

# GDS-78XP Process Gas Monitor for Hazardous Area Applications

- \* Designed for installation in Class I, Div 1 Hazardous Locations
- \* Reliable electrochemical sensor technology for toxic gases
- \* Long life infrared sensors for carbon dioxide and hydrocarbons
- \* Stainless steel coalescing filter removes particulate and moisture
- \* Built-in flow meter provides visual confirmation of sample flow rate
- \* Industry-proven GASMAX family monitor with large LCD display
- \* Auto-recognition of infrared, VOC and toxic gas Smart Sensors
- \* Prompted calibration procedure and cal port for easy maintenance
- \* Optional 3x 5A SPDT alarm relays and MODBUS slave interface
- \* Optional explosion proof flow switch for critical applications
- \* Available with NEMA 4x stainless steel and non-metallic enclosures
- \* Loop-powered Intrinsically Safe option for reactive gases
- \* Calibration in hazardous area only requires simple magnetic wand
- \* Manufactured in USA

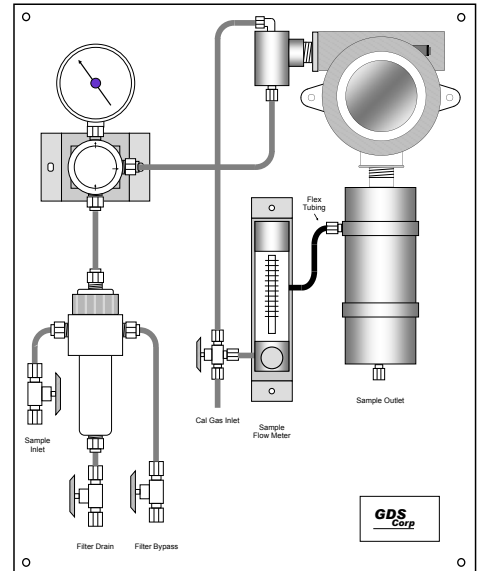
## GDS-78XP Process Gas Monitor

The GDS-78XP Process Gas Monitor is designed to provide monitoring for gas sample streams compatible with standard electrochemical, infrared or photoionization sensors. For gases that require electrochemical sensors, the stream must contain at least 20% oxygen. If the target gas can be detected by an infrared or photoionization detector, then the gas stream is not required to contain oxygen. The GDS-78XP combines the industry-proven reliability and performance of GDS Corp GASMAX gas monitors with high quality sample conditioning and flow measurement components to deliver cost-effective solutions for process monitoring applications.

## GASMAX Gas Monitor

The heart of the GDS-78XP is a GASMAX gas monitor configured for sample flow monitoring. The popular GASMAX family includes monitors that are loop-powered, DC-powered or wireless 900Mhz or 2.4 Ghz. Wireless units can be battery powered when used with toxic gas sensors, or DC powered for use with infrared, catalytic bead or PID sensors.

A magnetic switch menu-driven operator interface eliminates all analog potentiometers and allows setup and calibration without hazardous area declassification. When used with DC-powered systems, electrochemical sensors include temperature compensation and local heater for increased accuracy in low temperature applications.



GDS-78XP for 0-100% CH<sub>4</sub> with regulator, flow switch and membrane + coalescing filter

## Flexible Sample Conditioning

The GDS-78XP includes a high quality stainless steel sample conditioning system, which includes a stainless steel inlet valve and high quality glass flowmeter. For high or variable pressure applications the GDS-78XP can be configured to include an adjustable regulator and stainless steel coalescing filter or combination coalescing and membrane filter with sample bypass loop. Inlet pressure can vary between 1.0 psig and 3000 psig, depending on sample conditioning option selected.

## Designed for XP Environments

GASMAX monitors are certified for use in Class I Div 1, Groups B, C & D areas when monitoring non-reactive gases. When measuring reactive gases such as chlorine or chlorine dioxide, a loop-powered GASMAX / EC must be specified and used with an intrinsically safe barrier for XP applications.

The GDS-78XP is available with optional NEMA 4x non-metallic and stainless steel enclosures.



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GDS-78XP SPECIFICATIONS	
<b>Power Input</b>	Loop-powered GM/EC: less than 0.75W DC-powered GMII or GMIIx: 10 to 30VDC, 10 watts Max
<b>Display</b>	64 x 128 pixel LCD with backlight (GMII only)
<b>Sample Inlet Pressure</b>	Option X = 0 or 1: Minimum 1.0 psig, maximum 50 psig. Max pressure change $\pm$ 10% from nominal value. Option X = 2 or 3: Minimum 10 psig, maximum 3000 psig
<b>Sample Conditioning</b>	Option #1: Pyrex glass particulate filter. Option #2: Stainless steel coalescing filter plus regulator Option #3: Combination coalescing & membrane filter plus regulator
<b>Sample Inlet Temp</b>	+5°C (+41°F) to +50°C (+122°F)
<b>Flow Switch</b>	Optional explosion proof flow switch configured for flying leads.
<b>Signal Output</b>	Loop: 2-wire 4-20mA current sink. Max R is 600 ohms with 24VDC. DC: 3-wire 4-20mA current source. Max R is 750 ohms with 24VDC Wireless: Point to point wireless compatible with GDS Corp controllers
<b>Optional Output</b>	Isolated 4-20mA current loop or three Form C Relays 5A @ 30VDC / 240VAC plus RS-485 2-wire MODBUS® slave interface.
<b>Operating Temp</b>	-25°C (-13°F) to +60°C (+140°F)
<b>Construction</b>	GASMAX AL housing with epoxy paint standard; #316 stainless steel optional. All stainless steel tubing and fittings. Painted steel backplate.
<b>Dimensions (Plate)</b>	17" w x 21" h x 6" d 6.8 kg / 15 pounds with simple filter
<b>Dimensions (Enc)</b>	20" w x 24" h x 8" d Non-metallic or stainless steel enclosure
<b>Inlet / Outlet</b>	1/4" compression, stainless steel
<b>Approvals</b>	GASMAX CSA Certified for Class I, Div 1, Grps B, C, D. Suitable for XP installations with stainless steel flame arrestor.
<b>Warranty</b>	Electronics - 2 years from date of purchase. Important: Electrochemical toxic gas sensors must be powered within three months of shipment or sensor life may be adversely affected.

