



# Rivertrace Engineering Ltd

## Company Overview



SPECIALISTS IN WATER QUALITY MONITORING



# About RTE



FAMILY OWNED COMPANY

ESTABLISHED 1984

EMPLOYS AROUND 25 PEOPLE

ISO9001 Quality Assured  
Company



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# About RTE

Rivertrace Engineering Limited is an ISO9001 Quality Assured Company and market leader with over 30 years experience of Oil in Water monitoring.

Rivertrace Engineering Ltd produce a range of products that meet and exceed the I.M.O. resolutions MEPC 107(49) and MEPC 108 (49) relating to water discharges from ships.

On-going development ensures Rivertrace products remain at the forefront of available technology and consistently push the boundaries of oil-in-water analysis.

Rivertrace has the solution to your environmental monitoring needs.



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# About RTE

- Specialise in Online Oil In Water Monitoring
- Focussed on OIW for a diverse range of applications.
- 25,000+ Monitors & Systems World Wide.



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# RTE – Globally



- **Worldwide network of agents**
- **Easy on site set up and installation.**
- **Market leader in Offshore, Marine and Industrial monitoring technology.**
- **Marine products meet Standards of**
  - **MARPOL 73/78**
  - **IMO resolution MEPC 107(49)**
  - **IMO resolution MEPC 108(49)**
- **INDUSTRIAL PRODUCTS meet standards of**
  - **Various National Standards including:**
  - **CSA, DNV, LLOYDS, SIRA**
- **ALL PRODUCTS BUILT AND SUPPORTED BY ISO9001 ACCREDITATION**

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# Applications

## Online monitoring:

- Produced water monitoring
- Cooling water and Boiler Feedwater
- Surface Drain discharge
- Oilywater Separator Monitor
- Ballast Water Discharge

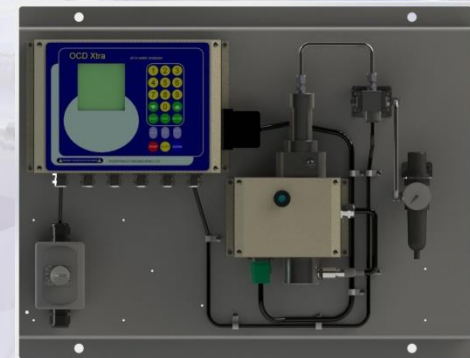
## Early warning of:

- Filter saturation
- Manifold leaks
- Heat exchanger failure
- IMO compliance failure

**Hazardous Area Classifications  
With full ATEX certification.**

## Successful installations:

- FPSO – Produced Water Discharge
- Refineries
- Power stations
- Airports
- Tank Farms



**OCD Xtra – Oil in Water Analyser**

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# Marine Products

Smart Cell

ODME

Smart Safe

OCD 50M

Smart 50M

Smart Sense Viscosity System



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OCD CONTENT MONITOR RTE

OCD INDUSTRIAL MONITOR RTE

OCD XTRA - OIL IN WATER ANALYSER RTE

OCD Xtra - oil in water analyser

The "OCD Xtra" combines multiple light wavelengths with multiple sensor technology, to measure oil accurately in the range 0-200 ppm, even in the blackest of produced water.

Multiple oil types are automatically compensated for by sophisticated algorithms. The multi-parameter display shows the sample's oil content, turbidity, pressure and a graphical average of the last 4 hours of readings. The last 7 days readings are stored in RAM and can be accessed from the help menu.

Full on screen help is available to guide the operator during set-up and maintenance routines.

OCD Xtra purged system

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# Industrial Products

OCD – CW

OCD – 50M

OCD – Xtra

Smart 50M



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# Smart Cell



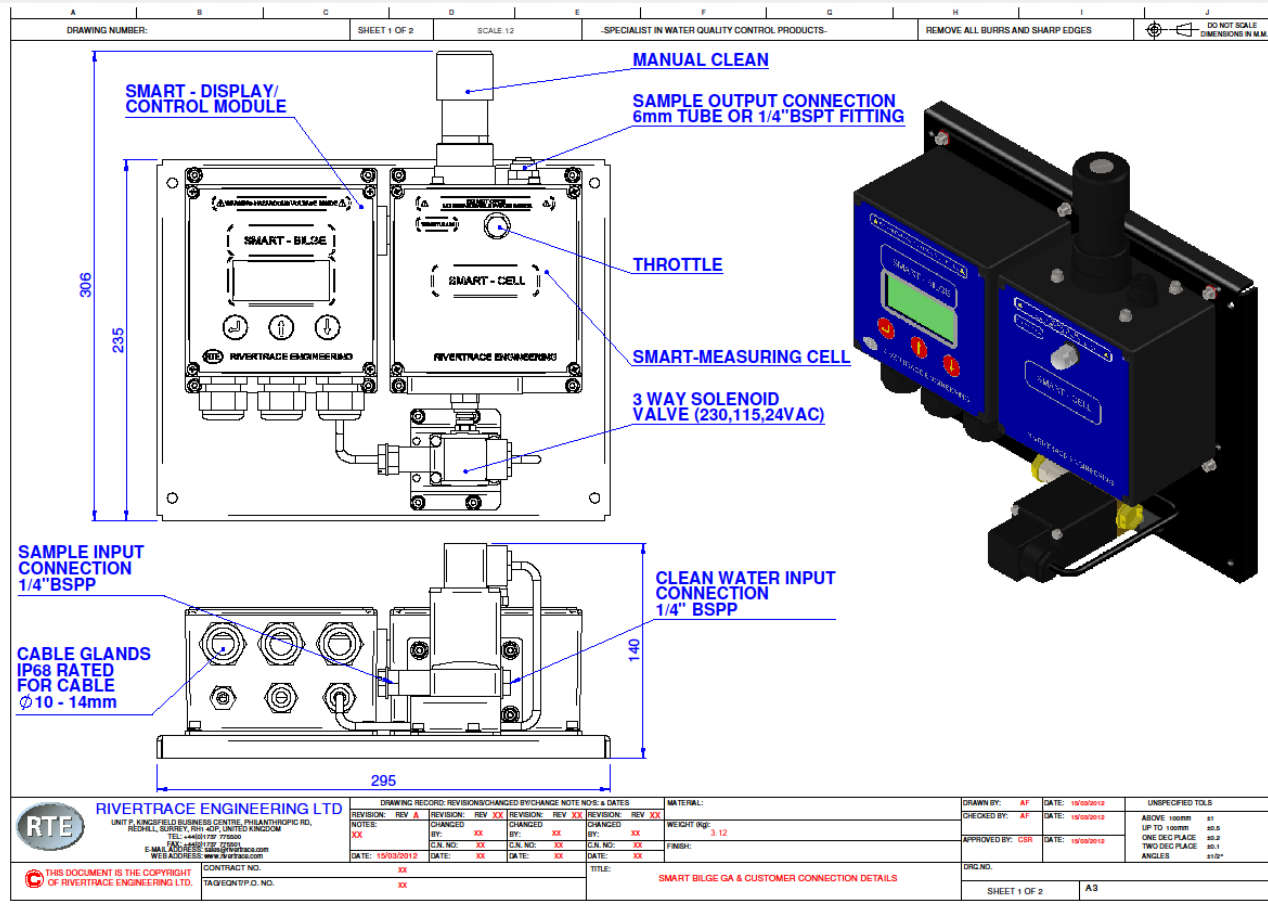
- Compliant to 107 (49)
- Incorporates Manual Clean device, low maintenance.
- Analyses all three oil types.
- Solids discrimination 100ppm
- **0-40ppm al Types**
- **Data Storage – 18 Months Data**
- **2 alarm points.**
- **Voltages Available 24,115,220V ac**
- **Temperature ranges**
  - Ambient -10 to +60°C
  - Sample +1 to +60°C
- **Sample pressure 0.1 to 10 Bar**
- **IP65 Protected**

