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CERTIFICATE OF COMPLIANCE

HAZARDOUS (CLASSIFIED) LOCATION ELECTRICAL EQUIPMENT

This certificate is issued for the following equipment:

COMBUSTIBLE GAS DETECTORS, Fixed

Stationary Single Channel 4-20 mA Combustible Gas Detector. The Ultima X Gas Detector consists of an Ultima X Control Unit and an Ultima XE Detector Head or Ultima XIR Detector Head. There are two variations of the Ultima X Control Unit, Ultima XE Main (with Display) and Ultima XL (without Display). The Ultima XE Main and Ultima XL Control Unit have an optional XP Port with I.S. barrier for HART communication. The Control Units are also provided with an optional HART Module. The Ultima XE Main Control Unit optional XP Port with I.S. barrier is either integral to the Control Unit or remote to the Control Unit. The XP Port with I.S. barrier provides intrinsically safe connections. The XP Port with I.S. barrier provides a lead seal for the explosion proof enclosure permitting the user to interface with the control unit while powered and functioning.

The Ultima XE Sensor is a Catalytic Combustible Gas Sensor. The Ultima XIR Sensor is an Infrared Combustible Gas Sensor. The Sensors mount remotely or integrally via a ¾ NPT or M25 connection to the Control Unit. The Control Unit communicates to the Sensors via a proprietary protocol. The Sensors may be remotely connected up to 100 ft away from the Control Unit. All configurations of the systems are suitable for installation in Class I, Division 1, Groups A, B, C, and D Hazardous (Classified) Locations, indoor and outdoor (Type 4X / IP66) and have intrinsically safe connections to Class I, Division 1, Groups A, B, C, and D Hazardous (Classified) Locations in accordance with Entity requirements and Control Drawing SK3098-1057 when installed with the intrinsically safe barrier. All configurations of the systems are also Nonincendive with Nonincendive Field Wiring for installation in Class I, Division 2, Groups A, B, C and D Hazardous (Classified) Locations when installed per control drawing SK3098-1108. The Ultima XE Sensor and Ultima XIR Sensor may be connected to any junction box with an internal volume of less than 40.04 cubic inches which has been identified, as defined within the National Electrical Code, for its intended area of installation. The Ultima XE Sensor and Ultima XIR Sensor monitor 0-100% LEL methane or propane gas-in-air atmospheres.

The Ultima XE Main Control Units provide the following: a two-digit measurement display with infrared control functions and alarm indication, a 4-20mA measurement signal with optional HART communication, an optional XP Port with I.S. barrier, optional LEDs which indicate alarm and trouble

conditions and optional relay contacts; 1 for trouble and 3 for alarm set points. The electrical ratings for the entire system, DC input, are 8-30VDC 10 watts maximum. The electrical ratings for the entire system, AC input, are 110-240VAC, 50/60 Hz, 15 watts maximum. The relay contact ratings are 5A at 250VAC or 30VDC. The Ultima XL Control Units provide the following: a 4-20mA measurement signal with HART mmunication, an optional XP Port with I.S. barrier, an LED which indicates alarm and trouble conditions. The operating temperature range of the system is -40°C to +60°C and the electrical ratings for the entire system is 8-30VDC 600mA maximum. The non I.S. connections on the HART Module are 30VDC max, 1 amp. In addition, the apparatus complies with ANSI/ISA-12.13.01-2003 Performance Requirements for Combustible Gas Detectors.

The following accessories are Approved for use with the Ultima X Series Gas Detectors: "Ultima" Controller, "Ultima" Calibrator, Weatherguard (environmental guard) P/N 10028904 for the Ultima XE sensor or 10041265 for the Ultima XIR sensor.

The Ultima Controller and Ultima Calibrator are Intrinsically Safe for use in Class I, Division 1, Groups A, B, C and D Hazardous (Classified) Locations, T3C, Ta = +40°C.

