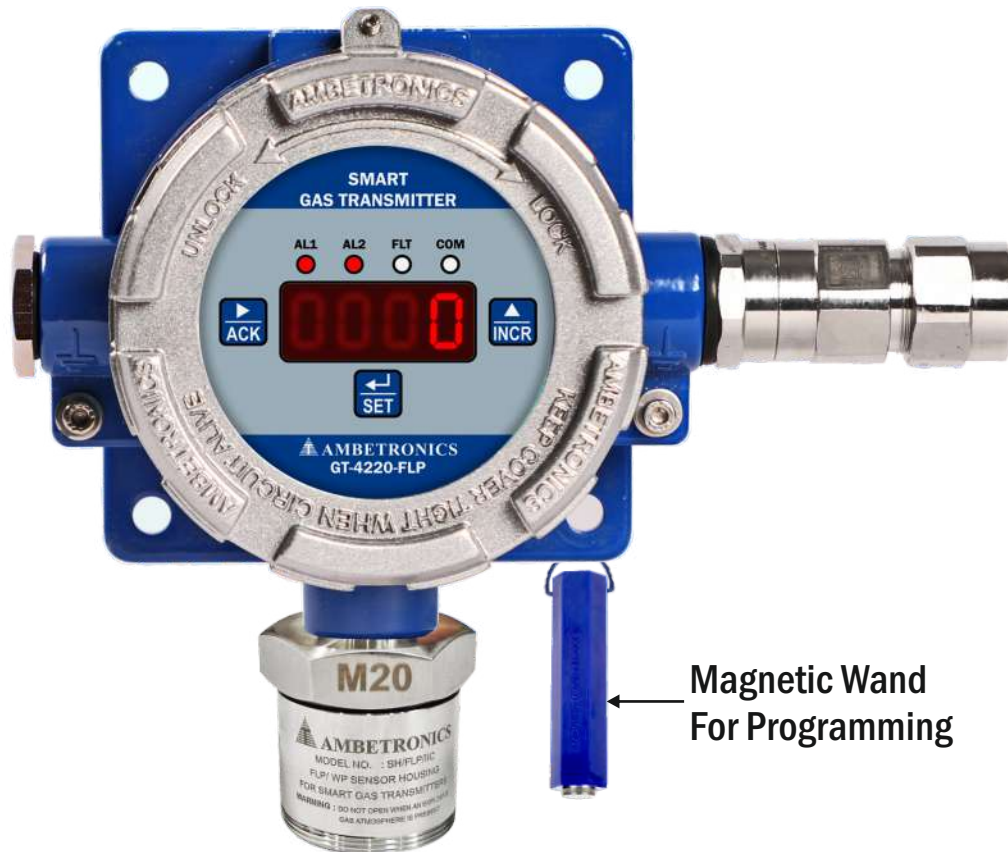


# GT-4220-FLP-A (RS-485)

## Gas Leak Detector for Combustible Gases



**AMBETRONICS**  
AN ISO 9001:2015 CERTIFIED COMPANY



Magnetic Wand  
For Programming

### Features

- PESO Certified Enclosure, Stopping Plug & Cable gland.
- Provides a fast & reliable response by using Catalytic / Pellistor / Semiconductor technology for detecting leak of LPG/PNG/ CNG/ LNG/ Natural Gas/ Flammable Gas.
- Isolated RS-485 communication port with MODBUS RTU protocol.
- Non-intrusive programming with Magnetic Wand .
- Password protected programming menu.
- 2 numbers Alarm Relay Contacts for Warm, Alarm & Fault.
- Inbuilt temperature detection.
- Indication for 'OPEN', 'OVER' & 'Temperature Alert'(E-REL).
- 'Test Mode' provided to check the electronics as Alarm LEDs, Relay.

