

# M2A STAND ALONE TRANSMITTER



- Operates with or without a controller
- Direct digital readout with OLED cold temperature display
- Available gases include
  - LEL, O<sub>2</sub>, H<sub>2</sub>S, CO, CO<sub>2</sub>, and 100% Vol CH<sub>4</sub>
  - Toxic gases include NH<sub>3</sub>, SO<sub>2</sub>, HCN, and more
- Infrared sensor for combustibles and CO<sub>2</sub>
- 4-20 mA & digital Modbus outputs standard
- 2 fully programmable alarm relays & fail relay
- Non-intrusive calibration via magnetic wand
- Explosion proof construction
- Patented water repellent sensor cover
- User friendly setup, push buttons & OLED menus
- Long-life sensors (2 + years typical)

The RKI M2A™ is a state-of-the-art transmitter that can operate as an independent, stand-alone monitor or as part of an integrated system. The M2A connects with an analog or digital signal to virtually any controller, PLC, or DCS. Setup procedures are simplified with user friendly push buttons and OLED menus. It utilizes a magnetic wand technique for performing non-intrusive calibration. The M2A provides an automatic zero drift correction feature, which results in more stable readings and reduces the need for adjustments due to sensor aging.

The housing of the M2A 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. Sensor construction is rated Class I, Div. 1 Groups B, C, D for flammables, CO, H<sub>2</sub>S, O<sub>2</sub>, and CO<sub>2</sub>, and Class I, Div. 2 for all other toxics.


The transmitter provides a 4-20 mA output in addition to a Modbus digital output. It also has two levels of alarms with relays, plus a fail alarm with relay. A digital display of the gas concentration, as well as alarm and status lights, can be viewed through the front window.

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>, SO<sub>2</sub>, PH<sub>3</sub>, AsH<sub>3</sub>, and HCN.


The M2A represents the latest leading edge technology in sensor / transmitters today.

World Leader In Gas Detection & Sensor Technology


# Explosion Proof

	LEL General Purpose	LEL H2 Specific	O2 Oxygen	H2S Hydrogen Sulfide	CO Carbon Monoxide	CH4 Methane	HC Hydrocarbons	CO2 Carbon Dioxide	
 Part#	65-2640RK	65-2641RK	65-2643RK-05	65-2645RK-05	65-2646RK-05	65-2649RK-CH4 65-2658RK-CH4	65-2649RK-HC	65-2660RK-02 65-2660RK-03 65-2660RK-05 65-2660RK-10	
	65-2640RK-05	65-2641RK-05							
Sensors	Catalytic		Galvanic cell	Electrochemical		Infrared			
Measuring Ranges	0 - 100 % LEL		0 - 25.0% Vol.	0 - 100 ppm	0 - 300 ppm	0 - 100% LEL 0 - 100% Vol.	0 - 100% LEL	-02 -03 -05 -10	0 - 5000 ppm 0 - 5% Vol. 0 - 50% Vol. 0 - 100% Vol.
Resolution	1% LEL		0.1% Vol.	1 ppm		1% LEL / 1% Vol.		20 ppm / 0.1% Vol. / 1% Vol.	
Lower Detectable Limit (LDL)	2% of full scale		0.1% Vol.	2% of full scale					
Max Current Draw (24VDC)	160 mA with alarm 1 and alarm 2 active and all relays energized		125 mA with alarm 1 and alarm 2 active and all relays energized						
Response Time (T-90)	35 Seconds or less					30 Seconds or less			
Life Expectancy	2 to 3 years with normal service	3 to 5 years with normal service	2 to 3 years with normal service			5 years plus with normal service			
Accuracy (which ever is greater)	± 5% of reading or ± 2 % LEL		± 0.5% Vol. O2	± 5% of reading or ± 2 ppm H2S	± 5% of reading or ± 5 ppm CO	± 5% of reading or ± 2 % of full scale			
Weather Resistant	Patented water repellent sensor coating								
Alarms									
Alarm Settings	Two fully programmable alarm set points, increasing / decreasing, latching / self-resetting, on delays, off delays, normally energized or de-energized								
Alarm Indication	Visual LEDs. Alarm 1, Amber; Alarm 2, Red; Fail, Red								
Relays	5 amp form 'C' contacts for alarm 1, alarm 2, and fail								
Physical									
Dimensions	Height: 8.5" (215 mm), Width: 5.2" (132 mm), Depth: 4.5" (114 mm)								
Display	Alphanumeric OLED display. 8 characters per line; 2 lines for gas concentration readout, plus user-friendly calibration and setup								
Enclosure	Explosion proof for Class I, Div 1, Groups B, C, D.								
Enclosure Rating	NEMA 4X, explosion proof, watertight, cast aluminum with o-ring seal and epoxy powder coating								
Controls	Magnet used for calibration functions. Calibrates without opening the housing. Internal push-button controls also available for calibration and setup								
Operating Environment									
Operating Temperature	-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	-40°F to 122°F -40°C to 50°C			
Relative Humidity	5 - 95% RH non-condensing								
Location	Indoor or outdoor. Explosion proof for Class I, Div. 1, Groups B, C, D.								
Operating Voltage	10 VDC - 30 VDC								
Outputs									
Analog	Linear 4-20 mA signal, into 1000 ohms impedance max (24DC), 0 - 500 ohms max (12VDC) corresponding to 0 - full scale								
Digital	Modbus RTU output standard, fully configurable, 2-wire RS-485, 1200 to 19.2k baud								
Approvals	65-2640RK UL	65-2641RK UL	c CSA US			c UL US			
	65-2640RK-05 c CSA US	65-2641RK-05 c CSA US							
Controllers	Compatible with all RKI Beacon controllers, as well as most DCS / PLC systems: Beacon 110, Beacon 200, Beacon 410, Beacon 800								
Warranty	One year material 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>	65-2666RK *65-2644RK	65-2662RK	65-2663RK	See Chart Below	65-2661RK-02 65-2661RK-03 65-2661RK-05 65-2661RK-10	
<b>Sensors</b>	Galvanic cell	Electrochemical			Infrared	
<b>Measuring Ranges</b>	0-25% Vol.	0-100 ppm	0-300 ppm	See Chart Below	-02	0 - 5000 ppm
					-03	0 - 5% Vol.
					-05	0 - 50% Vol.
<b>Resolution</b>	0.1% Vol.	1 ppm		See Chart Below	-10	0 - 100% Vol.
<b>Lower Detectable Limit (LDL)</b>	0.1% Vol.	20 ppm / 0.1% Vol. / 1% Vol.				
<b>Response Time (T-90)</b>	35 Seconds or less			60 Seconds or less	30 Seconds or less	
<b>Max Current Draw (24VDC)</b>	125 mA with alarm 1 and alarm 2 active and all relays energized					
<b>Life Expectancy</b>	2 to 3 years with normal service				5 years plus	
<b>Accuracy</b> (which ever is greater)	± 0.5% Vol. O2	± 5% of reading or ± 2 ppm H2S	± 5% of reading or ± 5 ppm CO	± 10% of reading or ± 5% of full scale	± 5% of reading or ± 2% of full scale	
<b>Alarms</b>						
<b>Alarm Settings</b>	Two fully programmable alarm set points, increasing / decreasing, latching / self-resetting, on delays, off delays, normally energized or de-energized,					
<b>Alarm Indication</b>	Visual LEDs. Alarm 1=Amber; Alarm 2=Red; Fail=Red					
<b>Relays</b>	5 Amp form 'C' contacts for alarm 1, alarm 2, and fail					
<b>Physical</b>						
<b>Dimensions</b>	Height: 8.5" (215 mm), Width: 5.2" (132 mm), Depth: 4.5" (114 mm)					
<b>Display</b>	Alphanumeric OLED display. 8 characters per line; 2 lines for gas concentration readout, plus user-friendly calibration and setup					
<b>Sensor Rating</b>	Non explosion proof construction, designed for Class I, Div. 2, Groups B, C, D (no certification)					
<b>Housing J-Box</b>	NEMA 4X, explosion proof, watertight, cast aluminum with o-ring seal and epoxy powder coating					
<b>Controls</b>	Magnet used for calibration functions. Calibrates without opening the housing. Internal push-button controls also available for calibration and setup					
<b>Sensor</b>	Aluminum / Plastic (non explosion proof)					
<b>Operating Environment</b>						
<b>Operating Temperature</b>	-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	14°F to 104°F -10°C to 40°C	-40°F to 122°F -40°C to 50°C	
<b>Relative Humidity</b>	5 - 95% RH non-condensing					
<b>Location</b>	Indoor or outdoor					
<b>Operating Voltage</b>	10 VDC - 30 VDC					
<b>Outputs</b>						
<b>Analog</b>	Linear 4-20 mA signal, into 1000 ohms impedance max (24DC), 0 - 500 ohms max (12VDC) corresponding to 0 - full scale					
<b>Digital</b>	Modbus RTU output standard, fully configurable, 2-wire RS-485, 1200 to 19.2k baud					
<b>Controllers</b>	Compatible with all RKI Beacon controllers, as well as most DCS / PLC systems: Beacon 110, Beacon 200, Beacon 410, Beacon 800					
<b>Warranty</b>	One year materials and workmanship					

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

	M2A Toxic Transmitter Sensor Ordering Information			
	Part Number With J-Box	Gas	Range	Resolution
	65-2648RK-AsH3	Arsine (AsH3)	0 - 1.5 ppm	0.01 ppm
	65-2648RK-NH3	Ammonia (NH3)	0 - 75.0 ppm	0.1 ppm
	65-2648RK-PH3	Phosphine (PH3)	0 - 1.00 ppm	0.01 ppm
	65-2648RK-HCN	Hydrogen Cyanide (HCN)	0 - 15.0 ppm	0.1 ppm
	65-2648RK-SO2	Sulfur Dioxide (SO2)	0 - 6.00 ppm	0.01 ppm

# AVAILABLE ACCESSORIES



AC power supply



Remote horns & lights



Air aspirator adaptors / panels



Calibration adaptors



Splash guards



Flow through adaptors



Dataloggers



Calibration kits

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

M2A Wiring Matrix				
	Number of Wires to Controller	Maximum Distance to Controller		
		18 AWG wire	16 AWG wire	14 AWG wire
M2A Transmitter	3	2500 ft.	5,000 ft.	8,000 ft.



Made in the USA

Authorized Distributor:



For further information contact: Environmental Equipment & Supply

Fax: (717) 901-8114 Tel: (800) 739-7706 (717) 901-8891

491L Blue Eagle Ave. Harrisburg, PA 17112

Web: [www.envisupply.com](http://www.envisupply.com) E-mail: [sales@envisupply.com](mailto:sales@envisupply.com)

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ISO 9001

Gas Detection For Life