RAWAFD International

SASO SASOEX

AMBETRONICS ®

ISO 9001 : 2015 QUALITY
ISO 14001 : 2015 ENVIRONMENT
ISO 45001 : 2018 HEALTH & SAFETY

LPG Bullet Yard

commercial kitchen

Chemical solvent storage area

Under ground car parking area

Warehouse

RAWAFD International

AMBETRONICS®

Commercial Kitchen

Residential Kitchen

Interoduction

GAS LEAK ALERT is household/Domestic gas alarm wall-mounted type designed to detect the concentration of Combustible Gas or vapours using fast response sensors and manufactured with advance featured technology. It provides visual and audible alarms when the gas concentration crosses the pre-set alarm levels and alerts user to take immediate required actions.

Features

- Provides Fast & Reliable Response by using Semiconductor Technology for detecting leak of LPG /PNG Gas.
- Provides visual and audible signals when the gas concentration cross the Pre-set Alarm level .
- Helps to detect Gas and Excess Temperature indication.
- Easy installation, simple Plug-in design for home use, 230VAC powered.
- Optional Single Alarm Relay to operate shut off valve.

TECHNICAL SPECIFICATIONS

GENERAL

Gas Sensor	:	Semiconductor
Gas Sampling	:	Diffusion
Response time	:	Less than 5 sec. at excess leak (Resume Automatically)
Alarm Method	:	Visual & Audible
Sound Level	:	7 85dB
Warm up time	:	1 min

ELECTRICAL

Operating Power	:	24VDC / 230VAC ± 10%, 50Hz
Power Supply	:	3 pin plug socket (230VAC Adaptor)

ENVIRONMENTAL

Operating Temp.	:	0 to +80°C
Storage Temp.	:	0 to +80°C

OUTPUT

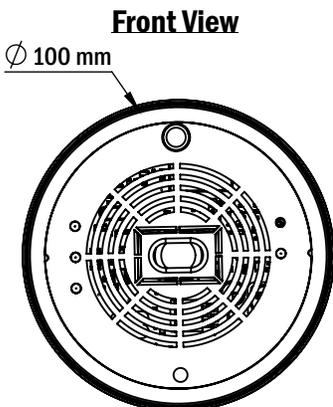|		
Optional	:	Single Relay of rating 5A/24VDC, to operate shut off valve

TEST FUNCTION

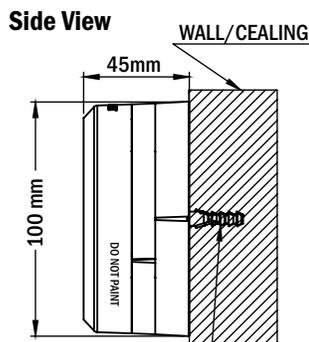|		
For 'TEST'	:	Long press this key to check the L.E.D.'s, Relay & Buzzer functionality
For 'ACK'	:	Press this key to acknowledge audio Alarm (Buzzer).

DIMENSION

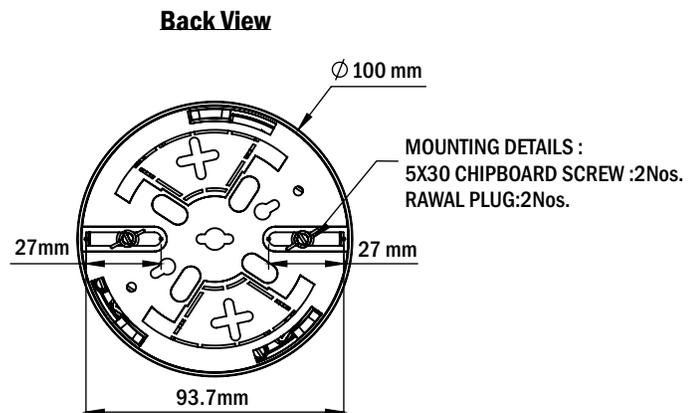|		
Enclosure Material	:	ABS Plastic
Over all dimension	:	i) GLA-222 - B : 70 (H) x 100 (W) x 40 (D) in mm
Mounting	:	Insert in 3 PIN Plug / Hang on wall through screw hole
Weight	:	Approximately 100 grams

ENCLOSURE DIMENSIONAL DETAILS

Front View

Ø 100 mm

Side View

45mm

WALL/CEALING

100 mm

DO NOT PAINT

MOUNTING DETAILS :
5X30 CHIPBOARD SCREW :2Nos.
RAWAL PLUG:2Nos.

Back View

Ø 100 mm

MOUNTING DETAILS :
5X30 CHIPBOARD SCREW :2Nos.
RAWAL PLUG:2Nos.

27mm   27 mm

93.7mm

NOTE : 1. ALL DIMENSIONS ARE IN "mm", UNLESS OTHERWISE SPECIFIED.
2. TOLERANCE ON DIMENSION ± 5 mm, UNLESS OTHERWISE SPECIFIED.

MUST FOR HUMAN & INDUSTRIAL SAFETY
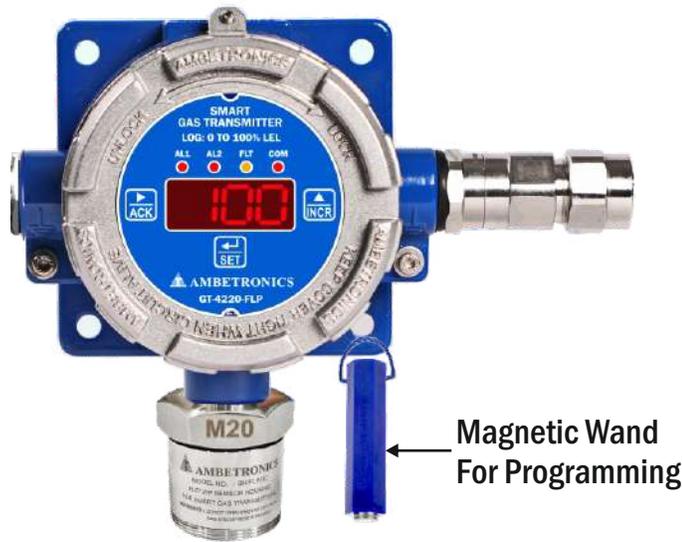
Features

- 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', 'ouEr' & 'Temperature Alert'(t-AL).
- 'Test Mode' provided to check the electronics as Alarm LEDs, Relay.

Magnetic Wand For Programming

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

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 % of full scale

Performance :

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

Environmental :

Operating Temp.	:	-20 to +60°C
Storage Temp.	:	-30 to +70°C
Humidity	:	Less than 95% Non-Condensing.

Electrical :

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

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 :

1) During Sensor Break / Open the display shows 'oPEn' , for Over Range 'ouEr' and MODBUS Hex Value/Decimal Value is Ox7FFF /32767 .

2) Ambient Temperature exceeds > set point, Display Shows 't-AL' and Alarm relay will be activated.

Accessories (Optional) :

1) CE certified 24 VDC Power supply   3) RS-485 to USB converter

2) Canopy & Mounting stand   4) Hooter cum flasher

Common Deliverable

1) Test Calibration Certificate   5) Protection Cap

2) Reference Calibration Gas Certificate   6) Calibration Cap

3) 'Operational / Instrument' User Manual   7) Magnetic Wand

4) Standard Mounting Hardware

MUST FOR HUMAN & INDUSTRIAL SAFETY

Flameproof Housing

Protection Class	:	IP-68
Cabinet Material	:	Cast Aluminium alloy, LM-6
Approval	:	CIMFR approved for IIA, IIB group, IIC
Cable Entry	:	Double Compression Cable Gland EX-proof M20 X 1.5mm (P)
Stopping Plug	:	(M20 x 1.5P & M25 x 1.5P)
Dimension	:	160 mm (H) with sensor holder x 200 mm (W) x 97 mm (D)
Weight	:	Approx 1.15 kg
Mounting	:	Wall Mounting / Stand Mounting / Pipe Mounting

LIST OF GASES WITH RANGE AND RESOLUTION AND ALARM SET POINT

CATALYTIC / PELLISTOR SENSOR TECHNOLOGY

SR. NO.	GASES	RANGE	UNIT	RES.	AL1	AL2
C21	Methane (CH4)	100	%LEL	1	20%LEL	40%LEL
C21	CNG	100	%LEL	1	20%LEL	40%LEL
C21	LNG	100	%LEL	1	20%LEL	40%LEL
C21	PNG	100	%LEL	1	20%LEL	40%LEL
C21	Natural Gas	100	%LEL	1	20%LEL	40%LEL
C21	Flammable Gas	100	%LEL	1	20%LEL	40%LEL
C18/C21	LPG (C3H8)	100	%LEL	1	20%LEL	40%LEL

LIST OF GASES WITH RANGE AND RESOLUTION AND ALARM SET POINT

SEMICONDUCTOR SENSOR TECHNOLOGY

SR. NO.	GASES	RANGE	UNIT	RES.	AL1	AL2
SC 1	Methane (CH4)	9999	PPM	1	1000 PPM	3000 PPM
SC 2	CNG	9999	PPM	1	1000 PPM	3000 PPM
SC 3	LNG	9999	PPM	1	1000 PPM	3000 PPM
SC 4	PNG	9999	PPM	1	1000 PPM	3000 PPM
SC 5	Natural Gas	9999	PPM	1	1000 PPM	3000 PPM
SC 6	Flammable Gas	9999	PPM	1	1000 PPM	3000 PPM
SC 7	LPG (C3H8)	9999	PPM	1	1000 PPM	5000 PPM
SC 8	Methane (CH4)	20	%LEL	1	2%LEL	6%LEL
SC 9	CNG	20	%LEL	1	2%LEL	6%LEL
SC 10	LNG	20	%LEL	1	2%LEL	6%LEL
SC 11	PNG	20	%LEL	1	2%LEL	6%LEL
SC 12	Natural Gas	20	%LEL	1	2%LEL	6%LEL
SC 13	Flammable Gas	20	%LEL	1	2%LEL	6%LEL
SC 14	LPG (C3H8)	50	%LEL	1	5%LEL	23%LEL

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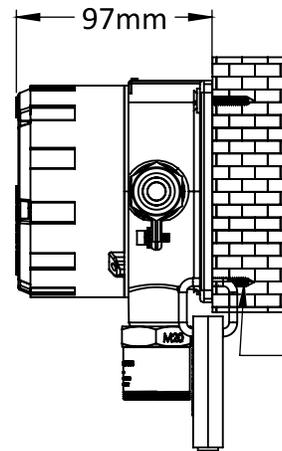• Gases which are not listed, are available on request & for other details contact factory.
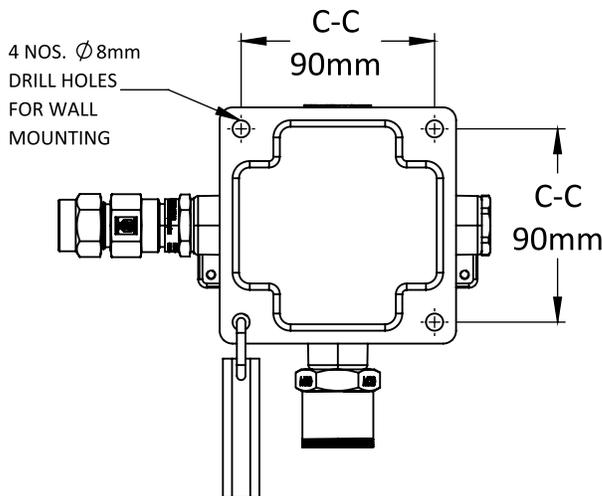
ENCLOSURE DIMENSION & MOUNTING DETAILS

FRONT VIEW

200mm
134mm
160 mm
123mm

THREADING : M45X1mm(P)

EARTHING DETAILS :
1) ID-4mm, OD-6mm, 1mm THK.
   SS PLAIN WASHER-4 NOS.
2) M4 SS SPRING WASHER-2 NOS.
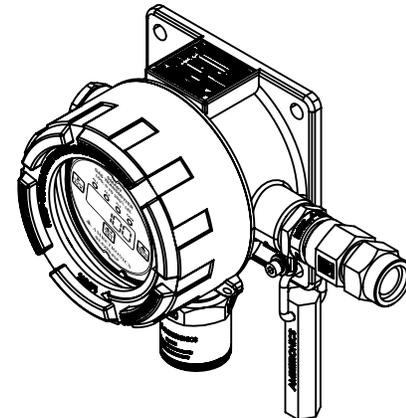3) M4X12mm EARTHING ALLEN
   BOLT-2 NOS.

SIDE VIEW

97mm

MOUNTING DETAILS :
1) METAL WASHER :
   ID-6mm, OD-12mm, 4 NOS.
2) 5X30 CHIPBOARD SCREW 4 NOS.

BACK VIEW

4 NOS. ∅8mm
DRILL HOLES
FOR WALL
MOUNTING

C-C
90mm

C-C
90mm

ISOMETRIC VIEW

NOTE :
1. ALL DIMENSIONS ARE IN "mm", UNLESS OTHERWISE SPECIFIED.
2. TOLERANCE ON DIMENSION ±5 mm, UNLESS OTHERWISE SPECIFIED.

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AMBETRONICS®

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.
- 4-20mA output.
- 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', 'ouEr', 'Loop Open (L-oP) & ' Temp. Alert ' (t-AL).
- 'Test Mode' provided to check the electronics as Alarm LEDs, Relay.

Magnetic Wand
For Programming

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

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 % of full scale

Performance :

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

Environmental :

Operating Temp.	:	-20 to +60°C
Storage Temp.	:	-30 to +70°C
Humidity	:	Less than 95% Non-Condensing.

Electrical :

Supply Voltage	:	18 to 36 VDC, Typically 24VDC
Power Consumption	:	Less than 2 Watts
Connector	:	1) 4 wires (0.5mm²) Flexible or Armoured shielded cable for Relay Output
		2) 3 wires Flexible or Armoured shielded cable for 4-20mA Output

Output Signal :

Output 1	:	4-20mA Output.
Output 2 (Optional)	:	Two SPST NO/C relays contact rating 5A/250VAC, 5A/30VDC

Error Monitoring :

1) During Sensor Break / Open the display shows 'oPEn' , for Over Range 'ouEr' & 4-20mA shows user settable scale current. (Upscale & Downscale)
2) Upscale current: 21mA/ 22mA ; Downscale current 1mA / 3.7mA Selectable
3) During Current loop open display shows "L-oP" & Loop Open setting can be Enabled or disabled
4) Ambient Temperature exceeds > set point, Display Shows 't-AL' and Alarm relay will be activated.

