

The 1440D provides a rack or panel mounted measurement of one or two of the following gases: oxygen, carbon dioxide, carbon monoxide and methane.



- Excellent stability and performance
- Low maintenance - no chemical cells to replace or renew
- Variants suitable for flammable/toxic sample gases
- Rack mounting or bench-top configuration.
- Concentration and low flow alarms.

Specification				
Gas Measured:	Oxygen	Methane	Carbon Dioxide	Carbon Monoxide
PERFORMANCE				
Technology:	Paramagnetic transducer	Infrared transducer	Infrared transducer	Infrared transducer
Range:	0 - 5, 10, 20, 25, 50, 100% ¹	0 - 5, 25, 50, 100%	0 - 0.25, 0.5, 1.0, 2.5, 5, 10, 25, 50, 100%	0 - 1, 2.5, 10, 25, 50%
Accuracy: (Intrinsic Error)	±0.1% O ₂	±1% of full scale	±1% of full scale	±1% of full scale
Linearity:	±0.1% O ₂	±1% of full scale	±1% of full scale	±1% of full scale
Repeatability:	±0.1% O ₂	±1% of full scale	±1% of full scale	±1% of full scale
Response time (T ₉₀)	<10 seconds	<10 seconds	<10 seconds	<10 seconds
Zero Drift:	<±0.002% O ₂ /hour	2% of full scale/week	2% of full scale/week	2% of full scale/week
Span Drift:	<±0.002% O ₂ /hour	1% of reading/day	1% of reading/day	1% of reading/day
SIGNAL OUTPUTS				
Display:	3½ Digit LED			
Display Resolution:	0.1%			
Analogue Output:	One isolated 4-20mA output (maximum load impedance 600 ohms) and one non-isolated 0-1V output (typical output impedance 470 ohms) per transducer with full zero and span adjustment. The user may assign a second range to each output (Methane/Carbon Dioxide/Carbon Monoxide only, 80% of full scale). Two changeover relay contacts rated 1A/110VAC or 1A/28VDC non-inductive per measurement			
Alarms:				
PHYSICAL				
Dimensions (W x D x H):	Single unit: 236 x 380 x 178mm (9 x 15 x 7”),		Double unit: 483 x 380 x 178mm (19 x 15 x 7”)	
Weight:	Single unit: 5.5kg (12lb) typical,		Double unit: 12kg (26lb) typical	
Case Rating:	IP20 (IEC 529)			

¹ Two ranges are user selectable from those shown

Power Supply

88 to 264VAC, 47 to 63Hz (45VA maximum)

Ambient Conditions

Temperature:

Storage:

-20 to +70°C (-4 to +158°F)

Operating:

0 to 45°C (32 to 113°F)*

Relative Humidity:

0 to 90% non-condensing

Pressure:

Oxygen measurement:

80 to 110 kPaa (0.8 to 1.1 bara)

Carbon Dioxide/Carbon Monoxide/Methane:

90 to 110 kPaa (0.9 to 1.1 bara)

* reduces in benchtop case to 0 to 40°C (32 to 104°F)

Warm up time:

