

# FlexVu® Explosion-Proof Universal Display Unit Model UD30



## DESCRIPTION

The FlexVu® Model UD30 is recommended for applications that require a gas detector with digital readout of detected gas levels as well as analog 4–20 mA output and relay output. The UD30 is designed for use with Det-Tronics gas detectors such as the GT3000, PIRECL, PIR9400, CGS, ATX10, PIRDUCT, or LS2000, as well as generic linear 4–20 mA sensors. The display unit is designed and approved as a “stand alone” device and performs all the functions of a gas controller.

Gas concentration and unit of measurement are indicated on a digital display. The display unit provides a 4–20 mA DC pass-through output signal (with HART pass-through) that corresponds to the detected gas concentration.

All electronics are enclosed in an explosion-proof aluminum or stainless steel housing. The display unit is used with a single detector that may be either coupled directly to the UD30, or remotely located using a sensor termination box (STB). The UD30 features non-intrusive calibration. A magnet is used to perform calibration as well as to navigate the UD30's menu.

The UD30 can be used with various 4–20 mA gas detection devices, with or without HART. The unit provides display, alarm and calibration capabilities for the gas detector.

The UD30 utilizes the following I/O:

Signal Inputs:	4–20 mA or 4-20 mA with HART from the sensing device
User Inputs:	Magnetic switches (four) on the display panel
Signal Outputs:	4–20 mA pass-through output with HART pass through Two alarm relays and one fault relay
Visible Outputs:	Backlit, five color, LCD display (blue, white, green, red and yellow)

## FEATURES AND BENEFITS

- ▲ Universal design supports multiple Det-Tronics sensors or generic linear 4–20 mA sensors
- ▲ Local digital LCD continuously indicates gas level, gas type and units measured
- ▲ Backlit and heated display
- ▲ Non-intrusive calibration quickly performed by one person
- ▲ Rugged construction approved for use in classified hazardous areas
- ▲ 4–20 mA pass-through output. HART signals also pass-through, if available
- ▲ Internal magnetic switches provide a non-intrusive user interface which allows device configuration without de-classifying hazardous areas
- ▲ SIL2 models certified to IEC61508 by exida®
- ▲ Logs provided for analysis and management include:
  - **Event:** Include fault and alarm logs with runtime hours
  - **Calibration:** With runtime hours
  - **Temperature:** Two sets of minimum and maximum temperature logs with runtime hours