Accessories (Optional) :

1) CE certified 24 VDC Power supply   3) Hooter cum flasher
2) Canopy & Mounting stand

Common Deliverable

1) Test Calibration Certificate   5) Protection Cap
2) Reference Calibration Gas Certificate   6) Calibration Cap
3) 'Operational / Instrument' User Manual   7) Magnetic Wand
4) Standard Mounting Hardware

MUST FOR HUMAN & INDUSTRIAL SAFETY

Flameproof Housing

Protection Class	:	IP-68
Cabinet Material	:	Cast Aluminium alloy, LM-6
Approval	:	CIMFR approved for IIA, IIB group, IIC
Cable Entry	:	Double Compression Cable Gland EX-proof M20 X 1.5mm (P)
Stopping Plug	:	(M20 x 1.5P & M25 x 1.5P)
Dimension	:	160 mm (H) with sensor holder x 200 mm (W) x 97 mm (D)
Weight	:	Approx 1.15 kg
Mounting	:	Wall Mounting / Stand Mounting / Pipe Mounting

LIST OF GASES WITH RANGE AND RESOLUTION AND ALARM SET POINT

CATALYTIC / PELLISTOR SENSOR TECHNOLOGY

SR. NO.	GASES	RANGE	UNIT	RES.	AL1	AL2
C21	Methane (CH4)	100	%LEL	1	20%LEL	40%LEL
C21	CNG	100	%LEL	1	20%LEL	40%LEL
C21	LNG	100	%LEL	1	20%LEL	40%LEL
C21	PNG	100	%LEL	1	20%LEL	40%LEL
C21	Natural Gas	100	%LEL	1	20%LEL	40%LEL
C21	Flammable Gas	100	%LEL	1	20%LEL	40%LEL
C18/C21	LPG (C3H8)	100	%LEL	1	20%LEL	40%LEL

LIST OF GASES WITH RANGE AND RESOLUTION AND ALARM SET POINT

SEMICONDUCTOR SENSOR TECHNOLOGY

SR. NO.	GASES	RANGE	UNIT	RES.	AL1	AL2
SC 1	Methane (CH4)	9999	PPM	1	1000 PPM	3000 PPM
SC 2	CNG	9999	PPM	1	1000 PPM	3000 PPM
SC 3	LNG	9999	PPM	1	1000 PPM	3000 PPM
SC 4	PNG	9999	PPM	1	1000 PPM	3000 PPM
SC 5	Natural Gas	9999	PPM	1	1000 PPM	3000 PPM
SC 6	Flammable Gas	9999	PPM	1	1000 PPM	3000 PPM
SC 7	LPG (C3H8)	9999	PPM	1	1000 PPM	5000 PPM
SC 8	Methane (CH4)	20	%LEL	1	2%LEL	6%LEL
SC 9	CNG	20	%LEL	1	2%LEL	6%LEL
SC 10	LNG	20	%LEL	1	2%LEL	6%LEL
SC 11	PNG	20	%LEL	1	2%LEL	6%LEL
SC 12	Natural Gas	20	%LEL	1	2%LEL	6%LEL
SC 13	Flammable Gas	20	%LEL	1	2%LEL	6%LEL
SC 14	LPG (C3H8)	50	%LEL	1	5%LEL	23%LEL

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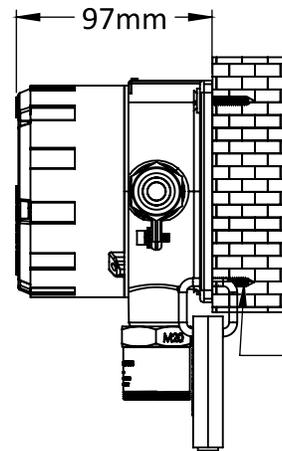• Gases which are not listed, are available on request & for other details contact factory.
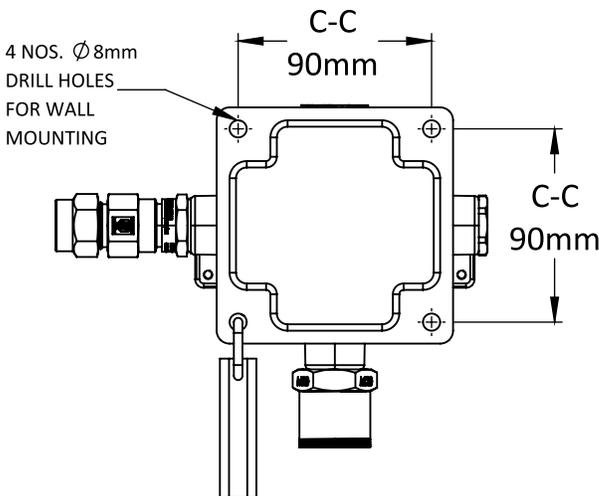
ENCLOSURE DIMENSION & MOUNTING DETAILS

FRONT VIEW

200mm
134mm
160 mm
123mm

EARTHING DETAILS :
1) ID-4mm, OD-6mm, 1mm THK.
   SS PLAIN WASHER-4 NOS.
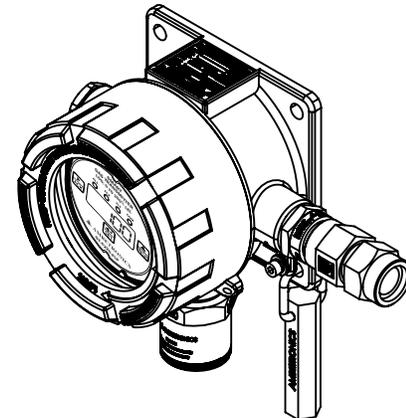2) M4 SS SPRING WASHER-2 NOS.
3) M4X12mm EARTHING ALLEN
   BOLT-2 NOS.

THREADING : M45X1mm(P)

SIDE VIEW

97mm

MOUNTING DETAILS :
1) METAL WASHER :
   ID-6mm, OD-12mm, 4 NOS.
2) 5X30 CHIPBOARD SCREW 4 NOS.

BACK VIEW

C-C
90mm
C-C
90mm

4 NOS. ∅ 8mm
DRILL HOLES
FOR WALL
MOUNTING

ISOMETRIC VIEW

NOTE :
1. ALL DIMENSIONS ARE IN "mm", UNLESS OTHERWISE SPECIFIED.
2. TOLERANCE ON DIMENSION ±5 mm, UNLESS OTHERWISE SPECIFIED.

Features

Magnetic Wand For Programming

- 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/ 4-20mA output.

- Non-intrusive programming with Magnetic Wand.

- Password protected programming menu.

- Optimised for detection of smallest Gas leaks with optional Integrated Buzzer & Flasher as optional.

- 2 numbers Alarm Relay Contacts configurable for Warm, Alarm & Fault.

- In built Temperature Detection

- Indication for 'Sensor Open', 'Loop Open /Communication Fault Alert.

- Temperature Alert' (Optional).

- 'Test Mode' provided to check the electronics as Alarm LEDs, Relay.

TECHNICAL SPECIFICATIONS

General :

Detection principle	:	Catalytic / Pellistor / Semiconductor
Sensor Holder	:	ABS Plastic
Temperature Sensor	:	For Ambient Temperature measurement. (Optional)
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 % of full scale

Performance :

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

Output Signal :

Output 1 : Two SPST NO/C/NC relays contact rating 5A/250VAC, 5A/30VDC

Output 2 : Isolated RS-485 communication with MODBUS RTU protocol.

Output 3 : SS 316 PESO Certified Hooter Cum Flasher 90dB with RED ligh flashing.

Electrical :

Supply Voltage	:	18 to 36 VDC, Typically 24VDC
Power Consumption	:	Less than 2 Watts
Cable	:	1) 4 Core, 1mm², Shielded Flexible Industrial Cable for 24 VDC input & RS-485 Output
		2) 4 Core, 1mm², Shielded Flexible Industrial Cable for Relay Output
		2) 3 Core, 1mm², Shielded Flexible Industrial Cable for 24 VDC input & 4-20mA Output

Error Monitoring :

1) During Sensor Break / Open the display shows 'Sensor Open/ Over Range' and MODBUS Hex Value/Decimal Value is 0x7FFF /32767.

2) Ambient Temperature exceeds > set point, FLT LED blinks and Alarm relay will be activated.

Accessories (Optional) :

1) CE certified 24 VDC Power supply   3) RS-485 to USB converter

2) Canopy & Mounting stand   4) Hooter cum Flasher

Common Deliverable

1) Test Calibration Certificate

2) Reference Calibration Gas Certificate

3) 'Operational / Instrument' User Manual

4) Standard Mounting Hardware

5) Splash Guard

6) Magnetic Wand

Environmental :

Operating Temp.	:	-20 to +60°C
Storage Temp.	:	-30 to +70°C
Humidity	:	Less than 95% Non-Condensing.

MUST FOR HUMAN & INDUSTRIAL SAFETY

Weatherproof Housing

Protection class	:	IP 65
Enclosure material	:	Polycarbonate, ABS Grey (RAL7035)
Cable entry	:	Polyamide Cable Gland: M12/ M16/ M20
Dimension	:	141 mm (H) with sensor holder X 132 mm (W) with cable gland X 70 mm(D)
Mounting	:	Wall Mounting/ Stand Mounting
Weight	:	Approximately 325 grams.

LIST OF GASES WITH RANGE AND RESOLUTION AND ALARM SET POINT

CATALYTIC / PELLISTOR SENSOR TECHNOLOGY						
SR. NO.	GASES	RANGE	UNIT	RES.	AL1	AL2
C21	Methane (CH4)	100	%LEL	1	20%LEL	40%LEL
C21	CNG	100	%LEL	1	20%LEL	40%LEL
C21	LNG	100	%LEL	1	20%LEL	40%LEL
C21	PNG	100	%LEL	1	20%LEL	40%LEL
C21	Natural Gas	100	%LEL	1	20%LEL	40%LEL
C21	Flammable Gas	100	%LEL	1	20%LEL	40%LEL
C18/C21	LPG (C3H8)	100	%LEL	1	20%LEL	40%LEL

LIST OF GASES WITH RANGE AND RESOLUTION AND ALARM SET POINT

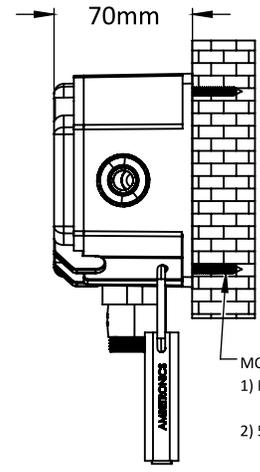| SEMICONDUCTOR SENSOR TECHNOLOGY						
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SC 10	LNG	20	%LEL	1	2%LEL	6%LEL
SC 11	PNG	20	%LEL	1	2%LEL	6%LEL
SC 12	Natural Gas	20	%LEL	1	2%LEL	6%LEL
SC 13	Flammable Gas	20	%LEL	1	2%LEL	6%LEL
SC 14	LPG (C3H8)	50	%LEL	1	5%LEL	23%LEL

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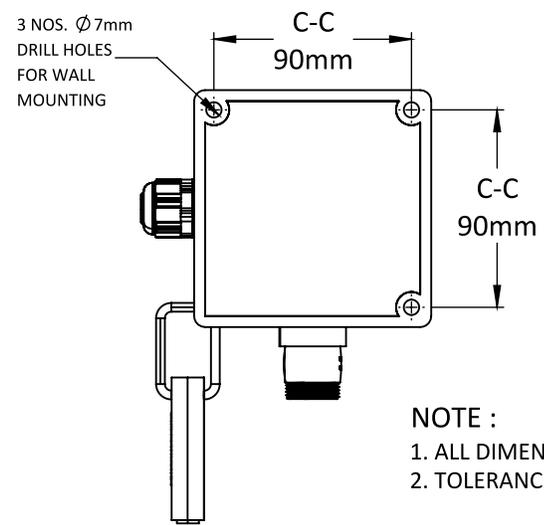
ENCLOSURE DIMENSION & MOUNTING DETAILS

FRONT VIEW

SIDE VIEW

MOUNTING DETAILS :
1) METAL WASHER
   ID-6mm, OD-12mm, 3 NOS.
2) 5X30 CHIPBOARD SCREW 3 NOS.

BACK VIEW
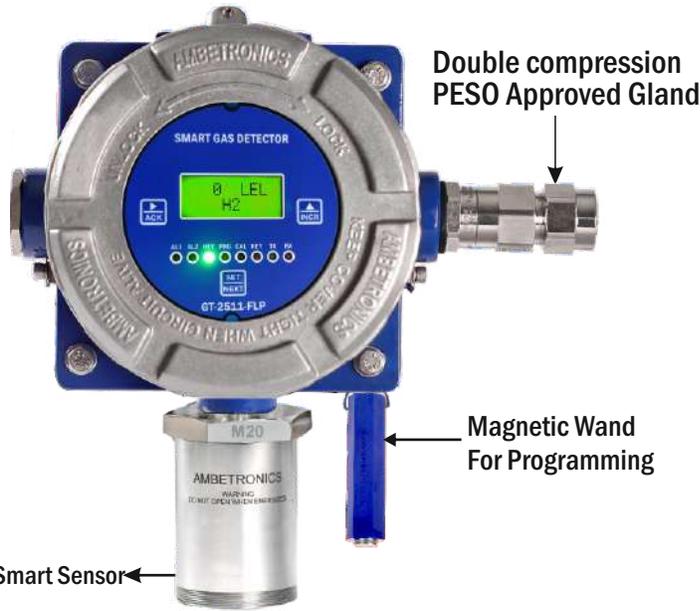
3 NOS. ⌀7mm DRILL HOLES FOR WALL MOUNTING

C-C 90mm

C-C 90mm

ISOMETRIC VIEW

NOTE :
1. ALL DIMENSIONS ARE IN "mm", UNLESS OTHERWISE SPECIFIED.
2. TOLERANCE ON DIMENSION ±5 mm, UNLESS OTHERWISE SPECIFIED.

RAWAFD International

AMBETRONICS®

Double compression
PESO Approved Gland

Magnetic Wand
For Programming

Hot Swappable Smart Sensor
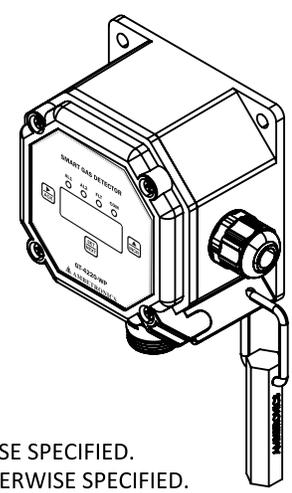
Features

- Multi-Gas Detection Capability: Detects Oxygen, Toxic, Combustible, VOC.
- Modular Sensor System: Supports various sensor types.
- Built-in Data Storage: Saves calibration and alarm data.
- Resilient to Contaminants: Highly resistant to poisoning.
- High Sensitivity: Detects down to PPM levels.
- Clear Display and Indicators: 2-line LCD, 8 LEDs.
- Comprehensive Status Indicators: Alerts for various conditions.
- Analog Output Options: 4-20mA standard, others optional.
- Environmental Monitoring: STEL and TWA configurations.
- Communication Flexibility: Optional RS-485 with MODBUS RTU.
- User-Friendly Programming: Non-intrusive, magnetic wand.
- Security Features: Password protection with change option.
- Alarm Management: Acknowledgement and testing modes.
- Relay Output Options: Configurable alarms and fail-safe relay.

TECHNICAL SPECIFICATIONS

General :

Sensor Technology	:	Electrochemical/Catalytic / Pellistor / NDIR / PID/ Solid State
Detection Method	:	Diffusion
Gas Detected	:	(Please select gas as specified in the table)
Range & Resolution	:	(Please select Range & Resolution as Specified in the table)
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	:	Magnetic Wand without opening enclosure cover

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

Performance :

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

Environmental :

Operating Temperature	:	-20°C to +60°C
Storage	:	-30°C to 70°C
Humidity	:	Less than 95% Non-Condensing.

Approvals & Compliance

Approval & Compliance for Flameproof Enclosure :

Ex db IIC T6 Gb IP66

Approval & Compliance for Smart Gas Detector / Transmitter :
Ex db IIC T6 Gb   Ex tb/tc IIIC T85°C Db/Dc IP68

- Standard Compliance :

- IS/IEC 60079-1   : 2014 Ex d IIC T6 Gb   (Flameproof Protection)
- IS/IEC 60079-31   : 2013 Ex ta IIIC T85°C Da   (Dust Ignition Protection)
- IS/IEC 60079-11   : 2011 Ex ia IIC T6 Ga   (Intrinsically Safe)
- IS/IEC 60529   : 2001 IP66 AND IP68   (Ingress Protection)

Approval & Compliance for Intrinsically Safe Certified to
Ex d [ia] IIC T6 Ga   Ex tb IIIC T85°C Db   IP68

- EMI & EMC Compliance : EN-50270

Approval & Compliance for Sensor Holder SenSmart
Model No. SM-FLP-IIC Safe Certified to
 Ex db IIC T6 Gb   Ex tb IIIC T85°C Db   IP-66

- ATEX   II 2G Ex db IIC T6 Gb
                      (-20°C ≤ Ta ≤ +60°C)

- IECEx   Ex db IIC T6 Gb

Output Signal

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

MUST FOR HUMAN & INDUSTRIAL SAFETY

Electrical

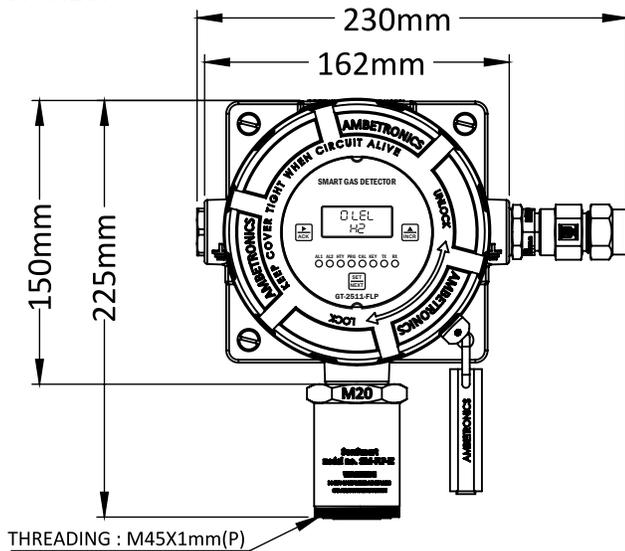|		
Supply Voltage	:	18 to 36 VDC, Typically 24VDC
Power Consumption	:	Less than 3.6 Watts
Connector Cross-section	:	2.5mm^2 for Flexible or Armoured Shielded Cable.

Flameproof Housing

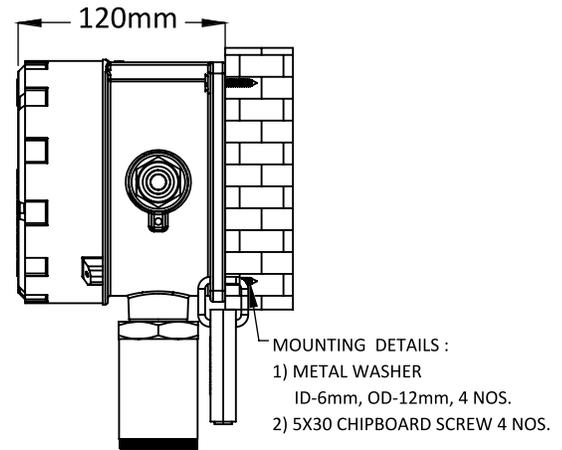|		
Protection Class	:	IP66 / IP68
Enclosure Material	:	Cast Aluminium alloy, LM-6 or SS-316 (optional)
Approval	:	CIMFR approved for IIA, IIB group, IIC
Cable Gland	:	Double Compression Cable Gland - Model No. : CG/FLP/2C
Cable Entry	:	M20 x 1.5(P) & 25 x 1.5P
Stopping Plug	:	Ex Proof
Dimension	:	225 mm (H) with sensor holder x 230 mm (W) x 120 mm (D)
Weight	:	Approx. 2.5 kg
Mounting	:	Wall Mounting / Stand Mounting / Pipe Mounting

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) Upscale voltage for 0-10V: 10V
8) Upscale voltage for 0-5V: 5V
9) Upscale voltage for 0-1V: 1V
10) Downscale voltage for 0-10V/0-5V/0-1V: 0V
11) Inhibit mode current is adjustable & user selective
12) Inhibit mode for 0-10V voltage output is adjustable & user selective
13) Inhibit mode for 0-5V voltage output is adjustable & user selective
14) Inhibit mode for 0-1V voltage output is adjustable & user selective

FLAMEPROOF ENCLOSURE DIMENSION & MOUNTING DETAILS

FRONT VIEW

230mm
162mm
150mm
225mm
M20
THREADING : M45X1mm(P)

SIDE VIEW

120mm

MOUNTING DETAILS :
1) METAL WASHER
   ID-6mm, OD-12mm, 4 NOS.
2) 5X30 CHIPBOARD SCREW 4 NOS.

BACK VIEW

C-C
115mm
C-C
115mm
4 NOS. ⌀ 9mm DRILL HOLES FOR WALL MOUNTING

ISOMETRIC VIEW
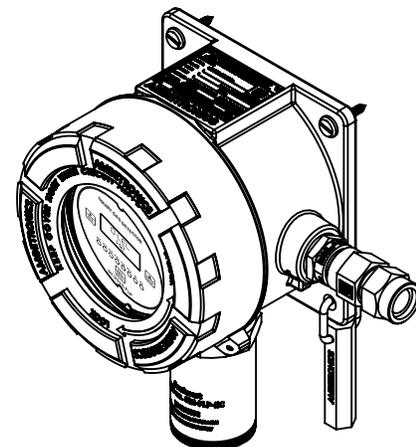

NOTE :
1. ALL DIMENSIONS ARE IN "mm", UNLESS OTHERWISE SPECIFIED.
2. TOLERANCE ON DIMENSION ±5 mm, UNLESS OTHERWISE SPECIFIED.

GREEN Colour Display for OK

RED Colour Display for Alarm

BLUE Colour Display for Sensor Open/Fault

← Hot Swappable Sensor

Magnetic Wand

TECHNICAL SPECIFICATIONS

General :

Sensor Technology	:	Electrochemical / Catalytic/Pellistor/NDIR/PID
Detection Method	:	Diffusion
Gas Detected	:	(Please select gas as specified in the table)
Range & Resolution	:	(Please select Range & Resolution as specified in the table
Display	:	8 x 2 Alphanumeric LCD 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 uing Magnetic Wand

Performance :

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

Environmental :

Operating Temperature	:	-20°C to +60°C
Storage	:	-30°C to 70°C
Humidity	:	Less than 95% Non-Condensing.

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

Electrical

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

Features

- High Sensitivity Gas Detection: Detects smallest leaks effectively.
- Modular Sensor System: Supports various gas sensors.
- Comprehensive Data Storage: Saves calibration and alarm data.
- Resistant to Contamination: Highly resistant to poisoning.
- Fine Detection Capability: Detects down to PPM levels.
- Digital Gas Concentration Display: Shows on LCD screen.
- Comprehensive Status Indicators: Alerts for various conditions.
- Analog Output Options: 4-20mA standard, others optional.
- Flexible Output Voltage: Optional 0-10V/0-5V/0-1V.
- Configurable Toxic Gas Settings: STEL and TWA options.
- Communication Flexibility: Optional RS-485 with MODBUS RTU.
- User-Friendly Weatherproof Design: Front-key programming for ease.
- Security Features: Password protection with change option.
- Alarm Management: Acknowledgement from front and rear.
- Diagnostic Test Mode: Checks electronics and outputs.
- Reliable Alarm System: Configurable levels and fail-safe relay.

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) Upscale voltage for 0-10V: 10V

8) Upscale voltage for 0-5V: 5V

9) Upscale voltage for 0-1V: 1V

10) Downscale voltage for 0-10V/0-5V/0-1V: 0V

11) Inhibit mode current is adjustable & user selective

12) Inhibit mode for 0-10V voltage output is adjustable & user selective

13) Inhibit mode for 0-5V voltage output is adjustable & user selective

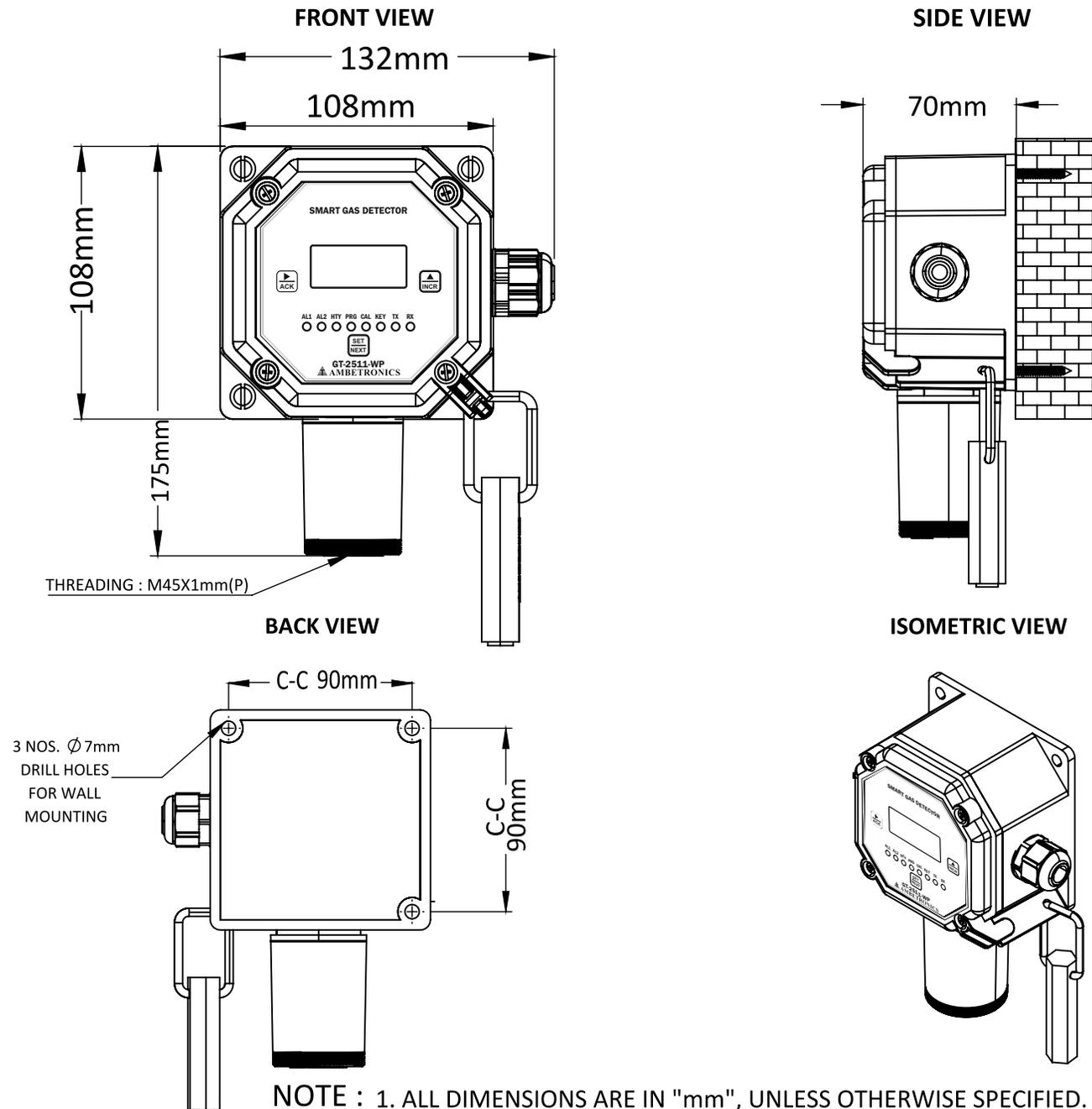14) Inhibit mode for 0-1V voltage output is adjustable & user selective

MUST FOR HUMAN & INDUSTRIAL SAFETY

Output Signal

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

Weatherproof Housing

Protection Class	:	IP-65
Enclosure Material	:	Polycarbonate, Grey Colour (RAL7032)
Dimension	:	180 mm (H) with sensor holder x 132 mm (W) x 70 mm (D) 180 mm (H) with sensor holder x 156 mm (W) with both side gland x 70 mm (D)
Mounting	:	Wall Mounting / Stand Mounting / Pipe Mounting

WEATHERPROOF ENCLOSURE DIMENSION & MOUNTING DETAILS

FRONT VIEW

132mm
108mm
108mm
175mm

THREADING : M45X1mm(P)

SIDE VIEW

70mm

BACK VIEW

C-C 90mm
C-C 90mm

3 NOS. ⌀7mm DRILL HOLES FOR WALL MOUNTING

ISOMETRIC VIEW

NOTE :
1. ALL DIMENSIONS ARE IN "mm", UNLESS OTHERWISE SPECIFIED.
2. TOLERANCE ON DIMENSION ±5 mm, UNLESS OTHERWISE SPECIFIED.

11

RAWAFD International

AMBETRONICS®

Model No.: PG-100-D

Green Colour Display for OK

20.90 uoL

Yellow Colour Display for Alarm-1

19.05 uoL

Red Colour Display for Alarm-2

23.54 uoL

Blue Colour Display for Sensor Open

SEnS oPEn

PORTABLE GAS DETECTOR

BUZZ

AL1 AL2 TWA S.T.L

20.90 uoL

AL1 AL2 CHG USB

SET ACK INCR

OXYGEN : 0.00 TO 25.00 % V/V

AMBETRONICS PG-100

*Actual image and size may slightly differ

CERTIFICATE & APPROVALS
INTRINSICALLY SAFE

IS/IEC 60079
Part 11
L-7800047118

- CIMFR TR NO.   : IN/CIMFR/TR21/R/1341   DATE : 06/08/2021
- BIS MARK LICENCE NO. : 7800047118
- PESO CERT. NO.   : P543659/1
                         DATE : 11/08/2022
- E x ia IIC T6 Ga   : Suitable for Hazardous Gas
- Atmospheres Zone   : Zone 1 and Zone 2,
- Including Gas Groups   : IIA, IIB & IIC
- IS/IEC 60079-0   : 2011
- IS/IEC 60079-11   : 2006
- IS/IEC 60529   : 2001

Features

- Long Sensor Warranty: Full year of guaranteed protection.
- Precise Leak Detection: Detects smallest gas leaks.
- Simple Operation and Handling: Easy with 3 keys.
- Front-key Calibration: Easily calibrate using keys.
- Versatile Gas Display: Digital LCD with adjustable settings.
- Customizable Alarm Display: Alerts in 5 color-coded alerts.
- Secure Menu Access: Password protection included.
- onfigurable Alarm Types: Various alerts and indications.
- Calibration Reminder: Alerts for calibration due.
- Sensor Status Indicators: Alerts for faults clearly.
- Optional Data Logging: Stores up to 50,000 records.
- Battery Monitoring: LCD and LED indicators.
- User-Defined Units: Custom unit settings.
- Rechargeable Battery Powered: Portable and lightweight.
- Compact Design: Small and easy to carry.
- Pump Blockage Detection: Ensures suction efficiency.

TECHNICAL SPECIFICATIONS

General :

Sensors	:	Electrochemical/Catalytic / Pellistor /NDIR / PID
Detection Method	:	Diffusion
Response Time	:	Less than 10 Sec
Parameter Setting	:	Setting by 3 keys i.e. (SET, SHIFT, INCR)
Alarm Set Point	:	Two independent set points, AL1 & AL2 with LED indication User settable Alarm 1 and Alarm 2 LCD display alert with
Settable display	:	5 colors Red / Blue / Yellow / Cyan / Violet Indicated by Integrated Vibrator & Buzzer (85dB Audible from 1 feet)
Display	:	2-line LCD with backlit. Normal mode White/ Green in colour

Electrical : 3.7V LI-PO Rechargeable Battery

BACK UP DETAILS

Sr. No	DETECTOR TYPE	W/O VIOLATION	WITH VIOLATION
1	Toxic/ O_2 / N_2	10 DAYS	24 HOURS
2	PID/NDIR (CO_2 /CH_4)	2 DAYS	18 HOURS
3	Catalytic / Pellistor	4 HOURS	2 HOURS

Accuracy :

Sr. No.	SENSOR TECHNOLOGY		CAL ACCURACY
1	Electrochemical		± 2 % FS
2	Catalytic / Pellister		± 2 % FS
3	NDIR - CH_4		± 0.2 % V/V OR ± 5% of applied gas whichever is max
4	NDIR - CO_2		± 10 % of applied gas
5	PID Range	0 to 5000 PPM	± 10% of applied gas
		0 to 1000 PPM	± 5% of applied gas
		0 to 50 PPM	± 3% of applied gas

Environmental :

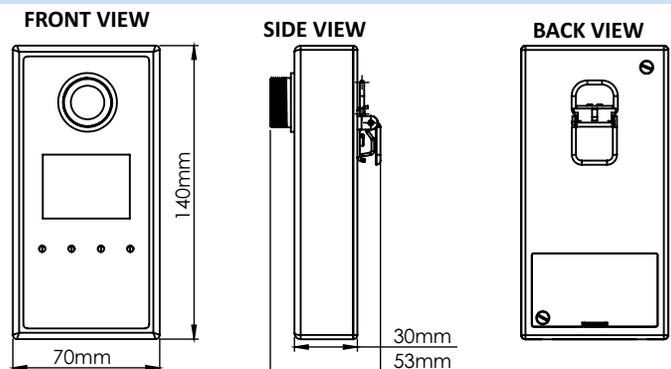|		
Operating Temp.	:	-10°C to +55°C
Storage Temp.	:	-10°C to +60°C
Humidity	:	Below 95% RH, Non condensing

Optional Data Logging

Logging Capacity	:	50,000 records with data available in ASCII format
Data Download	:	To the PC Through USB interface using Terminal software

Dimensions & Weignt

Material	:	ABS Plastic
Size	:	140 mm (H) x 70 mm (W) x 37 mm (D)
Weight	:	225 grams

ENCLOSURE DIMENSION & MOUNTING DETAILS

FRONT VIEW   **SIDE VIEW**   **BACK VIEW**

140mm

70mm

30mm
53mm

NOTE :
1. ALL DIMENSIONS ARE IN "mm", UNLESS OTHERWISE SPECIFIED.
2. TOLERANCE ON DIMENSION ±5 mm, UNLESS OTHERWISE SPECIFIED.

MUST FOR HUMAN & INDUSTRIAL SAFETY

RAWAFD International

AMBETRONICS®

Green Colour Display for **OK**

20.90 uoL

Yellow Colour Display for **Alarm-1**

19.05 uoL

Red Colour Display for **Alarm-2**

23.54 uoL

Blue Colour Display for **Sensor Open**

5En5 oPEn

Suction Type

Inlet

Vent

PORTABLE GAS DETECTOR

SUCTION/ CALIBRATION CAP

BUZZ

AL1 AL2 TWA STL

20.90 uoL

AL1 AL2 CHG USB

SET · ACK · INCR

AMBETRONICS PG-100

Ex ia

*Actual image and size may slightly differ

CERTIFICATE & APPROVALS
INTRINSICALLY SAFE

IS/IEC 60079 IST Part 11 L-7800047118

- CIMFR TR NO.　　　　　: IN/CIMFR/TR21/R/1341　DATE : 06/08/2021
- BIS MARK LICENCE NO. : 7800047118
- PESO CERT. NO.　　　　: P543659/1
　　　　　　　　　　　　　DATE : 11/08/2022
- E x ia IIC T6 Ga　　　　: Suitable for Hazardous Gas
- Atmospheres Zone　　　: Zone 1 and Zone 2,
- Including Gas Groups　　: IIA, IIB & IIC
- IS/IEC 60079-0　　　　: 2011
- IS/IEC 60079-11　　　　: 2006
- IS/IEC 60529　　　　　: 2001

Features

- Plug-in Sensor: One-year warranty against hazardous gases.
- Portable Detector: Detects smallest gas leaks.
- Easy Handling: Intuitive 3-key interface.
- Power Management: Simple ON/OFF key.
- Software Calibration: Front key calibration option.
- Digital Display: LCD with adjustable backlight.
- Alarm Settings: User-settable with 5 colors.
- Security: Password-protected menu.
- Configurable Alarms: Multiple alert types available.
- Calibration Reminder: Alerts for calibration due.
- Range Indication: Detects sensor issues visually.
- Data Logging Option: Stores up to 50,000 records.
- Battery Monitoring: LCD and LED indicators.
- Unit Conversion: User-configurable settings.
- Power Supply: Rechargeable battery operated.
- Compact Design: Small and lightweight.
- Pump Blockage Detection: Ensures suction efficiency.

TECHNICAL SPECIFICATIONS

General :

Sensors	:	Electrochemical/Catalytic / Pellistor /NDIR / PID
Detection Method	:	Suction
Response Time	:	Less than 10 Sec
Parameter Setting	:	Setting by 3 keys i.e. (SET, SHIFT, INCR)
Alarm Set Point	:	Two independent set points, AL1 & AL2 with LED indication User settable Alarm 1 and Alarm 2 LCD display alert with
Settable display	:	5 colors Red / Blue / Yellow / Cyan / Violet Indicated by Integrated Vibrator & Buzzer (85dB Audible from 1 feet)
Display	:	2-line LCD with backlit. Normal mode White/ Green in colour

Electrical : 3.7V LI-PO Rechargeable Battery

BACK UP DETAILS			
Sr. No	DETECTOR TYPE	W/O VIOLATION	WITH VIOLATION
1	Toxic/ O_2 / N_2	10 DAYS	24 HOURS
2	PID/NDIR (CO_2 /CH_4)	2 DAYS	18 HOURS
3	Catalytic / Pellistor	4 HOURS	2 HOURS

Accuracy :

Sr. No.	SENSOR TECHNOLOGY		CAL ACCURACY
1	Electrochemical		± 2 % FS
2	Catalytic / Pellister		± 2 % FS
3	NDIR - CH_4		± 0.2 % V/V OR ± 5% of applied gas whichever is max
4	NDIR - CO_2		± 10 % of applied gas
5	PID Range	0 to 5000 PPM	± 10% of applied gas
		0 to 1000 PPM	± 5% of applied gas
		0 to 50 PPM	± 3% of applied gas

Environmental :

Operating Temp.	:	-10°C to +55°C
Storage Temp.	:	-10°C to +60°C
Humidity	:	Below 95% RH, Non condensing

MUST FOR HUMAN & INDUSTRIAL SAFETY

Optional Data Logging

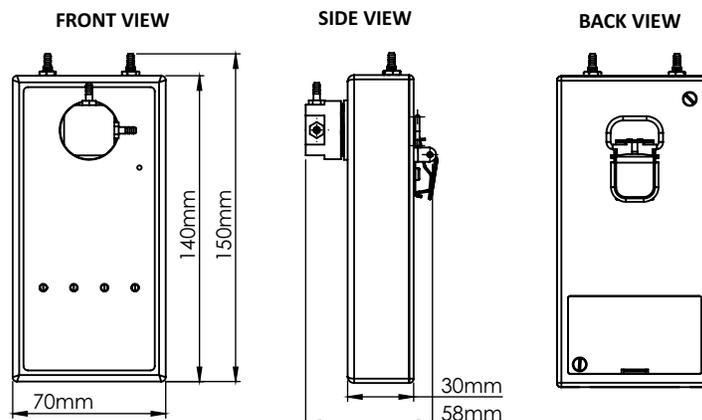|		
Logging Capacity	:	50,000 records with data available in ASCII format
Data Download	:	To the PC Through USB interface using Terminal software

Dimensions & Weignt

Material	:	ABS Plastic
Size	:	150 mm (H) x 70 mm (W) x 50 mm (D)
Weight	:	260 grams

ENCLOSURE DIMENSION & MOUNTING DETAILS

FRONT VIEW　　**SIDE VIEW**　　**BACK VIEW**

140mm　150mm

70mm

30mm
58mm

NOTE :

1. ALL DIMENSIONS ARE IN "mm", UNLESS OTHERWISE SPECIFIED.
2. TOLERANCE ON DIMENSION ±5 mm, UNLESS OTHERWISE SPECIFIED.

15

RAWAFD International

AMBETRONICS®

Green Colour Display for OK

20.90 voL

Yellow Colour Display for Alarm-1

19.05 voL

Red Colour Display for Alarm-2

23.54 voL

Blue Colour Display for Sensor Open

SEnS oPEn

PORTABLE GAS DETECTOR

LPG

0 LEL

AL1 AL2 TWA STL

BUZZ

AL1 AL2 CHG USB

SET | ACK | INCR

LPG : 0 TO 100 %LEL

AMBETRONICS PG-100

*Actual image and size may slightly differ

CERTIFICATE & APPROVALS
INTRINSICALLY SAFE

IS/IEC 60079
Part 11
L-7800047118

- CIMFR TR NO. : IN/CIMFR/TR21/R/1341 DATE : 06/08/2021
- BIS MARK LICENCE NO. : 7800047118
- PESO CERT. NO. : P543659/1
  DATE : 11/08/2022
- E x ia IIC T6 Ga : Suitable for Hazardous Gas
- Atmospheres Zone : Zone 1 and Zone 2,
- Including Gas Groups : IIA, IIB & IIC
- IS/IEC 60079-0 : 2011
- IS/IEC 60079-11 : 2006
- IS/IEC 60529 : 2001

Features

- Calibration Reminder: Alerts when calibration is due.
- Sensor Status Indication: Alerts for open/over range conditions.
- Data Logging Capability: Optional, ASCII format, 50,000 records.
- Battery Status Monitoring: LCD, LED, buzzer alerts.
- Unit Conversion: User-customizable unit settings.
- Power Supply: Rechargeable battery operated.
- Compact Design: Small, lightweight, easy transport.
- Pump Blockage Detection: Ensures suction system efficiency.
- Plug-in Sensor : One-year protection against hazardous gases.
- Portable Detector: Detects smallest gas leaks.
- Easy Handling: Intuitive 3-key interface.
- Software Calibration: Simple calibration using front keys.
- Gas Concentration Display: LCD with adjustable backlight.
- User-Settable Alarms: Alerts in 5 selectable colors.
- Security: Password-protected function menu.
- Configurable Alarms: Various alert types available.

TECHNICAL SPECIFICATIONS

General :

Sensors	:	Electrochemical/Catalytic / Pellistor /NDIR / PID
Detection Method	:	Diffusion /Suction
Response Time	:	Less than 10 Sec
Parameter Setting	:	Setting by 3 keys i.e. (SET, SHIFT, INCR)
Alarm Set Point	:	Two independent set points, AL1 & AL2 with LED indication User settable Alarm 1 and Alarm 2 LCD display alert with
Settable display	:	5 colors Red / Blue / Yellow / Cyan / Violet Indicated by Integrated Vibrator & Buzzer (85dB Audible from 1 feet)
Display	:	2-line LCD with backlit. Normal mode White/ Green in colour

Electrical : 3.7V LI-PO Rechargeable Battery

BACK UP DETAILS

Sr. No	DETECTOR TYPE	W/O VIOLATION	WITH VIOLATION
1	Toxic/ O_2 / N_2	10 DAYS	24 HOURS
2	PID/NDIR (CO_2 /CH_4)	2 DAYS	18 HOURS
3	Catalytic / Pellistor	4 HOURS	2 HOURS

Accuracy :

Sr. No.	SENSOR TECHNOLOGY		CAL ACCURACY
1.	Electrochemical		± 2 % FS
2.	Catalytic / Pellistor		± 2 % FS
3.	PID	0 TO 5000	± 10% of applied gas
	Range	PPM	
		0 TO 1000 PPM	±5% of applied gas
		0 To 50 PPM	± 3% of applied gaws

Environmental :

Operating Temp.	:	-10°C to +55°C
Storage Temp.	:	-10°C to +60°C
Humidity	:	Below 95% RH, Non condensing

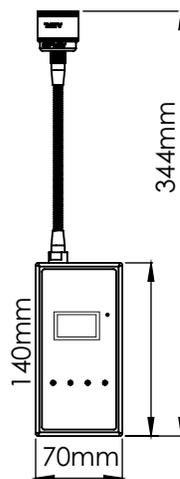### Optional Data Logging

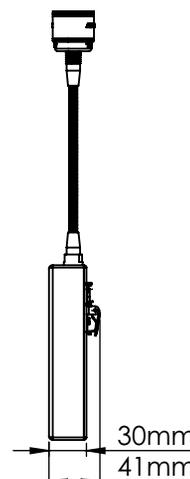|		
Logging Capacity	:	50,000 records with data available in ASCII format
Data Download	:	To the PC Through USB interface using Terminal software

Dimensions & Weignt

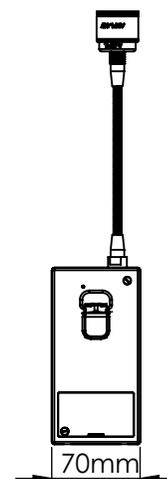|	
Material	: ABS Plastic
Size	: 140 mm (H) x 70 mm (W) x 50 mm (D) Extended flexible sensor (Goose neck)
Sensor Height	: 300 mm
Weight	: 300 grams

ENCLOSURE DIMENSION & MOUNTING DETAILS

FRONT VIEW **SIDE VIEW** **BACK VIEW**

344mm

140mm

70mm

30mm
41mm

70mm

NOTE :
1. ALL DIMENSIONS ARE IN "mm", UNLESS OTHERWISE SPECIFIED.
2. TOLERANCE ON DIMENSION ±5 mm, UNLESS OTHERWISE SPECIFIED.

MUST FOR HUMAN & INDUSTRIAL SAFETY

16

RAWAFD International

AMBETRONICS®

Features

- User Friendly Operation by front keys
- Scan Each Channel with Gas Concentration PPM, PPB, %V/V
- Easy One Man Calibration at site
- Open Loop Transmitter Sensor Break, 'oPEn' Indication
- Individual Channel Skip, Hold Facility from Front Panel
- Reading Offset Facility To Compensate The Field Error
- High & Low Alarm Output with Programmable Latch & Non-Latch Facility for common Relay & Relay Indication
- Optional : Data Logging / Printer Interface / PC Software
- Optional Relay Output for Each Channel
- Suitable in Hazardous Area CCOE, PESO, CMRI & IP-65 approved.

TECHNICAL SPECIFICATIONS

General :

Input	:	8 Channel, 4 to 20mA output from Oxygen / Toxic / Combustible Gas Transmitter of 2 wire/ 3wire
Range	:	0 to 9999 programmable by user, reads % LEL , PPM or %V/V
Resolution	:	0.01, 0.1, 1 Programmable by Users
Channel Capacity	:	Available 2CH./4CH./6CH./8CH.
LED Indication	:	8 No. RED LED for Alarm Indications of both set points AL1, AL2
Set Point	:	2 Independent Set Points Individual for each channels with 2 Common Relay Output
Control Action	:	LO/HI, HI/LO, LO/Very LO & HI-very HI, Programmable by user.
Setting	:	Setting by 5 keys on front panel ' MODE,' 'SHIFT', 'INC', 'ENT', 'PRN/ACK'
Skip Channel	:	Individual Channel SKIP facility from front panel
Hold	:	Facility to 'HOLD' the particular channel continuously
Scan Time	:	1 to 59 second programmable by users

Performance :

Measurement Accuracy : ±0.5% of the Full Scale Value

Electrical

Power Supply	:	100V AC to 270V AC, ±10%
Cable	:	1.5 sq. mm 3 core OR 2 core, Flexible OR Armoured shielded cable from Gas Transmitter

Environmental :

Operating Temp.	:	0 to 50°C ±5%
Relative Humidity :		Below 95% non Condensing

Output Signal :

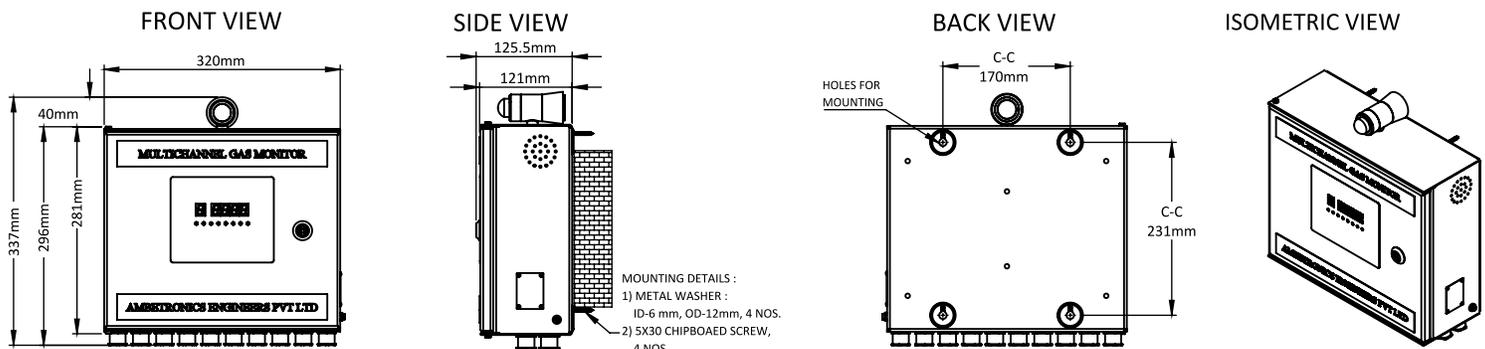|		
Relay Output	:	1 NO/C/NC Relay Contact Rated 230VAC/5A for Relay-1 (AL1) & Relay -2 (AL2)
Relay Latching	:	Programmable latch & Non-Latch facility for Common Relay & Relay Indication.
Optional	:	a) Isolated RS-232/RS-485 Serial port with MODBUS RTU Protocol output
		b) Data logging facility
		c) SMART LOG / SCADA SOFTWARE for online graph & data report for safety audit
		d) Individual relay O/P can be given for each channel OR with grouping output
		e) Flame Proof of Non Flame Proof Industrial Hooter, Hooter Cum Flasher, Chart Recorder, Cables, PC Software, Gas Transmitters, 24VDC Power Supply, Gas Calibration Kit.

Error Monitoring :

Display	:	4 Digits of 13mm Height RED LED Display for 'Process Value' Indication
		1 Digits of 13mm Height RED LED Display for Channel No indication.

MS Panel Housing Details :

Cabinet Material	:	Metal Sheet Siemens Grey Color
Cable Entry	:	Thermoplastic Cable Gland (IP 65) with Clamping Range of 2.5 To 6.5mm
Dimension	:	337 mm (H) x 320 mm (W) x 125.5 mm (D)
Mounting	:	Wall Mounting / Stand Mounting
Weight	:	Approx. 6 Kg

ENCLOSURE DIMENSION & MOUNTING DETAILS

FRONT VIEW
320mm
40mm
337mm
296mm
281mm
MULTICHANNEL GAS MONITOR
AMBETRONICS ENGINEERS PVT LTD

SIDE VIEW
125.5mm
121mm
MOUNTING DETAILS :
1) METAL WASHER :
   ID-6 mm, OD-12mm, 4 NOS.
2) 5X30 CHIPBOAED SCREW,
   4 NOS.

BACK VIEW
C-C 170mm
HOLES FOR MOUNTING
C-C 231mm

ISOMETRIC VIEW

NOTE :
1. ALL DIMENSIONS ARE IN "mm", UNLESS OTHERWISE SPECIFIED.
2. TOLERANCE ON DIMENSION ±5 mm, UNLESS OTHERWISE SPECIFIED.

MUST FOR HUMAN & INDUSTRIAL SAFETY

RAWAFD International **AMBETRONICS®**

Features

- User Friendly Operation
- Scan Each Channel with Gas Concentration PPM, PPB, %V/V
- Easy One Man Calibration at site
- Open Loop Transmitter Sensor Break, 'OPEM' Indication
- Individual Channel Skip, Hold Facility from Front Panel
- Reading Offset Facility To Compensate The Field Error
- High & Low Alarm Output with Programmable Latch & Non-Latch Facility for common Relay & Relay Indication
- Optional : Data Logging / PC Software
- Optional Relay Output for Each Channel
- Suitable in Hazardous Area CCOE, PESO, CIMFR & IP-65 approved.

TECHNICAL SPECIFICATIONS

General :

Input	:	16 Channel, 4 to 20mA output from Oxygen / Toxic / Combustible Gas Transmitter of 2 wire/ 3wire
Range	:	0 to 9999 programmable by user, reads % LEL , PPM or %V/V
Resolution	:	0.1, 1 Programmable by Users
Channel Capacity	:	Available 2CH./4CH./6CH./8CH./16CH.
LED Indication	:	32No. RED LED for Alarm Indications of both set points AL1, AL2
Set Point	:	2 Independent Set Points Individual for each channels with 4 Common Relay Output
Control Action	:	LO/HI, HI/LO, LO/Very LO & HI-very HI, Programmable by user.
Setting	:	Setting by 8 keys on front panel ' 'MODE', 'INC', 'SHIFT', 'ENT', 'ESC', 'ACK', 'PRN', 'HOLD'
Skip Channel	:	Individual Channel SKIP facility from front panel
Hold	:	Facility to 'HOLD' the particular channel continuously
Scan Time	:	1 to 59 second programmable by users

Performance :

Measurement Accuracy : ±0.5% of the Full Scale Value

Electrical

Power Supply	:	100V AC to 270V AC, ±10%
Cable	:	1.5 sq. mm 3 core OR 2 core, Flexible OR Armoured shielded cable from Gas Transmitter

Environmental :

Operating Temp.	:	0 to 50°C ±5%
Relative Humidity :		Below 95% non Condensing

Output Signal :

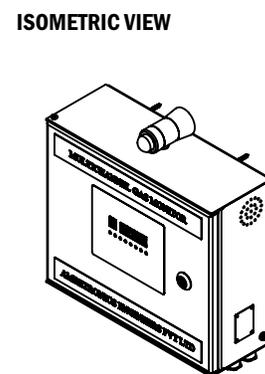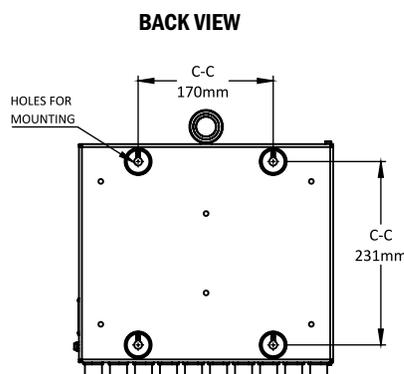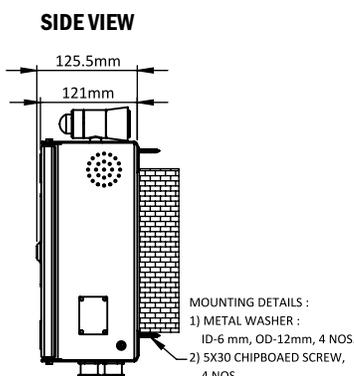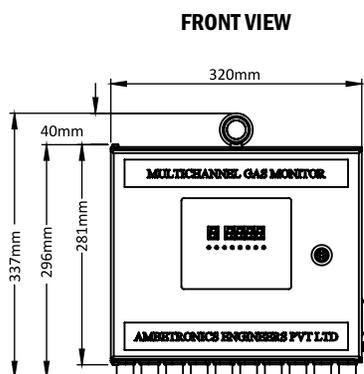|		
Relay Output	:	1 NO/C/NC relay contact rated 230VAC /5A for Relay-1 (AL1) & Relay -2 (AL2)
Relay Latching	:	Programmable latch & Non-Latch facility for common relay & relay indication.
Optional	:	a) Isolated RS-485 Serial port with MODBUS RTU Protocol output
		b) SMART LOG / SMARTLOG PRO SOFTWARE for online graph & data report for safety audit
		c) Flame Proof of Non Flame Proof Industrial Hooter, Hooter Cum Flasher, Chart Recorder, Cables, PC Software, Gas Transmitters, 24VDC power supply, Gas calibration kit.

Error Monitoring :

Display : 5 Digits of 13mm (H) Red LED for 'Gas Concentration'
        2 Digits of 13mm (H) Red LED for 'Channel Number'.

MS Panel Housing Details :

Cabinet Material	:	Metal Sheet Siemens Grey Color
Cable Entry	:	Thermoplastic Cable Gland (IP 65) with Clamping Range of 2.5 To 6.5mm
Dimension	:	337 mm (H) x 320 mm (W) x 125.5 mm (D)
Mounting	:	Wall Mounting / Stand Mounting
Weight	:	Approx. 6 Kg

ENCLOSURE DIMENSION & MOUNTING DETAILS

FRONT VIEW   SIDE VIEW   BACK VIEW   ISOMETRIC VIEW

320mm
40mm
337mm
296mm
281mm

125.5mm
121mm

MOUNTING DETAILS :
1) METAL WASHER :
   ID-6 mm, OD-12mm, 4 NOS.
2) 5X30 CHIPBOAED SCREW,
   4 NOS.

C-C
170mm
HOLES FOR MOUNTING
C-C
231mm

NOTE :
1. ALL DIMENSIONS ARE IN "mm", UNLESS OTHERWISE SPECIFIED.
2. TOLERANCE ON DIMENSION ±5 mm, UNLESS OTHERWISE SPECIFIED.

MUST FOR HUMAN & INDUSTRIAL SAFETY

RAWAFD International

AMBETRONICS®

Features

- 80 Channel Modbus ID Monitoring : Robust RS-485 network monitoring.
- Ring Topology Redundancy : Built-in redundancy support.
- Connectivity to 20 Relay Modules : Flexible relay module integration.
- Multidrop RS-485 Port : Simplified detector connectivity.
- Configurable Polling Interval : Adjustable polling frequency options.
- 128x64 Graphical LCD Display : Clear and informative display.
- Common Alarm Setting : Unified alarm configuration feature.
- Error Detection and Display : Instant error message notifications.
- Integrated Buzzer and Relays : Built-in alarm and relay system.
- Password Protected Menu : Secure access with password protection.
- User-Friendly Panel : Easy operation with minimal controls.

TECHNICAL SPECIFICATIONS

General :

Input	:	80 detectors having RS-485 Modbus RTU port (Slave Id=1 to 80) and 20 numbers Relay module – REL-1200 (ID81 to 100). Set slave Id in sequence.
Display	:	128x64 Graphical Display with Backlight.
Status indication	:	4 numbers LEDs (AL1,AL2,FAULT,COMMUNICATION) to indicate the status of Alarm generation, Connected detector & Relay Module.
Control action	:	Two independent Alarm set points common for all channels with Latch and Non-Latch facility. User selectable Hysteresis and Logic settings
Audible Indication	:	Integrated buzzer for Alarm Set point violation.
Range & resolution	:	1, 0.1,0.01 common for all connected Detectors.

Communication Setting :

Protocol	:	MODBUS RTU.
Baud Rate	:	(9600/19200/38400/57600)bps, User Selectable.
Parity	:	Odd/Even/None, User Selectable.
Stop bits	:	One/two, User Selectable.
Polling Interval	:	500ms/1000ms,User Selectable

Error Monitoring :

'Detector Open/Communicaon Break' errors indication & fault Relay activates for fail safe operation.

Relay :

3 Numbers DPDT Relay with potenal free (2 NO-C-NC) contacts of rang, 2A/230VAC, 2A/24VDC, Common for all configured Detector.

Programmable Parameters :

Set point	:	2 Nos, Alarm 1(AL1) & Alarm 2(AL2), user programmable.
Logic	:	High/very High, very low/Low, Low/High User programmable.
Hysteresis/Time		
Delay/Snooze	:	User Programmable.
Relay Assignment	:	Relay 1 for Alarm 1, Relay 2 for Alarm 2 & Relay 3 for fault (fail safe operation).
Latch	:	'Latch' Relays for Alarm 1 & Alarm 2 programmable as 'Enable/Disable'.
Setting	:	3 No, push button front keys (All programmable menus are password protected).

MS Panel Housing Details :

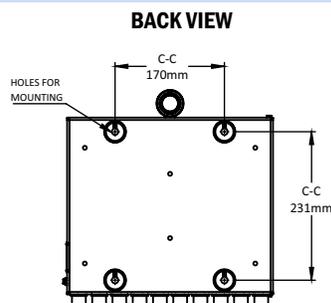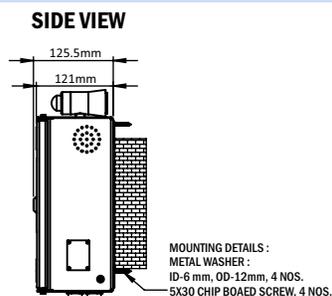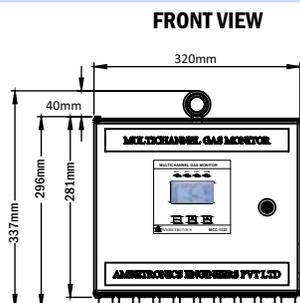|		
Cabinet material & colour	:	Metal sheet grey colour.
Cable entry	:	Single Compression Cable Gland ¾" (metal).
Dimensions	:	337 mm (H) x 320 mm (W) x 105 mm (D) With Cable Gland.
mounting	:	Wall mounting.
Weight	:	Approx. 4.3kg.

Environmental :

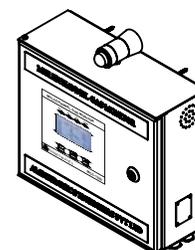|		
Operating Temp.	:	0 to 50°C.
Relative Humidity	:	Below 95%,RH, Non condensing.

Electrical

Supply Voltage	:	90VAC to 270VAC, 50Hz.
Power rating	:	Approximately 20W.
Supply for detector & Relay Module	:	24VDC, 4.5A.
Cable cross section	:	2.5mm².
Cable required	:	2.5mm², 4 core Shielded Armoured / Twisted flexible cable for (24V+,24V-, D+,D-)signals.

ENCLOSURE DIMENSION & MOUNTING DETAILS

FRONT VIEW

320mm
40mm
296mm
281mm
337mm

MULTICHANNEL GAS MONITOR
MCC-1322
AMBETRONICS ENGINEERS PVT LTD

SIDE VIEW

125.5mm
121mm

MOUNTING DETAILS :
METAL WASHER :
ID-6 mm, OD-12mm, 4 NOS.
5X30 CHIP BOAED SCREW, 4 NOS.
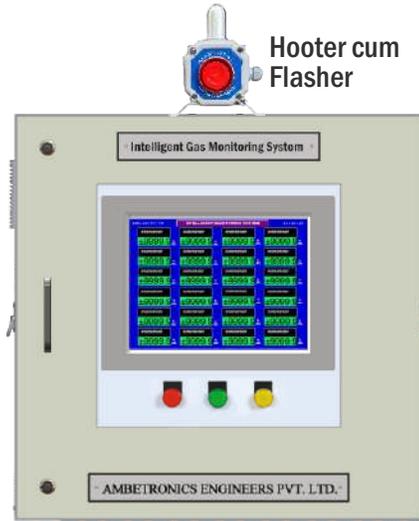
BACK VIEW

HOLES FOR MOUNTING
C-C 170mm
C-C 231mm

ISOMETRIC VIEW

NOTE :
1. ALL DIMENSIONS ARE IN "mm", UNLESS OTHERWISE SPECIFIED.
2. TOLERANCE ON DIMENSION ±5 mm, UNLESS OTHERWISE SPECIFIED.

MUST FOR HUMAN & INDUSTRIAL SAFETY

RAWAFD International

AMBETRONICS®

Hooter cum Flasher

AMBETRONICS ENGINEERS PVT. LTD.

Features

- Intelligent Monitoring System is a 8/16/32 Channel Monitoring System for Transmitters having 4-20mA output.

- Scan time for Transmitter 5 sec. for 8/16/32 Transmitter .

- Large LCD Display

- Real time Monitoring of all Gas / Temp./ RH Transmitters.

- Real time alarm indication via channel blinking.

- Upto 40 (optional) Digital Output of rating "5A

- Failsafe Operation for UNDER /OVER /OPEN condition of Transmitter.

- Separate Alarm Setting for each Transmitter with Logic High / Low & Latching Facility.

TECHNICAL SPECIFICATIONS

General :

Input	:	4-20mA Output from Gas / Process Transmitters of 4/8/16/32 Channel.
Display	:	4.3"/ 7" & 10.2" LCD Display
Control Action	:	i) Independent Alarm set points for each Transmitter with common relay output for Hooter
		ii) Independent Relay output for Solenoid Valve (optional)
Setting	:	By touch screen

Performance :

Scan Time	:	Less than 5 Sec. for 8 /16/32 Transmitters

Electrical :

Supply Voltage	:	190 to 270 VAC; $\pm$ 20%, 50Hz.
Power Rating	:	Approx 20W.
Cable	:	1.5mm^2 2 Core Shielded Cable for 24 VDC Power Supply.
		1.0mm^2 2 Core Twisted Pair Cable for RS-485 MODBUS RTU Communication.

Output Signal (Optional) :

Relay Output	:	Upto 40 Relay Output of rating 5A/230VAC / NO/NC Failsafe Operation for UNDER / OVER / OPEN condition of Transmitter.
RS-485 Port	:	Separate RS-485 MODBUS RTU Port for IoT Device or PC Communication at a time one Function is possible. MODBUS TCP/ IP port : Optional for SCADA software

MS Panel Housing Details :

Protection Class	:	IP-54
Cabinet Material	:	MS Powder Coated compression
Cable Entry	:	Single bottom entry
Dimension for Panel	:	600 mm (W) x 600 mm (H) x 461 mm (D) in mm
Mounting	:	Wall Mounting / Table Mounting
Weight	:	Approx 30 kg.

Environmental :

Storage Temp.	:	-20 to 60°c
Operating Temp.	:	-30 to 70°c
Humidity	:	Below 95% Non-Condensing

Error Monitoring :

- During Sensor Break / Open in the Transmitter connected to it, Intelligent Monitoring System shows 'OPEN' & Failsafe Relay activates.

- During Over Range in the Transmitter connected to it, Intelligent Monitoring Systemshows 'OVER' & Failsafe Relay activates.

- During Under Range in the Transmitter connected to it, Intelligent Monitoring Systemshows 'UNDER' & Failsafe Relay activates.

- If communication fail occurs with any Transmitter then Intelligent Monitoring System holds last value for that transmitter & will show message as 'COM ERROR'.

ENCLOSURE DIMENSION & MOUNTING DETAILS

Front view — 600 mm / 600 mm

Side view — 461 mm

Back view — 400 mm / 400 mm

MUST FOR HUMAN & INDUSTRIAL SAFETY

RAWAFD International · **AMBETRONICS®**

Features

- Intelligent Monitoring System is a 8/16 Channel MODBUS ID Monitoring System for Transmitters having RS-485 MODBUS RTU Network Connectivity.
- Multidrop RS - 485 Port eliminates separate cabling to each Transmitter and Monitor Panel.
- MODBUS - RTU Network can be connected in Ring Topology for Redendency.
- Scan time for 8 Transmitter < 5 sec., for 16 Transmitter <10 sec.
- Large LCD Display (7")
- Real time Monitoring of all Gas / Temp./ RH Transmitters.
- Real time alarm indication via channel blinking.
- Upto 4 (optional) Digital Output of rating "2A
- Failsafe Operation for UNDER/OVER/OPEN condition of Transmitter.
- Separate Alarm Setting for each Transmitter with Logic High / Low Facility.

TECHNICAL SPECIFICATIONS

General :

Input	:	8/16 channels Gas / Process Transmitters having RS-485 MODBUS RTU Port.
Display	:	7" LCD Display
Control Action	:	Independent Alarm set points for each Transmitter with common relay output for Hooter
Setting	:	By touch screen

Performance :

Scan Time	:	Less than 5 Sec. for 8 Transmitters having RS-485 MODBUS RTU Port.
		Less than 10 Sec. for 16 Transmitters having RS-485 MODBUS RTU Port.

Electrical :

Supply Voltage	:	190 to 270 VAC; ± 20%, 50Hz.
Power Rating	:	Approx 20W.
Cable	:	4 Core Shielded Cable for 24 VDC Power Supply. & RS-485 MODBUS RTU Communication.

Output Signal :

Relay Output	:	Upto 4 Output of rating 2A Failsafe Operation for UNDER / OVER / OPEN condition of Transmitter.

MS Panel Housing Details :

Protection Class	:	IP-54
Cabinet Material	:	MS Powder Coated compression
Cable Entry	:	Single bottom plate entry
Dimension for Panel	:	400 (W) x 300 (H) x 150 (D) in mm
Mounting	:	Wall Mounting
Weight	:	Approx 15 kg.

Environmental :
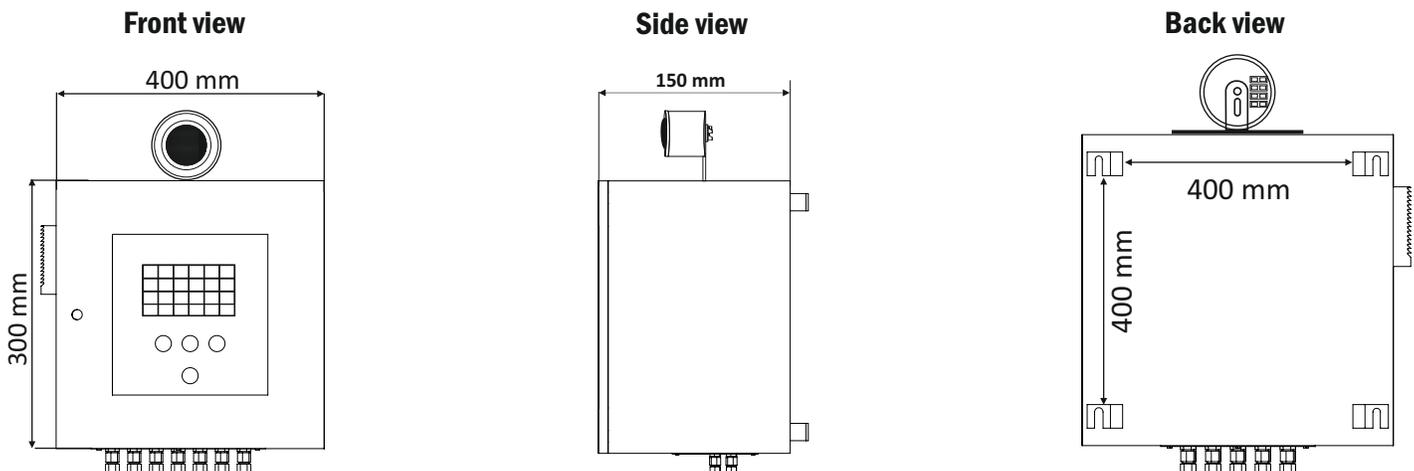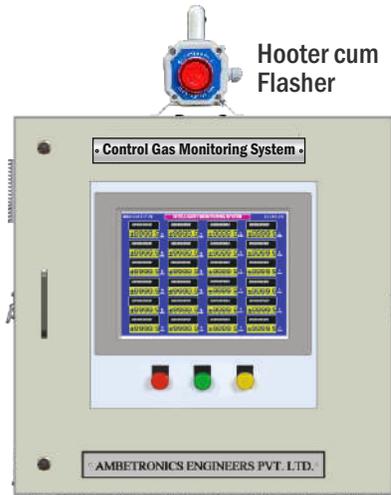
Storage Temp.	:	-20 to 70°c
Operating Temp.	:	0 to 50°c
Humidity	:	Below 95% Non-Condensing

Error Monitoring :

- During Sensor Break / Open in the Transmitter connected to it, Intelligent Monitoring System shows 'OPEN' & Failsafe Relay activates.
- During Over Range in the Transmitter connected to it, Intelligent Monitoring System shows 'OVER' & Failsafe Relay activates.
- During Under Range in the Transmitter connected to it, Intelligent Monitoring System shows 'UNDER' & Failsafe Relay activates.
- If communication fail occurs with any Transmitter then Intelligent Monitoring System holds last value for that transmitter & will show message as 'COM ERROR'.

ENCLOSURE DIMENSION & MOUNTING DETAILS

Front view
400 mm
300 mm

Side view
150 mm

Back view
400 mm
400 mm

MUST FOR HUMAN & INDUSTRIAL SAFETY

RAWAFD International

AMBETRONICS®

Hooter cum Flasher

• Control Gas Monitoring System •

AMBETRONICS ENGINEERS PVT. LTD.

Features

- Intelligent Monitoring System is a 8/16/32 Channel MODBUS ID Monitoring System for Transmitters having RS-485 MODBUS RTU Network Connectivity.
- Multidrop RS - 485 Port eliminates separate cabling to each Transmitter and Monitor Panel.
- MODBUS - RTU Network can be connected in Ring Topology for Redendency.
- Scan time for 8 Transmitter <5 sec., for 16 Transmitter < 10 sec. & for 32 Transmitter < 20 sec.
- Large LCD Display (7" or 10.2")
- Real time Monitoring of all Gas / Temp./ RH Transmitters.
- Real time alarm indication via channel blinking.
- Upto 8 (optional) Digital Output of rating "2A
- Failsafe Operation for UNDER/OVER/OPEN condition of Transmitter.
- Separate Alarm Setting for each Transmitter with Logic High / Low Facility.

TECHNICAL SPECIFICATIONS

General :

Input	:	8/16/32 channels Gas / Process Transmitters having RS-485 MODBUS RTU Port.
Display	:	7" & 10.2" LCD Display
Control Action	:	i) Independent Alarm set points for each Transmitter with common relay output for Hooter
		ii) Independent Relay output for Solenoid Valve (optional)
Setting	:	By touch screen

Performance :

Scan Time	:	Less than 5 Sec. for 8 Transmitters having RS-485 MODBUS RTU Port.
		Less than 10 Sec. for 16 Transmitters having RS-485 MODBUS RTU Port.
	:	Less than 20 Sec. for 32 Transmitters having RS-485 MODBUS RTU Port.

Electrical :

Supply Voltage	:	190 to 270 VAC; $\pm$ 20%, 50Hz.
Power Rating	:	Approx 20W.
Cable	:	4 Core Shielded Cable for 24 VDC Power Supply. & RS-485 MODBUS RTU Communication.

Environmental :

Storage Temp.	:	-20 to 70°c
Operating Temp.	:	0 to 50°c
Humidity	:	Below 95% Non-Condensing

Error Monitoring :

- During Sensor Break / Open in the Transmitter connected to it, Intelligent Monitoring System shows 'OPEN' & Failsafe Relay activates.
- During Over Range in the Transmitter connected to it, Intelligent Monitoring System shows 'OVER' & Failsafe Relay activates.
- During Under Range in the Transmitter connected to it, Intelligent Monitoring System shows 'UNDER' & Failsafe Relay activates.
- If communication fail occurs with any Transmitter then Intelligent Monitoring System holds last value for that transmitter & will show message as 'COM ERROR'.
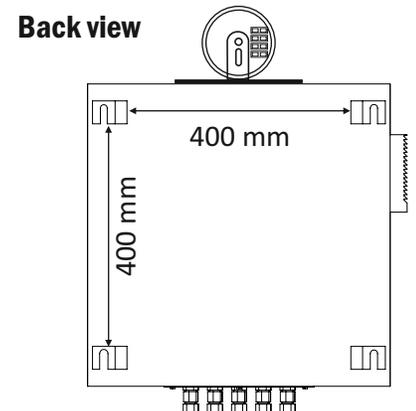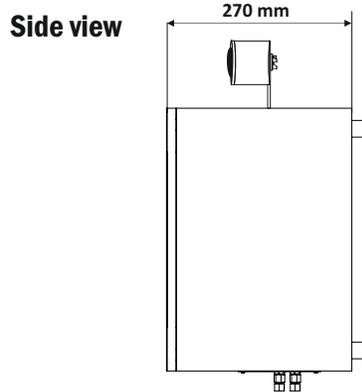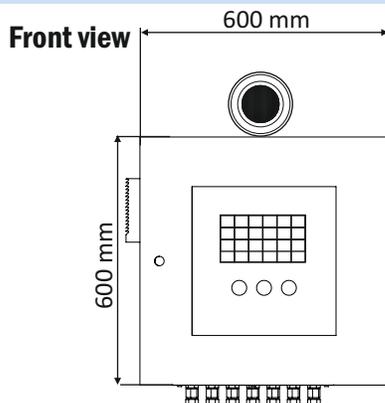
Output Signal :

Relay Output	:	Upto 8 Output of rating 2A Failsafe Operation for UNDER / OVER / OPEN condition of Transmitter.
RS-485 Port (Optional)	:	Separate RS-485 MODBUS RTU Port for IoT Device or PC Communication at a time one Function is possible.
		MODBUS TCP/ IP port : Optional for SCADA software

MS Panel Housing Details :

Protection Class	:	IP-54
Cabinet Material	:	MS Powder Coated compression
Cable Entry	:	Single bottom entry
Dimension for Panel	:	600 (W) x 600 (H) x 270 (D) in mm
Mounting	:	Wall Mounting / Table Mounting
Weight	:	Approx 30 kg.

ENCLOSURE DIMENSION & MOUNTING DETAILS

Front view — 600 mm, 600 mm

Side view — 270 mm

Back view — 400 mm, 400 mm

MUST FOR HUMAN & INDUSTRIAL SAFETY

RAWAFD International

AMBETRONICS®

Hooter cum Flasher

with in built Battery Back-up

- Intelligent Monitoring System is a 8/16/32/40 Channel MODBUS ID Monitoring System for Transmitters having RS-485 MODBUS RTU Network Connectivity.
- Multidrop RS - 485 Port eliminates separate cabling to each Transmitter and Monitor Panel.
- MODBUS - RTU Network can be connected in Ring Topology for Redendency.
- Scan time for 8 Transmitter < 5 sec., for 16 Transmitter < 10 sec. & for 32 Transmitter < 20 sec., for 40 ch. < 25 Sec.
- Large LCD Display (7" or 10.2")
- Real time Monitoring of all Gas / Temp./ RH Transmitters.
- Data Recording and Monitoring with Data export wia USB
- Battery backup up to 1½ hours
- Real time alarm indication via channel blinking.
- Upto 8 (optional) Digital Output of rating "2A
- Failsafe Operation for UNDER/OVER/OPEN condition of Transmitter.
- Separate Alarm Setting for each Transmitter with Logic High / Low Facility.

TECHNICAL SPECIFICATIONS

General :

Input	:	8/16/32/40 channels Gas / Process Transmitters having RS-485 MODBUS RTU Port.
Display	:	7" & 10.2" LCD Display
Control Action	:	i) Independent Alarm set points for each Transmitter with common relay output for Hooter
		ii) Independent Relay output for Solenoid Valve (optional)
Setting	:	By touch screen

Performance :

Scan Time	:	Less than 5 Sec. for 8 Transmitters having RS-485 MODBUS RTU Port.
		Less than 10 Sec. for 16 Transmitters having RS-485 MODBUS RTU Port.
	:	Less than 20 Sec. for 32 Transmitters having RS-485 MODBUS RTU Port.
	:	Less than 25 Sec. for 40 Transmitters having RS-485 MODBUS RTU Port.

Electrical :

Supply Voltage	:	190 to 270 VAC; ± 20%, 50Hz.
Standby	:	12V - 4.5Ah x 2battery - Rechargeable battery
Power Rating	:	Approx 20W.
Cable	:	4 Core Shielded Cable for 24 VDC Power Supply. & RS-485 MODBUS RTU Communication.

Environmental :

Storage Temp.	:	-20 to 70°c
Operating Temp.	:	0 to 50°c
Humidity	:	Below 95% Non-Condensing

Error Monitoring :

- During Sensor Break / Open in the Transmitter connected to it, Intelligent Monitoring System shows 'OPEN' & Failsafe Relay activates.
- During Over Range in the Transmitter connected to it, Intelligent Monitoring System shows 'OVER' & Failsafe Relay activates.
- During Under Range in the Transmitter connected to it, Intelligent Monitoring System shows 'UNDER' & Failsafe Relay activates.
- If communication fail occurs with any Transmitter then Intelligent Monitoring System holds last value for that transmitter & will show message as 'COM ERROR'.
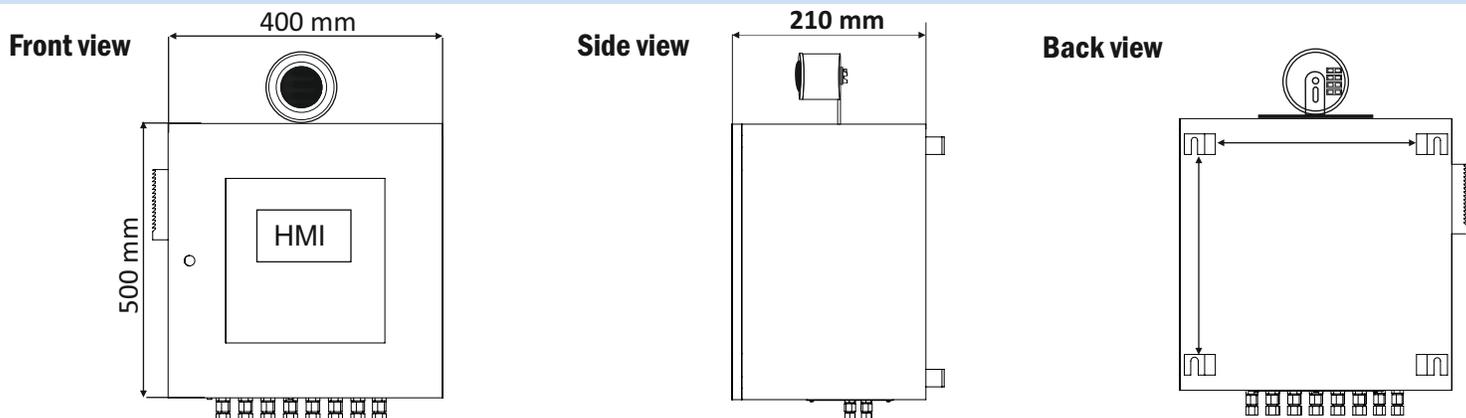
Output Signal :

Relay Output	:	Upto 8 Output of rating 2A Failsafe Operation for UNDER / OVER / OPEN condition of Transmitter.
RS-485 Port	:	Separate RS-485 MODBUS RTU Port for IoT Device or PC Communication at a time one Function is possible.
		MODBUS TCP/ IP port : Optional for SCADA software

MS Panel Housing Details :

Protection Class	:	IP-65
Cabinet Material	:	MS Powder Coated compression
Cable Entry	:	Single bottom entry
Dimension for Panel	:	400 (W) x 500 (H) x 210 (D) in mm
Mounting	:	Wall Mounting / Table Mounting
Weight	:	Approx 30 kg.

ENCLOSURE DIMENSION & MOUNTING DETAILS

Front view — 400 mm, 500 mm, HMI

Side view — 210 mm

Back view

MUST FOR HUMAN & INDUSTRIAL SAFETY

RAWAFD International

AMBETRONICS®

Features

- Multi-Spectral fire detection with UV & IR sensors.
- Clear Line of Sight visual range.
- Triple Spectrum Design for long-distance detection.
- Compatible with any make Fire Alarm Panel.
- High sensitivity and fast response for accurate flame detection.

Approvals & Compliance

Approval & Compliance for Flameproof :

IIC Approval :

Certified to Ex d IIC T6 Gb, @ 60°C IP68
Standard Compliance :
- IS/IEC 60079-0 : 2017
- IS/IEC 60079-1 : 2014
- IS/IEC 60529 : 2001

ATEX IECEx SGS Baseefa UKCA RoHS Compliant SASO SASOEX

TECHNICAL SPECIFICATIONS

General :

Parameter Setting	:	Field configuration settings done by Bluetooth or MODBUS RTU Protocol or HART
Spectral Response	:	UV Band - (185nm to 260 nm)
		Three IR Bands - (3000 nm to 5000 nm)
Detection Range	:	• n-Heptane : 88ft (27m)
(At highest sensitivity		• Kerosene : 82ft (25m)
Setting for 1ft^2 pan fire)		• Diesel Fuel : 82ft (25m)
		• Methanol : 66ft (20m)
		• Gasoline : 82ft (25m)

Performance :

Response Time	:	Typically Less than 5 seconds (Depending on Flame Size & Sensitivity)
Field of View	:	90° Horizontal, 90° Vertical
Adjustable Time Delay	:	Upto 30 seconds
Adjustable Sensitivity	:	Low, Medium and High
Performance Test	:	Performance can be tested by using Test Lamp (FTU-3311) (Safe Test)

Electrical :

Supply Voltage	:	18 to 36 VDC, typically 24VDC
Power Consumption	:	Less than 3W

Output Signal :

4-20mA Current Output	:	250 to 600 ohms load driving capacity
	:	Fault : 1mA Normal : 4mA
		Fire detect : 20mA
L.E.D. Indication	:	Blinking POWER LED (Green), FIRE DETECT LED (RED) & COMMUNICATION LED (Blue)
Relay	:	Three SPDT relays 5A@ 30VDC & 250 VAC for Fail safe, Fire detection & Auxiliary output.
Communication (optional)	:	RS-485 communication port with MODBUS RTU protocol.
HART Protocol (optional)	:	Use for configuration changes by using
(Proprietary optional)		AEPL Communicator
Connectivity (optional)	:	Mobile connectivity and SMS alert via LoRa & IoT support

Environmental :
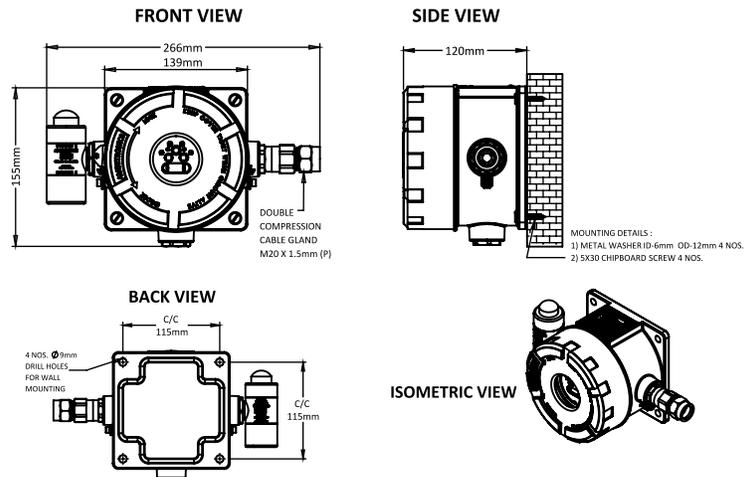
Operating Temperature	:	-40°C to +85°C
Storage Temperature	:	-50°C to +90°C
Humidity	:	Less than 95% Non-Condensing

Flameproof Housing Details :

Degree of Protection Class	:	IP66 & IP68
Enclosure Material	:	Cast Aluminium LM6 alloy or Stainless Steel
Approval	:	CIMFR approved for IIA, IIB group, IIC
Cable Gland	:	Double Compression Cable Gland
Cable Entry	:	M20 x 1.5 (P) ½" or NPT or ¾" NPT
Wiring	:	16-26AWG (1.5mm^2 - 0.14 mm^2)
Hooter Cum Flasher	:	HCF/FLP/2C
Stopping Plug	:	Ex Proof
Dimension (IIC Enclosure)	:	155mm (H) x 266mm (W) with Hooter cum Flasher & cable gland x 120 mm (D)
		155mm (H) x 223 mm (W) with stopper plug & cable gland x 120 mm (D)
Mounting	:	Wall or Pipe Mounting
Weight	:	Approx 2.53 Kg. (LM6), Approx 7 Kg. (SS316)

ENCLOSURE DIMENSION & MOUNTING DETAILS

FRONT VIEW

266mm
139mm
155mm

DOUBLE COMPRESSION CABLE GLAND M20 X 1.5mm (P)

SIDE VIEW

120mm

MOUNTING DETAILS :
1) METAL WASHER ID-6mm OD-12mm 4 NOS.
2) 5X30 CHIPBOARD SCREW 4 NOS.

BACK VIEW

C/C 115mm
4 NOS. Ø9mm DRILL HOLES FOR WALL MOUNTING
C/C 115mm

ISOMETRIC VIEW

MUST FOR HUMAN & INDUSTRIAL SAFETY

NOTE : 1. ALL DIMENSIONS ARE IN "mm", UNLESS OTHERWISE SPECIFIED.
2. TOLERANCE ON DIMENSION ±5 mm, UNLESS OTHERWISE SPECIFIED.

RAWAFD International

AMBETRONICS®

GREEN COLOR FOR NORMAL WORKING MODE

RED COLOR FOR FLAME DETECTION

Features

- UV & IR sensors detect fires.
- Clear line of sight range.
- Triple Spectrum Design: Long-range, low false alarms.
- Sensitivity Selection prevents crossover.
- High sensitivity, fast response.
- Detects small and large flames.

- Versatile output options available.
- Programmable via Bluetooth, RS-485, HART.
- Optional air shield for clean optics.
- IoT connectivity optional.
- Test Lamp compatible for safety.

TECHNICAL SPECIFICATIONS

General :

Parameter Setting	:	Field configuration settings done by Bluetooth or MODBUS RTU Protocol or HART
Spectral Response	:	UV Band - (185nm to 260 nm)
		Three IR Bands - (3000 nm to 5000 nm)
Detection Range	:	• n-Heptane : 88ft (27m)
(At highest sensitivity		• Kerosene : 82ft (25m)
Setting for 1ft^2 pan fire)		• Diesel Fuel : 82ft (25m)
		• Methanol : 66ft (20m)
		• Gasoline : 82ft (25m)

Performance :

Response Time	:	Typically Less than 5 seconds (Depending on Flame Size & Sensitivity)
Field of View	:	90° Horizontal, 90° Vertical
Adjustable Time Delay	:	Upto 30 seconds
Adjustable Sensitivity	:	Low, Medium and High
Performance Test	:	Performance can be tested by using Test Lamp (FTU-3311) (Safe Test)

Electrical :

Supply Voltage	:	18 to 36 VDC, typically 24VDC
Power Consumption	:	Less than 3W

Output Signal :

4-20mA Current Output	:	250 to 600 ohms load driving capacity
	:	Fault : 1mA Normal : 4mA
		Fire detect : 20mA
L.E.D. Indication	:	Blinking POWER LED (Green), FIRE DETECT LED (RED) & COMMUNICATION LED (Blue)
Relay	:	Three SPDT relays 5A@ 30VDC & 250 VAC for Fail safe, Fire detection & Auxiliary output.
Communication (optional)	:	RS-485 communication port with MODBUS RTU protocol.
HART Protocol (optional)	:	Use for configuration changes by using
(Proprietary optional)		AEPL Communicator
Connectivity (optional)	:	Mobile connectivity and SMS alert via LoRa & IoT support

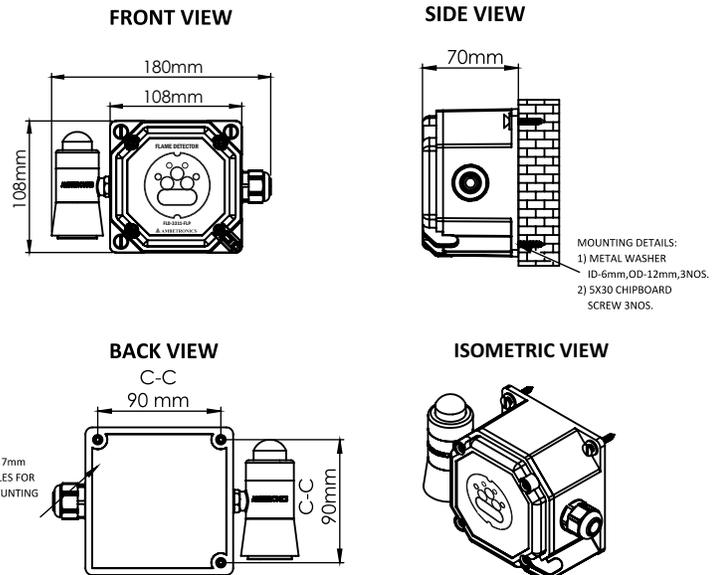## Environmental :

Operating Temperature	:	-15°C to +50°C
Storage Temperature	:	-20°C to +60°C
Humidity	:	Less than 95% Non-Condensing

Weatherproof Housing Details :

Protection Class	:	IP65
Enclosure Material	:	Polycarbonate, ABS Grey (RAL7035)
Cable Entry	:	M20 x 1.5(P)
Dimension	:	108mm (H) x 180mm (W) with Hooter cum Flasher x 70mm (D)
Mounting	:	Wall Mounting/ Stand Mounting
Weight	:	Approx. 444grm.

ENCLOSURE DIMENSION & MOUNTING DETAILS

FRONT VIEW

180mm
108mm
108mm

SIDE VIEW

70mm

MOUNTING DETAILS:
1) METAL WASHER ID-6mm,OD-12mm,3NOS.
2) 5X30 CHIPBOARD SCREW 3NOS.

BACK VIEW

C-C
90 mm

3 NOS. ⌀7mm DRILL HOLES FOR WALL MOUNTING

C-C
90mm

ISOMETRIC VIEW

NOTE :
1. ALL DIMENSIONS ARE IN "mm", UNLESS OTHERWISE SPECIFIED.
2. TOLERANCE ON DIMENSION ±5 mm, UNLESS OTHERWISE SPECIFIED.

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Features

- 70 - Nodes Compatible
- Two settable Alarm set-points for each channel (High/Low)
- Communication Failure detection
- 4 - DPDT Relays for control action
- Inbuilt Buzzer for Audio Alarm Indication with snooze
- Bi-colour L.E.D. indications for Alarms & Device status
- 24V DC Input / 12V DC Adaptor
- Ethernet/RS-485/RS-232 Output Port (for SCADA/PLC/PC)
- 128 x 64 Graphical L.C.D. Display
- Pendrive Interface for online / offline data logging.

TECHNICAL SPECIFICATIONS

Device Configuration :

Nodes	:	70 - Nodes
Configuration	:	AEPL-IIoT PC Software
Operating Mode	:	Programming and Applications
Security	:	Password protected configuration

Display & LED Indications :

Display	:	128 x 64 GLCD
Healthy	:	Blue / Red
AL1/AL2	:	Blue / Red
MODBUS Communication	:	Blue / Red

Serial Interface :

Interface mode	:	RS-485 MODBUS RTU
Supported Baud Rates	:	9600, 19200, 38400, 57600
Parity	:	None, Odd, Even
Stop Bits	:	1, 2
Protocol Supported	:	MODBUS RTU/MODBUS TCP-IP or MODBUS over TCP-IP
Connector	:	3 pin terminal block (DB9/RJ45 Optional)

Environmental :

Temperature Range	:	-10° C to 50° C
Relative Humidity	:	10% to 90% RH, Non- Condensing

MS Housing Details :

Cabinet Material	:	Metal sheet grey colour
Cable Entry	:	Single Compression cable gland - ¾"(Metal)
Dimension	:	300mm (H) x 320mm (W) x 105mm(D) - with Cable Gland
Mounting	:	Wall Mounting
Weight	:	Approx 5.2 kg

Alert & Notification :

Buzzer	:	Beep Sound
Relay	:	4 DPDT Relays

Data Storage :

Data Format	:	CSV
Off Line Log Records	:	32,000 - Records

Electrical :

Operating Voltage	:	230VAC
Reverse Power Protection	:	Available
Overload Protection	:	Available
Power Input	:	Terminal Block

ENCLOSURE DIMENSION & MOUNTING DETAILS
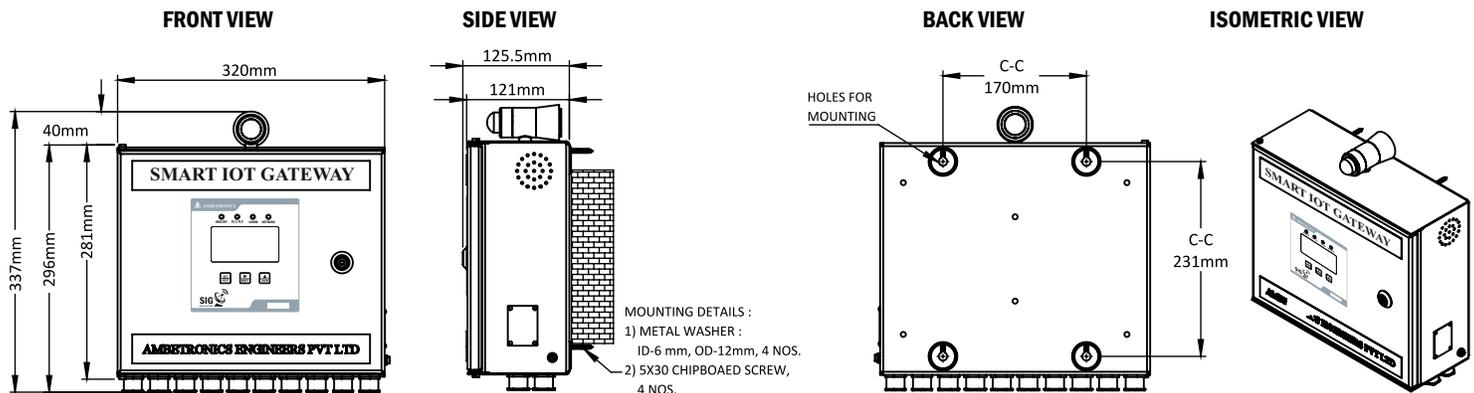
FRONT VIEW   SIDE VIEW   BACK VIEW   ISOMETRIC VIEW

320mm
40mm
337mm
296mm
281mm

125.5mm
121mm

MOUNTING DETAILS :
1) METAL WASHER :
   ID-6 mm, OD-12mm, 4 NOS.
2) 5X30 CHIPBOAED SCREW, 4 NOS.

