



GAS	MEASURES	APPLICATION
OXYGEN	PERCENT	PROCESS CONTROL SAFETY

SENSING TECHNOLOGY



INTRINSICALLY SAFE ANALYZER MEASURES O₂

UNRIVALLED PERFORMANCE

- Uses industry-leading patented Paramagnetic technology for stable, non-depleting measurement
- Manufactured by Servomex - over 60 years' experience innovating and pioneering gas analysis, and thousands of units used in the field every year

LOW COST OF OWNERSHIP

- Uses a non-depleting sensor technology that reduces ongoing maintenance costs
- Advanced Li-Ion rechargeable batteries as standard (up to 18 hour run time)

BENCHMARK COMPLIANCE

- IEC Ex/ATEX for Zone 0, and FM/CSA Division 1

FLEXIBLE

- Intrinsically Safe (i.s.) design permits use in any hazard rated location including Zone 0/Division 1
- Gas analysis for O₂
- Pumped or non-pumped functionality
- IP65 rating

EASY TO USE

- Intuitive, engineer-friendly interface and icons
- Stores up to 200 measurements for subsequent download
- Ergonomic design with carry strap

KEY APPLICATIONS

- Process monitoring
- Inerting applications
- Controlled atmosphere monitoring
- Hazardous area combustion optimization

Learn more about the SERVOFLEX 5100 Micro i.s.

Visit servomex.expert/pb-5100



ENHANCED SAFETY FOR THE MOST DANGEROUS LOCATIONS

When you work in environments where potentially explosive atmospheres may be present, you need the most robust analytical solutions that enhance safety and provide efficient, engineer-friendly gas measurements.

In applications like catalytic regeneration, decoke cycle, combustion optimization and hazardous area process monitoring, i.s. certified solutions help reduce costs and improve efficiency. No matter what your application monitoring requirements are, you'll want a device that offers feature-rich performance, long battery runtime, low operational costs, simplified ongoing maintenance and ease of use. And we don't believe you should have to compromise.

A NO COMPROMIZE SOLUTION

The Micro i.s. combines intuitive user interaction and a safety-enhanced i.s. design with ultra-sensitive, industry-leading O₂ monitoring capability, providing the ideal portable gas analysis solution for hazardous applications.

With flexible options including pumped and non-pumped formats and a range of features designed to further simplify sample testing, the Micro i.s. doesn't just meet requirements: it adapts perfectly to deliver the efficiency and usability your job demands.

WORKS AS HARD AS YOU DO

Optimized to deliver a tough and hard-working solution with maximized uptime, the Micro i.s. comes with high-grade, long-life Li-Ion rechargeable batteries as standard. An integrated digital LCD notepad also allows up to 200 measurements to be stored on the device, permitting you to work and test with maximized efficiency.

USEFUL LINKS



These analyzers are not intended for any form of use on humans and are not medical devices as described in the Medical Devices Directive 93/42EEC.

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TECHNICAL DATA SHEET



SERVOFLEX Micro i.s. 5100

SPECIFICATIONS

GAS MEASURED	OXYGEN (O ₂) Standard	OXYGEN (O ₂) High accuracy			
TECHNOLOGY	Magnetodynamic paramagnetic sensor				
PERFORMANCE					
Measurement range	0-21% O ₂ (0-100% O ₂ * in a safe area)				
Decimal places	1	2			
Linearity error	±0.1% O ₂	±0.01% O ₂			
Repeatability error	±0.1% O ₂	±0.05% O ₂			
Intrinsic error (accuracy)	±0.1% O ₂	±0.05% O ₂			
Response time (T ₉₀)	<15 seconds				
Zero drift per week	±0.4% O ₂	±0.2% O ₂			
Sample flow variations	±0.1%				
Temperature coefficient Zero Span	±0.2 O ₂ per 10°C (18°F) ±0.3 O ₂ per 10°C (18°F)				
Tilt effect	±0.15% O ₂ per 15° of tilt				
Pressure effect	Directly proportional to ambient barometric pressure				
Power cycle	±0.4% O ₂ maximum				
SIGNAL OUTPUTS					
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				
BATTERY (rechargeable lithium ion)	Running times (from fully charged)			Charge time (from empty)	
	+50°C	+20°C	-5°C	-10°C	
Li-ion (O ₂) 5110 Pumped	16.5	14.8	10.5	9.7	4 to 6 hours
Li-ion (O ₂) 5111 AFCD	18.0	18.0	-	-	
Power supply	The instrument must be charged in a safe area using the 100-240V charger supplied. The unit is not designed to operate from mains power				
Note	<p>The 5100 i.s is suitable for operation in hazardous areas only when powered by the internal battery. The power supply must only be used to charge the internal rechargeable battery when in a safe area. Lithium ion batteries have no 'memory effects', so can be recharged, from any charge level, for any duration and as often as preferred, without affecting service life.</p> <p>To ensure optimum service life of the battery, we recommend:</p> <ul style="list-style-type: none"> recharging the battery after each session of operation when not in use, storing (with fully charged battery) in a cool environment and recharging every 2 months 				
OPERATING ENVIRONMENT					
Temperature	Operation: -10°C to +50°C (+14°F to +122°F) Storage: -20°C to +60°C (-4°F to +140°F)				
Relative humidity	0-95% RH non condensing				
Warm up time	Allow 1 hour to meet performance specifications				
Operating altitude range	-500 to 2,000 metres				
Ambient pressure	80 to 110 kPa absolute				

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

The performance specification has been written and verified in accordance with the international standard IEC 61207-1:1994 "Expression of performance of gas analyzers"



