



## ***Broken Bag Detectors***

**Model 201 LP-2 Wire, 4 -20 mA Loop Powered**

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**Instruction Manual, REV 1**

Redkoh Industries— 300 Valley Rd, NJ 08844

T: 908-369-1590 [www.redkoh.com](http://www.redkoh.com)

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## General Description

The Redkoh Industries Model 201LP-2 Electrostatic Dust Monitor measures the electrical charge on a flow of dust particles. It uses the Triboelectric principle whereby particles receive an electrical charge from surface friction and collisions between particles.

The charge picked up by the probe is converted to an electrical current, which is amplified and then transmitted by a 4-20 mA isolated 2-wire system. The only power requirement is a 24VDC 4-20 mA looped power source.

For the most sensitive scale, the current may be as low as 0.5 pico amps.

The Model 201LP-2 may be used to determine preventative maintenance on a bag house. With its sensitivity to very small amounts of particulate, the Model 201LP-2 using a recorder can show very small changes in bag performance. Maintenance can then be scheduled before a real problem arises causing a process shut down.

The Redkoh Model 201LP-2 has six current scales from 0-10 pico amps (pA) to 0-100 nano amps (nA). The scale selection is field adjustable.

High voltage clamping circuits protect the electronics in the probe so that high voltage arcing at the probe will be dissipated and the electronics protected.

Zero and span checks may be made at the probe.

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## Specification

**Enclosure** - Nema 4X Stainless Steel

**Humidity Range** 0 - 95% non-condensing

**Operating Temperature Electronics** – 170F

**Operating Temperature Gas probe** – standard probe – 400F, High Temp Probe – 800F

**Output** 4-20mA for either loop or powered network

**Performance** 1 pA - 10 nA

**Power** – 24 VDC, 20 mA

**Probe** - 316 stainless steel

**Sensing Anode** - 316 Stainless Steel

## General Description

The mounting connection thread on the probe is  $\frac{1}{2}$ " NPT. The conduit connection for the customer's cable connection is  $\frac{3}{4}$ " NPT. The stainless steel pick up rod should not touch any part of the structure. There is an insulator that separates this rod from the housing. The probe may be at any angular position.

There are three terminals on the PC board inside the housing.

TB1-1	24 VDC Positive
TB1-2	4-20mA Out
TB1-3	Cable Shield

Connect a twisted pair wire to these three terminals. Power requirement: 4-20mA 24 VDC loop power source. Refer to drawing at the back of this manual

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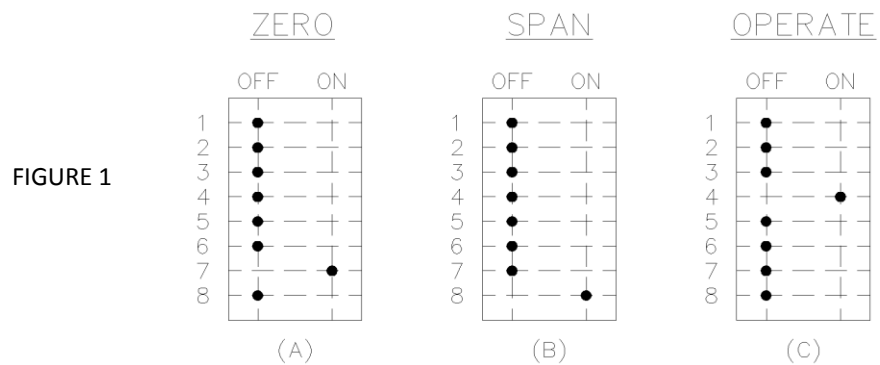
# Adjustment of zero and span

This procedure may be done in-situ or off the duct.

There are two adjustments on the PC board. Zero and span for the 4-20mA output. They both have been adjusted at the Redkoh factory.

If further adjustment is required, refer to drawing at the back of this manual.

- (a) Zero
- (b) Span



To adjust (zero), switch SW1- Position (7) to the on position.

Adjust the (zero) pot for 4 mA

**Remember to turn off the “Zero” switch to return to normal operation.**

To adjust (span), switch on SW1- Position (8) to the on position. Make sure all the other switches are in the off position. This will connect a test voltage to the input. Adjust the “Span” pot for an output current of 20mA

**Remember to turn off the “Span” switch to return to normal operation.**

Probe sensitivity: The most sensitive scale is SW1- Position (1) and the least sensitive is SW1- Position (6). You may select anyone of the 6 scales.

## Maximum Load

The maximum load resistance is 250 ohms.

## Operation

Since all adjustments to the Model 201LP have been made at the Redkoh factory, the instrument is ready to operate.

The DIP Switch has been factory set at 0-1 nA SW1- Position (3). You can use SW1 to change the sensitivity. SW1- Position (1) is the most sensitive, and SW1- Position (6) is the least sensitive.

If the probe is not fitted to the duct or smoke stack, the probe casing should be connected to earth ground before performing the zero or span adjustments.

## Maintenance

The only maintenance required is to keep the probe clean. This will require periodic removal. Redkoh Industries cannot specify the cleaning interval for the dust accumulation on the probe. This depends on factors beyond our control such as the nature of the effluent, flue gas pressure, moisture and other factors.

## Spare Parts

If electronic failure occurs, the PC board in the probe may be replaced. The part number for a replacement board is RK3448.

If the probe becomes pitted or otherwise destroyed by the process, it can be returned to Redkoh for re-working.

If a complete replacement probe is required, please contact the factory for the proper replacement part since they do vary in length.

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## Warranty

Redkoh Industries warrants to Purchaser that the products manufactured by Redkoh Industries are free from defects in material and/or workmanship under normal use and service for one (1) year from date of installation but not in excess of fifteen (15) months from date of shipment. Liability of Redkoh Industries under this warranty is limited to the repair or replacement of any defective product manufactured and supplied by Redkoh Industries that is used and/or connected in accordance with instructions and/or recommendations provided by Redkoh Industries. Such products are to be returned via prepaid, common carrier to the Redkoh Industries facility within the warranty period. Transportation, field service, removal and/or reinstallation costs (of any kind) are the fiscal responsibility of the Purchaser. Redkoh Industries reserves the right, at its sole option, to inspect Purchaser's schematic and/or connecting diagrams and/or to inspect job site conditions and installation. Repairs or modifications by Purchaser will void this warrant unless approved by Redkoh Industries. Except for warranties specifically set forth herein, THERE SHALL BE NO WARRANTIES-EXPRESSED OR IMPLIED-NOR SHALL THERE BE A WARRANTY OR MERCHANTABILITY WITH RESPECT TO THE GOODS. In addition, it is expressly agreed by the Purchaser, by the purchasing of the goods, that the liability of Redkoh Industries, if any, shall be LIMITED solely to the replacement or repair of the defective goods in accordance with the Warranties specifically and expressly set forth herein.

**A warranty repair authorization number must be obtained prior to returning any equipment for repair.**

Address Inquiries regarding shipment of defective parts for repair to:

