

# GDS-49 Gas Sensor Transmitter

Model 10-0248 Loop-Powered Stand Alone Transmitter for Toxic Applications with Replaceable Sensor & 4-20mA Output

- \* Certified for Explosion Proof and Intrinsically Safe Installations
- \* Compatible with all GDS Corp toxic sensors
- \* Non-polarized loop powered interface eliminates wiring errors
- \* Range and target gas configured by sensor module
- \* Fault supervision circuitry detects failed or missing sensor & transmits warning (2mA)
- \* Stainless steel case & potted electronics for high noise immunity in electrically noisy environments
- \* Industry standard 4-20mA output signal for cable runs > 1000 ft
- \* Available without flame arrestor for highly reactive gases
- \* Easy interface to all GDS Corp 2, 4, 8 or 16+ channel controllers
- \* Combine with GDS-55 Loop-Powered Alarm or GDS-54 Loop-Powered Indicator for more flexibility
- \* Manufactured in USA



Hydrogen Sulfide  
Oxygen 0-25%  
Carbon Monoxide  
Hydrogen Fluoride  
Ammonia  
Chlorine

... And More

Over 20 different sensor options for Explosion Proof and Intrinsically Safe Installations

Shown in exploded view and with standard explosion-proof junction box

The GDS-49 (Model 10-0248) two-wire toxic sensor transmitter provides a scaled 4-20mA current sink output suitable for long distance transmission to an appropriate receiver device such as a C1 or C2 Protector series controller or GASMAX transmitter.

#### Wide Variety of Available Sensors

The GDS-49 is compatible with all GDS Corp toxic sensors, including oxygen, hydrogen sulfide, chlorine, carbon monoxide and more. Built-in fault detection circuitry constantly monitors the sensor for correct operation and sensors can easily be replaced in the field.

#### Rugged Detection

The GDS-49 is enclosed in a stainless steel housing with integrated flame arrestor and is CSA approved for all Class I, Division 1 and 2 hazardous environments. For certain highly reactive gases that are not compatible with stainless steel, the GDS-49 is also available in a configuration without a flame arrestor that can be

installed as intrinsically safe (IS) with an approved IS barrier. A standard junction box is supplied with the GDS-49 for connection to field wiring.

#### Calibration Required

Initial factory adjustment is completed by installing a fixed gain resistor on the sensor. This resistor establishes the range and provides basic calibration. Since the GDS-49 electronics are completely sealed and potted for maximum protection, final calibration must be performed at the receiver device in order to meet the rated accuracy specifications and accommodate changes in sensor characteristics over time. GDS Corp. offers single, dual, four, eight and sixteen + channel controllers with compatible analog inputs suitable for final calibration, alarm, display and retransmission of monitored gas values.

#### Easy Installation

The GDS-49 includes an XP junction box and functions with loop voltages ranging from 10-30VDC; voltage drop across the GDS-49 is less than 9 volts. An integral "transient voltage suppressor" protects the GDS-49 against lightning and other electrical transients. Non-polarized wiring eliminates wiring errors.

**GDS**  
**Corp**

Gas and Flame Detection

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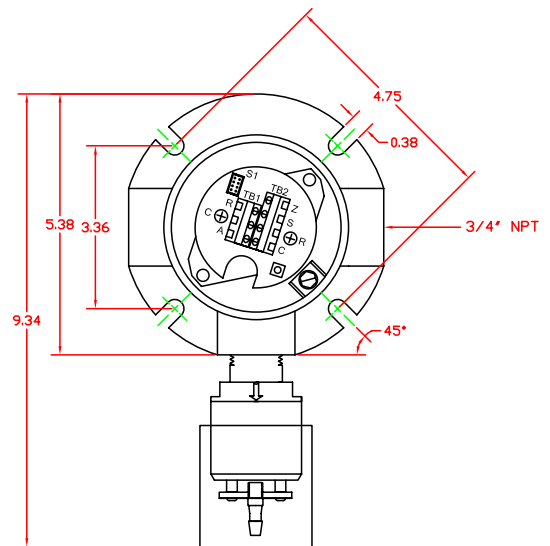
| <b>GDS-49 (Model 10-0248 &amp; 10-0248IS) SPECIFICATIONS</b> |  |
|--|--|
| <b>Power Input</b>   | 10 - 30VDC 4 - 20mA current loop with less than 9V drop across GDS-49; Maximum 32mA draw with overrange sensors  |
| <b>Display</b>   | None   |
| <b>Input</b>   | Accepts microamp-level signals from local GDS Corp toxic or oxygen deficiency sensors  |
| <b>Calibration Range</b>                                     | Rough calibration set by sensor; final calibration must be performed by remote receiver device   |
| <b>Accuracy</b>  | +/- 5% of full scale range (typical)   |
| <b>Standard Output</b>                                       | Standard 2-wire 4-20mA current sink output. Max loop R is 600 ohms with nominal 24VDC power supply.  |
| <b>Temp</b>  | -25°C to +60°C (see sensor limitations)  |
| <b>Housing</b>   | GDS-49 Stainless steel with or without flame arrestor  |
| <b>Dimensions</b>  | Width 5.3" x Height 9.3" x Depth 2.75" with splash guard<br>Shipping weight 6.5 pounds (3 kg)  |
| <b>Approvals</b>   | Model 10-0248 CSA Certified for Div. 1 & 2 Groups B, C, D Exia. Suitable for Explosion Proof and Intrinsically Safe installations.<br>Model 10-0248IS CSA Certified for Div. 1 & 2 Groups A, B, C, D. Suitable for Intrinsically Safe only.<br><b>IMPORTANT:</b> Intrinsically Safe installations require IS barrier 10-0263 (MTL 7787P+) or equivalent. |
| <b>Warranty</b>  | Two years on electronics and one year on sensors from date of purchase   |

