

## Environmental Control Unit Accessories

### Product Description

Bebco offers three modular gas detection systems to monitor the presence of combustible hydrocarbon gases, hydrogen sulfide (H<sub>2</sub>S) gases or to detect the deficiency of oxygen (O<sub>2</sub>) by diffusion adsorption, a process requiring no moving parts. Individual components of the Model GDS Gas Detection Systems include a monitor with a compatible sensor and a power supply. Together, these components are designed to detect gases while providing alarm contacts and an LCD display that indicates the percentage of concentration. These assemblies feature calibration adjustments for zero and span (course and fine), and low and high alarm trip points. The sensor detects an undesirable level of concentration and then signals the monitor of the changing condition which is shown at the LCD readout. The monitor then trips the alarm contacts, which can be used to activate local alarm systems or to provide a signal for the emergency shutdown or emergency control override inputs of a Bebcos Pressurization or Ventilation System.

### Gas Monitors

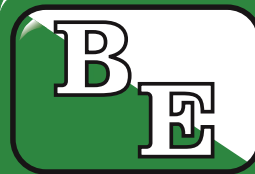
Model CGDM, HGDM, and OGDM Gas Detection Monitors are transmitters containing a sensor power supply control, sensor signal conditioner, calibration amplifiers and a digital LCD screen. The Monitors feature a 4-20 ma linear output signal to permit sensor status monitoring, along with low and high alarm set-point and fault supervision contacts. Both sets of contacts are jumper programmable form C dry contacts that can be set to open or close upon an alarm event. The alarm and fault supervision contacts are rated 5 amp @ 125 VAC; 5 amp @ 30 VDC. The monitors are housed in a NEMA 7 explosion proof enclosure rated for Class I, Division 1, Group B, C, and D areas.

### Gas Sensors

Model CGDS, HGDS, and OGDS Gas Detection Sensors are the elements that detect unacceptable levels of hydrocarbons, hydrogen sulfide or oxygen. Model CGDS Combustible Gas Sensor assemblies are catalytic bead sensors that detect hydrocarbons in a range of 0-100% LEL (Lower Explosive Limit). Model HGDS Hydrogen Sulfide Sensor assemblies are proprietary solid state sensor elements that detect hydrogen sulfide in a range of 0-100 parts per million. Model OGDS Oxygen Sensor assemblies are electrochemical sensors that measure oxygen levels in a range of 0-26% to detect oxygen deficiencies. All sensors are offered in a stainless steel housing and can be mounted either inside a stack for intake air monitoring, directly to the monitor, or remotely inside a room or building.

### Power Supplies

Model GDPS is a 24VDC Power Supply, capable of providing power for two gas detection monitors. The Power Supply requires a 120VAC power source, and is housed in a NEMA 7 explosion proof enclosure rated for Class I, Division 1, Group B, C, and D areas.



