ETG 7500

SmartCEMS for Marine Exhaust Monitoring

ENVIRONMENTAL REGULATIONS FOR MARINE NAVIGATION

Exhaust gas emissions from the maritime industry being subject to international and national law and regulations, it is fundamental for ship owners to establish compliance with new environmental standards.
Being the de facto convention, IMO Marpol Annex VI sets limits for airborne pollution for gas substances contributing to local and global environmental problems.
The ETG 7500 it's a very smart system CEM where it's possible to swap from first analysis cabinet to other automatically avoiding out of service of the whole system. All components has been selected for marine application.
ETG 7500 has been specifically designed for the marine industry, to monitor DeSOx, suitable to monitor the most severe emission limits for SOx (MARPOL 73/78 Annex VI and Amendments).

MODULAR SISTEM LAYOUT

MAIN FEATURES

- Ready to operate for SO_2/CO_2/ ratio monitoring
- Modular system composed by Probe-Sample box conditioning-Cabinet Analysis
- Automatic System Back up in case of failure
- CO_2 analyzer NDIR based – SO_2 UVDOAS based
- Remote Control from Central Room
- Automatic Calibration
- Signal out : 4-20 mA, Profinet, Modbus, Profibus
- Bi-directional Input/Output
- IACS UR E10 Certification
- IMO Marpol Annex VI Compliant
- RINA Certification
- Rugged Marine cabinet and components with Stainless Steel material
- No-Stop operation with field replaceable sample conditioning box by the end user
- Low cost ownership

SAMPLING SYSTEM COMPOSED BY HEATED GAS SAMPLING PROBE AND CHILLER

The heated gas sampling probe is designed for continuous use in extractive sampling systems even when the sample contains dust and aerosols. Water vapour and high corrosive gases must be kept above their dew point to prevent corrosion and sample degradation prior to the analysis or sample conditioning. The probe can be delivered in several versions to meet user specific requirements. The probe incorporates a non-corrosive heated, replaceable ceramic filter element. The filter element is mounted in an electrically heated stainless steel housing covered by a thermal isolated weather protection enclosure. The temperature regulation is done by a maintenance free, fully electronic temperature controller with under temperature alarm.The heated sample hose Jh series is directly connected with a moveable PG42 cable conduit on the probes housing. A universal mounting clamp is available to connect other types of heated sample hoses.

Heated Sampling probe

Chiller Peltier Effect

Many of the analysis processes used in these fields require extracting the sample gas. This inevitably also extracts process-related contamination such as particles or moisture. These in turn can impact the measurement results or damage the measuring cells. The sample gas must therefore be conditioned before entering the analyser. The Chiller Peltier Effect remove the humidity on the sample delivering a dry sample to the analyzer. Not all applications require an output dew point of 5 °C. In some applications a higher dew point is sufficient. In other applications a stable output dew point doesn't matter, it's enough for the gas to be dry, so for the output dew point to have an adequate difference in temperature below the ambient temperature. The advantage of a higher output temperature is that at a given ambient temperature the Peltier cooler provides significantly more cooling performance.

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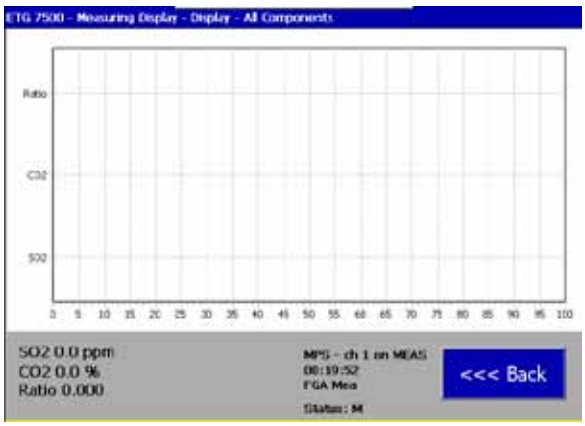
ETG 7500 SOFTWARE



The analyzer, once powered up, it will start automatically and you will see the main screen of the software analysis. The strip below indicates the presence or absence of errors or alarms. If there are none will show "Status OK" , otherwise an error message will appear flashing indicating to check the error in question. Clicking the above you will be forwarded to the Status/Fault which will be examined later. Where you can choose whether to display in real time a single gas or all of the gas at the same time. If you select a single gas will see a screen showing a progress bar is representative of the concentration between the beginning and the end of scale set by the user to that gas.
Cliking on Screen Display you can choose whether to display in real time a single gas or all of the gas at the same time. If you select a single gas will see a screen showing a progress bar is representative of the concentration between the beginning and the end of scale set by the user to that gas. Selecting to "All components", you will be shown the same bar for each gas concentration.

TECHNICAL DATA

Probe

Filter	2um ceramic
Wheater protection housing	SS304, thermal insulated, colour stainless steel natural
Power Supply	115 to 230 Vac 50/60 Hz
Mounting Flange	DN 65, PN6; form A according to EN 1092-1; SS316L or 2" ANSI 150 lbs; according to ASME B16.5
Operating temperature	180°C
Operating pressure	Max 2 Bara
Heating-up time	30 min
Ambient temperature	-20°to 60°C
Mounting Position	5°-15° incline (recommended), torsion angle max. 45°
Dust load	max. 1 g/m^3 , flow dependent
Sample gas inlet	G3/4" female thread
Sample gas outlet	1/8"NPT female thread

Gas Analyzers

Principle of Operation	SO_2 UVDoas – CO_2 NDIR
Standard Range	SO_2 0...50 ppm CO_2 0...20% (Others range on request)
Response time SO2	≤ 30 s
Repeatability SO2	≤ ± 2% F.S.
Zero drift SO2	≤ ± 2% F.S. (24 h)
Span drift SO2	≤ ± 2% F.S. (24 h)
Response time CO2	Approx. 15 s
Repeatability CO2	≤ ± 1%
Detection limit (3 δ)	≤ ± 1% (typically)
Linearity error	≤ ± 2%

Communication

Protocol	Bi-directional Input/output Profinet, Profibus , Modbus
Signal current analog outputs	4-20 ma each measured compound and ratio

Utilities

Air purge	Dew Point 0°C – Oil free – Min. Pressure 2 Bar / Max Pressure 6 bar
Electrical power consumption	SCS box + Probe (150 VA) - Analysis Cabinet with air conditioning (950 VA)

Mechanical Dimension

SCS sampling Conditioning System	W 400 x H 500 x D 250 mm
Analysis Cabinet ETG 7500	W 600 x H 1026 x D 550 mm

Compliant
IMO RES. MEPC 259 (68)
ISO 8178-1 Annex D

Company Certified ISO 9001

Product whole designed and manufactured in Italy

ETG RISORSE E TECNOLOGIA S.r.l.
Via P. Carpignano 23
14026 Montiglio M.to (AT) • ITALY
www.etgrisorse.com
sales@etgrisorse.com
infoetg@etgrisorse.com