

MSA Orion[®] FX Multigas Detector Addendum

These Orion FX instructions are to be used as an addendum to Orion Multigas Instruction Manual (P/N 10021555). This addendum replaces manual information given in Chapter 7, TABLE 7-3 and TABLE 7-4, and in Chapter 8, TABLE 8-2 for Orion FX units only. The Orion FX Multigas Detector must be installed with a 4P-50 combustible sensor (P/N 10055614) only.

Table 7-3. COMBUSTIBLE GAS - Typical Performance Specifications

RANGE	0 to 100% LEL
RESOLUTION	1% LEL
REPRODUCIBILITY (NORMAL TEMP. RANGE)	3% LEL to 50% LEL reading 5% LEL to full scale
REPRODUCIBILITY (EXTENDED TEMP. RANGE)	5% LEL to 50% LEL reading 8% LEL to full scale
RESPONSE TIME	90% of final reading in 30 seconds (normal temperature range)
*See TABLE 7-2 NOTE	

NOTE: These results are typical. Some sensors may fall outside of this range. For best results, calibrate the sensor at the temperature of use.

Table 7-4. COMBUSTIBLE GAS - Cross Reference Factors

This TABLE shows the variation in response of the 4P-50 CiTipeL[®] on exposure to a range of gases and vapors at the same % LEL concentration.

GAS VAPOR	RELATIVE SENSITIVITY*	GAS VAPOR	RELATIVE SENSITIVITY*
Methane	100	Carbon monoxide	115
Propane	65	Acetone	70
nButane	65	Methyl ethyl ketone	55
n-Pentane	60	Toluene	40
n-Hexane	50	Ethyl acetate	60
n-Heptane	45	Hydrogen	115
n-Octane	40	Ammonia**	130
Methanol	95	Cyclohexane	55
Ethanol	85	Leaded petrol	60
Iso-propyl alcohol	60	Unleaded petrol	60
Acetylene	80	Ethylene	85

*Each sensitivity has been rounded to the nearest 5%.

**T₉₀ for Ammonia is extended. Contact City Technology for details.

Response Notes

1. The compounds may reduce the sensitivity of the combustible gas sensor by poisoning or inhibiting the catalytic action.
2. These compounds may reduce the sensitivity of the combustible gas sensor by polymerizing on the catalytic surface.
3. The figures are experimentally derived and expressed relative to the methane signal (= 100).
4. These conversion factors should be used only if the combustible gas is known.
5. The results are intended for guidance only. For the most accurate measurements, an instrument should be calibrated using the gas under investigation.

Table 8-2. Orion FX Replacement Parts List

ITEM NO.	PART	PART NO.
1	Pump Cap Assembly, includes screw (P/N10025551) (pumped version only)	10025539
2	Pump Cap Screw (pumped version only)	10025551
3	Case Screws	10022921
4	Sensor Cover (pumped version only) Sensor Cover (diffusion version only)	10022105 10026032
5	Sensor Membrane	10022104
6	Sensor Cover Gasket	10022096
7	Oxygen Sensor	10025940
8	Hydrogen Sulfide Sensor	711307

ITEM NO.	PART	PART NO.
9	Combustible Sensor	10055614
10	Carbon Monoxide Sensor	711306
11	Sensor Gasket	10022331
12	Front Case Assembly (non-saleable)	10026268
13	Pump Cap Assembly with gasket P/N 10022102 (pumped version only)	10025539
14	Pump Cap Gasket	10022102
15	Display Assembly	10020548
16	Printed Circuit Board Assembly, Main	10020362
17	LINK Printed Circuit Board Assembly	
18	Case Gasket	10022100
19	Pump and Drive Replacement Kit	10026031
20	Filter Disc	655552
21	Dust filter, package of five	808935
22	Inlet Fitting	497187
23	Filter Cover	811722
24	Filter Cover Screws	10022922
25	Case Rear, Pumped (pumped version only) (non-saleable) Case Rear, Diffusion (diffusion version only) (non-saleable)	10026300 10026269
26	Filter Cover O-ring	637009
27	Internal backup filter (not shown)	634261