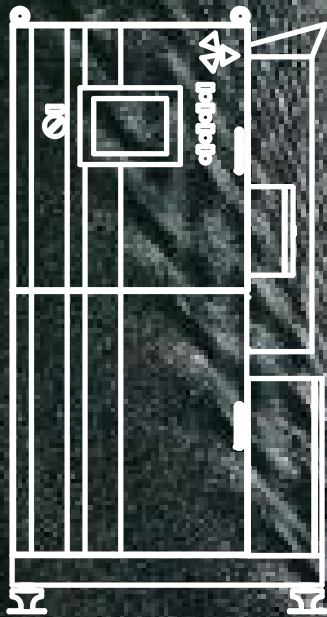




S-Keeper 7™

MARINE APPROVED CEMS



***GREEN
EFFICIENCY
ON BOARD***



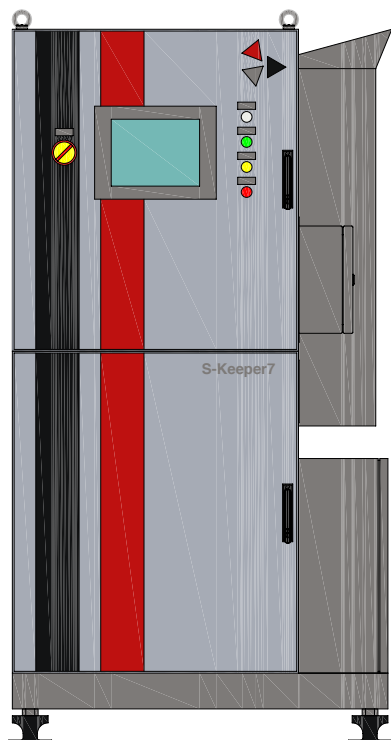
TECNOVA HT

WE MEASURE <> YOU CONTROL



S-Keeper 7™

ARE YOU A SHIPOWNER OPERATING IN EMISSIONS CONTROL AREAS "ECAs"? IS INCREASING SHIP EFFICIENCY YOUR TARGET? ARE FUEL SAVINGS STILL AN ISSUE? THIS IS YOUR LIFERAFT.



S-K7™ is a modular analysis system suitable for on-board continuous emissions monitoring as per:

- **MARPOL Annex VI Reg. 13 & 14**
- **MEPC Circ. 471, 177(58), 184(59)**
- **IEC 60092-504**

and certified as per:

- **RINA Rules, Pt C, Ch 3, Sec 6**
- **LLOYD Register Test Spec 1**
- **DNV Standard for Certification 2.4**



- > S-K7™ is simply the "State of the Art" of integrated analysis systems, fully compliant with applicable marine directives.
- > S-K7™ is fully tailored to the Shipowner's requests with particular focus on CaPex & OpEx balance.
- > S-K7™ is integrated with a modern PEM Propulsion Efficiency Monitor, thus encompassing metered Fuel Consumption, Fuel Oil Viscosity, Thrust and Torque measuring Systems.
- > Thanks to the specific engineering of this modular system, the S-K7™ installation is able to withstand the toughest marine environment.
- > On-board maintenance is easy even for an unskilled operator, while the SPMP Spare Parts Management Program ensures the traceability of every single component and its availability on the ship's course.

TECHNICAL DATA

S-K7™ OVERVIEW OF AVAILABLE FEATURES

- According to **MARPOL Annex VI Reg.13 & MEPC 177(58), 184(59)**
 - > calculation of NOx g/kWh vs Tier I, Tier II, Tier III limits
 - > monthly NOx compliance test report
- According to **MARPOL Annex VI Reg.14 & MEPC 177(58), 184(59)**
 - > calculation SO2/CO2 ratio
 - > calculation of Fuel Oil Sulphur content (% wt/wt) vs Reg.14 limits
- According to **MEPC 177(58), 184(59)** HC total Hydrocarbons load (ppm or g/kWh) is measured
- Reports according to **ISO 14001** of totalized mass NOx / SOx / CO2 emissions (kg/tonne)
- Reports according to **MEPC Circ. 471** of CO2 Emission Index (gCO2 / tonne n.m.)

- **Combustion Efficiency** monitoring by CO2/(CO2+CO) ratio
- Types EASY-N, LITE-N, LITE designed for **LNG powered units**
- O2 (%) & Particulate (mg/m3 or g/kWh) analysis as additional options
- Multiple stack management

S-K7™ MAIN SUPPLY

- Qty#1 Integrated Cabinet
- Qty#1 Sample probe & tube
- Qty#1 Sample line
- Qty#1 Bottles set (according to analyzed components)

