New

Certified to:
ATEX
EN 61779-1
EN 61779-4
EN 60079-0
EN 60079-1
All inclusive!

ULTIMA® XE with HART

[Gas Monitors with Digital Communication]

MSA
The Safety Company

HART: Enhanced Communication. Improved Asset Management.

MSA's well-proven ULTIMA X series gas monitors are now available with HART field communications protocol [**H**ighway **A**ddressable **R**emote **T**ransducer].

HART two-way digital communication provides increased sensor data as well as convenient set-up, calibration and diagnostics for better management of plant assets.

HART data is superimposed on the 4–20 mA analogue signal, allowing existing installed wiring to be used, reducing installation costs.

ULTIMA XE gas monitors with HART include the MSA patented disconnect-under-power smart sensor, the single PCB design, a LCD that alternates between gas concentration and gas type and other proven features of the ULTIMA X series.

All gas monitors of the ULTIMA X series use the same catalytic, electrochemical and infrared sensors to provide continuous monitoring of combustible and toxic gases, and oxygen deficiency.

ULTIMA® X Series with HART

[Features & Benefits]

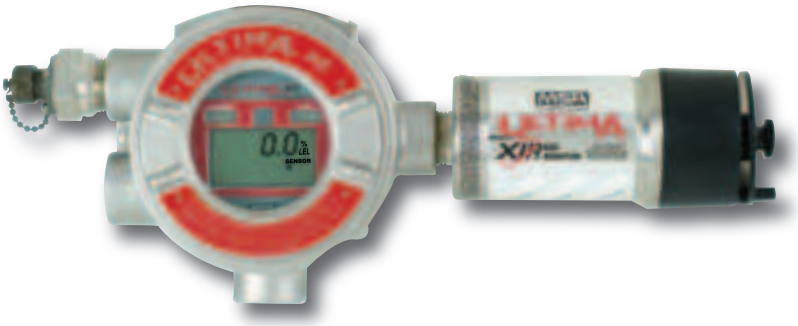
■ HART protocol	→ Digital communication from any point along the 4–20 mA line or intrinsically safe port
■ Upgrade to HART by replacing PCB	→ Flexibility and reduced installation costs
■ Sensor disconnect-under-power (MSA PATENT)	→ MSA's patented sensor design allows sensor replacement without declassifying the hazardous area
■ Interchangeable smart sensors	→ Pre-calibrated, installation-ready sensors are field-replaceable under power without tools
■ Same sensors for all versions	→ Significant savings for plants already using ULTIMA X gas monitors
■ Various calibration & diagnostic options	→ Hand-held HART communicator, host DCS or laptop for troubleshooting, calibration and configuration
■ LCD alternates between sensor reading & gas type	→ Easy to view important information
■ Single-board design	→ Provides reliability and easier serviceability
■ Rugged, explosion-proof stainless steel enclosure	→ Suitable for indoor and outdoor applications in virtually any type of industry

[ULTIMA® XE]

- Combustible, oxygen and toxic gas monitoring
- Catalytic and electrochemical sensors
- Intrinsically safe HART port
- 316 stainless steel
- Multiple-entry mounting enclosure
- Ingress protection – IP 66

[ULTIMA® XIR: ULTIMA® XE with Infrared Sensor]

- Combustible gas monitoring
- IR technology offers excellent long-term stability, eliminating the need for frequent calibrations
- Operation based on dual-wavelength, heated-optics technology, providing definitive compensation for temperature, humidity and ageing effects
- 10 years warranty for XIR source
- No gas calibration, only a zero adjustment is required for full calibration
- Intrinsically safe HART port
- 316 stainless steel
- Multiple-entry mounting enclosure
- Ingress protection – IP 66



[Applications]

- Oil and gas
- Chemical and petrochemical facilities
- Steel mills
- Water and wastewater plants
- General industry

[Calibration Options]

- Hand-held HART communicator, host DCS or laptop
- ULTIMA Controller and ULTIMA Calibrator
- Automatic calibration adjustments and date stamping
- Selectable lockout of output signal during calibration

[Technical Specifications]

Gas Types	XE	Combustibles, toxics and oxygen
	XIR	Combustibles; 0–100% LEL
Temperature Range		–40 °C to +60 °C [–40 °F to +140 °F] [Typical range for some gases may differ]
Drift		
Zero Drift	XE	<5% per year, typical
	XIR	±2% per year, typical
Span Drift	XE	<10% per year, typical
Noise		<1% Full Scale
Accuracy		
Repeatability	XE, XIR	±1% Full Scale or 2 ppm, typical
Linearity	XE	±2% Full Scale or 2 ppm, [O_2, CO]
	XIR	±2% Full Scale [≤50% LEL]
	XE	±3% Full Scale [<50% LEL combustibles]
	XE, XIR	±5% Full Scale [>50% LEL combustibles]
	XE	±10% Full Scale or 2 ppm, [non-CO toxics]
Response Times		
τ_{20} Oxygen & Toxics	XE	<12 seconds [typically 6 seconds]
τ_{50} Oxygen & Toxics	XE	<30 seconds [typically 12 seconds]
τ_{50} Combustibles	XE	<8 seconds
τ_{90} Combustibles	XE	<30 seconds
τ_{90} Combustibles	XIR	<2 seconds
Humidity	XE	15%–95% RH, non-condensing
	XIR	0%–95% RH, non-condensing
Sensor Life		
Oxygen & Toxics	XE	2 years typical
Combustibles	XE	3 years typical
Combustibles	XIR	10 years typical
Warranty		XE 1 year; XIR 2 years; XIR source 10 years
Power Input	XE	8–30 VDC [oxygen and toxics]
	XE	8–30 VDC @ 450 mA maximum [combustibles]
	XIR	8–30 VDC @ 750 mA maximum [combustibles]
Wiring Requirements		
Combustibles	XE, XIR	3-wire
Oxygen & Toxics	XE	2-wire; no LEDs or relays
Oxygen & Toxics	XE	3-wire; LEDs and/or relays
Signal Output	XE	4–20 mA 2-wire current sink
	XE, XIR	4–20 mA 3-wire current source
Relay Contact Rating		5amp @ 250 VAC; 5amp @ 30 VDC
Enclosure Entries	XE, XIR	Four cable/conduit entries, 3/4″ NPT or 25 mm
Physical	XE	316 Stainless Steel; 4.7 kg; 160 x 99 x 261 mm [W x D x L]
	XIR	316 Stainless Steel; 4.9 kg; 320 x 99 x 144 mm [W x D x L]
Approvals		**Europe** CE Low Voltage/EMC/ATEX II 2G Ex d [ib] IIC T4/T5 IP 66 EN 61779-1, EN 61779-4, EN 60079-0, EN 60079-1
		USA/Canada $_c$FM, $_c$UL$_{us}$, CSA Class I, Div. 1, Groups A, B, C, D Class I, Div. 2, Groups A, B, C, D Class III ANSI/ISA 12.13.01 CSA C22.2 No. 152 Class I, Div. 1, Groups A, B, C, D CSA C22.2 No. 152 Class I, Div. 1, Groups B, C, D [XIR]
		International IEC Ex d [ib] IIC T4 IP 66