Nonincendive Field wiring parameters:
Vmax = 30V, Imax = 100mA, Ci = 0, Li = 0

Control Unit

A-UltimaX-XP - a - b - c - d - e - f - g - h - i - j - k - l - m , Ultima X Series
a = Model: E or L
b = Gas Code: 31, 32, 33, 38, or 39.
c = Configuration: any alpha numeric code that represents stainless steel enclosure with the 3/4 inch NPT threads or M25 Metric threads
d = Sensor Output: 1, 2, 3, or 4
e = Sensor Mounting Style: N, S, or D
f = Relays and LEDs: 0, 1, or 2
g = Display Language/Features: 0, S, or H
h = Optional Power Supply: 0, 1, 2, 3, or 4.
i = Gas Sample Selection: 0 or 1
j = Integrated Accessories: 0 or 1
k = Installation Hardware: Any number indicating how the product is mounted.
l = Manuals: Any number indicating how the manual is supplied.
m = Custom: 0, CB, CC, CF, or T

Sensors

***A-UltX - Sens - a - b - c*, Ultima XIR Sensor**
a = Gas Type: 38 or 39
b = Enclosure Type: 2 or 3
c = Custom: 0, CB, CC, CF, or T

***A-UltX - Sens - a - b - c,* Ultima XE Sensor**
a = Gas Type: 31, 32, or 33
b = Enclosure Type: 1
c = Custom: 0, CB, CC, CF, or T

External Power Supplies - 10053967 (11W), 10053966 (15W)

Specifications - The manufacturer's specifications are as follow;

Operating Temperature: -40°C to +60°C
Relative Humidity: 10 to 90% RH
Supply Parameters: 8-30 Vdc, 24 Vdc (Nominal), 10 watts maximum
110/240 Vac, 50/60 Hz, 15 watts maximum
Measurement Signal: 4-20mA
Calibration: Infrared or HART

COMBUSTIBLE GAS DETECTORS, Fixed

Stationary multi-channel 4-20 mA Combustible Gas Detector. The Ultima XE Main with X3 technology Gas Detector consists of an Ultima XE main with X3 technology Control Unit with any combination of three Detector Heads. The Detector Heads can be either an Ultima XE Detector Head (combustible or oxygen depletion) or Ultima XIR Detector Head. The Ultima XE Combustible Detector Head is either a Catalytic Combustible Gas Detector Head or an electrochemical Oxygen Depletion Gas Detector Head. The Ultima XIR Detector Head is an Infrared Combustible Gas Detector Head. The Detector Heads mount remotely or integrally via a ¾ NPT or M25 connections to the Control Unit. The Control Unit communicates to the Detector Heads via a proprietary protocol. The Detector Heads may be remotely connected up to 100 ft away from the Control Unit when powered by the Control Unit or up to 3000 ft away from the Control Unit with boost board option when powered by AC Power Supply, input rated 120/240 V AC, 5 W max or DC Power Supply, input rated 9-30 V dc, 5 W max.

All configurations of the systems are suitable for installation in Class I, Division 1, Groups A, B, C, and D, The Ultima XE main with X3 technology Control Units are also Nonincendive with Nonincendive field wiring for installation in Class I, Division 2, Groups A, B, C, and D Hazardous (Classified) Locations when installed per control drawing SK3098-1108. The operating temperature range of the systems is -40°C to +60°C and the electrical ratings for the entire system is 7-30VDC, 10 watts maximum. The relay contact ratings are 5A at 250VAC or 30VDC. In addition, the apparatus complies with ANSI/ISA-12.13.01-2000 Performance Requirements for Combustible Gas Detectors.

The following accessories are Approved for use with the Ultima X Series: "Ultima" Controller, "Ultima" Calibrator, Weatherguard (environmental guard) P/N 10028904 for the Ultima XE sensor or 10041265 for the Ultima XIR sensor.

The Ultima Controller and Ultima Calibrator are Intrinsically Safe for use in Class I, Division 1, Groups A, B, C and D Hazardous (Classified) Locations, T3C, Ta = +40°.
Nonincendive Field wiring parameters:
Vmax = 30V, Imax = 100mA, Ci = 0, Li = 0

Control Unit

A-Ultima X3-a-b-c-d-e-f-g-h-i-j-k-l-m-n-o-p-q-r **Ultima XE Main with X3 Technology**

a = Model: E
b = Enclosure Type: any alpha numeric code that represents the ¾ inch NPT threads or M25 Metric threads
c = Sensor Output: M
d = Relay / LED option: 0, 1, 2 and 3.
e = Connection for external Power Supply Option: 0 = None; 3 = 12 VDC external, 4 = 24 VDC external. Note, external power supplies not FM Approved.
f = Language option: 0
g = Hardware / Software option: 0
h = Signal Boost option: 0 or 1
i* = Gas type sensor 1: 13, 14, 31, 32, 33, 38 or 39.
j = Sensor 1 mounting / power: 0, 1, 2 or 3
k = A number indicating how the product is mounted.
L* = Gas type sensor 2: 13, 14, 31, 32, 33, 38 or 39.
m = Sensor 2 mounting / power: 0, 1, 2 or 3
n = A number indicating how the product is mounted.
o* = Gas type sensor 3: 13,14, 31, 32, 33, 38 or 39.
P = Sensor 3 mounting / power: 0, 1, 2 or 3
q = A number indicating how the product is mounted.
r = Custom: 0, CB, CC, CF, or T
* One of the three gas sensor types shall be either: 31, 32, 33, 38 or 39

Sensors

***A-UltX - Sens - a - b - c*, Ultima XIR Sensor**
a = Gas Type: 38 or 39
b = Enclosure Type: 2 or 3
c = Custom: 0, CB, CC, CF, or T

***A-UltX - Sens - a - b – c,* Ultima XE Sensor**
a = Gas Type: 13, 14, 31, 32, or 33
b = Enclosure Type: 1
c = Custom: 0, CB, CC, CF, or T

Specifications - The manufacturer's specifications are as follow:

Operating Temperature:	-40°C to +60°C
Relative Humidity:	10 to 90% RH
Supply Parameters:	7-30 Vdc, 24 Vdc (Nominal), 10 watts maximum.
Measurement Signal:	4-20mA
Calibration:	Infrared

COMBUSTIBLE GAS DETECTORS, Fixed

Stationary 4-20mA Stand-Alone Combustible Gas Detector Head. The Ultima XI Gas Monitor is Explosionproof for installation in Class I, Division 1 and 2, Groups A, B, C and D Hazardous (Classified) Locations. Suitable for indoor and outdoor (Type 4X / IP66). The Ultima XI monitors 0-100% LEL methane or propane gas-in-air atmospheres. The instrument provides a 4-20 mA measurement signal. The Ultima XI is an Infrared Combustible Gas Detector Sensor. The operating temperature range for the sensor is -40°C to +60°C the electrical ratings are 7-30 VDC, 800 mA max. The apparatus complies with

ANSI/ISA-12.13.01-2000 Performance Requirements for Combustible Gas Detectors and ISA-60079-29-1-200X-Draft 6 “Explosive Atmospheres – Part 29-1: Gas detectors – Performance requirements of detectors for flammable gases”.

The following accessories are Approved for use with the Ultima XI Gas Monitor: Weatherguard (environmental guard) P/N 10041265.

COMBUSTIBLE AND OXYGEN DEPLETION GAS DETECTOR CONTROL UNITS, Fixed

Stationary Single Channel 4-20 mA Combustible or Oxygen Depletion Gas Detector Control Unit. There are two variations of the Ultima X Control Unit, Ultima XE Main (with Display) and Ultima XL (without Display). The Ultima XE Main and Ultima XL Control Unit have an optional XP Port with I.S. barrier for HART communication. The Control Units are also provided with an optional HART Module. The Ultima XE Main Control Unit optional XP Port with I.S. barrier is either integral to the Control Unit or remote to the Control Unit. The XP Port with I.S. barrier provides intrinsically safe connections. The XP Port with I.S. barrier provides a

lead seal for the explosion proof enclosure permitting the user to interface with the control unit while powered and functioning. The Ultima X Control Unit is suitable for installation in Class I, Division 1 and 2, Groups A, B, C, and D; Class I, Zone 1 and 2 Group IIC Hazardous (Classified) Locations, indoor and outdoor (Type 4X/IP66) and may provide intrinsically safe connections to Class I, Division 1, Groups A, B, C, and D; Class I, Zone 1, Group IIC Hazardous (Classified) Locations in accordance with Entity requirements and Control Drawing SK3098-1057. The Ultima X control units monitor FM Approved Combustible Gas Detector heads which monitor 0-100% LEL gas-in-air atmospheres. The Ultima X control units monitor FM Approved Oxygen Depletion detector heads which monitor up to 21% O_2 gas-in-air atmospheres. The control unit communicates to the detector head via a proprietary protocol. The control unit provides a 4-20mA signal proportional to the gas detector head’s measuring range of gas of interest and trouble signals.