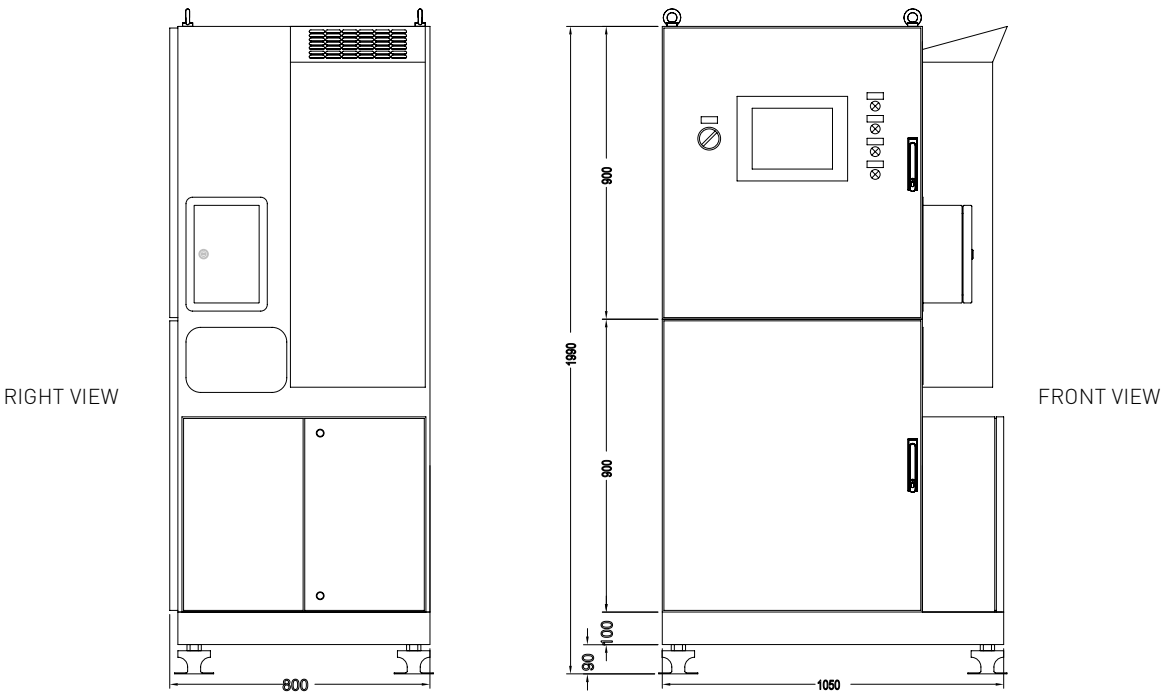
S-K7™ ANALYTICAL OPTIONS

- Qty#1 Oxygen Analyser
- Qty#1 Particulate Analyzer

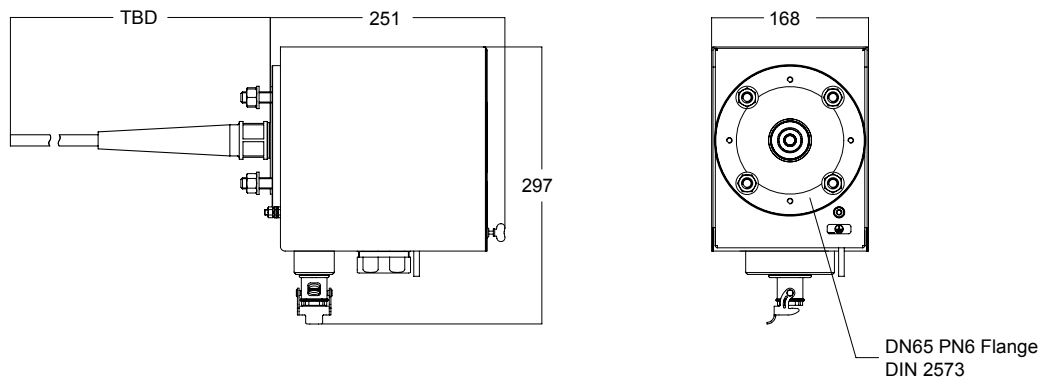
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LAYOUTS

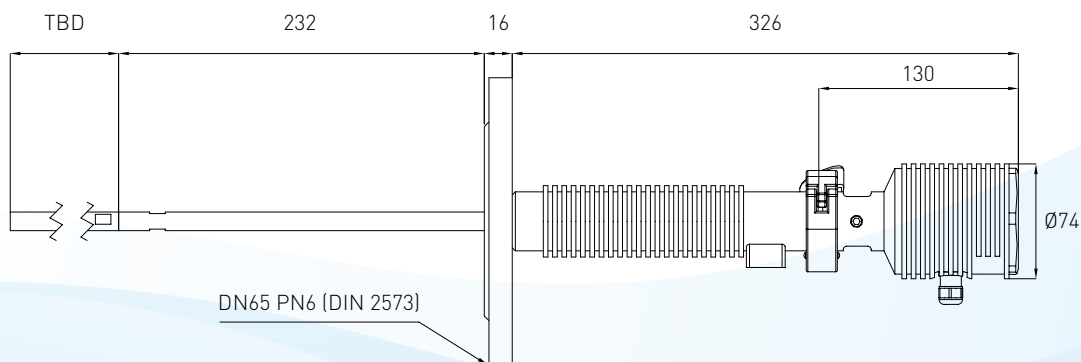
MAIN INTEGRATED CABINET



SAMPLE PROBE



PARTICULATE ANALYSER (OPTION)





S-K7™ companions

SLASHING EMISSIONS, REDUCING FUEL CONSUMPTION, MINIMIZING MAINTENANCE... IN OTHER WORDS, SUSTAINABLE SHIP EFFICIENCY. HOW? HERE'S OUR ANSWER.

POSITIVE DISPLACEMENT METERS

These liquid flow meters take accurate volumetric measurements for a wide range of liquids, from low-density LPG to fuel oil



VISCOSITY IN LINE ANALYSERS

The patented ViscoSense® system is used for continuous in-line measurement and control of fuel oil viscosity & temperature for diesel engines on ships



SHAFT POWER TORQUE & THRUST METER

Using the TT-Sense® for measuring thrust and torque results gives you an insight into your propeller efficiency, vessel pitch optimization and hull resistance



PEM PROPULSION EFFICIENCY MONITOR

The PEM4 is the first maritime solution for measuring propeller thrust, engine power and fuel consumption simultaneously



OIL DISCHARGE MONITORING EQUIPMENT

For the continuous on-line monitoring of discharge water during de-ballasting operations, the Oilcon® Mark 6 is a proven solution known worldwide



PRESSURE TRANSMITTERS

The FCX All V5 family with both aluminum and SS316 housings is simply the-state-of-the-art in pressure sensing for heavy-duty service





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