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# Smart Cell



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## Flow-switch

Ensures water is flowing through the cell  
Error shows on display if no flow  
Flow cannot be shut off  
Overboard Discharge Valve will close if  
an error is detected



## Auto-clean

Keeps the cell tube clean  
No need to clean the cell manually

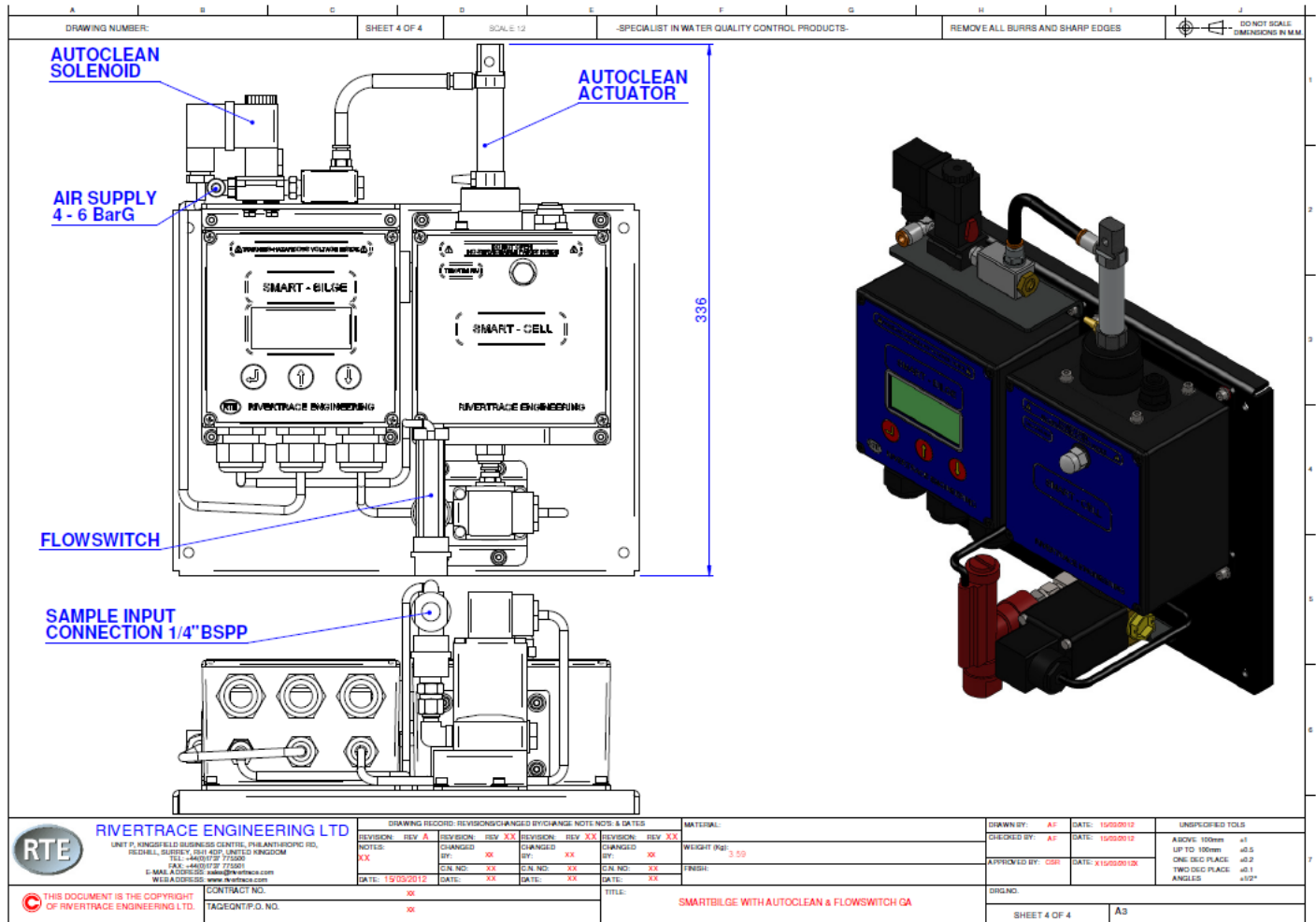


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# Smart Cell With Flowswitch and Autoclean





## After Care

Rivertrace recommend that the monitor's calibration is verified annually using the verification fluid and that the measuring cell is replaced every 5 years from date of original calibration.

### PURPOSE

To verify that the Monitor indicates the presence of "oil".

### EQUIPMENT REQUIRED

The following equipment is supplied:

225mL of 10ppm Verification Fluid

225mL of 20ppm Verification Fluid

Bottle Brush

Syringe

Nylon tube 6mm OD x 150mm long



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# Reference Lists – Smart Bilge

OEM Separator Manufacturers			
Compass World Water Systems	Marinfloc	Heishin	B & V
Facet Industrial	Aquatek	Taiko	Ensolve
Chongqing Taiko Kanda	Hamworthy	Victor Marine	Sasakura
Recovered Energy	Ocean Clean	Westfalia	Parker Hannifin



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# Reference Lists – Smart Bilge

## Ship Owners and Managers

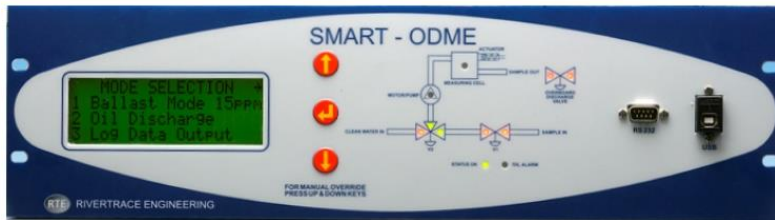
Evergreen	AP Moller	Paccship	Anglo Eastern S.M.
Brostrom Tankers	Meridian Marine Management	James Fisher & Sons	Fleet Management
Maersk	Stena Line	Royal Cruises	V-Ships Group
P&O Cruises	Univan Ship Management	Matson Navigation Co.	China Navigation
Petrobras	Wan Hai Shipping	International Tanker Mgt	Torm
Teekay	United Marine Dredging Ltd	Tsakos Shipping and Trading	Tomasos Brothers
Helena Line	Wallem	BP Shipping	Carnival Cruise
UECC	Vela International Marine Ltd	Norwegian Cruise Lines	Indian Navy
Wilhelmsen	P&O Ferries	P&O Tankships	Princess Cruises
Zodiac	London Ship Management Ltd	IMT Shipping	M.O.D
MSC	Shell International	P&O Containers	Sun Enterprises

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# SMART ODME



- Compliant to 108 (49)
- Approvals – USCG, GL, IMO
- Single Bulkhead penetration.
- Easy installation
- Automatic Clean Water Calibration.