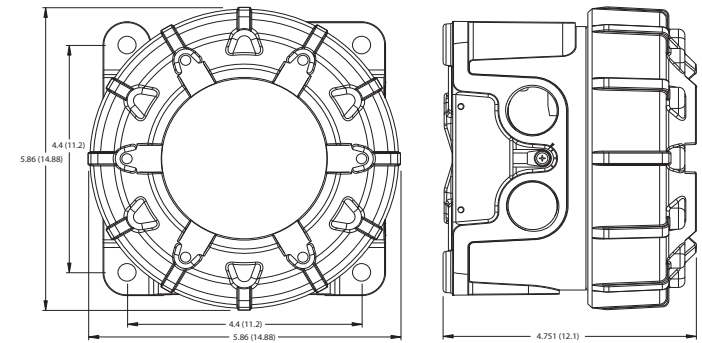
# SPECIFICATIONS

<b>Operating Voltage</b>	24 Vdc nominal, operating range is 18 to 30 Vdc.
<b>Operating Power</b>	Standard model, with heater and backlight off: No alarm: 1.5 watts @ 24 Vdc. Alarm: 3 watts @ 24 Vdc (20 mA current output and both alarm relays energized). Backlight on: 0.5 watt additional. Heater on: 3.5 watts additional.  CGS Model with CGS Conditioning Board and CGS sensor installed: 4 watts additional.  Maximum power in alarm, with heater and backlight on: 7 watts @ 24 Vdc (Standard model). 11 watts @ 24 Vdc (CGS Model).
<b>NOTES:</b> Heater turns on when the internal temperature drops below -10°C. Heater function can be disabled to save power.	
Appropriate relays will be activated when a fault or alarm occurs.	
Each UD30 nominally adds 25 ohms of loop resistance.	
<b>Current Output</b>	4–20 mA pass through output. HART signals also pass through (if available). The UD30 is a non-HART device. Maximum loop resistance 600 ohms at 18 to 30 Vdc.
<b>Relay Contacts</b>	Two Alarm Relays: Form C, 3 amperes at 30 Vdc. Selectable energized/de-energized. Selectable latching/non-latching.  One Fault Relay: Form C, 3 amperes at 30 Vdc. Normally energized for no fault condition with power applied.
<b>Operating Temperature</b>	-40°C to 75°C (-40°F to 167°F).
<b>Storage Temperature</b>	-55°C to 85°C (-67°F to 185°F).
<b>Humidity Range</b>	5 to 95% RH (Det-Tronics verified). 20 to 90% RH (Performance Agency verified).
<b>Wiring Terminals</b>	14 to 18 AWG, 2.5-0.75 mm <sup>2</sup> wire can be used.
<b>Conduit Entries</b>	3/4" NPT, M25 or M20.
<b>Enclosure Material</b>	Epoxy coated aluminum or 316 stainless steel.
<b>Shipping Weight</b>	Aluminum: 4.2 pounds (1.9 kilograms). Stainless Steel: 13 pounds (5.9 kilograms).
<b>Warranty</b>	36 months from date of manufacture.
<b>Electro-Magnetic Compatibility</b>	EMC Directive 2014/30/EU EN61000-6-4 EN50270 (Immunity).

Refer to Instruction Manual 95-8764 for in-depth information regarding the FlexVu UD30 Universal Display Unit.

## Dimensions

Dimensions shown in inches (centimeters).



## Certification



**FM:** Class I, Div. 1, Groups B, C & D (T5);  
 Class I, Div. 2, Groups A, B, C & D (T4);  
 Tamb -40°C\* to +75°C  
 Type 4X UD30  
 Type 3R UD30 CGS  
 Conduit seal not required  
 Performance verified in accordance with:  
 ANSI/ISA-92.00.01: 2010  
 FM 6320 (2018)  
 ANSI/ISA 60079-29-1: 2013  
 ANSI/ISA 12-13-04: 2007  
 FM 6325 (2005)  
 FM 6340 (2014)  
 ANSI/NEMA 250: 2014



**CSA:** Class I, Div. 1, Groups B, C & D (T5);  
 Class I, Div. 2, Groups A, B, C & D (T4).  
 (Tamb = -40°C to +75°C)  
 Type 4X, IP66 (UD30)  
 Type 3R, IP53 (UD30 CGS, CTX10)  
 CSA C22.2 No. 30, Seal not required for Class I,  
 Division 1 installations  
 Performance verified in accordance with:  
 CSA No. 60079-29-1: 2017



**ATEX:** II 2 G  
 Ex db IIC T5 Gb  
 Tamb -40°C\* to +75°C  
 IP66 for UD30  
 IP53 for UD30 CGS  
 Performance verified in accordance with:  
 EN 60079-29-1: 2016  
 Compliance with:  
 EN 60079-0: 2012 + A11: 2013  
 EN 60079-1: 2014  
 EN 60079-29-1: 2016  
 EN 50271:2018

**IECEX:** Ex db IIC T5 Gb  
 Tamb -40°C\* to +75°C  
 IP66 for UD30  
 IP53 for UD30 CGS  
 Performance verified in accordance with:  
 IEC 60079-29-1:2016  
 Compliance with:  
 IEC 60079-0: 2011 - 16  
 IEC 60079-1: 2014  
 IEC 60079-29-1: 2016  
 IEC 60529, 2.1 ed + Corr. 1: 2003 + 2: 2007

SIL: All safety certified UD30 models are SIL2 certified per IEC61508

Specifications subject to change without notice.

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Det-Tronics manufacturing system is certified to ISO 9001—the world's most recognized quality management standard.



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