

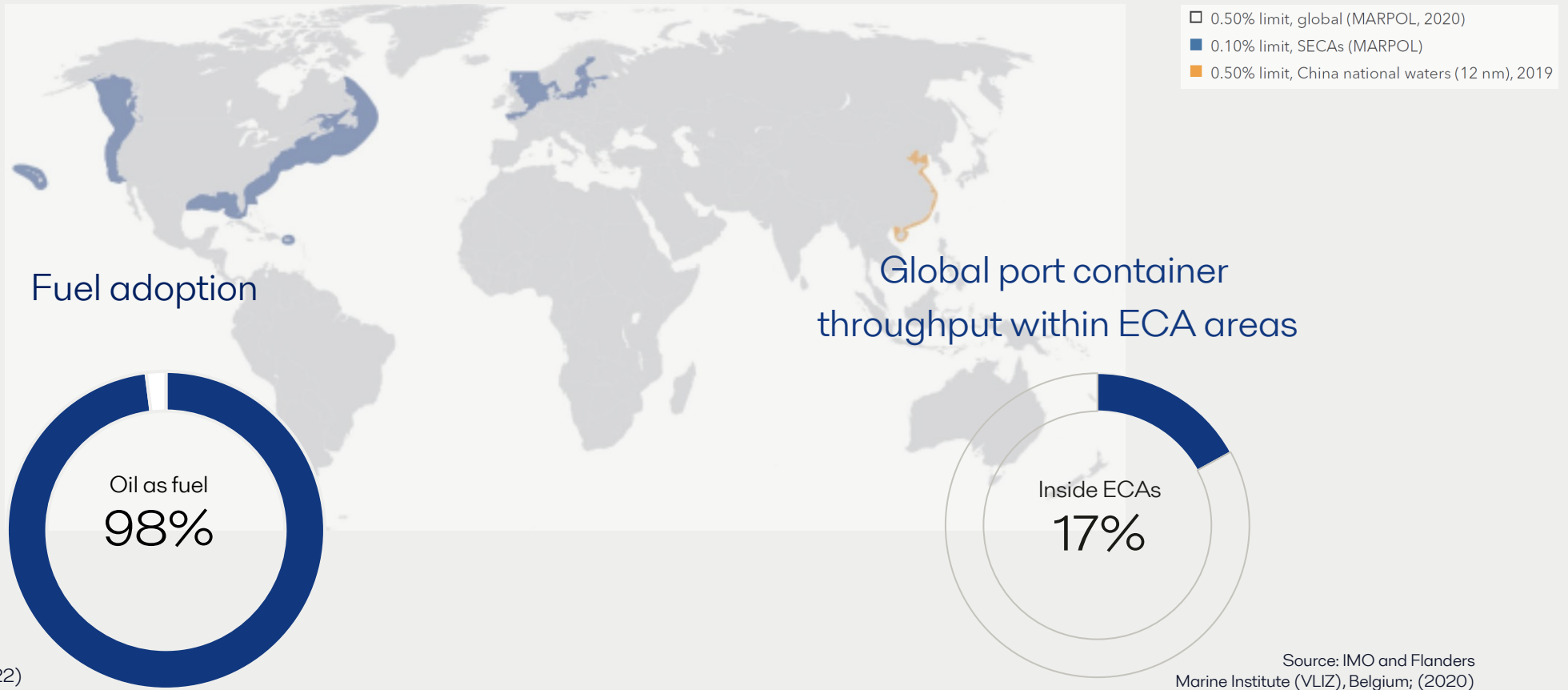
精準控制燃油黏度 · 安全切換多元燃料 **Viscochief 3 自動換油系統**



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Context

Fuel oil is still the norm – and there will be many oil types to be managed on board