- **0-1000 ppm**
- **Data Storage.**
- **Temperature ranges**
  - Ambient -10 to +50°C
- **Sample pressure 1 Bar**
- **Flow rates 0.5 – 4.0 Ltrs/Min**

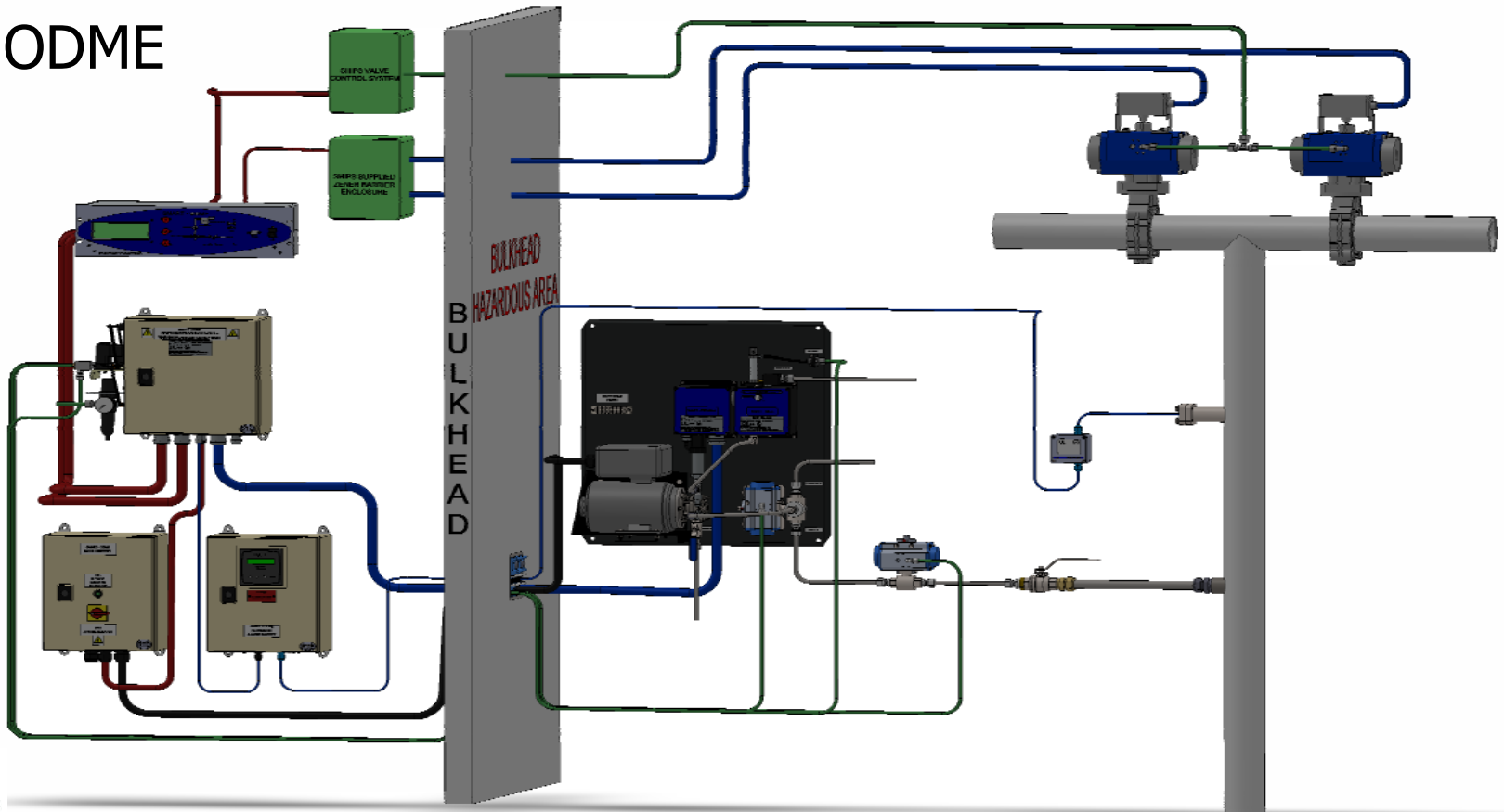
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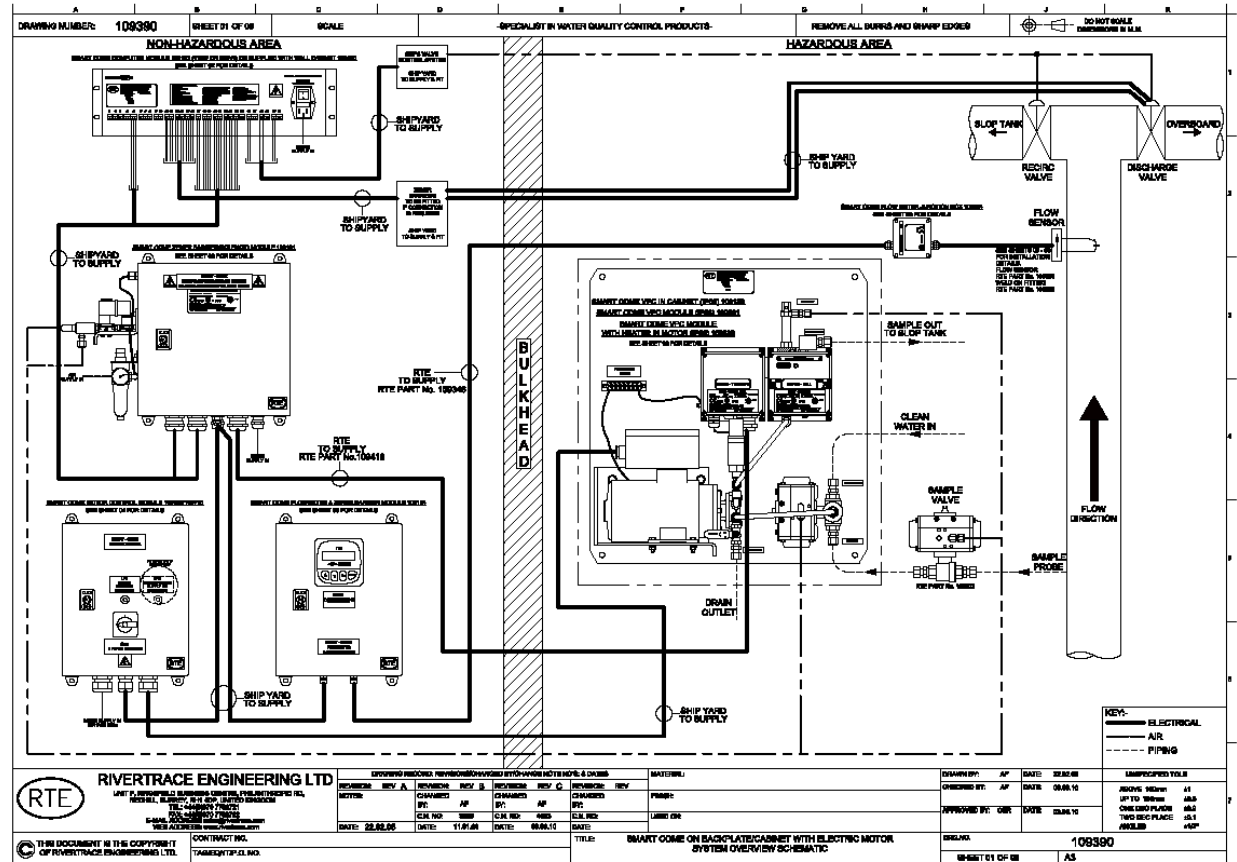
# SMART ODME Layout



