Data Sheet

THE SURE-CUT® LO ANALYZER

Delivers highly accurate Water Cut measurement performance

Registered Address
ABLE Instruments & Controls Ltd
Cutbush Park, Danehill, Lower Earley,
Reading, Berkshire, RG6 4UT. UK.

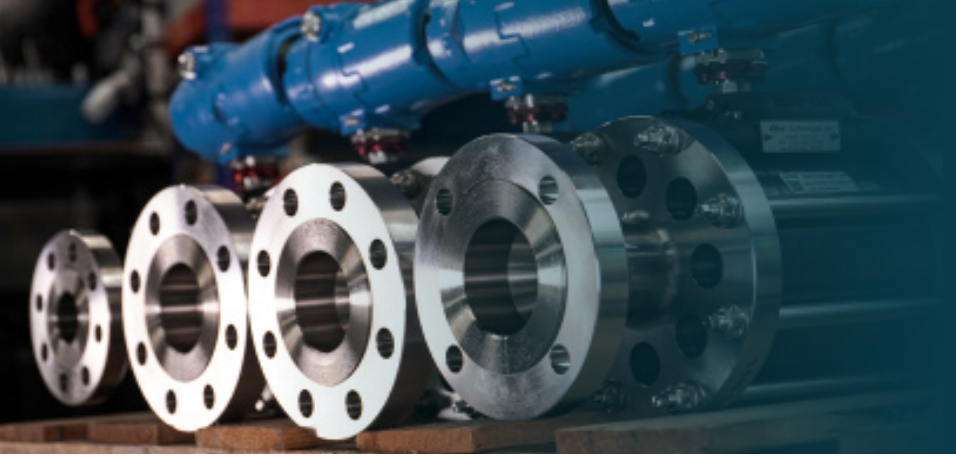
Phone
+44 (0)118 9311188

Email
info@able.co.uk

Web
able.co.uk

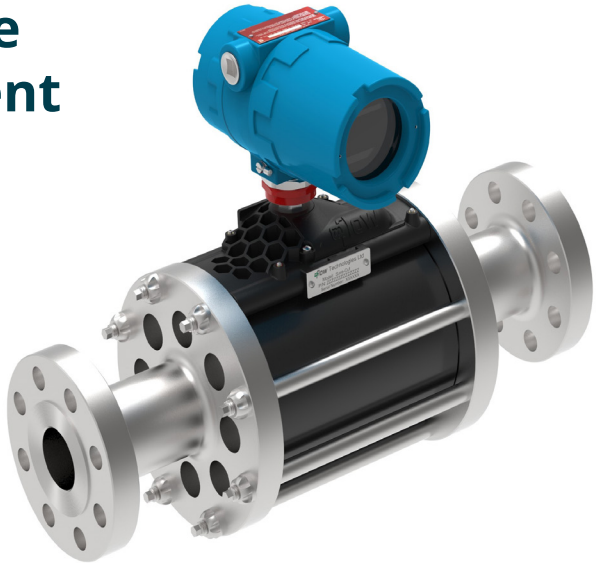
E-commerce
247able.com

ISO 9001
ISO 14001 : 2015 REGISTERED
Certificate No:288612019
ISO 45001 : 2018 REGISTERED
Certificate No:372832021
Registered in England No. 01851002. VAT No. GB 417 2481 61



mflow Sure-Cut® Lo

The Sure-Cut® Lo Analyzer delivers **highly accurate Water Cut measurement performance**



Achieve **significant operational efficiencies** with Sure-Cut® Lo

- Single product covers 0% to the inversion point with high accuracy
- Full oil density compensation as standard
- Compatible with all oil densities and viscosities
- Unique design eliminates any contact with process fluids
- No fouling or sensor damage
- No maintenance or recalibration required
- Repeatable multi-year performance

Sure-Cut®

M-Flow Technologies Ltd
Abingdon, UK T: +44 (0) 1235 380088
M-Flow Technologies Canada Ltd
Calgary T: +1 (403) 510-4989
www.m-flow-tech.com | info@m-flow-tech.com

Measurement Accuracy

The Sure-Cut® Lo has a proven accuracy and resolution based on laboratory validation of its microwave resonant cavity sensing.

However, the main focus of Sure-Cut® Lo development has been on field performance, when variations in oil composition, density and temperature can have a substantial impact on measurement.

Sure-Cut® Lo is supplied with auto-calibration and optimisation software to compensate for fluid changes, when connected to live line density and temperature inputs.

The ability of Sure-Cut® Lo to maintain accuracy across a variety of oil densities has been proven over multiple field trials and permanent installations.

Example Field Trial Performance

Operating Range	Oil Density: 840 to 953 kg / m^3 (17 to 37 API Gravity)
Sure-Cut Uncertainty*	± 0.06%**
Overall System Uncertainty*	± 0.14%**

Data from 64 measurement runs, each within a 6-12 hour duration.

**Sure-Cut Lo uncertainty is lower than overall system uncertainty, where half of the uncertainty derived from densitometer measurement drift. See Water Cut Meter Case Study on www.m-flow-tech.com*

***Uncertainty quoted is 2 x SD to 95% confidence for a 1" analyzer versus Karl Fischer analysis of API 8.2 compliant auto samples. Quoted numbers overstate analyzer uncertainty as they include the uncertainty of sampling and lab analysis.*

Instrument Performance

Water Cut Range	0% to inversion point (Typical Inversion 40%)		
Operating Ranges	Oil Type/Density: Condensate to Heavy oil (600 to 1000 kg / m^3) Water Density: 990 to 1240 kg / m^3		
Instrument Accuracy*		Water Cut Range	Uncertainty
	Laboratory Calibration	0 - 1%	± 0.05% absolute
	Laboratory Calibration	1 - 20%	± 0.12% absolute
	Flow Loop Testing (NEL)	0 - 32%	± 0.22% absolute

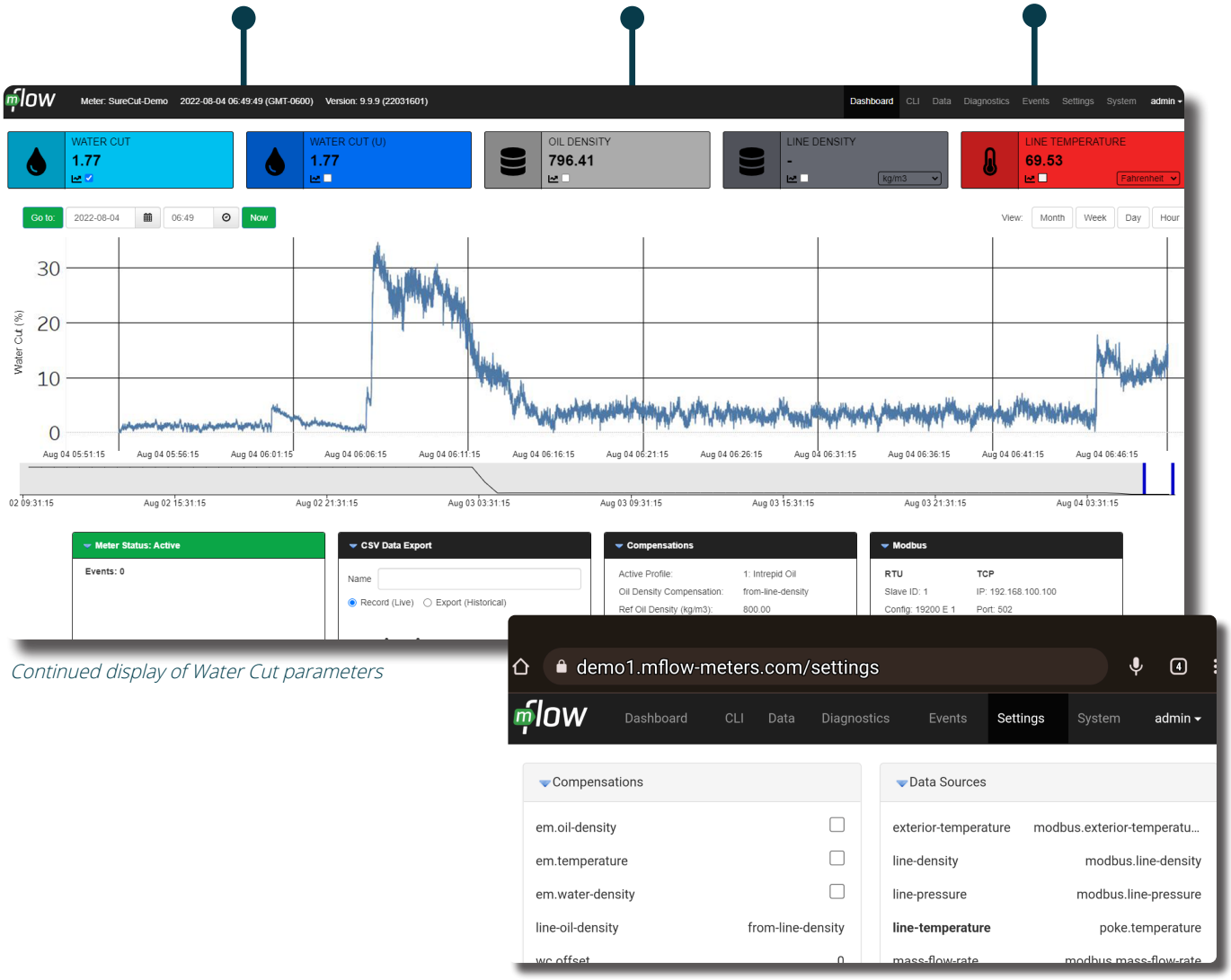
**Uncertainty quoted is 2 x SD to 95% confidence*

