INSTRUMENTS

41697MF

Installation and Operating Instructions
RKI Model PS-II Hydrogen Monitor
48 VDC Input

Thank you for selecting our the RKI Model PS-II gas monitor for your gas monitoring needs. With proper installation and care, it will provide you with many years of trouble-free operation. If you have any questions regarding this monitor, please feel free to call RKI at (800) 754-5165.

Description:

The Model PS-II is a multipurpose gas monitor utilizing a metal oxide sensor for long life / low maintenance detection of Hydrogen and other gases. The instrument is powered by 48 VDC (115 VAC or 24 VDC versions are also available). It consists of a plastic enclosure with flanges provided for wall mounting. Holes are provided on the base of the housing for wiring entry, and the unit is supplied with the gas sensor located on the end of a 30 foot cable. The PS-II has two alarm levels; 10% LEL Hydrogen and 30% LEL Hydrogen. Each alarm level activates a 10 amp relay inside the unit, and terminals are provided for wiring the relay to activate an external alarming device or activate some other device such as a ventilation fan. The front of the unit contains three lights; Pilot, Alarm 1, and Alarm 2. An internal audible alarm is also provided which activates for a gas alarm condition.

When you receive your PS-II, it will consist of 3 parts:

1. The main unit with sensor cable attached.
2. The lid, which will be placed on the unit but will not be screwed down.
3. A bag of parts which include the 2 mounting flanges, 10 screws for securing the mounting flanges and lid, 3 strain relief bushings for use during installation for the wires entering the case, and 4 small plastic caps to press over the front screwholes for cosmetics when the installation is completed.

Installation :

1. Remove the parts from the box and with the screws provided install the 2 mounting flanges on the top and bottom rear of the instrument enclosure.

2. Using the mounting flanges, install the monitor on a wall within 30 feet of the area to be monitored.

3. Using the 3 holes provided on the base of the unit, and the strain reliefs provided, run wires for power, and relay connections.

A. For 48 VDC Power, attach power wires to the terminals marked "DC IN, + and -".

B. For relay connections Alarm 1 relay is for 10% LEL Hydrogen, and Alarm 2 relay is for 30% LEL Hydrogen. Relays are normally de-energized, so connecting to the "C" and "NO" terminals will cause an electrical contact to be closed when the instrument senses gas that exceeds these alarm levels.

Note : Wiring sizes for the relay connections must be adequately sized for the device to be driven. Wiring size for the power wires can be 22 gage or greater.

4. Gas sensor is the blue bell shaped device located on the end of the 30 foot cable. Locate the sensor in a face down direction near to where the gas would be expected to accumulate. Sensor can be secured by clamping either the sensor or the sensor wire to the wall. Do not drill holes through the sensor body.

5. Apply power to the PS-II to confirm proper connection and operation of all wires and external devices. Please note that during power up, the PS-II will usually go into alarm condition for about 15 to 60 seconds. This is normal, and is a good time to confirm that all external alarming devices are also functioning.

6. After proper operation is confirmed, secure the housing cover in place with the 4 screws provided, and place the small blue caps over the screw holes.

Maintenance :

The PS-II requires no normal maintenance other than to confirm operation and calibrate with a gas sample once per year.

Calibration :

Please note that the PS-II units are calibrated before shipment, so initial calibration is not necessary unless the alarm levels need to be changed from the factory set levels. It is recommended that the calibration be confirmed on the PS-II at least once per year. To do this, you will need the following equipment, which can be supplied by RKI Instruments :

1. Calibration gas cylinders at each of the alarm points (10% LEL Hydrogen, and 30% LEL Hydrogen).

2. Cylinder valve or regulator (desired flow rate is 0.5 liter per minute).

3. Sample tube and test cup to apply gas to sensors.

4. Small screwdrivers: (Phillips head to remove case screws and small flat blade to make calibration / alarm adjustments).

To Calibrate / Set Alarm levels, proceed as follows:

1. Remove the front cover of the PS-II by removing the 4 corner screws from the housing.

2. Connect the regulator, hose, and test cup to the 10% LEL (0.4% volume) hydrogen gas cylinder.

3. Secure the test cup to the sensor and let the gas flow onto sensor for approx. 30 seconds to allow time for full response.

4. While the gas continues to flow onto the sensor, with a fine flat blade screwdriver adjust the LOW ALARM potentiometer adjustment (located on the right hand side of the PCB just under the buzzer). Adjust the potentiometer as follows:
   A. If the buzzer is sounding and the yellow alarm light is lit, turn the potentiometer clockwise slowly until the yellow alarm light just goes out. Now, turn the potentiometer counter clockwise slowly until the alarm light (and buzzer) just go on. Low alarm is now set.

   B. If the yellow light is not lit, turn the potentiometer slowly counter-clockwise until the yellow light just goes on. Low alarm is now set.

