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Specifier Notes: This product guide specification is written according to the Construction Specifications Institute (CSI) 3-Part Format, including *MasterFormat, SectionFormat,* and *PageFormat*

This section must be carefully reviewed and edited by the Architect or Engineer to meet the requirements of the project and local building code. Coordinate this section with other specification sections and the Drawings. Delete all “Specifier Notes” after editing this section.

Section numbers are from *MasterFormat 2020 Update.*

SECTION 28 42 00

GAS DETECTION AND ALARM

Specifier Notes: Delete any information below in Parts 1, 2 or 3 which is not required or relevant for the project.

1. GENERAL
	1. SECTION INCLUDES
		1. Fixed gas detection.
			1. AMC-1DCX-L Digital Gas Monitor
			2. AMC-UTx-M Transmitter
			3. AMC-400 Transmitter
			4. AMC-DTR Transmitter
		2. Modular Boxes.
			1. AMC-1DMB–RL 8CH Relay Module.
			2. AMC-1DPS 24VDC, 7A, Power Supply.
			3. AMC-1DMB-AI 8CH 0-20mA Analog Input.
			4. AMC-1DMB-RL-AO 8CH Relay and Analog Out Module.
		3. Remote Alarm Modules.
			1. AMC-RAM-3 Remote Audio/Visual Alarm.
	2. RELATED SECTIONS
		1. Division 16 - Electrical.
	3. REFERENCES
		1. CSA Group (CSA):
			1. CSA C22.2 No. 61010-1 +UPD1, +UPD2, AMD1 Safety requirements for electrical equipment for measurement, control, and laboratory use - Part 1: General requirements
		2. Underwriters Laboratories (UL):
			1. UL 61010-1, 3rd Ed. Amd1 Safety requirements for electrical equipment for measurement, control, and laboratory use - Part 1: General requirements
		3. International Electrotechnical Commission
			1. IEC 60529 Degrees of protection provided by enclosures (IP Code)
	4. SUBMITTALS
		1. Submit under provisions of Section 01 30 00 - Administrative Requirements.
		2. Product Data:
			1. Manufacturer's data sheets on each product to be used.
			2. Preparation instructions and recommendations.
			3. Storage and handling requirements and recommendations.
			4. Typical installation methods.
		3. Shop Drawings: Include details of materials, construction, and finish. Include relationship with adjacent construction.
	5. QUALITY ASSURANCE
		1. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with a minimum five years documented experience.
		2. Installer Qualifications: Company specializing in performing Work of this section with minimum two years documented experience with projects of similar scope and complexity.
		3. Source Limitations: Provide each type of product from a single manufacturing source to ensure uniformity.
	6. PRE-INSTALLATION CONFERENCE
		1. Convene a conference approximately two weeks before scheduled commencement of the Work. Attendees shall include Architect, Contractor and trades involved. Agenda shall include schedule, responsibilities, critical path items and approvals.
	7. DELIVERY, STORAGE, AND HANDLING
		1. Store and handle in strict compliance with manufacturer's written instructions and recommendations.
		2. Protect from damage due to weather, excessive temperature, and construction operations.
	8. PROJECT CONDITIONS
		1. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's recommended limits.
	9. WARRANTY
		1. Manufacturer's standard limited warranty unless indicated otherwise.
2. PRODUCTS
	1. MANUFACTURERS
		1. Acceptable Manufacturer: Armstrong Monitoring, which is located at: 215 Colonnade Road South.; Ottawa, Ontario, Canada K2E 7K3; Toll Free Tel: 1-800-465-5777; Fax: (613) 225-6965; Email: quotes@armstrongmonitoring.com Web: [https://armstrongmonitoring.com/](https://armstrongmonitoring.com/%20)
		2. Substitutions: Not permitted.
		3. Requests for substitutions will be considered in accordance with provisions of Section 01 60 00 - Product Requirements.
	2. FIXED GAS DETECTION
		1. Basis of Design: Model AMC-1DCX-L Digital Gas Monitor as manufactured by Armstrong Monitoring.
			1. Gas Monitor that can be configured to work with all AMC sensors and sensor/transmitters.
				1. For details on AMC analog 4-20mA or multidrop sensors and sensors/transmitters refer to the AMC Website.
			2. Build Code Structure
				1. AMC-1DCX-L-P

P (Power Supply) Options

Blank 120 VAC, 60 Hz. Rated 75VA.

LV 24VDC, Rated 3A

* + - 1. Certifications
				1. CSA Listed for Canada and USA. See References A and B.
			2. Recommended Mounting Height: 4-5 ft. (1.2 – 1.5m) A.F.F
			3. Housing: UV Stabilized Polycarbonate (LxWxH): 11.75 x 9.98 x 5.46 inch (299 x 253 x 139 mm).
				1. Rating: UL 94V-0
				2. Lockable with hinged door.
			4. Power Supply, Input:
				1. AC Option: 120 VAC, 60 Hz, 75 VA.
				2. DC Option: 24VDC, 3A.
			5. Power Output:
				1. DC: 24VDC, 1A max to provide power for external devices on RS-485 network.
			6. Serial Interface
				1. One RS-485 lanes providing MODBUS interface for transmitters.
				2. RS-485 9600 Baud, 8bit Even Parity interface
				3. Ethernet Interface.

1 GbE providing optional BACnet/IP uplink to BAS

10/100 providing optional connection for Industrial Ethernet interface. This allows traffic to continue to operate over the ethernet link if the 1DCX-L is out of service.

* + - * 1. USB 2.0 Interface for external flash drives used in firmware upgrades or downloading datalogs.
			1. Analog Inputs
				1. 4 provided on CPU Module.
				2. User-Selectable: 4 to 20 mA, or 0 to 10 VDC
			2. Analog Outputs:
				1. 4 provided on CPU Module.
				2. User-Selectable: 4 to 20 mA, or 0 to 10 VDC
			3. Relays:
				1. Four DPDT 6A @ 250 VAC Res
			4. Display:
				1. 4.3 Inch HDMI Display, 800x480 resolution
				2. Capacitive touch screen
			5. Alarm: Buzzer, 95 dBa at (100 mm), 3.5 kHz piezoelectric element.
			6. Temperature Range: -4 to 104 degrees F (-20 to 40 degrees C).
			7. Humidity Range: 15-90 percent RH Non-condensing.
			8. Atmospheric Pressure: 0.9 to 1.1 atm.
			9. Connecting Terminals
				1. Wire Range, Power and Signal: 22 AWG to 12 AWG (0.2-2.5 sq.mm.);
				2. Wire Range, Ground: 22 AWG to 10 AWG (0.2-4 sq.mm.
				3. Strip Length: 0.3 in. (8 mm)
				4. Torque: 7 lb.-in. (0.4 Nm)
				5. Relay connections: Ring Terminal for #6 stud
			10. Weight: 5.7 lbs. (2.6 kg) max.
			11. Accessories
				1. AMC-RAM-3
				2. Replacement Modules

AMC-DCX-CPU CPU Module

* + 1. Basis of Design: Model AMC-UTx-M Transmitter as manufactured by Armstrong Monitoring.
			1. Highly configurable fixed gas detector for single or dual sensor applications.
			2. Recommended Mounting Height: 4-5 ft. (1.2 – 1.5m) A.F.F
			3. Coverage Area: up to 7500 sq. ft. (700 sq. m.); 50 ft (15m) radius
			4. Gas Options:
				1. Carbon Monoxide (CO).

AMC-UTx-M-91A01-N-R-0400 (CO) 0-100 PPM, EC.

AMC-UTx-M-91B01-N-R-0400 (CO) 0-300 PPM, EC.

* + - * 1. Carbon Monoxide (CO) and Nitrogen Dioxide (NO2).

AMC-UTx-M-VCA01-N-R-0400 (CO) 0-100 PPM, (NO2) 0-10 PPM, EC.

AMC-UTx-M-91B01-98A01-R-0400 (CO) 0-300 PPM, (NO2) 0-10 PPM, EC.