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# SMART ODME Layout





# Reference List – Smart ODME

## Shipyards

Hyundai Mipo	Nantong Tongshun	Estaleiro Navship	Dong Fang Shipyard
Haidong	Jiangsu Hongming Shipbuilding Co	Jaixing Kexun Electron Co	Liaoning Hongguan
Mindge	Nanjing Tianshun	Nanjing Hao Yuan	Nanjing Shengfei
Penglai Bohai Shipyard Co	Titan Quanzhou	Guangzhou Shipyard	STX Ship Building
ABG Shipyard	CSBC Taiwan	Brodosplit	HHI
Selay	Fujian Mawei Ship Building	China Merchants Heavy Industry	Zhenjiang Sopo

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# Reference List – Smart ODME

<b>Ship Owners and Managers</b>			
Indian Government	Selay Denixclilik Sanayi	Vaderotank	Stena Bulk AB
BW Offshore	Gulf Energy maritime	Interorent Navigation	Parakou Shipping
National Schiffahrts	Herning Shipping	Titan Ocean	Rix & Sons Ltd
Faro Shipping Holdings	Fenelton Development Inc	Val Oil Trading S.A.	CPC Corp Tawian
Tawian Power Co	EMS Ship Management Denmark	Mednav	Hornbeck Offshore Services
Tradewind Tankers	NGOL Dande Ltd	Gulf Energy Maritime GEM	Overseas Shipholding Group
Hansa Hamburg Shipping	Fidias Maritime SA	Grace Management SA	Korea Line Corp
Capital Maritime & Trading	FAL Bunkering Co Ltd	Baltic Sapphire Shipping company Limited	Eastern Mediterranean Maritime
Lativan Shipping Co	Edison Chouest Offshore	Akron Trade & Transport	Zacchello Group
TB Marine-Hamburg GmbH	Angel Shipping Hong Kong Co	Fortune Tankers	Global Energy International



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# Smart Safe



- Demonstrate MARPOL Compliance
- Cost Effective Prevention of illegal Discharge.
- Easy Installation, Plug and Play
- Low maintenance.
- Capable of recording other miscellaneous ships data.
- Compatible with all IMO resolutions :-
  - MEPC 107 (49)
  - MEPC 60 (33)
  - A393X

