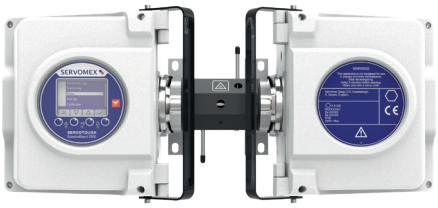
PRODUCT OVERVIEW

SERVOTOUGH SpectraExact 2500

HAZARDOUS AREA



GAS	MEASURES	APPLICATION
TOXIC FLAMMABLE CORROSIVE	PERCENT PPM	PROCESS CONTROL

LIQUIDS	MEASURES	APPLICATION
TOXIC FLAMMABLE CORROSIVE	PPM	PROCESS CONTROL

SENSING TECHNOLOGY

GAS FILTER CORRELATION

INFRARED

KEY APPLICATIONS

- Water in ethylene dichloride/ solvents
- Ethylene production
- Toluene di-isocyanate production
- Pure Terephthalic Acid (PTA) production

ACCURATE AND ADAPTABLE PHOTOMETRIC ANALYZER FOR SINGLE COMPONENT PROCESS MONITORING

UNRIVALLED PERFORMANCE

- The new 2500 series of digital NDIR analyzers builds on the proven measurement principles of Servomex's premium NDIR analyzers
- Suitable for mounting in various hazardous area locations
- Highly reliable, accurate and stable

FLEXIBLE

- On line, real time analysis

EASY TO USE

- New and improved, easy to use display and interface
- Modbus TCP
- Ideal for diverse gas and liquid sample types (0-130°C/32-356°F and 0-150psig/0-10barg/0-1,000kPag)

LOW COST OF OWNERSHIP

- Footprint compatible with all previous series of 2500 analyzers making for fast, cost effecive replacement
- Separate cell allows simple cleaning and servicing
- Low maitenance non-depleting technology

BENCHMARK COMPLIANCE

- UKCA, CE, ATEX, UKEx, IECEx hazardous area approvals
- North American hazardous area approvals*
- Hardware safety integrity certification supports use in SIL 2 safety instrumented systems*
- Certified for gases and dust
- Suitable to measure a continually flammable sample in a hazardous area

Note:

* Pending, refer to Servomex

For more information please contact us

Visit servomex.com/contact

SERVOMEX
a spectris company

PRODUCT OVERVIEW

SERVOTOUGH SpectraExact 2500

HAZARDOUS AREA

ENHANCED SAFETY FOR THE MOST DANGEROUS LOCATIONS

When you work on applications with complex process requirements, you need a highly flexible, easy-to-use solution that is adaptable to your exact process monitoring needs.

The SpectraExact is certified for gas and dust zone areas and is suitable to use with flammable or highly toxic gases.

MORE FEATURES, MORE FLEXIBILITY

Digital communications enables the full functionality of the SpectraExact to be controlled remotely and safely, with Modbus implemented through MODBUS TCP.

Options include a High Integrity cell, supplied with specialist Chemraz "O" rings to ensure improved leak tightness for use in high concentration, highly toxic gas measurements. Meanwhile a heated cell is a standard option available on safe area, ATEX, UKEx, IECEx. North American approvals pending.

UNBEATABLE VALUE OVER PRODUCT LIFE

The ability to reduce ongoing costs and leverage maximum efficiency from process control equipment is essential to your business. This is why SpectraExact features an intelligent design that helps to reduce the frequency of maintenance requirements via sample cell and electronics segregation. This, combined with the use of non-depleting technology, ensures the SpectraExact delivers a low lifetime cost-of-ownership year after year.

USEFUL LINKS

SERVOMEX SERVICE NETWORK
servomex.com/service

SERVOMEX SYSTEMS INTEGRATED SOLUTIONS
servomex.com/systems

SERVOMEX EXPERT UNRIVALLED KNOWLEDGE AND VISION
servomex.com/expert-guidance

PBTDS2500F Rev.3 Date: 02/24

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.