* + - * 1. Nitrogen Dioxide (NO2)

AMC-UTx-M-98A01-N-R-0400 (NO2) 0-10ppm

* + - * 1. Oxygen (O2)

AMC-UTx-M-70A01-N-R-0400 (O2) 0-25% vol.

* + - 1. Expected Sensor Life: Up to 6 years (CO), up to 3 years (NO2), 2 years (O2). End-of-life notification.
			2. Sensor Calibration: Recommended recalibration every 6 months, or more frequently as required
				1. Patent pending ADAPTiCal™ algorithm ensures safe, reliable and rapid calibrations optimized for the unique operating conditions of each sensor.
				2. The integral sensor module(s) are easily changed, and are eligible for the EZ Cal™ service program, allowing sensor maintenance to be a simple swap-out
			3. Intelligent sensors transfer sensor information to transmitter including sensor type, measurement range, calibration span values, last calibration date, serial number, sensor life and manufacture date.
			4. Housing: Grey Polycarbonate Enclosure (LxWxH): 5.45 x 4.64 x 2.35 inch (138 x 118 x 60 mm)
			5. Power Supply: 12-24 VDC, 40mA.
			6. Temperature Range: -4 to +104 degrees F (-20 to 40 degrees C).
			7. Humidity Range: 15-90 percent RH Non-condensing.
			8. Atmospheric Pressure: 0.9 to 1.1 atm.
			9. Weight: 1.0 lbs. (0.45 kg) max.
			10. Display: OLED Display (8 lines x 20 characters).
				1. Displays gas values, units of measurement, system configuration options and alarm levels.
				2. Three button user interfaces to view or change system configuration parameters
			11. Front Panel Indicators: 3 LEDs
				1. Sensor; indicates status of the Sensor Module or highest error level if multiple errors are reported.
				2. Network; indicates status of Modbus interface.
				3. Sensor Module; indicates status of sensor element or module.
			12. Relay
				1. SPDT, 2A @ 30VDC, resistive.
			13. Serial Interface
				1. RS-485 RTU addressable interface MODBUS RTU over RS-485 9600 Baud, 8bit Even Parity
			14. Connecting Terminals
				1. Wire Range, Signal: 22 AWG to 20 AWG (0.33-0.5 sq.mm.); The cable characteristics required are an impedance of 120 ohms and a low capacitance: ≈ 13pf/ft conductor to conductor and ≈ 23pf/ft conductor to shield.
				2. Wire Range, Power: 18 AWG to 16 AWG (0.82-1.3 sq.mm.);
				3. Strip Length: 0.35 in. (9 mm)
			15. Accessories
				1. AMC-WS00-SL Weathershield
				2. AMC-VG-XL Vandal Guard Universal fit
				3. 3473501-6 Pole Mounting Bracket (included with each transmitter)
				4. AMC-C1-FM1 Calibration Kit
				5. AMC-FM1 Calibration Adaptor (included with Calibration Kit or can be ordered separately)
		1. Basis of Design: Model AMC-400 Transmitter as manufactured by Armstrong Monitoring.
			1. Fixed gas detector for single or dual sensor applications.
			2. Recommended Mounting Height: 4-5 ft. (1.2 – 1.5m) A.F.F
			3. Coverage Area: up to 7500 sq. ft. (700 sq. m.); 50 ft (15m) radius
			4. Gas Options:
				1. Carbon Monoxide (CO).

AMC-400-CO (CO) 0-100 PPM, EC.

AMC-400-CO-HC (CO) 0-200 PPM, EC.

