

# 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>, 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>
- 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>, AsH<sub>3</sub>, Cl<sub>2</sub>, ClO<sub>2</sub>, HCN, PH<sub>3</sub>, and SO<sub>2</sub>

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

World Leader In Gas Detection & Sensor Technology


# Explosion Proof

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



Part #	Combustibles		LEL	O <sub>2</sub>	H <sub>2</sub> S	CO	CH <sub>4</sub>	HC	CO <sub>2</sub>	
	LEL	PPM	H <sub>2</sub> Specific	Oxygen	Hydrogen Sulfide	Carbon Monoxide	Methane	Hydrocarbons	Carbon Dioxide	
	UL	65-2640RK	65-2647RK	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
	CSA	65-2640RK-05	65-2647RK-05	65-2641RK-05						
<b>Sensors</b>		Catalytic			Galvanic cell	Electrochemical		Infrared		
<b>Measuring Ranges</b>	0 - 100% LEL	0 - 9000 ppm CH <sub>4</sub>	0 - 100% LEL	0 - 25.0% Vol.	0 - 100 ppm	0 - 300 ppm	0 - 100% LEL 0 - 100% Vol.	0 - 100% LEL	-02 0 - 5000 ppm -03 0 - 5% Vol. -05 0 - 50% Vol. -10 0 - 100% Vol.	
<b>Resolution</b>	1% LEL	20 ppm	1% LEL	0.1% Vol.	1 ppm		1% LEL / 1% Vol.			
<b>Lower Detectable Limit (LDL)</b>	2% of full scale			0.1% Vol.	2% of full scale					
<b>Max Current Draw (24VDC)</b>	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			160 mA with alarm 1 and alarm 2 active and all relays energized			
<b>Response Time (T-90)</b>	35 Seconds or less			90 Seconds or less	60 Seconds or less	90 Seconds or less	30 Seconds or less			
<b>Life Expectancy</b>	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			
<b>Accuracy (which ever is greater)</b>	± 5% of reading or ± 2% of full scale			± 0.5% Vol. O <sub>2</sub>	± 5% of reading or ± 2 ppm H <sub>2</sub> S	± 5% of reading or ± 5 ppm CO	± 5% of reading or ± 2 % of full scale			
<b>Weather Resistant</b>	Patented water repellent sensor coating									
<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>Enclosure</b>	Explosion proof for Class I, Div 1, Groups B, C, D.									
<b>Enclosure Rating</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>Operating Environment</b>										
<b>Operating Temperature</b>	-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			
<b>Relative Humidity</b>	5 - 95% RH non-condensing									
<b>Location</b>	Indoor or outdoor. Explosion proof for Class I, Div. 1, Groups B, C, D.									
<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>Approvals</b>	65-2640RK UL		65-2641RK UL	c CSA US			c UL US			
	65-2640RK-05 c CSA US		65-2641RK-05 c CSA US							
<b>Controllers</b>	Beacon 110, Beacon 200, Beacon 410A, Beacon 800 as well as most DCS / PLC systems									
<b>Warranty</b>	One year material 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#	65-2666RK *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. -10 0 - 100% Vol.
<b>Resolution</b>	0.1% Vol.	1 ppm		See Chart Below	20 ppm / 0.01% Vol. / 0.1% Vol. / 1%Vol.
<b>Lower Detectable Limit (LDL)</b>	0.1% Vol.	2% of full scale			
<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				160 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>	Beacon 110, Beacon 200, Beacon 410A, Beacon 800 as well as most DCS / PLC systems				
<b>Warranty</b>	One year materials and workmanship				

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

		M2A Toxic Transmitter Sensor Ordering Information				
		Part Number With J-Box	Gas	Range	Resolution	Sensor Type
 ESM-01   CT-7  * Sensor being phased out, use CT-7 type when possible.		65-2670RK-NH3-75	Ammonia (NH3)	0 - 75.0 ppm	0.1 ppm	CT-7
		65-2670-NH3-1	Ammonia (NH3)	0 - 100 ppm	1 ppm	CT-7
		65-2670-NH3-2	Ammonia (NH3)	0 - 200 ppm	1 ppm	CT-7
		65-2670-NH3-5	Ammonia (NH3)	0 - 500 ppm	1 ppm	CT-7
		65-2648RK-AsH3	Arsine (AsH3)	0 - 1.50 ppm	0.1 ppm	ESM -01
		65-2670RK-CL2-3	Chlorine (Cl2)	0 - 3.00 ppm	0.01 ppm	CT-7
		65-2670RK-CL2-10	Chlorine (Cl2)	0 - 10.0 ppm	0.1 ppm	CT-7
		65-2670RK-CLO2	Chlorine Dioxide (ClO2)	0 - 1.00 ppm	0.01 ppm	CT-7
		65-2648RK-HCN	Hydrogen Cyanide (HCN)	0 - 15.0 ppm	0.1 ppm	ESM -01
		65-2648RK-PH3	Phosphine (PH3)	0 - 1.00 ppm	0.01 ppm	ESM -01
		65-2648RK-SO2	Sulfur Dioxide (SO2)	0 - 6.00 ppm	0.01 ppm	ESM -01

(800) 754-5165

M2A Stand Alone Transmitter

# AVAILABLE ACCESSORIES



Remote Mount Calibration Adaptor



Flow through adaptors



Air aspirator adaptors / panels



Remote horns & lights



Calibration adaptors



Calibration kits

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