SERVOPRO

DF-745 SGMax

Product overview

High Purity

Gas	Measures	Application
Moisture	Trace ppm Ultra trace ppb	Quality

SENSING TECHNOLOGY

Laser Moisture

GEN-7

NanoTrace SERIES

Key applications

- Specialty gas cylinder quality control checks
- Bulk gas cylinder quality control
- Process development of new specialty gas blends

Tunable diode laser absorption spectroscopy (TDLAS) sensor-based trace moisture analyzer, designed for measuring diverse gas mixtures in specialty gas blending applications

Unrivalled performance

- Uses industry-leading, high stability Tunable Diode Laser (TDLAS) sensing technology
- New Solid State Hard Drive and CPU
- 5ppb Lower Detection Limit (LDL)
- Manufactured by Servomex - 70 years' experience innovating and pioneering gas analysis with thousands of units used in the field

Flexible

- Pure/specialty gas blend mixtures: database of 17 standard background gases and blends of up to 8 gases. Pre-define 30 gas mixture templates or create customized blends
- Broad detection range: 0ppb -100ppm
- Gas blend storage, recall and measurement data display via integrated LCD interface
- Analysis resistant to gas cell contamination. The SGMax is able to operate to specification with up to 90% signal loss

Easy to use

- Display shows real-time analysis and reference spectrum for increased user confidence
- Display data on the integrated LCD interface or download onto a USB drive
- Compact with a low weight; moves easily from port to port and ideal for other mobile applications
- Operates at ambient pressure, further reducing complexity and operating costs

Low cost of ownership

- Herriott Cell sensor design, the same as used in NASA's Mars rovers
- Absence of zero drift reduces calibration requirements
- Modular design allows individual component replacement in the field
- No consumables required

Benchmark compliance

- IEC 61010-1
- Overvoltage Category II, Pollution Degree 2
- EU EMC Directive
- EU Low Voltage Directive
- Class 1 laser product

For more information visit **servomex.com/contact**

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Flexible TDLAS trace measurements for diverse gas blends

When you need to analyze moisture as a contaminant in pure and specialty gas blending applications, you require highly accurate, stable measurements at a low LDL. A robust design that can withstand higher levels of contaminants within electronic specialty gas is a perfect application for TDLAS. The SGMax is able to operate to specification with up to 90% signal loss, so you can have confidence in the measurement given all the challenges of gas blending. We don't believe you should have to compromise.

A no compromise solution

At the heart of the SGMax is powerful application software specifically designed for single and blended specialty gases with up to eight components. An expanded database of 17 standard background gases now includes CF_4, C_2F_6, C_3F_8, C_4F_8 and NF_3, and users can pre-define gas mixture templates for routine blends or define a custom mixture using the front control panel. Custom gases can be added using a simple data collection procedure. The SGMax also virtually eliminates dry-down times, thanks to a clever hardware/software design. A compact, low weight format ensuring the simplified port to port mobility your package gas facility demands.

Field repairable and reduced ongoing costs

The new DF-700 Series Gen VII was designed for manufacturability and repairability. The laser cell, hard drive, CPU, PCBs, display, filter and gas panel can now all be replaced in the field. We have SOPs and service videos to guide these repairs. So, in the rare case a unit exhibits a component failure the product can stay in your facility to be repaired by a competent technician of yours or ours.

The use of patented leading-edge TDLAS technology provides long-term stability and accuracy, while the use of this first principle physics method also helps to reduce ongoing maintenance thanks to its non-depleting technology.

Useful links:

SERVOMEX SERVICE NETWORK

servomex.com/**service**

SERVOMEX SYSTEMS

servomex.com/**systems**

SERVOMEX EXPERT

servomex.com/**expert-guidance**

PBTDSDF745SGMax Rev. 2 Date: 10/24

Technical data sheet

SERVOPRO DF-745 SGMax

Specifications

Gas measured	**H_2O (purity)**
Technology	Tunable Diode Laser Absorption Spectroscopy (TDLAS)
Performance	
Measurement range	0-100ppm
Lower detection limit	5ppb
Intrinsic error (accuracy) FS	0-100ppm range ±5% of reading or ±5ppb (whichever is greater)
Response time (T_{90})	<3 minutes at 1 l/min
Zero drift/month	Negligible
Span drift/month	Negligible
Upset recovery time	<5 minutes to return to within 50ppb of previous stable reading
Compatible for use with pure or blended gases	N_2, O_2, H_2, He, Ar, CO_2, CO, SF_6, Ne, Kr, Xe, N_2O, CF_4, C_2F_6, C_3F_8, C_4F_8, NF_3. Blend up to 8 of these supported gases into one sample (for other gases contact Servomex)
Signal outputs/inputs	
Analog output	Isolated 4-20mA dc and a choice of 0-1, 0-5 or 0-10V dc
Analog output range	Scalable to any range between 0-2ppb to 0-100ppm
Visual alarms	4 moisture levels, temperature, system error, pressure range and hydrogen safety system (if applicable)
Dual scale range	2 user selectable analog output ranges
Relay contacts	4 non-latching, independently assignable relays. SPDT contacts rated for 1A at 30V dc
Serial communications	Factory configured RS232 or RS485 two-way serial communications
Sample conditions	
Sample flow range	0.5 to 2 l/min (most common flowrate 1l/min)
Bypass flowrate	0.3 l/min (depending on configuration)
Pressure (gauge)	30 to 150psi, 2.07 to 10.34 Bar, 207 to 1,034 KPa
Dew point	+5°C (+9°F) below minimum ambient
Temperature	+10°C to +80°C (+50°F to +176°F)
Particulates	Filtered to 2µm
Sample gas	Must be oil free, non-corrosive, non-condensing
Vent (gauge)	Vent to atmosphere. Maximum vent pressure is -2 to 1psi, -0.14 to 0.07 Bar, -13.8 to 6.9 KPa
Operating environment	
Operating temperature	+10°C to +40°C (+50°F to +105°F)
Storage temperature	Less than +50°C (+122°F), shielded from direct sunlight
Relative humidity	0 to 95% RH non-condensing
Operating altitude range	0-2,000m above sea level

Physical	
Size	483mm (19”) Wide x 266mm (10.5”) High x 631mm (24.9”) Deep (see drawing below)
Weight	33.2kg (73lbs)
Mounting	19” rack mount NEMA 1 enclosure, IP10
Utilities	
Supply voltage	110V ac @ 5A or 230V ac 50/60 Hz @ 2.5A
Zero gas	Optional - recommended if operating near LDL
Span gas	Not required
Standard aspirator gas supply (gauge)	N_2 or CDA at 80psig (±3psig) 15l/min with a backpressure on outlet stream of <2psig
Pneumatic gas (gauge)	N_2 or CDA 60 to 100psi, 4.14 to 6.89 Bar, 413.7 to 689.5 KPa (Isolation panel option)

Compliance

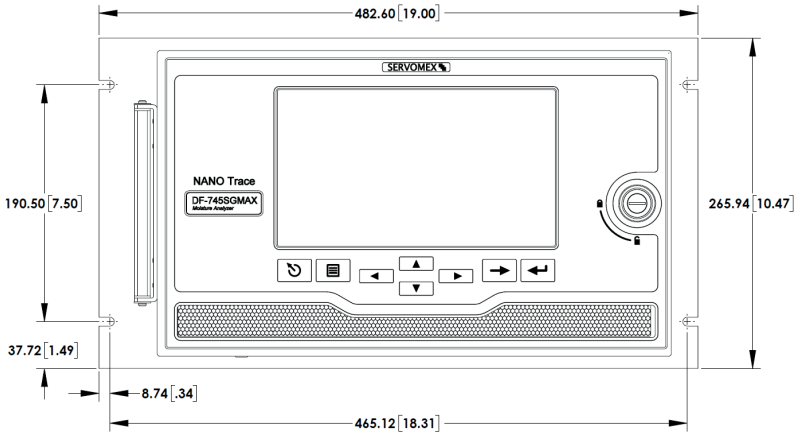
EC directives	This product complies with the EU EMC Directive, EU Low Voltage Directive, Pollution Degree 2. This is a class 1 laser product.
Electrical safety	Electrical safety to IEC 61010-1

