

# SMART GAS ANALYZER FOR OXYGEN / TOXIC / COMBUSTIBLE GASES

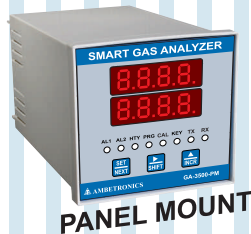
MODEL NO.: GA-3500 (LED DISPLAY)



PANEL MOUNT-V



PANEL MOUNT-H



PANEL MOUNT



WEATHERPROOF



FLAMEPROOF

## Features

- Provides a fast and reliable output by using Electro Chemical / Pellister Sensor Technology.
- Optimized for detection of smallest leak of Oxygen, Toxic and Combustible Gases.
- Highly resistant to poisoning and etching.
- Capable of detecting down to PPM, %LEL & %V/V.
- Digital display of Gas Concentration on LED Display for GA-3500 Standard 4-20mA signal output with configurable range.
- Easy handling and programming with 3 keys for Panel Mount, Weatherproof & Flameproof Models.
- Password protected programming with password changing facility.
- Optional Alarm relay contacts with two configurable Alarm levels & one Relay for fail safe relay.
- Optional STEL and TWA set points can be configured for Toxic Gases.
- Show peak value of gas concentration with a single key press.
- Optional RS-485 communication port with MODBUS RTU Protocol.
- Programmable time setting for pump operation to cleaning dust.

## Applications

- Refineries
- Cold Storage
- Sewage Plants
- Fertilizers Plants
- Stack Monitoring
- Chlorination Plant
- Gas Metering skid
- Gas Cylinder Bank
- Ambient Monitoring
- Pulp & Paper Plants
- Oil & Gas Industries
- Gas Pipeline Project
- Gas Metering Station
- Heat Treatment Plants
- Chemical Storage Area
- Control Atmosphere
- Burner / Furnace Areas
- Power & Industrial Plants
- Bullet Yard / Storage Yard
- Chemical Processing Plant
- Coal Mine and Confined Area
- Chemical & Petrochemical Plants
- Acid Alkalizes & Dyes Mfg. Plants
- Automotive Industries / Paint Shops
- Offshore Drilling & Processing Platforms
- Industrial painting and coating
- Indoor air quality
- Waste water treatment plants

**MUST FOR HUMAN AND INDUSTRIAL SAFETY**

# TECHNICAL SPECIFICATIONS

## General :

Detection Method : Electrochemical / Catalytic Bead / Pellistor / Siegistor  
 Gases Detected : Oxygen / Toxic Gases, Infrared / Solidstate / Combustible  
 Display : 2-Line, 4-Digit 8 mm (H) Seven Segment LED Display 8 LEDs to indicate status of instrument  
 Control Action : i) Two independent alarm set points with Latch & Non-Latch Facility.  
 ii) User selectable Hysteresis and Logic option.  
 iii) Configurable STEL and TWA set points for Toxic Gases (Optional)  
 Setting : By using 3 Keys on front panel

## Performance :

Accuracy : ±2% of Full Scale.  
 Response Time : T20 < 18 Seconds  
 T50 < 22 Seconds  
 T90 < 40 Seconds  
 Start-up Time : Less than 30 Seconds.

## Electrical :

Supply Voltage : 230VAC / 50/60Hz, 230VDC (±10%)  
 Power Consumption : Less than 10 Watts.  
 Cable : 1) For Weatherproof Model : 3 Wire (1.5 mm<sup>2</sup>) Flexible Cable.  
 2) For Flameproof Model : 3 Core copper wire, Shielded Armored Cable.  
 R-12 ohm / km per core & C - 0.15mFd per Km & Reactance 0.107 hms / km.

## Panel Mount Housing :

Protection Class : IP-40  
 Dimension : PMV - 96 mm (W) x 194 mm (H) x 213mm (D)  
 : PMH - 194 mm (W) x 96 mm (H) x 213 mm (D)  
 : PM - 96 mm (W) x 96 mm (H) x 170 mm (D)  
 Enclosure : ABS Plastic  
 Mounting : Panel Mounting  
 Weight : Approx 1.4 Kg

## Weatherproof Housing :

Protection Class : IP-65  
 Cabinet Material : Polycarbonate, Grey Colour  
 Cable Entry : Thermoplastic Cable Gland (IP 68)  
 Dimension : 225 mm (H) x 240 mm (W) x 115 mm (D) (With Gland)  
 Mounting : Wall Mounting / Stand Mounting / Pipe Mounting  
 Weight : Approx 1.2kg

## Output Signal :

Standard : 4-20mA Current Output with configurable range selection with 470 ohm load driving capacity.  
 Optional : a) Three SPDT Relay (one for FailSafe & Two for Alarm indication) of rating. 10A/250VAC, 10A30VDC  
 b) 0 to 10 VDC  
 c) RS-485 isolated Port with MODBUS RTU protocol.