## Model GDS Series Gas Detection Systems

### Class I, Division 1, Group B, C & D Monitors, Sensors & Accessories

Technical Bulletin GDS TB-R0

© 04.21.2019



**Model CGDM**  
Combustible Gas  
Detection Monitor

**Model CGDS**  
Combustible Gas  
Detection Sensor



**Model GDPS**  
Monitor Power Supply



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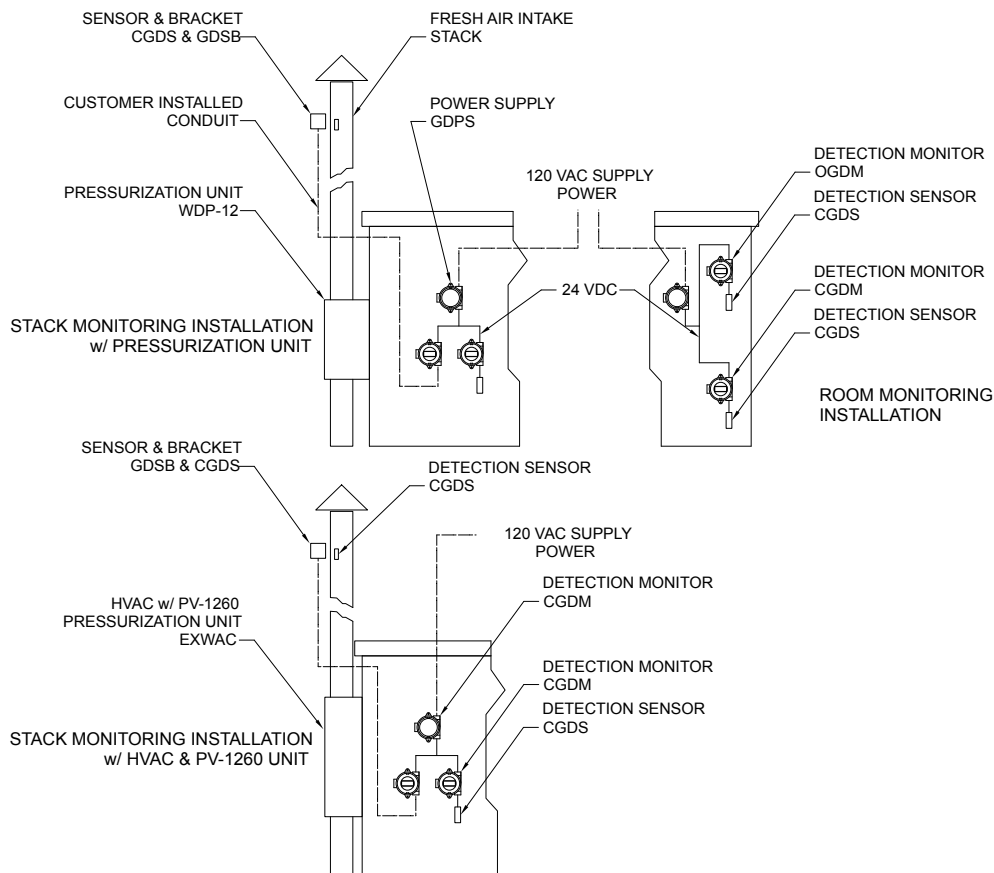
## Sensor Brackets

Model GDSB Gas Detection Sensor Brackets provide an easy method of mounting Gas Detection Sensors to an intake stack. The brackets are constructed of 14 gauge 316 stainless steel and replaceable open core tubular gasket. The gasket provides a means of sealing the gas detector bracket to the intake stack. The bracket features a 1/4" bulkhead fitting to provide a connection point for calibration gas tubing and a short section of tubing which directs calibration gas over the sensor element. The bracket also features a conduit hub connecting an explosion proof junction box outside of the stack to the sensor on the inside of the stack. The junction box contains four (4) terminals to provide an interface connection between the sensor and field wiring. The brackets are available in three models - GDSB-0810 for 8" and 10" stacks GDSB-1216 for 12" and 16" stacks and GDSB-2024 for 20" and 24" stacks.



**Model CGDS with GDSB  
Gas Detection Sensor installed in  
Gas Detection Stack Bracket**

## Monitoring Methods for Air Intake Stacks & Buildings



### STACK MONITORING METHOD

In this scenario, the gas detection sensor is mounted inside the air intake stack, utilizing the gas detection sensor bracket, to monitor air before it enters the building.

When the Monitor's alarm contact is connected to a Bebcos Pressurization or Ventilation Unit's ESD (Emergency Shut Down) input, gas detection sensor alarm events will cause the Unit to cease pressurization or ventilation, activate an alarm, and/or de-energize building power in accordance with NFPA 496.

### BUILDING MONITORING METHOD

In this scenario, the sensor is mounted inside the building to detect excessive levels of hydrocarbon or hydrogen sulfide gases or to detect oxygen deficiency.

When the Monitor's alarm contact is connected to a Bebcos Pressurization or Ventilation Unit's ECO (Emergency Control Override) input, gas detection sensor alarm events will cause the Unit to fully engage all fans, activate an alarm and dilute dangerous levels of hydrocarbons or hydrogen sulfide or increase oxygen levels.

***In any circumstance where gases are introduced into a building, such as an analyzer room, it is advisable to deploy both monitoring methods!***

Contact factory for complete shutdown applications, including power control, signal & alarm components.

