

DF SERIES

DF-745 SGM_{ax}

TUNABLE DIODE LASER (TDL) SENSOR-BASED TRACE MOISTURE ANALYZER, DESIGNED FOR MEASURING DIVERSE GAS MIXTURES IN SPECIALTY GAS BLENDING APPLICATIONS



DF-745 SGM_{ax}

Designed to deliver a flexible and easy to use solution to diverse specialty gas blending applications, the DF-745 SGM_{ax} moisture analyzer provides measurements of single and multigas pure and specialty gas blend mixtures. Using intelligent integrated software, this device includes a database of 17 standard background gases - with blends of up to 8 gases - providing an adaptable solution for diverse application needs; 30 custom gas mixtures can be predefined directly via the front panel interface. A robust hardware/software design enables the SGM_{ax} to be moved easily from port to port, virtually eliminating dry down times often associated with these applications.

Servomex's leading-edge TDL technology has been engineered with to deliver a broad measurement range of 0-100ppm, with an incredible low 5ppb Lower Detection Limit (LDL) - the lowest available without using a pump. This device is also highly affordable over product life, through the use of ultra-stable, zero drift sensing technology that helps to extend calibration periods and reduce ongoing maintenance needs.

FLEXIBLE

- Trace level Tunable Diode Laser (TDL) sensing provides high stability measurements through minimal moisture contact with optical elements
- Broad detection range: 0-100ppm
- Gas blend storage, recall and measurement data display via integrated LCD interface

EASY TO USE

- 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
- 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
- Up to 3 months of data history downloadable via the internal USB connection.

LOW COST OF OWNERSHIP

- Maintenance periods can be extended by the use of patented ultra-stable, zero drift, non-depleting TDL sensing technology
- Zero drift reduces calibration requirements
- 5ppb LDL lowest available without need for a pump

UNRIVALLED PERFORMANCE

- Uses industry-leading, high stability TDL trace and ultra-trace sensing with zero drift
- Analysis is immune from gas cell contamination. The SGM_{ax} is able to operate to specification with up to 90% signal loss

BENCHMARK COMPLIANCE

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

Learn more about the DF-745 SGM_{ax}
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PRODUCT OVERVIEW: DF-745 SGM_{ax}

FLEXIBLE TDL TRACE MEASUREMENTS FOR DIVERSE GAS BLENDS

When you need to analyze moisture as a contaminant in pure and specialty gas blending applications, you depend on highly accurate, stable measurements with a low LDL and a broad measurement range. A robust design that permits portability to dry down times is essential to process efficiency, as is the requirements to record production data efficiently. No matter the application, you'll want a moisture analyzer that delivers class-leading performance while actively reducing maintenance costs. We don't believe you should have to compromise.

A NO COMPROMISE SOLUTION

At the heart of the SGM_{ax} is powerful application software specifically designed for blending specialty gases involving single gases and mixtures with up to eight components. An expanded database of 17 standard background gases now includes CF₄, C₂F₆, C₃F₈, C₄F₈ and NF₃, while 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 SGM_{ax} also virtually eliminates dry down times, thanks to a clever hardware/software design and a compact, low weight format ensuring the simplified port to port mobility your applications demand.

SIMPLE MAINTENANCE AND REDUCED ONGOING COSTS

Factory calibrated, the zero-drift performance delivered by Servomex's high-stability TDL sensing technology requires no ongoing calibration, while the non-depleting sensor technology never needs replacing. The exceptional 5ppb LDL is the lowest measurement level available without the additional set-up costs and continuing expense of using a pump. The SGM_{ax} is optimized for fast and efficient operation, with storage and recall functions for pure and specialty gas blends minimizing downtime switching between cylinder measurements. These advantages make the SGM_{ax} an adaptable, high performance analyzer you can depend on.

ALTERNATIVE PRODUCTS

The DF SERIES features a number of options designed to meet your application needs.

DF-740 NanoTrace



Choose the DF-740 NanoTrace Moisture Analyzer when you need to carry out trace H₂O as contaminant measurements in electrograde NH₃. This device uses TDL technology and is suitable for use with multiple background gases.

DF-745 NanoTrace



Choose the DF-745 NanoTrace Moisture Analyzer when you need to measure trace and ultra-trace H₂O as a contaminant for LED manufacturing bulk gas checks or leak detection. This analyzer uses TDL technology and is suitable for use with multiple background gases.

