1 to 8 Channel Capacity

Wall Mount Controllers

Beacon Series

The Beacon 110, 200 and 410A controllers can monitor any combination of direct connect sensors as well as any 4-20mA transmitter. The Beacon 800 works with 4-20mA transmitters only. Available in 1, 2, 4, and 8 channels, respectively, each channel has configurable alarm points. Audible and visual indications alert you to alarm conditions.

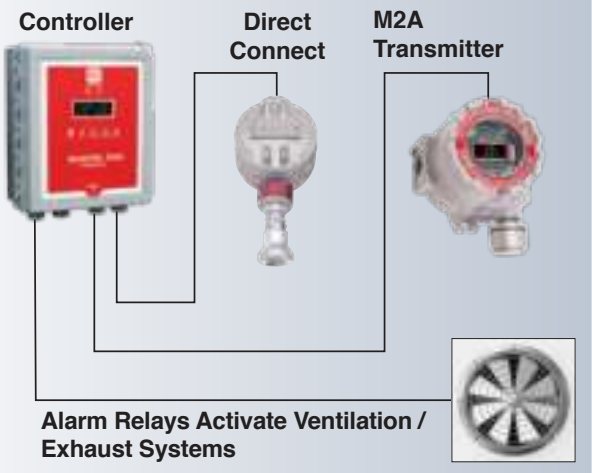
Each channel also has dedicated fully configurable relays and each controller has a bank of common relays. The common relays can be configured as additional relays on the Beacon 410A allowing for more alarm relays, optional on Beacon 800. Each channel provides a 4-20mA output signal. A digital Modbus interface for remote communication of data via a Modbus network is standard on the Beacon 410A.

A fully configurable, high visibility strobe is available as an option (except Beacon 800). The unit can be powered from 115/220 VAC, or an external 24 VDC source. A trickle charging battery backup feature with battery assembly is also available.

	Channels	Alarm levels per channel	Relays per channel	Common relays	Direct connect sensors
 Beacon 110	1	2	3	N/A	Yes
 Beacon 200	2	2	3	3	Yes
 Beacon 410A	4	3	3	5	Yes
 Beacon 800	8	2	3	3	No

FEATURES

- Accepts direct wire sensors for: LEL, O2, H2S, CO, CO2, Toxic direct wire sensors
- Digital display of gas and concentration
- Accepts any 4-20 mA transmitter
- Provides 4-20 mA output
- Programmable alarm levels
- Configurable alarm relays per channel
- Programmable common relays — Beacon 410A
- Audible alarm with reset button
- Weatherproof, NEMA 4X enclosure
- 115/220 VAC or 24 VDC operation
- Built-in trouble alarm with relay
- RFI / EMI resistant



Explosion / Non Explosion Proof Sensor Stand Alone Transmitter

M2A

The M2A™ model is an explosion proof transmitter that can operate as a stand-alone system or as part of a system connected with an analog or digital signal to a controller, PLC, or DCS. A non explosion proof version is also available for certain gases.

The M2A utilizes a magnetic wand technique for performing non-intrusive calibration. The housing does not need to be opened for zeroing or calibration, making it unnecessary to declassify the area for routine maintenance. It is designed so that a complete field calibration can be performed by one person.

FEATURES

- Direct digital readout
- H2 Specific version available
- Explosion proof housing
- Operates independently or with any controller, PLC or DCS
- Non intrusive calibration via magnetic wand
- 2 programmable alarm relays, plus fail relay
- Auto zero drift correction
- Remotely mount sensor with calibration adapter
- IR sensors available for LEL & CO2, % vol. CH4 & HC

LEL, H2, H2S, CO, O2, CO2, CH4, HC, NH3, ASH3, Cl2, ClO2, PH3, HCN, SO2

Explosion / Non Explosion Proof Sensor / Transmitter

S2

The S2 Series transmitter electronics are encased inside a potted package to avoid damage from mechanical abuse or corrosion, and housed in an explosion-proof enclosure. Some sensors are available as explosion-proof with flame arrestors and approved for use in hazardous atmospheres. S2 transmitters are also available with stainless steel enclosures.

