FORNEY

HD Flame Detector

Forney's HD Flame Detector is the best available flame detector for the Power Generation, Petrochemical and Industrial markets.
It provides the highest level of flame discrimination in multi-burner applications with an easy to use interface on a mobile app.

PRODUCT OVERVIEW

The Forney High Definition (HD) Flame Detector integrates both Infrared (IR) and Ultraviolet (UV) optical sensors along with an amplifier and high speed signal processor. The high speed signal processor is able to analyze frequency resolution allowing for precise discrimination between multiple burners and background radiation. HD Detector includes two flame relays, one for signals from each optical sensor. Four different profiles are selectable for maximum flexibility under different operating conditions. 4 to 20mA analog outputs are provided for remote display options.

An industry first mobile app is available in two configurations from the Apple Store and Google Play. The Forney HD Detector app will allow the user to select a specific detector via Bluetooth.The user can then the detector on their mobile device. A live Fast Fourier Transform (FFT) is also displayed. To tune the detector, the password protected, Forney HD Detector Pro app will allow the user to specify pick up and drop outs for flame on and flame off within the two user specified frequency ranges. Any fault codes are clearly shown with Reset capability. A PC based RS485 connection capability is also available.

A single, flexible 12 wire custom cable is available in multiple lengths to make field connects simple. In many cases the existing field cabling can be reused. (Existing cables for Forney D85, UniFlame, and UniFlame II Detectors can be reused with transition adapters.)

Forney HD Flame Detector is available in two models. Model HD-01 is suitable for use in non hazardous & Class 1 Division 2 / Zone 2 hazardous area wheras Model HD-01-EX is suitable for use in Class 1 Division 1/ Zone 1 hazardous area.

HD-01   HD-01-EX

BENEFITS

- **High Definition**

  Maximum discrimination in difficult multi-burner environments.

- **Easy to use**

  App available for either smart phones or tablets

- **Installation friendly**

  Lightweight housing and single flexible cable

- **Robust**

  2 year warranty in normal operating conditions

FEATURES

- Both Infrared (IR) and Ultraviolet (UV) sensors in every unit
- High speed microprocessor based signal analysis
- Bluetooth® and RS485 Modbus communications
- Simple LED status indicators on HD Detector unit for Power, Flame Relay 1 & 2, Fault, Bluetooth®, and High Temperature
- IP 66 housing and connections
- RoHS compliant

Worldwide Agency Approvals

- HD-01: FM
          : NEC,CEC,CE,IECEX,ATEX - Pending
- HD-01-EX: FM
          : NEC,CEC,CE,IECEX,ATEX

HD FLAME DETECTOR

Products

Part Number	Description
HD-01	HD Flame Detector with quick disconnect, suitable for Class1 Div2 / Zone 2 area.
HD-01-EX-N01	HD Flame Detector suitable for 1" cable Gland, suitable for Class1 Div 1 / Zone 1 area.
HD-01-EX-N34	HD Flame Detector suitable for 3/4" cable Gland, suitable for Class1 Div 1 / Zone 1 area.
HD-01-EX-M32	HD Flame Detector suitable for M32 cable Gland, suitable for Class1 Div 1 / Zone 1 area.
HD-01-EX-M25	HD Flame Detector suitable for M25 cable Gland, suitable for Class1 Div 1 / Zone 1 area.
HD-01-EX-PF01	HD Flame Detector suitable for PF 1" X 2.309P cable Gland, suitable for Class1 Div 1 / Zone 1 area.
HD-01-EX-PF034	HD Flame Detector suitable for PF 3/4" X 1.814P cable Gland, suitable for Class1 Div 1 / Zone 1 area.

