Honeywell F08 Multifunction Wireless Infrastructure Component User Manual

Contents

Honeywell F08 Multifunction Wireless Infrastructure Component

Product Information

Specifications

- Five internal SPDT relays (except in RAEPoint router)
- Wireless transmission distance of 1000 ft (300m) line-of-sight and 4921 ft (1500m) for LoRa. Range can be extended by using wireless routers.
- Class 1, Division 1, and IECEx/ATEX Zone 1 hazardous area certification
- Explosion-proof enclosure for hazardous environment applications
- LEDs indicate status

Applications

- Oil and gas exploration
- Refineries and petrochemical plants
- Fenceline monitoring

Proper Product Disposal at End of Life

EU Directive 2012/19/EU: Waste Electrical and Electronic Equipment (WEEE)

This symbol indicates that the product must not be disposed of as general industrial or domestic waste. This product should be disposed of through suitable WEEE disposal facilities. For more information about disposal of this product, contact your local authority, distributor, or the manufacturer.

Product Usage Instructions

General Information

The RAEPoint can be ordered as a stand-alone wireless unit, or as part of an integrated Wireless Alarm Bar complete with 2 strobes and horn (Wireless Alarm Bar). Each RAEPoint can be configured as a Router, Remote, or Host on a wireless mesh network. Note: The Wireless Alarm Bars (AC and DC versions) used as examples in this manual do not conform to the same certifications of the RAEPoint. Refer to the corresponding Wireless Alarm Bar manuals for product specific specifications.

Special Servicing Note

This manual must be carefully read by all individuals who have or will have the responsibility of using, maintaining, or servicing this product. The product will perform as designed only if it is used, maintained, and serviced in accordance with the manufacturer's instructions. The user should understand how to set the correct parameters and interpret the obtained results.

CAUTION: To reduce the risk of electric shock, turn the power off before opening this instrument or performing service. Never operate the instrument when the instrument is open. Use and service this product only in an area known to be non-hazardous.

WARNING: For safety reasons, this equipment must be operated and serviced by qualified personnel only. Read and understand instruction manual completely before operating or servicing.

Mounting

Follow the manufacturer's instructions for proper mounting of the RAEPoint.

Instrument Disassembly

To disassemble the instrument, follow these steps:

1. Turn off the power to the instrument
2. Refer to the manufacturer's instructions for disassembly

Instrument Reassembly

To reassemble the instrument, follow these steps:

1. Refer to the manufacturer's instructions for reassembly
2. Turn on the power to the instrument

Read Before Operating

Special Servicing Note

If the instrument needs to be serviced, contact either: The Honeywell® distributor from whom the instrument was purchased; they will return the instrument on your behalf.
Honeywell® Technical Service Department. Before returning the instrument for service or repair, obtain a Returned Material Authorization (RMA) number for proper tracking of your equipment. This number needs to be on all documentation and posted on the outside of the box in which the instrument is returned for service or upgrade. Packages without RMA Numbers will be refused at the factory.

Read Before Operating

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General Information

RAEPoint is an explosion-proof wireless device that both extends the range and enables remote relay functionality across a wireless mesh network. As part of a wireless mesh network, the RAEPoint communicates with wireless detectors and controllers and can direct any of its five internal relays to trigger audible and visible alarms. Remote alarm notifications are critical for many applications where local device alarms are simply not visible enough or loud enough to alert a wide area. RAEPoint relay settings can be fully configured wirelessly via the system controller. RAEPoint can also be configured as a wireless host, and communicate directly with detectors, providing a localized alarm notification solution that does not require a controller.

Key Features

- Five internal SPDT relays (except in RAEPoint router)
- Wireless transmission distance of 1000 ft (300m) line-of-sight and 4921 ft (1500m) for LoRa. Range can be extended by using wireless routers.
- Class 1, Division 1, and IECEx/ATEX Zone 1 hazardous area certification
- Explosion-proof enclosure for hazardous environment applications
- LEDs indicate status

Applications

- Oil and gas exploration
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FCC Part 15 Statement

This device complies with Part 15 of the FCC rules. Operation is subject to the following two conditions:

1. This device does not cause harmful interference.
2. This device must accept any interference received, including interference that may cause undesired operation.

Applications

- The RAEPoint can be ordered as a stand-alone wireless unit, or as part of an integrated Wireless Alarm Bar complete with 2 strobes and horn (Wireless Alarm Bar).
- Each RAEPoint can be configured as a Router, Remote, or Host on a wireless mesh network.

Note: The Wireless Alarm Bars (AC and DC versions) used as examples in this manual do not conform to the same certifications of the RAEPoint. Refer to the corresponding Wireless Alarm Bar manuals for product specific specifications.

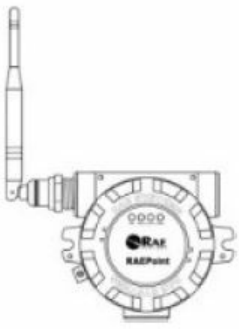
RAEPoint Router

- A stand-alone, DC-powered, explosion-proof unit that acts as a permanent wireless router for mesh network systems.
- Includes aluminum enclosure with LED status indicators and an integrated wireless mesh radio.

RAEPoint Remote & RAEPoint Host

- Stand-alone relay units include aluminum enclosure with LED status indicators, an integrated wireless mesh radio, and five integrated relays.

RAEPoint Remote Wireless Alarm Bar & RAEPoint Host Wireless Alarm Bar



RAEPoint

WA-100 DC Alarm

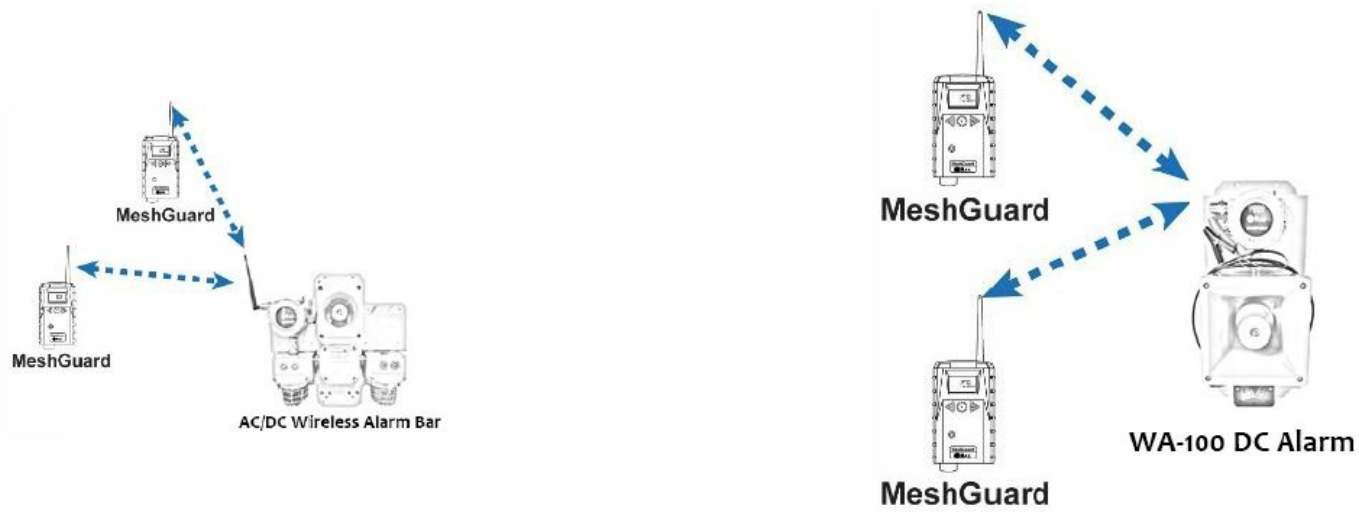
AC/DC Wireless Alarm Bar

- Wireless alarm bar units include the RAEPoint fully integrated with 2 certified Xenon strobes and a certified 112dB horn.
- Flame and PID sensors and third-party devices (using RS-485) can be also be included.

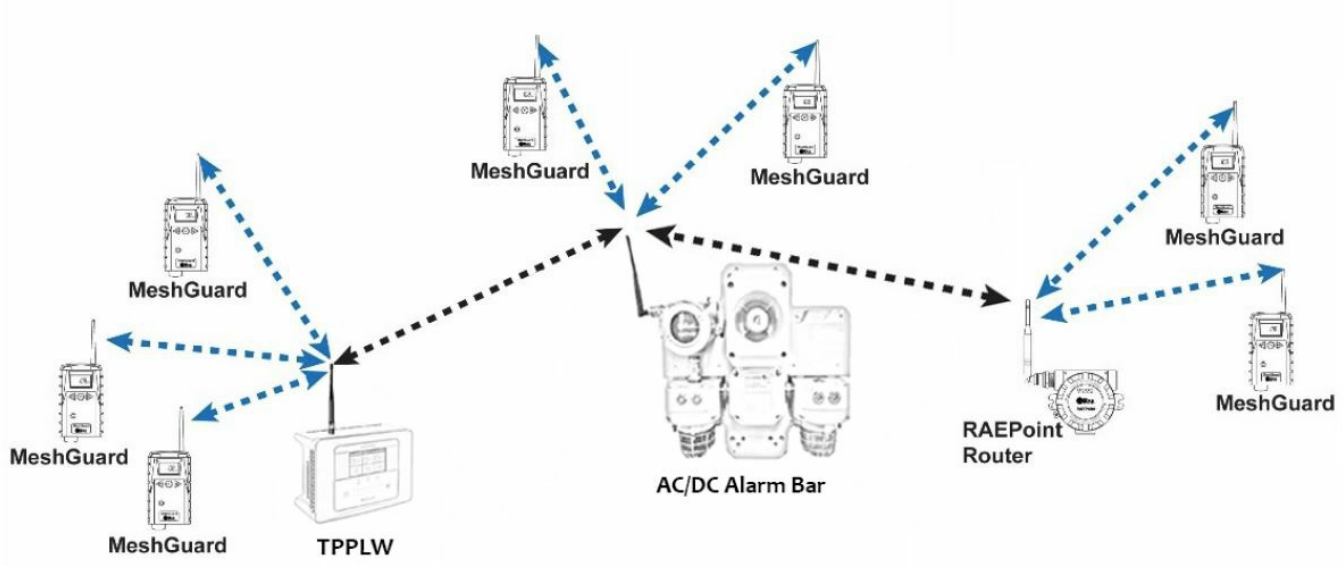
Flexibility

- RAEPoint can be used in large or small systems, and the network can be expanded or units removed, depending on the facility or facilities being monitored.

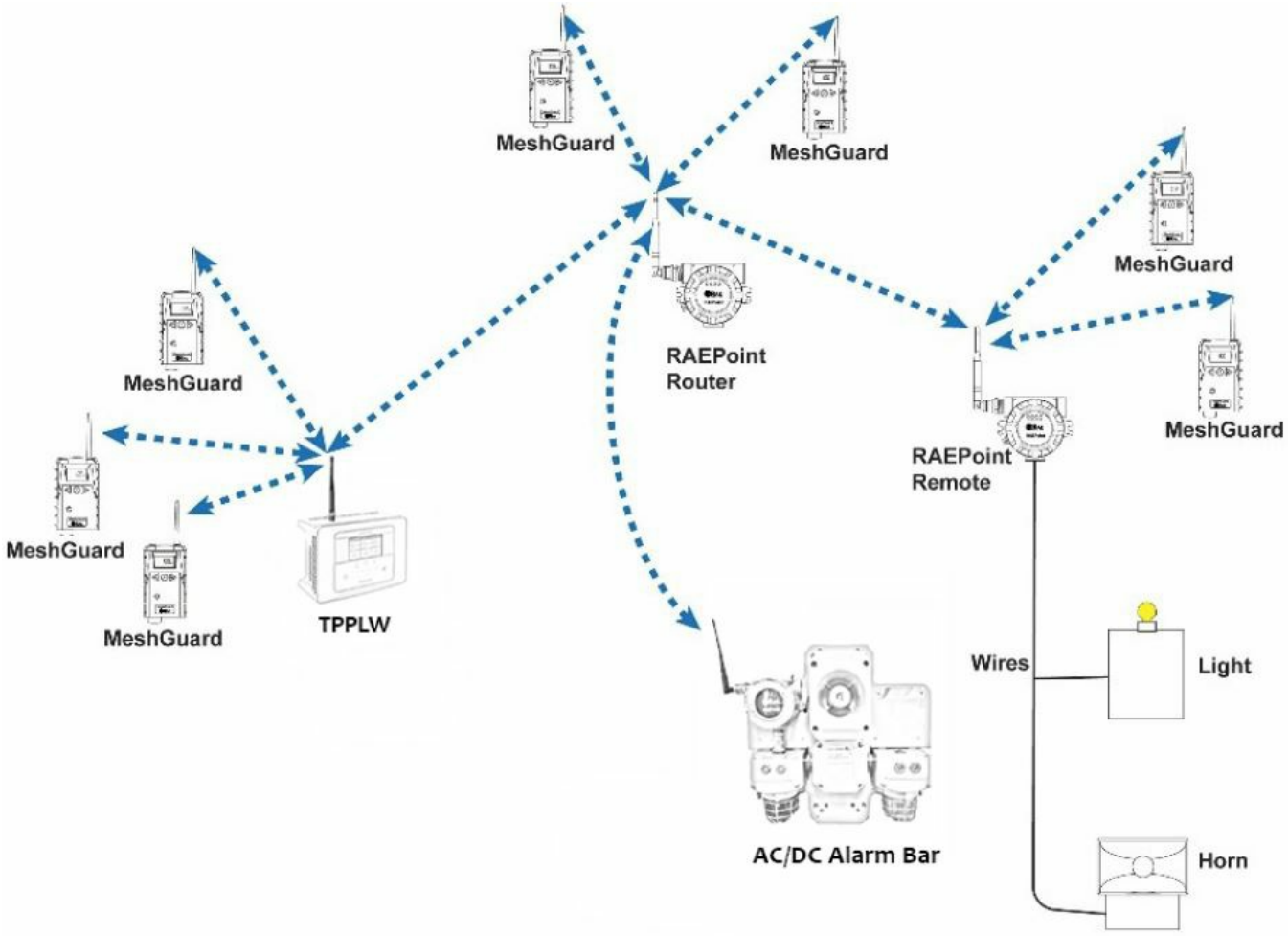
Simple configurations that use MeshGuard sensors and a RAEPoint Wireless Alarm Bar host



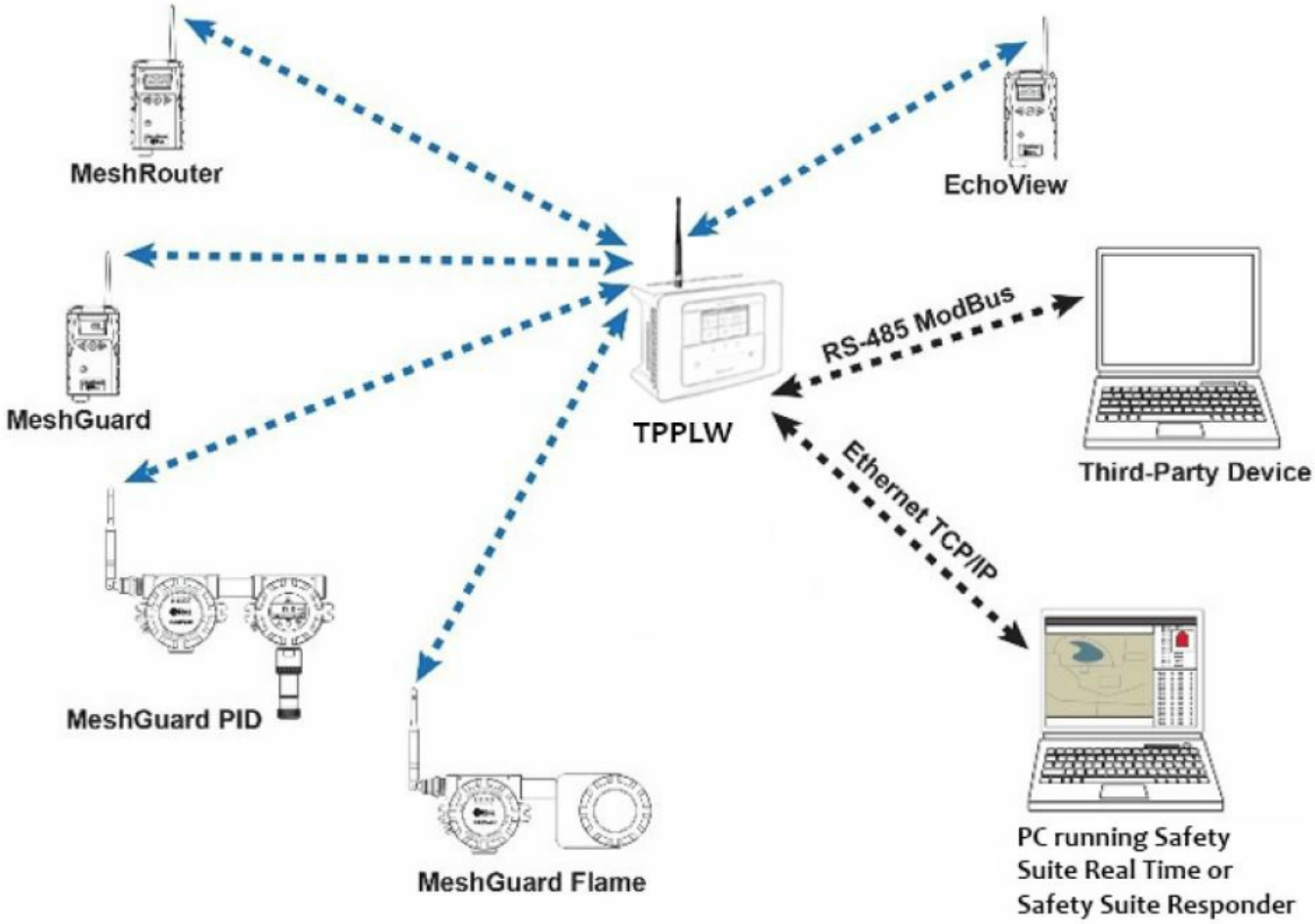
Full network, including externally controlled devices (AC-Powered Alarm Bar configured as Remote)



Full network, including externally controlled devices (DC-Powered Alarm Bar with RAEPoint configured as Remote)

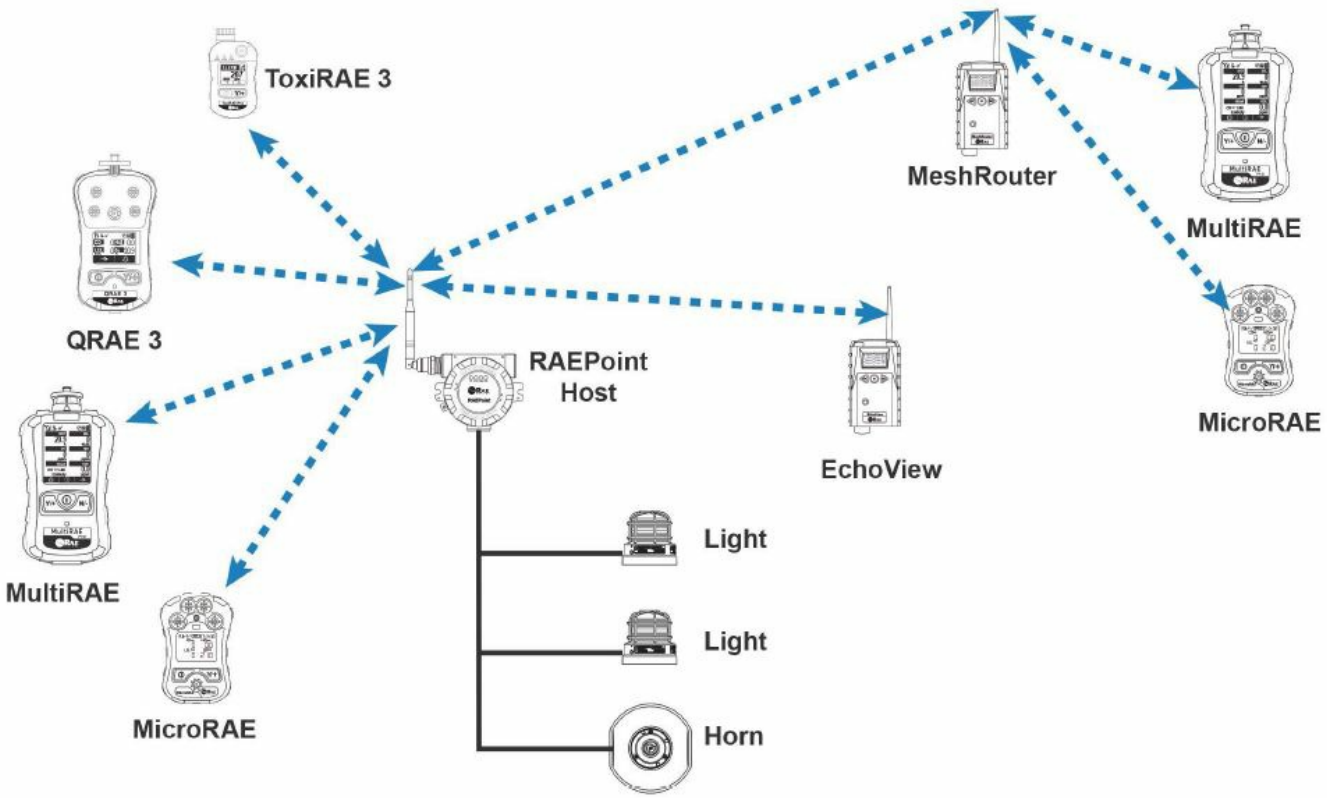


Flame detectors and PID sensors can be included in the network, as well as third-party devices communicating with RS-485 Modbus® protocol

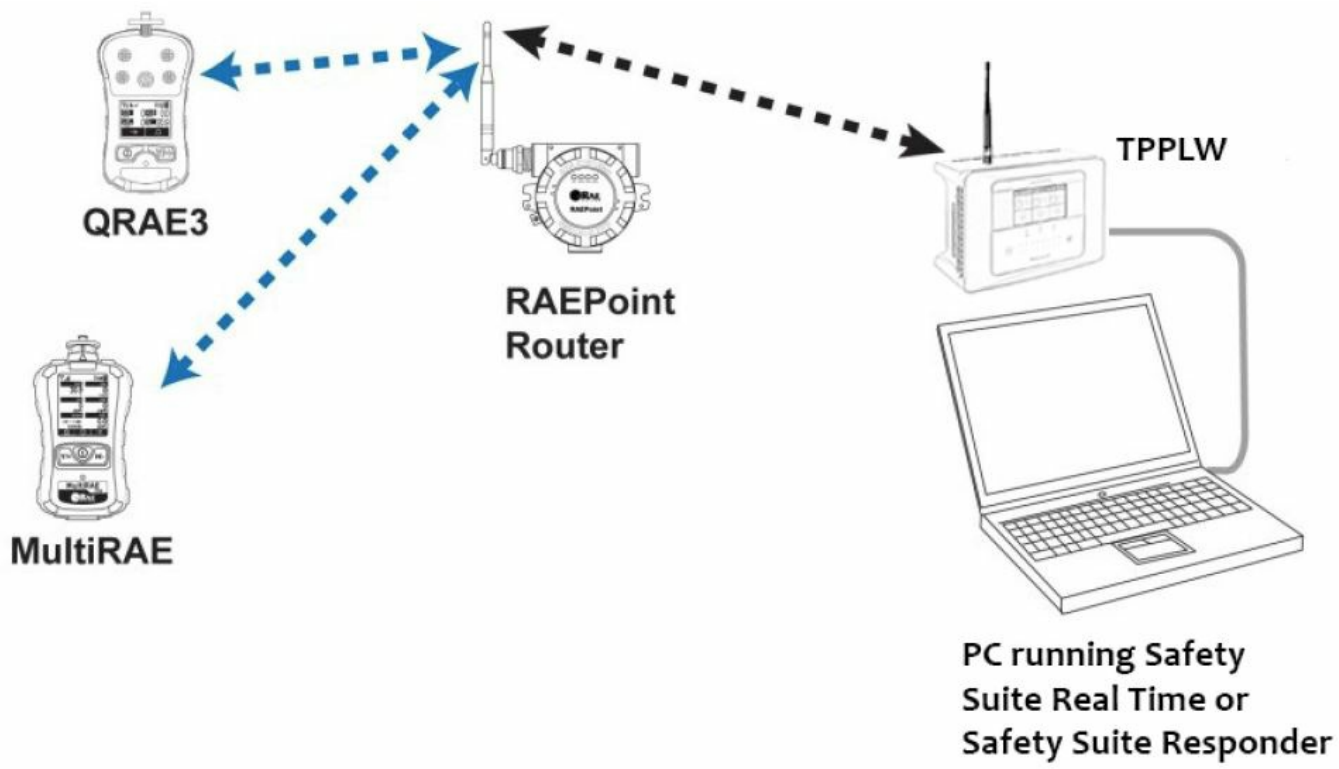


Note: With a 2.4 GHz modem, a RAEPoint Router can connect with 24 instruments with 3 hops and a maximum of 8 Routers.

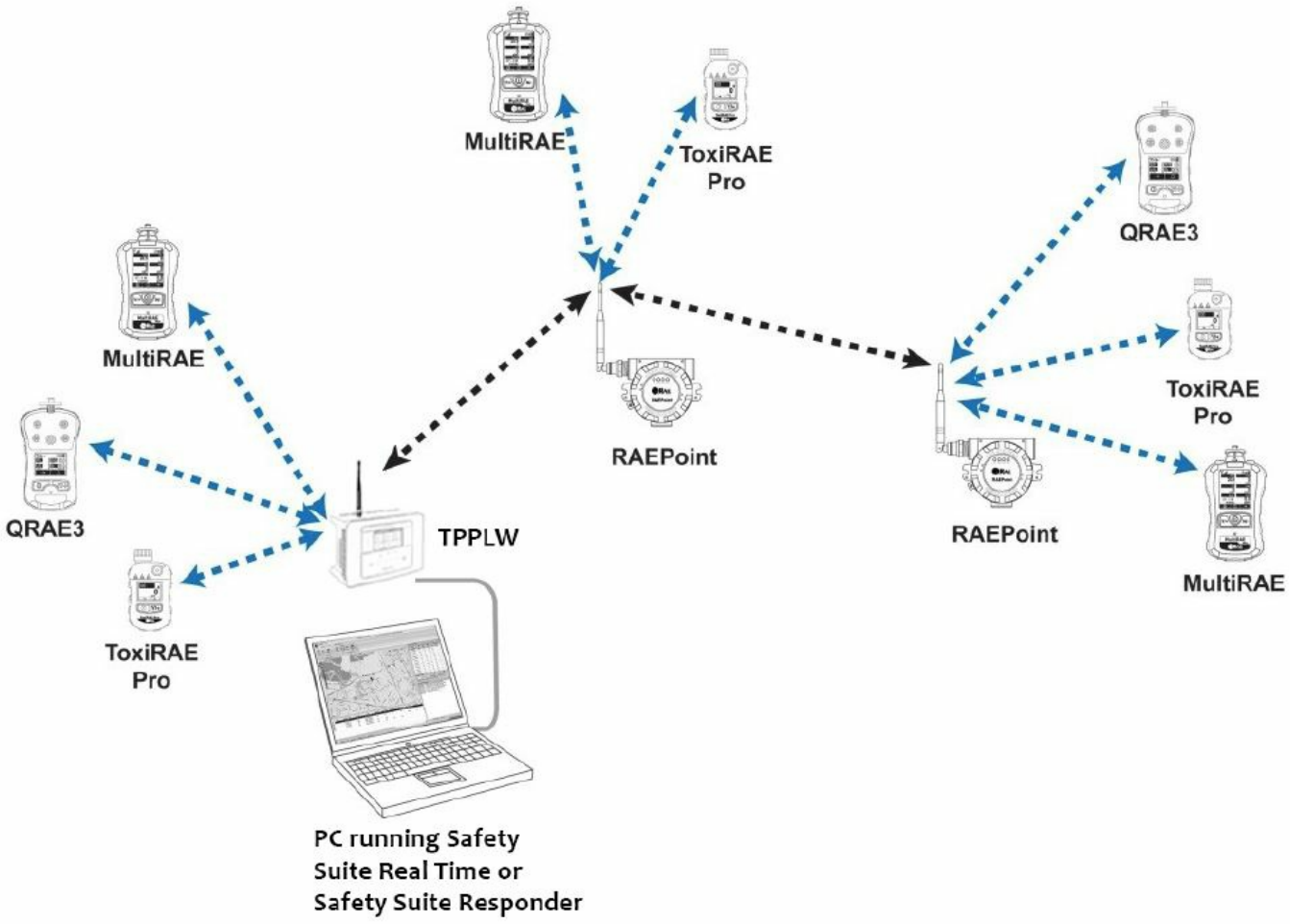
Up to 8 portable instruments can be connected with a RAEPoint Host equipped with an 868/900MHz modem



Simple configuration that includes wireless monitors

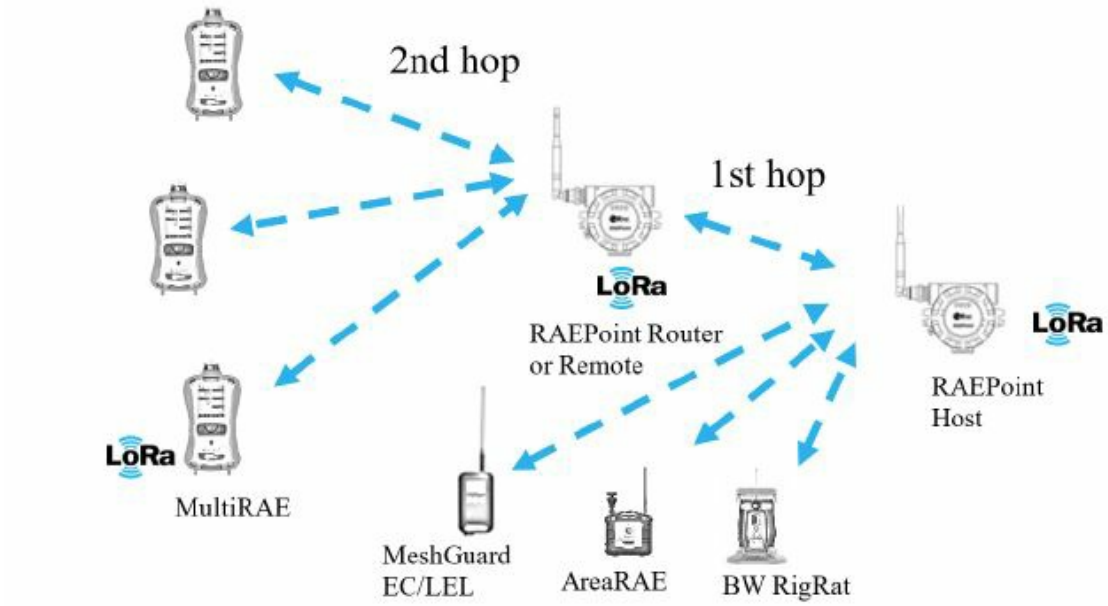


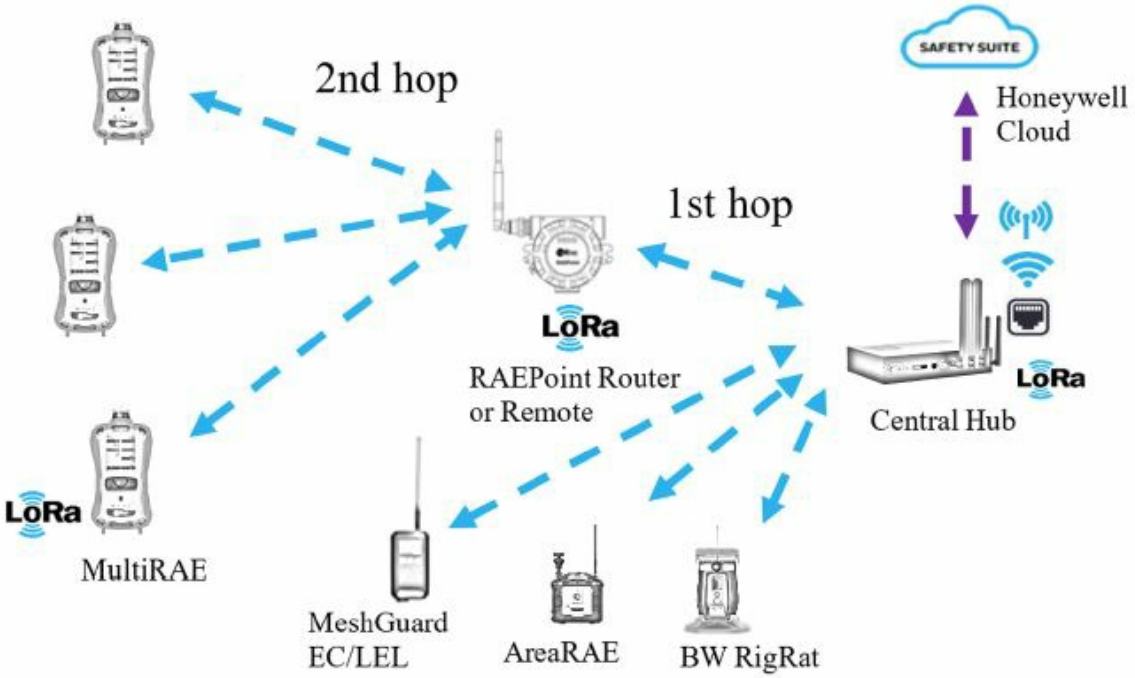
Extended network with multiple RAEPoint routers



New LoRa Network

- 869MHz or 900MHz LoRa radios only.
- Up to 2 hops LoRa private network.
- Up to 8 instruments for RAEPoint Host.
- Up to 64 instruments for Central Hub.





RAEPoint Specifications

This table covers RAEPoint only.

Input Power	Input Power Limit: 2.4W Vinput: 12-28VDC
Output	Five 3-level programmable alarm relays (30 VDC, 2A), dry contact Resisti ve load Max: 6A@24VDC or 6A@250VAC Inductive load Max: 2A@24VDC or 3A@250VAC
IP Rating	IP-65
Mechanical Interface	3/4″ NPT Female
Installation	2″ pipe-holding or wall mounting
Operation Environment Parameters	
Temperature	-20° C to +55° C (-4° F to 131° F)
Humidity	0 to 95% relative humidity, non-condensing
Pressure	90 to 110kPa
Display	
Display	4 LEDs (Network, Alarm, Communication, Mode)
Physical Parameters	
Dimensions, L x W x H	257 x 201 x 107 mm (10.1″ x 7.9″ x 4.2″)
Material	Alumina
Weight	3.5 kg (7.7 lbs)

Specifications subject to change.

Brazil Radio Specifications

- **Radio model:** RM900A
- **Frequency range:** Within 902 to 907.5 MHz and 915 to 928 MHz, use IEEE 802.15.4 channel 1, 6, 7, 8, 9 and 10
- **Modulation:** 802.15.4 DSSS BPSK
- **RF power(Tx):** 20dBm
- **Data rate:** 40kbps

1. **Radio model:** RM2400A
2. **Frequency range:** 2.400 to 2.4835GHz

3. **Modulation:** 802.15.4 DSSS BPSK
4. **RF power(Tx):** 20dBm
5. **Data rate:** 250kbps
6. **TRA Registered No:** ER36636/15
    - **Dealer No:** HONEYWELL INTERNATIONAL MIDDLE EAST – LTD – DUBAI BR
7. **TRA Registered No:** ER36063/14
    - **Dealer No:** HONEYWELL INTERNATIONAL MIDDLE EAST – LTD – DUBAI BR

Wireless Approval For QATAR In Middle East

ictQATAR

- **Type Approval Reg. No.:** R-4697
- **Type Approval Reg. No.:** R-4465
- **Radio model:** RMLORAB
- **Frequency range:** 868MHz Channel 0;902~928MHz Channel 1~10.
- **Modulation:** 802.15.4 DSSS BPSK
- **RF power(Tx):** 17dBm
- **Data rate:** xxkbps

RAEPointHazardous Location Classification

This table includes Hazardous Location information for RAEPoint only. The Wireless Alarm Bars (AC and DC versions) used as examples in this manual do not conform to the same certifications of the RAEPoint. Refer to the corresponding Wireless Alarm Bar manuals for product specific specifications.

IECEx	**ATEX**	**North America**
IECEx SIR 12.0027X	Sira 12ATEX 1085X	
Ex d ia IIC T6, Gb	CE 0575 Ex II 2G, Ex d ia IIC T6 Gb	Cl.I Div 1, Group A,B,C,D T6

- **Temperature range:** -20° C ≤ Tamb ≤ 55° C

Operation

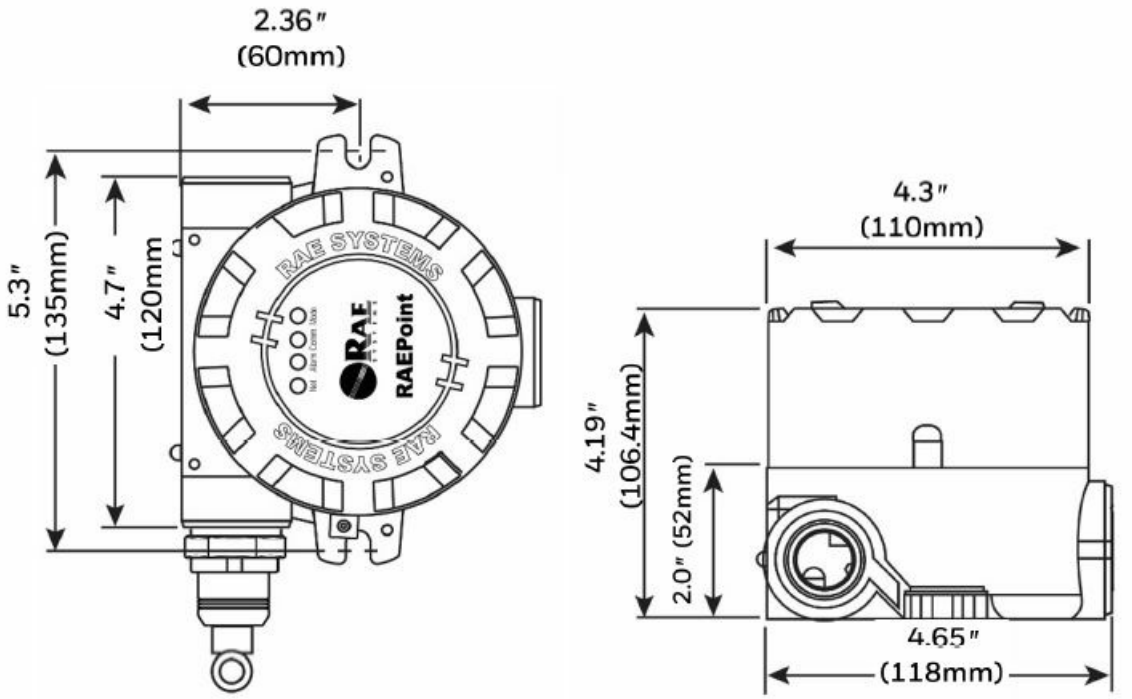
Note: Prior to factory shipment, the RAEPoint is tested. However, the instrument should be tested after installation.

Physical Description

- The RAEPoint can be easily installed and integrated with various control systems. It is designed with flexible pipe-holding/wall-mounting options and standard connection terminals.

Physical Dimensions

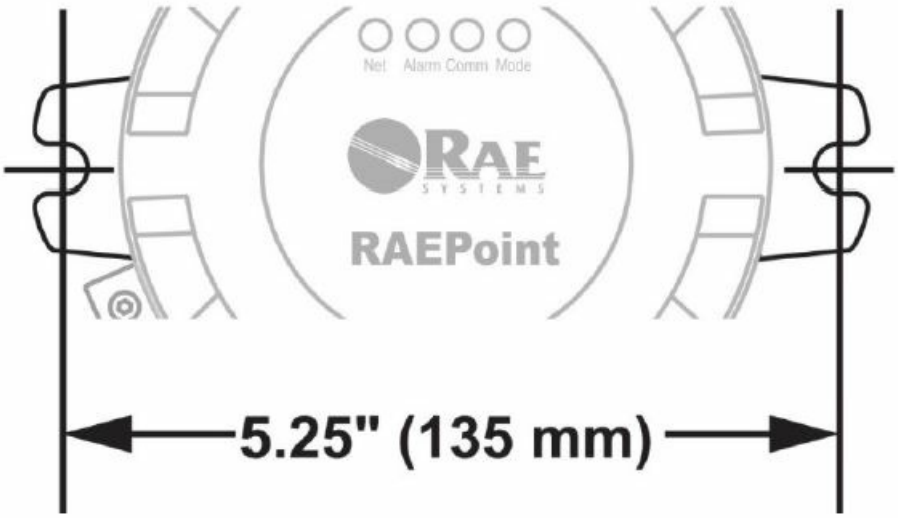
The physical dimensions are as follows:



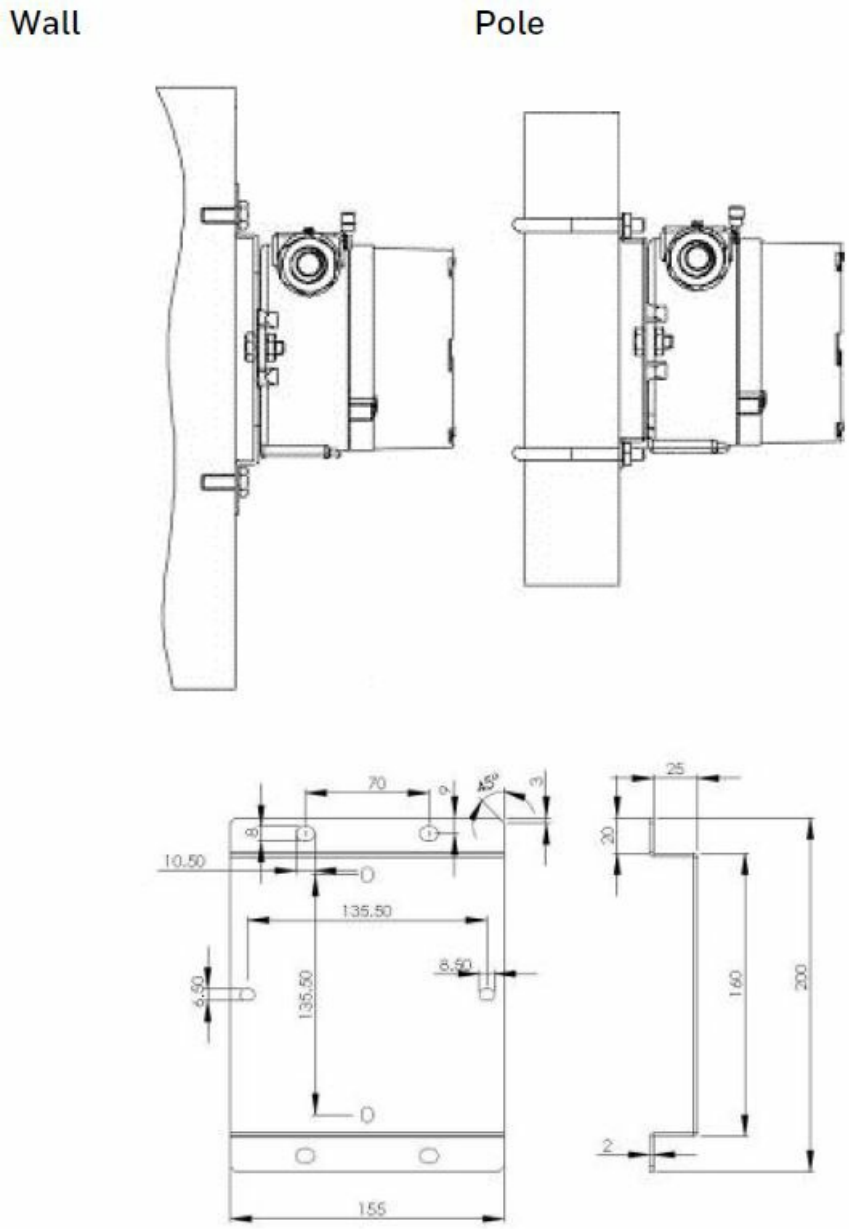
Hardware Installation

Note: If the RAEPoint is integrated into a Wireless Alarm Bar, follow the installation and access instructions in its Installation Guide.

Mounting



- First, decide where the transmitter will be mounted. (Refer to installation drawing, below.) Drill two holes in mounting surface, with the center of the holes 5.25″ (135 mm) apart.



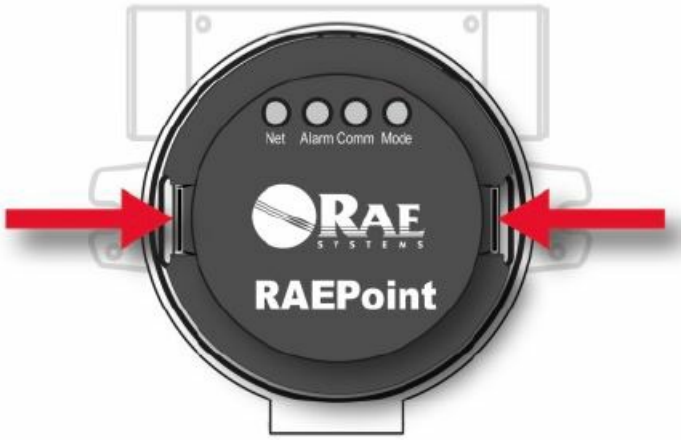
- Besides being mounted to a wall, RAEPoint can be mounted on a pipe.

Note: When installing the RAEPoint, make sure the antenna is installed in the left or right inlet (not the one on the bottom).

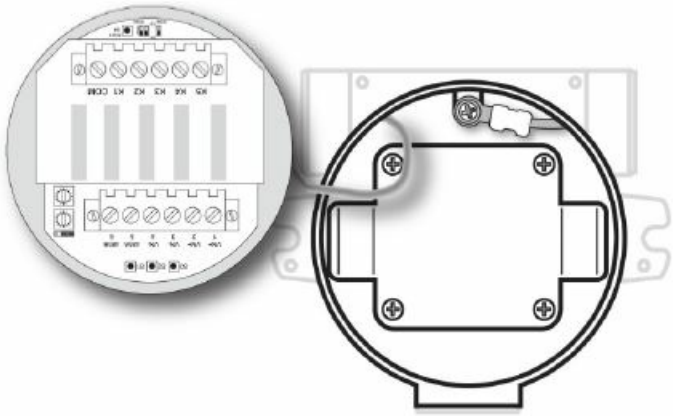
Instrument Disassembly

CAUTION: Prior to service: Make sure power is OFF. Observe all Hazardous Location Safety procedures.

1. Loosen the hex locking screw on the housing lid.



2. Press in on the clips on both sides of the display, and then lift out the circuit boards.



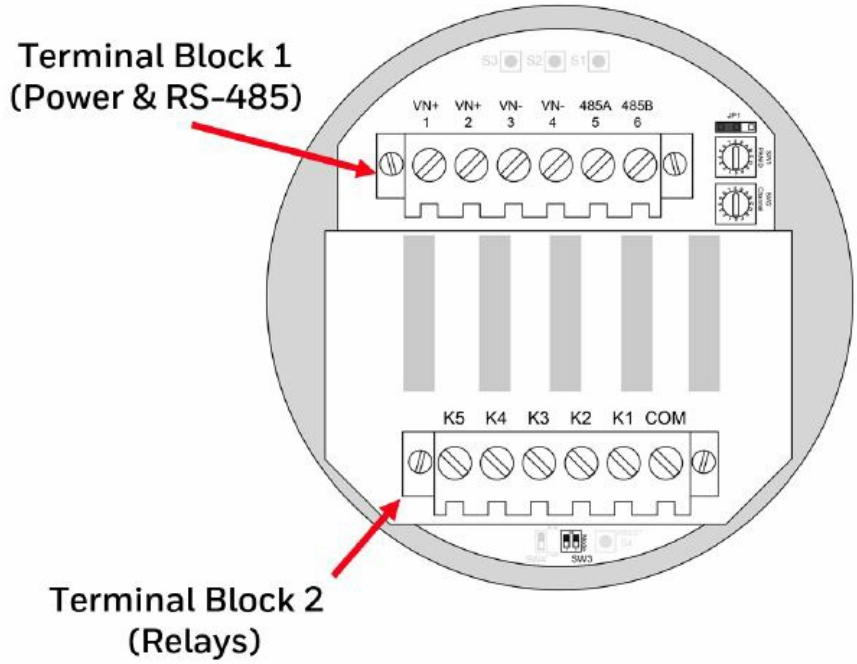
3. Turn the circuit boards over to access the switches and wiring points. Be careful not to damage the antenna wire between the circuit boards and the antenna that passes through the housing.

Instrument Reassembly

1. Make sure all wires are connected to the terminal blocks and that the terminal blocks are firmly seated in the circuit board.
2. Turn over the circuit board/front panel.
3. Align the two clips with the mating points in the housing.
4. Click the board into place.
5. Screw on the housing top.
6. Screw down the locking screw.

Wiring

RAEPoint Wiring



The two terminal blocks in the RAEPoint accept 12AWG to 24AWG wire. One terminal block is for DC power, and the other is for relay connections.

Note: Refer to the RAEPoint Wireless Alarm Bar's User's Guide for information on connecting the Wireless Alarm Bar.

Read this before wiring a RAEPointto control external customized loads.

1. Before wiring a RAEPoint to control external devices, consult the datasheet that applies to the RAEPoint's relays: **http://www3.panasonic.biz/ac/e/control/relay/cautions-use/index.jsp#ANCHOR3**
2. Some none-resistive loads, such as motors, horns, or strobes, may present high inrush current, causing relay contact degradation/welding even they are within the relays' rating. A simple solution is to place an NTC thermistor (for example, model B57236S0509M0** from EPCOS) in series between the relay and the load, to limit inrush current.

Note: A RAEPoint that is factory-configured as a router does not contain relays.

RAEPoint Wiring Procedure

Note: The following section is for wiring a stand-alone RAEPoint. If you are wiring a RAEPoint Wireless Alarm Bar, refer to the RAEPoint Wireless Alarm Bar Installation Guide.

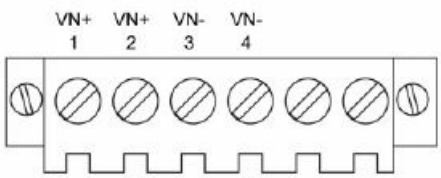
1. Inside the housing bottom, two green terminal block plugs are inserted into the terminal blocks on the PC boards.
    - The terminal block plugs accept 12 AWG to 24 AWG wire.

- **Note:** On the RAEPoint Wireless Alarm Bar, wiring from the Relay outputs and downline power are already complete. Only Power and Ground (earth) connections need to be made. See “Earth Grounding Instructions,” section, for information on proper grounding.

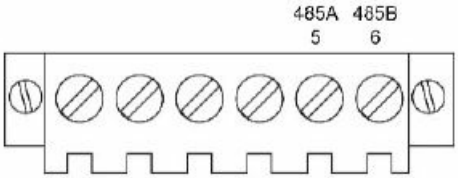
2. Route the wires through the RAEPoint’s wire hole(s) and connect wires to the corresponding pin numbers of the terminal blocks:

Terminal	Terminal Definition	Terminal	Number
Block 1	Positive DC power supply for RAEPoint	VN+	1
	Positive DC power for downline units		2
	Negative DC power supply for RAEPoint	VN-	3
	Negative DC power for downline units		4
	RS-485A	RS-485A	5
	RS-485B	RS-485B	6
Block 2	Relay Output 5	K5	K5
	Relay Output 4	K4	K4
	Relay Output 3	K3	K3
	Relay Output 2	K2	K2
	Relay Output 1	K1	K1
	Relay Common	COM	COM

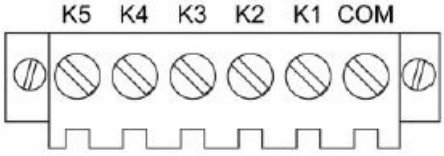
Note: When using RS-485, make sure a RAEGuard2 PID 485 address is 0x32(default), and a Flame detector is 0x7F(default).



Terminal Block 1 (Power Connections) Terminal Block 1 (RS-485 Connections)



Terminal Block 1 (Power Connections) Terminal Block 1 (RS-485 Connections)



Terminal Block 2 (Relay Connections)

DC Control Wiring

When wiring the RAEPoint's relays to external devices, the resistance of the wiring may be sufficient to cause significant voltage drop, particularly in long wires. In order to compensate for this, you must calculate the resistance and compensate accordingly. The table below gives approximate values for resistance by wire gauge (AWG). After calculating and compensating for voltage drop, check the system to ensure that all equipment is receiving sufficient voltage.

Wire Gauge and DC resistance values (in ohms)

AWG Gauge	Ohms per 1000 ft.	Ohms per Kilometer
12	1.588	5.20864
13	2.003	6.56984
14	2.525	8.282
15	3.184	10.44352
16	4.016	13.17248
17	5.064	16.60992
18	6.385	20.9428
19	8.051	26.40728
20	10.15	33.292
21	12.8	41.984
22	16.14	52.9392
23	20.36	66.7808
24	25.67	84.1976

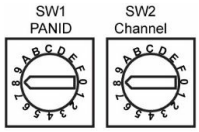
- Voltage Loss = Amperes x Wire Resistance per 1,000 feet x Distance in thousands of feet x 2 Wires
- Voltage Loss = Amperes x Wire Resistance per kilometer x Distance in kilometers x 2 Wires

Switch Settings

Configuration requires setting the two hexadecimal rotary-encoder switches that govern Pan ID and Channel, located inside the RAEPoint.

Pan ID (SW1) And Channel (SW2)

Make sure all units in the network, including an FMC2000 controller and any monitors, have the same Pan ID number and channel in order to communicate within the network. If you change the Pan ID number or Channel on the FMC2000, check the other units in the network, as well as the RAEPoint, to ensure they match.



Use a small-blade screwdriver to turn each rotary encoder to the proper value.

The following chart shows settings for the two encoders:

- For Mesh

SW1	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**A**	**B**	**C**	**D**	**E**	**F**
PAN ID	999	998	997	996	995	994	993	992	991	990	989	988	987	986	985	984
SW2	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**A**	**B**	**C**	**D**	**E**	**F**
Channel (ISM)	Ch0	Ch2	Ch3	Ch5	Ch6	Ch7	Ch8	Ch20	Ch25	Ch26	Ch27	Ch28	Ch29	Ch30	Ch35	Ch36
	868MHz	902 to 928 MHz							2.4 GHz							

- For LoRa

SW1	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**A**	**B**	**C**	**D**	**E**	**F**
PAN ID	999	998	997	996	995	994	993	992	991	990	989	988	987	986	985	984
SW2	**0**	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**	**9**	**A**	**B**	**C**	**D**	**E**	**F**
Channel (ISM)	Ch0	Ch2	Ch3	Ch3	Ch4	Ch5	Ch6	Ch7	Ch8	Ch9	Ch20	X	X	X	X	X
	EU: Ch0; NA: Ch2 ~ Ch20; See manual for detail.											**Reserved**				

1. **EU:** Select Ch0
2. **India:** Select Ch0 or Ch2
3. **Russia:** Select Ch0
4. **NA:** Select Ch2~Ch20

IMPORTANT

Available channels vary by the internal wireless modem's frequency. The channel can only be set to one that is available for the wireless modem frequency of your RAEPoint. For example, a RAEPoint with a 2.4 GHz modem can only use channels shown (15, 16, 17, 18, 19, 20, 25, 26).

Note: After you change the settings on the rotary encoders, press the Reset button (labeled S4).

Mode Switch (SW3)

Two DIP switches, labeled SW3, can be used to change the RAEPoint's mode of operation (Host, Remote, or Router). The RAEPoint's mode was set at the factory, but if you need to reconfigure it, set the switches as follows:

Switch 1	Switch 2	Mode
On	On	RAEPoint Host
On	Off	RAEPoint Remote
Off	On	RAEPoint Router
Off	Off	MeshGuard PID/Flame
Off	Off	Factory Setting*

Factory settings are indicated by the RAEPoint's serial number:

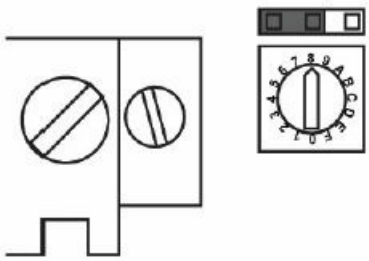
- F081 RAEPoint Remote
- F082 RAEPoint Router
- F083 RAEPoint Host
- F087 MeshGuard PID
- F088 MeshGuard Flame
- F081L RAEPoint Remote LoRa
- F082L RAEPoint Router LoRa

Note

- After you change the settings on the two DIP switches, press the Reset button (labeled S4).

Jumper JP1

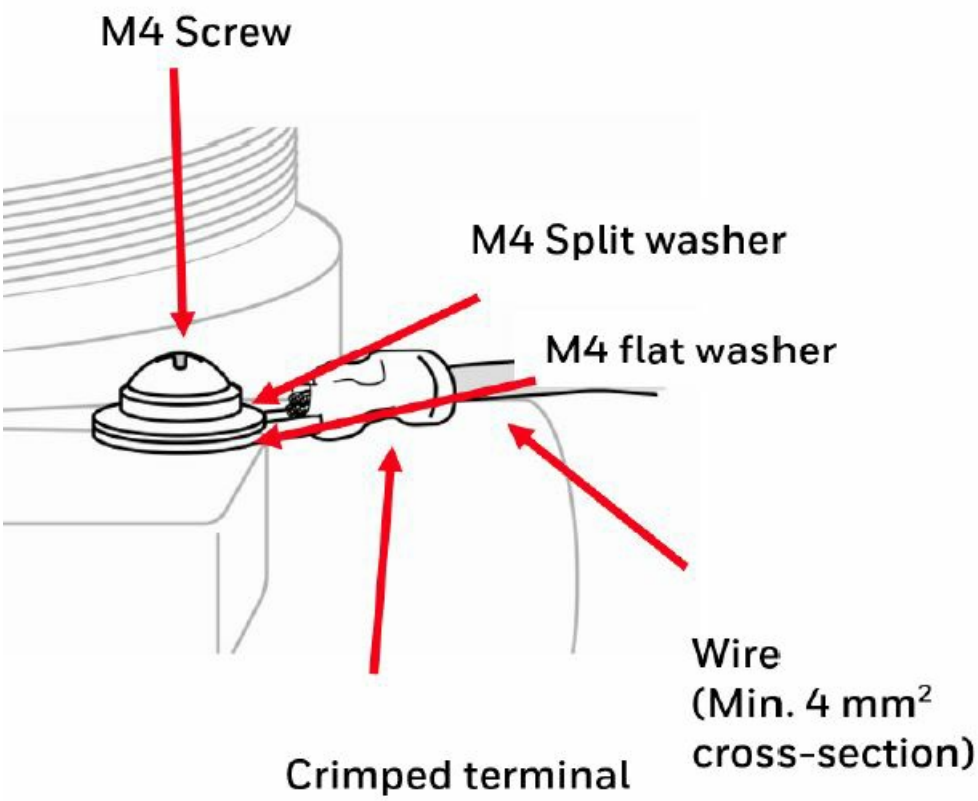
The jumper labeled JP1 has no effect on operation, so leave it in place, as shown:



IMPORTANT: Once the system is operational, test the functionality of all connected relays.

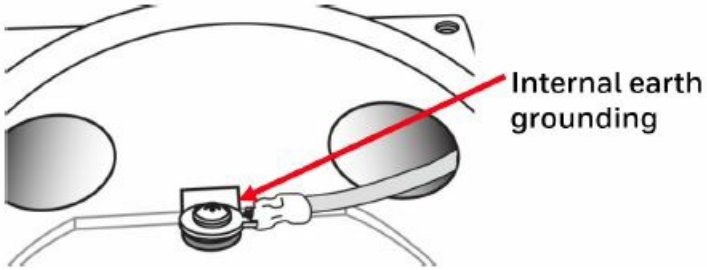
Earth Grounding Instructions

External Earth Grounding



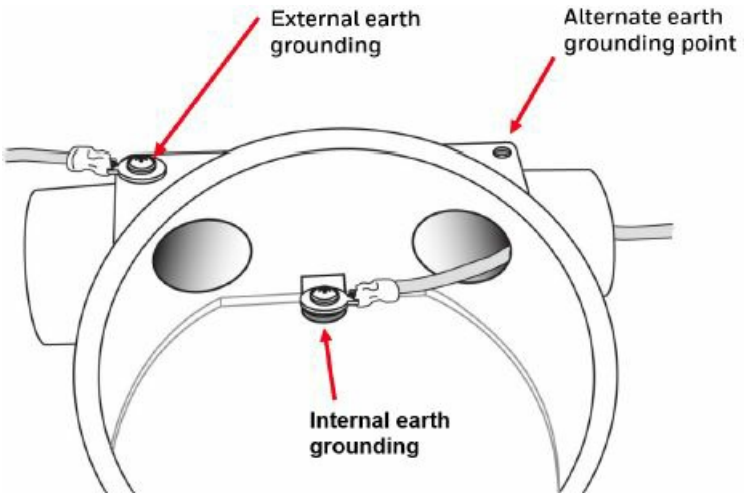
- Fasten the crimped ground wire with hardware as illustrated below.
- The wire should have a minimum cross-section area of 4mm2 for its conductor.

Internal Earth Grounding



Use the same hardware as shown in the illustration of external earth grounding. The wire should be no less than the size of the power lines. Signal grounding can connect to a cable's shielding layer if shielded cable is used. If a separate wire is used for grounding, its cross section should be greater than that of the power line.

Finished Grounding Wires



- Internal and external grounding are shown here, as well as an alternate external grounding point. Always follow local electrical guidelines.

Additional content

Display/User Interface

- The RAEPoint's user interface consists of four status LEDs. There are no buttons or controls. All settings are made internally.

Alarm Signal Summary

The following are reading-related alarms.

	Function	Host	Remote	Router
Net	Network Status Indicator	Blinks once per second if in network. Off when there is no network		
Alarm	Alarm Type Indicator	On during any relay action Blinks for any fault	On during any relay action Blinks for any fault	Blinks for any fault
Comm	Communications Activity Indicator	Blinks for all communication Off at any other time		
Mode	Device Type Indicator	On	Blinks once per second	Blinks twice per second

RAEPoint Host

The LEDs on the RAEPoint Host indicate the following conditions:

Net	Blinks when a network is established. Off when a network is absent.
Alarm	Glows solid red when detectors are in alarm. Blinks red when detectors have a fault. Blinks red when DC supply voltage is below 11 volts.
Comm	Flashes when there is RF (radio frequency) send/receive activity.
Mode	Glows solid green.

Notes

Relay Definitions

Relay 1	Any alarms (including any sensor alarm and APP alarm, excluding Unit alarm)
Relay 2	Any low alarms and LowLow
Relay 3	Any high alarms and Over and Max and HighHigh
Relay 4	High LEL alarms and Over and Max and HighHigh
Relay 5	High H2S alarms and Over and Max and HighHigh

IMPORTANT: This is a fixed configuration and cannot be modified.

RAEPoint Remote

Note: RAEPointRemote can only operate with an FMC2000 Controller.

The LEDs on the RAEPoint Remote indicate the following conditions:

Net	Blinks when a network is established. Off when a network is absent.
Alarm	Glows solid red when detectors are in alarm Blinks red when DC supply voltage is below 11 volts.
Comm	Flashes when there is RF (radio frequency) send/receive activity.
Mode	Blinks one time per second (green).

Notes

- **Relay Definitions:** The relays in the RAEPoint mirror the relays in the FMC2000 Controller on the same network. Definitions are set at the FMC2000 Controller.
- When power is turned on, RAEPoint turns on all LEDs until a PID or Flame is connected. Then, PID or Flame can be detected after power on initialization is done (PID initialization time is about 15 seconds; Flame is less than 5 seconds).

RAEPoint Router

Note: A RAEPoint Router can operate as a router for any device using the same radio type.

The LEDs on the RAEPoint Router indicate the following conditions:

Net	Blinks when a network is established. Off when a network is absent.
Alarm	Blinks red when DC supply voltage is below 11 volts.
Comm	Flashes when there is RF (radio frequency) send/receive activity.
Mode	Blinks two times per second (green).

Note: RAEPoint purchased as a router does not contain relays.

RS485 Modbus®

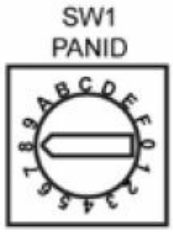
RAEPoint Host support RS485 Modbus® from FW V1.xx

Communication Setting

Communication mode: Modbus® RTU on RS485.

Mode 1: Communication Parameters for RS485 Interface

RAEPoint Host	Slave
Baud Rate	57600 (default),38400,19200,9600
Client ID	1~16(0x01~0x10)
Data Format	Data bits: 8 Check bits: none Stop bits: 1



Note

- Client ID is switch by the SW1. 16 client ID totally.

Message Frame /Communication Procedure

IMPORTANT

- RAEPoint Host supports Function Code 0x03 only.

Modbus® RTU

0x03: Read Holding Registers

The Requesting Message:

Device Address	Function Code	Starting Address High Byte	Starting Address Low Byte	Quantity of Registers High Byte	Quantity of Registers Low Byte	CRC Low Byte	CRC High Byte
Client ID	0x03	addr	addr	qty	qty	crc	crc

Note: The max Quantity value is 48.

The aswering message:

Device Address	Function Code	Byte Count	Register Values	CRC Low Byte	CRC High Byte
Client ID	0x03	len	MSB… LSB	crc	crc

Registers Table

1. 0x03(Read Holding Registers)

RAEPoint Host supports up to 8 monitors by following system specification. The entire registers space is divided into 8 blocks, one block register space corresponds a monitor data registers. Monitors' basic address is located from 0x0000 to 0x031F (#1 basic address: 0x0000, #2 basic address: 0x0060, #3 basic address: 0x00C0, #4 basic address: 0x0120, #5 basic address: 0x0180, #6 basic address: 0x01E0, #7 basic address: 0x0240, #8 basic address: 0x02A0, address length:0x300), step value is 0x60.

Terminology

- **Monitor:** Could be BW RigRat, RAEPoint Remote; Maximum number is 8.
- **Sensor:** Refer to the sensor inside the monitor. One monitor may has more than 1 sensor and up to 16 sensors.

The monitor data and registers offset address

Start Offset Address	**Length (2 Bytes)**	**Response Data**	**Remark**
0x0000	0x0001	byte[0] = MonitorIndex byte[1] = SysOnlineNum	MonitorIndex: the monitor data Availability 0: unavailable; 1: available; SysOnlineNum: the number of online monitors in RAEPoint Host
0x0001	0x0001	byte[0] = RadioID high byte[1] = RadioID low	Monitor Radio ID, data format: Hex. Example, Radio ID = 0x4011 means the monitor wireless ID is "4011".
0x0002	0x0008	byte[0 ~ 15] = SN [0 ~ 15]	Monitor's serial number: ASCII, could be 10 /12/16 bytes;
0x000A	0x0001	byte[0] = InstrID byte[1] = UnitErr	Instrument ID: refer to Appendix 1 UnitErr: monitor unit error status refer to Appendix 4

0x000B	0x0001	byte[0] = SenSkt MSB byte[1] = SenSkt LSB	Sensor mask to tell you how many sensors and what the position. BIT 0 0: 1st Sensor Disable. 1: 1st Sensor Enable. BIT 1 0: 2nd Sensor Disable. 1: 2nd Sensor Enable. …… BIT 15 0: 16th Sensor Disable. 1: 16th Sensor Enable.
0x000C	0x0001	byte[0] = DutyCycle high byte[1] = DutyCycle low	How often the monitor update its reading
0x000D	0x0001	byte[0] = PwrStatus byte[1] = PwrPer	PwrStatus: 0: Battery only; 1: charging; 2: fully charged+AC 3: AC only or external bat tery; PwrPer: the battery capacity in percentage
0x000E	0x0001	Byte[0] = DIO_Bank1_Settings	DIO_Bank1_Settings:

		Byte[1] = DIO_Bank0_Settings	BIT7: 0: DIO Bank1 Disable. 1: DIO Bank1 Enable. BIT6: 0: DIO Bank1 is Digital Input. 1: DIO Bank1 is Digital Output. BIT5 – BIT4: Reserved. BIT0 – BIT3: Number of DIO Bank1 channel DIO_Bank0_Settings: BIT7: 0: DIO Bank0 Disable. 1: DIO Bank0 Enable. BIT6: 0: DIO Bank0 is Digital Input. 1: DIO Bank0 is Digital Output. BIT5 – BIT4: Reserved. BIT0 – BIT3: Number of DIO Bank0 channel
0x000F	0x0001	Byte[0] = DIO_Bank1_Status Byte[1] = DIO_Bank0_Status	DIO_Bank1_Status: Each bit for the current channel status. Bit0 for Channel8, and bit7 for Channel15. If Bank1 is DI 0: Logical Low or disabled (by active bitmap) 1: Logical High If Bank1 is DO 0: NO or disabled (by active bitmap) 1: NC DIO_Bank0_Status: Each bit for the current channel status. Bit0 for Channel0, and bit7 for Channel7. If Bank0 is DI 0: Logical Low or disabled (by active bitmap) 1: Logical High If Bank0 is DO 0: NO or disabled (by active bitmap) 1: NC .
0x0010	0x0004	byte[0] = SenID byte[1] = UnitID	First sensor info. Total 8 bytes

			SenID: refer to Appendix 2 For byte2 bit definition: DataLength :B0:B1

		byte[2] = DataFormat B0..B1: DataLength B2..B4: DevideFactor B5..B7: DecimalPoint byte[3] = SenErr byte[4] = Rding higherbyte[5] = Rding high byte[6] = Rding low byte[7] = Rding lower	**Bit 1** **Bit 0** **Lenght** 0 0 1 byte 0 1 2 bytes 1 0 4 bytes DivideFactor: **B4 B3 B2 Lenght** 0 0 0 1 0 0 1 10 0 1 0 100 0 1 1 1000 1 0 0 111: reserved for future use DecimalPoint: **B7 B6 B5 Lenght** 0 0 0 1 0 0 1 10 0 1 0 100 0 1 1 1000 1 0 0 111: reserved for future use refer to Appendix 6 SenErr refer to Appendix 5
…	…	…	…
0x0040	0x0004	byte[0] = SenID byte[1] = UnitID byte[2] = DataFormat B0..B1: DataLength B2..B4: DevideFactor B5..B7: DecimalPoint byte[3] = SenErr byte[4] = Rding higher byte[5] = Rding high byte[6] = Rding low byte[7] = Rding lower The 16th sensor info	

0x0050	0x0008	byte[0 ~ 15] = User Name String[0 ~ 15]	Location: ASCII code, 16 bytes;
0x0058	0x0001	Byte[0] = Baud rate	Baud rate: default 0, WR

			0: 57600
			1: 38400
		Byte[1] = reserved	2: 19200
			3: 14400
			4: 9600
0x0059	0x0007	Reserved.	

Appendix A

Appendix A: Controlled Section

This section applies to the RAEPoint only. Information for the RAEPoint Wireless Alarm Bar is included in Appendix 6.

Scope

- The scope of this document is to identify the section of the RAEPoint controlled part of the manual.

Responsibility

- The included sections cannot be changed without prior approval from the Notified Body.

Contents

Below are the sections controlled by the Notified Body, including all safety-related information in the manual.

Controlled sections are

1. Warnings and directive information
2. Marking of the RAEPoint
3. Hazardous Location Classifications
4. Instructions for Safe Use
5. Connections and Ratings
6. Maintenance
7. Physical dimensions

Warnings And Directive Information

READ BEFORE OPERATING

This manual must be carefully read by all individuals who have or will have the responsibility of using, maintaining, or servicing this product. The product will perform as designed only if it is used, maintained, and serviced in accordance with the manufacturer's instructions.

CAUTION

- To reduce the risk of electric shock, turn the power off before removing the instrument cover.
- Disconnect the power before removing the sensor module for service. Never operate the instrument when the cover is removed. Remove instrument cover and sensor module only in an area known to be non- hazardous.
- Use of non-Honeywell® components will void the warranty and can compromise the safe performance of this product.

WARNING: Wireless communication is intended for use as a secondary remote alarm status notification only. Primary alarming of combustible gas hazards is provided locally by the detector.

Marking Of RAEPoint

RAEPoint is certified according to ATEX and the IECEx scheme and CSA for US and Canada as protected by a flameproof enclosure, and the antenna barrier is used on intrinsically safe principles.

The product is marked with the following information:

- Honeywell® Inc.
- 1349 Moffett Park Dr.
- Sunnyvale, CA 94089 USA
- **Serial number:** XXXXXXXXXX
- Year of production
- RAEPoint

IECEx	**ATEX**	**North America**
IECEx SIR 12.0027X	Sira 12ATEX 1085X	Cl.I Div 1, Group A,B,C,D T6
d ia IIC T6, Gb	CE 0575 Ex II 2G, Ex d ia IIC T6 Gb	

Temperature range: -20° C ≤ Tamb ≤ 55° C

WARNING

- READ USER'S MANUAL FOR SAFETY PRECAUTIONS.

- DO NOT OPEN WHEN AN EXPLOSIVE ATMOSPHERE MAY BE PRESENT.
- REFER TO USER MANUAL FOR ENTRY TYPE AND SIZE.

Hazardous Location Classification

Hazardous Areas Classified by Zones

RAEPoint is intended to be used in hazardous areas classified for Zone 1 or Zone 2, within the temperature range of -20°C to +55°C, where gases of explosion groups IIA, IIB or IIC and T6 may be present.

Hazardous Areas Classified By Divisions

RAEPoint is intended to be used in hazardous areas classified for Class I Div. 1 or 2, within the temperature range of -20ºC to +55ºC, where gases of explosion groups A, B, C or D and temperature class T6 may be present.

Instructions For Safe Use

- The threaded coaxial connector external to the enclosure shall only be fitted with a dedicated antenna and shall not be used to supply an external, intrinsically safe circuit.

Connections And Ratings

Input/Output

The rated RAEPoint input/output are as follows:

- **Input:** 2.4W
- **Vinput:** 12-28VDC

Maintenance

Installation and Access Instructions

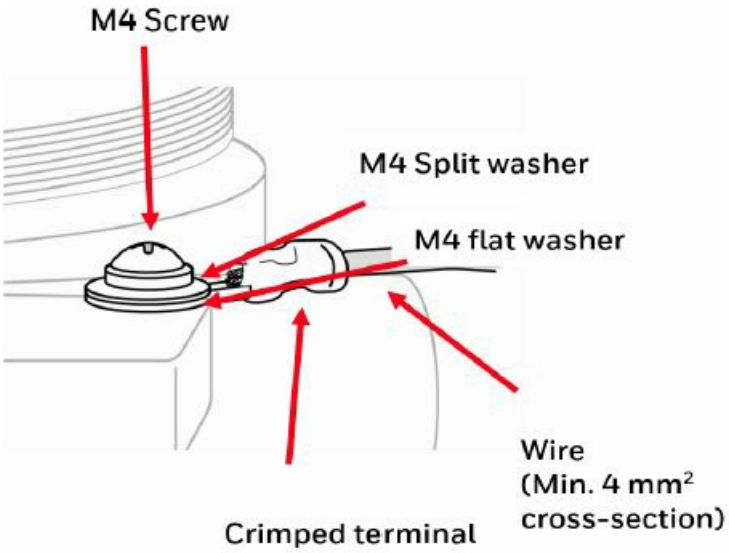
- An explosion-proof seal is required for all gas groups within 18″ (46 cm) of the enclosure.
- The appropriate regulations for installation, service and repair must be properly observed during such activities.
- To prevent ignition of hazardous atmospheres, area must be free of flammable vapors and supply circuit must be disconnected before removing cover.

WARNING

- Negative terminal of power supply must be grounded.

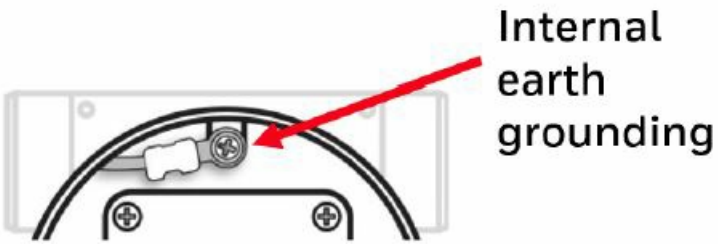
Earth Grounding Instructions

External Earth Grounding



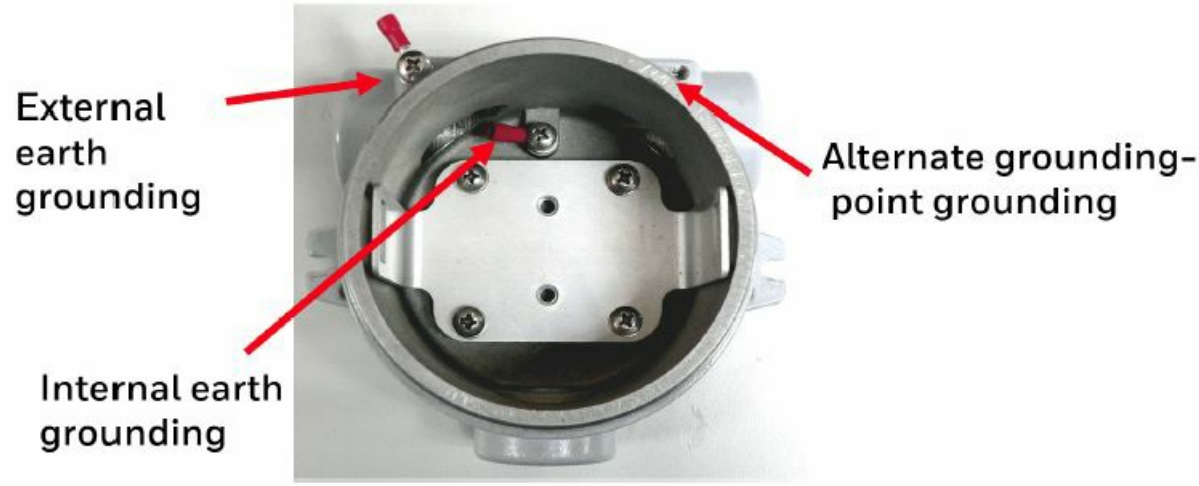
- Fasten the crimped ground wire with hardware as illustrated here.
- The wire should have a minimum cross-section area of 4mm2 for its conductor.

Internal Earth Grounding



- Use the same hardware as shown in the illustration of external earth grounding. The wire should be no less than the size of the power lines.

Finished Grounding Wires

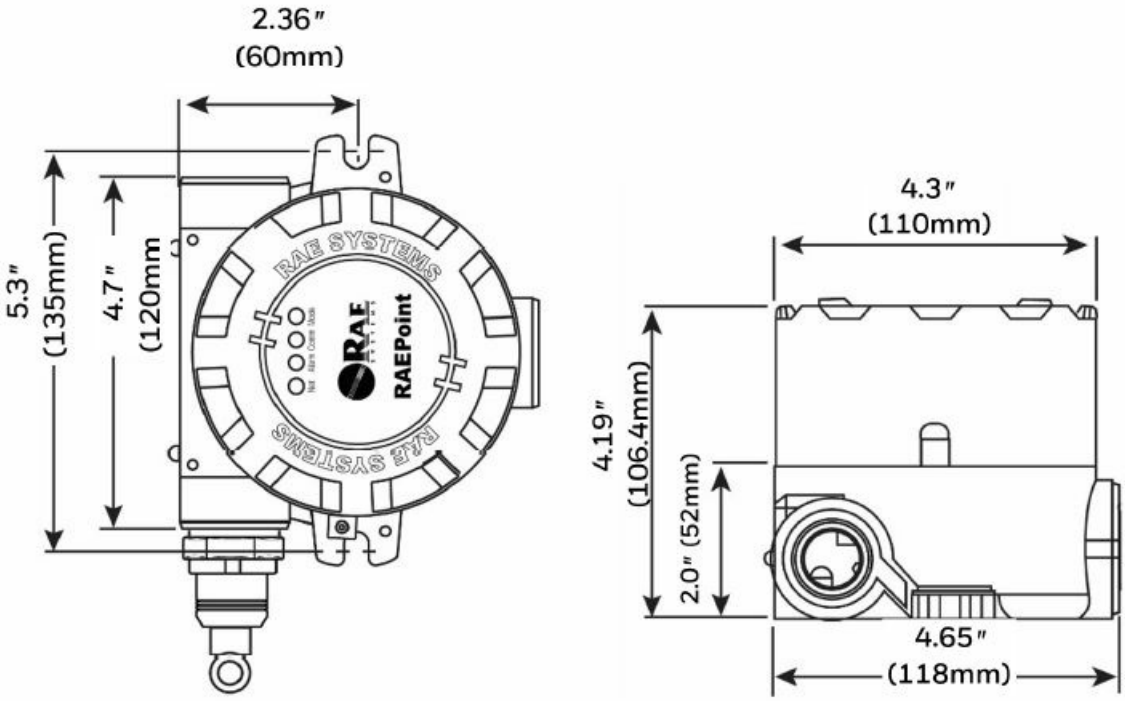


- Internal and external grounding are shown here, as well as an alternate external grounding point.
- Always follow local electrical guidelines.

Physical Dimensions

RAEPoint can be easily installed and integrated with various control systems with its flexible pipeholding/ wall-mounting options and standard connection terminals.
Entries: RAEPoint is provided with three female 3/4″ – 14 NPT cable entry holes tapped into its side walls; one 3/4″ 14 NPT containing the antenna coupler for mounting of the external antenna.

The physical dimensions are as follows:



Models of RAEPoint

Model Number	Product Name
RRA2000	RAEPoint Wireless Switch Remote
RRA2000	RAEPoint Wireless Router
RRA2000	RAEPoint Wireless Switch Host / RAEPoint Gateway

Technical Support

To contact Honeywell® Technical Support:

- Monday through Friday, 7:00AM to 5:00PM Pacific (US) Time
- **Phone (toll-free):** +1 888-723-4800
- **Phone:** +1 408-952-8461
- **Email:** tech@raesystems.com

Contacts

Honeywell RAE Systems

- 700 Mint St. Charlotte, NC 28202, USA
- **Phone:** +1 888 749 8878
- **Email:** rae-callcenter@honeywell.com

Technical Support

- **Phone:** +1.408.952.8461
- **Email:** tech@raesystems.com

Software Support

US&C

- **Email:** support.safetysuite@honeywell.com
- **Phone:** +1 833 556 3515

EMEA

- **Email:** gastechsupportemea@honeywell.com
- **Phone:** 0080081819691

Scan

sps.honeywell.com

Documents / Resources

	Honeywell F08 Multifunction Wireless Infrastructure Component [pdf] User Manual F08 Multifunction Wireless Infrastructure Component, F08, Multifunction Wireless Infrastructure Component, Wireless Infrastructure Component, Infrastructure Component, Component

References

- Safety and Productivity Solutions | Honeywell
- Safety and Productivity Solutions | Honeywell
- Relays Cautions for Use - Panasonic
- User Manual