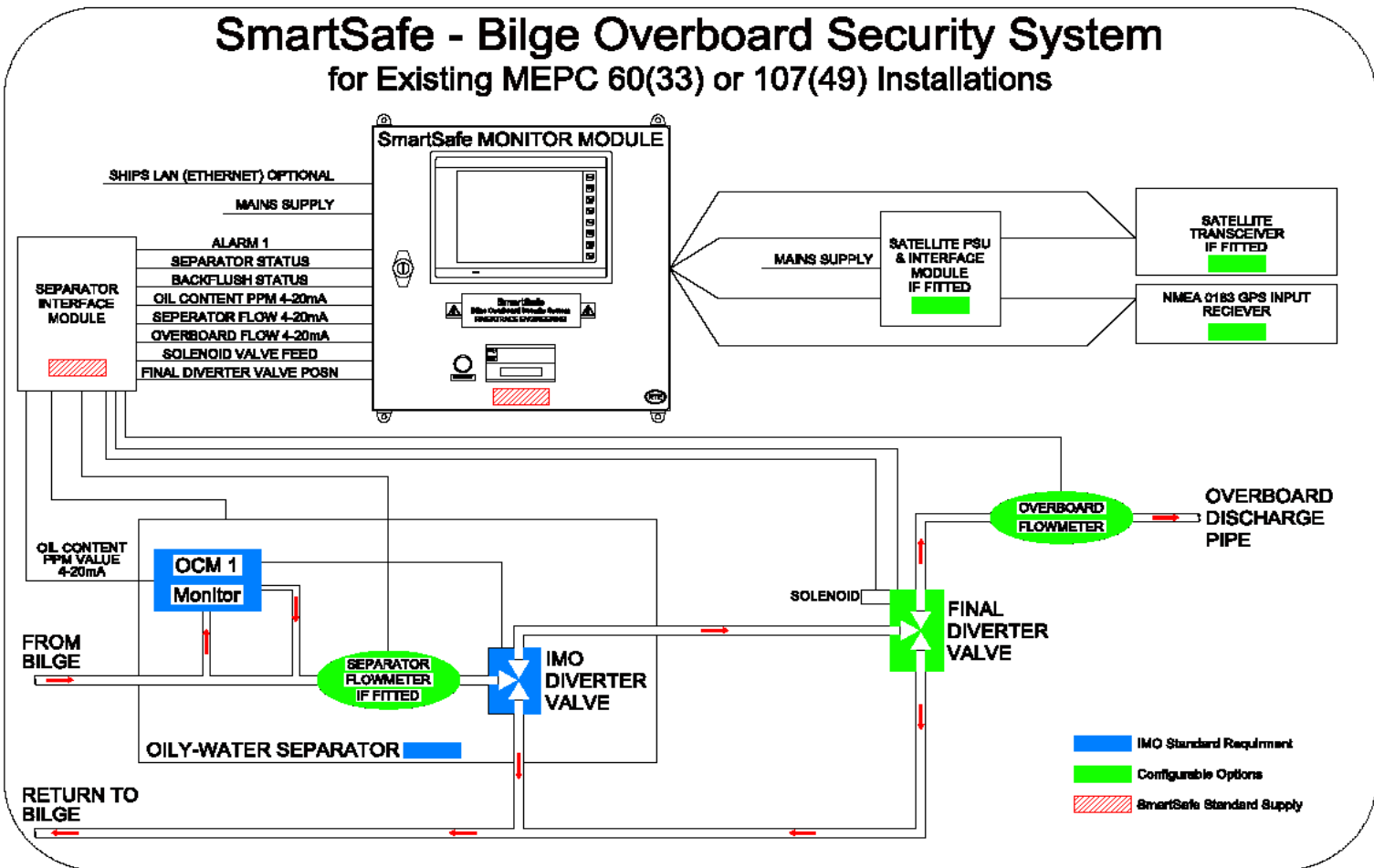


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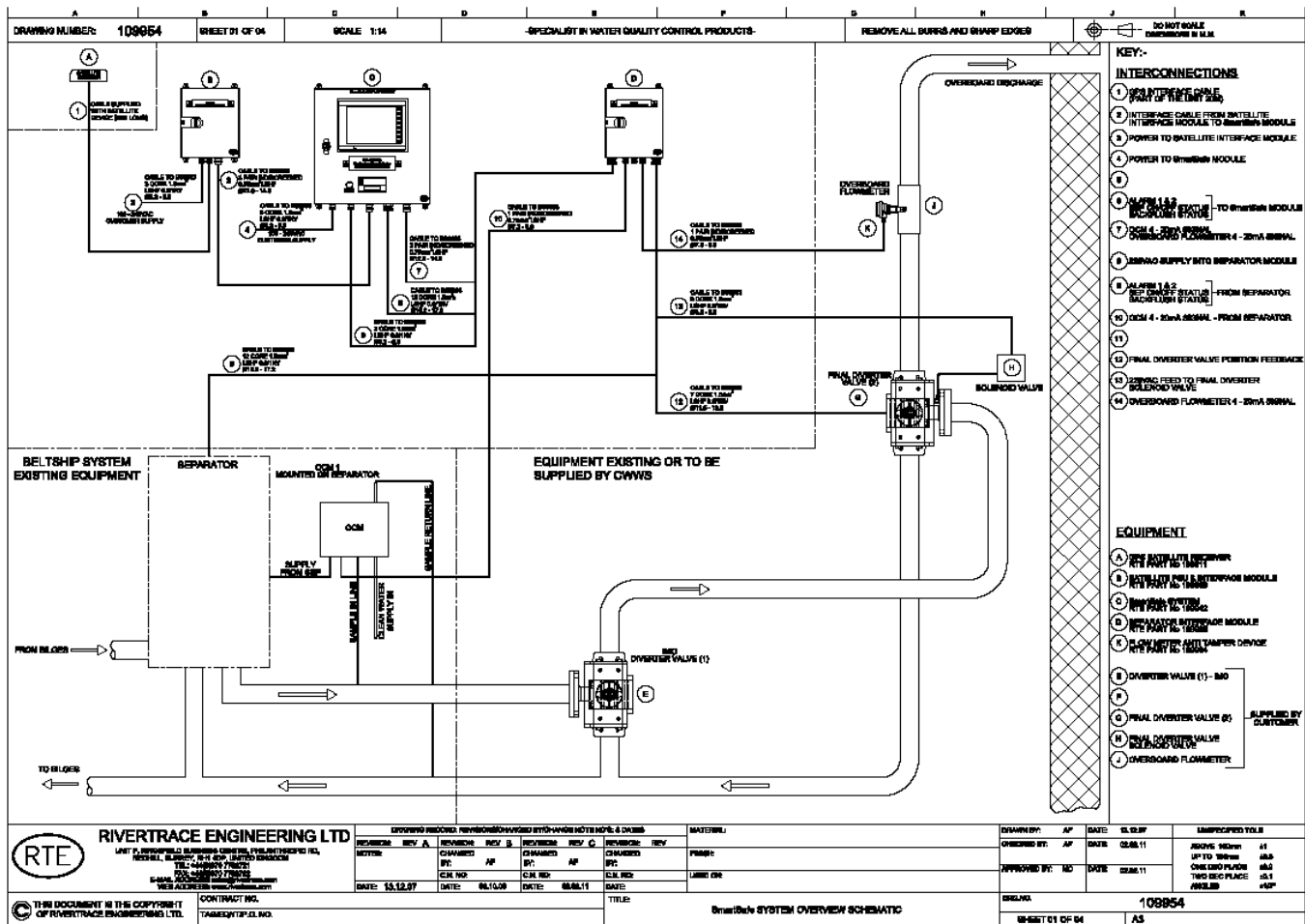
# Smart Safe

## SmartSafe - Bilge Overboard Security System for Existing MEPC 60(33) or 107(49) Installations





# Smart Safe





# Reference List – Smart Safe

<b>Ship Owners, Managers and Agents</b>			
<b>Teekay</b>	<b>Beltship</b>	<b>Chandris-Hellas</b>	<b>UECC</b>
<b>MOL LNG</b>	<b>Alfa Laval</b>	<b>Wilhelmsen</b>	<b>Victor Marine</b>
<b>Coffin World Water - Korea</b>	<b>Coffin World Water – USA</b>	<b>V Ships</b>	<b>RWO</b>



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## OCD 50M Boiler Condensate Monitor



**OCD 50M with Autoclean**



**OCD 50M EEx system**

- Specifically designed for high sample temperatures
- Suitable for hazardous environments
- Low maintenance Autocleaning
- Two versions: 0-10 and 0-200ppm
- Temperature ranges
  - Ambient -20 to +90°C
  - Sample +1 to +90°C
- Sample pressure 0.1 to 10 bar
- Suitable for Hazardous areas.



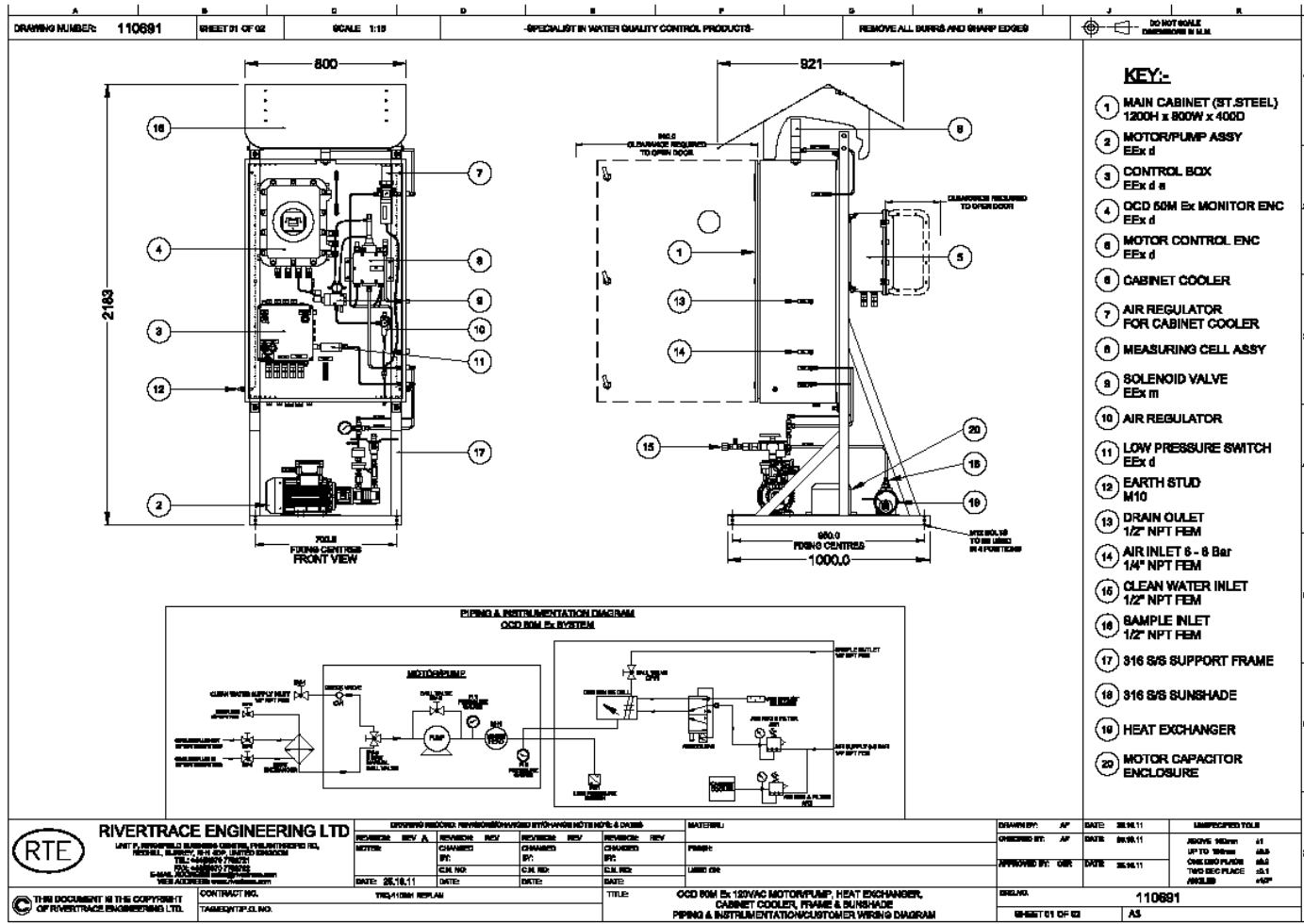
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# OCD 50M Boiler Condensate Monitor