The Ultima XE Main Control Units provide the following: a two-digit measurement display with infrared control functions and alarm indication, a 4-20mA measurement signal with optional HART communication, an optional XP Port with I.S. barrier, optional LEDs which indicate alarm and trouble conditions and optional relay contacts; 1 for trouble and 3 for alarm set points. The electrical ratings for the entire system, DC input, are 8-30VDC 10 watts maximum. The electrical ratings for the entire system, AC input, are 110-240VAC, 50/60 Hz, 15 watts maximum. The relay contact ratings are 5A at 250VAC or 30VDC. The Ultima XL Control Units provide the following: a 4-20mA measurement signal with HART communication, an optional XP Port with I.S. barrier, an LED which indicates alarm and trouble conditions. The operating temperature range of the systems is -40°C to +60°C and the electrical ratings for the entire system is 8-30VDC 600mA maximum. The non I.S. connections on the HART Module are 30VDC max, 1 amp. In addition, the apparatus complies with ANSI/ISA-12.13.01-2003 Performance

Requirements for Combustible Gas Detectors.

A-UltimaX-XP - a - b - c - d - e - f - g - h - i - j - k - l - m , Ultima X Series
a = Model: E or L
b = Gas Code: 31, 32, 33, 38, or 39.
c = Configuration: any alpha numeric code that represents stainless steel enclosure with the 3/4 inch NPT threads or M25 Metric threads
d = Sensor Output: 1, 2, 3, or 4
e = Sensor Mounting Style: N, S, or D
f = Relays and LEDs: 0, 1, or 2
g = Display Language/Features: 0, S, or H
h = Optional Power Supply: 0, 1, 2, 3, or 4.
i = Gas Sample Selection: 0 or 1
j = Integrated Accessories: 0 or 1
k = Installation Hardware: Any number indicating how the product is mounted.
l = Manuals: Any number indicating how the manual is supplied.
m = Custom: 0, CB, CC, CF or T

Entity Parameters
Uo = 6.14VDC, Io = 170mA, Co = 34µF, Lo = 1.3mH, Po = 260 mW

OXYGEN DEPLETION GAS DETECTORS, Fixed

Stationary Single Channel 4-20 mA Oxygen Depletion Gas Detector. The Ultima X Gas Detector consists of an Ultima X Control Unit with an Ultima XE Detector Head. There are two variations of the Ultima X Control Unit, Ultima XE Main (with Display) and Ultima XL (without Display). The Ultima XE Main and Ultima XL Control Unit have an optional XP Port with I.S. barrier for HART communication. The Control Units are also provided with an optional HART Module. The Ultima XE Main Control Unit optional XP Port with I.S. barrier is either integral to the Control Unit or remote to the Control Unit. The XP Port with I.S. barrier provides intrinsically safe connections. The XP Port with I.S. barrier provides a lead seal for the explosion proof enclosure permitting the user to interface with the control unit while powered and functioning.

The Ultima XE Sensor is an Electrochemical Oxygen Depletion Gas Sensor. The Sensor mounts remotely or integrally via a ¾ NPT or M25 connection to the Control Unit. The Control Unit communicates to the Sensor via a proprietary protocol. The Sensor may be remotely connected up to 100 ft away from the Control Unit. All configurations of the systems are suitable for installation in Class I, Division 1, Groups A, B, C, and D Hazardous (Classified) Locations, indoor and outdoor (Type 4X / IP66) and have intrinsically safe connections to Class I, Division 1, Groups A, B, C, and D Hazardous (Classified) Locations in accordance with Entity requirements and Control Drawing SK3098-1057 when installed with the intrinsically safe barrier. All configurations of the systems are also Nonincendive with Nonincendive Field Wiring for installation in Class I, Division 2, Groups A, B, C and D Hazardous (Classified) Locations when installed per control drawing SK3098-1108. The Ultima XE Detector Head monitors 0-10% O_2 or 0-21% O_2 gas-in-air atmospheres.

The Ultima XE Main Control Units provide the following: a two-digit measurement display with infrared control functions and alarm indication, a 4-20mA measurement signal with optional HART communication, an optional XP Port with I.S. barrier, optional LEDs which indicate alarm and trouble conditions and optional relay contacts; 1 for trouble and 3 for alarm set points. The electrical ratings for the entire system, DC input, are 8-30VDC 10 watts maximum. The electrical ratings for the entire Ultima

XE system, AC input, are 110-240VAC, 50/60 Hz, 15 watts maximum. The relay contact ratings are 5A at 250VAC or 30VDC. The Ultima XL Control Units provide the following: a 4-20mA measurement signal with HART communication, an optional XP Port with I.S. barrier, an LED which indicates alarm and trouble conditions. The operating temperature range of the systems is -40°C to +60°C and the electrical ratings for the entire system is 8-30VDC 600mA maximum. The non I.S. connections on the HART Module are 30VDC max, 1 amp.

The following accessories are Approved for use with the Ultima X Series Gas Detectors: "Ultima" Controller, "Ultima" Calibrator, Weatherguard (environmental guard) P/N 10028904 for Ultima XE sensor

The Ultima Controller and Ultima Calibrator are Intrinsically Safe for use in Class I, Division 1, Groups A, B, C and D Hazardous (Classified) Locations, T3C, Ta = +40°C.

Nonincendive Field wiring parameters: Vmax = 30V, Imax = 100mA, Ci = 0, Li = 0

Control Unit

A-UltimaX-XP - a - b - c - d - e - f - g - h - i - j - k - l - m , Ultima X Series
a = Model: E or L
b = Gas Code: 31, 32, 33, 38, or 39.
c = Configuration: any alpha numeric code that represents stainless steel enclosure with the 3/4 inch NPT threads or M25 Metric threads
d = Sensor Output: 1, 2, 3, or 4
e = Sensor Mounting Style: N, S, or D
f = Relays and LEDs: 0, 1, or 2
g = Display Language/Features: 0, S, or H
h = Optional Power Supply: 0, 1, 2, 3, or 4.
i = Gas Sample Selection: 0 or 1
j = Integrated Accessories: 0 or 1
k = Installation Hardware: Any number indicating how the product is mounted.
l = Manuals: Any number indicating how the manual is supplied.
m = Custom: 0, CB, CC, CF or T

Sensors

A-UltX - Sens - a - b – c, **Ultima XE Sensor**
a = Gas Type: 13 or 14
b = Enclosure Type: 1
c = Custom: 0, CB, CC, CF, or T

External Power Supplies - 10053967 (11W), 10053966 (15W)

Specifications - The manufacturer's specifications are as follow;

Operating Temperature:	-40°C to +60°C
Relative Humidity:	10 to 90% RH
Supply Parameters:	8-30 Vdc, 24 Vdc (Nominal), 10 watts maximum. 110/240 Vac, 50/60 Hz, 15 watts maximum
Measurement Signal:	4-20mA

Calibration: Infrared or HART

Nonincendive Field wiring parameters: Vmax = 30V, Imax = 100mA, Ci = 0, Li = 0

OXYGEN DEPLETION GAS DETECTORS, Fixed

Stationary multi-Channel 4-20 mA Oxygen Depletion Gas Detector. The Ultima XE main with X3 technology Gas Detector consists of an Ultima XE main with X3 technology Control Unit with any combination of three Detector Heads. The Detector Heads can be either an Ultima XE Detector Head (combustible or oxygen depletion) or Ultima XIR Detector Head. The Ultima XE Detector Head is either a Catalytic Combustible Gas Detector Head or an electrochemical Oxygen Depletion Gas Detector Head. The Ultima XIR Detector Head is an Infrared Combustible Gas Detector Head. The Detector Heads mount remotely or integrally via a ¾ NPT or M25 connections to the Control Unit. The Control Unit communicates to the Detector Heads via a proprietary protocol. The Detector Heads may be remotely connect up to 100 ft away from the Control Unit or up to 3000 ft away from the Control Unit with boost board option when powered by AC Power Supply, input rated 120/240 V AC, 5 W max or DC Power Supply, input rated 9-30 V dc, 5 W max. All configurations of the systems are suitable for installation in Class I, Division, Groups A, B, C, and D, The Ultima XE main with X3 technology Control Units are also Nonincendive with Nonincendive field wiring for installation in Class I, Division 2, Groups A, B, C, and D Hazardous (Classified) Locations when installed per control drawing SK3098-1108. The operating temperature range of the systems is -40°C to +60°C and the electrical ratings for the entire system is 7-30VDC, 10 watts maximum. The relay contact ratings are 5A at 250VAC or 30VDC.

