

# S2 SENSOR / TRANSMITTER



## Available gases include

- LEL, H<sub>2</sub>S, CO, PPM H<sub>2</sub>, and CO<sub>2</sub>
- Toxic gases include Cl<sub>2</sub>, NH<sub>3</sub>, SO<sub>2</sub>, HCN, and more

## Infrared sensor for combustibles and CO<sub>2</sub>

## Hydrogen-Specific not available

## Patented water repellent sensor coating

## 4-20 mA output

## Explosion proof construction

The RKI S2 series gas sensor/transmitters are highly reliable and very cost effective for the detection of common gas hazards. The S2 series are available for LEL, H<sub>2</sub> Specific (LEL, and ppm), Oxygen, H<sub>2</sub>S, CO, and for a variety of toxic gases. The transmitters for LEL, H<sub>2</sub> Specific, Oxygen, H<sub>2</sub>S, CO<sub>2</sub>, and Carbon Monoxide are explosion-proof with flame arrestors, and approved for use in hazardous areas (Class I, Groups B, C, D). An optional non-explosion proof version is available for oxygen, H<sub>2</sub>S, CO, and CO<sub>2</sub> in non-hazardous atmospheres. LEL sensors are available using catalytic bead and infrared technologies.

The toxic sensors are electrochemical type plug-in sensors, which provide high specificity, fast response, and long life. The plug-in design allows quick replacement in the field with no tools required. Toxic sensors are designed for use in Class I, Div. 2 hazardous locations. Sensors available for Cl<sub>2</sub>, NH<sub>3</sub>, SO<sub>2</sub>, PH<sub>3</sub>, AsH<sub>3</sub>, and HCN.

The S2 transmitters can be used either indoors or outdoors. The flame arrestors for the explosion-proof versions utilize a patented coating which make them water repellent. Splash guards are also available for use in very wet environments.


All of the S2 transmitters are designed to interface with RKI controllers, or with PLC/DCS systems.

World Leader In Gas Detection & Sensor Technology


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# Explosion Proof

	LEL General Purpose	LEL H2 Specific	H2 PPM Hydrogen	O2 Oxygen	H2S Hydrogen Sulfide	CO Carbon Monoxide	CO2 Carbon Dioxide	CH4 Methane	HC Hydrocarbons
 <b>Part #</b>	65-2405RK	65-2451RK	65-2442RK-1000	65-2322RK	65-2331RK	65-2336RK	65-2396RK-02 65-2396RK-03 65-2396RK-05 65-2396RK-10	65-2394RK-CH4	65-2394RK-HC
	65-2405RK-05	65-2451RK-05	65-2442RK-2000						
<b>Sensor</b>	Catalytic		Metal oxide semiconductor	Galvanic cell	Electrochemical		Infrared		
<b>Measuring Range</b>	0-100% LEL	0-100% LEL (H2 Specific)	0-1000 ppm 0-2000 ppm	0-25% Vol.	0-100 ppm	0-300 ppm	0 - 5000 ppm 0 - 5% Vol. 0 - 50% Vol. 0 - 100% Vol.	0-100% LEL	
<b>Lower Detectable Limit (LDL)</b>	2% of full scale			0.1% Vol.	2% of full scale				
<b>Max Current Draw (24VDC)</b>	200 mA (power wires) 25 mA (signal wires) 3 wires		200 mA (power wires) 25 mA (signal wires) 3 wires	20 mA max, 2 wires			60 mA (power wires) 25 mA (signal wires) 3 wires		
<b>Response Time (T-90)</b>	30 Seconds	20 Seconds	45 Seconds	20 Seconds	45 Seconds	30 Seconds	30 Seconds		
<b>Accuracy</b>	+/- 5% of full scale (0.5% volume for oxygen)								
<b>Life Expectancy</b>	2 to 3 years with normal exposure to flammable gas	3-5 years with normal service	5 years plus with normal service	2-3 years with normal service			5 years plus with normal service		
<b>Operating Environment</b>									
<b>Location</b>	Indoor or outdoor. Explosion proof for Class I, Div. 1, Groups B, C, and D.								
<b>Temperature</b>	-40°F to 167°F -40°C to 75°C	-40°F to 167°F -40°C to 75°C	-4°F to 113°F -20°C to 45°C	-40°F to 104°F -40°C to 40°C	23°F to 104°F -5°C to 40°C	-4°F to 122°F -20°C to 50°C			
<b>Humidity</b>	0 - 99% RH, non condensing								
<b>Housing</b>									
<b>Housing J Box</b>	Cast aluminum explosion proof, optional stainless steel J-box available								
<b>Sensor</b>	Stainless steel explosion proof								
<b>Controls</b>									
<b>Zero</b>	Sets transmitter output to 4 mA with zero output from sensor								
<b>Span</b>	Sets transmitter output to proper level when span gas is applied								
<b>Output</b>	4 - 20 mA signal								
<b>Operating Voltage</b>	11 VDC to 30 VDC		19 VDC to 30 VDC	19-30VDC (250 OHMS impedance max)			11 VDC to 30 VDC		
<b>Approvals</b>	65-2405RK UL	65-2451RK UL	UL	CSA NRTL			c UL us		
	65-2405RK-05 c CSA us	65-2451RK-05 c CSA us							
<b>Controllers</b>	Compatible with the following controllers: Beacon 110, Beacon 200, Beacon 410, and 800, also PLC and DCS systems								
<b>Warranty</b>	One year materials and workmanship								