### Approvals & Compliance

Approval & Compliance for Flameproof Enclosure by PESO:

Certified to Ex d IIC T6 Gb (-25°C ≤ Ta ≤ +60° C)

Ex tb IIIC T85°Db, IP68

• Standard compliance :

- 1) IS/IEC 60079-0: 2017
- 2) IS/IEC 60079-1: 2014
- 3) IS/IEC 60079-31: 2013
- 4) IS/IEC 60529: 2001

### Applications

- Gas Metering Skid
- CNG station
- Fertilizers Plants
- Oil & Gas Industries
- Ambient Monitoring
- Gas Pipeline Project Refineries
- Gas Metering Station
- Gas Refilling station
- BMS
- Commercial Kitchen
- Gas manifold area
- Chemical & Petrochemical Plants
- Automotive Industrial / Paints Shops
- LPG Gas Cylinder Bank
- Sewage Plants
- Burner / Furnace Areas
- Heat Treatment Plants
- Chemical Storage Area
- LPG Bullet Yards
- Chemical Processing Plant
- Offshore Drilling & Processing Platform
- Power & Industrial Plants

**MUST FOR HUMAN & INDUSTRIAL SAFETY**

# TECHNICAL SPECIFICATIONS

## General :

- Detection principle : Catalytic / Pellistor / Semiconductor  
 Sensor Holder : SS 316  
 Temperature Sensor : For Ambient Temperature measurement.  
 Detection Method : Continuous Diffusion  
 Range & Resolution : As specified in table  
 Display & LEDs : 4 Digit Seven segment LED Display.  
 4 L.E.D.'s for Warning, Alarm, Fault, Communication to indicate status of instrument.  
 Set Point : i) Two independent Alarm set points for AL1 & AL2 with LED indication  
 ii) User selectable Hysteresis and Logic options for Alarm.  
 iii) Ambient Temperature detection set point can be set between 0°C to 90°C  
 Setting : Non-intrusive programming with Magnetic wand without opening enclosure cover

## Accuracy :

| SR. NO. | SENSOR TECHNOLOGY    | CALIBRATION ACCURACY |
|---------|----------------------|----------------------|
| 1       | Catalytic/ Pellistor | ±2 % F.S             |
| 2       | Semiconductor        | ±10 %                |

## Performance :

- Response time : Less than 5 seconds  
 Start-up Time : Less than 30 seconds

## Electrical :

- Supply Voltage : 18 to 36 VDC, Typically 24VDC  
 Power Consumption : Less than 2 Watts  
 Connector : 1) 4 wires (0.5mm<sup>2</sup>) Flexible or Armoured shielded cable for 24 VDC input & RS-485 Output  
 2) 4 wires (0.5mm<sup>2</sup>) Flexible or Armoured shielded cable for Relay Output

## Environmental :

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

## Output Signal :

- Output 1 : Isolated RS-485 communication with MODBUS RTU protocol  
 Output 2 (Optional) : Two SPST NO/C relays contact rating 5A/250VAC, 5A/30VDC

## Error Monitoring :

- During Sensor Break / Open the display shows 'oPEr', for Over Range 'oUEr' and MODBUS Hex Value/Decimal Value is 0x7FFF / 32767 .
- Ambient Temperature exceeds > set point, Display Shows 't-RL' and Alarm relay will be activated.

## Accessories (Optional) :

- CE certified 24 VDC Power supply
- Canopy & Mounting stand
- RS-485 to USB converter
- Hooter cum flasher

## Common Deliverable

- Test Calibration Certificate
- Reference Calibration Gas Certificate
- 'Operational / Instrument' User Manual
- Standard Mounting Hardware
- Protection Cap
- Calibration Cap
- Magnetic Wand

## Flameproof Housing

- Protection Class : IP-68  
 Cabinet Material : Cast Aluminium alloy, LM-6  
 Approval : CIMFR approved for IIA, IIB group, IIC

| Certificate Agency | Certificate No.    | Certificate Dt. |
|--------------------|--------------------|-----------------|
| CIMFR              | IN/CIMFR/TR20/3007 | 22/10/2020      |
| PESO               | P492376/2          | 13/01/2021      |