The following accessories are Approved for use with the Ultima X Series: “Ultima” Controller, “Ultima” Calibrator, Weatherguard (environmental guard) P/N 10028904 for the Ultima XE sensor or 10041265 for the Ultima XIR sensor.

The Ultima Controller and Ultima Calibrator are Intrinsically Safe for use in Class I, Division 1, Groups A, B, C and D Hazardous (Classified) Locations, T3C, Ta = +40°C.

Nonincendive Field wiring parameters: Vmax = 30V, Imax = 100mA, Ci = 0, Li = 0

Control Unit

***A-Ultima X3-a-b-c-d-e-f-g-h-i-j-k-l-m-n-o-p-q-r* Ultima XE Main with X3 Technology**

a = Model: E
b = Enclosure Type: any alpha numeric code that represents the ¾ inch NPT threads or M25 Metric threads
c = Sensor Output: M
d = Relay / LED option: 0, 1, 2 and 3.
e = Connection for external Power Supply Option: 0, 3 or 4.
f = Language option: 0
g = Hardware / Software option: 0
h = Signal Boost option: 0 or 1
i* = Gas type sensor 1: 13, 14, 31, 32, 33, 38 or 39.
j = Sensor 1 mounting / power: 0, 1, 2 or 3
k = A number indicating how the product is mounted.
L* = Gas type sensor 2: 13, 14, 31, 32, 33, 38 or 39.
m = Sensor 2 mounting / power: 0, 1, 2 or 3
n = A number indicating how the product is mounted.

o* = Gas type sensor 3: 13,14, 31, 32, 33, 38 or 39.
P = Sensor 3 mounting / power: 0, 1, 2 or 3
q = A number indicating how the product is mounted.
r = Custom: 0, CB, CC, CF, or T
*One of the three gas sensor types shall be either Sensor Type: 13 or 14

Sensors

***A-UltX - Sens - a - b - c*, Ultima XIR Sensor**
a = Gas Type: 38 or 39
b = Enclosure Type: 2 or 3
c = Custom: 0, CB, CC, CF, or T

***A-UltX - Sens - a - b – c,* Ultima XE Sensor**
a = Gas Type: 13, 14, 31, 32, or 33
b = Enclosure Type: 1
c = Custom: 0, CB, CC, CF, or T

Specifications - The manufacturer's specifications are as follow;

Operating Temperature:	-40°C to +60°C
Relative Humidity:	10 to 90% RH
Supply Parameters:	7-30 Vdc, 24 Vdc (Nominal), 10 watts maximum.
Measurement Signal:	4-20mA
Calibration:	Infrared

Toxic GAS DETECTORS, Fixed

Stationary Single Channel 4-20 mA electrochemical toxic Gas Detector. The Ultima X Gas Detector consists of an Ultima X Control Unit and an Ultima XE Detector Head. There are two variations of the Ultima X Control Unit, Ultima XE Main (with Display) and Ultima XL (without Display). The Ultima XE Main and Ultima XL Control Unit have an optional XP Port with I.S. barrier for HART communication. The Control Units are also provided with an optional HART Module. The Ultima XE Main Control Unit optional XP Port with I.S. barrier is either integral to the Control Unit or remote to the Control Unit. The XP Port with I.S. barrier provides intrinsically safe connections. The XP Port with I.S. barrier provides a lead seal for the explosion proof enclosure permitting the user to interface with the control unit while powered and functioning.

The Ultima XE Sensor is an electrochemical toxic Sensor. The Sensor mounts remotely or integrally via a ¾ NPT or M25 connection to the Control Unit. The Control Unit communicates to the Sensors via a proprietary protocol. The Sensors may be remotely connected up to 100 ft away from the Control Unit. All configurations of the systems are suitable for installation in Class I, Division 1, Groups A, B, C, and D Hazardous (Classified) Locations, indoor and outdoor (Type 4X / IP66) and have intrinsically safe connections to Class I, Division 1, Groups A, B, C, and D Hazardous (Classified) Locations in accordance with Entity requirements and Control Drawing SK3098-1057 when installed with the intrinsically safe barrier. All configurations of the systems are also Nonincendive with Entity for installation in Class I, Division 2, Groups A, B, C and D Hazardous (Classified) Locations when installed per control drawing SK3098-1108. The Ultima XE Sensor may be connected to any junction box with an internal volume of less than 40.04 cubic inches which has been identified, as defined within the National Electrical Code, for its intended area of installation.