OCD 50M EEx system





## Smart 50M Boiler Condensate Monitor



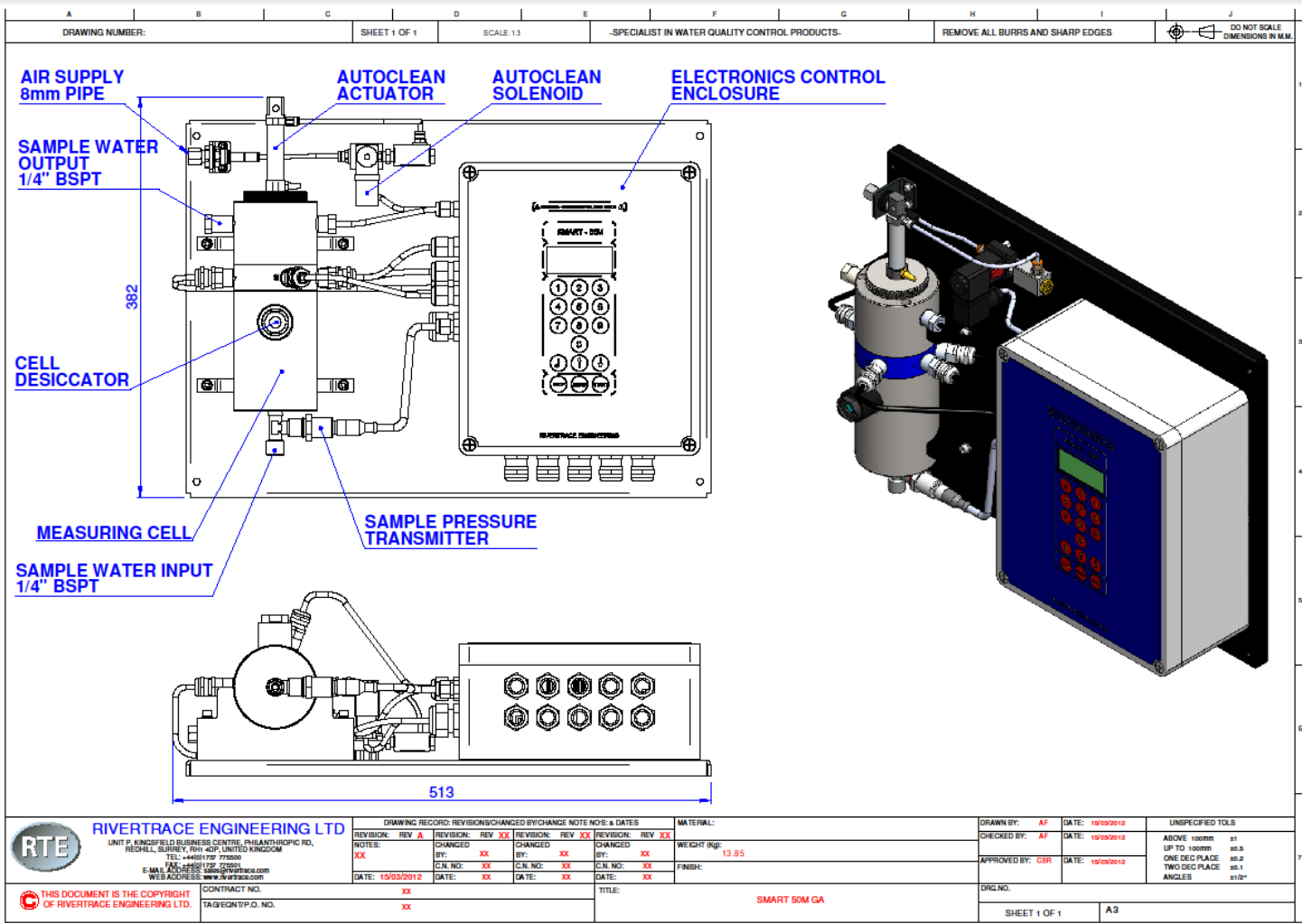
- Multiple optical sensors
- Two volt free alarms are driven when oil concentration exceeds the set points
- Auto-clean system is included to ensure accuracy
- 4 optional parameters on display – temperature, pH, conductivity and oxygen concentration
- Remote monitoring available
- Remote start-stop facility enabling sample conditioning if used as part of a system.

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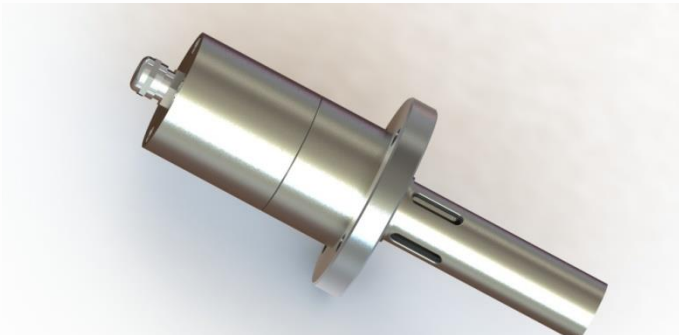


# Smart 50M Boiler Condensate Monitor





# Smart Sense Viscosity System



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# Smart Sense Viscosity System

Designed for Heavy Fuel Oil & Marine Distillate applications.

Has an improved method of using the vibrating rod at resonance frequency. The technique is Electro Magnetic which is far more robust than other piezo electric methods.

Can accurately measure viscosity, temperature and density without frequent calibration or maintenance.

Designed for full flow, inline installation in Heavy Fuel Oil and Marine Distillate applications allowing for improved accuracy at lower viscosity when switching between HFO and Marine Distillate.

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# Smart Sense Viscosity System

Oscillating Viscosity Probe connected to the Viscosity Controller Module via a 5m cable.