## Error Monitoring :

i) During Sensor Break / Open, the Display shows '5E n5 oPE n' & 4-20mA output goes down to 3.7mA. for Combustible gases only.  
 ii) During Over Range, the Display shows 'o u E r r Fl n G' & 4-20mA output goes up to 21mA.

## Environmental :

Operating Temperature : 0° to +50°C  
 Storage Temperature : -10° to + 60°C  
 Humidity : Less than 95% Non-Condensing.

## Accessories (Optional) :

- certified 24 VDC Power Supply.
- Canopy & Stand Mounting.
- Gas Calibration Kit (0.5,1,3,10) Litre.
- Hooter Cum Flasher.
- Gas Sampling & Conditioning System.
- RS-485 to USB OR RS-232 Converter.
- PC Based SCADA Software, Modem.

## Flameproof Housing :

Protection Class : IP-65 for Gas Gr. IIA, IIB & IIC, CMRI Approved Enclosure, CCOE (Optional)  
 Cabinet Material : Cast Aluminium alloy, LM-6  
 Cable Entry : Double compression cable gland (Ex-Proof), ¾" ET-type  
 Dimension : 350 mm (H) x 290 mm (W) x 170 mm (D) (With Gland)  
 Mounting : Wall Mounting / Stand Mounting / Pipe Mounting  
 Weight : Approx 5.8 Kg.

## LIST OF GAS TRANSMITTERS WITH RANGES & RESOLUTION

S.N.	GAS NAME	ON DISPLAY	RANGE	RES.	S.N.	GAS NAME	ON DISPLAY	RANGE	RES.
1.	Oxygen	O2	0-25% Vol.	0.1, 0.01, 1	11.	Ammonia	Nh <sub>3</sub>	0-50 PPM	0.1, 1
2.	Oxygen	O2	0-100% Vol.	0.1, 1	12.	Ozone	O <sub>3</sub>	0-2000 PPM	0.1, 0.01
3.	Nitrogen Dioxide	NO <sub>2</sub>	0-20 PPM	0.1, 1	13.	Ethylene Oxide	C <sub>2</sub> H <sub>4</sub> O	0-100 PPM	0.1, 0.01, 1
4.	Nitric Oxide	NO	0-250 PPM	0.1, 1	14.	Phosphine	PH <sub>3</sub>	0-9999 PPB	0.1, 0.01, 1
5.	Sulphur Dioxide	SO <sub>2</sub>	0-50 PPM	0.1, 1	15.	Hydrogen	H <sub>2</sub>	0-100% LEL	1
6.	Chlorine	CL <sub>2</sub>	0-20 PPM	0.01, 0.1, 1	16.	Phosgene	PHGn	0-10 PPM	0.1, 0.01
7.	Carbon Monoxide	CO	0-2000 PPM	1	17.	Fluorine	F <sub>2</sub>	0-100 PPM	0.1, 1
8.	Hydrogen Sulphide	H <sub>2</sub> S	0-200 PPM	0.1, 1	18.	Hydrogen Fluoride	HF	0-50 PPM	0.1, 1
9.	Hydrogen Cyanide	HCN	0-100 PPM	0.1, 0.01, 1	19.	Hydrogen Bromide	Hbr	0-10 PPM	0.1, 0.01
10.	Hydrogen Chloride	HCL	0-20 PPM	0.1, 1	20.	Ethylene Oxide	ETO	0-100 PPM	0.1, 1

\* Please specify if any other gases you require which is not in the list ( Available on Request)

## ORDERING INFORMATION

<b>GA</b> — <b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>	<b>G</b>	<b>H</b>
<b>A) Model No.</b> 1) GA-3500	<b>B) Enclosure</b> 1) Flameproof - (FLP) 2) Weatherproof - (WP) 3) Panel Mount Vertical - PMV 4) Panel Mount Horizontal - PMH 5) Panel Mount - PM	<b>C) Gas</b> Please select the Serial No of the gas from the list given above.	<b>D) Relay Output</b> 1) None 2) 3 Relays (AL1, AL2 Failsafe Relay)	<b>E) Retransmission Output</b> 1) None 2) 4 to 20mA 3) 0 to 10 VDC	<b>F) Communication Port</b> 1) None 2) RS-485 serial port	<b>G) Sensor Housing</b> 1) PVC material 2) Teflon 3) Stainless Steel (SS316)	<b>H) Power Supply</b> 1) 230 VAC 2) 230 VDC

\* Before placing order please Refer the above ordering information or Contact below address for assistance.

Manufactured by :



**AMBETRONICS ENGINEERS PVT. LTD.**

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Dealers: