

# ISIMET

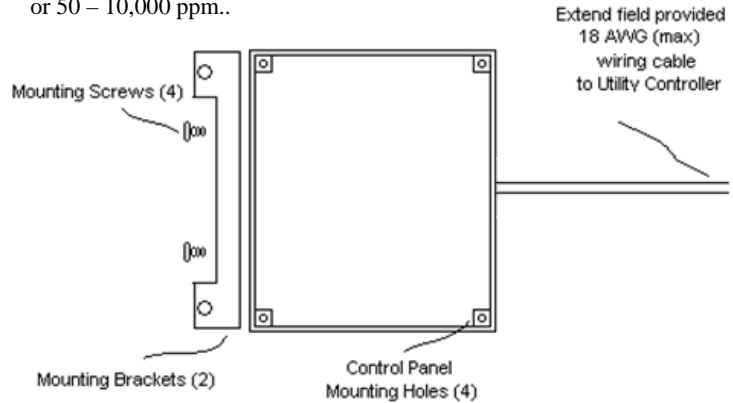
## Model FGS-11X2

### Fuel Gas Sensor

#### Installation Instructions

The ISIMET Fuel Gas Sensor features a raw gas sensor, a red/green LED and a Lamp mounted onto a Stainless Steel Wall Panel. The wall box with mounting brackets is provided. The Unit is intended for use as a sensor to detect raw fuel gas. Operating power is derived from an ISIMET Controller and transmits a signal back to the Controller when raw fuel gas is detected.

Typical detection range is 1 – 25% LEL (Lower Explosion Limit) or 50 – 10,000 ppm..



#### Mounting the Wall Box:

Using the provided mounting brackets and screws, secure the unit within the wall cavity with the face of the box extending to the wall surface. We recommend that the unit be mounted as appropriate for the gas being used. One foot below the ceiling for natural gas or CO and one foot above the floor for propane and within 5-10' of the potential leak source. Tape over or otherwise protect the interior of the box during the construction phases.

#### Wiring the Unit to the Utility Controller:

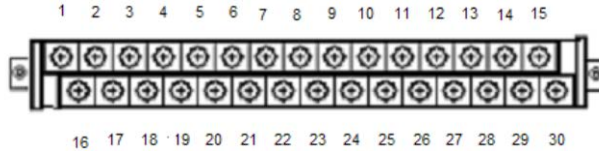
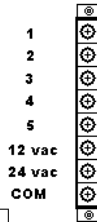
Several knock-outs are provided along the side and back of the Wall Box for your use. A rubber grommet is provided for insertion in the hole if a 3/8" knock-out is selected. If a hole for 1/2" electrical conduit is used, then a connector must be field provided.

Providing field wiring (18 AWG min.), make connections to the Utility Controller's Control Panel.

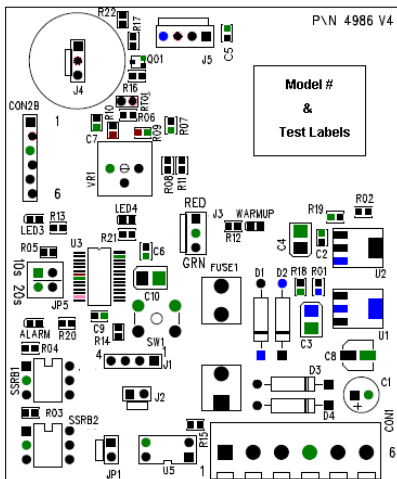
Connect wiring at Terminal 1, Pins 16, 17, 30. Connect 24-vac, COM, 12-vac wiring at Terminal 2. Wiring should be color-coded. Terminate wiring in Wall Box.

Knock-out in the side of the Wall Box. At the Utility Controller Ver 9.1 pcb, two (2) jumpers should be in place at JP-3. See Installation Instructions provided with that unit.

Terminal 2  
@ Ver 9.1 Controller



#### Fuel Gas Sensor pcb



#### Wiring the Fuel Gas Sensor circuit board:

Wiring connects between the Utility Controller and the Fuel Gas Sensor should conform precisely to these specifications. Make connects at CON 1.

Controller Ver 9.1 Terminal 1	Fuel Gas Sensor pcb CON 1
Pin 16 – Dry-contact input	Pin 5 - Dry-contact output
Pin 17 – Dry-contact input	Pin 6 - Dry-contact output
Pin 30 - Re-Keying output	Pin 1 - Reset of Sensor input
<b>Controller Ver 9.1 Terminal 2</b>	
12-vac output	Pin 4 - 12-vac input
24-vac output	Pin 3 - 24-vac input
COM	Pin 2 - 24-vac input

#### Time Delay Settings @ JP 5:

NO Jumper = 0 sec.  
Jumper @ top = 10 sec.  
Jumper @ bottom = 20 sec.  
2 Jumpers = 30 sec. Delay.

Care should be taken to not change the delay setting to a non-desired period.

**CAUTION:**

Wiring between the Utility Controller and the Fuel Gas Sensor should match exactly the specifications and instructions as stated on page 1 of these instructions. Failure to follow the instructions will cause the unit to not operate, and may cause damage to both the units.

**Verify that the Sensor is designed for the Appropriate Fuel Gas:**

The Model Number of the Sensor is located on the carton and inside the wall box. FGS-12x2 is intended for use with natural gas. FGS-1222 is intended for use with LP or Propane gas. Both are intended for use specifically with Version 9.1 Controllers. A Sensor should connect to only one Controller. If the Model number of this unit does not match the application, stop and contact your ISIMET representative.

**Connecting the Wall Panel to the Circuit Board; Mounting the Panel:**

Wiring terminated with a plug extends from the Lamp and plugs in at J2. A LED 3 pin plug plugs in at J3. Wiring to the Sensor plugs in at J5. Care should be taken to insure the connector on the sensor cable and J5 match up. Failure to do so will cause the unit to malfunction. Optionally, there may be a 2 pin plug for a panel mounted Reset Switch. The Reset Switch plugs into JP 1. If a Horn is provided, it plugs into J 4. Position the panel over the wall box and using the provided screws tighten the panel onto the box. Verify that the panel rests squarely and flat to the finished wall surface.

**Operation of the Sensor:**

The Panel LED is bi-color (Red – Green). During the warm-up period the LED will flash green. The LED will remain a constant green during normal operation. This LED color will change from green to red should the sensor fail. The sensitivity of the unit is settable 500 ppm to 100,000 ppm. Factory Setting is 500 ppm and may be adjusted downward (requiring more ppm to detect) by turning the integral variable resistor to the left (CCW).

Time delay feature is factory pre-set based on customer ordering stipulations. Settings other than 0 will allow a brief period between detection and notification so that the gas outlet that is the cause of the detection can be turned OFF before the unit transmits a shut-down signal to the Controller. During this period the panel mounted lamp will flash notifying the user that raw fuel gas has been detected. Once the time delay elapses the signal is transmitted and the lamp remains constant. Once the notification is transmitted to the Controller that unit will turn OFF the fuel gas circuit plus any other circuits designated by program to respond to the sensor. For Time Delay Settings at JP5, the Jumpers should be positioned left to right on the pins. See the Programming Information sheet and Operations and Maintenance Manual provided with the Version 9.1 Utility Controller in order to verify those circuits affected by this sensor.

**Test the Unit: (Recommend that two persons perform this test)**

Turn on the Utility Controller. Connect a small rubber hose of sufficient length to a nearby fuel gas outlet. Extend the open end of the hose to the Fuel Gas Sensor. Slightly open the gas outlet, pointing the open end closely towards the louver. The lamp should remain ON constant. The fuel gas circuit as well as other circuits determined to be effected by the sensor should turn OFF. The flow of gas should stop.

**NOTICE:**

If this test does not result in the loss of fuel gas at the outlet, turn OFF the outlet and Controller and perform tests to determine the cause of this failure. If a cause can not be determined and then rectified, contact an ISIMET factory representative.

**Placing the Unit into Service:**

Once the testing of the unit has been successfully completed no additional efforts are required. Because the unit provides a dry-contact notification signal to the Version 9.1 Utility Controller, a series of these Fuel Gas Sensors can be connected in parallel. Having multiple sensors positioned around the room will insure that raw fuel gas will be detected within a reasonable time. To reset the sensor, re-key the Version 9.1 Utility Controller. If the light on the front of the sensor panel does not go off with re-keying, press the reset button on the Gas Sensor Panel.

**Important!** All local electrical codes must be followed when connecting the conduit to the service panel and making wiring connections. Do not install wiring or cable for integrated systems, remote panic assemblies or other interface wiring within conduit for either 24-vac control or 120-vac line voltage. Each wiring system should be housed in independent conduit and not bundled with wiring for other systems.

**If the unit fails to operate, contact ISIMET or a factory representative.**