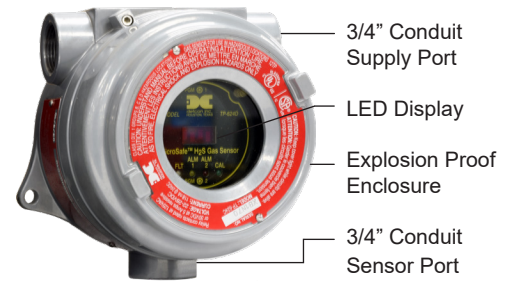
### SPECIAL GDSB INSTALLATION NOTES

**IT IS THE RESPONSIBILITY OF THE INSTALLER TO ENSURE ALL CUSTOMER SUPPLIED ELECTRICAL CONDUIT AND CALIBRATION GAS TUBING BETWEEN THE MODEL GDSB AND THE GAS DETECT MONITOR IS PROPERLY SECURED. IN ADDITION, ALL ELECTRICAL CONDUIT MUST BE INSTALLED IN ACCORDANCE WITH THE NATIONAL ELECTRIC CODE AND ALL RELEVANT PLANT AND LOCAL CODES.**

## Sensor & Monitor Specifications

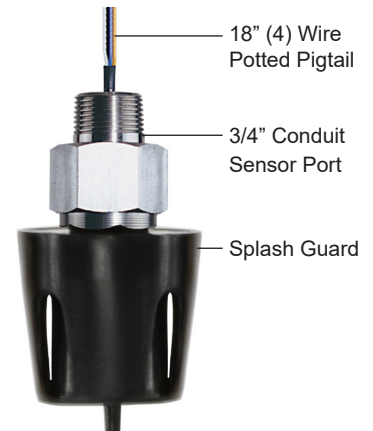
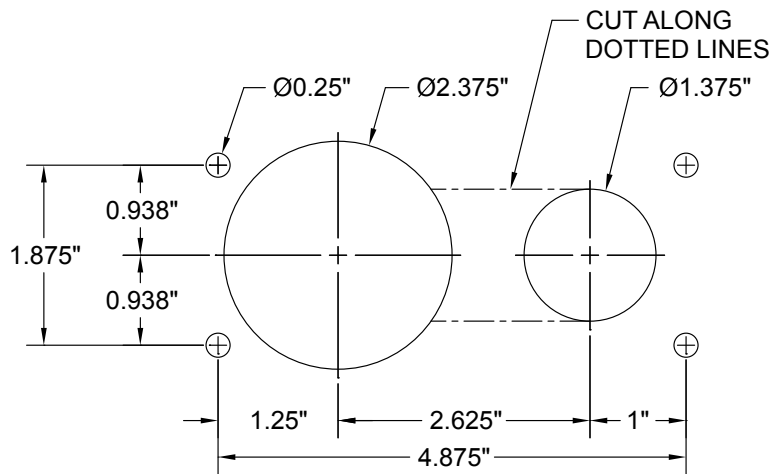
Type:	CGDM/CDDS	HGDM / HGDS	OGDM / OGDS
Accuracy:	+/- 5% Full Scale	+/- 5% Full Scale	+/- 2%
Repeatability:	+/- 5% Full Scale	+/- 5% Full Scale	+/- 2%
Zero Drift:	< 5% per year	< 2% per year	< 2% per month
Response Time:	90% < 30 sec	90% < 60 sec	90% < 60 sec
Clearing Time:	90% < 30 sec	90% < 60 sec	90% < 60 sec
Operating Temp.:	-40deg to 175F	-40deg to 175F	-40deg to 175F
Power Usage:	< 5 watt @ 24vdc	< 4 watt @ 24vdc	< 2.5 watt @ 24vdc
Signal Output:	4-20 madc linear	4-20 madc linear	4-20 madc linear
Alarm & Fault Contacts:	0.5 amps @ 125 VAC or 30 VDC		
Housing Classifications:	UL Listed - Class 1 Division 1 Gr. B, C, & D		
Input Voltage:	22 - 28vdc	22 - 28vdc	22 - 28vdc
Detection Range:	0-100% LEL	0-100 PPM	0-26%
Linearity:	< 2%	< 2%	< 2%
Detection Method:	dual poison resistant catalytic bead diffusion adsorption no moving parts	solid state metal oxide sensor diffusion adsorption no moving parts	electrochemical fuel cell diffusion adsorption no moving parts

Please contact Bebcos for information regarding special substance sensing needs.