# Non Explosion Proof

	<b>O2</b> Oxygen	<b>H2S</b> Hydrogen Sulfide	<b>CO</b> Carbon Monoxide	<b>Toxics</b> See chart below	<b>CO2</b> Carbon Dioxide
 <b>Part #</b>	65-2321RK	65-2330RK	65-2335RK	See chart below	65-2397RK-02 65-2397RK-03 65-2397RK-05 65-2397RK-10
<b>Sensor</b>	Galvanic cell	Electrochemical			Infrared
<b>Measuring Range</b>	0-25% Vol.	0-100 ppm	0-300 ppm	See chart below	0 - 5000 ppm 0 - 5% Vol. 0 - 50% Vol. 0 - 100% Vol.
<b>Lower Detectable Limit (LDL)</b>	0.1% Vol.	2% of full scale			
<b>Accuracy</b>	+/- 5% of full scale (0.5% volume for oxygen)				
<b>Life Expectancy</b>	2 years normal service	2 to 3 years with normal service			5 years plus with normal service
<b>Response Time (T-90)</b>	20 Seconds	45 Seconds	30 Seconds	60 Seconds	30 Seconds
<b>Operating Environment</b>					
<b>Location</b>	Indoor Class I, Div. 2				
<b>Temperature</b>	-4°F to 122°F -20°C to 50°C		14°F to 104°F -10°C to 40°C	-4°F to 122°F -20°C to 50°C	
<b>Humidity</b>	0 - 99% RH non condensing		5-95% RH	0 - 99% RH non condensing	
<b>Housing</b>					
<b>Housing J-Box</b>	Cast aluminum, explosion-proof				
<b>Sensor</b>	Plastic or aluminum				
<b>Controls</b>					
<b>Zero</b>	Sets transmitter output to 4 mA with zero output from sensor				
<b>Span</b>	Sets transmitter output to 20 mA with full scale output from sensor				
<b>Operating Voltage</b>	19 VDC to 30 VDC				
<b>Output</b>	4-20 mA signal				
<b>Controllers</b>	Compatible with the following controllers: Beacon 110, Beacon 200, Beacon 410, and 800, also PLC and DCS systems				
<b>Warranty</b>	One year materials and workmanship				

	<b>Non Explosion Proof Toxic Assemblies</b>		
	<b>Ordering Information</b>		
	<b>Part Number</b>	<b>Gas</b>	<b>Range</b>
	65-2340RK-ASH3	Arsine (AsH3)	0 - 1.5 ppm
	65-2340RK-NH3	Ammonia (NH3)	0 - 75 ppm
	65-2340RK-Cl2	Chlorine (Cl2)	0 - 3.00 ppm
	65-2340RK-HCN	Hydrogen Cyanide (HCN)	0 - 15 ppm
65-2340RK-PH3	Phosphine (PH3)	0 - 1.00 ppm	
65-2340RK-SO2	Sulfur Dioxide (SO2)	0 - 6.00 ppm	

# S2 SENSOR / TRANSMITTER



## Available Accessories

A. Calibration adaptors

E. Battery backups

B. Flow through adaptors

F. Splash guards

C. Remote horns & lights

G. Air aspirator adaptors / panels

D. Calibration kits

H. Dataloggers

## Direct Interface with Beacon 110 / 200 / 410 / 800 Controllers

S2 Wiring Matrix				
S2 Transmitter	Number of Wires to Controller	Maximum Distance to Controller		
		18 AWG wire	16 AWG wire	14 AWG wire
LEL / IR / CO2	3	2500 ft.	5,000 ft.	8,000 ft.
Oxygen	2	2500 ft.	5,000 ft.	8,000 ft.
H2S	2	2500 ft.	5,000 ft.	8,000 ft.
CO	2	2500 ft.	5,000 ft.	8,000 ft.
Toxics	2	2500 ft.	5,000 ft.	8,000 ft.



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