

## Ultima® X Series Gas Monitors – ATO Order Form

A-ULTIMA X-XP													
	①	②	③	④	⑤	⑥	⑦	⑧	⑨	⑩	⑪	⑫	⑬

**1 Model**  
 E = Explosion proof, with display  
 L = Explosion proof, no display  
     Catalytic & Electrochemical  
     Infrared  
*Note: Subtract \$100 if no sensor selected*  
 J = X series junction box (No electronics)

**2 Gas Code –see list for gas type**  
*NOTE: The following codes are to be used when ordering an enclosure and PCBA without a sensor and sensor body. Please see gas type list when ordering a complete unit or a sensor and sensor body.*  
 01 = “Standard” toxics and oxygen  
 02 = Catalytic  
 03 = IR Combustible (*Please specify gas of interest*)  
 04 = “Reactive” toxics (Cl<sub>2</sub>, HCl, ClO<sub>2</sub>, NH<sub>3</sub>, HF, EtO)  
 05 = IR CO<sub>2</sub>  
 Note: If ② = IR, ④ ≠ 0.  
 For XIR sensors use A-ULTX-SENS

**3 Configuration**  
 • A = ATEX w/metric threads  
 • B = ATEX w/NPT threads  
 \* C = CSA approval w/NPT threads  
 > F = FM approval (cFM<sub>us</sub>) w/NPT threads  
 + U = UL approval w/NPT threads  
 • I = IEC approval w/metric threads

**4 Sensor Output**  
 0 = No PCBA. Note ⑤ must = N)  
 1 = 2-Wire mA output  
 2 = 2-Wire (mA + HART) output  
 3 = 3-Wire mA output  
 4 = 3-Wire (mA + HART) output  
 Note: If ② = IR, ④ ≠ 0.  
 For XIR sensors use A-ULT-SENS

**5 Sensor Mounting Style**  
 S = Sensor mounted on control unit  
 D = Sensor mounted on remote housing  
 N = No conduit (choose for sensor/sensor body only)

**6 Relays and LEDs**  
 0 = No relays and no LEDs (*Required if 2-wire*)  
     Not permitted if ④ = 4  
 1 = LEDs, no relays (*Required if Model = L*) 3-wire  
 2 = Relays and LEDs 3-wire

**7 Display Language/Features**  
 0 = English  
 S = Spanish  
 H = English with custom horn software

**8 Optional Power Supply**  
 0 = None  
 1 = 12 VDC Internal  
 2 = 24 VDC Internal  
 3 = 12 VDC External (Bracket not included)  
 4 = 24 VDC External (Bracket not included)  
*NOTE: Power supplies not available for ATEX or IEC – matrix 8*

**9 Gas Sample Selection**  
 0 = None – Standard diffusion method  
 1 = Flow cap assembly  
     XE  
     XIR

**10 Integrated Accessories**  
 0 = None  
 1 = XP HART port  
     (requires cable P/N 10081441 FM)  
 2 = Reset/Cal switch – approved for Div. 1, Gr.  
     B-D only  
 3 = Both XP HART port and Reset/Cal switch (UL)  
*Note: option 3 requires use of a HART module*

**11 Installation Hardware**  
 0 = None  
 1 = Brackets  
 2 = Duct Mount Kit  
 3 = Brackets + Duct Mount Kit

**12 Manuals – alternate quantities can be ordered separately**  
 0 = Standard  
 1 = Hardcopy + CD

**13 Custom Features**  
 0 = None  
 C = Custom operation necessary  
 T = Custom Tagging, SS  
 TC = Custom Tagging/Custom operations necessary  
 CC = Certificate of calibration request



**Sensor Selection Table**

0	None
11	Carbon Monoxide 0-100 PPM
12	Carbon Monoxide 0-500 PPM
= 13	Oxygen 0- 10%
= 14	Oxygen 0-25%
15	Hydrogen Sulfide 0-10 PPM
16	Hydrogen Sulfide 0-50 PPM
17	Hydrogen Sulfide 0-100 PPM
“ ~ 18	Chlorine 0-5 PPM
20	Nitric Oxide 0-100 PPM
22	Hydrogen Cyanide 0-50 PPM
“ ~ 23	Hydrogen Chloride 0-50 PPM
“ ~ 24	Chlorine Dioxide 0-3 PPM



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25 Hydrogen Sulfide 0-500PPM Butanol (n) Ethyl Benzene Methyl Methacrylate

- “ ~ 28 Chlorine 0-10 PPM
- 31 Combustible gas 0-100% LEL - Natural Gas & H<sub>2</sub>
- 32 Combustible gas 0-100% LEL – Petroleum Vapors
- 33 Combustible gas 0-100% LEL – Solvents
- N } ^ 34 Acetylene IR (0-100% LEL) A07 – UL/ATEX ONLY
- N } ” 35 Carbon Dioxide IR 0-0.5%
- ” } 36 Carbon Dioxide IR 0-2%
- N } ” 37 Carbon Dioxide IR 0-5%
- N \* \* 38 IR combustible 0-100% LEL- Methane
- \* \* 39 IR combustible 0-100% LEL – Propane
- 41 Phosphine 0-2 PPM
- 42 Arsine 0-2 PPM
- 43 Silane 0-25 PPM
- “ ~ 45 Diborane 0-50 PPM
- “ ~ 46 Bromine 0-5 PPM
- “ ~ 47 Fluorine 0-10 PPM
- “ ~ 48 Ammonia 0–100 PPM
- 49 Hydrogen 0-1000 PPM
- “ ~ 50 Ethylene Oxide 0-10 PPM
- 51 Comb. Gas 0-100% LEL - ATEX - 4.4% CH<sub>4</sub>  
Natural Gas and H<sub>2</sub>
- 52 Comb. Gas 0-100% LEL - ATEX - 1.7% Propane  
Petroleum Vapors
- 53 Comb. Gas 0-100% LEL - ATEX - 1.7% 1.7% Propane  
Solvents
- “ ~ 54 Ammonia 0-1000 PPM
- + \* } ” x 55 Solvent Tolerant O<sub>2</sub>
- 57 Carbon Monoxide 0-1000 PPM
- N 58 Comb Gas IR – Methane 0-100% LEL –  
ATEX - 4.4% CH<sub>4</sub>
- N 59 Comb Gas IR - Non Methane 0-100% LEL – ATEX  
1.7% Propane
- “ ~ 61 Chlorine 0-20 PPM
- } ” x 62 Solvent & CO<sub>2</sub> Tolerant Oxygen (0 -25%)
- } ” x 63 Low oxygen (0 -25%)
- + \* } ” x 64 Low solvent tolerant oxygen (0 -25%)
- ~ 70 Sulfur Dioxide 0-25 PPM
- ~ 71 Sulfur Dioxide 0-100 PPM
- ~ 72 Nitrogen Dioxide 0-10 PPM

