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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-UTx-M-B Transmitter.
	2. RELATED SECTIONS
		1. Division 16 - Electrical.
	3. REFERENCES
		1. BACnet International:
			1. BTL Certification.
	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-UTx-B 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-B-91A01-N-R-0400 (CO) 0-100 PPM, EC.

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

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

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

AMC-UTx-B-VCB01-N-R-0400 (CO) 0-300 PPM, (NO2) 0-10 PPM, EC.

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

* + - * 1. Nitrogen Dioxide (NO2)

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

* + - 1. Expected Sensor Life: Up to 6 years (CO) or up to 3 years (NO2). End-of-life notification.
			2. Sensor Calibration: Recommended recalibration every6 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 BACnet MSTP

Baud Rate: 9600 (default), 19200, 38400, 57600, 76800,115200

Device ID: 677100

MAC Address: 100

Parity: No parity

Stop bits: 1

Data bits: 8

* + - 1. 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)
			2. Accessories
				1. AMC-WS00-SL Weathershield
				2. AMC-VG-XL Vandal Guard Universal fit
				3. 3473501-6 Pole Mounting Bracket
				4. AMC-C1-FM1 Calibration Kit
				5. AMC-FM1 Calibration Adaptor (included with Calibration Kit or can be ordered separately)
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