Fleet > 2000 DWT (2022)
Source: ABS

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Context

Variances in fuel properties are increasing



VLSFO – Fluctuation of viscosity and density



ULSFO (MGO) – Low viscosity levels



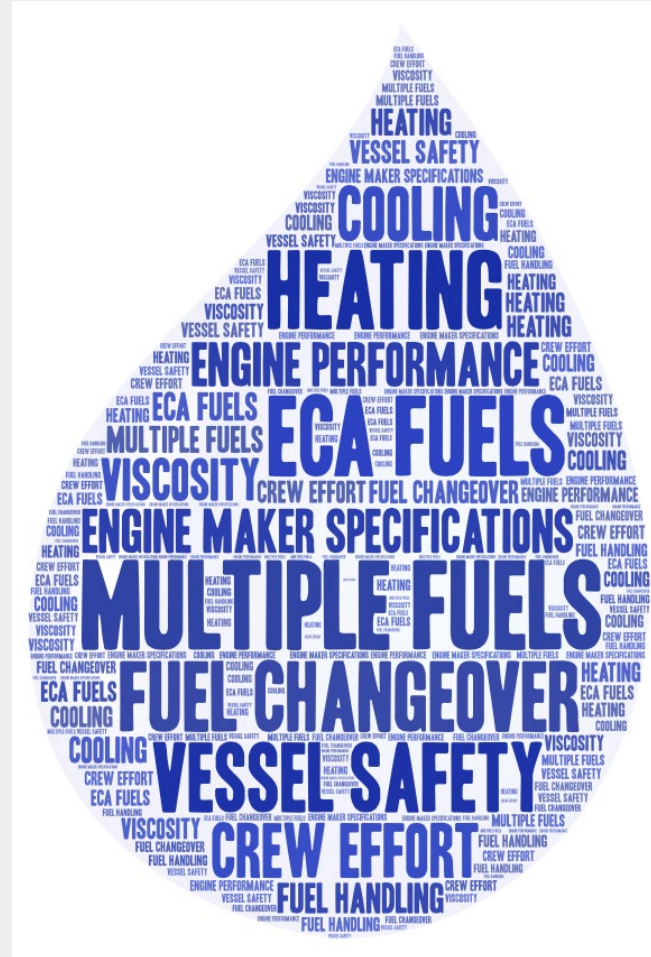
■ VLSFO avg
■ HSFO avg
Source: VeriFuel

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What it addresses

Multiple fuel oils means:

- Multiple parameters
- Multiple challenges



Varying fuel properties means:

- Constantly adapting fuel treatment
- Challenge to manually adjust fuel temperature

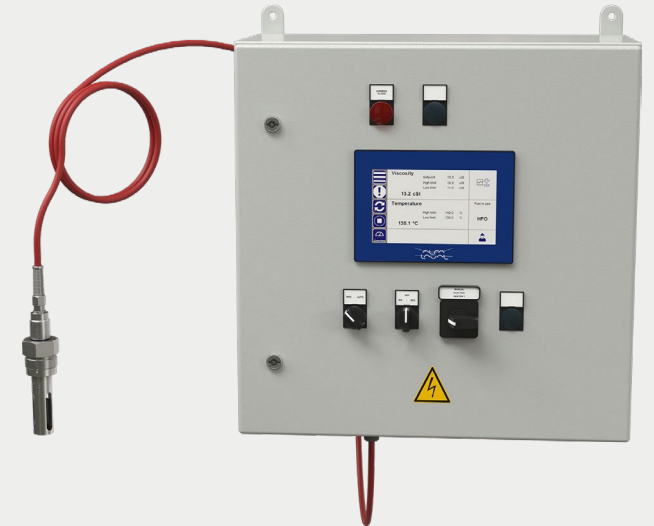
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What it offers

Multiple challenges solved by **one** automated control system



- **One** solution to secure viscosity values for any fuel oil
- **One** solution to handle many fuel oils on board
- **One** solution to ensure safe fuel changeover
- **One** solution to reduce costs and operational effort



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Why it's unique

This **one** solution is



Complete

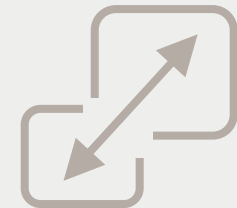
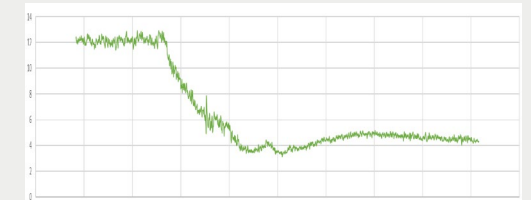
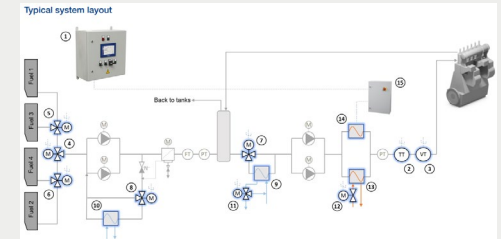
Control options for all fuel oil handling needs