**Selection Guide for Ultima X Combustible (Catalytic)**

**CATEGORY 31: NATURAL GAS & H<sub>2</sub>**

Span is set at 25% LEL with 0.6% Propane

Acetaldehyde	Ethylene	Methanol
Acetylene	Ethylene Dichloride	Methylene Chloride
Butadiene, 1, 3	Hydrogen	Monomethyl Amine
Carbon Monoxide	MAPP Gas	Trigonox B
Ethane	Methane	

**CATEGORY 32: PETROLEUM VAPORS**

Span is set at 40% LEL with 0.6% Propane

1, 1, 1-Trichloroethane	Cyclohexane	Pentane (n)
Acetic Acid	Dimethoxyethane	Pentane (iso)
Acetone	Dioxane, 1, 4	Pentene
Acrolein	Epichlorhydrin	Propane
Acrylonitrile	Ethanol	Propanol (n)
Allyl chloride	Ether, Diethyl	Propanol (iso)
Benzene	Ether, Dimethyl	Propylene
Butane (n)	Ethylene Oxide	Propylene Oxide
Butane (iso)	Freon 152 <sup>o</sup>	Tetrahydrofuran
Butanol (iso)	Gasoline	Toluene
Butene – 1	Hexane	Trichloroethylene
Butene - 2	Isoprene	Triethylamine
Butyl Acetate (n)	Methyl Acetate	Vinyl Acetate
Butylene	Methyl Chloride	Vinyl Chloride
Butyraldehyde	Methyl Propene (2)	
Chlorobenzene	Methyl t-Butyl Ether	

**CATEGORY 33: GENERAL SOLVENTS**

Span is set at 55% LEL with 0.6% Propane

Amyl alcohol	Ethyl Acrylate	Methyl. Iso. Ket.
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Butyl Acrylate	Heptane	Naphtha, VM&P
Cellosolve	Hexene	Octane (iso)
Di isopropylamine	JP - 4	Propyl Acetate
Diethylamine	Methyl Cellosolve	Styrene
Ethyl Acetate	Methyl Ethyl Ketone	Xylene

If application includes gases in more than one category, specify highest number category.

**GUIDE FOR ULTIMA XIR COMBUSTIBLE**

**CATEGORY 38: Methane Calibration**

	Controller Code	Cal Cylinder	Cylinder P/N	Cal Span Value
Methane	1	2.5% Methane	10028032	50% LEL

**CATEGORY 39: Non-Methane Calibration**

	Controller Code	Cal Cylinder	Cylinder P/N	Cal Span Value
Propane	2	0.6% Propane	10028034	29% LEL
Ethane	3	0.6% Propane	10028034	25% LEL
Butane	4	0.6% Propane	10028034	28% LEL
Pentane	5	0.6% Propane	10028034	33% LEL
Hexane	6	0.6% Propane	10028034	41% LEL
Cyclopentane	7	0.6% Propane	10028034	30% LEL
Ethylene	8	0.1% Propane	711054	28% LEL

For sensing multiple gases always calibrate for the least sensitive gas or vapor expected to be measured (highest response factor within category).

All other combustible gas span values available upon request.

Gas Type	Range	MSA RP Cylinder P/N	Adder
Methanol	0-500 ppm	10027938	305
H <sub>2</sub> S	0-1000 ppm	10089547	305
NH <sub>3</sub>	0-50%	10028034	565
Methane	0-10% by volume	10028031	840
Methane	0-50% by Volume	10075804	840
Methane	0-50% by volume	10075805	840
Propane	2% by Volume	10028034	840
Propane	0-5%	10028035	840

*NOTE: To order for Ultima XP, choose “C” for option 13 and specify Gas Type. Call Factory for other custom Gas options. Approvals must = “UL”*

**Key:**

- + UL approved, Class I, Div 1 & 2, Groups A, B, C, D; Class II, Div. 1, Groups E, F, G for IR, Groups F, G for E-chem and catalytic; Class III
- > FM approved Class I, Div. 1 & 2, Groups A, B, C, D for oxygen, catalytic and IR
- \* CSA approved Class I, Div. 1, Groups A, B, C & D for E-chem and catalytic, Groups B, C & D for IR
- \*\* \$530 for Ultima XL only
- ATEX or IEC approved Ex d IIC T4, IP66
- ^ Available as custom product only
- x XP Stainless Steel only
- X<sup>3</sup>IR must have conulet
- ~ Available with intrinsically safe barrier and ATEX approval or UL Div 2 approval
- “ Not available as XL model
- } Not available as XT model
- N Not available on XPL
- = Not to be used in Helium or Argon backgrounds. Use #62 in its place