* + - * 1. Nitrogen Dioxide (NO2)

AMC-400-NO2 (NO2) 0-10ppm

* + - * 1. Hydrogen (H2)

AMC-400-H2 (H2) 0-100% LEL

* + - * 1. Methane (CH4)

AMC-400-CH4 (CH4) 0-100% LEL

* + - * 1. Propane (C3H8)

AMC-400-C3H8 (C3H8) 0-100% LEL

* + - 1. Expected Sensor Life: Up to 6 years (CO) or up to 3 years (NO2).
			2. Sensor Calibration: Recommended recalibration every 6 months.
			3. Housing: Grey Polycarbonate Enclosure (LxWxH): 5.45 x 4.64 x 2.35 inch (138 x 118 x 60 mm)
			4. Power Supply: 12-24 VDC, 40mA.
			5. Temperature Range: -4 to 104 degrees F (-20 to 40 degrees C).
			6. Humidity Range: 15-90 percent RH Non-condensing.
			7. Atmospheric Pressure: 0.9 to 1.1 atm.
			8. Weight: 0.8 lbs. (0.36 kg) max.
			9. Display: LCD Display (3 characters).
				1. Displays gas concentration and status information
				2. Momentary On/Off Pushbutton User Interface for Configuration
			10. Front Panel Indicators: 3 LEDs
				1. Transmitter Status; indicates status of the transmitter.
				2. Sensor; indicates status of sensor.
			11. Serial Interface
				1. RS-485 RTU addressable interface MODBUS RTU over RS-485 9600 Baud, 8bit Even Parity
			12. Connecting Terminals
				1. Wire Range, Signal: 22 AWG to 20 AWG (0.33-0.5 sq.mm.); The cable characteristics required are an impedance of 120 ohms and a low capacitance: ≈ 13pf/ft conductor to conductor and ≈ 23pf/ft conductor to shield.
				2. Wire Range, Power: 18 AWG to 16 AWG (0.82-1.3 sq.mm.);
				3. Strip Length: 0.35 in. (9 mm)
			13. Accessories
				1. AMC-WS00-SL Weathershield
				2. AMC-VG-XL Vandal Guard Universal fit
				3. 3473501-6 Pole Mounting Bracket (included with each transmitter)
				4. AMC-C1-FK1 CO Cal Kit (use for all non-reactive gases)
				5. AMC-C1-FK2 NO2 Cal Kit (use for reactive gases)
			14. Replacement Sensors
				1. AMC-91JGF Electrochemical CO Smart Sensor
				2. AMC-98JEC Electrochemical NO2 Smart Sensor
		1. Basis of Design: Model AMC-DTR Non-Intrusive Digital Transmitter as manufactured by Armstrong Monitoring.
			1. Fixed gas detector for single or dual sensor applications with use of optional Dual Sensor Flange.
			2. Recommended Mounting Height: Based on gas type. Lighter than air gases should have the monitors mounted 12 – 18 inches (30 – 45 centimeters) above the potential gas leak and heavier than air gases should be this distance below.
			3. Coverage Area: up to 7500 sq. ft. (700 sq. m.); 50 ft (15m) radius
			4. Order Codes
				1. AMC-DTR-CAT: Digital Transmitter for Single EC/Cat/IR Input