SENSOR TYPES					
10	Oxygen	-40 to +55C	27	Hydrazine	-40 to +40C
11	Carbon Monoxide	-40 to +50C	28	Nitric Oxide	-40 to +50C
12	Chlorine <sup>4</sup>	-40 to +50C	29	Nitrogen Dioxide	-40 to +50C
13	Chlorine Dioxide <sup>4</sup>	-40 to +40C	30	Mercaptan TBM	-40 to +40C
14	Hydrogen	-40 to +50C	31	Tetrahydrothiophene	-40 to +40C
15	Hydrogen Sulfide	-40 to +50C	32	Diborane	-40 to +40C
16	Hydrogen Cyanide	-40 to +50C			
17	Hydrogen Chloride <sup>4</sup>	-40 to +50C	61	PID Low (0-50 ppm, 10.6eV)	-40 to +60C
18	Hydrogen Fluoride <sup>4</sup>	-40 to +50C	62	PID High (0-300 ppm, 10.6eV)	-40 to +60C
19	Sulfur Dioxide	-40 to +50C	63	PID Low (0-50 ppm, 9.6eV)	-40 to +60C
20	Ammonia <sup>4</sup>	-40 to +40C			
21	Ozone <sup>4</sup>	-40 to +40C	70	Catalytic Bead 0-100% LEL CH4	-55 to +65C
22	Ethylene Oxide	-40 to +50C	71	Catalytic Bead 0-100% LEL (other)	-55 to +65C
23	Arsine	-40 to +40C			
24	Silane	-40 to +40C	110-132	GDS-IR Infrared	-55 to +65C
25	Fluorine <sup>4</sup>	-40 to +40C			
26	Phosgene <sup>4</sup>	-40 to +40C	150-153	GDS-IR-PM Infrared	-40 to +65C



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GDS-78XP Order Guide	
GDS-78XP X -A-B-C/ D-E-F [SS]	
<b>"X"</b>	SAMPLE CONDITIONING <sup>1</sup> 0 = Stainless steel inlet valve only 1 = Pyrex glass particulate filter 2 = Stainless steel coalescing filter with high pressure regulator 3 = Stainless steel coalescing plus membrane filter with sample bypass plus high pressure regulator
<b>"A"</b>	1 = Stainless steel sensor head 2 = SS sensor head for reactive gases 28 = Flow cell for GDS-IR 29 = Flow cell for GDS-IR2
<b>"B"</b>	SENSOR TYPE <sup>2,4</sup> 10 - 32 Toxic 61 - 64 Photoionization for VOC 70 - 71 Catalytic bead for LEL 110 - 133 GDS-IR Infrared 150 - 152 GDS-IR2 Infrared
<b>"C"</b>	RANGE (See sensor information)
<b>"D"</b>	0 = Standard sensor 1 = Temperature compensated sensor with sensor heater (Type 10-32 only)
<b>"E"</b>	OUTPUT TYPE <sup>2,5</sup> 1 = DC Non-isolated 4-20mA output 2 = DC 4-20mA plus MODBUS, relays 3 = DC Isolated 4-20mA output 4 = Two-wire 4-20mA loop-powered 5 = Battery wireless (900 Mhz) 6 = Battery wireless (2.4 Ghz) 7 = DC wireless (900 Mhz) 8 = DC wireless (2.4 Ghz)
<b>"F"</b>	FLOW SWITCH <sup>6</sup> 0 = None 1 = XP flow switch
<b>"F"</b>	ENCLOSURE 1 = 17" x 21" carbon steel plate 2 = 20" x 24" NEMA4X non-metallic enclosure 3 = 20" x 24" NEMA4X stainless steel enclosure

NOTES
Note 1: Option X = 0, 1 requires sample at fixed pressure between 2 and 50 psig, with less than 10% variation. Option X = 2, 3 require minimum inlet pressure of 10 psig.
Note 2: Two-wire and battery wireless available for sensor types 10-32 only.
Note 4: Reactive gases require E = 4, IS barrier and loop-powered output for use in hazardous area
Note 5: Combustible, PID or Infrared sensors require DC-power
Note 6: For options E = 1, 2, 3 flow switch can be wired into unused channel for integrated relay or FAULT output.