**Mailing Address:**  
**Redkoh Industries**  
**PO Box 801**  
**Belle Mead, NJ 08502**

**Shipping Address:**  
**Redkoh Industries**  
**300 Valley Road**  
**Hillsborough, NJ 08844**

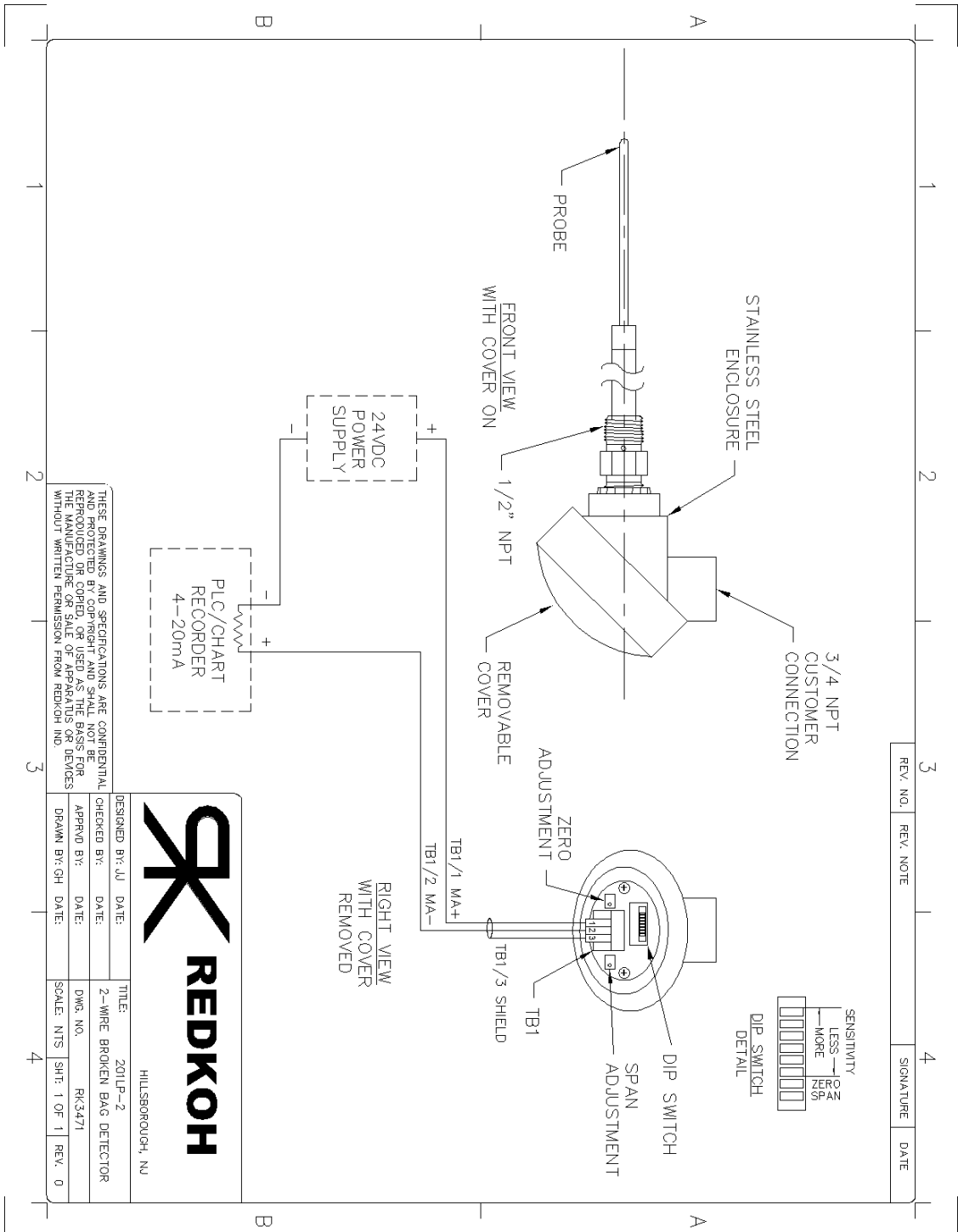
**Or call: (908) 360-1590**  
**Or fax: (908) 360-1594**

## Field Service

In the event that the customer requires a Redkoh field service technician or engineer on site, the customer will be billed for this service at our standard rate in effect at the time service is requested. This applies whether the equipment is in or out of warranty. This daily rate is based on the man-days spent on-site, plus travel time. Expenses for travel and living are billed at cost. Redkoh will not accept instruments returned under this warranty at the Redkoh plant without prior authorization.