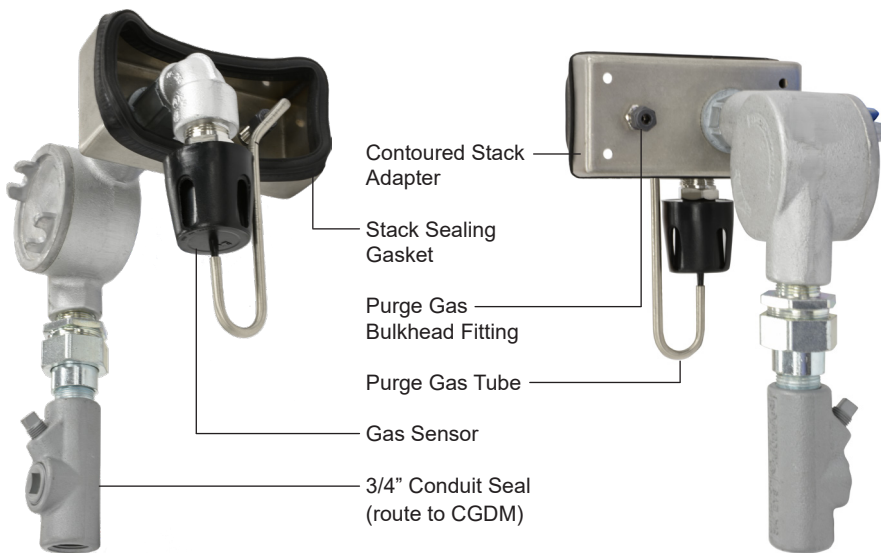


Model CGDM, HGDM & OGDM Gas Detection Monitor Housings

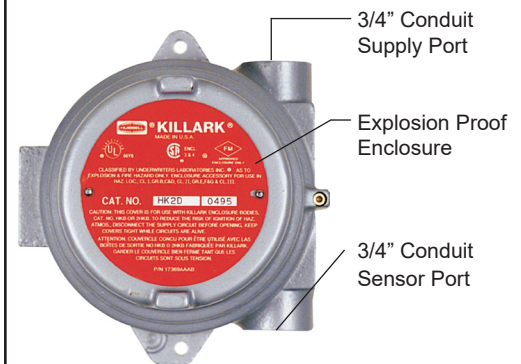
## Sensor Mounting Bracket Details



Model CGDS, HGDS & OGDS Sensors with Splash Guard Housings



Contoured Stack Adapters are available for Stack Diameters ranging from 8" to 24"



Model GDPS Power Supply Housing

# Model Number Designations

## MODELS CGDM, HGDM & OGDM

### CGDM

Series Model Number \_\_\_\_\_  
 CGDM - Combustible Gas Detector Monitor  
 HGDM - Hydrogen Sulfide Gas Detector Monitor  
 OGDM - Oxygen Gas Deficiency Monitor

## MODELS CGDS, HGDS & OGDS

### CGDS

Series Model Number \_\_\_\_\_  
 CGDS - Combustible Gas Detector Sensor  
 HGDS - Hydrogen Sulfide Gas Detector Sensor  
 OGDS - Oxygen Gas Deficiency Sensor

