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

### 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)

### 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.

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>“Standard” toxics and oxygen</td>
</tr>
<tr>
<td>02</td>
<td>Catalytic</td>
</tr>
<tr>
<td>03</td>
<td>IR Combustible (Please specify gas of interest)</td>
</tr>
<tr>
<td>04</td>
<td>“Reactive” toxics (Cl₂, HCl, ClO₂, NH₃, HF, EtO)</td>
</tr>
<tr>
<td>05</td>
<td>IR CO₂</td>
</tr>
</tbody>
</table>

Note: If **₂** = IR, **₄** ≠ 0.

For XIR sensors use A-ULTX-SENS

### Configuration
- **A** = ATEX w/metric threads
- **B** = ATEX w/NPT threads
- **C** = CSA approval w/NPT threads
- **F** = FM approval (cFMus) w/NPT threads
- **U** = UL approval w/NPT threads
- **I** = IEC approval w/metric threads

### 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-ULTX-SENS

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

### Relays and LEDs
- **0** = No relays and no LEDs (Required if 2-wire)
- **1** = LEDs, no relays (required if Model = L) 3-wire
- **2** = Relays and LEDs 3-wire

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

### 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

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

### 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

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

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

### 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

<table>
<thead>
<tr>
<th>Code</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>None</td>
</tr>
<tr>
<td>11</td>
<td>Carbon Monoxide 0-100 PPM</td>
</tr>
<tr>
<td>12</td>
<td>Carbon Monoxide 0-500 PPM</td>
</tr>
<tr>
<td>13</td>
<td>Oxygen 0-10%</td>
</tr>
<tr>
<td>14</td>
<td>Oxygen 0-25%</td>
</tr>
<tr>
<td>15</td>
<td>Hydrogen Sulfide 0-10 PPM</td>
</tr>
<tr>
<td>16</td>
<td>Hydrogen Sulfide 0-50 PPM</td>
</tr>
<tr>
<td>17</td>
<td>Hydrogen Sulfide 0-100 PPM</td>
</tr>
<tr>
<td>18</td>
<td>Chlorine 0-5 PPM</td>
</tr>
<tr>
<td>20</td>
<td>Nitric Oxide 0-100 PPM</td>
</tr>
<tr>
<td>22</td>
<td>Hydrogen Cyanide 0-50 PPM</td>
</tr>
<tr>
<td>23</td>
<td>Hydrogen Chloride 0-50 PPM</td>
</tr>
<tr>
<td>24</td>
<td>Chlorine Dioxide 0-3 PPM</td>
</tr>
</tbody>
</table>
Mine Safety Appliances Company  •  100 Cranberry Woods Dr.  •  Cranberry Twp., PA 16066

Hydrogen Sulfide 0-500PPM

Butyl Acrylate  Heptane  Naphtha, VM&P
Cellulose  Hexene  Octane (iso)
Di isopropylamine  JP - 4  Propyl Acetate
Diethylamine  Methyl Celloseol  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

CATEGOR Y 38: Methane Calibration

<table>
<thead>
<tr>
<th>Controller Code</th>
<th>Cal Cylinder</th>
<th>P/N</th>
<th>Span Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methane 1</td>
<td>2.5% Methane</td>
<td>10028032</td>
<td>50% LEL</td>
</tr>
</tbody>
</table>

CATEGOR Y 39: Non-Methane Calibration

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

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.

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”.

Gas Type  Range  MSA RP Cylinder  Adder

<table>
<thead>
<tr>
<th>MSA RP Cylinder</th>
<th>Adder</th>
</tr>
</thead>
<tbody>
<tr>
<td>Methanol 0-500 ppm</td>
<td>305</td>
</tr>
<tr>
<td>H2S 0-1000 ppm</td>
<td>10089547</td>
</tr>
<tr>
<td>NH3 0-50%</td>
<td>10028034</td>
</tr>
<tr>
<td>Methane 0-10% by volume</td>
<td>10028031</td>
</tr>
<tr>
<td>Methane 0-50% by volume</td>
<td>10075804</td>
</tr>
<tr>
<td>Methane 0-50% by volume</td>
<td>10075805</td>
</tr>
<tr>
<td>Propane 2% by Volume</td>
<td>10028034</td>
</tr>
<tr>
<td>Propane 0-5%</td>
<td>10028035</td>
</tr>
</tbody>
</table>

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
XP Stainless Steel only
X'IR must have conduit
Available with intrinsically safe barrier and ATEX approval or UL Div 2 approval
Not available as XL model
Not available as XT model
Not available on XPL
Not to be used in Helium or Argon backgrounds.
Use #62 in its place