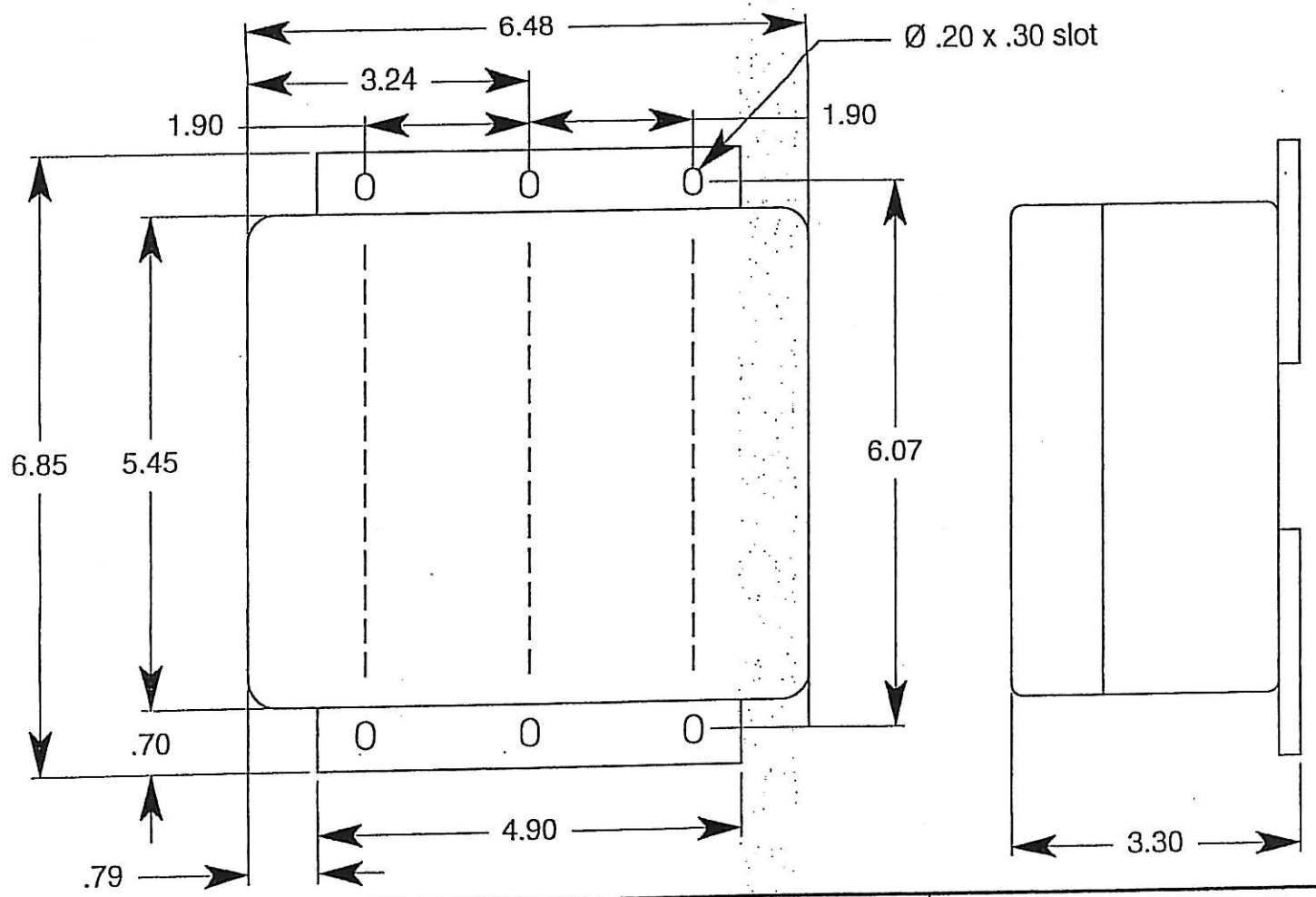
5. A. Disconnect the gas regulator from the 10% LEL (0.4% volume) gas cylinder and connect it to the 30% LEL (1.2% volume) hydrogen gas cylinder. Allow approx. 30 seconds for full response.

   B. With the gas continuing to flow, adjust the HIGH ALARM potentiometer as described in step 4A or 4B above, while watching for the red light to come on. (note buzzer will sound during this entire stage because the low alarm level is exceeded).

6. When finished, remove the regulator from the gas cylinder to stop the flow, and replace the cover of the PS-II housing.

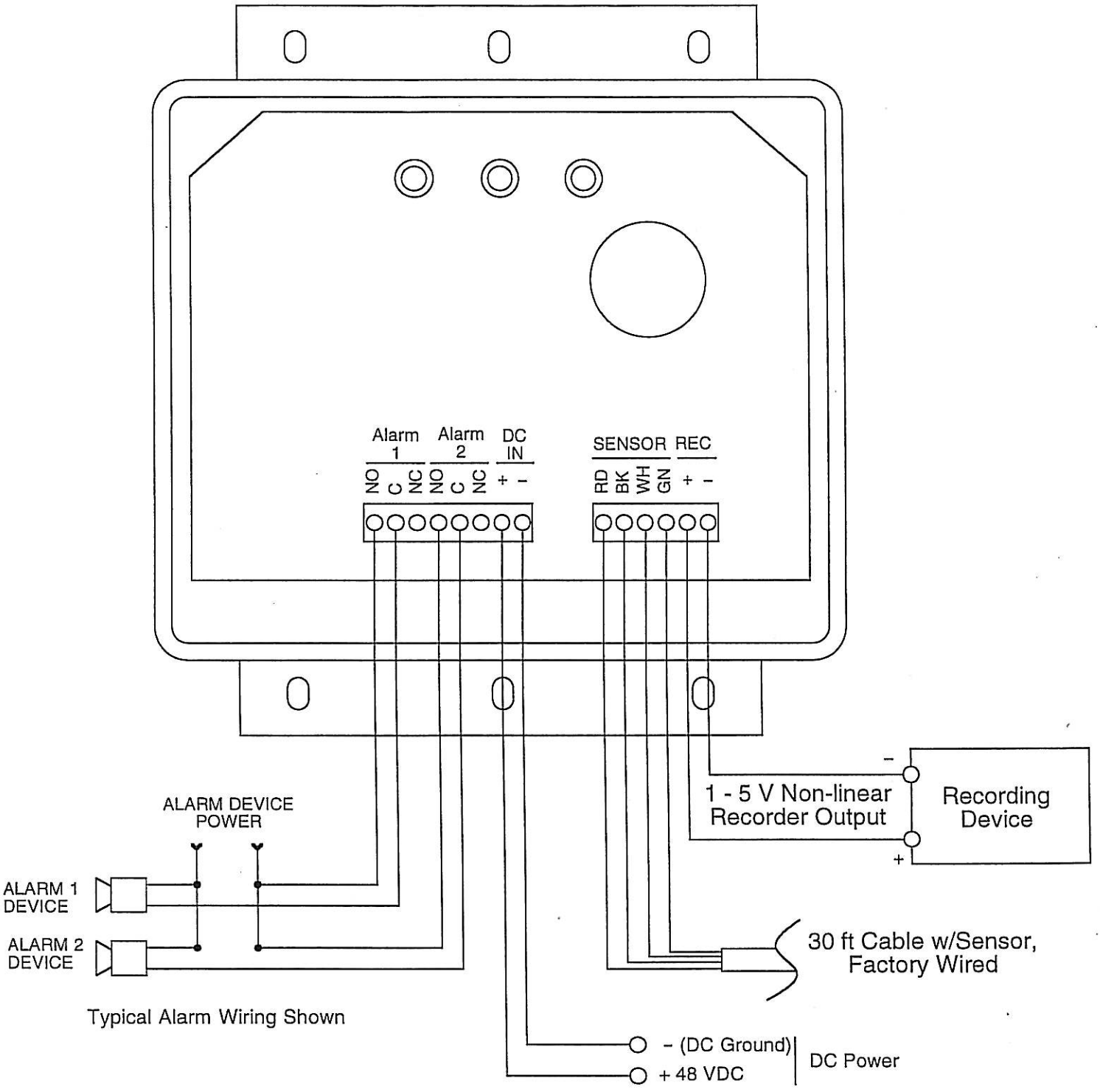
For replacement parts, calibration equipment, repairs, or other information on this equipment, please contact RKI Instruments, Inc, 33248 Central Ave., Union City, CA, 94587, Phone (800) 754-5165, Fax (510) 441-5650.

0	Updated 6.15 to 6.07. Release.	1/8/99	



TOLERANCES: (IF NOT STATED) .XX ——— +/- .010 .XXX ——— +/- .005	RKI Instruments, Inc. Hayward, CA 94544		
ALL DIMENSIONS IN INCHES UNLESS OTHERWISE STATED.	TITLE: **Outline and mounting dimensions, model PS 2**		
MATERIAL: n/a	A	DRAWN BY: MF	PART NUMBER: 73-1020RK-R01	REVISION: 0
FINISH: n/a				
SCALE: 1:2	APPROVED BY:	DATE: 4/4/97	PAGE 1 OF 1	

P1	Preliminary Release	1/29/03	



Typical Alarm Wiring Shown

DO NOT SCALE DRAWING Deburr | Break Edges .010 R Tolerances & Finishes Unless Otherwise Noted: .XX ± .010 Angles ± 0° 30' .XXX ± .005 Conc. .010 TIR Fractions ± .015 Finish 125 Finish for O-ring Grooves, 3 Sides 32	All Dimensions In Inches Unless Otherwise Noted. MATERIAL: N/A FINISH: N/A SCALE: None	RKI Instruments, Inc. Hayward, CA 94544 TITLE: **Wiring Diagram, PS 2, 48 VDC Powered** A | DRAWN BY: CW | PART NUMBER: 73-1022RK-R01 | REVISION P1 APPROVED BY: | DATE: 1/29/03 | PAGE 1 OF