- Cable Entry : Double Compression Cable Gland EX-proof M20 X 1.5mm (P)

| Certificate Agency | Certificate No.      | Certificate Dt. |
|--------------------|----------------------|-----------------|
| CIMFR              | IN/CIMFR/TR21/R/2147 | 12/10/2021      |
| PESO               | P538850/7            | 16/06/2022      |

- Stopping Plug : (M20 x 1.5P & M25 x 1.5P)

| Certificate Agency | Certificate No.      | Certificate Dt. |
|--------------------|----------------------|-----------------|
| CIMFR              | IN/CIMFR/TR21/R/1143 | 23/07/2021      |
| PESO               | P538850/3            | 16/06/2022      |

- Mounting : Wall Mounting / Stand Mounting / Pipe Mounting

## Dimension Without Hooter Cum Flasher

- Dimension : 158 mm (H) with sensor holder x 199 mm (W) x 97 mm (D)  
 Weight : Approx 1.25 kg

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

### CATALYTIC / PELLISTOR SENSOR TECHNOLOGY

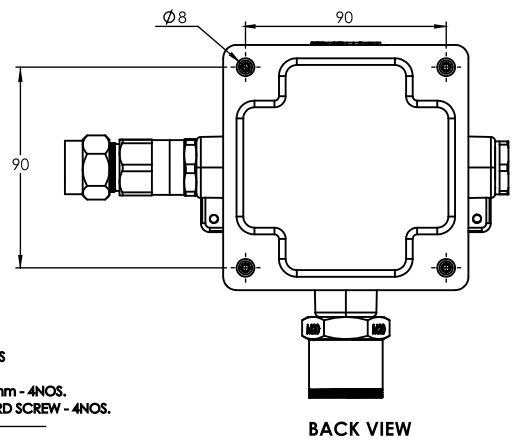
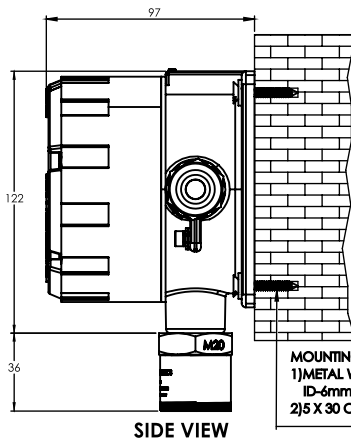
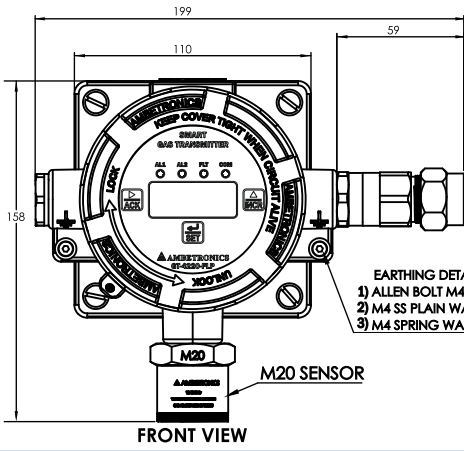
| SR. NO. | GASES         | RANGE | UNIT  | RES. | AL1     | AL2     |
|---------|---------------|-------|-------|------|---------|---------|
| C1      | LPG (C3H8)    | 100   | % LEL | 1    | 20% LEL | 40% LEL |
| C2      | PNG           | 100   | % LEL | 1    | 20% LEL | 40% LEL |
| C3      | CNG           | 100   | % LEL | 1    | 20% LEL | 40% LEL |
| C4      | LNG           | 100   | % LEL | 1    | 20% LEL | 40% LEL |
| C5      | NATURAL GAS   | 100   | % LEL | 1    | 20% LEL | 40% LEL |
| C6      | METHANE (CH4) | 100   | % LEL | 1    | 20% LEL | 40% LEL |
| C7      | FLAMMABLE GAS | 100   | % LEL | 1    | 20% LEL | 40% LEL |