The Ultima XE Main Control Units provide the following: a two-digit measurement display with infrared control functions and alarm indication, a 4-20mA measurement signal with optional HART communication, an optional XP Port with I.S. barrier, optional LEDs which indicate alarm and trouble conditions and optional relay contacts; 1 for trouble and 3 for alarm set points. The electrical ratings for the entire system, DC input, are 8-30VDC 10 watts maximum. The electrical ratings for the entire system, AC input, are 110-240VAC, 50/60 Hz, 15 watts maximum. The relay contact ratings are 5A at 250VAC or 30VDC. The Ultima XL Control Units provide the following: a 4-20mA measurement signal with HART communication, an optional XP Port with I.S. barrier, an LED which indicates alarm and trouble conditions. The operating temperature range of the system is -40°C to +60°C and the electrical ratings for the entire system is 8-30VDC 600mA maximum. The non I.S. connections on the HART Module are 30VDC max, 1 amp.

The following accessories are Approved for use with the Ultima X Series Gas Detectors: “Ultima” Controller, “Ultima” Calibrator, Weatherguard (environmental guard) P/N 10028904 for Ultima XE sensor

The Ultima Controller and Ultima Calibrator are Intrinsically Safe for use in Class I, Division 1, Groups A, B, C and D Hazardous (Classified) Locations, T3C, Ta = +40°C.

Entity parameters:
Vmax = 30V, Imax = 100mA, Ci = 0, Li = 0

Control Unit

A-UltimaX-XP - a - b - c - d - e - f - g - h - i - j - k - l - m , Ultima X Series
a = Model: E or L
b = Gas Code: 11, 12, 15, 16, 17 or 25.
c = Configuration: any alpha numeric code that represents stainless steel enclosure with the 3/4 inch NPT threads or M25 Metric threads
d = Sensor Output: 1, 2, 3, or 4
e = Sensor Mounting Style: N, S, or D
f = Relays and LEDs: 0, 1, or 2

g = Display Language/Features: 0, S, or H
h = Optional Power Supply: 0, 1, 2, 3, or 4.
i = Gas Sample Selection: 0 or 1
j = Integrated Accessories: 0 or 1
k = Installation Hardware: Any number indicating how the product is mounted.
l = Manuals: Any number indicating how the manual is supplied.
m = Custom: 0, CB, CC, CF, or T

Sensor

A-UltX - Sens - a - b - c, **Ultima XE Sensor**
a = Gas Type: 11, 12, 15, 16, 17 or 25.
b = Enclosure Type: 1
c = Custom: 0, CB, CC, CF, or T

External Power Supplies - 10053967 (11W), 10053966 (15W)

Specifications - The manufacturer's specifications are as follow;

Operating Temperature:	H2S: 0°C to +40°C, CO: -30°C to +50°C
Relative Humidity:	15 to 95% RH
Supply Parameters:	8-30 Vdc, 24 Vdc (Nominal), 10 watts maximum 110/240 Vac, 50/60 Hz, 15 watts maximum
Measurement Signal:	4-20mA
Calibration:	Infrared or HART

Toxic GAS DETECTORS, Fixed

Stationary multi-channel 4-20 mA Toxic Gas Detector. The Ultima XE Main with X3 technology Gas Detector consists of an Ultima XE main with X3 technology Control Unit with any combination of three Detector Heads. The Detector Heads can be an Ultima XE Detector Head (Toxic, combustible or oxygen depletion). The Ultima XE Combustible Detector Head is either a Catalytic Combustible Gas Detector Head or an electrochemical Oxygen Depletion or toxic Gas Detector Head. The Detector Heads mount remotely or integrally via a ¾ NPT or M25 connections to the Control Unit. The Control Unit communicates to the Detector Heads via a proprietary protocol. The Detector Heads may be remotely connected up to 100 ft away from the Control Unit when powered by the Control Unit or up to 3000 ft away from the Control Unit with boost board option when powered by AC Power Supply, input rated 120/240 V AC, 5 W max or DC Power Supply, input rated 9-30 V dc, 5 W max.