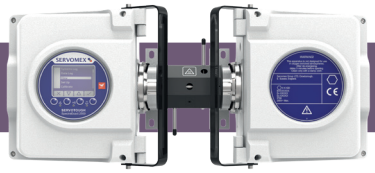
Please note: *Whilst every effort has been made to ensure accuracy, no responsibility can be accepted for errors and omissions. Data may change, as well as legislation, and you are strongly advised to obtain copies of the most recently issued regulations, standards and guidelines. This document is not intended to form the basis of a contract.*

SERVOMEX
a spectris company

SERVOMEX.COM

TECHNICAL DATA SHEET

SERVOTOUGH SpectraExact 2500



SPECIFICATIONS

GAS MEASURED	**See "TYPICAL MEASUREMENTS" on next page**
TECHNOLOGY	Non-dispersive infrared
PERFORMANCE	
Intrinsic error (accuracy)	<1% FS*
Response time (T_{90})	11 sec†
Drift (zero) per week	<1% FS
Output fluctuation (noise)	<1% FS peak to peak
Repeatability	<0.5% FS
Ambient temperature influence	Less than 1% FS zero drift due to rate of ambient temperature change of 25°C/hr (45°F/hr) over a maximum of 25°C (45°F) change
Min. recommended range (application dependent)	10% FS
Recommended calibration frequency	Application dependent
Cross sensitivity	Application dependent
SIGNAL OUTPUTS/INPUTS	
Analog output	1 x isolated 4-20mA/0-20mA as standard
Output range	Analog output parameters freely selectable over measurement range
Alarms & relays	5 x volt free (30V/1A) single pole relays as standard
Digital communications	Optional Modbus TCP Ethernet
SAMPLE CONDITIONS	
Temperature	0°C to +180°C (+32°F to +356°F)
Sample pressure	0-10barg/0-1,000kPa gauge (0-150psig) (for high pressure operation contact Servomex)
Flow rate	0.2-5.0l/min gas applications 0.3-1.0l/min liquid applications
Condition	Gas: clean and non-condensing at the temperature of operation, free from particulates
OPERATING ENVIRONMENT	
Operating temperature	0°C to +55°C (+32°F to +131°F) (Heated cell >130°C: max 50°C (122°F))
Storage temperature	-25°C to +70°C (-13°F to +158°F)
Relative humidity	0-95% RH, non-condensing
Altitude	2,000m
Warm-up time	Typically 2-10h, depending on application and environment
Rate of ambient temperature change	<25°C/h (45°F/h)
Ingress protection	IP66

* When used under reference conditions
† Minimum, electronic only, excludes sampling

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

PHYSICAL	
Weight	From 27kg (55lbs) to 50kg (110lbs)
Dimensions, WxDxH	Max: 1620 x 284 x 500mm (63.7 x 11.2 x 20.0”) (inc. allowance to open covers) Min: 620 x 284 x 241mm (24.2 x 11.2 x 9.5”)
Mounting	Wall

UTILITIES	
Supply voltage	115/230Vac ±15% or 100/200Vac ±15% 50/60Hz
Rated power	120VA without optional heated cell 300VA with optional electrically heated cell
Zero gas	Typically nitrogen/liquid - application dependent
Span gas	Gas/liquid - application dependent
Sample connection	1/4”OD tube

TYPICAL MEASUREMENTS		
2500 Gas	**2500 Gas**	**2500 Liquid**
Acetic Acid Acetone Acetylene Ammonia Benzene Butane CO_2 CO CS_2 COS Chloroform Ethane Ethanol Ethylene Ethylene oxide HCl % Trichlorotrifluoroethene Acetaldehyde Freons	Methane Methanol NCO NO N_2O NO_2 Hexane Phosgene Propane Propylene SO_2 THC Toluene H_2O (vap)	H_2O in EDC H_2O in*: Acetic acid Acetone EDC Gylcols NMP THF VAM VCM Methanol Ethanol Isobutanol NaOH * Pending, refer to Servomex

SAMPLE WETTED MATERIALS

	Application configurable from
Sample cell options	Stainless steel, Hastelloy®, Monel®, titanium
Seals options	Viton®, Chemraz®, PTFE
Cell window options	Depends on application spectroscopy

COMPLIANCE

HAZARDOUS AREA APPROVALS	Model 2500 Series Gas Analyzer with unheated cell or heated cell up to:	
	130°C Operation	80°C Operation
North American Approval	Certification pending Class 1 Division 2 Group A,B,C,D T3	Certification pending Class 1 Division 2 Group A,B,C,D T4
IECEx Approval	Zone 2 T3 Gases Zone 21 T175 Dusts	Zone 2 T4 Gases Zone 21 T125 Dusts
ATEX Approval	Cat 3G T3 Gases Cat 2D T175 Dusts	Cat 3G T4 Gases Cat 2D T125 Dusts
UKEx Approval	Cat 3G T3 Gases Cat 2D T175 Dusts	Cat 3G T4 Gases Cat 2D T125 Dusts

ELECTRICAL SAFETY	Electrical safety to IEC 61010-1
FUNCTIONAL SAFETY	Demonstrates analyzer hardware compliance to SIL 2, IEC 61508 (pending)