[Ordering Information]

		3/4" NPT	25 mm metric
ULTIMA Enclosures			
ULTIMA XE/XIR enclosure without terminal strips		10044380	10044382
ULTIMA XE/XIR enclosure with terminal strips		10044381	10044383
ULTIMA XE, reactive local sensor + HART module		10097875	10097879
ULTIMA XE/XIR, non-reactive local sensor + HART port		10097876	10097880
ULTIMA XE, reactive remote sensor + HART port		10097877	10097921
ULTIMA XE/XIR, non-reactive remote sensor + HART port		10097878	10097922
ULTIMA XE/XIR, non-reactive remote sensor		10098926	10098925
ULTIMA XE/XIR HART module		10098928	10098927
ULTIMA XE Sensors			
Infrared Sensors			
Combustible gases, group 3	0 – 100% LEL	10044425	10044449
Combustible gases, group 4	0 – 100% LEL	10044426	10044450
Catalytic Sensors			
Combustible gases, group 1	0 – 100% LEL	10044423	10044447
Combustible gases, group 2	0 – 100% LEL	10044424	10044448
Electrochemical Sensors			
Ammonia [r]	0 – 50 ppm	10044520	10044528
Ammonia [r]	0 – 100 ppm	10062612	10056992
Ammonia [r]	0 – 1000 ppm	10098687	10098688
Arsine	0 – 2 ppm	10044428	10044452
Bromine [r]	0 – 5 ppm	10044518	10044526
Carbon monoxide	0 – 100 ppm	10044364	10044433
Carbon monoxide	0 – 500 ppm	10044365	10044434
Carbon monoxide	0 – 1000 ppm	10098684	10098685
Chlorine [r]	0 – 5 ppm	10044514	10044522
Chlorine [r]	0 – 10 ppm	10098681	10098682
Chlorine [r]	0 – 20 ppm	10098678	10098679
Chlorine dioxide [r]	0 – 3 ppm	10044517	10044525
Diborane [r]	0 – 50 ppm	10044431	10044455
Ethylene oxide [r]	0 – 10 ppm	10044521	10044529
Flourine [r]	0 – 10 ppm	10044519	10044527
Germane	0 – 3 ppm	10044430	10044454
Hydrogen	0 – 1000 ppm	10044432	10044456
Hydrogen chloride [r]	0 – 50 ppm	10044516	10044524
Hydrogen cyanide	0 – 50 ppm	10044422	10044446
Hydrogen flouride [r]	0 – 10 ppm	10098675	10098676
Hydrogen sulphide	0 – 10 ppm	10044368	10044440
Hydrogen sulphide	0 – 50 ppm	10044369	10044442
Hydrogen sulphide	0 – 100 ppm	10044420	10044444
Hydrogen sulphide	0 – 500 ppm	10098690	10098691
Nitric oxide	0 – 100 ppm	10044421	10044445
Oxygen	0 – 10%	10044366	10044436
Oxygen	0 – 25%	10044367	10044438
Phosphine	0 – 2 ppm	10044427	10044451
Silane	0 – 25 ppm	10044429	10044453
Sulphur dioxide	0 – 100 ppm	10098672	10098673
Sulphur dioxide	0 – 25 ppm	10098479	10098480
[r] reactive gases			

ULTIMA XE PCB Options				
	LEDs	**Relays**	**Output**	
ULTIMA XE/XIR with HART	No	No	2 wire*	10097872
ULTIMA XE/XIR with HART	Yes	No	3 wire	10097873
ULTIMA XE/XIR with HART	Yes	Yes	3 wire	10097874
*2 wire output only available for toxic or oxygen				

ULTIMA XE Accessories	
ULTIMA XE calibration cap	10020030
ULTIMA XE flow adapter	10041866
ULTIMA XE SensorGard	10028904
ULTIMA XIR calibration cap	10041533
ULTIMA XIR flow cap	10042600
ULTIMA XIR SensorGard	10041265
ULTIMA Controller	10044459
ULTIMA Calibrator	10044470
Duct mount kit	on request
ULTIMA XE mounting bracket	10047561
ULTIMA remote sensor mounting bracket	10047562
Reducer M25 to M20 EEx de	10045881
Cable gland M20 EEx d	10045880
Cable gland M25 EEx d	10045619

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