

S2 SENSOR / TRANSMITTER



NH3 Sensor

Explosion Proof
LELExplosion Proof
O2 / CO / H2S

Available gases include

- LEL, H₂S, CO, PPM H₂, and CO₂
- Toxic gases include NH₃, AsH₃, Cl₂, ClO₂, HCN, & SO₂

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, H₂ Specific (LEL, and ppm), Oxygen, H₂S, CO, and for a variety of toxic gases. The transmitters for LEL, H₂ Specific, Oxygen, H₂S, CO₂, 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, H₂S, CO, and CO₂ 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 NH₃, AsH₃, Cl₂, ClO₂, HCN, PH₃, and SO₂.

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

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	65-2451RK	65-2443-100 65-2443-500 65-2443-1000 65-2443-2000	65-2322RK	65-2331RK	65-2336RK	65-2394RK-CH4	65-2394RK-HC	65-2396RK-02 65-2396RK-03 65-2396RK-05 65-2396RK-10
	65-2405RK-05	65-2451RK-05							
Sensor	Catalytic		Metal oxide semiconductor	Galvanic cell	Electrochemical		Infrared		
Measuring Range	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.
Lower Detectable Limit (LDL)	2% of full scale		6% of full scale	0.1% Vol.	2% of full scale				
Accuracy (whichever is greater)	± 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		
Response Time (T-90)	30 Seconds	20 Seconds	45 Seconds	90 Seconds	60 Seconds	90 Seconds	30 Seconds		
Max Current Draw (24VDC)	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		
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		-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		-40°F to 122°F -40°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	65-2451RK UL	65-2443-500 UL 65-2443-1000 UL 65-2443-2000 UL		CSA NRTL			c UL us	
	65-2405RK-05 CSA	65-2451RK-05 CSA							

Controllers

Compatible with the following controllers: Beacon 110, Beacon 200, Beacon 410A, and 800, also PLC and DCS systems

Warranty

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			
	Part #	65-2320RK	65-2330RK	65-2335RK	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			
Response Time (T-90)	20 Seconds	45 Seconds	30 Seconds	60 Seconds	30 Seconds			
Max Current Draw (24VDC)	25 mA max, 2 wires			60 mA (power wires) 25 mA (signal wires) 3 wires				
Life Expectancy	2 years normal service	2 to 3 years with normal service			5 years plus with normal service			
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		-40°F to 122°F -40°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 410A, and 800, also PLC and DCS systems							
Warranty	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
ESM-01	65-2340RK-NH3	Ammonia (NH3)*	0 - 75.0 ppm	0.1 ppm	ESM -01
	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

* Sensor being phased out, use CT-7 type when possible.

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:

