

# 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 NH<sub>3</sub>, AsH<sub>3</sub>, Cl<sub>2</sub>, ClO<sub>2</sub>, HCN, & SO<sub>2</sub>

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

## Hydrogen-Specific now available

## Patented water repellent sensor coating

## 4-20 mA output

## Explosion proof construction

## Optional stainless steel junction box

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, Div 1 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 Class 1 Div 2. 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 NH<sub>3</sub>, AsH<sub>3</sub>, Cl<sub>2</sub>, ClO<sub>2</sub>, HCN, PH<sub>3</sub>, and SO<sub>2</sub>.

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. An optional stainless steel junction box is available for corrosive 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

Class I, Div. 1 , Groups B, C, D

	LEL General Purpose	LEL H2 Specific	H2 PPM Hydrogen	O2 Oxygen	H2S Hydrogen Sulfide	CO Carbon Monoxide	CH4 Methane IR	HC Hydrocarbons IR	CO2 Carbon Dioxide IR
 Part #	65-2405RK 65-2405RK-05	65-2451RK 65-2451RK-05	65-2445-100 65-2445-500 65-2445-1000 65-2445-2000	65-2322RK	65-2331RK	65-2336RK	65-2394RK-CH4	65-2394RK-HC	65-2396RK-02 65-2396RK-03 65-2396RK-05 65-2396RK-10
<b>Sensor</b>	Catalytic		Metal oxide semiconductor	Galvanic cell	Electrochemical		Infrared		
<b>Measuring Range</b>	0-100% LEL	0-100% LEL (H2 Specific)	0-100 ppm 0-500 ppm 0-1000 ppm 0-2000 ppm	0-25% Vol.	0-100 ppm	0-300 ppm	0-100% LEL		0 - 5000 ppm 0 - 5% Vol. 0 - 50% Vol. 0 - 100% Vol.
<b>Lower Detectable Limit (LDL)</b>	2% of full scale		6% of full scale	0.1% Vol.	2% of full scale				
<b>Accuracy (whichever is greater)</b>	± 5% of reading or ± 2% LEL		± 10% of full scale	± 0.5% O2	± 5% of reading ± 2 ppm H2S	± 5% of reading ± 5 ppm CO	± 5% of reading or ± 2% of full scale		
<b>Response Time (T-90)</b>	30 Seconds	20 Seconds	45 Seconds	90 Seconds	60 Seconds	90 Seconds	30 Seconds		
<b>Max Current Draw (24VDC)</b>	70 mA (power wires) 25 mA (signal wires) 3 wires			25 mA max, 2 wires			60 mA (power wires) 25 mA (signal wires) 3 wires		
<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	-4°F to 104°F -20°C to 40°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	-40°F to 122°F -40°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	65-2445-100 UL 65-2445-500 UL 65-2445-1000 UL 65-2445-2000 UL	CSA NRTL			c UL US		
	65-2405RK-05 CSA	65-2451RK-05 CSA	65-2445-100-05 CSA 65-2445-500-05 CSA 65-2445-1000-05 CSA 65-2445-2000-05 CSA						
<b>Controllers</b>	Compatible with the following controllers: Beacon 110, Beacon 200, Beacon 410A, and 800, also PLC and DCS systems								
<b>Warranty</b>	One year materials and workmanship								

# Toxic Gas Transmitters

Class I, Div. 2

	O2 Oxygen	H2S Hydrogen Sulfide	CO Carbon Monoxide	Toxics See chart below	CO2 Carbon Dioxide
 <b>Part #</b>	65-2320RK	65-2330RK	65-2335RK	See chart below	65-2397RK-02 65-2397RK-03 65-2397RK-05 65-2397RK-10
	65-2321RK				
<b>Sensor</b>	Galvanic cell	Electrochemical			Infrared
	Partial Pressure				
<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 (whichever is greater)</b>	± 0.5% O2	± 5% of reading ± 2 ppm H2S	± 5% of reading ± 5 ppm CO	± 10% of reading or ± 5% of full scale	± 5% of reading or ± 2% of full scale
<b>Response Time (T-90)</b>	20 Seconds	45 Seconds	30 Seconds	60 Seconds	30 Seconds
<b>Max Current Draw (24VDC)</b>	25 mA max, 2 wires				60 mA (power wires) 25 mA (signal wires) 3 wires
<b>Life Expectancy</b>	2 years normal service	2 to 3 years with normal service			5 years plus with normal service
<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		-40°F to 122°F -40°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 410A, and 800, also PLC and DCS systems				
<b>Warranty</b>	One year materials and workmanship				

\* Partial pressure sensor for helium (He) applications. Consult factory for details.

		S2 Non Explosion Proof Toxic Assemblies				
		Part Number With J-Box	Gas	Range	Resolution	Sensor Type
 <b>ESM-01</b> * Sensor being phased out, use CT-7 type when possible.	 <b>CT-7</b>	65-2341-NH3-75	Ammonia (NH3)	0 - 75.0 ppm	0.1 ppm	CT-7
		65-2341-NH3-1	Ammonia (NH3)	0 - 100 ppm	1 ppm	CT-7
		65-2341-NH3-2	Ammonia (NH3)	0 - 200 ppm	1 ppm	CT-7
		65-2341-NH3-5	Ammonia (NH3)	0 - 500 ppm	1 ppm	CT-7
		65-2340RK-Ash3	Arsine (AsH3)	0 - 1.50 ppm	0.01 ppm	ESM -01
		65-2341-CL2-3	Chlorine (Cl2)	0 - 3.00 ppm	0.01 ppm	CT-7
		65-2341-CL2-05	Chlorine (Cl2)	0 - 5.00 ppm	0.02 ppm	CT-7
		65-2341-CL2-10	Chlorine (Cl2)	0 - 10.0 ppm	0.1 ppm	CT-7
		65-2341-CLO2-1	Chlorine Dioxide (ClO2)	0 - 1.00 ppm	0.01 ppm	CT-7
		65-2340RK-HCN	Hydrogen Cyanide (HCN)	0 - 15.0 ppm	0.1 ppm	ESM -01
		65-2340RK-PH3	Phosphine (PH3)	0 - 1.00 ppm	0.01 ppm	ESM -01
		65-2340RK-SO2	Sulfur Dioxide (SO2)	0 - 6.00 ppm	0.01 ppm	ESM -01

# S2 SENSOR / TRANSMITTER



AC power supply



Remote horns & lights



Calibration kits



Calibration adaptors



Splash guards



Flow through adaptors



Dataloggers



Remote Mount Calibration Adaptor

## Direct Interface with Beacon 110 / 200 / 410A / 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.

Made in the USA



Authorized Distributor: