

# Protector BX4 Sensor Controller

## Four-Channel Gas Sensor Controller with Calibrated Digital and Analog Sensor Inputs for General-Purpose Applications

- ❑ Supports 4 local, extended (25') or remote toxic / combustible sensors
- ❑ Two full color TFT displays for fast recognition of alarm status
- ❑ Supports local or extended PID sensors for VOC detection
- ❑ Configurable analog inputs for local or remote 4-20mA sensors
- ❑ User-prompted calibration available on all inputs
- ❑ Fault supervision circuitry detects failed sensor & transmits warning
- ❑ Power-up and post-calibration delays eliminate false alarms
- ❑ Optional Red, Amber, or Blue highly visible top-mounted Strobe
- ❑ Optional Piezo, Dual Tone Buzzer, or Electronic horn
- ❑ Bright display for better visibility in full-sun lighting conditions
- ❑ Graphic display shows values, units, trend graph, alarm levels
- ❑ Security settings allow users to lock critical parameters
- ❑ Manufactured in USA



Shown with  
two local and  
two remote  
sensors

Optional red,  
amber or blue  
strobe available

The GDS Corp **Protector BX4** Gas Sensor Controller supports up to four local or remote sensors for volatile organics, toxic gases or combustible atmospheres. The *Protector BX4*'s direct sensor interface to local or extended GDS Smart Sensors (up to 25') gives the unit the ability to automatically recognize and configure a wide range of toxic, infrared and PID sensor types.

For greater distances, the *Protector BX4* supports industry-standard 4-20mA sensors including the GDS-49X toxic sensor transmitter or the GDS-IR and GDS-IR2 infrared sensors. Each channel can be individually calibrated and Smart Sensors track hours-in-use

and calibration history.

The *Protector BX4* features four independent 4-20mA outputs two dedicated normally-open alarm relays and a normally closed (fail-safe) fault relay. A serial RS-485 MODBUS interface is also included with the controller. Finally, the controller includes a dedicated alarm acknowledge push-button on the front panel.

The two highly visible full color TFT backlit display makes the *Protector BX4* sensor controller extremely easy to read and operate, and magnetic switches arranged around the screen allow users to perform calibrations or change settings without opening the enclosure. Bright flashing yellow or red alarm screens give users the ability to instantly recognize alarm conditions and take appropriate action.

The *Protector BX4* is designed for general purpose applications in areas such as water treatment plants, municipal installations and brewing & food processing facilities

**GDS  
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Gas and Flame Detection

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PROTECTOR BX4 SPECIFICATIONS	
<b>Power Input</b>	Power Input 90-264 VAC or +12-30 VDC
<b>Display</b>	Dual QVGA color TFT displays with value, bargraph and trend graph Color coded alarms (A1 = Yellow, A2 = Red, A3 = Purple)
<b>Sensor Inputs</b>	CH1: GDS Digital Smart Sensor or 4-20mA Analog Input CH2: GDS Digital Smart Toxic Sensor or 4-20mA Analog Input CH3: GDS Digital Smart Sensor or 4-20mA Analog Input CH4: GDS Digital Smart Toxic Sensor for 4-20mA Analog Input (Options may vary based on sensor selection)
<b>Standard Output</b>	Four independent non-isolated 4-20mA source outputs. Common Alarm 1 Relay: Normally open, 5A @ 24VDC Common Alarm 2 Relay: Normally open, 5A @ 24VDC Common Fault Relay: Normally closed, 5A @ 24VDC MODBUS RS-485 serial interface
<b>Environmental</b>	-10C to +50C operating; -20C to +60C storage, 95% RH non-condensing Sensor restrictions may override device environmental specifications
<b>Housing</b>	Polycarbonate wall-mount with hinged cover and stainless steel snap latch. Non-corrosive, non-conductive rigid design. UL 508A, UL 50 and UL 50E Types 1, 2, 3, 3R, 4, 4X, 12 & 13 Complies with EN/IEC 60204-1 and 60529 Type IP66
<b>Dimensions</b>	
<b>Certifications</b>	For use in non-hazardous areas only
<b>Warranty</b>	Two-year limited warranty on electronics and one year on sensors. Five years on GDS-IR and GDS-IR2 infrared sensors.