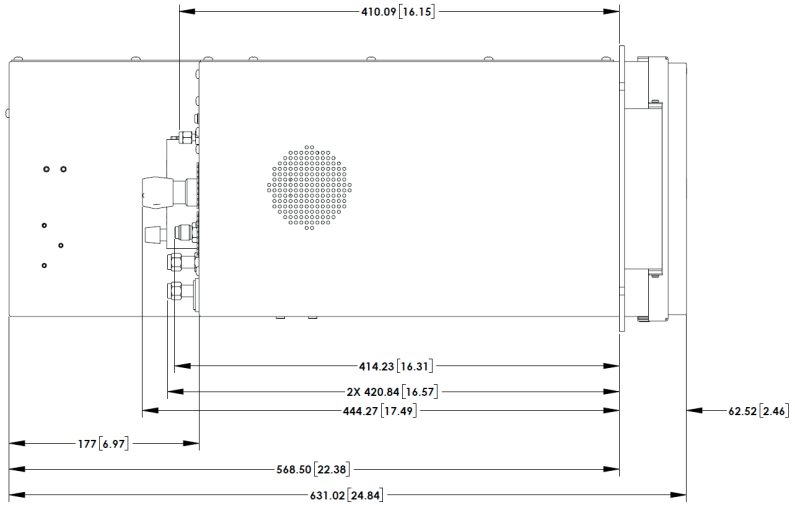
Options

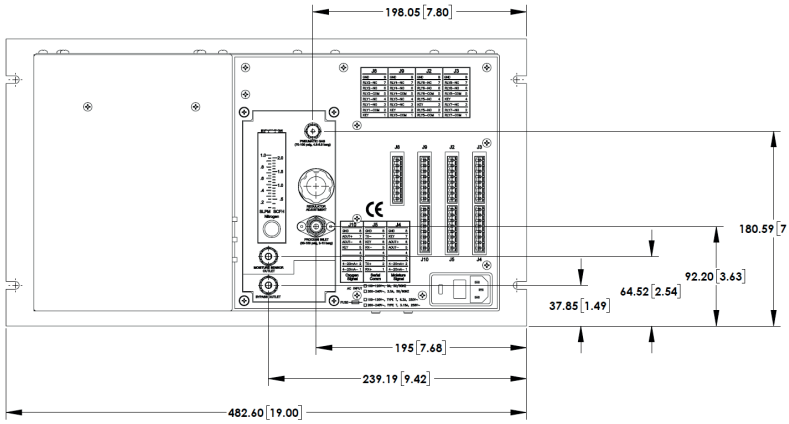
Configuration options		
Power input	110 VAC input power 220 VAC input power	☐ ☐
Hydrogen safety system	Not required System with pump purge System without pump purge	☐ ☐ ☐
Gas panel	Standard gas panel Isolation gas panel	☐ ☐
Key lock	Not required Required	☐ ☐
Communication	Not required RS232 communication RS485 communication	☐ ☐ ☐
Special analog output	Analyzer supplied with isolated 4-20mA and a choice of 0-1 VDC 0-5 VDC 0-10 VDC	 ☐ ☐ ☐
Power cord	Not required USA Europe UK	☐ ☐ ☐ ☐

Please tick the box for required options

Dimensional drawings







Dimensions shown in millimetres [inches]

We're ready to help

Whatever your gas analysis requirements, wherever you are.

These analyzers are not intended for any form of use on humans and are not medical devices as described in the Medical Devices legislation or regulation.

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 has a policy of constant product improvement and reserves the right to change specifications without notice.

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Analysis that **empowers**

SERVOMEX
a **spectris** company