Accessories

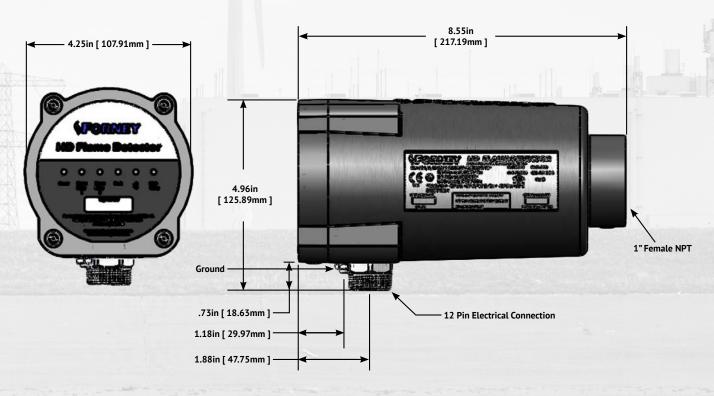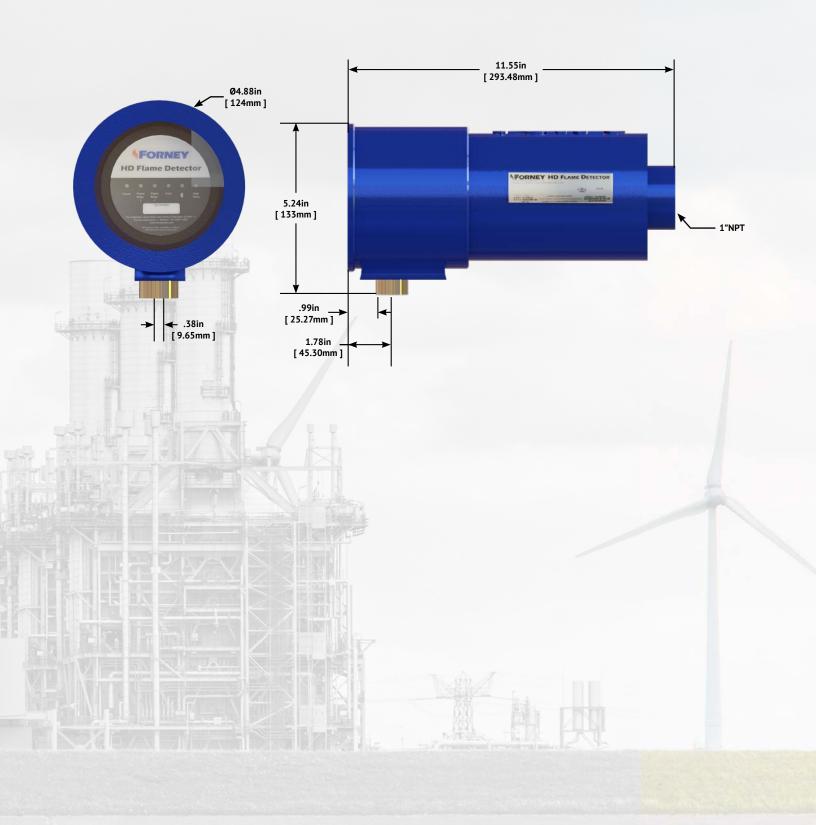| Part Number	Description
91016-63	Swivel
HD-Cable-QD-XXX	Cable, 12 Conductor with Quick Disconnect for use with Model HD-01 only
92615-18	Cable, 12 conductor for use with HD-01-EX (all models)
HD-01-XCONN-UNFLM1	Cable Adapter for Use with Uniflame 1 Detector Cable
HD-01-XCONN-UNFLM2	Cable Adapter for Use with Uniflame 2 Detector Cable
HD-01-XCONN-D85	Cable Adapter for Use with D85 Detector Cable
92615-44	Cable Gland, for Model HD-01-EX-N34
92615-45	Cable Gland, for Model HD-01-EX-N01
92615-46	Cable Gland, for Model HD-01-EX-M25
92615-47	Cable Gland, for Model HD-01-EX-M32
358824-05	UV/IR Fiber Optic Adapter
409893-XX	UV Fiber Optic Guide Assy
409892-XX	IR Fiber Optic Guide Assy
409894-XX	Rigid Fiber Optic Guide Assy; Use -01 to -049 for iR and -050 to -99 for UV
41075000	Optical Orifices, Set of 4 Orifice Plates

Specifications

Environmental

Ambient Operating Temperature	-30°C to 65° C (-22° F to 149° F)
Internal Operating Temperature	Up to 85° C (185° F)
Ambient Storage and Transportation Temperature	20°C to 50°C (68°F to 122° F)
Relative Humidity	40°C (104°F), RH 95%
Vibration Sinusoidal Operating	Frequency: 5 -200 Hz Acceleration: 8G
Flammability Rating	UL 94-HB (HD-01)
Conformal Coatings	Yes
RoHS Compliant	Yes

Mechanical

	HD-01	HD-01-EX
Housing Material	Engineered Polymer	Cast Aluminum
Weight	1.2 Kg (2.7 lbs)	3.5 Kgs, 7.72 Lbs
Degree of Protection	IP66	IP66
Sight Tube Mounting	1" NPT	1" NPT
Lens Temperature Rating	538°C (1000° F)	538°C (1000° F)
Purge Air Flow	Minimum 5 SCFM	Minimum 5 SCFM
Optical Sensitivity	Responsive to oil, coal & gas flames using IR & UV spectrum	

Power Supply	24 VDC (+10 /- 15%)
Steady State Current	120 ma
Inrush Current	350 ma
Power Consumption	2.88 watt
External In-line Fuse	1 Amp Fuse Required
Heat Dissipation	1.2 Watt
Flame Relay	Two (2) independent (fail safe)
Flame Contact Rating	SPST 24 VDC, 1 amp
Flame Failure Response Time (FFRT)	1, 2, 3 or 3.8 seconds (user adjustable)
Fault Relay	In Series With Flame Relay Contact
Analog Output	Sourced 4-20 ma, one for each flame relay Load resistance < 500 Ohm
Digital Inputs	Two self-powered inputs for up to four file selections
Communication	RS-485 / Modbus Bluetooth®
Electrical connections	Standard - Quick disconnect (HD-01 Only)
Prefabricated Cable	12 Conductor (color coded) Tinned Copper Braid Shield, Black PVC Jacket CSA CMG (UL) PLTC-ER 300V 105C, Fire Resistant - FT4, UV Resistance Diameter -0.463" Nominal Weight - 0.17 lb/ft

4.25in [107.91mm]

8.55in [217.19mm]

4.96in [125.89mm]

1" Female NPT

Ground

.73in [18.63mm]

1.18in [29.97mm]

1.88in [47.75mm]

12 Pin Electrical Connection

Ø4.88in
[124mm]

11.55in
[293.48mm]

5.24in
[133mm]

FORNEY
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1"NPT

.38in
[9.65mm]

.99in
[25.27mm]

1.78in
[45.30mm]