TOXIC SENSORS <sup>1</sup>		SMARTIR SENSORS		122	Diesel 100% LEL
10	Oxygen	50	Methane 100% LEL	123	Gasoline 100% LEL
11	Carbon Monoxide	51	Propane 100% LEL	124	ISO Al 100% LEL
12	Chlorine	52	Methane 100% v/v	125	Acetone 100% LEL
13	Chlorine Dioxide	53	CO2 500 ppm	126	p-Xylene 100% LEL
14	Hydrogen	PID SENSORS		127	ETO 100% LEL
15	Hydrogen Sulfide	60	0-100 ppm PID (10.6eV)	128	MEK 100% LEL
16	Hydrogen Cyanide	61	0-300 ppm PID (10.6eV)	129	Styrene 50% LEL
17	Hydrogen Chloride	63	0-100 ppm PID (10.0 eV)	130	Methane 100% v/v
18	Hydrogen Fluoride	64	0-300 ppm PID (10.0 eV)	131	Propane 100% v/v
19	Sulfur Dioxide	GDS-IR INFRARED <sup>3,4</sup>		132	CO2 5% v/v
20	Ammonia	110	Methane 100% LEL	133	CO2 3.5% v/v
21	Ozone	111	Propane 100% LEL	134	Propane 100% UEL
22	Ethylene Oxide	112	Isobutane 100% LEL	135	CO2 2% v/v
25	Fluorine	113	Pentane 100% LEL	136	EN 100% LEL
26	Phosgene	114	Cyclopentane 100% LEL	137	CO2 1% v/v
27	Hydrazine	115	n-Butane 100% LEL	138	CO2 5000 ppm
28	Nitric Oxide	116	Ethanol 100% LEL	139	CO2 2000 ppm
29	Nitrogen Dioxide	117	Methanol 100% LEL	140	Eth Chl 100% LEL
30	Mercaptan TBM	118	Propylene 100% LEL	141	Prp Ace 100% LEL
31	THT	119	Ethylene 100% LEL	142	Meth Ace 100% LEL
ANALOG INPUT <sup>2</sup>		120	Hexane 100% LEL	143	Aro 150 100% LEL
90	4-20mA input 0-100	121	Jet-A 100% LEL		



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PROTECTOR BX4 Order Guide	
BX4A- HEAD1-SEN1-RNG1 / HEAD2-SEN2-RNG2 / HEAD3-SEN3-RNG3 / HEAD4-SEN4-RNG4 / OPT1 - OPT2 - OPT3	
<b>HEADx</b>	0 = No sensor 1 = Local smart sensor 2 = Extended sensor (<25') 3 = Local analog sensor 4 = Remote analog sensor 5 = Local GDS-IR or GDS-IR2 sensor 6 = Remote GDS-IR or GDS-IR2 sensor
<b>SENx</b>	CHx Sensor Type (See sensor selection below)
<b>RNGx</b>	CHx Sensor Range For available ranges see GDS Configurator
<b>OPT1</b>	0 = No Strobe 1 = Red Strobe 2 = Amber Strobe 3 = Blue Strobe
<b>OPT2</b>	0 = No Horn 1 = Local Piezo 2 = Dual Tone Horn (102 dB) 3 = C1D2 Electronic Horn (99 dB)
<b>OPT3</b>	1 = DC Input (+12 to +30VDC) 2 = 20W Supply (90-264VAC, 47 to 440 Hz) 3 = 40W Supply (90-264VAC, 47 to 440 Hz)

GDS-IR2 INFRARED <sup>3,4</sup>			
209	Acetylene 100% LEL	270	CO2 3000 ppm
210	Methane 100% LEL	271	Acetic Acid 2k ppm
211	Propane 100% LEL	301	NH3 1000 ppm
220	MeOAc 50% LEL	302	NH3 2500 ppm
221	Vinyl Acetate	303	NH3 1% v/v
222	Acetic Acid	304	NH3 10% v/v
230	Methane 100% v/v	401	DCM
231	Propane 100% v/v	402	Chloroprene 6%
232	CO2 5% v/v	403	SF-6 1000 ppm
233	CO2 3.5% v/v	410	H2O 300 mg/L
234	CO 1% v/v		
235	CO2 15% v/v		
236	CO2 20% v/v		

Notes	
1	Local or Extended Toxic Sensors utilize Smart sensor interface for automatic identification and setup.
2	Type 90 analog input ranges and engineering units are field programmable. Default range is 0-100 % LEL.
3	Contact GDS Corp for additional information on GDS-IR and GDS-IR2 sensors.
4	GDS-IR sensors require a 4-20mA analog input and 5 watts of DC power. If configuring more than 2 GDS-IR sensors, specify the 40 W power supply.