

# FlexVu® Explosion-Proof Universal Display Unit Model UD10 DCU Emulator



## DESCRIPTION

The FlexVu® Model UD10 DCU Emulator (UD10-DCU) is designed for applications that require a gas detector with digital readout of detected gas levels. Its LON interface board makes the UD10-DCU compatible with Eagle Quantum Premier systems by digitizing the 4–20 mA analog signal from the attached sensor/transmitter and transmitting the value as a process variable over the LON to the EQP controller.

The UD10-DCU is designed for use with Det-Tronics gas detectors such as GT3000, PIR9400, PIRECL, PIRECL CO<sub>2</sub>, OPECL, C706x\*, Model 505/CGS, CGS\*\*, NTMOS, AC100/ATX10, PIRDUCT, or LS2000, as well as generic linear 4–20 mA sensors. Gas concentration and unit of measurement are indicated on a digital display.

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 UD10-DCU, or remotely located using a sensor termination box. The UD10-DCU features non-intrusive calibration. A magnet is used to perform calibration as well as to navigate the UD10-DCU's internal menu.

The UD10-DCU can be used with various 4–20 mA gas detection devices, with or without HART. The unit provides display, output and control capabilities for the gas detector.

The UD10-DCU utilizes the following I/O:

Signal Inputs:	4-20 mA loop from the sensing device HART communication
User Inputs:	Magnetic switches (4) on the display panel S <sup>3</sup> Software
Signal Outputs:	LON communication
Visible Outputs:	Backlit LCD display Computer running S <sup>3</sup> Software

## FEATURES AND BENEFITS

- ▲ Universal design supports multiple Det-Tronics sensors or generic linear 4–20 mA sensors.
- ▲ Local digital LCD display 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.
- ▲ Compatible with Eagle Quantum Premier systems.
- ▲ Non-intrusive menu allows device configuration without de-classifying the hazardous area.
- ▲ Internal magnetic switches provide a non-intrusive user interface.
- ▲ Smart capabilities with access to sensor information and measurement range.
- ▲ Event logs: Calibration with date and time stamp.
- ▲ Fault logs: Detector fault, Low power, and General fault.
- ▲ Alarm logs: High gas alarm, Low gas alarm, and Aux alarm.

\* C7065E O<sub>2</sub> detector is not supported.

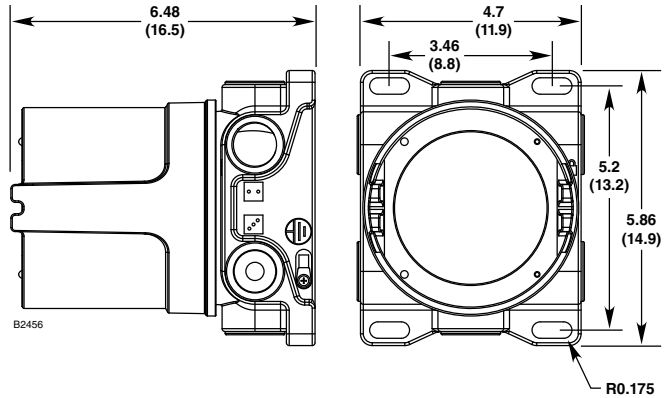
\*\* Requires the use of a CGS Interface Board. See Instruction Manual 95-8656 for details.

## SPECIFICATIONS

<b>Operating Voltage</b>	24 Vdc nominal, operating range is 18 to 30 Vdc.
<b>Operating Power</b>	Heater off: 1.3 watts nominal @ 24 Vdc with backlit display off. 2 watts @ 24 Vdc with backlit display on. Heater on: 4 watts additional. CGS model: Add 4 watts with CGS interface board and CGS sensor installed. Maximum power with heater and backlit display on: 6 watts @ 30 Vdc (Standard model) 10 watts @ 30 Vdc (CGS model). NOTE: – Heater turns on when the internal temperature drops below –10°C.
<b>LON Communication</b>	Digital communication, transformer isolated (78.5 kbps).
<b>EQP/UD10 System Accuracy</b>	<1 ppm error. <1 %LFL error. With CGS sensor: ±3 %LFL, 0-50 range, ±5 %LFL 51-100 range.
<b>EQP/UD10 System Response</b>	Toxic gas: T90 < 10 sec. Combustible gas: T90 < 10 sec. With CGS sensor: T90 < 12 sec.
<b>Unit of Measurement</b>	PPM, % LFL, % V/V, LFLM, or Mg/M3.
<b>Operating Temperature</b>	–40°C to +75°C.
<b>Storage Temperature</b>	–55°C to +75°C.
<b>Humidity Range</b>	5 to 95% RH (Det-Tronics 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 or M25.
<b>Enclosure Material</b>	Epoxy coated aluminum or 316 stainless steel.
<b>Shipping Weight</b>	Aluminum: 4.15 pounds (1.88 kilograms). Stainless steel: 10.5 pounds (4.76 kilograms).
<b>Warranty</b>	12 months from date of installation or 18 months from date of shipment, whichever occurs first.
<b>Electro-Magnetic Compatibility</b>	EMC Directive 2004/108/EC EN55011 (Emissions) EN50270 (Immunity)

### Dimensions

Dimensions shown in inches (centimeters).



### Certification



FM: Class I, Div. 1, Groups B, C & D (T5);  
 Class I, Div. 2, Groups B, C & D (T4);  
 Class I, Zone 1/2 AEx d IIC (T5);  
 Class II/III, Div. 1/2, Groups E, F & G.  
 Tamb –40°C to +75°C  
 NEMA/Type 4X, IP66  
 Conduit seal not required.

Performance verified in accordance with:  
 ANSI/ISA-92.00.01  
 ANSI/ISA-12.13.01 (CGS excluded)  
 FM 6310/6320  
 ANSI/ISA-12.13.04/FM 6325



CSA: CSA 08 2029512.  
 Class I, Div. 1, Groups B, C & D (T5);  
 Class I, Div. 2, Groups B, C & D (T4);  
 Class II/III, Div. 1/2, Groups E, F & G.  
 (Tamb = –40°C to +75°C)  
 Type 4X  
 Conduit seal not required.  
 Performance verified in accordance with:  
 CSA C22.2 #152.



ATEX: 0539   
 Ex d IIC T5 Gb  
 Tamb –40°C to +75°C  
 FM08ATEX0042X  
 IP66  
 Performance verified in accordance with:  
 EN 60079-29-1:2007 and EN 60079-29-4:2010

IECEx: Ex d IIC T5 Gb  
 Tamb –40°C to +75°C  
 IECEx FMG 08.0010X  
 IP66  
 Performance verified in accordance with:  
 IEC 60079-29-1:2007

Refer to Instruction Manual 95-8656 for in-depth information regarding the FlexVu UD10-DCU Universal Display Unit.

Specifications subject to change without notice.

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**Corporate Office**  
 6901 West 110<sup>th</sup> Street | Minneapolis, MN 55438 USA  
 Phone: 952.941.5665 or 800.468.3244  
 Customer Service: 952.946.6491 or 800.765.3473  
[www.det-tronics.com](http://www.det-tronics.com) | Email: [det-tronics@det-tronics.com](mailto:det-tronics@det-tronics.com)