CONFIGURATION	
Measurement	The choice of analyzer will depend on the measurement and application. What do you want to measure? What measurement range? What other gases are present? In what concentrations? What are the temperature, pressure, dewpoint and particulate loading of the sample? Common measurements include: % & ppm(v) carbon dioxide % & ppm(v) carbon monoxide % & ppm(v) methane %, ppm(v) & LEL total hydrocarbons ppm(v) water in solvents (e.g. EDC) % water in solvents (e.g. acetic acid) % & ppm(v) sulphur dioxide % ethylene % wl sodium hydroxide in water % & ppm(v) phosgene Other measurements are available. Contact your local Servomex company using the questionnaire to provide details of your application
Approval type	Safe Area IECEx Zone 2 ATEX Cat 3 UKEx Cat 3
Sample wetted materials	**Cell** A 316 stainless steel sample cell is fitted as standard, capable of high temperature and pressure operation. Other metals (e.g. Hastelloy® or Monel®) are available as options if required by a specific application. **O-rings** Viton® sample cell o-rings are fitted as standard. PTFE or Chemraz® o-rings are available as options if required by a specific application.
Additional options	**Sample temperature compensation** For use, usually with liquid samples, when the sample temperature is changing. A thermocouple, factory calibrated for each specific application, enables the analyzer to compensate for changes in sample temperature. **Heated sample cell** For use usually with gas samples, it ensures more reproducable results by making all measurements at a constant temperature.
Outputs	One analog isolated mA outputs and five relay contact pairs are fitted as standard.

SERVOMEX

QUESTIONNAIRE

Measurement(s)

	Component to be measured	Range	Units
1			
2			
3			

Sample conditions

Temperature	°C	°F
Pressure	psig	barg
Dewpoint	°C	°F
Particulates	mg/m³	

Is there a sample conditioning system between the sample point and the analyzer? Yes ☐ No ☐

If yes, please provide further details in the box below.

Background gases

(If a sample system is installed, please give details of background gases and sample conditions at the outlet of the system. If no sample system is fitted, please show background gases and conditions at the sampling point)

Component	Concentration	Units

Approval type

Is the analyzer to be installed in a hazardous area?

Yes ☐ No ☐

If yes, please provide further details

Sample wetted materials

Choose from the following, materials suitable for use with the sample gas:

Cell		O-rings	
316 stainless steel	☐	Viton®	☐
Hastelloy® C	☐	Chemraz®	☐
Monel®	☐	PTFE	☐
Titanium	☐		
Other‡	☐	Other‡	☐

‡ If you choose other, please give details, including known sample/material incompatibility information.