Field calibration can be performed easily and quickly by one person. The only tools required to calibrate the S2 Series are a voltmeter, screwdriver, and cal gas. The amplifier has test jacks for connecting to a voltmeter for calibration purposes.

FEATURES

- Explosion proof housing
- Stainless steel enclosures available
- Patented water repellent sensor coating
- IR sensors available for LEL & CO2, % vol. CH4 & HC
- H2 Specific LEL and ppm versions available
- Remotely mount sensor with calibration adapter

LEL, H2, H2S, CO, O2, CO2, CH4, HC, NH3, ASH3, Cl2, ClO2, PH3, HCN, SO2

Explosion / Non Explosion Proof Sensor

Direct Connect

The Direct Connect sensors can be used in two different ways. The sensors can be mounted directly to the controllers as a complete stand alone system, or they can be mounted to explosion proof junction boxes for remote detection.

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.

The Direct Connect sensors can be used either indoors or outdoors. The flame arrestors for the explosion-proof versions utilize a patented coating, which make them water repellent. Also, splash-guards are available for use in wet environments. An optional stainless steel junction box is available for corrosive environments.

FEATURES

- Connect directly to a Beacon controller
- Explosion proof housing
- Stainless steel enclosures available
- IR sensors available for LEL & CO2, % vol. CH4 & HC
- Patented water repellent sensor coating
- Remotely mount sensor with calibration adapter

Smart Sample Draw Transmitter

LEL, O2, Toxics

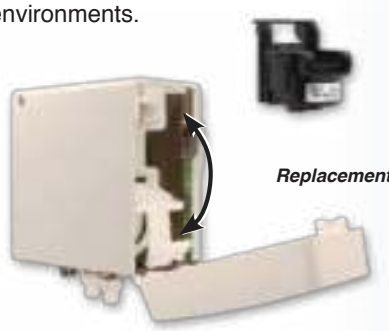
GD-70D

GD-70D Toxic Gases & Ranges	
Measurable Gases	Range
Ammonia	0 - 75 ppm
Arsine	0 - 0.2 or 1.5 ppm
Boron Trichloride	0 - 15 ppm
Boron Trifluoride	0 - 9 ppm
Bromine	0 - 1 ppm
Carbon Monoxide	0 - 75,150,300 ppm
Chlorine	0 - 3 ppm
Chlorine Trifluoride	0 - 0.6 ppm
Diborane	0 - 0.3 ppm
Dichlorosilane	0 - 15 ppm
Diethylamine	0 - 15 ppm
Dimethylamine	0 - 15 ppm
Disilane	0 - 15 ppm
Fluorine	0 - 3 ppm
Germane	0 - 0.8 ppm
Hydrogen Bromide	0 - 6 or 9 ppm
Hydrogen Chloride	0 - 6 or 15 ppm
Hydrogen Cyanide	0 - 15 ppm
Hydrogen Fluoride	0 - 3 or 9 ppm
Hydrogen Selenide	0 - 0.2 ppm
Hydrogen Sulfide	0 - 1 or 30 ppm
Nitric Oxide	0 - 100 ppm
Nitrogen Dioxide	0 - 9 or 15 ppm
Nitrogen Tetraoxide	0 - 15 PPM
Ozone	0 - 0.6 ppm
Phosphine	0 - 1 ppm
Silane	0 - 15 ppm
Silicon Tetrachloride	0 - 15 ppm
Silicon Tetrafluoride	0 - 9 ppm
Sulfur Dioxide	0 - 6 ppm
Sulfur Tetrafluoride	0 - 9 ppm
Tetraethyl Orthosilicate	0 - 15 ppm
Trichlorosilane	0 - 15 ppm
Trimethylamine	0 - 15 ppm
Tungsten Hexafluoride	0 - 9 ppm

The GD-70D smart sample-draw transmitter offers an array of plug and play intelligent sensor technologies, including electrochemical sensors for a wide range of toxic gases and oxygen; MOS for H2, IPA, and methanol; catalytic sensors for combustibles; and a pyrolyzer sensor for TEOS and NF3.

