M2A STAND ALONE TRANSMITTER

LEADERS IN GAS DETECTION

Since 1977

M2A

Features:

- Operates with or without a controller
- Direct digital readout with OLED display
- Available gases include LEL and CO2
- Infrared sensor for combustibles and CO2
- 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 & LCD menus
- Long-life sensors (2 - 5 years typical for catalytic, 5 - 10 years typical for IR)

Industry Applications

- Petrochemical plants
- Refineries
- Water & wastewater treatment plants
- Pulp & paper mills
- Manufacturing facilities
- Automotive
- Semiconductor plants

Description:

The 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 LCD menus. It utilises 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 and CO2. For CO2, a general purpose (not explosion proof) construction is also available. 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 M2A represents the latest leading edge technology in sensor / transmitters today. The “A” version of the M2 style instrument includes several improvements over the past design. This includes an OLED display for cold temperature operation (to -40), side access conduit opening for better leak protection, improved RFI/EMI resistance, and superior protection against power surges or spikes.

OIL & GAS | CONFINED SPACE | HYGIENE | MINING | LABORATORIES | HVAC | DEFENCE | SHIPPING | FUMIGATION

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EXPLOSION PROOF

	LEL General Purpose	LEL H2 Specific	O2 Oxygen	H2S Hydrogen Sulphide	CO Carbon Monoxide	CH4 Methane	HC Hydrocabons	CO2 Carbon Dioxide
Part#	R65-2640RK R65-2640RK-05	R65-2641RK R65-2641RK-05	R65-2643RK-05	R65-2645RK-05	R65-2646RK-05	R65-2649RK-CH4 R65-2658RK-CH4	R65-2649RK-HC	R65-2660RK-02 R65-2660RK-03 R65-2660RK-05 R65-2660RK-10
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: 0 - 5000 ppm -03, -05: 0 - 5% Vol. / 0 - 50% Vol. -10: 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°C to 75°C		-20°C to 45°C	-40°C to 40°C	-5°C to 40° C	-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	R65-2610RK UL R65-2610RK-05 C CSA US	R65-2611RK UL R65-2611RK-05 C CSA US	C CSA US			C UL 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

	O2 Oxygen	H2S Hydrogen Sulfide	CO Carbon Monoxide	Toxics See Chart Below	CO2 Carbon Dioxide	
Part#	R65-2666RK *R65-2644RK	R65-2662RK	R65-2663RK	See Chart Below	R65-2661RK-02 R65-2661RK-03 R65-2661RK-05 R65-2661RK-10	
Sensors	**Galvanic cell**	**Electrochemical**			**Infrared**	
Measuring Ranges	0-25% Vol.	0-100 ppm	0-300 ppm	See Chart Below	-02	0 - 5000 ppm
					-03 -05	0 - 5% Vol. 0 - 50% Vol.
					-10	0 - 100% Vol.
Resolution	0.1% Vol.	1 ppm		See Chart Below	20 ppm / 0.1% Vol. / 1% Vol.	
Lower Detectable Limit (LDL)	0.1% Vol.	2% of full scale				
Response Time (T-90)	35 Seconds or less			60 Seconds or less	30 Seconds or less	
Max Current Draw (24VDC)	125 mA with alarm 1 and alarm 2 active and all relays energized					
Life Expectancy	2 to 3 years with normal service				5 years plus	
Accuracy (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	
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: (215 mm), Width: (132 mm), Depth: (114 mm)					
Display	Alphanumeric OLED display. 8 characters per line; 2 lines for gas concentration readout, plus user-friendly calibration and setup					
Sensor Rating	Non explosion proof construction, designed for Class I, Div. 2, Groups B, C, D (no certification)					
Housing J-Box	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					
Sensor	Aluminum / Plastic (non explosion proof)					
Operating Environment						
Operating Temperature	-20°C to 45°C	-40°C to 40°C	-5°C to 40°C	-10°C to 40°C	-40°C to 50°C	
Relative Humidity	5 - 95% RH non-condensing					
Location	Indoor or outdoor					
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					
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 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
R65-2648RK-AsH3	Arsine (AsH3)	0 - 1.5 ppm	0.01 ppm
R65-2648RK-NH3	Ammonia (NH3)	0 - 75.0 ppm	0.1 ppm
R65-2648RK-PH3	Phosphine (PH3)	0 - 1.00 ppm	0.01 ppm
R65-2648RK-HCN	Hydrogen Cyanide (HCN)	0 - 15.0 ppm	0.1 ppm
R65-2648RK-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

Calibration kits

Flow through adaptors

Dataloggers

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

M2A Wiring Matrix		
	Number of Wires to Controller	Maximum Distance to Controller
		14 AWG wire
M2A Transmitter		2,4000

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