DF-760 NanoTrace



When you need a solution optimized for integrated circuit board bulk gas checks or leak detection, we recommend the DF-760 NanoTrace Moisture Analyzer. This device combines TDL and Coulometric sensing for trace H₂O and O₂ as a contaminant monitoring.

KEY APPLICATIONS

- Specialty gas cylinder quality control checks
- Bulk gas cylinder quality control



PRODUCT DATA: DF-745 SGM_{max}

OPTIONS	DESCRIPTION	SPECIFICATION
Output	5 output options available	Isolated 4-20mA DC and a choice of 0-1,0-2,0-5 and 0-10V DC
Output range	Output parameters	Scalable to any range between 0-1ppm to 0-100ppm (LDL 5ppb)
Alarms	5 alarms available	4 moisture levels, temperature, moisture sensor diagnostics, analyzer offline and expanded range
Serial communications	2 options for two-way serial communications	Factory configured RS232 or RS485
Dual scale range	2 range options	User-selectable secondary analog output ranges for rescaling the output once the primary range is exceeded
Hydrogen purge	Enhances safety during gas purge procedures	Includes sample delivery interlock and case purge valves for instrument housing and enclosure. Please note: limits available relays from 4 to 3
Mounting	1 option	19" rack mount NEMA 1 enclosure

ACCESSORIES

**ACCESSORIES AVAILABLE FOR SPECIFIC APPLICATIONS
– CONTACT YOUR LOCAL SERVOMEX BUSINESS CENTER**

MONITORING PERFORMANCE

Gas	H ₂ O (purity)
Technology	Tunable Laser Diode (TDL)
Range	0-100ppm – 0-1ppm min.
Accuracy (intrinsic error) FS	0-100ppm range ±5% of reading or ±5ppb (whichever is greater)
Zero drift/month	Negligible
T ₉₀ in minutes	<3 at 1liter/min
Lower Detection Limit (LDL)	5ppb
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 ₂ O, CF ₄ , C ₂ F ₆ , C ₃ F ₈ , C ₄ F ₈ , NF ₃ . Blend up to 8 of these supported gases into one sample

SAMPLE FOR MEASUREMENTS

Sample for measurement	Sample must be oil free, non-corrosive, non-condensing and non-flammable
Sample pressure	5– 30psig (1.36 – 3.08 BarA)
Dew Point	5°C/9°F below minimum ambient
Particulates	Filtered to 2µm

TUNABLE
DIODE LASER



FLAME IONISATION
DETECTOR



GAS
CHROMATOGRAPHY



PLASMA



LASER MOISTURE



COULOMETRIC



SPECTROSCOPIC



PRODUCT DATA: DF-745 SGM_{ax}

DEVICE SPECIFICATION

Size:

- 483mm (19") Wide x 266mm (10.5") Height x 608mm (23.9") Deep

Weight:

- 31.8 kg (70lbs)

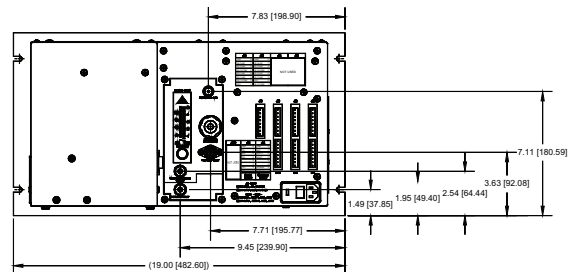
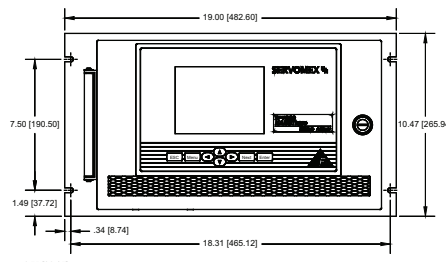
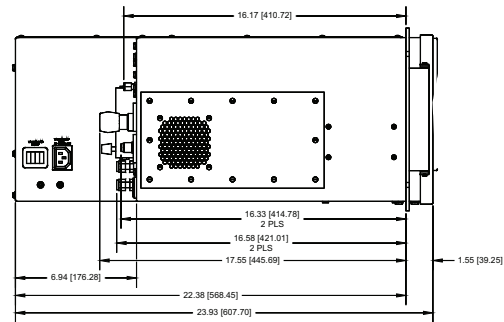
Operating Temperature:

- 10°C - 40°C/50°F - 105°F

Compliance:

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

DEVICE SCHEMATIC



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: This document was updated in August 2014. While every effort has been made to ensure accuracy, no responsibility can be accepted for errors or 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.

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