These smart sensors retain all calibration and sensor-specific data in non-volatile memory, so sensors can be hot-swapped in the field with no programming required. The sensors also retain calibration information, which means they can be conveniently calibrated separate from the transmitter, avoiding transport of calibration gases to field locations.

The long life high capacity pump and wide variety of sensing elements are replaceable in a few seconds, with no tools required! The GD-70D can be used as a stand-alone device, offering a number of communication protocols to existing PLC systems, or can be integrated with RKI's Beacon series of single and multi-channel controllers. An optional NEMA 4X enclosure is available for harsh environments.



Replacement Pump

Replacement Sensor

TOOL FREE MAINTENANCE

SENSOR UNIT					
Model	**ESU**	**SGU**	**SSU**	**OSU**	**NCU**
Detection principle	Electrochemical cell	Semiconductor	Pyrolysis-particle	Galvanic cell	Catalytic combustion
Gas detected	Refer to table of toxic gases	H2, CH4, IPA, Methanol, R-32	0-15ppm TEOS in air	0-25% O2 in air	0-100% LEL H2, CH4, and others
Self diagnosis function	Sensor trouble, system failure				
Date logging function	Event history, alarm history, calibration history, Alarm trend (60 sec. before / after 1st alarm)				

Diffusion Sensor / Transmitter for Toxic Gases

Wide Range of Toxics

GD-K88Ai

- Diffusion Style head
- Digital readout of gas name and concentration
- External control buttons for easy maintenance
- Intrinsically safe design
- Quick response sensors
- Many toxic sensors available
- 3 to 5 year typical sensor life
  Low cost of ownership
- Weather proof enclosure available

Weather Proof housing for GD-K88-4X

Partial List Of Detectable Gases. Contact RKI for gases or ranges not listed					
Ammonia (NH3)	0 - 75.0 ppm	Fluorine (F2)	0 - 6.0 ppm	Nitrogen Dioxide (NO2)	0 - 15.0 ppm
Arsine (AsH3)	0 - 0.20 ppm	Hydrogen Chloride (HCl)	0 - 15.0 ppm	Ozone (O3)	0 - 1.0 ppm
Bromine (Br2)	0 - 1.00 ppm	Hydrogen Cyanide (HCN)	0 - 30 ppm	Phosphine (PH3)	0 - 1.0 ppm
Chlorine (Cl2)	0 - 3.0 ppm	Hydrogen Fluoride (HF)	0 - 9.0 ppm	Silane (SiH4)	0 - 15.0 ppm
Chlorine Dioxide (ClO2)	0 - 1.00 ppm	Hydrogen Sulfide (H2S)	0 - 30.0 ppm	Sulfur Dioxide (SO2)	0 - 6 ppm
Carbon Monoxide (CO)	0 - 150 ppm	Hydrogen Sulfide (H2S)	0 - 1.00 ppm	Optional	0 - 30 ppm
Diborane (B2H6)	0 - 0.30 ppm	Nitric Oxide (NO)	0 - 100.0 ppm		

O2, CO

Indoor Stand Alone

OX-600 / EC 600

The OX-600 and EC-600 models are indoor, standalone monitors that detect Oxygen (O2) and Carbon Monoxide (CO) respectively. It's sleek, low-profile design is equipped with a unique tri-color display, which changes color as each alarm level is reached.

Each model has 2 preset alarms, and comes ready to operate with a simple wall mount bracket and 10 foot power cord (AC units). It is capable of operating with three different power options; 115 VAC, 24 VDC or alkaline batteries.

The sensor can also be mounted with an optional remote sensor cable.
Extender cable with remote box available in different lengths (3, 5, 10, or 20 meters).

