

SERVOMEX 5100 i.s. SERIES

PORTABLE GAS ANALYSER PERFORMANCE SPECIFICATION

SPECIFICATION			
GASES MEASURED:	O ₂ (standard)	O ₂ (high accuracy)	Infrared : CO ₂
TECHNOLOGY:	Magnetodynamic Paramagnetic Sensor		Infrared Sensors
PERFORMANCE:			
Range(s):	0-100% O ₂ **	0-100% O ₂ **	0 - 10% 0 - 25%
Accuracy (intrinsic error):	±0.1% O ₂	±0.05% O ₂	±2% of FSR
Repeatability:	±0.1% O ₂	±0.01% O ₂	±1% FSR
Linearity:	±0.1% O ₂	±0.01% O ₂	±1% FSR
Decimal places:	1	2	2
Response time(T ₉₀):	<15 seconds	<15 seconds	<15 seconds
Zero drift per week:	±0.4% O ₂	±0.2% O ₂	±4% FSR
Temperature coefficient			
Zero:	±0.2 O ₂ per 10°C (18°F)	±0.2 O ₂ per 10°C (18°F)	±1% FSR*
Span:	±0.3 O ₂ per 10°C (18°F)	±0.3 O ₂ per 10°C (18°F)	±5% FSR*
Pressure effect:	Directly proportional to ambient barometric pressure <0.2% reading / mBar change		
PHYSICAL:			
Dimensions (W x D x H):	160mm x 140mm x 185mm (6.3" x 5.5" x 7.3") without protective case 175mm x 160mm x 195mm (6.9" x 6.3" x 7.7") with protective case		
Weight:	1.8 Kg to 2.3 Kg (4.0lbs to 5.1lbs)		
Ingress protection:	IP65 (IP64 for non-pumped version)		
Operating temperature:	-10°C to +50°C (+14°F to +122°F)		
Storage temperature:	-20°C to +60°C (-4°F to +140°F)		
Alarms:	Two user configurable concentration alarms indicated by an LED, icon display and audible sounder Instrument fault alarm indicated by an LED, icon display and audible sounder		
Power supply:	The instrument must be charged in a safe area using the 100-240V charger supplied Note: The unit is not designed to operate from mains power		
Notepad:	Up to 200 measurement points can be stored in the analyser memory for later viewing		
Effect of tilt (per 15°):	± 0.15% O ₂	± 0.15% O ₂	± 1% FSR
Typical battery life:	10 hours at 20°C		
Display:	White backlit LCD		
Operating altitude range:	-500 to 2000 metres		

* in the range 5 to 45°C (41 to 113 °F)

** Note: Samples in excess of 21% should not be measured in a hazardous area, for further information please contact your local Servomex office



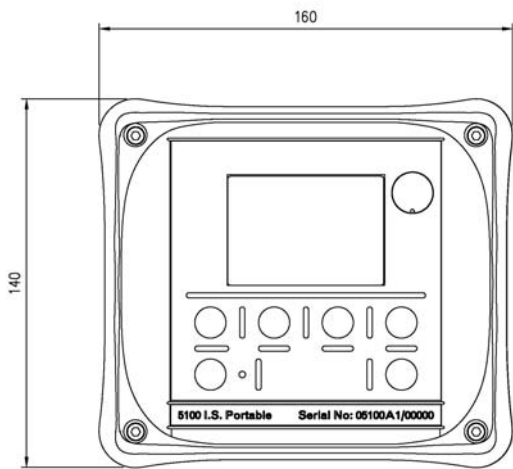
5100 i.s. BATTERY RUNNING TIMES (HOURS)

	Li - Ion (O ₂) 5110 Pumped	Li - Ion (IR) 5110 Pumped	Li - Ion (O ₂) 5111 AFCD	Li - Ion (IR) 5111 AFCD
50 °C	16.5	10.5	18.0	11.4
20 °C	14.8	9.7	18.0	11.4
-5 °C	10.5	7.4		
-10 °C	9.7	7		9.0

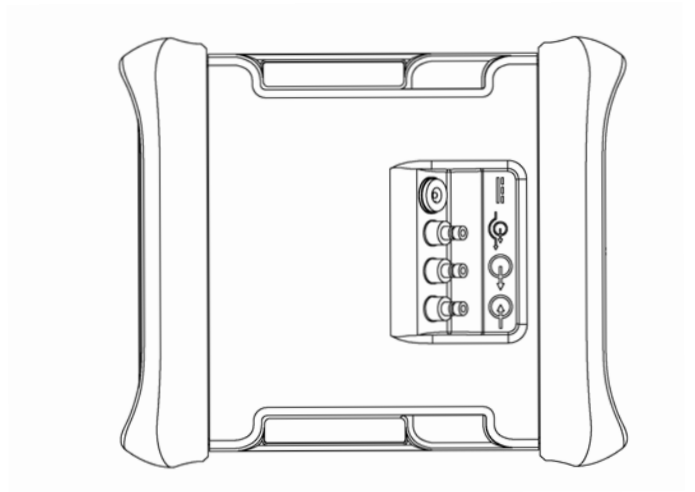
Pump duty cycle = 5 mins ON / 5 mins OFF

