

# D85 Unitized Flame Detector

*Forney's D85 series flame detectors provide unparalleled ease of installation and operation, with fully automatic flame characterization and optimum gain detection.*

## Product Overview

The Forney D85 series is a microprocessor based flame detector utilizing a solid state flame detection sensor. The D85 incorporates an internal flame relay with automatically set ON/OFF thresholds and advanced programming features for fine tuning.

Forney's D85 detects the modulation of the target flame's amplitude (flame "flicker") over a wide frequency. During the detector setup the amplitudes of the target flame are automatically stored in the flame detector along with optimum ON/OFF criteria. The appropriate sensor gain is also automatically selected and stored. Forney D85 detectors incorporate full self-diagnostic and electronic self-checking.

Forney D85 flame detectors are powered by 24Vdc with standard analog 4-20mA flame signal strength output. Electrical connection is via an 8-pin electrical quick-disconnect (QD) fitting for standard models. CEX models utilize internal terminal blocks.

Forney D85 flame detectors are available in multiple models based on spectral range (UV or IR), hazardous area classifications and agency approvals.

## Features & Benefits

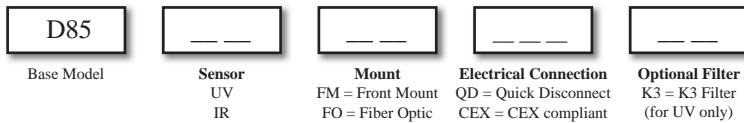
- Rapid installation and configuration with quick disconnects and fully automated tuning.
- Advanced, programmable settings for more demanding applications
- Expanded diagnostic analysis for superior flame characterization and troubleshooting.
- Multiple UV and IR flame detection options support a wide range of combustion processes including: industrial burners, duct burners, refinery applications, low NOx burners, waste fuel units and incinerators.
- Integrated sensor and electronics eliminates need for external amplifiers.
- Standard NEMA 4X, IP66 housing for Class I, Div 2 environments
- Optional CEX models for ATEX Ex II 2 G/D environments
- Safety Integrity Level 3 (IEC 61508)



# D85 Unitized Flame Detector

Pub # 404005-26  
Rev 02/2015

## Part Number for D85 Detector Heads



Sample Part Number: **D85 UV FM QD \_ \_** = D85 Model with UV sensor, Front Mount and Quick Disconnect Connection.

## Mechanical Specifications:

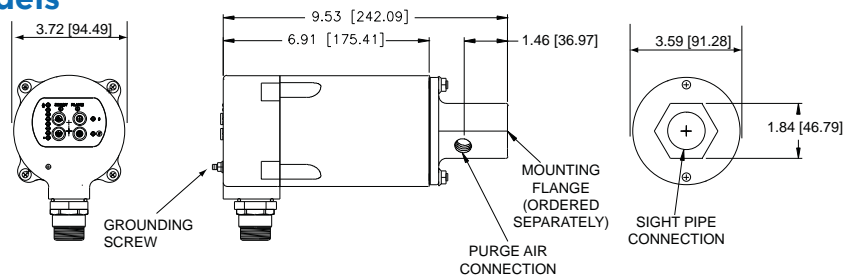
Housing Material:	Standard Models: Engineered material - GE Valox Standard Models: NEMA 4X, IP66 / Class I Div II	CEX Models: Aluminum, painted finish CEX Models: Ex II 2 G/D, ATEX certified
Detector Weight:	Standard Models: 3.30 lbs (1.5kg)	CEX Models: 9.5 lbs (4.3kg)
Cooling / Purge Air Requirements:	Source: Clean, dry, cool Volume: 10 SCFM (113 l/min) at 3/8" threaded mounting flange, or 1 inch "Y" fitting, mounted on scanner sight pipe. Temperature near the upper limit of the operating range and/or dirty fuels may require up to 15 SCFM (425 l/min). Pressure: Adequate to overcome furnace or windbox pressure	
Environmental:	-40° F to + 150°F (-40°C to +65°C), 0-95% relative humidity, non-condensing	
Mounting (Ordered Separately):	Standard Models: P/N 35-318-1, Standard, non-metallic, 1" NPT female pipe mount flange with 3/8" NPT female cooling air connection P/N 35-318-2, Standard, non-metallic, 1" BSP female pipe mount flange with 3/8" BSP female cooling air connection P/N 129-182-1, Optional, aluminum 1" NPT kit for standard models with 3/8" NPT female cooling air connection P/N 129-182-2, Optional, aluminum 1" BSP kit for standard models with 3/8" BSP female cooling air connection CEX Models: P/N 129-168-1, 1" NPT female pipe mount flange with 3/8" NPT female cooling air connection P/N 129-168-2, 1" BSP female pipe mount flange with 3/8" BSP female cooling air connection	

**Optical:** UV Models: 295 to 340 nanometers (K3 option 310-500 nanometers); IR Models: 830 to 1100 nanometers

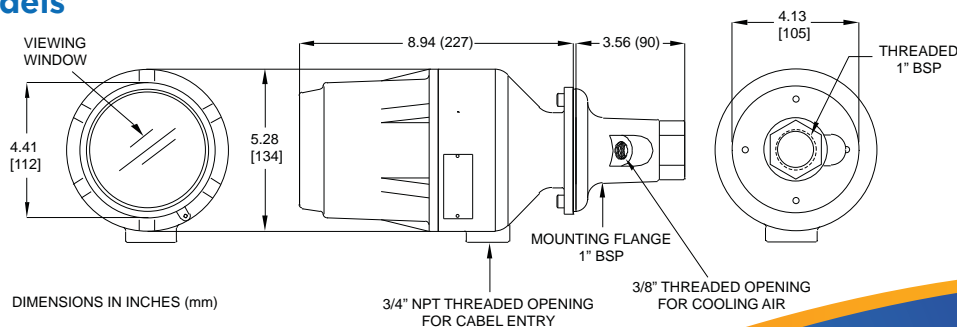
## Electrical Specifications:

Input Power:	24 Vdc, +20%, -15% supply current 200mA	Status Indication:	Multiple LED indication for flame signal strength, flame relay, ready, target, background select and fault codes
Electrical Connection:	Standard Models: 8-pin quick disconnect CEX Models: internal terminal blocks	Cable Specification:	Quick Connect P/N 401119-xx, Bulk Cable P/N 401119-00 Multi-core, 8 (color coded) Eight #18 AWG with foil wrap and overall braided shield. PLTC-ER rating. Temperature Rating: -40°F to 221°F (-40°C to 105°C) Cable Jacket: PVC (flame-retardant, low smoke, zero halogen) Nominal O.D. 0.44" (11.2 mm); Maximum O.D. 0.48" (12.2 mm)
Relay Output:	FLAME RELAY, SPST (N.O.) FAULT RELAY, SPST (N.C.)		
Contact Rating:	Minimum: 10mA @ 5 Vdc Maximum: 2A@30 Vdc, 2A@230 Vac Resistive load		
Analog Output:	Optically isolated 4-20mA dc current referenced to 24 Vdc common, maximum connected load: 750 Ohms. Forney recommends the 60-2685-X 24 Vdc power supply for best performance and for a SELV rating of the 4-20mA analog output leads.		

## Standard Models



## CEX Models



**Forney Corporation**

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