Reliable

Based on the latest Alfa Laval FCM Oil automation software

Scalable

Expand system with additional functions – today or tomorrow

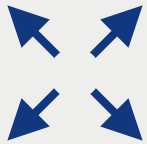


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Product features

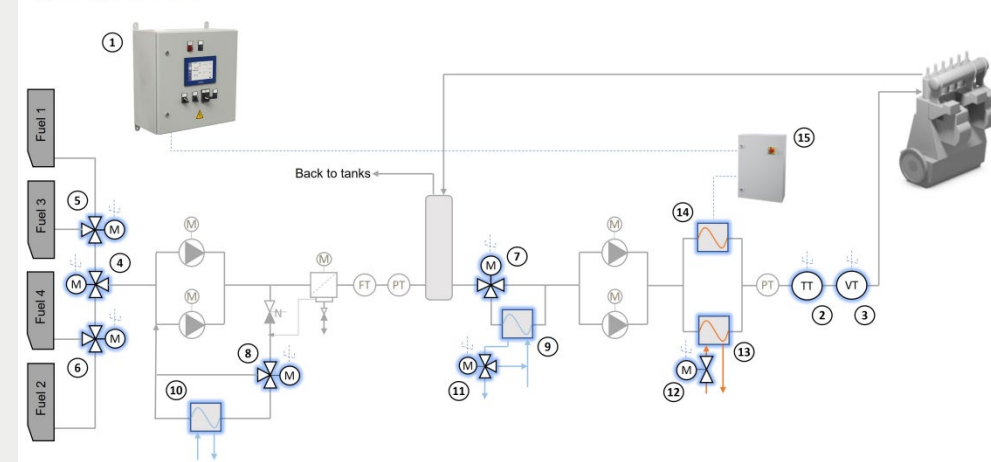
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Complete range of control possibilities – in one single cabinet



- **Viscosity control**
 - Control viscosity using any type of heater
 - Improved viscosity accuracy with updated sensor
- **Multiple fuel control**
 - Handle up to 4 different fuels
 - Viscosity and temperature set points for all fuel selections
- **Automatic fuel changeover control**
 - Safe and automated changeover process
 - Reduce manual work for crew
- **Cooler control**
 - Control also coolers from same cabinet
 - Improved process control of both heating and cooling

Typical system layout



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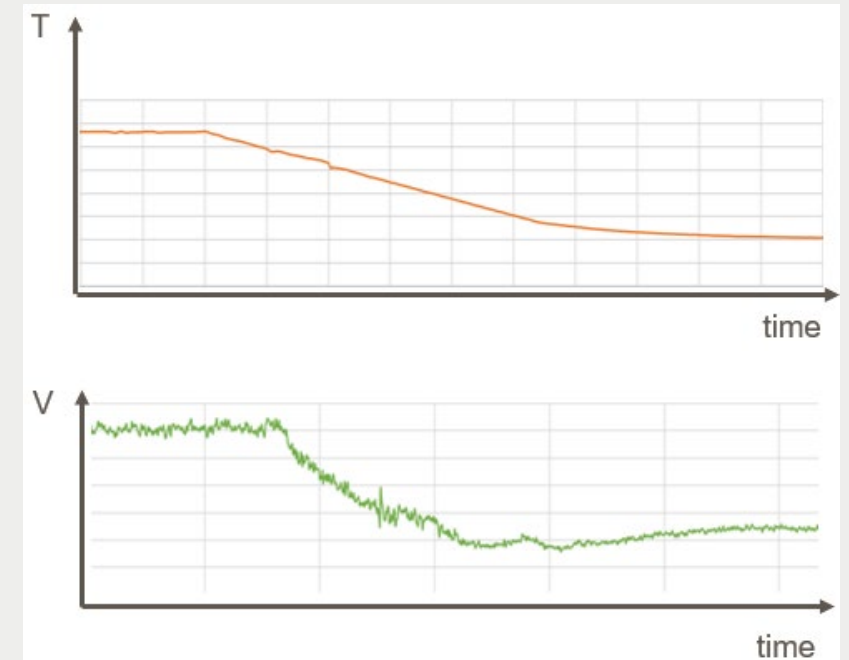
Advanced software

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Reliable based on most recent FCM Oil automation software



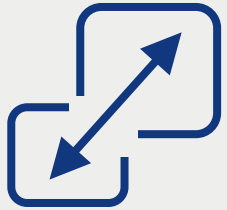
- **Precise response**
 - Ensures accurate fuel parameters at the engine inlet
- **Smooth ramping**
 - Keeps fuel parameters within safe maximum/minimum limits
 - Never dropping below 2cSt or changing more than 2°C/min
- **Fully automated process**
 - Eliminates the risk of manual errors
 - Frees up valuable time for crew members
- **Class-approved changeover**
 - Complies with engine maker requirements according to FOBAS Fuel Oil Bunker Analysis and Advisory Service