Graphical Interface and Connectivity

A transparent system to process and present accurate production and diagnostic data.

Reliable data is accessible remotely via a secure online interface from any connected device.

M-Flow provides modern instrumentation for the digital oilfield.



Continued display of Water Cut parameters

GUI set-up page, viewed on mobile

- Fully digital electronics deliver wide operating envelope without sacrificing precision
- Modbus 485 or TCP to flow computer, SCADA or PLC
- GUI for monitoring, set-up and diagnostics
- 24/7 access to real-time and historical data
- Accessible locally or remotely via wired or Wi-Fi connection to laptops or handheld devices

Specification Details

Design Specification

Sensor Type	Microwave
Water Cut Range	0% to Inversion Point
Sizing	2" - 4" nominal flange sizing Flow area determined on throughput.
Pressure Range	Up to 102 barg (1480 psig) Higher pressure ratings available on request
Flange Rating	ASME B16.5 #150, #300, #600
Pressure Drop	0 barg achievable (no intrusion)
Fluid Temperature Range	-35 to +110° C (-31 to +230° F)
Dimensions / Weight	From 432 to 564 mm face to face / From 25 to 45 kg
Mounting	Horizontal or vertical No up/downstream requirement

Hazardous Area Certification	ATEX, UKEX, IECEx, CSA, UL
Ambient Temperature Range	-40 to +60° C (-40 to +140° F) Electronics certification
Mechanical Design Temperature Range	-40 to +110° C (-40 to +230° F)
Ingress Protection	IP66, NEMA 4X
Materials	Electronics enclosure: Painted Aluminium Core: PEEK/Carbon Fibre composite Sour Service Compatible Flange (and wetted metal parts): 316 SS as standard. Other materials as options
Material Compliance	NACE MR 0175 / ISO 15156
Power	Power supply: Typical 24VDC, Min 18 VDC, Max 30 VDC Power consumption: Typical 5W

Digital Interface

Comms	Modbus RTU, Serial Settings: 19200E1 Modbus TCP: 10,100Base-T Ethernet
Transmission Length	1200 m (RS-485 / TIA-485-A) 100 m (Ethernet)
GUI	Access to System Config, Modbus Comms Set-Up, Measurement Config & System Diagnostics
WIFI	Full access to Graphical User Interface (GUI)
Screen	Display: 2.42" OLED, 128 x 64 pixels Dimensions: 57mm x 29mm

Sure-Cut®

M-Flow Technologies Ltd
Abingdon, UK T: +44 (0) 1235 380088
M-Flow Technologies Canada Ltd
Calgary T: +1 (403) 510-4989
www.m-flow-tech.com | info@m-flow-tech.com