| <b>GDS-49 Order Guide</b>    |   |
|------------------------------|---|
| <b>GDS-49 A - B - C [SM]</b> |   |
| <b>"A"</b>                   | <b>SENSOR HEAD</b> <sup>1</sup><br>1 = Stainless Steel Sensor Head (XP, IS)<br>2 = Stainless Steel Sensor Head with Splash Guard (XP, IS)<br>4 = Stainless Steel Sensor Head with Splash Guard (IS) |
| <b>"B"</b>                   | <b>SENSOR TYPE</b> (see chart) <sup>1</sup>   |
| <b>"C"</b>                   | <b>DETECTION RANGE</b> <sup>2</sup><br>1 = 0 - 1<br>2 = 0 - 5<br>3 = 0 - 10<br>4 = 0 - 25<br>5 = 0 - 50<br>6 = 0 - 100<br>7 = 0 - 500<br>8 = 0 - 1000<br>Custom RXXXX (0-9999)                      |
| <b>[SM]</b>                  | Includes quick-connect fitting for SiteMAX Rapid Deployment System  |

| <b>SENSOR TYPES</b> |                                       |             |           |                             |             |
|---------------------|---------------------------------------|-------------|-----------|-----------------------------|-------------|
| <b>10</b>           | Oxygen (0-25%)                        | -30 to +55C | <b>21</b> | Ozone (0-1) <sup>1</sup>    | -20 to +40C |
| <b>11</b>           | Carbon Monoxide (0-300)               | -30 to +50C | <b>22</b> | Ethylene Oxide (0-20)       | -20 to +50C |
| <b>12</b>           | Chlorine (0-5) <sup>1</sup>           | -20 to +50C | <b>23</b> | Arsine (0-1)                | -20 to +40C |
| <b>13</b>           | Chlorine Dioxide (0-1) <sup>1</sup>   | -20 to +40C | <b>24</b> | Silane (0-50)               | -20 to +40C |
| <b>14</b>           | Hydrogen (0-2000)                     | -20 to +50C | <b>25</b> | Fluorine (0-1) <sup>1</sup> | -10 to +40C |
| <b>15</b>           | Hydrogen Sulfide (0-100)              | -30 to +50C | <b>26</b> | Phosgene (0-1) <sup>1</sup> | -20 to +40C |
| <b>16</b>           | Hydrogen Cyanide (0-50)               | -20 to +50C | <b>27</b> | Hydrazine (0-1)             | -10 to +40C |
| <b>17</b>           | Hydrogen Chloride (0-30) <sup>1</sup> | -20 to +50C | <b>28</b> | Nitric Oxide (0-50)         | -20 to +50C |
| <b>18</b>           | Hydrogen Fluoride (0-10) <sup>1</sup> | -20 to +50C | <b>29</b> | Nitrogen Dioxide (0-100)    | -20 to +50C |
| <b>19</b>           | Sulfur Dioxide (0-25)                 | -30 to +50C | <b>30</b> | Mercaptan TBM (0-15)        | -10 to +40C |
| <b>20</b>           | Ammonia (0-100) <sup>1</sup>          | -20 to +40C | <b>31</b> | Tetrahydrothiophene (0-100) | -10 to +40C |
|                     |                                       |             | <b>32</b> | Diborane (0-5)              | -20 to +40C |

### Intrinsically Safe Installations

Certain highly reactive gases (see above) require type 4 sensor heads and Intrinsically Safe (IS) installation in hazardous locations. Intrinsically Safe equipment is defined as "equipment which is incapable of releasing sufficient electrical or thermal energy under normal or abnormal conditions to cause ignition of a specific hazardous atmospheric mixture in its most easily ignited concentration." IS installations require an IS barrier (#10-0263 MTL 7787P+) or equivalent that must be mounted in an area designated as non-hazardous.



Model 10-0248 shown with 10-0198 Splash Guard



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| <b>NOTES</b>   |
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| Note 1: Some highly reactive gases require aluminum sensor head & IS installation for XP |
| Note 2: Standard ranges shown; contact factory for additional ranges                     |