Additional options

Sample temperature compensation - pending ☐

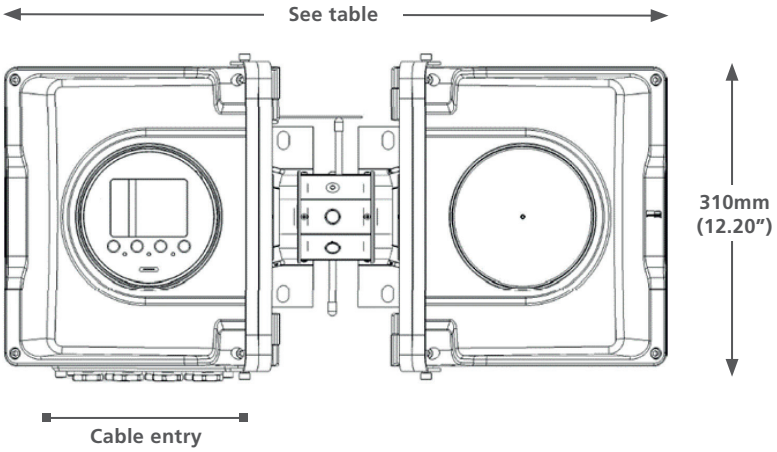
Heated sample cell ☐

Power supply

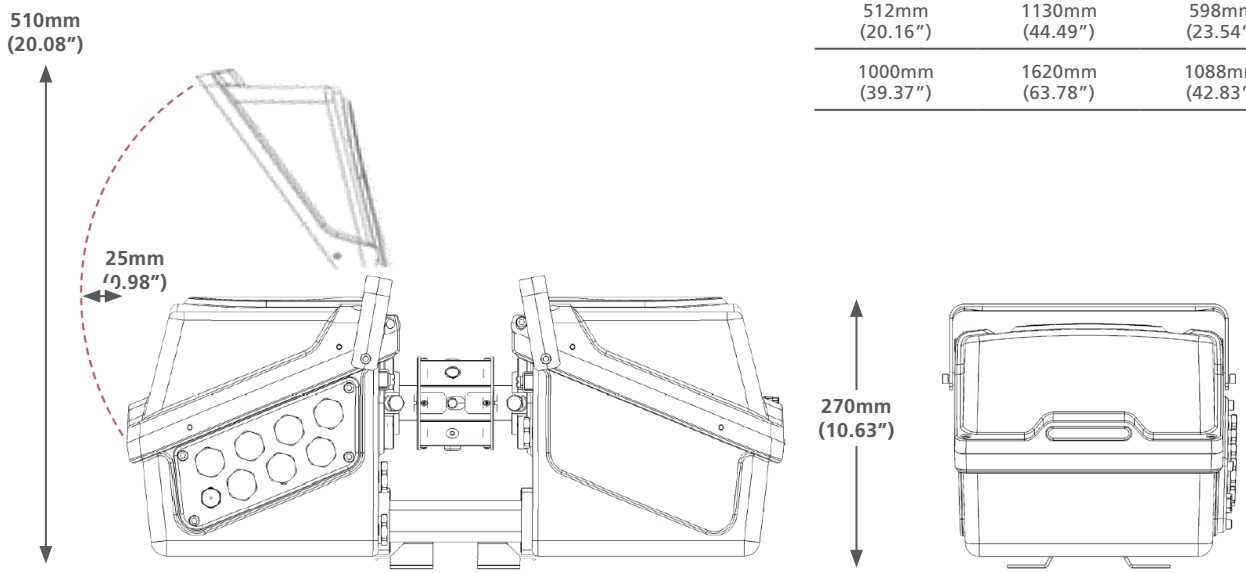
Voltage

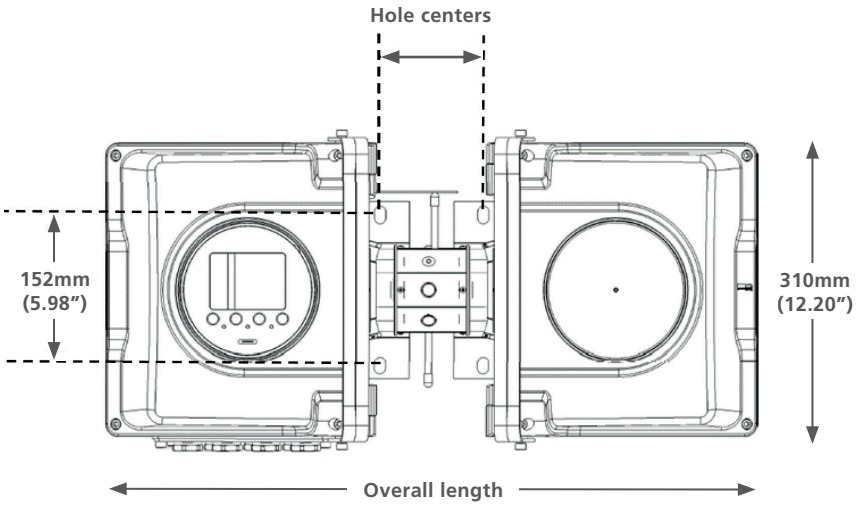
Frequency

DIMENSIONAL DRAWINGS



Path Length	Overall Length	Hole Centers
1 to 4mm (0.04 to 0.16")	620mm (24.41")	88mm (3.46")
8mm (0.31")	624mm (24.57")	92mm (3.62")
16mm (0.63")	632mm (24.88")	100mm (3.94")
32mm (1.26")	648mm (25.51")	116mm (4.57")
64mm (2.52")	680mm (26.77")	148mm (5.83")
128mm (5.04")	744mm (29.29")	212mm (8.35")
256mm (10.08")	873mm (34.37")	341mm (13.43")
512mm (20.16")	1130mm (44.49")	598mm (23.54")
1000mm (39.37")	1620mm (63.78")	1088mm (42.83")





WE'RE READY TO HELP

WHATEVER YOUR GAS ANALYSIS REQUIREMENTS, WHEREVER YOU ARE

PBTDS2500F Rev.3 Date: 02/24

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.

Please note: *Whilst every effort has been made to ensure accuracy, no responsibility can be accepted for errors and omissions.*
Data may change, as well as legislation, and you are strongly advised to obtain copies of the most recently issued regulations, standards and guidelines.
This document is not intended to form the basis of a contract.

SERVOMEX
a spectris company

SERVOMEX.COM