C-C
170mm
HOLES FOR MOUNTING
C-C
231mm

SMART IOT GATEWAY
AMBETRONICS ENGINEERS PVT LTD

NOTE : 1. ALL DIMENSIONS ARE IN "mm", UNLESS OTHERWISE SPECIFIED.

2. TOLERANCE ON DIMENSION ±5 mm, UNLESS OTHERWISE SPECIFIED.

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RAWAFD International | AMBETRONICS®

Features

- Provides a fast & reliable response by sensing heat build-up i.e. Overheat in Ambient Temperature
- Factory Preset to required Temperature
- Temperature setpoint available for alarm (50,60,70,80 & 90°C)
- Auto-reset Operation, Reset to normal state itself after Temperature cool down.

Approvals & Compliance

- Approval & Compliance for Flameproof Enclosure by PESO:
  Certified to Ex db IIC T6 Gb (-20°C 7 Ta7 +60°C)
  Ex tb/tc IIIC T85°C Db/Dc, IP66
- Standard compliance :

1) IS/IEC 60079-0: 2017   3) IS/IEC 60079-31: 2022
2) IS/IEC 60079-1: 2014   4) IS/IEC 60529: 2001

TECHNICAL SPECIFICATIONS

General

Temp. Set point	:	Refer table No. 01 for ordering (50, 60,70, 80 & 90°C)
Set Point	:	Factory Preset as per customer requirement
Auto-Reset	:	Reset to normal state itself after Temperature Cool down

Performance

Response Time	:	Less then 60 Seconds

Connection

Cross Section	:	0.8 mm2 Flexible or Armoured shielded cable

Environmental

Operating Temp.	:	-20 to 90°C
Storage Temp.	:	-30 to +90°C
Humidity	:	Less than 95% RH, Non-Condensng

Output Signal

Potential Free No Contact	:	NO (Normally Open) Contact only

Common Deliverable

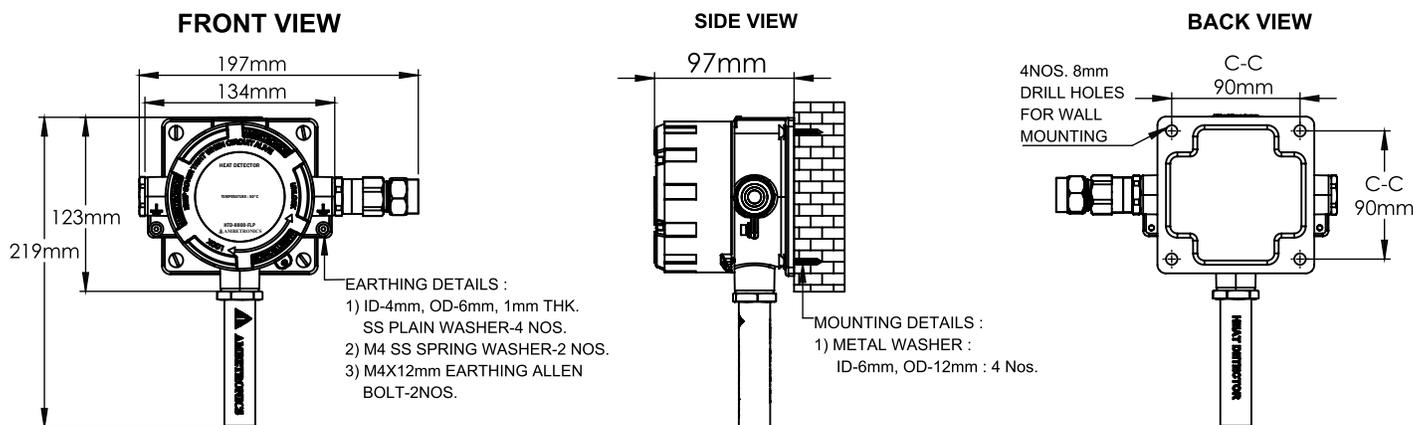1) 'Operational / Instrument' User Manual
2) Standard Mounting Hardware

Flameproof Housing

Protection Class	:	IP66
Cabinet Material	:	Cast Aluminium alloy, LM-6
Approval	:	CIMFR approved for IIA, IIB group, IIC
Cable Gland	:	Double Compression Cable Gland EX-proof
Cable Entry	:	M20 X 1.5mm (P)
Stopping Plug	:	Ex-proof
Mounting	:	Wall Mounting / Stand Mounting / Pipe Mounting
Dimension	:	219 mm (H) with Sensor x 197 mm (W) x 97 mm (D)
Weight	:	Approx 1 Kg.

LISTED TEMPERATURES

Temperature seting (°C)	Accuracy Tolerance (°C)
50	± 4
60	± 4
70	± 4
80	± 4
90	± 4

ENCLOSURE DIMENSION & MOUNTING DETAILS

FRONT VIEW

197mm
134mm
123mm
219mm

EARTHING DETAILS :
1) ID-4mm, OD-6mm, 1mm THK. SS PLAIN WASHER-4 NOS.
2) M4 SS SPRING WASHER-2 NOS.
3) M4X12mm EARTHING ALLEN BOLT-2NOS.

SIDE VIEW

97mm

MOUNTING DETAILS :
1) METAL WASHER : ID-6mm, OD-12mm : 4 Nos.

BACK VIEW

4NOS. 8mm DRILL HOLES FOR WALL MOUNTING

C-C 90mm
C-C 90mm

NOTE :
1. ALL DIMENSIONS ARE IN "mm", UNLESS OTHERWISE SPECIFIED.
2. TOLERANCE ON DIMENSION ± 5 mm, UNLESS OTHERWISE SPECIFIED.

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Pole Mounting Front View

Pole Mounting Side View

Pole Mounting Isometric View

Pole Mounting Back View

ASSEMBLY DETAILS:

ITEM NO.	PART NAME	QTY.	SAP CODE	MATERIAL
1	JB-IIC-CANOPY-BASE PLATE	01	CAN-JB-120-SIDE-223.5-150-2.5-PC	POLYCARBONATE
2	PLAIN WASHER, 4MM X 8MM	12	P-WASH-4-8-1-SS	STAINLESS STEEL (SS316/304)
3	SPRING WASHER, SPLIT LOCK, M4, SS-304	12	S-WASH-SP-M4-SS	STAINLESS STEEL (SS304)
4	CHEESE HEAD SCREW, SLOTTED, M4 X 12MM	04	CHS-M4-12-SS	STAINLESS STEEL (SS316/304)
5	CHEESE HEAD SCREW, SLOTTED, M4 X 8MM	08	CHS-M4-8-SS	STAINLESS STEEL (SS316/304)
6	JB-IIC-CANOPY-SIDE-PLATE	02	CAN-JB-120-SIDE-20-150-2.5-PC	POLYCARBONATE
7	CANOPY STAND PIPE USED IN ALL CANOPY	01	MOU-ST-CAN-P-600-42-34-MS	MILD STEEL
8	CANOPY STAND PIPE BASE PLATE	01	MOU-ST-CAN-BP-150-150-6-MS	MILD STEEL
9	STICKER	01	-	-
10	JB-IIC-CANOPY-TOP PLATE	02	CAN-JB-120-SIDE-224-14.5-2.5-PC	POLYCARBONATE
11	PLAIN WASHER, 6MM (ID) X 10MM (OD), 1MM	04	P-WASH-6-10-1-SS	STAINLESS STEEL (SS316/304)
12	SPRING WASHER, SPLIT LOCK, M6, SS-304	04	S-WASH-SP-M6-SS	STAINLESS STEEL (SS304)
13	CHEESE HEAD SCREW, SLOTTED, M6 X 10MM	04	CHS-M6-10-SS	STAINLESS STEEL (SS316/304)
14	NEW C TYPE CLAMP FOR JB-IIC CANOPY	02	MOU-ST-CAN-CL-42-20-1.5-AL	ALLUMINIUM

MUST FOR HUMAN & INDUSTRIAL SAFETY
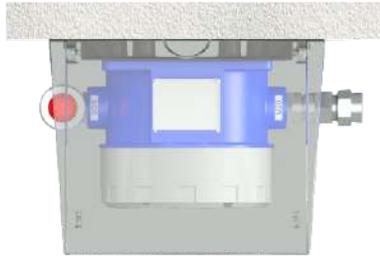
Wall Mounting Front View

Wall Mounting Top View

Wall Mounting Isometric View-1

Wall Mounting Isometric View-2

ASSEMBLY DETAILS:

| ITEM NO.	PART NAME	QTY.	SAP CODE	MATERIAL
1	CHEESE HEAD SCREW, SLOTTED, M4 X 12MM	04	CHS-M4-12-SS	STAINLESS STEEL (SS316/304)
2	SPRING WASHER, SPLIT LOCK, M4, SS-304	12	S-WASH-SP-M4-SS	STAINLESS STEEL (SS304)
3	PLAIN WASHER, 4MM X 8MM	20	P-WASH-4-8-1-SS	STAINLESS STEEL (SS316/304)
4	SELF TAPPPING SCREW, 4X25	08	SELF-4X25-MS	MILD STEEL
5	JB-IIC-CANOPY-BASE PLATE	01	CAN-JB-120-SIDE-223.5-150-2.5-PC	POLYCARBONATE
6	CHEESE HEAD SCREW, SLOTTED, M4 X 6MM	08	CHS-M4-6-SS	STAINLESS STEEL (SS316/304)
7	ACRYLIC PLATE FOR JB-90 FLP AND WP HEX BOX	01	ACRL-CT-D98-3-JB-90-FLP-CAN	ACRYLIC
8	JB-90-HEX BOX	01	JB-90-03-00-ABS-TR	POLYCARBONATE
9	STICKER	01	-	-
10	JB-IIC-CANOPY-SIDE PLATE	02	CAN-JB-120-SIDE-20-150-2.5-PC	POLYCARBONATE
11	JB-IIC-CANOPY-SIDE PLATE	02	CAN-JB-120-SIDE-20-150-2.5-PC	POLYCARBONATE
12	HEX NUT, M6, SS-304	03	HEX-NUT-M6-SS	STAINLESS STEEL (SS316/304)
13	SPRING WASHER, SPLIT LOCK, M6, SS-304	03	S-WASH-SP-M6-SS	STAINLESS STEEL (SS304)
14	PLAIN WASHER, 6MM (ID) X 12MM (OD), 1MM	03	P-WASH-6-12-1-SS	STAINLESS STEEL (SS316/304)
15	COUNTERSUNK SCREW, SLOTTED, M6 X 10MM, SS-304	07	CSK-M6-10-SS	STAINLESS STEEL (SS316/304)

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1 STEP

Mounting the canopy base plate (DIE-01) on wall using self-thread screw

Self-Threaded Screw
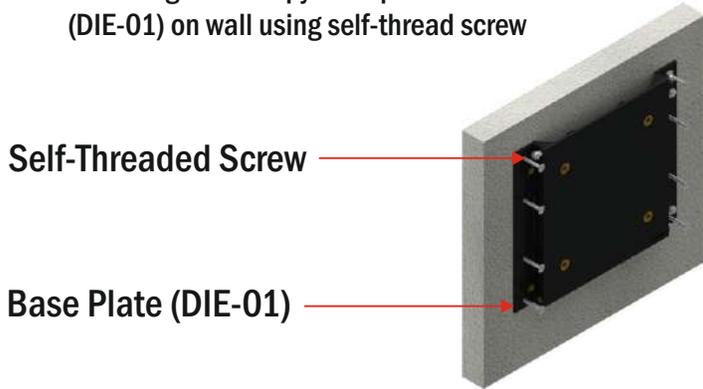
Base Plate (DIE-01)

2 STEP

Mount the device on canopybase plate (DIE 01) with help of M6 x 10mm cheese head screw

M6 x 10mm Screw

Device
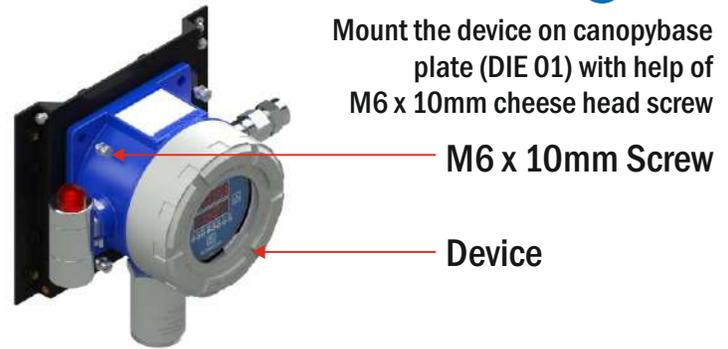
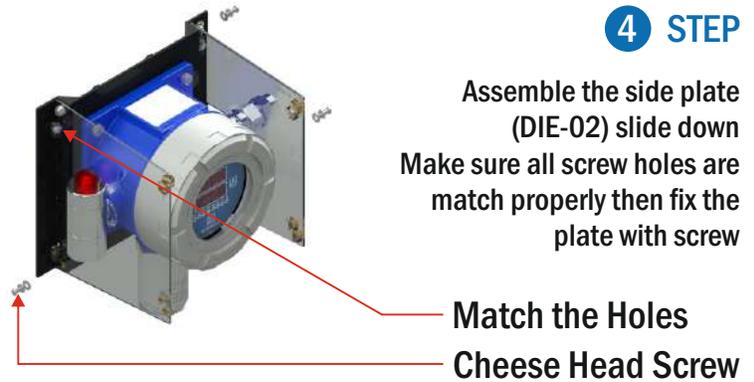**3 STEP**

Side plate (DIE-02) cut the ribs using sharp tool or ex-sawblade for Cable Entry & Hooter cum Flasher

Cutting Ribs

Side Plate (DIE-02)

4 STEP

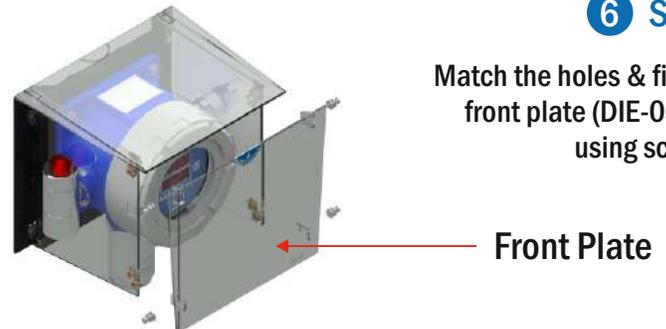Assemble the side plate (DIE-02) slide down Make sure all screw holes are match properly then fix the plate with screw

Match the Holes

Cheese Head Screw

5 STEP

Match the holes & fix the top plate (DIE-03) by using screws
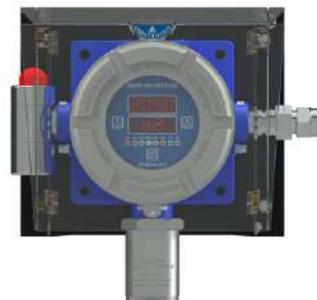
Cheese Head Screw

Top Plate
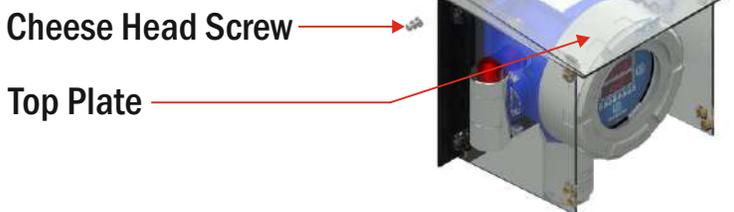
6 STEP

Match the holes & fix the front plate (DIE-03) by using screws

Front Plate

7 STEP

Canopy Installation Done

Manufactured by :

IECEx   ATEX   UL   SGS   Baseefa   SASO   SASOEX   SIL 2   CE   UKCA   RoHS   HART COMMUNICATION PROTOCOL   FieldComm Group

AMBETRONICS ENGINEERS PVT. LTD.