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

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)

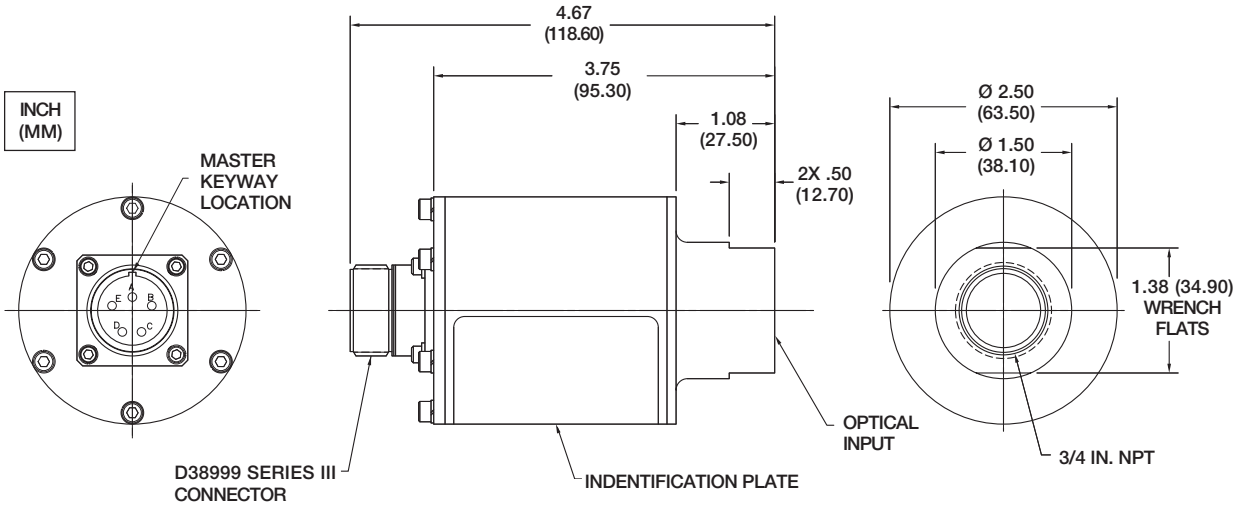
CE	EN55011:Radiated Emissions EN61000-4-2:ESD EN61000-4-3:Radiated Immunity EN61000-4-4:EFT EN61000-4-6:Conducted Immunity
UL	To Standard C22.2 No. 1010-92
CSA	To Standard C22.2 No. 1010-92
ATEX Directive	To Standard 94/9/EC
Factory Mutual (FM)	To Standard FM7610 FM3611

OPTIONAL ACCESSORIES
1. Cooling Coil, p/n 1084-417

2a. 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

2b. 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

2c. Electrical Cable, p/n 8EH8CAT1
- Same as “2b” except 120 feet long



AMETEK®

ISO 9001 Certified