	OX-600	EC-600
Detection Range	0 - 25 vol%	0 - 150 ppm (1ppm / digit)

FEATURES

- Operates with or without a controller
- Tri-color visual alarm display: Green=Normal, Yellow=Alarm 1, Red=Alarm 2
- Large easy to read digital display
- Three power options: 115 VAC, 24 VDC, or 2 AA alkaline
- Operates up to 1 year on one set of AA alkaline batteries
- Pressure compensation eliminates false alarms caused by pressure change
- Remote mount sensor cable available

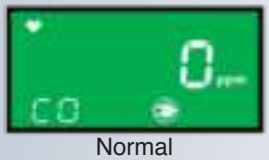
OX-600

Normal

Alarm 1

Alarm 2

EC-600



Normal

Alarm 1

Alarm 2

Remote Sensor

H2

H2 Specific Sensor / Transmitter

H2 Specific

Gas monitoring that is specific to hydrogen without any false alarms is now available from RKI Instruments. A low range version is available which is highly sensitive with a range of 0-2,000 ppm. This is 20 times more sensitive than standard LEL detectors. The technology is based on a proprietary hydrogen specific solid state sensor.
The second hydrogen specific sensor is for LEL range. A molecular sieve filter is used to make the sensors respond only to hydrogen molecules. False alarms from interfering gases are eliminated. Ideal for semiconductor fab monitoring and fuel cell applications. Production interruptions are minimized by eliminating false alarms from isopropyl alcohol (IPA) or other compounds. LEL is available with Direct Connect, S2 and M2A, 0-2000 ppm available in S2 Series.

IPA historically has caused problems with conventional hydrogen sensors when they mistakenly indicate the presence of hydrogen.

FEATURES

- Explosion proof housing
- H2 specific solid state sensor (0-2000 PPM)
- Catalytic H2 specific sensor (0-100 % LEL)
- Eliminates false alarms from IPA and other compounds
- Molecular sieve filter
- 4-20 mA transmitter, 24VDC, or direct connect
- Poison resistant
- Optional stainless steel enclosure

Sample Draw Sensor / Transmitter

LEL, O2, H2S, CO, CO2

35-3001

The 35-3001 series is a compact sample draw detector assembly with a built-in pump that accepts a 24VDC input. This unit features a NEMA 4X enclosure making it dust, water and corrosion resistant. It also features a flowmeter with adjustable flow and a low flow alarm which warns of any obstructions or restrictions in the flow system. The 35-3001 is also available in some dual sensor configurations.

The 35-3001 is capable of single person calibrations and remote sampling at up to 5,000 ft. from a controller, and interfacing to any RKI or third party control system (utilizing a 4-20 mA feedback signal).

FEATURES

- NEMA 4X enclosure
- Long life pump
- Low flow indication
- Flowmeter and LED's for operational status
- Operates on 24VDC input
- Multi gas versions available with sensors in one enclosure

Digester Process Gas Monitoring

High Range H2S, CH4 Vol, O2, CO2

Digester Gas Monitor

Gas from waste digesters contains high levels of methane, CO2, and H2S, with little to no oxygen present. The Digester gas monitor checks for all these gases on a cyclic basis. A powerful air aspirator draws a sample from up to 100 feet away. Since digester gas contains high humidity and high H2S, both of which can cause damage to sampling systems, the RKI Digester Gas Monitor is designed to handle these with no damage to the sampling system or sensors. The sample is passed through a series of particles, dust, and moisture stopping filters, and these filters are automatically purged with fresh air at the end of each cycle.

FEATURES

- Corrosion resistant design
  - — Housing designed for extreme environments
  - — Internal construction for extreme samples
  - — Flow system designed to handle corrosive wet samples
- Sample system designed to handle high humidity
- Accurately measures gases with high levels of H2S present
- 100 ft. sample range
- Up to 4 sensors:
  - — CH4 0-100% volume
  - — CO2 0-50% volume
  - — O2 0-25% volume
  - — H2S 0-1000 PPM (0-3000 or 0-5000 optional)
- Suitable for indoor / outdoor installations
- NEMA 4X enclosure

Harsh Environment Aspirator Panel

H2S, CO, O2, CO2, H2, LEL

Aspirator Panel

Single or dual sensor system is designed to monitor gas atmospheres from extreme conditions with either temperature or pressure challenges. A powerful air aspirator can pull a sample from up to 100 feet away. The filtered and conditioned sample gas is then passed across one or two different detectors. Each detector shares a common calibration and compressed air inlet for aspirated flow. This system is fault tolerant removing the need for expensive downtimes and maintenance. The sample is diluted with air after the gas sensor then returned to a common exhaust reducing the danger of potential hazardous gases entering a safe work space.

