



# GAS DETECTION SYSTEM



**Medi Smart** – Delivering innovative and reliable **Medical Engineering**, tailored for the GCC healthcare sector.



Certified - ISO 9001:2015, ISO 45001:2018, ISO 14001:2015 & ISO 13485:2016



A HEALTHCARE PRODUCT MANUFACTURING COMPANY

# Smart Gas Detector for Toxic, Combustible, Oxygen & VOC Gases



**GT-2511-FLP**



## 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 L.C.D. Display
- Standard 4-20mA signal output with configurable range
- Easy handling and programming with 3 keys for Weatherproof Models.
- Password protected programming with password changing facility
- One man Auto Software Gas Calibration
- 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
- Optional RS-485 communication port with MODBUS RTU Protocol.

## Applications

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

**MUST FOR HUMAN & INDUSTRIAL SAFETY**

# TECHNICAL SPECIFICATIONS

## General

Detection Method : Electrochemical / Catalytic Bead / Pellistor / Siegestor  
 Gases Detected : Oxygen / Toxic / Combustible  
 (Please select from the table below).

Display : 8 x 2 Alphanumeric L.C.D. with configurable backlit  
 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 for Weatherproof Model

## Performance

Response time : Less than 15 seconds (Depending on type of gas)

## Error Monitoring

- 1) During Sensor Break / Open, the Display shows 'SENSOR OPEN' & Output Current/voltage will be as per Upscale/ Downscale
- 2) During Over range, the Display shows 'OVER RANGE' & Output Current will be as per Upscale/ Downscale
- 3) During output current open condition the display indicates "mA LOOP OPEN" & the message disappears after Acknowledgment
- 4) mA Loop Open setting can be Enabled or disabled
- 5) Upscale current: 21mA/ 22mA Selectable
- 6) Downscale current 1mA / 3.7mA Selectable
- 7) Inhibit mode current is adjustable & user selective  
 Oxygen for 25% V/V range : 3.8mA / 17.4mA  
 Oxygen for 100% V/V range : 3.8mA / 7.34mA  
 Nitrogen for 100% V/V range : 3.8mA/ 16.656mA  
 Toxic / combustible / PID / NDIR : 2mA / 3.8mA / 4mA

## Performance :

Accuracy : ±2% of Full Scale.  
 Response Time : For response time, contact to factory  
 Start-up Time : Less than 30 Seconds.

## Accuracy

SR. NO.	SENSOR TECHNOLOGY		CALIBRATION ACCURACY
1	Electrochemical		±2 % F.S
2	Catalytic/ Pellistor		±2 % F.S
3	NDIR-CH4/ CO2/ C3H8		± 10 % of Applied Gas
4	PID	0 to 5000 PPM	± 10 % of Applied Gas
		0 to 1000 PPM	± 5 % of Applied Gas
		0 to 50 PPM	± 3 % of Applied Gas

## Output Signal

Standard Current / Voltage : 4-20mA output with configurable range  
 selection.

Current output capacity : ± 0.125% Full Scale  
 Load Driving Capacity : 1) 560 ohm at 18VDC to 36VDC  
 2) 820 ohm load driving capacity at 22VDC to 36VDC

Optional Relay : Three SPDT Relay (one for Fail Safe and Two for Alarm  
 indication) of rating No: 10a 250VAC / 5A 30VDC &  
 NC: 3A 125VAC / 3A 30VDC

Display : 8 x 2 Alphanumeric L.C.D. with configurable backlit  
 8 LEDs to indicate status of instrument.

Optional communication : Isolated RS-485 Communication port with  
 MODBUS RTU protocol

## Electrical :

Supply Voltage : 18 to 36 VDC, Typically 24VDC  
 Power Consumption : Less than 3.6 Watts  
 Connector Cross-section : 2.5mm<sup>2</sup> for Flexible or Armoured Shielded Cable.

## Common Deliverable

- 1) Test Calibration Certificate
- 2) Reference Calibration Gas Certificate
- 3) 'Operational/Instrument' User Manual
- 4) Standard Mounting Hardware

## Environmental :

Operating Temperature : -15 to +55°C  
 Storage : -10 to 60°C  
 Humidity : Less than 95% Non-Condensing.

## Weatherproof Housing

Protection Class : IP65  
 Cabinet Material : Polycarbonate, grey colour  
 Cable Entry : Thermoplastic cable gland (IP 68)  
 Dimension : 192mm(H) x 150mm(W) with hooter cum flasher and  
 cable gland x 60 mm(D) (with 1 Gland)

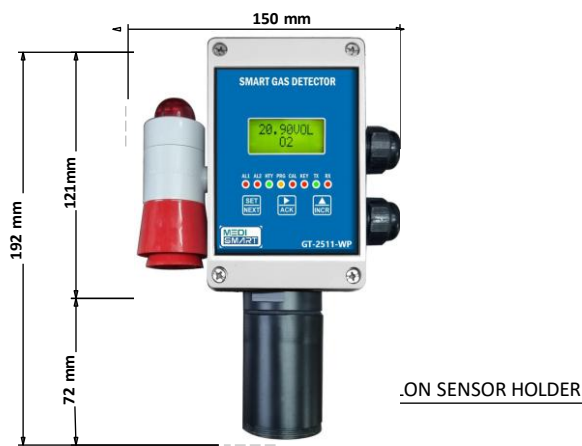
Mounting : Wall Mounting / Stand Mounting / Pipe Mounting  
 Weight : Approx 500 Grams

