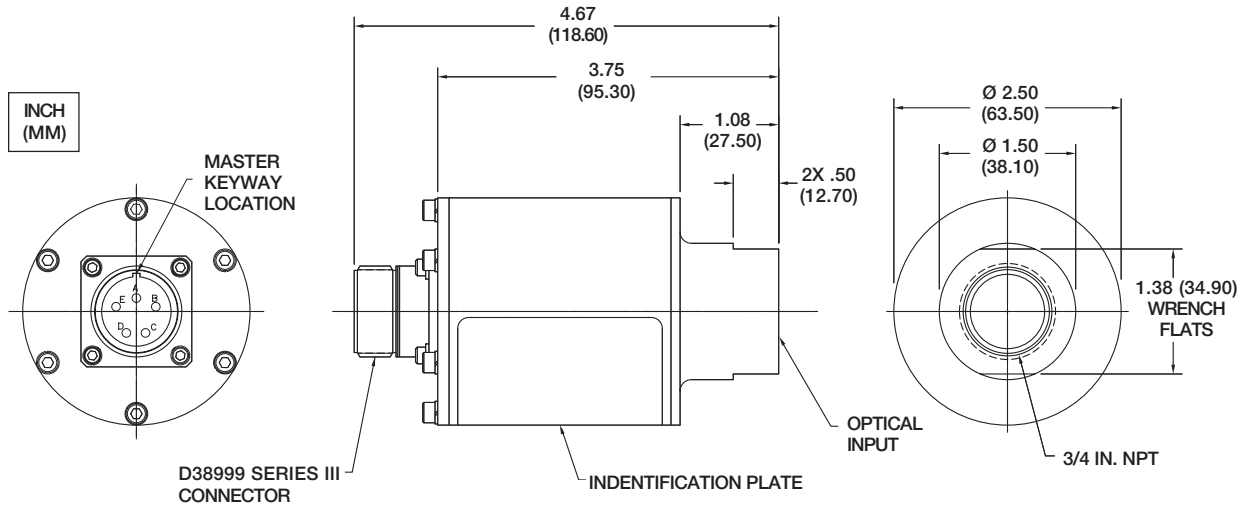
- PIN A 4-20 mA current return
- PIN B +24 VDC nominal
- PIN C Case ground
- PIN D No connection
- PIN E No connection

### Agency Approvals (Tests Conducted)

|                     |                                                                                                                                     |
|---------------------|-------------------------------------------------------------------------------------------------------------------------------------|
| CE                  | EN55011:Radiated Emissions<br>EN61000-4-2:ESD<br>EN61000-4-3:Radiated Immunity<br>EN61000-4-4:EFT<br>EN61000-4-6:Conducted Immunity |
| UL                  | To Standard<br>C22.2 No. 1010-92                                                                                                    |
| CSA                 | To Standard<br>C22.2 No. 1010-92                                                                                                    |
| ATEX Directive      | To Standard<br>94/9/EC                                                                                                              |
| Factory Mutual (FM) | To Standard<br>FM7610<br>FM3611                                                                                                     |

### OPTIONAL ACCESSORIES

- Cooling Coil, p/n 1084-417
- Electrical Cable, p/n 8EH8DHK1
  - Typical for Aeroderivative turbine applications
  - 43 feet long
  - 14 foot stainless steel overbraid then 26 foot Teflon overbraid covering outer Teflon jacket
  - Right angle connector
- Electrical Cable, p/n 8EH8EAB1
  - Typical for Frame turbine applications
  - 60 feet long
  - 3 foot stainless steel overbraid covering outer Teflon jacket
  - Right angle connector
- Electrical Cable, p/n 8EH8CAT1
  - Same as "2b" except 120 feet long



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