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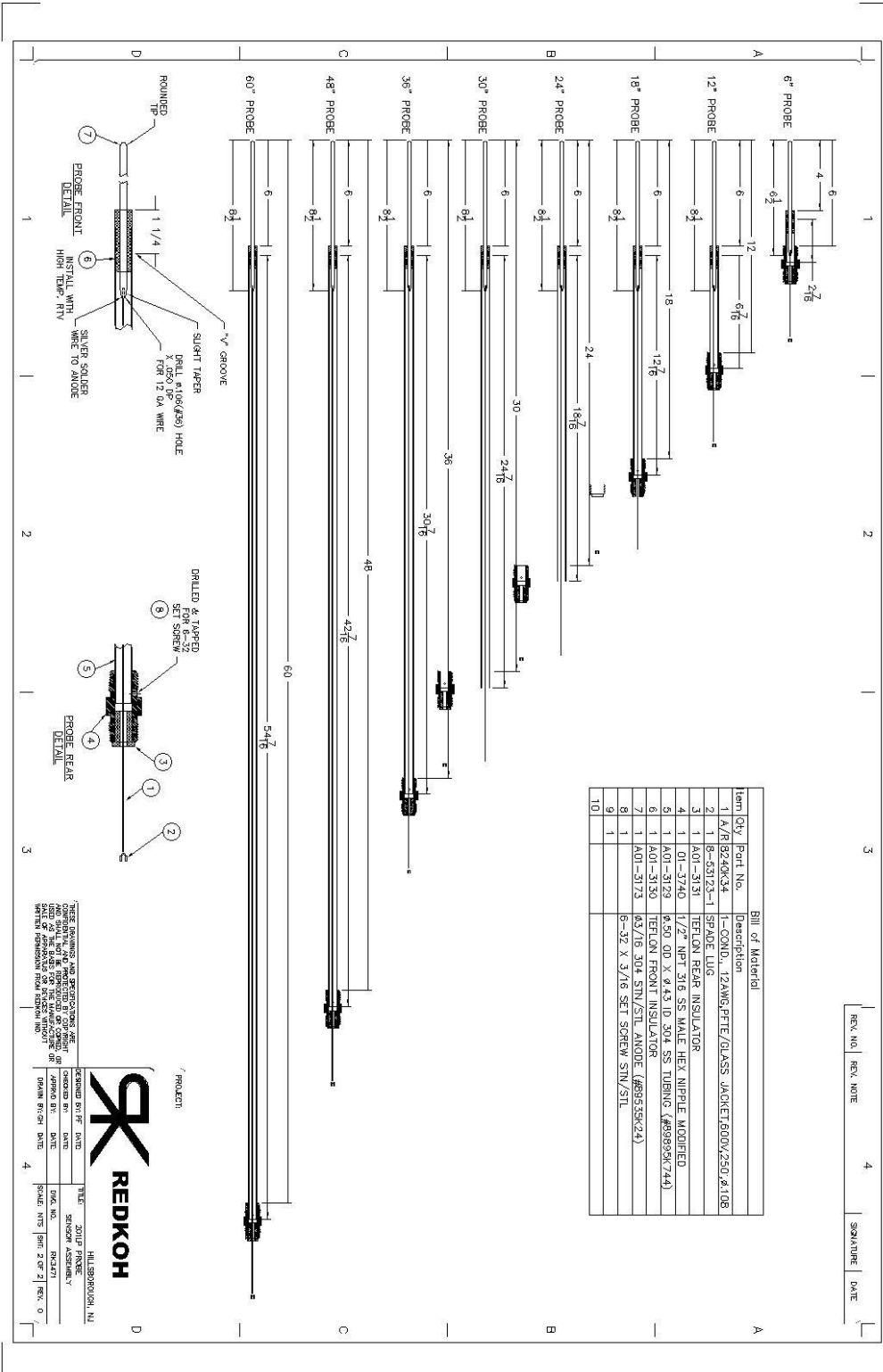
# Drawings



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DESIGNED BY: JJ	DATE:	TITLE:	2011P-2
CHECKED BY:	DATE:	2-WIRE BROKEN BAG DETECTOR	
APPROVED BY:	DATE:	DWG. NO.	PK3471
DRAWN BY: GH	DATE:	SCALE: NTS	SHT: 1 OF 1 REV: 0





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PROJECT: \_\_\_\_\_

HILLSBOROUGH, NJ

DESIGNED BY	DATE	TITLE	2D/3D PLOT
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

REV. NO.	REV. NOTE	SIGNATURE	DATE