## MODEL GDPS

### GDPS

Series Model Number \_\_\_\_\_  
 GDPS - Gas Detector Power Supply

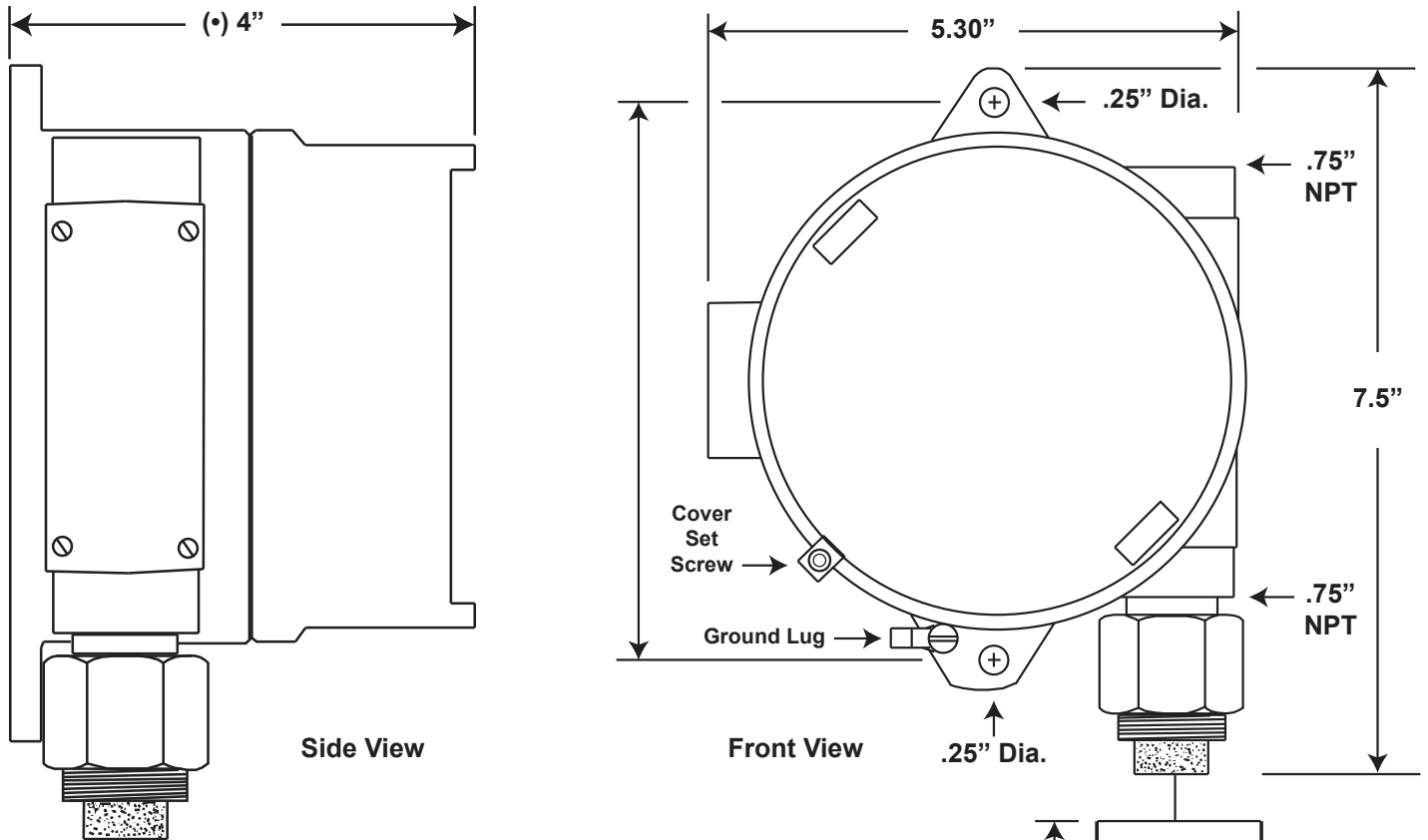
## MODEL GDSB

### GDSB - 0810

Series Model Number \_\_\_\_\_  
 GDSB - Gas Detector Sensor Bracket

Stack Size \_\_\_\_\_  
 0810 - 8" and 10" Stack Diameters  
 1216 - 12" and 16" Stack Diameters  
 2024 - 20" and 24" Stack Diameters

# Monitor, Sensor & Power Supply Housing Dimensions

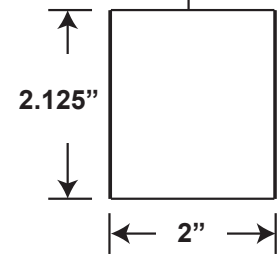


**IMPORTANT DIMENSIONAL NOTES**

Model CGDM, HGDM and OGDM gas monitors and Model GDPS power supply utilize identical explosion proof housings except as noted above (\*)

- Add 2 inches for Model GDPS Gas Detector Power Supply

Both dimensional drawings are shown with sensors installed



**IMPORTANT NOTES: All specifications subject to change without notice. Warranty & Liability policies available upon request.**