System integrity is maintained at all times using a flow fail monitoring device which provides an normally open contact that activates if the sample line becomes blocked or damaged or if the air supply is removed or interrupted.

FEATURES

- Long life air aspirator (no moving parts)
- Extreme sample temperatures
- indoor / outdoor location options
- Corrosion resistant construction for extreme environments / samples
- Uses proven RKI technology
- Modular design easy to maintain
- Self draining moisture trap
- Back flush for sample line
- NEMA 4X enclosure options

Explosion Proof Multi Sensor Head

Waste Water Gas Monitoring

This unique tri-sensor head can be used either indoors or outdoors. The flame arrestors for the explosion-proof versions utilize a patented coating which make them water repellent. Also, splash guards are available for use in very wet environments. The tri and quad sensor head is designed to specifically interface with the RKI Beacon 410A controller.

The direct connect series sensors are available for LEL (IR or catalytic), toxics, O2, H2S, CO, or CO2. All sensors are explosion-proof with flame arrestors, and suitable for use in hazardous locations. The enclosure is corrosion resistant NEMA 4X stainless steel.

Recommended for water and wastewater applications including wet wells, dry wells, bar screens, lift stations, digesters, thickeners, pump stations, and confined spaces.

H2S ***LEL*** ***O2***

FEATURES

- 2-4 Sensors, 1 explosion proof housing
- Infrared sensors available for combustible or CO2
- Interfaces with Beacon 410A controller
- Available for combinations of LEL (CH4 or HC), O2, CO, H2S, CO2, and toxics
- Water repellent patented sensor coating
- Long life sensors (2 + years typical)
- CSA approved NEMA 4X stainless steel enclosure

Semiconductor Gases

Paper Tape Toxic Gas Detector

FP-300, 301, and 330

RKI's paper tape monitors utilize highly sensitive colorimetric tapes to achieve interference free detection at low PPB and PPM levels of a wide variety of gases. Each model is equipped with easily replaceable tapes that are specific to the gas being monitored. Each model has a digital display showing the type of gas and concentration in either PPM or PPB, and also displays remaining tape time as well as an end of tape alarm.

FEATURES

- PPB detection for many gases
- PPB or PPM digital display
- Easily transportable
- 115 VAC powered

Gas Name	Gas Formula	Range	FP-300	FP-330	FP-301
Ammonia	NH3	0 - 4ppm	•		
Arsine	AsH3	0 - 150ppb	•		•
		0 - 15ppb			
Boron Trifluoride	BF3	0 - 3ppm	•		
Chlorine	Cl2	0 - 1.5ppm	•		
		0 - 0.8ppm			
Diborane	B2H6	0 - 300ppb	•		
Hydrogen Bromide	HBr	0 - 2ppm	•		
Hydrogen Chloride	HCl	0 - 1ppm	•		
		0 - 8ppm			
Hydrogen Fluoride	HF	0 - 3ppm	•		
Hydrogen Selenide	H2Se	0 - 200ppb			•
Hydrogen Sulfide	H2S	0 - 100ppb	•		
		0 - 10ppm			
Octafluorocyclopentene	C5F8	0 - 5ppm	•		
Perfluorobutadiene	C4F6	0 - 5ppm	•		
Phosgene	COCl2	0 - 300ppb	•		
Phosphine	PH3	0 - 500ppb	•		
		0 - 900ppb			
Silane	SiH4	0 - 15ppm	•		
Formaldehyde	HCHO	0 - 0.5ppm			
		0 - 1ppm		•	
		0 - 5ppm			

PPM or LEL H2 and Solvent vapors

Single Point Stand Alone Monitor

PS 2

A perfect solution for hydrogen detection in battery rooms, methane detection in basements, or in buildings near landfills. The PS 2 also detects a variety of solvent vapors in general industry and is a multipurpose gas monitor utilizing a metal oxide sensor (MOS) for long lasting and low maintenance detection at low LEL level of many gases or vapors. The PS 2 has two alarm levels for increasing gas or vapor levels. This stand alone unit is housed in a durable plastic enclosure with flanges provided for wall mounting and is designed with easy access wiring hubs on the bottom of the unit. The front of the PS 2 contains three lights; Pilot, Alarm 1, and Alarm 2. An internal audible alarm (85 db) signals a gas alarm condition. The sensor is provided on the end of a 30' extension cable as standard and the 115 VAC version is equipped with a power cord, for easy installation.

