S2 SENSOR / TRANSMITTER

RKI
INSTRUMENTS

Explosion Proof O2 / CO / H2S

Explosion Proof LEL

NH3 Sensor

— **Available gases include**
  ◦ **LEL, H2S, CO, PPM H2, and CO2**
  ◦ **Toxic gases include NH3, SO2, HCN, and more**
— **Infrared sensor for combustibles and CO2**
— **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_2 Specific (LEL, and ppm), Oxygen, H_2S, CO, and for a variety of toxic gases. The transmitters for LEL, H2 Specific, Oxygen, H_2S, CO2, 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, H2S, CO, and CO2 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 NH3, SO2, PH3, AsH3, 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. 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

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

Non Explosion Proof

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

Non Explosion Proof Toxic Assemblies

Ordering Information

Part Number	Gas	Range
65-2340RK-ASH3	Arsine (AsH3)	0 - 1.5 ppm
65-2340RK-NH3	Ammonia (NH3)	0 - 75 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

A   B   C   D

Available Accessories

A. Calibration adaptors

B. Flow through adaptors

C. Remote horns & lights

D. Calibration kits

E. Battery backups

F. Splash guards

G. Air aspirator adaptors / panels

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.

Made in the USA

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Gas Detection For Life