

# VAF

INSTRUMENTS



# Monitoring & Control Systems

## 107

Product Range

Viscosity

Oil Discharge

Liquid Flow

Shaft Power

Alarm Units

Custom Made

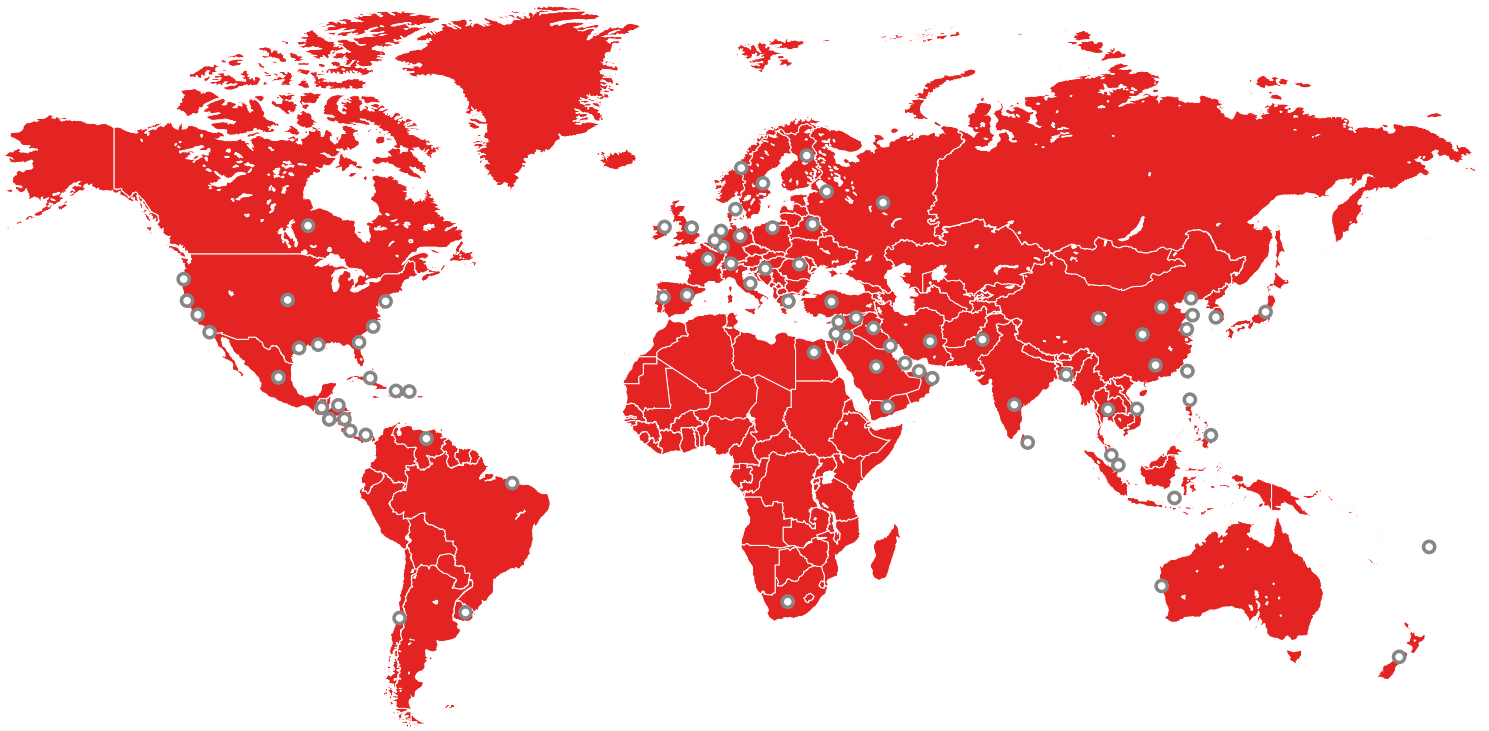
[WWW.VAF.NL](http://WWW.VAF.NL)

TO BE  
REALLY  
SURE

**Quality,  
Reliability  
and Flexibility**  
are some  
of the main  
ingredients  
of our success  
since 1938.

## Worldwide sales & service network

Argentina	Lebanon
Australia	Luxemburg
United Arab Emirates	Malaysia
Bangla Desh	Mexico
Belgium	The Netherlands
Brazil	New Zealand
Canada	Nicaragua
Chile	Norway
The Peoples Republic of China	Oman
Costa Rica	Pakistan
Croatia	Panama
Cuba	Poland
Denmark	Portugal
Dominican Republic	Qatar
Egypt	Romania
El Salvador	Russia
Fiji	Saudi Arabia
Finland	Singapore
France	South Africa
Germany	South-Korea
Great Britain	Spain
Greece	Sri Lanka
Guatemala	Sweden
Haiti	Switzerland
Honduras	Syria
India	Taiwan
Iran	Thailand
Indonesia	Turkey
Iran	USA
Iraq	Ukraine
Ireland	United Arab Emirates
Israel	Uruguay
Italy	Venezuela
Japan	Vietnam
Jordan	Yemen
Kuwait	



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## Introduction

VAF Instruments is the most preferred supplier of the top 100 shipyards and market leader in maritime measurement systems today. Why? Because we continuously strive to improve our products and service in order to serve you better.

For one, VAF Instruments offers her customers the best, longest and most comprehensive guarantee in the maritime industry. Secondly, with a global service organisation, VAF Instruments offers a unique level of customer service. When you look for reliability and service, VAF Instruments is the logical choice.

### Who is VAF Instruments?

VAF Instruments is the leading specialist for the development, manufacturing and world-wide sales of measurement and control systems. We supply both the marine- and process industry.

### What do we offer?

VAF Instruments offers measurement and control systems for the marine and process industry.

### Which customers do we serve?

Our instruments are used in a diversity of situations and by a variety of companies. Over 70% of the top 100 shipyards worldwide we call our clients. With most of them we have long established relationships.

### Why choose VAF Instruments?

Our company is based on your success. Our processes and the way we do things are designed around five guiding principles. These five principles define how we want to make a difference for you and who we are as a company.

### Where can you find us?

VAF Instruments has a world-wide network, with agents all around the globe. Over 70 representatives are most willing to serve you. Please feel free to contact us or one of our representatives, any time, any place.

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## Ready for the future

### Reliable instruments to meet expectations

Not just today but every day for as long as your system is in operation. You need the latest technologies to compete in the marketplace. You need to be sure you have the most advanced, reliable and cost-effective technology available.

You expect a company to demonstrate its trust and its commitments to its clients by guaranteeing the quality of its products. You can expect more from VAF Instruments' products. We give a standard two year guarantee on all our products; the longest and most comprehensive guarantee in the maritime industry. This is also the reason we put so much effort in research & development; to meet your current and future needs.

Our continuous effort to innovate can be illustrated by our intensive cooperation with some of the most renowned research institutions in the Netherlands in the area of sensor technology, both from the academic world as well as from other industries. These include research institutions from the Twente University, TNO and even the aviation industry. Also, we invest 8% of our revenues into new product development and 60% of our revenue comes from products developed less than 4 years ago. Not many competitors can say the same.

This way we were able to develop the torsional vibration technology that eliminated all moving parts from the ViscoSense®. Innovations like these made VAF Instruments' viscosity system the most popular viscosity control system in the marketplace and until now over 50.000 systems were sold. It broke all records by being on board of 70% of all ships being built since 1960.

A growing environmental awareness has led to higher demands regarding the measurement of oil in water. For this we developed the light scattering technique of the Oilcon that makes extreme accuracy possible. The quest to improvement also led to the automatic window wash system that eliminates manual maintenance. In depth knowledge from manufacturing possibilities and our clients' processes has led to a long history of innovation, dating back to the origin of VAF Instruments in 1938.

In fact VAF Instruments was the first to market several innovations. Always forward looking VAF Instruments has gained market leadership with its products and a world wide reputation of reliability and innovation.



**VAF Instruments**  
offers measurement  
and control systems  
for the marine and  
process industry.

# 1

## Viscosity

Viscosity measurement and control systems are used for continuous in-line measurement and control of viscosity of many liquids. Specially designed for fuel oil applications, it is used for diesel engines on board of ships and in land based power plants. VAF Instruments' expertise in this field resulted in a unique patented, superior measuring principle; ViscoSense®.



ViscoSense®

### ViscoSense® Measurement System

- Revolutionary viscosity measurement principle;
- Viscosity control of intermediate and heavy fuel oils for main and auxiliary diesel engines on board ships;
- Viscosity control in oil-fired electric power plants and other industrial applications using diesel engines on heavy or intermediate fuel oils;
- Increases combustion efficiency;
- Reduces internal engine fouling;
- Suitable for all types of fuel heaters;
- Accurate in-line viscosity measurement and electronic control of all kinds of liquids in industrial applications;
- Viscosity range: 0-25 mPa.s to 0-1000 mPa.s;
- Ex proof version available.

# 2

## Oil discharge

For the continuous on-line monitoring of discharge water during de-ballasting operations, VAF Instruments is one of world's main suppliers, offering the Oilcon® Mark 6M Oil Discharge Monitoring & Control system.



Oilcon®

### Oilcon® Oil Discharge Monitoring System

The latest development in a long line of oil-in-water monitoring system is the Oilcon® Mark 6M. The Oilcon® Mark 6M has been designed, approved and recognised by all major classification societies in accordance with IMO MARPOL Resolution MEPC 108 (49). The system is designed to be compact and easy to install, with only 2 bulkhead penetrations required. Great attention has been paid to ensure the Mark 6M is the most compact and user friendly system to date, with the most extensive list of Annex II oil-like substances.

Monitoring of:

- Dirty ballast/tank washing discharge;
  - Clean ballast discharge;
  - Segregated ballast discharge.
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- Sample selection: up to 6 sample points;
  - Materials: AISI 316, brass;
  - Detection range: 0-1000 ppm.

## 3

# Liquid flow

VAF Instruments' positive displacement liquid flowmeters stand for accurate volumetric measurement of a wide range of liquids, from low-density LPG to high viscosity chemical and petroleum products. VAF Instruments' liquid flowmeters are used in continuous metering applications, fuel consumption measurement, in-line blending processes, as well as for batching applications, such as the filling of containers and storage tanks. VAF Instruments' range of products covers flow rates from 1 litre/hour up to 960 m<sup>3</sup>/hour.



Flowmeters

### Series LoFlow<sup>®</sup>, ProFlow, MidFlow<sup>®</sup> and HiFlow<sup>®</sup>

The most accurate liquid flowmeters for marine and industrial applications.

- Suitable for continuous metering operations, metered deliveries, consumption measurement, as well as for batching applications such as filling of drums and containers, and in mixing or reaction vessels;
- Body materials: ductile iron, carbon steel AISI 316;
- Patented meter design;
- Designed to CE standards;
- ISO 9001 quality assurance;
- Accuracy from  $\pm 0,1$  % dependent on flow conditions / applications;
- Reproducibility better than  $\pm 0,05$ %;
- Low pressure drop;
- Wide viscosity range;
- Local and/or remote registration;
- A wide variety of electronic instrumentation available.

## 4

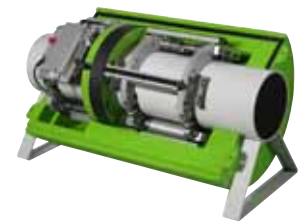
# Shaft power

For the continuous measurement of the power transmitted by rotating shafts VAF Instruments offers the T-Sense optical torque measuring system. The T-Sense system is available for marine, as well as land based installations where monitoring of shaft power is required. The T-Sense torque sensor can be installed and commissioned by the owner or shipyard. In combination with flowmeters and the PEM2 signal processing unit it makes the perfect efficiency monitor.

The TT-Sense Thrust and Torque sensor can be applied on a propeller shaft or intermediate shaft aft of the thrust bearing. Monitoring of thrust will give you direct visual control of changes in hull and propeller fouling and trimming of the vessel.



T-Sense



TT-Sense

### T-Sense Torque measuring system

For torque measurement of engine-driven shafts and other rotating equipment the T-Sense optical torque sensor can be supplied.

- Wireless system, power supply through induction principle, signal transmission through 2,4 GHz data transfer;
- Monitoring actual and average shaft power, torque and rpm;
- Able to detect torsional vibrations in the shaft line up to 50 Hz;
- Together with VAF Instruments' PT2 flowmeters an integrated efficiency monitoring system can be supplied, able to calculate and visualize specific fuel oil consumption, fuel consumption per NM and other efficiency indicators;
- Accuracy is within nanometer range.

### TT-Sense Thrust and Torque measuring system

In addition to above torque measuring system the TT-Sense thrust and torque sensor will bring you:

- Continuous propeller thrust and hull condition monitoring;
- Pitch optimization and propeller cavitation detection;
- A full overview of the efficiency of your complete propulsion train and direct indication of the performance of your vessel's hull;
- Very high accuracy and repeatability regarding thrust measurements.

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## 5

# Alarm units

For monitoring a wide range of sensors, process parameters and bridge activity, VAF Instruments is offering both digital and analogue Alarm Units as well as Bridge Navigational Watch Alarm System Units.

Key words related to these Alarm Units are easy installation and programming, reliability, competitive pricing and class approval.



Alarm Units / BNWAS

### Alarm Units

- Bilge alarms;
- Generator (repeater) alarms;
- Tank measuring alarms;
- Water ingress alarms;
- Small alarm systems.

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## 6

# System engineering

Experienced system engineers are available to design, along with the customer, a tailor-made solution for measurement and control problems. Examples are liquid batching systems, ratio control systems, stationary and mobile in-line blending systems. After installation the system engineer can bring the equipment into operation and arrange the training of personnel. VAF Instruments' quality control begins with the specific requirements of the customer and continues through all phases up to and including service during the economic life of the product. For further information contact VAF Instruments.

LoFlow®, MidFlow®, HiFlow®, Milliflow®, ViscoSense® and Dilcon® are registered trade marks of VAF Instruments B.V.



## Ready for the future.

VAF Instruments makes your promise come true. Not only for today, but long into the future.

For further information see relevant Product Bulletins or [www.vaf.nl](http://www.vaf.nl)

Represented by

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Agents and distributors in more than 50 countries.