## Accessories (Optional) :

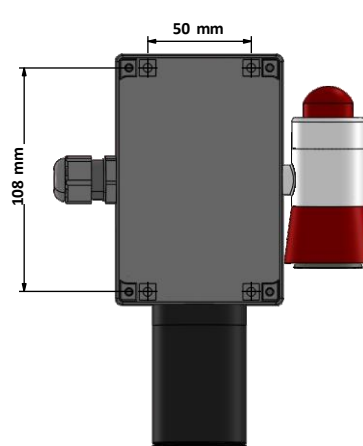
- 1) CE certified 24VDC Power supply
- 2) Canopy & Mounting stand
- 3) Gas Calibration Kit (0.5, 1,3,10) Liter.
- 4) Hooter Cum Flasher
- 5) Gas sampling & Conditioning System
- 6) RS-485 to USB or RS-232 converter
- 7) Ethernet converter
- 8) PC Based SCADA software, Modem

## FLAMEPROOF ENCLOSURE DIMENSION & MOUNTING DETAILS WITHOUT HOOTER CUM FLASHER

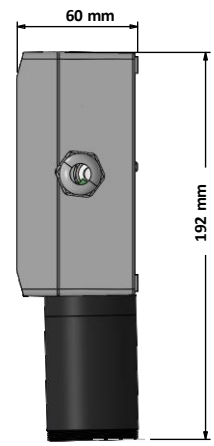
Front View



Back View



Side View



# LIST OF GASES WITH RANGE AND RESOLUTION AND ALARM SET POINT

ELECTROCHEMICAL SENSOR TECHNOLOGY				
SR.NO	GASES	RANGE	UNIT	RES
O1	Oxygen (O <sub>2</sub> )	25	%V/V	0.01
O2	Oxygen (O <sub>2</sub> )	0 TO 100	%V/V	00.1
NT1	Nitrogen (N <sub>2</sub> )	0 TO 100	%V/V	00.1
TOXIC GASES				
T1	Ammonia (NH <sub>3</sub> )	100	PPM	1
T2	Ammonia (NH <sub>3</sub> )	1000	PPM	1
T3	Bromine (Br <sub>2</sub> )	20	PPM	00.1
T4	Carbon Monoxide (CO)	1000	PPM	1
T5	Carbon Monoxide (CO)	2000	PPM	1
T6	Chlorine (CL <sub>2</sub> )	10	PPM	0.1
T7	Ethylene Oxide (ETO)	100	PPM	1
T8	Hydrogen (H <sub>2</sub> )	2000	PPM	1
T9	Hydrogen Bromide (HBr)	20	PPM	1
T10	Hydrogen Chloride (HCL)	20	PPM	1
T11	Hydrogen Cyanide (HCN)	100	PPM	1
T12	Hydrogen Fluoride (HF)	10	PPM	0.01
T13	Hydrogen Fluoride (HF)	100	PPM	1
T14	Hydrogen Sulfide (H <sub>2</sub> S)	100	PPM	1
T15	Ozone (O <sub>3</sub> )	5	PPM	0.01
T16	Phosphine (PH <sub>3</sub> )	10	PPM	0.1
T17	Nitrogen Dioxide (NO <sub>2</sub> )	20	PPM	0.1
T18	Nitric Oxide (NO)	250	PPM	1
T19	Sulfur Dioxide (SO <sub>2</sub> )	50	PPM	0.1
T20	Sulfur Dioxide (SO <sub>2</sub> )	2000	PPM	1
NDIR SENSOR TECHNOLOGY				
SR.NO	GASES	RANGE	UNIT	RES
N1	Carbon Dioxide(CO <sub>2</sub> )	5000	PPM	1
N2	Carbon Dioxide (CO <sub>2</sub> )	5	%V/V	0.01
N3	Carbon Dioxide (CO <sub>2</sub> )	100	%V/V	0.1
N4	Methane (CH <sub>4</sub> )	100	%V/V	0.1
N5	Methane (CH <sub>4</sub> )	100	%LEL	1
N6	Methane (CH <sub>4</sub> )	5	%V/V	0.01
N7	Propane/LPG (C <sub>3</sub> H <sub>8</sub> )	100	%LEL	1
N8	Propane/LPG (C <sub>3</sub> H <sub>8</sub> )	5	%V/V	0.1
N9	Propane/LPG (C <sub>3</sub> H <sub>8</sub> )	100	%V/V	1

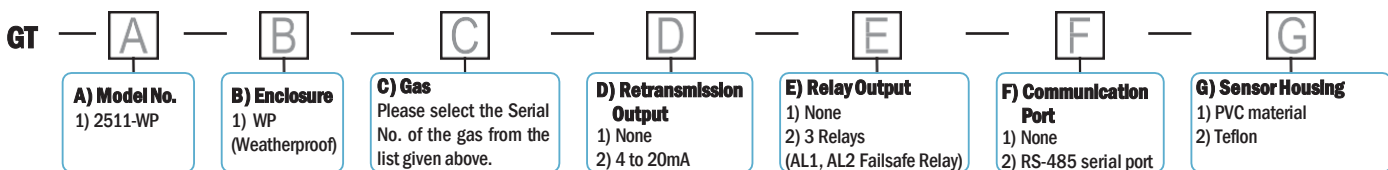
COMBUSTIBLE GASES				
SR.NO	GASES	RANGE	UNIT	RES
C1	Acetone (CH <sub>3</sub> ) <sub>2</sub> CO	100	%LEL	1
C2	Acetylene (C <sub>2</sub> H <sub>2</sub> )	100	%LEL	1
C3	Ammonia (NH <sub>3</sub> )	100	%LEL	1
C4	Butane/ n-Butane (C <sub>4</sub> H <sub>10</sub> )	100	%LEL	1
C5	Carbon Monoxide (CO)	100	%LEL	1
C6	Ethanol (C <sub>2</sub> H <sub>5</sub> OH)	100	%LEL	1
C7	Ethyl Acetate (C <sub>4</sub> H <sub>8</sub> O <sub>2</sub> )	100	%LEL	1
C8	Ethylene (C <sub>2</sub> H <sub>4</sub> )	100	%LEL	1
C9	Hexane/ n-Hexane (C <sub>6</sub> H <sub>14</sub> )	100	%LEL	1
C10	Hydrogen (H <sub>2</sub> )	100	%LEL	1
C11	Isopropanol (CH <sub>3</sub> -C <sub>2</sub> H <sub>4</sub> OH)	100	%LEL	1
C12	Methane (CH <sub>4</sub> )/ HC	100	%LEL	1
C13	Methyl Ethyl Ketone (CH <sub>3</sub> -CO-C <sub>2</sub> H <sub>5</sub> )	100	%LEL	1
C14	Methanol (CH <sub>3</sub> OH)	100	%LEL	1
C15	N-Heptane (C <sub>7</sub> H <sub>16</sub> )	100	%LEL	1
C16	N-Heptane (C <sub>7</sub> H <sub>12</sub> )	100	%LEL	1
C17	Pentane / n-Pentane (C <sub>5</sub> H <sub>12</sub> )	100	%LEL	1
C18	Propane / n-Propane (C <sub>3</sub> H <sub>8</sub> )	100	%LEL	1
C19	Toluene (C <sub>6</sub> H <sub>5</sub> CH <sub>3</sub> )	100	%LEL	1
C20	Unleaded Petrol	100	%LEL	1
C21	CNG/ LNG/ LPG/ Natural Gas/ Flammable Gas	100	%LEL	1

PID SENSOR TECHNOLOGY				
Sr. No.	GASES	RANGE	UNIT	RES
P1	Isobutylene (C <sub>4</sub> H <sub>8</sub> )/ other VOC	50	PPM	0.1
P2	Isobutylene (C <sub>4</sub> H <sub>8</sub> )/ other VOC	1000	PPM	1
P3	Isobutylene (SPAN C <sub>4</sub> H <sub>8</sub> )/ other VOC	5000	PPM	1

SEMICONDUCTOR SENSOR TECHNOLOGY			
GASES	RANGE	UNIT	RES.
R-22 / R-134	10 - 300	PPM	1
	5000 -10,000	PPM	1

- NOTE: • In above Table, Range of gases start from zero.  
 • Gases which are not listed, are available on request & for other details contact factory.  
 • All VOCs are available in PID detection principle in PPM ranges.  
 • PID detector will be provided by calibration with Isobutylene gas.  
 • In PID detector, VOC other than Isobutylene is calibrated with Isobutylene gas by setting VOC correction factor. In Calibration Report, VOC factor with respect to Isobutylene gas will be mentioned.  
 • Detection value of VOC = Isobutylene gas concentration value x factor

## ORDERING INFORMATION



Manufactured by :



Contact Us:

00971 4 250 0178  
00971 55 585 2360

[info@medismartglobal.com](mailto:info@medismartglobal.com)  
[www.medismartglobal.com](http://www.medismartglobal.com)



**Medismart** – Advancing healthcare with trusted, high-quality **Medical Engineering** across the GCC.



- Phone: +971 42 500 178
- Mobile: +971 55 585 2360
- Email: [info@medismartglobal.com](mailto:info@medismartglobal.com)
- [www.medismartglobal.com](http://www.medismartglobal.com)
- P.O. Box: 231673, Dubai



Certified - ISO 9001:2015, ISO 45001:2018, ISO 14001:2015 & ISO 13485:2016



A HEALTHCARE PRODUCT MANUFACTURING COMPANY