OXYGEN ENRICHED SAMPLES AND PRESSURE INFORMATION FOR HAZARDOUS AREAS

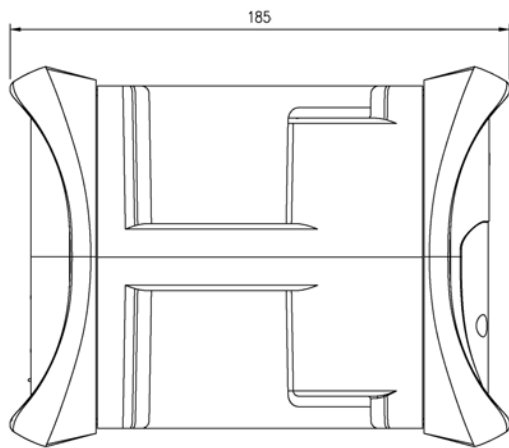
Outside Atmosphere	Sample Gas			
	Type	Oxygen	Pressure	Permitted
Flammable ≤21% oxygen 11.6 - 16.0psia (80 - 110kPa abs)	Non-Flammable 5110 Pumped	≤21% oxygen	≤16psia (≤110kPa abs)	YES
	Flammable 5110 Pumped	≤21% oxygen	≤16psia (≤110kPa abs)	YES
	Non-Flammable 5110 Pumped	≤21% oxygen	>16psia (>110kPa abs)	NO
	Flammable 5110 Pumped	≤21% oxygen	>16psia (>110kPa abs)	NO
	All	≥21% oxygen		NO
	Non-Flammable 5111 AFCD	≤21% oxygen	≤26psia (≤180kPa abs)	YES
	Flammable 5111 AFCD	≤21% oxygen	≤26psia (≤180kPa abs)	YES



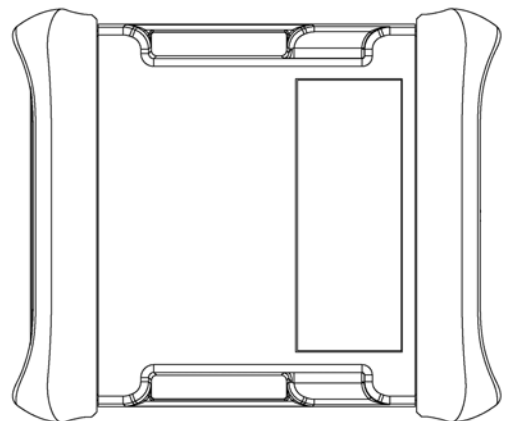
TOP



FRONT



SIDE



BACK

DIMENSIONS SHOWN IN MILLIMETRES

HAZARDOUS AREA APPROVALS

ATEX:  II 1G, Ex ia IIC T4 (-10°C < Ta < +50°C)
(+14°F < Ta < +122°F)

IECEX: Ex ia IIC T4 (-10°C < Ta < +50°C)
(+14°F < Ta < +122°F)

EC DIRECTIVE COMPLIANCE

CE marked and in compliance with the ATEX, EMC and is in the scope of the WEEE Directives

UL approved and CE marked 100-240V / 43-70Hz AC power supply.

PERFORMANCE SPECIFICATION

Written and verified in accordance with:

BS EN 61207-1 1994
BS EN 61207-3 2002

MEASUREMENT RANGES

Carbon dioxide, CO₂ 10% or 25%
Oxygen, O₂ 0-100% standard or high accuracy

* Note: Samples in excess of 21% should not be measured in a hazardous area, for further information please contact your local Servomex office

SAMPLE

Clean, dry at ambient temperature and free from particulates <0.6µm (conditioning accessories are available to prepare sample where required)

Sample inlet connection: 5mm OD stub with QuickConnect barb fitting for 5mm (¼") ID tube
Sample outlet connection: 5mm OD stub (sample and bypass)
Optional connector: Quickconnect fitting to an ⅛" NPT threaded fitting

Inlet pressure:	<u>5110 Pumped</u>	<u>5111 AFCD (Pressure Driven)</u>
	minimum 80kPa absolute (11.6psia) maximum 110kPa absolute (16.0psia) typically ±3.4kPa gauge (±0.5psig) at 700ml/min nominal	6.9kPa gauge (1psig) 69kPa gauge (10psig)

CERTIFICATION

ATEX:	Baseefa 06 ATEX0124	Baseefa 06ATEX0182X *
IECEX:	IECEX BAS06.0030	IECEX BAS060042X

* - special condition for safe operation: maximum inlet pressure 1.8 bar absolute

OPTIONS AND ACCESSORIES

- Additional barb fittings for simple zero and span gas connections
- Sampling probes
- 2 years spares (includes replacement filters and 'O' rings)
- Black canvas carrying case
- Sample conditioning kit (pumped version only)
- Transport case (for use in a safe area only)

MATERIALS IN CONTACT WITH SAMPLE AND CALIBRATION GASES

	Common Gas Path	Standard and High Accuracy Oxygen Sensor	Infrared Sensor	Optional Gas Probe	Sample Conditioning Kit
302 Stainless steel	✓				
316 Stainless steel		✓	✓	✓	✓
Borosilicate glass	✓	✓		✓	
Epoxy adhesive (EPO-TEK H72)			✓		
Electroless nickel		✓			
Fibre glass					✓
Fluorocarbon elastomer (FPM)					✓
Gold			✓		
Kynar ® (PVDF: polyvinylidene disulphide)	✓				
Nickel	✓		✓	✓	✓
Nitrile					✓
Nylon				✓	
PPS (polyphenylene sulphide) with carbon fibre filler	✓				
PPS (polyphenylene sulphide)	✓				
Perspex					✓
Platinum		✓			
Platinum/iridium alloy		✓			
Polysulphone	✓				
Polyurethane				✓	
PVC (polyvinylchloride)				✓	✓
Ruby (restrictor)	✓	✓	✓		
Sapphire			✓		
Silica					✓
Viton ®	✓	✓	✓	✓	✓