All configurations of the systems are suitable for installation in Class I, Division 1, Groups A, B, C, and D, The Ultima XE main with X3 technology Control Units are also Nonincendive with Entity for installation in Class I, Division 2, Groups A, B, C, and D Hazardous (Classified) Locations when installed per control drawing SK3098-1108. The operating temperature range of the systems is -40°C to +60°C and the electrical ratings for the entire system is 7-30VDC, 10 watts maximum. The relay contact ratings are 5A at 250VAC or 30VDC.

The following accessories are Approved for use with the Ultima X Series Gas Detectors: "Ultima" Controller, "Ultima" Calibrator, Weatherguard (environmental guard) P/N 10028904 for Ultima XE sensor

The Ultima Controller and Ultima Calibrator are Intrinsically Safe for use in Class I, Division 1, Groups A, B, C and D Hazardous (Classified) Locations, T3C, Ta = +40°.

Entity parameters:
Vmax = 30V, Imax = 100mA, Ci = 0, Li = 0

Control Unit

A-Ultima X3-a-b-c-d-e-f-g-h-i-j-k-l-m-n-o-p-q-r **Ultima XE Main with X3 Technology**
a = Model: E
b = Enclosure Type: any alpha numeric code that represents the ¾ inch NPT threads or M25 Metric threads
c = Sensor Output: M
d = Relay / LED option: 0, 1, 2 and 3.
e = Connection for external Power Supply Option: 0 = None; 3 = 12 VDC external, 4 = 24 VDC external. Note, external power supplies not FM Approved.
f = Language option: 0
g = Hardware / Software option: 0
h = Signal Boost option: 0 or 1
i* = Gas type sensor 1: 11, 12, 15, 16, 17 or 25.
j = Sensor 1 mounting / power: 0, 1, 2 or 3
k = A number indicating how the product is mounted.
L* = Gas type sensor 2: 11, 12, 15, 16, 17 or 25..
m = Sensor 2 mounting / power: 0, 1, 2 or 3
n = A number indicating how the product is mounted.
o* = Gas type sensor 3: 11, 12, 15, 16, 17 or 25.
P = Sensor 3 mounting / power: 0, 1, 2 or 3
q = A number indicating how the product is mounted.
r = Custom: 0, CB, CC, CF, or T
* One of the three gas sensor types shall be either: 11, 12, 15, 16, 17 or 25.

Sensor

A-UltX - Sens - a - b – c, **Ultima XE Sensor**
a = Gas Type: 11, 12, 12, 16, 17 or 25.
b = Enclosure Type: 1
c = Custom: 0, CB, CC, CF, or T

Specifications - The manufacturer's specifications are as follow:

Operating Temperature:	H2S: 0°C to +40°C, CO: -30°C to +50°C
Relative Humidity:	15 to 95% RH
Supply Parameters:	7-30 Vdc, 24 Vdc (Nominal), 10 watts maximum.
Measurement Signal:	4-20mA
Calibration:	Infrared

FM Approved for:

Mine Safety Appliances Co
Cranberry Twp, PA United States

This certifies that the equipment described has been found to comply with the following Approval Standards and other documents:

Class 3600	2011	ANSI/ISA-60079-11	2002
Class 3610	2010	ANSI/ISA-60079-15	2003
Class 3611	2004	ANSI/NEMA 250	2003
Class 3615	2006	ISA-60079-29-1-200X	Draft 6
Class 3810	2005	ISA-92.00.01	2010
Class 6310/6320	2001		
Class 6340 (Draft)	2002		
ANSI/ISA-12.13.01	2000		
ANSI/ISA-12.13.01-2003	2003		
(IEC) 61779-1 through 5)			
ANSI/ISA-60079-0	2005		

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Subsequent Revision Reports / Date Approval Amended

Report Number	Date	Report Number	Date
3027754	January 30, 2007		
3029381	May 22, 2007		
080312	May 5, 2008		
3032677	June 30, 2008		
100427	April 30, 2010		
100408	September 14, 2010		
3041736	January 13, 2012		
3051047	August 25, 2014		

FM Approvals LLC

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25 August 2014
Date