The Housing has standard flanges for easy installation and retro-fitting

The electronics are housed in a robust die-cast enclosure to withstand the harshest environments in marine applications.

Has two separate controllers for displaying Viscosity and Temperature allowing for redundancy in the case of failure.



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# OCD CW



- Low cost compact design.
- Solids discrimination
- Auto clean system, low maintenance.
- **0-99ppm**
- **2 alarm points.**
- **Temperature ranges**
  - Ambient +1 to +55°C
  - Sample +1 to +50°C
- **Sample pressure 0.1 to 10 Bar**
- **IP55 Protected**

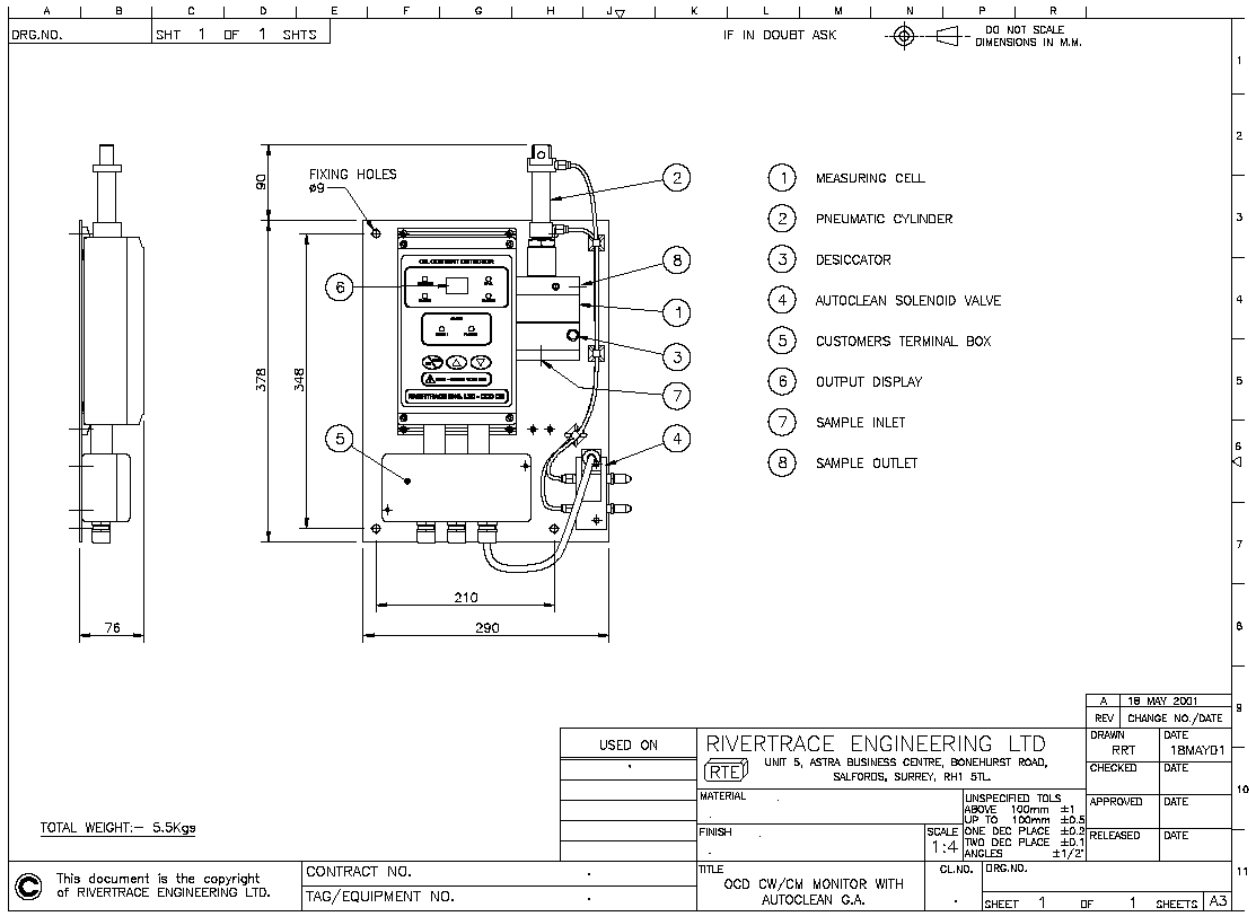
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# OCD CW





# Reference List – OCD CW

Ship Owners, Managers and Agents			
<b>Esindus</b>	<b>Waltron</b>	<b>RWE N Power</b>	<b>Barry Power Station</b>
<b>Heathrow Hydrant</b>	<b>Stuff 4 Water</b>	<b>Stetfield Separators</b>	<b>DSA</b>
<b>Tridente</b>	<b>Aqua Air</b>	<b>ITT Flowtronix</b>	<b>Eberdrola</b>



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# OCD Xtra – Online Produced Water Analyser



Range 0-200ppm  
2 Oil Alarm set points  
2 Turbidity alarms  
Temp range 0-50°C  
Sample pressure  
1-10bar  
Protection IP66



- **Dual light wavelength**
- **Advanced solids discrimination up to 100ppm.**
- **Multiple readings:**
  - **Oil content**
  - **Turbidity**
  - **Pressure**
- **Auto clean and self calibrating.**
- **Sample conditioning unit and pump**
- **Each build to exact specifications.**
- **Full Zone 1 classification with ATEX approval.**