				2. AMC-DTR-DS: Digital Transmitter for Dual Sensor Input
				3. Dual Sensor Input must include one EC sensor and one of Cat/IR/4-20mA
				4. AMC-DTR-IS: Digital Transmitter for Use in 2 wire Loop Mode
				5. AMC-DTR-TRX: Digital Transmitter for Use with 4-20mA Transmitter Input
			5. Options
				1. AMC-DTR-10-0234: Modbus® RTU/Relay Output
				2. AMC-DTR-10-0250: Isolated 4-20 mA Output
				3. AMC-DTR-0010-1200 Explosion-Proof Dual Sensor Flange
				4. AMC-DTR-10-0233ARC Thermostatic Heater Option
			6. Gas Options:
				1. The AMC-DTR supports all AMC-ESA based Sensor Housing options.
			7. Certifications
				1. CSA certified Canadian and US Markets for Division 1 & 2 hazardous area installations for explosion proof Class 1 Groups B,C,D
				2. Certified for Class 1 Groups A,B,C,D. (excluding Relay/Modbus variant)
				3. Designed to meet CSA C22.2 No.152 for Combustibles Monitors and ISA 92.0.01 Part 1 for Toxic Monitors.
			8. Housing: Blue cast aluminum explosion-proof (NEMA 7) enclosure
				1. (LxWxH): 5.71 x 5.0 x 5.0 inch (145 x 127 x 127 mm)
				2. Note enclosure dimensions do not include Sensor Housing
			9. Power Supply: 10-30 VDC.
			10. Power Consumption:
				1. Catalytic Combustible Sensors (requires DTR-10-0233 I/O Power Supply and 3-wire operation): 100 mA @ nominal 24 VDC
				2. Toxic/Oxygen Sensors without Relays / Modbus Option (2-wire 4-20mA operation): 25 mA @ nominal 24 VDC.
				3. Relays / RS-485 Modbus Option Board (requires DTR-10-0233 I/O Power Supply and 3-wire operation): 40 mA per relay (120 mA total with all 3 energized); RS-485 use adds 20mA
			11. Temperature Range: -40 to 140 degrees F (-40 to 60 degrees C).
				1. Range may be limited based on temperature range of Sensor.
			12. Humidity Range: 15-90 percent RH Non-condensing.
			13. Atmospheric Pressure: 0.9 to 1.1 atm.
			14. Weight:
				1. Transmitter: 4 lbs. (1.8 kg) max.
				2. Dual Sensor Flange: 1.2 lbs. (0.55 kg) max.
				3. Transmitter: 1 lbs. (0.45 kg) max.
			15. Display: Backlit 64 x 128px LCD.
				1. Displays LED Alarm Status and 30 minute Bar Graph
			16. Analog Interface
				1. Supports 2-Wire and 3-Wire 4-20mA outputs depending upon installed options.
			17. Digital Interface
				1. Optional with installation of AMC-DTR-10-0234 Module
				2. RS-485 RTU addressable interface MODBUS RTU over RS-485 9600 Baud, 8bit Even Parity
			18. Relay
				1. Optional with Installation of AMC-DTR-10-0234 Module
				2. 3xSPDT 5A @ 250VAC Res.