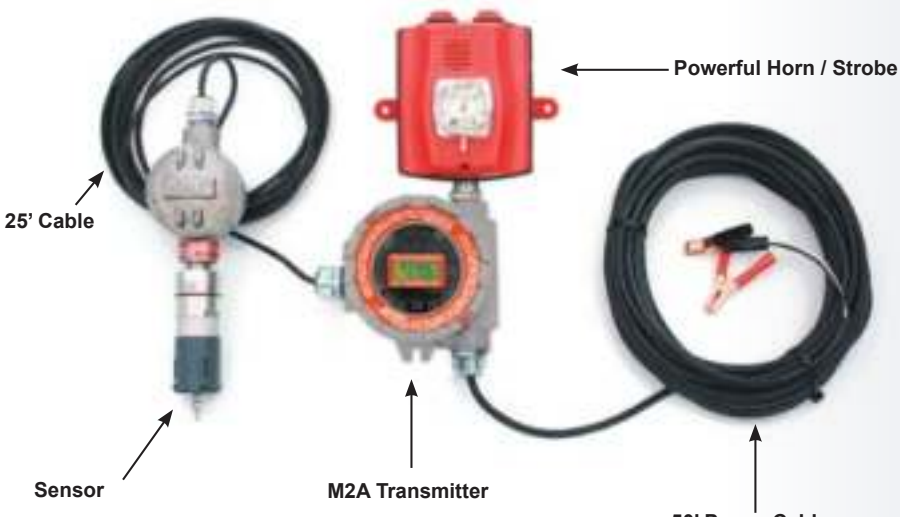
FEATURES

- LEL detection ranges available for many gases
- 2 alarm levels (typically 10% LEL and 30% LEL)
- Stand alone system
- Input voltages: 115 VAC standard, 24 VDC or 48 VDC (optional)
- Audible and visual alarms
- Compact design
- Simple installation
- AC version equipped with power cord
- Relay contacts rated 12A @ 115 VAC
- Low maintenance

LEL or H2S

LEL / H2S Detection for Drill Rigs

Rig Monitor



Rig monitors are specifically designed for detection of LEL / H2S around drilling rigs. All units include our long-life plug in electrochemical H2S sensor, range 0 - 100 ppm or our catalytic sensor range 0 - 100% LEL. All cable connections are protected by rugged strain relief cord grips, and sensors are mounted in an explosion proof enclosure that includes a convenient mounting bracket. Also included is a powerful horn / strobe mounted directly to the M2A or Beacon controller. The unit is powered by 12 VDC and comes with battery clamps on a 50' Cable.

FEATURES

- Pre-wired for easy installation
- 12 VDC powered with battery clamps
- Sensors wired on 25' cables
- Powerful horn / strobe
- Ideal for use at oil and gas drilling sites
- LEL versions available
- 2-4 channel versions available

Sensor Specification		
	H2S	LEL
Sensor	Electrochemical	Catalytic
Measuring Ranges	0 - 100 ppm H2S	100% LEL.
Resolution	1 ppm	1 LEL
Lower Detectable Limit (LDL)	2% of full scale	
Response Time (T-90)	35 Seconds or less	
Life Expectancy	2 to 3 years with normal service	
Accuracy	± 5% of reading or ± 2 ppm H2S, ± 2% LEL (whichever is greater)	
Weather Resistant	Patented water repellent sensor coating	

	Diffusion Instruments	Sample Draw Instruments
Small Kit		
Large Kit		

Portable Models	GX-2009, 03 Series, SC-01	GX-6000, GX-2012, Gas Tracer, Eagle 2, Eagle, RX-8000, RX-516, RX-517
Fixed System Models	Direct Connect Sensors, S2, M2A, GD-A80/GD-A80V, GD-K88Ai, PS2, M Series, OX-600, CO-600	GD-70D, 35-3001 Series