### SEMICONDUCTOR SENSOR TECHNOLOGY

| SR. NO. | GASES         | RANGE | UNIT | RES. | AL1     | AL2     |
|---------|---------------|-------|------|------|---------|---------|
| S1      | LPG (C3H8)    | 20    | %LEL | 1    | 10% LEL | 15% LEL |
| S2      | PNG           | 20    | %LEL | 1    | 10% LEL | 15% LEL |
| S3      | CNG           | 20    | %LEL | 1    | 10% LEL | 15% LEL |
| S4      | LNG           | 20    | %LEL | 1    | 10% LEL | 15% LEL |
| S5      | NATURAL GAS   | 20    | %LEL | 1    | 10% LEL | 15% LEL |
| S6      | METHANE (CH4) | 20    | %LEL | 1    | 10% LEL | 15% LEL |
| S7      | FLAMMABLE GAS | 20    | %LEL | 1    | 10%LEL  | 15%LEL  |

NOTE:  
 • In above Table, Range of gases start from zero. • Gases which are not listed, are available on request & for other details contact factory.

# DIMENSIONAL DETAILS OF GAS DETECTOR

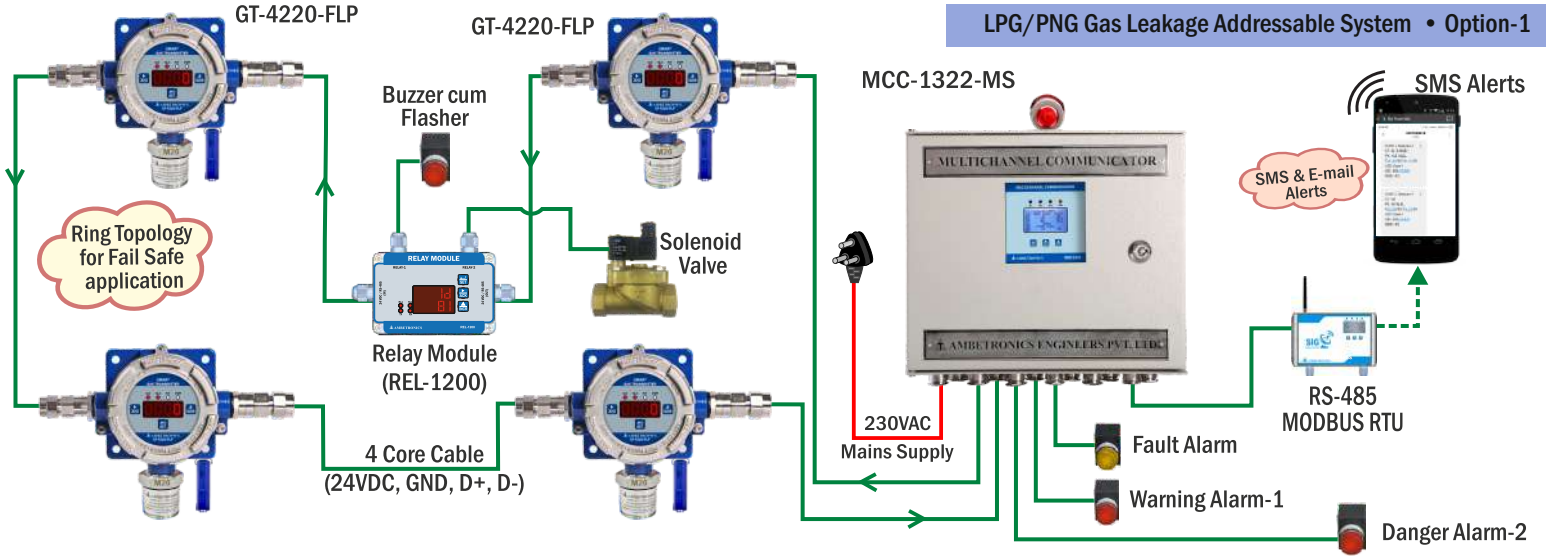


**EARTHING DETAILS**  
 1) ALLEN BOLT M4x12 - 2NOS.  
 2) M4 SS PLAIN WASHER - 4NOS.  
 3) M4 SPRING WASHER - 2NOS.

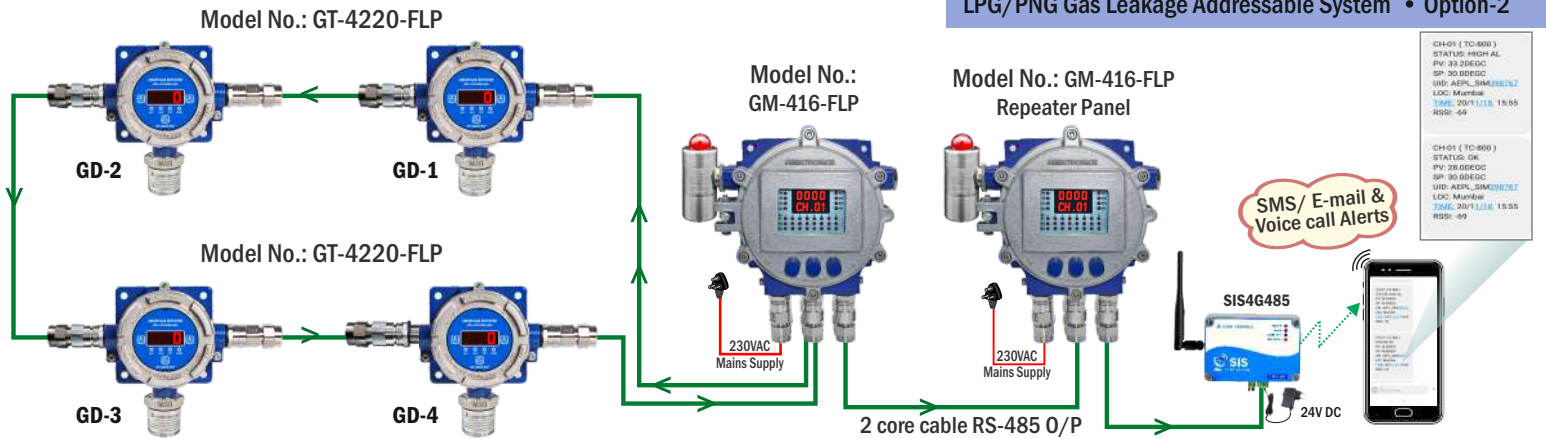
**MOUNTING DETAILS**  
 1) METAL WASHER:  
 ID-6mm, OD-12mm - 4NOS.  
 2) 5 X 30 CHIPBOARD SCREW - 4NOS.