Low Level Alarm

High Level Alarm

Fault

* 1. MODULAR BOXES
		1. Basis of Design: Model AMC-1DMB–RL 8CH Relay Module as manufactured by Armstrong Monitoring.
			1. Each AMC-1DMB-RL provides an additional eight DPDT relay interfaces that are controlled over the AMC-1DBX Control Panel Modbus interface.
			2. Certifications:
				1. CSA Listed for Canada and USA.
			3. Housing: 16-gauge steel (LxWxH): 12 x 12.25 x 6.875 inch (305 x 311 x 175 mm).
				1. Grey powder coating
				2. Degree of Protection: NEMA 1.
				3. Latchable with hinged door.
				4. Knockouts: 3x 1.375/1.125-inch diameter and 3x 1.125/0.875-inch diameter on bottom surface
				5. Mounting flanges extend 0.8 inches top and bottom
			4. Power Supply:
				1. DC: 24VDC Input, +/- 10%, 450mA (with all relays energized)
			5. Serial Interface
				1. RS-485 RTU addressable interface MODBUS RTU over RS-485 9600 Baud, 8bit Even Parity
			6. Temperature Range:
				1. 14 to 122 degrees F (-10 to 50 degrees C).
			7. Humidity Range:
				1. 0-95 percent RH Non-condensing.
			8. Atmospheric Pressure: 0.9 to 1.1 atm.
			9. Connecting Terminals
				1. Wire Range, Power and Signal: 22 AWG to 12 AWG (0.2-2.5 sq.mm.);
				2. Wire Range, Ground: 22 AWG to 10 AWG (0.2-4 sq.mm.
				3. Strip Length: 0.3 in. (8 mm)
				4. Torque: 7 lb.-in. (0.4 Nm)
			10. Weight: 11.6 lbs. (5.26 kg) max.
		2. Basis of Design: Model AMC-1DPS-7A Power Supply as manufactured by Armstrong Monitoring.
			1. Each AMC-1DPS-7A provides up to an additional 7 amps of 24VDC power to provide power to devices within the network.
			2. Certifications:
				1. CSA Listed for Canada and USA.
			3. Housing: 16-gauge steel (LxWxH): 12 x 12.25 x 6.875 inch (305 x 311 x 175 mm).
				1. Grey powder coating
				2. Degree of Protection: NEMA 1.
				3. Latchable with hinged door.
				4. Knockouts: 3x 1.375/1.125-inch diameter and 3x 1.125/0.875-inch diameter on bottom surface
				5. Mounting flanges extend 0.8 inches top and bottom
			4. Power Supply:
				1. Input: 120VAC, 60 Hz, 5.3A
				2. Output: DC: 24VDC, 10A
			5. Fuses:
				1. 5x20mm 4A Input
				2. 5x20mm 10A Output
			6. Temperature Range:
				1. 14 to 122 degrees F (-10 to 50 degrees C).
			7. Humidity Range:
				1. 0-90 percent RH Non-condensing.
			8. Atmospheric Pressure: 0.9 to 1.1 atm.
			9. Connecting Terminals
				1. Wire Range, Power and Signal: 22 AWG to 12 AWG (0.2-2.5 sq.mm.);
				2. Wire Range, Ground: 22 AWG to 10 AWG (0.2-4 sq.mm.
				3. Strip Length: 0.3 in. (8 mm)
				4. Torque: 7 lb-in. (0.4 Nm)
			10. Weight: 11.6 lbs. (5.26 kg) max.
		3. Basis of Design: Model AMC-1DMB-AI Modular Box as manufactured by Armstrong Monitoring.
			1. Each AMC-1DMB-AI provides eight channels of 0-20mA Analog Inputs that can be communicated to the AMC-1DBX Control Panel over the RS-485 Modbus Interface.
			2. Certifications:
				1. CSA Listed for Canada and USA.
			3. Housing: 16-gauge steel (LxWxH): 12 x 12.25 x 6.875 inch (305 x 311 x 175 mm).
				1. Grey powder coating
				2. Degree of Protection: NEMA 1.
				3. Latchable with hinged door.
				4. Knockouts: 3x 1.375/1.125-inch diameter and 3x 1.125/0.875-inch diameter on bottom surface
				5. Mounting flanges extend 0.8 inches top and bottom
			4. Power Supply:
				1. DC: 12-24VDC Input, 250mA
			5. Serial Interface
				1. RS-485 RTU addressable interface MODBUS RTU over RS-485 9600 Baud, 8bit Even Parity.
			6. Analog Inputs (AMC-1DMB-AI only):
				1. Eight channels 0 to 20 mA.
			7. Temperature Range:
				1. 14 to 122 degrees F (-10 to 50 degrees C).
			8. Humidity Range:
				1. 0-90 percent RH Non-condensing.
			9. Atmospheric Pressure: 0.9 to 1.1 atm.
			10. Connecting Terminals
				1. Wire Range, Power and Signal: 22 AWG to 12 AWG (0.2-2.5 sq.mm.);
				2. Wire Range, Ground: 22 AWG to 10 AWG (0.2-4 sq.mm.
				3. Strip Length: 0.3 in. (8 mm)
				4. Torque: 7 lb.-in. (0.4 Nm)
			11. Weight: 11.6 lbs. (5.26 kg) max.
