Alfa Laval Fuel Conditioning Module 1.5

Fuel conditioning system for diesel engines

Introduction

The main purpose of the fuel conditioning system is to ensure proper conditioning of the fuel oil fed from the daily service tank to the engines. The booster system ensures that correct flow, pressure, viscosity and cleanliness are matching the diesel engine manufacturers specifications.

Application

Fuel conditioning systems are primarily suitable for ships and power stations. Emissions legislation is warmly requiring the use of lighter fuel oils and distillates on Marine and Diesel applications tha require care on viscosity parameter management. The FCM 1.5 combines all-new flexibility with the strengths of the original module and can be configured to handle multiple fuels, or a blend of them, and safely managing the controlled changeover process among them.

Benefits

- All chosen equipment and functions are combined into a compact frame, driven by one controller (PLC)
- Project-based sizing and configuration create a compact and energy saving booster system
- Adjustable temperature ramp and specific viscosity limits for the fuels changeover process
- Dedicated viscosity and temperature set points for all the fuels in use
- Reduced engine wear by efficient fuel parameter control during the changeover process
- Variable engine load possible during fuel C/O procedure

Configuration and Features options

- Handling of multiple fuels (up to 4)
- Flow meter (volumetric or mass type)
- Filter position (high or low pressure stage)
- Filter configuration (Auto-Manual or Auto-Auto)
- Heaters (Shell&Tube, Electric or a their combination)
- Gasketed Plates Heat Exchanger cooler
- Pumps (mechanical or magnetic-drive type)
- Changeover valve (Manual or automatic type)
- Onboard fuel blending with dedicated mass flow meters
- Complete data logging of the fuel processes
- VFD-based control of fuel supply pumps
- Modular Remote Control

Human Machine Interface

The Human Machine Interface (HMI), integrated in the control cabinet, is an operator friendly interface based on touch screen.

- Intuitive, Robust and Reliable user interface
- 7” or 15” touch screen display

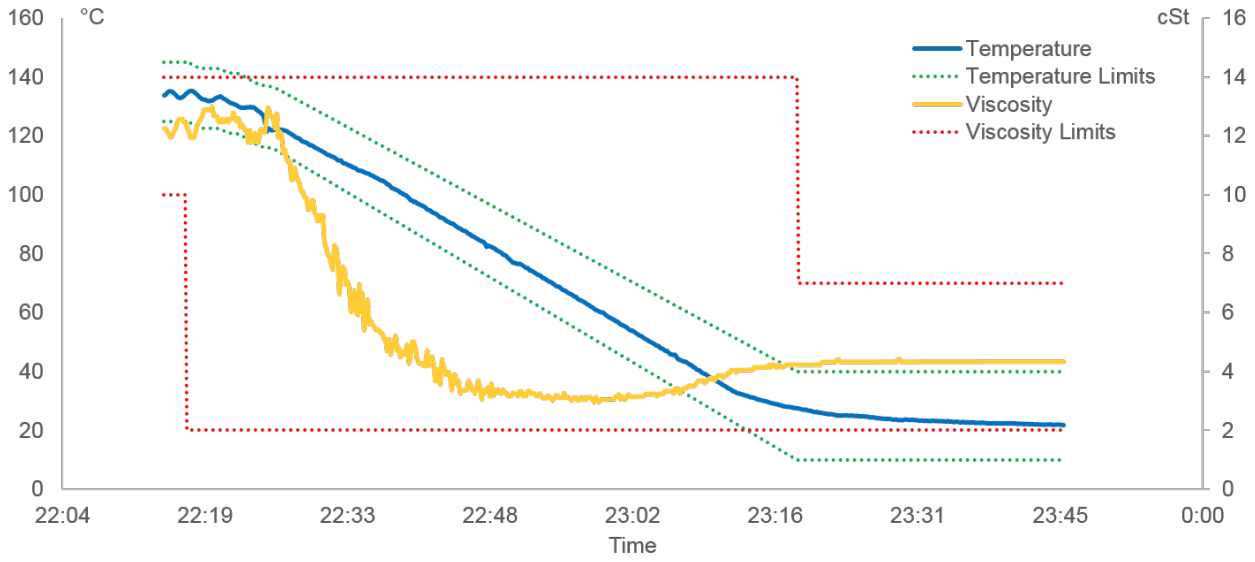
Controlled fuel changeover

Unlike traditional manual systems, Alfa Laval smart controlled changeover safely leads a quick transition among fuels, maintaining viscosity within the limits. The automatic three way changeover valve is the starting point of a fuel switch; its

adjustable transition time allows a smooth and controlled fuel transition.

The changeover process with constant monitoring and controlling of adaptive temperature ramp, guarantees the viscosity is within the engine manufactures limits for the whole transition time.

Each fuel can be configured with dedicated name, specifications, set-points and alarm limits by parameters, and the FCM 1.5 self adjust for a safe changeover among them.



Code description

FCM[1] m[2] 30[3] c[4] 2[5] SS[6] F[7] F[8] b[9]

Pos.	Designation	Type
1	Model	**FCM**:Fuel Conditioning Module
		FCU:Fuel Conditioning Unit
		FSU:Fuel Supply Unit
2	Frame size	**l**: little (2800x1200 mm)
		m: medium (3400x1200 mm)
		o: oversized (3900x1200 mm)
		h: huge (4300x1200 mm)
		hh: huge split units (1800+3400x1200 mm)
3	Maximum fuel consumption[1]	**30**: 3000 l/h
		65: 6500 l/h
		130: 13000 l/h
4	Filter position	**c**: cold side
		h: hot side
5	Number of fuels	**2**: 2 fuels; **3**: 3 fuels; **4**: 4 fuels
6	Heaters Type	**SS**: Steam — Steam
		TT: Thermal oil — Thermal oil
		EE: Electrical — Electrical
		SE: Steam — Electrical
		TE: Thermal oil — Electrical
7	Cooler Type	**F**: Fresh water
8	SPV Cooler Type	**F**: Fresh water
9	Options	**b**: with blender

[1] Based on circulation factor 3

Technical data

Main supply voltage (V)	3–phase, 400/440/480 up to 690
Control voltage (V)[1]	1–phase, 110/230
Frequency (Hz)	50 or 60
Design oil pressure (bar)	15
Design oil temperature (°C)	150

[1] Uninterruptible power supply required

Certifications

- Fuel changeover compliant with Engine Makers requirements according to FOBAS

- All FCM 1.5 modules are delivered only after factory acceptance test (FAT) in according to standard Alfa Laval testing instruction

How to contact Alfa Laval

Up-to-date Alfa Laval contact details for all countries are always available on our website at www.alfalaval.com