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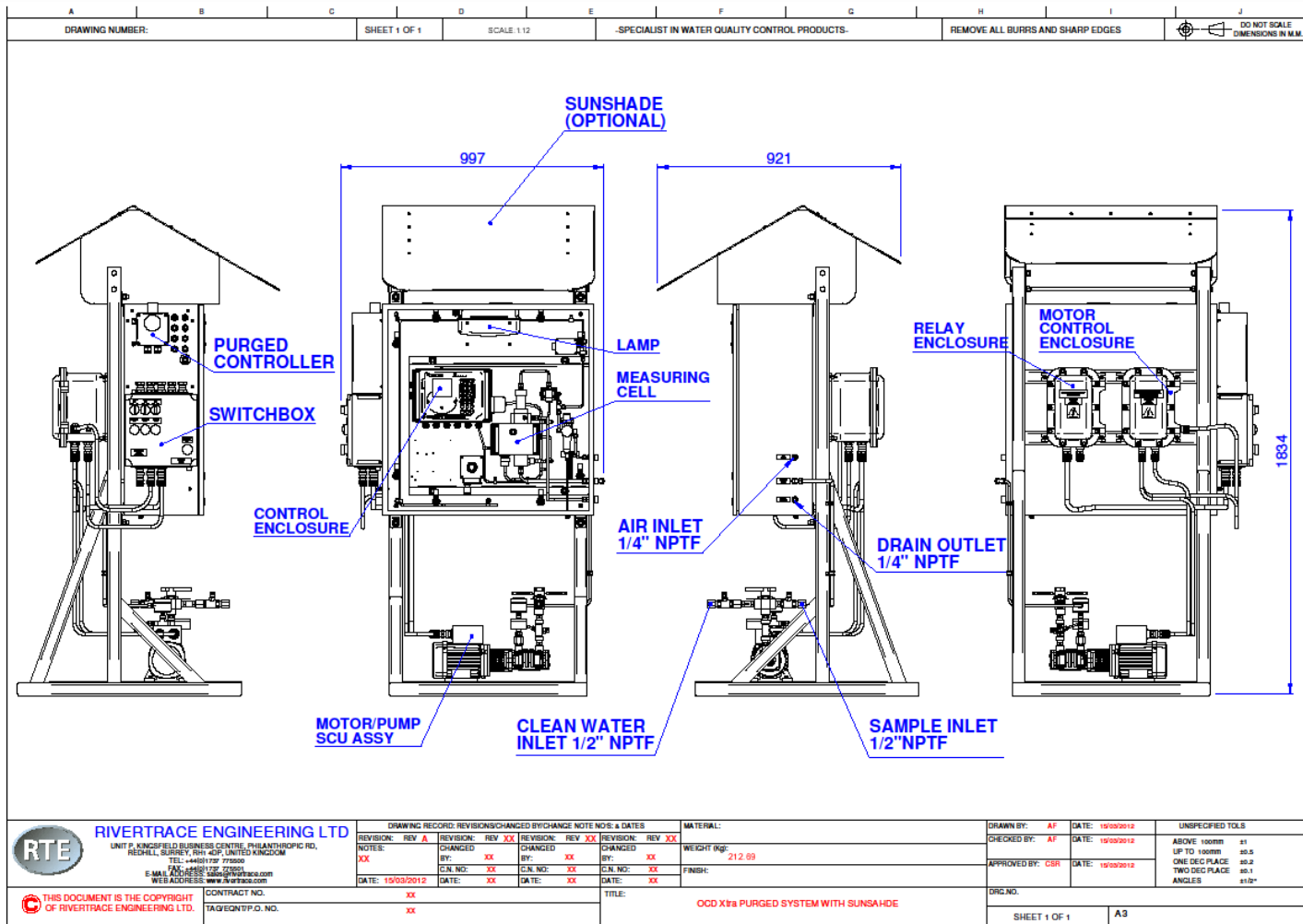
**OCD Xtra EEx Purged System**

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# OCD Xtra

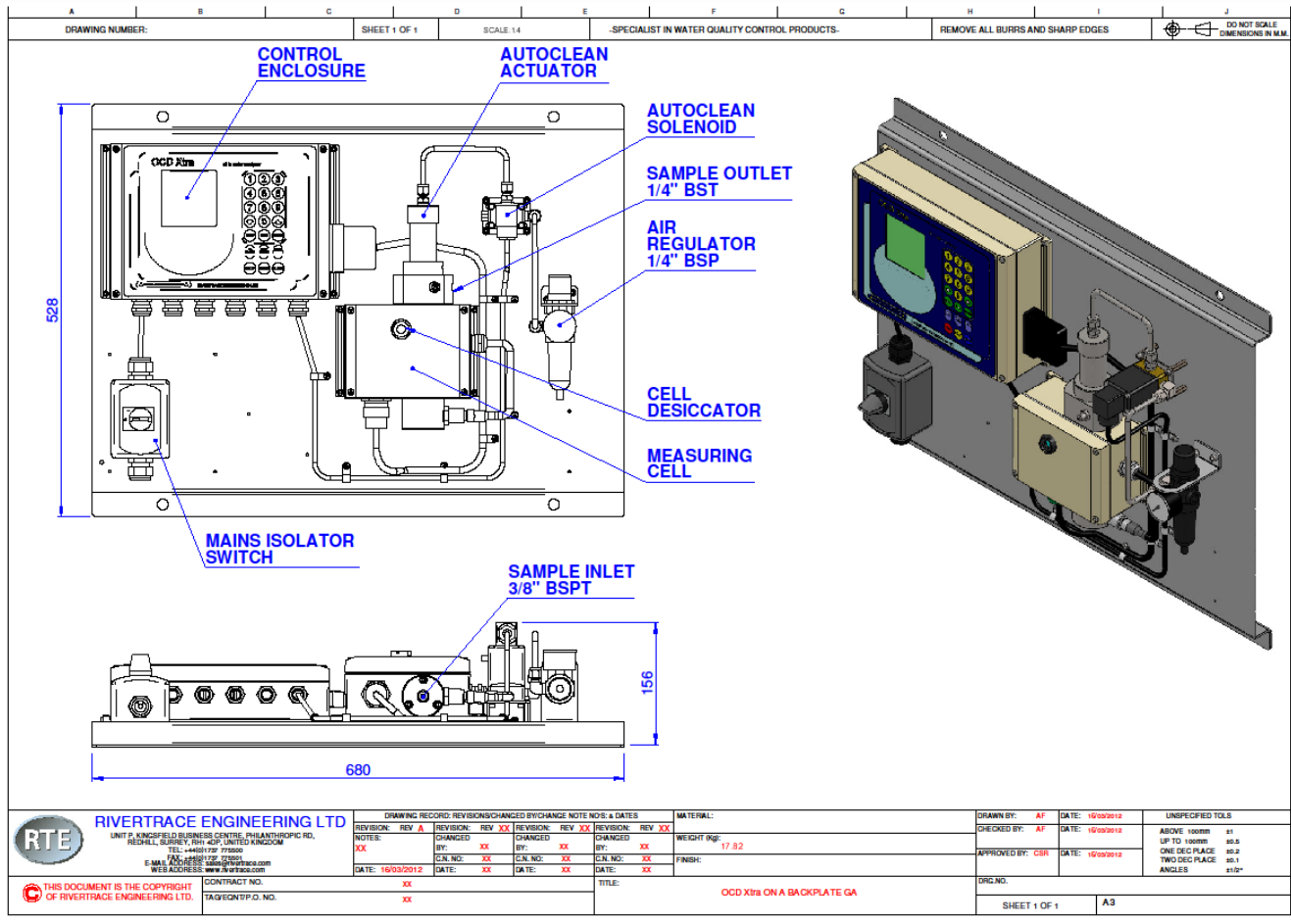
Online  
Produced  
Water  
Analyser  
Purged  
System





# OCD Xtra

Online  
Produced  
Water  
Analyser



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# Reference List – OCD Xtra

<b>Ship Owners and Managers</b>			
<b>Tridente</b>	<b>Tilbury Power Station</b>	<b>Alfa Laval, Denmark</b>	<b>Scottish Power</b>
<b>Hobre Instruments, NL</b>	<b>Cegelec/Total</b>	<b>RWE Didcot</b>	<b>FineTech</b>
<b>Single Bouy Moorings</b>	<b>Alderley Systems</b>	<b>ATAC UK Ltd</b>	<b>Bluewater Offshore</b>
<b>DSA</b>	<b>EON</b>	<b>GDF SUEZ</b>	<b>HAL Offshore</b>
<b>Hobre Instruments, NL</b>	<b>Maersk Contractor</b>	<b>MiSwaco</b>	<b>Norske Analyse</b>
<b>OSG</b>	<b>Petrobras</b>	<b>PT. Gunanusa Utama Fabricators</b>	<b>SAIPEM</b>
<b>Single Bouy Moorings</b>	<b>Total Nigeria</b>	<b>US FILTERS</b>	



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