		4. Basis of Design: Model AMC-1DMB-RL-AO Modular Box as manufactured by Armstrong Monitoring.
			1. Each AMC-1DMB-RL-AO provides eight DPDT relay interfaces and eight channels of 0-20mA Analog Outputs controlled by the AMC-1DBX Control Panel over the Modbus Interface.
			2. Certifications:
				1. CSA Listed for Canada and USA.
			3. Housing: 16-gauge steel (LxWxH): 12 x 12.25 x 6.875 inch (305 x 311 x 175 mm).
				1. Grey powder coating
				2. Degree of Protection: NEMA 1.
				3. Latchable with hinged door.
				4. Knockouts: 3x 1.375/1.125-inch diameter and 3x 1.125/0.875-inch diameter on bottom surface
				5. Mounting flanges extend 0.8 inches top and bottom
			4. Power Supply:
				1. DC: 24VDC Input, +/- 10%, 700mA (with all relays energized)
			5. Serial Interface
				1. RS-485 RTU addressable interface MODBUS RTU over RS-485 9600 Baud, 8bit Even Parity
			6. Analog Outputs (AMC-1DBM-RL-AO only):
				1. Eight channels of 0 to 20 mA
			7. Relays:
				1. Eight DPDT 10A @ 240 VAC Res
			8. Temperature Range:
				1. 14 to 122 degrees F (-10 to 50 degrees C).
			9. Humidity Range:
				1. 0-90 percent RH Non-condensing.
			10. Atmospheric Pressure: 0.9 to 1.1 atm.
			11. Connecting Terminals
				1. Wire Range, Power and Signal: 22 AWG to 12 AWG (0.2-2.5 sq.mm.);
				2. Wire Range, Ground: 22 AWG to 10 AWG (0.2-4 sq.mm.
				3. Strip Length: 0.3 in. (8 mm)
				4. Torque: 7 lb.-in. (0.4 Nm)
			12. Weight: 11.6 lbs. (5.26 kg) max.
	2. REMOTE ALARM MODULES
		1. Basis of Design: Model AMC-RAM-3 Remote Alarm Monitor as manufactured by Armstrong Monitoring.
			1. Designed to offer remote audio/visual signaling of alarms, in conjunction with any of Armstrong Monitoring's monitor systems, the AMC-RAM-3 is perfect for mechanical rooms, confined spaces, or general remote alarming requirements.
			2. Recommended Mounting Height: 4-5 ft. (1.2 – 1.5m) A.F.F
			3. Housing: Polypropylene (LxWxH): 11.75 x 9.98 x 5.46 inch (299 x 253 x 139 mm).
				1. Degree of Protection: NEMA 4X
			4. Power Supply: 12-24 VDC, 275mA with strobe and buzzer operating.
			5. Indicators:
				1. Red Strobe Light, 90 strobes/minute
				2. Buzzer 85 dBa at (610 mm), 2.9 kHz piezoelectric element.
			6. Audio Alarm Acknowledge switch silences alarm, but visual alarm continues until gas clears
			7. Temperature Range:
				1. Operating: -40 to 140 degrees F (-40 to 50 degrees C).
				2. Storage: -40 to 167 degrees F (-40 to 70 degrees C).
			8. Humidity Range: 0-99 percent RH Non-condensing.
			9. Atmospheric Pressure: 0.9 to 1.1 atm.
			10. Connecting Terminals, Power
				1. Wire Range: 22 AWG to 16 AWG (0.2-1.5 sq.mm.);
				2. Ring Terminal for #6 stud.
				3. Torque: 7 lb.-in. (0.4 Nm)
			11. Connecting Terminal, Ground:
				1. Wire Range, Ground: 14 AWG to 2 AWG (2.08-33.6 sq.mm.)
				2. Strip Length: 0.47 in. (11.9 mm)
				3. Torque: 12 lb.-in. (1.3 Nm)
			12. Weight: 3.3 lbs. (1.7 kg).
1. EXECUTION
	1. EXAMINATION
		1. Do not begin installation until substrates have been properly constructed and prepared.
		2. If substrate preparation is the responsibility of another installer, notify Architect in writing of unsatisfactory preparation before proceeding.
	2. PREPARATION
		1. Clean surfaces thoroughly prior to installation.
		2. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
	3. INSTALLATION
		1. Install in accordance with manufacturer's instructions, approved submittals, and in proper relationship with adjacent construction.
	4. FIELD QUALITY CONTROL
		1. Field Inspection: Coordinate field inspection in accordance with appropriate sections in Division 01.
		2. Manufacturer's Services: Coordinate manufacturer's services in accordance with appropriate sections in Division 01.
	5. CLEANING AND PROTECTION
		1. Clean products in accordance with the manufacturer’s recommendations.
		2. Touch-up, repair or replace damaged products before Substantial Completion.

END OF SECTION