## ILLUSTRATION FOR GT-4220-FLP

### LPG/PNG Gas Leakage Addressable System • Option-1



### LPG/PNG Gas Leakage Addressable System • Option-2



## ORDERING INFORMATION

GT-4220-FLP-A

- |   |   |   |  |
|---|---|---|--|
| <p><b>A) OUTPUT</b></p> <ol style="list-style-type: none"> <li>1) RS-485</li> <li>2) Relay</li> </ol> | <p><b>B) GAS NUMBER, RANGE &amp; RESOLUTION</b></p> <p>Select name and range of the</p> | <p><b>C) POWER SUPPLY</b></p> <ol style="list-style-type: none"> <li>1) 24V DC</li> <li>2) 230 VAC</li> </ol> | <p><b>D) ACCESSORIES</b></p> <ol style="list-style-type: none"> <li>1) Ambtronics - Hooter Cum Flasher 24VDC operated- ABS Plastic</li> <li>2) Ambtronics - Hooter Cum Flasher 24VDC operated- SS-316</li> <li>3) Relay Module (REL-1200) for 2 numbers ADD on External Relays</li> <li>4) Pipe mounting accessories</li> <li>5) None</li> </ol> |
|---|---|---|--|

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

Manufactured by :



**AMBETRONICS ENGINEERS PVT. LTD.**  
 17-B, 16, 14A, Tarun Industrial Estate, New Nagardas Road, Mogra Pada, Andheri (E.) Mumbai - 400 069, India.

+91-22-69623389    +91-93207 37646    sales8@ambtronics.com  
 +91-22-61673021/22    +91-91674 18106    sales11@ambtronics.com



Specifications subject to change without any prior notice