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SAMPLE CONDITIONS	
Sample gas	Clean, dry at ambient temperature and free from particulates <2µm (conditioning accessories are available to prepare sample where required)
Sample inlet connection	5mm OD stub with QuickConnect barb fitting for 5mm (1/4") ID tube
Sample outlet connection	5mm OD stub (sample and bypass)
Optional connector	QuickConnect fitting to an 1/8" NPT threaded fitting
Maximum inlet pressure	5110 pumped
	minimum 80kPa absolute (11.6psia) maximum 110kPa absolute (16.0psia) typically ±3.4kPa gauge (±0.5psig) at 700ml/min nominal flow
	5111 AFCD (pressure driven)
	6.9kPa gauge (1psig) 69kPa gauge (10psig)
PHYSICAL	
Ingress protection	IP65
Weight	1.8kg to 2.3kg (4.0lbs to 5.1lbs)
Dimensions, WxDxH	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

SAMPLE WETTED MATERIALS

	Common gas path	Standard and high accuracy oxygen sensor	Optional gas probe	Sample conditioning kit
316 stainless steel		•	•	•
Borosilicate glass	•	•	•	
Electroless nickel		•		
Fibre glass				•
Fluorocarbon elastomer (FPM)				•
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)			•	•
Silica				•
Viton®	•	•	•	•



COMPLIANCE

HAZARDOUS AREA APPROVALS	
ATEX European	Ex II 1G, Ex ia IIC T4 Ga (-10°C < Ta <+50°C) (+14°F < Ta <+122°F)
IECEX International	Ex ia IIC T4 Ga (-10°C < Ta <+50°C) (+14°F < Ta <+122°F)
FM approved North American	Class I, Division 1, Group A,B,C,D T4 } Indoor (IP65) Locations Class I, Zone 0, AExia IIC T4 } (-10°C < Ta <+50°C) Class I, Zone 0, Exia IIC T4 } (+14°F < Ta <+122°F)
EC DIRECTIVE	This product is in compliance with the EMC Directive, the RoHS II Directive, and all other applicable directives.
ELECTRICAL SAFETY	Electrical safety to IEC 61010-1

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)	All	≥21% oxygen		NO
	Non-flammable 5110 pumped	≤21% oxygen	≤16psia (≤110kPa abs)	Yes
	Flammable 5110 pumped		>16psia (≤110kPa abs)	NO
	Non-flammable 5110 pumped			
	Flammable 5110 pumped	≤21% oxygen	≤26psia (≤180kPa abs)	Yes
	Non-flammable 5111 AFCD			
	Flammable 5111 AFCD			

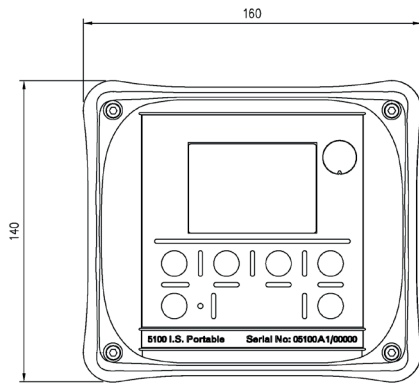
OPTIONS

DESCRIPTION		
Additional barb fittings	Additional QuickConnect fittings to simplify connection of zero and span gases	<input type="checkbox"/>
Probe length required	None	<input type="checkbox"/>
	25cm	<input type="checkbox"/>
	1m	<input type="checkbox"/>
2 years spares	Recommended spares for two years operation, comprising replacement filters (5) and filter cap 'O' ring	<input type="checkbox"/>
Carrying case	Black canvas	<input type="checkbox"/>
Transport case	For use in a safe area only	<input type="checkbox"/>
Sample conditioning kit	Pumped versions only	<input type="checkbox"/>

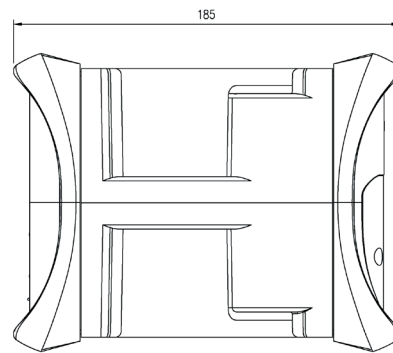
Please tick the box for required options



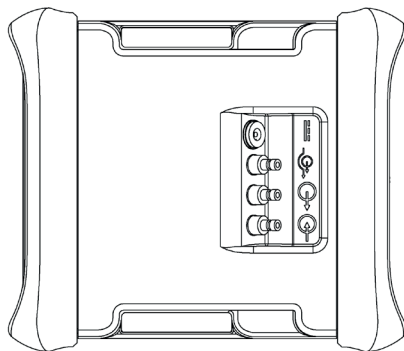
DIMENSIONAL DRAWINGS



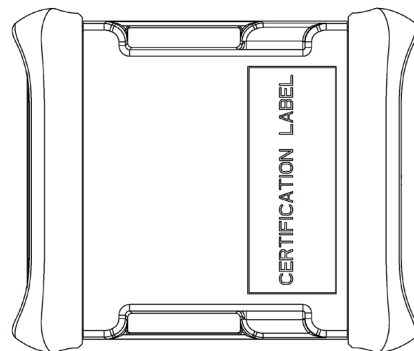
FRONT



SIDE



TOP



BOTTOM

Dimensions shown in millimetres



> WE'RE READY TO HELP

WHATEVER YOUR GAS ANALYSIS REQUIREMENTS, WHEREVER YOU ARE

PBTDSMicro I.s. Rev.0 Date: 05/20

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