Typically 1 hour

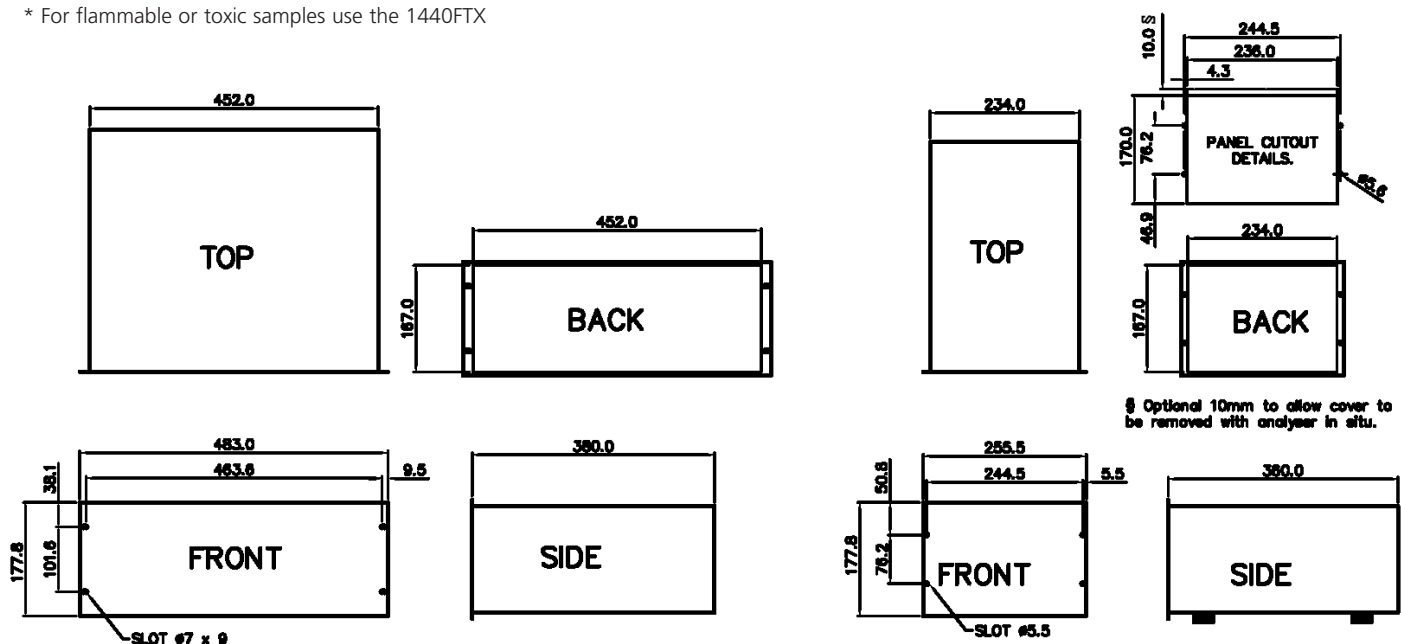
Sample Wetted Materials

Item	Materials
FTX analyser oxygen transducer	Stainless steel, Viton, borosilicate glass, platinum and nickel
FTX analyser methane/ carbon monoxide/ carbon dioxide transducer	Stainless steel, Viton, sapphire, epoxy resin
Additional materials with STD analyser	Bonded glass fibre, nylon, neoprene, gold on silver, brass, monel, acetylene, polypropylene
Additional materials with Back Pressure Regulator	Copper, PVC, PVDF, beryllium copper

Sample Gas Conditions

	Standard Analyser (STD)	Standard Analyser with back pressure regulator	Flammable/Toxic sample Analyser (FTX)
Inlet/Outlet Connections	6.4mm (1/4") OD tube DO NOT RESTRICT ANALYSER VENT		3.2mm (1/8") OD tube DO NOT RESTRICT ANALYSER VENT
Inlet Pressure	1 to 10 psig 7 to 70 kPag	17 to 20 psia 120 to 140 kPaa	Typically 0.3kpag (30 mmWG) at 200ml/min
Vent Pressure	11.6 to 15.9 psia 80 to 110 kPaa		13.0 to 15.9 psia 90 to 110 kPaa
Flow Rate	1 to 6 l/min	1 to 2 l/min	User limited to 250ml/min MAXIMUM
Dew Point	At least 5°C below ambient temperature		At least 5°C below ambient temperature
Temperature	Nominally at ambient temperature		Nominally at ambient temperature
Particulates	<3µm. an internal replaceable, 0.3µm filter is fitted as standard		An external filter of 6µm must be provided by the user
Condition	Clean, non flammable, non toxic*, non corrosive, oil free, dry (see dew point above)		Clean, non-corrosive, oil free, dry (see dew point above), toxic and flammable, but not oxygen enriched samples. The auto-ignition temperature of each flammable gas in the sample must be greater than 200°C.

* For flammable or toxic samples use the 1440FTX



A) DOUBLE UNIT CASE (NOT PANEL MOUNTABLE)

Dimensions do not include Back Pressure Regulator if fitted an additional 110mm must be added to the back of the unit depth

B) SINGLE UNIT CASE (PANEL MOUNTABLE)

EC Directive Compliance

The 1440 complies with the Low Voltage Directive 73/23/EEC and the EMC Directive 89/336/EEC (as amended by Directive 92/31/EEC), both as amended by Directive 93/68/EEC.

It conforms to the following harmonised European standards for product safety and electromagnetic compatibility:

EN 50081-1: Generic emission standard

EN 50082-1: Generic immunity standard

EN 61010-1: Safety requirements for electrical equipment for measurement, control and laboratory use.

This product is rated for Installation Category II in accordance with IEC 664.

This product is rated for Pollution Degree 2 in accordance with IEC 664.

Performance Specification Continued				
Gas Measured	Oxygen	Methane	Carbon Dioxide	Carbon Monoxide
Output fluctuation (peak to peak noise):	$\pm 0.02\% \text{O}_2$	0.5% of selected range	0.5% of selected range	0.5% of selected range
Ambient temperature coefficient:	$< \pm 0.05\% \text{O}_2 / 10^\circ\text{C}$ zero $< \pm 0.3\%$ reading/ 10°C span	1% of full scale per 10°C change	1% of full scale per 10°C change	1% of full scale per 10°C change
Ambient pressure coefficient:	Directly proportional (0.025% reading per mbar)	$> 0.15\%$ of reading per mbar within specified range (0.025% reading per mbar)	$> 0.15\%$ of reading per mbar within specified range (0.025% reading per mbar)	$> 0.15\%$ of reading per mbar within specified range (0.025% reading per mbar)
(with back pressure regulation, only available for STD analyser):				
Sample flow effect:	0.1% of O_2 for 50 to 200ml/min	3% of full scale for 50 to 200ml/min	3% of full scale for 50 to 200ml/min	3% of full scale for 50 to 200ml/min

The performance specification has been written, and verified, in accordance with the international standard IEC 1207-1: 1994 "Expression of performance of gas analysers"

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