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Product features

Scalable with unique opportunity to add options – now or later



Core

Viscosity control

- Viscosity transmitter
- Temperature sensor
- Control Cabinet

Options

Cooling system

- Cooler
- Regulating valves

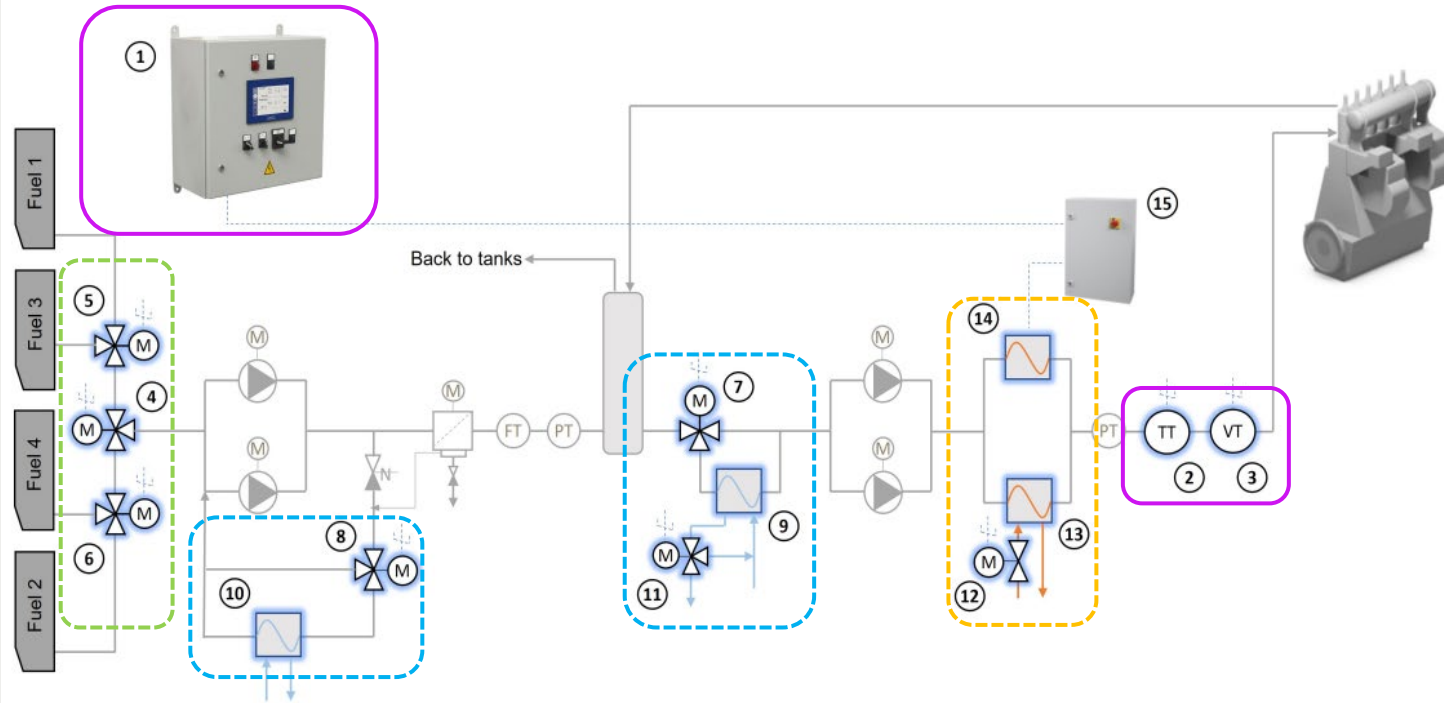
Heating system

- Steam or electrical heater
- Regulating valves

Fuel changeover

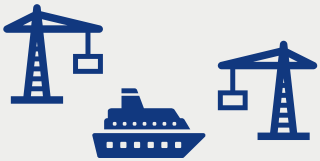
- Changeover valves

Typical system layout



Shipyard Benefits

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Simplified purchasing

- ✓ All fuel handling functions from one supplier

Reduced CAPEX

- ✓ Compared to multiple systems

Reliability

- ✓ Stronger promise on fuel system reliability

Easy Installation

- ✓ Plug and play solution
- ✓ Compatible with any booster design



Shipowner Benefits



Optimized Engine Uptime

- ✓ Better engine lubrication and ignition quality
- ✓ Reduced engine wear

Reduced OPEX

- ✓ Reduce manpower needed through complete automated process control

Multi-Fuel Management

- ✓ Simplify the handling of multiple fuels

Safe & Easy Operation

- ✓ Reduce manual work needed
- ✓ Latest software from FCM Oil

Flexibility

- ✓ Add control options – today or tomorrow
- ✓ Compatible with all booster systems

Alfa Laval Marine Service

- ✓ 24/7 Service & Support
- ✓ Global spare parts supply



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Stand-alone modular system



Suitable for internal combustion engines



Suitable for all fuel oils meeting ISO 8217 specs



Fuel system supply of a new ship



Upgrade to an existing module

Control for fuel supply systems

聯絡我們

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Pioneering Positive Impact