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Innovations for custom solutions

Viewline – the new generation in instrumentation

- Combi instruments
- Tachometer
- Speedometer
- Gauges for engine monitoring
- Basic navigation instruments

VDO

Mobility shapes our life – moving ahead is our passion



Our passion for mobility helps us attain new goals, to move forward and to push beyond boundaries. As an instrument supplier to the pleasure boat industry, it is both our vision and fascination. This can be seen in everything we do. Our knowledge of marine OEM and our enthusiasm for modern pleasure boats with their technical possibilities unites all VDO employees across geographic and linguistic boundaries.

An open mind for what's new is just as important to us as experience, focused research and development. That's why specialists from the most diverse business sectors work together within our company – e.g., from the sectors of instrumentation and sensor technology, in order to supply the pleasure boat building industry with these technologies for innovative solutions.

Today, our innovative developments are proof of the success of this operational model.

One platform for this is our new Viewline instrument standard providing special engine monitoring and navigation solutions for pleasure boats and sailing yachts.



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The future of analogue instrumentation

Viewline is the new standardised instrument platform for pleasure boats and yachts. With modular solutions in three housing variations, we supply more functions, more flexible installation and design options as well as space-saving combi instruments – something unique in this sector. Furthermore, Viewline offers a great deal of freedom to customise the cockpit and is the natural choice for an attractive price/performance ratio.



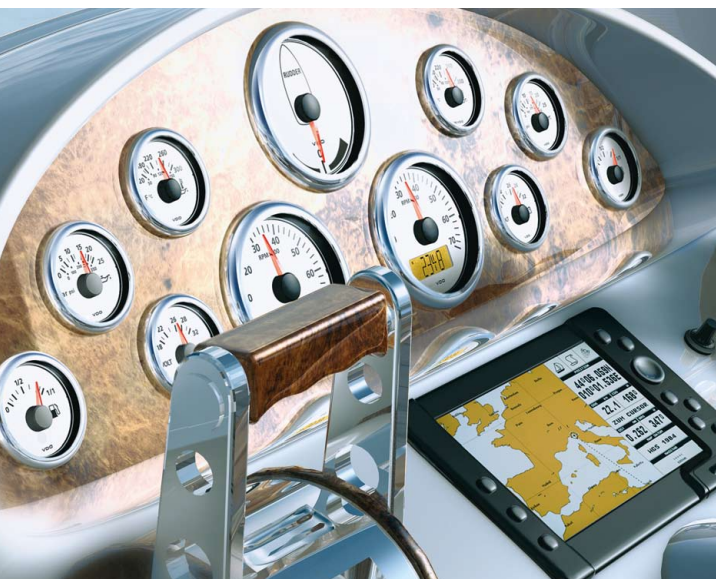
The series to fulfil the toughest requirements

As a leader in technology we are familiar with the complex requirements which boat and engine manufacturers place on a product. With over 50 years of experience in boat and engine instrumentation for the marine pleasure industry, we are in a position to offer reliable special solutions enabling optimum integration. In this respect, maximum precision and the deployment of pioneering technologies are equally important as ease of use and stylish design.

Viewline is the most recent result of our ongoing research and development work. An innovative, comprehensive standard instrumentation platform which will replace previous series and which is also available for outboard engine use.

Harmony in function and design

Our plug and play solution design concept means that the Viewline instruments for panel and flush mounting offer the highest level of installation flexibility. It doesn't matter whether bezels are used or not – the modular concept allows for a high degree of design variation. Furthermore, all the solutions have full backlight technology unique to this sector. What's more, the Viewline platform now includes a generic display component which can process and display a variety of sensor sources. Viewline is our forward-looking instrumentation concept which stands for quality, flexibility, customised design and diversity.



Benefiting in the long-term from new technologies

In developing the Viewline instrumentation, we have paid attention to the requirements of manufacturers. With Viewline, we have created a platform-wide standard with which we offer maximum freedom in respect of cockpit design.

Simple conversion and easy exchange

Our aim was to be forward-looking in our design concept of Viewline so that it would bring with it a high degree of installation freedom and flexibility. Trouble-free exchange or conversion to Viewline is therefore possible at any time. We have already prepared a safe and convenient solution for the instrument series if customers like to change to Viewline. As an experienced and reliable partner of leading boat manufacturers, we assist during the planning stage and ensure seamless integration and optimum deployment of all the advantages which Viewline offers.

Certified quality and innovative technology

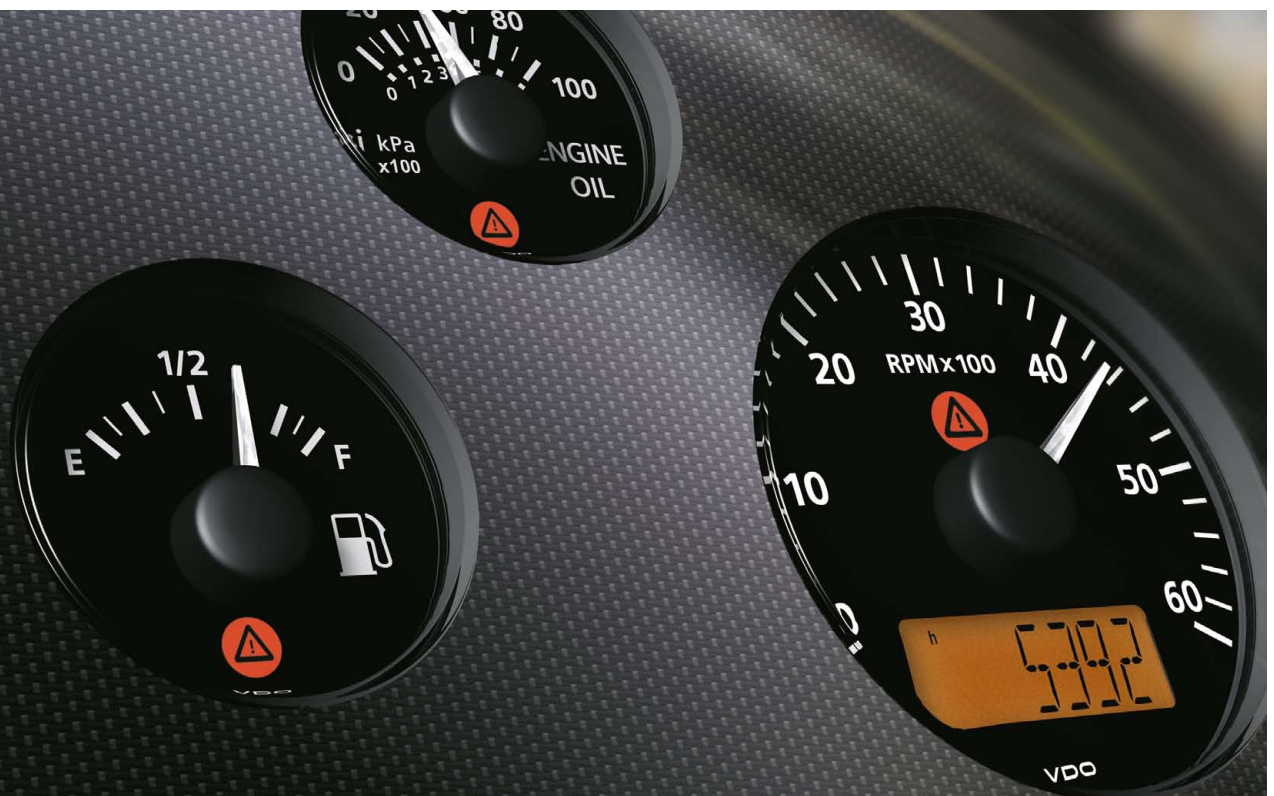
With Viewline, we offer a comprehensive modular series of the most modern instruments for engine monitoring and navigation. With more functions and greater flexibility in installation and design, Viewline increases the scope for creative cockpit customisation. The superb processing quality and technical perfection guarantee the highest levels of reliability and readability.

Flush and panel installation

All Viewline instruments can be conveniently mounted in the instrument panel. Here, it is possible to use the modular bezels for installation as well as integrating the instruments flat without the bezels (flush installation). This allows maximum flexibility in cockpit customisation and numerous design variants.

Anti-fog and water resistance

Electrical devices for use on boats under extreme conditions at sea need to be particularly well protected. This is why the fronts of all Viewline instrument casings are hermetically sealed in compliance with IP 67 and fitted with anti-fog double lenses in shock-resistant plastic, while the casing is corrosion-free. Distracting reflections are practically eliminated and resistance to seawater is guaranteed. The domed design also ensures that water flows off quickly when instruments are mounted horizontally.





Double lens section



Highly visible LED warning and indicator lights



Bezels: Colour and design variants

LED illumination/indicators and warning lights

Viewline instruments are fitted with highly visible, high intensity LED warning and indicator lights. They ensure that critical operating conditions can be quickly and safely detected. In the case of the speedometer and tachometer instruments, the Viewline platform concept also offers dials which can be fitted with up to five indicator warning lights.*

Clip-on bezels

The modular bezel concept offers design flexibility in the layout of instrument panels. Three attractive design variants in black, white or chrome perfectly complement any boat's interior. Furthermore, bezels are available in flat, round and triangular versions. All available bezels can be combined with all devices.

*OEM-specific





LC-display

As well as having an analogue indication (speed or engine revs), the new Viewline tachometer and tachometer instruments have an additional digital display:

- Display size 37 mm x 11 mm
- Quick and secure retrieval of other data
- Optimum reading angle and representation on the display
- Display with speed or engine revs (option)
- Further monitoring functions available on the LC-display
- Individual function selection via external control buttons

Programmable displays

Viewline enables the user to use different setting and programming options:

- Basic setup via dip switches, external buttons or a PC-software package
- Setup of various display functions



Full backlight technology

The dials and pointers of all Viewline instruments are produced with full backlight technology:

- Optimum contrast and superb readability of the display when lit
- Attractive display appearance at night thanks to clearly structured dial design

Signal inputs

Viewline offers the following options for the signal inputs:

- Standard speedometer and tachometer signals
- NMEA data input (option)
- Second frequency input (option)
- Standard signals for engine monitoring and onboard power supply
- Signal inputs for special sensors (generic gauge) (option)
- Up to five usable switching inputs for control/warning lights within the OEM version (option)



Combi and multifunction gauges *

Now, in addition to the tried and tested standard solutions, Viewline also offers the option to the OEM of installing multifunction devices:

- 85 mm combi devices, analogue and/or digital presentation of speedometer and tachometer signals (OEM solution)
- 110 mm multifunction devices, such as 4-in-1, 3-in-1, 2-in-1* (OEM solution)
- 110 mm combi devices, analogue and/or digital representation of speedometer and tachometer signals (OEM solution)
- Integration of up to five display/warning lights (OEM solution)

* in preparation

Generic gauge

Through the use of the most modern technologies, Viewline offers for the first time the OEM the possibility of processing and displaying all types of signals and characteristics, such as:

- Current and resistor inputs
- Frequency inputs
- Voltage inputs

Clear and multifunctional – the new Viewline 110 mm and Viewline 85 mm instruments

In addition to the standard platform, our new 85 mm and 110 mm Viewline displays also offers in the future manufacturers the opportunity to exploit solutions comprising combi and multifunction devices.

Combi display

As there is a second optional frequency input, the combi device can present speed and tachometer information either in analogue (pointer) or digital form (display).



Viewline 110 mm
combi display

110 mm multifunction gauges *

If various types of information are required in a multifunction gauge, manufacturers in the future can choose from our 2-in-1, 3-in-1 and 4-in-1 combinations.

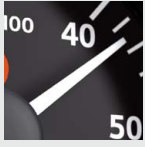
* OEM-specific/in preparation



Viewline 85 mm
combi display

Combi and multifunction devices – technical data at a glance

- Operating voltage 8–32 volt
- Indication error < 2.5 % over the entire display area
- Current consumption < 100 mA, with warning light (LED)
- Optional: up to five integrated warning lights (LED)
- Output for acoustic alert (option)
- Reverse polarity protection
- Various sensor inputs
- LC-display size 37 mm x 11 mm
- Two frequency inputs for tachometer /speedometer on combi device (option)
- Display function e. g., for clock, trip, odometer etc. via externally switchable button
- Up to four separate analogue gauges on multifunction units (in preparation)



Clearly structured, dial design with good readability.



Up to a maximum of five warning lights possible on display. Standard version with warning light.



37 mm x 11 mm 14 segment LC-display. Display of various device functions.



Viewline 85 mm tachometer



The advantages of Viewline at a glance

- Anti-fog double lens
- Flush installation on instrument panels
- Front panel in compliance with IP 67 protection rating
- LED-illumination
- Clip-on, modular bezel concept with high degree of design variance
- Integration of up to five display/warning lights on the gauge (option)
- Large digital display with good readability
- Different signal inputs
- Full backlight technology
- Combi and multifunction gauges (in preparation)
- Software programming using PC-software
- Individually programmable displays

Your cockpit solution with Viewline 85 mm

Our 85 mm Viewline instruments perfectly complement the cockpit environment with black or white dial design. Every cockpit can be individually customised by using the flexible bezel system (detachable and clip-on bezels). The precision of all Viewline instruments make them the natural choice and all relevant information is clearly displayed with good readability.

It doesn't matter whether it's working out distances, speed, or the engine monitoring – Viewline offers the right solution for every task. With their simple operation, these instruments are suitable for every type of boat. Moreover, the additional GL classification permits their use under the most extreme conditions.



Rudder angle

The Viewline rudder angle instrument for wheel-controlled yachts displays the current rudder position at all times. An important cockpit instrument for accident-free manoeuvres in narrow waterways.

- 12 volt operation
- Mechanical specification such as tachometer and speedometer
- 85 mm installation diameter
- 8 pole Tyco/Hirschmann bush housing
- < 130 mA current consumption
- Anti-fog double lens
- Front panel in compliance with IP 67 protection rating



Tachometer

The Viewline rev counter with or without operating hours counter (OHC) can be connected to conventional marine engines (no data bus).

- 12 volt/24 volt operation
- 85 mm installation diameter
- 8 pole Tyco/Hirschmann bush housing
- +/- 2.5% accuracy
- 100 mA current consumption with an LED warning light as standard
- Up to five optional warning lights
- Optional 2nd frequency input (on devices with display)
- Connection for external switch keys for display toggling
- Connection for external alerts
- Various pulse numbers adjustable via switch keys and/or software
- Anti-fog double lens
- Front panel in compliance with IP 67 protection rating



Sumlog®

The classic electronic route distance calculator with new technology for all pleasure boats.

- 12 volt/24 volt operation
- Mechanical specification such as rev counter and tachometer
- 85 mm installation diameter
- 8 pole Tyco/Hirschmann bush housing
- +/-2.5% accuracy
- 8–32 volt operating voltage
- < 130 mA current consumption with LED warning light
- Red LED warning light as standard
- Reverse polarity protection
- Mechanical construction such as the Viewline tachometer
- Frequency input for NMEA sensors or standard „paddle-wheel“ sensor
- Warning light to set speed limit
- Display with various functions, e. g., water temperature, depth (NMEA, time, on-board voltage, trip, distance) etc.
- Anti-fog double lens
- Front panel in compliance with IP 67 protection rating

Synchronizer

On pleasure boats with double engine installations, the Viewline synchronizer is an indispensable aid in guaranteeing the correct synchronous running of both drive units.

- 12 volt/24 volt operation
- 85 mm installation diameter
- 8 pole Tyco/Hirschmann bush housing
- +/-2.5% accuracy
- 100 mA current consumption
- 2nd frequency input
- Connection for external alerts (option)
- Various pulse numbers adjustable via switch keys and/or software
- Anti-fog double lens
- Front panel in compliance with IP 67 protection rating

Reliable engine monitoring with Viewline 52 mm

In conjunction with Viewline, to complement the 85 mm devices, we offer a useful range of engine monitoring devices with an installation diameter of 52 mm, plus dials are available in black and white. Due to the flexible bezel system (detachable and clip-on front bezels), each cockpit can therefore be individually customised.

Our Viewline standard instruments monitor engine functions and the onboard power supply to the highest level of precision and they continually detect the current operating conditions. Due to their simple construction, they are suitable for every type of boat and, in the same way as the 85 mm devices, GL certified for use under the most extreme conditions.





Pressure

The Viewline pressure gauge detects fluctuations in engine and gearbox oil pressure and changes in turbocharger boost.

- 8 pole Tyco/Hirschmann MQS plug
- $\pm 3.6^\circ$ angle degree accuracy over the entire display area
- Operating voltage 10–16 volt, 16–32 volt with dropping resistor
- Current consumption < 130 mA with LED warning light
- Reverse polarity protection
- Input signal: standard Ohm values
- 90° display angle
- 52 mm installation diameter
- Anti-fog double lens
- Front panel in compliance with IP 67 protection rating
- Red LED warning light
- Optional makepoint switch can be connected



Fuel gauge

The Viewline fuel gauge provides information about the fuel level in the tank and can be used with all different types of tank sensors.

- 8 pole Tyco/Hirschmann MQS plug
- $\pm 3.6^\circ$ angle degree accuracy over the entire display area
- Operating voltage 10–16 volt, 16–32 volt with dropping resistor
- Current consumption < 130 mA with LED warning light
- Reverse polarity protection
- Input signal: standard Ohm values
- 90° display angle
- 52 mm installation diameter
- Anti-fog double lens
- Front panel in compliance with IP 67 protection rating
- Red LED warning light
- Optional makepoint switch can be connected



Temperature

The Viewline temperature gauge displays any sudden rise in coolant temperature, helping to prevent serious damage and the associated expense.

- 8 pole Tyco/Hirschmann MQS plug
- $\pm 3.6^\circ$ angle degree accuracy over the entire display area
- Operating voltage 10–16 volt, 16–32 volt with dropping resistor
- Current consumption < 130 mA with LED warning light
- Reverse polarity protection
- Input signal: standard Ohm values
- 90° display angle
- 52 mm installation diameter
- Anti-fog double lens
- Front panel in compliance with IP 67 protection rating
- Red LED warning light
- Optional makepoint switch can be connected



Volts

The Viewline voltmeter displays the status of generator and battery and their loads on a voltage scale. Values exceeding the normal charging voltages can therefore be monitored exactly. In addition, even potential deep discharges can be detected.

- 8 pole Tyco/Hirschmann MQS plug
- $\pm 3.6^\circ$ angle degree accuracy over the entire display area
- Operating voltage 8–16 volt, 18–32 volt
- Current consumption < 130 mA with LED warning light
- Reverse polarity protection
- 90° display angle
- 52 mm installation diameter
- Anti-fog double lens
- Front panel in compliance with IP 67 protection rating
- Red LED warning light





Trim

The Viewline trim gauge provides information about the position of the stern-drive in relation to the boat's stem. In this way the skipper knows at all times whether the drive is in a raised or lowered position. Furthermore, he can always optimise the boat's trim.

- 8 pole Tyco/Hirschmann MQS plug
- $\pm 3.6^\circ$ angle degree accuracy over the entire display area
- Operating voltage 10–16 volt, 16–32 volt with dropping resistor
- Current consumption < 30 mA with LED warning light
- Reverse polarity protection
- Input signal: standard Ohm values
- 90° display angle
- 52 mm installation diameter
- Anti-fog double lens
- Front panel in compliance with IP 67 protection rating
- Red LED warning light
- Optional makepoint switch can be connected



Rudder angle

The Viewline rudder angle indicator makes it even easier to navigate wheel-controlled yachts out of harbours or through locks. The gauge shows the position of the rudder at all times and is available in 52 and 85 mm diameters.

- 8 pole Tyco/Hirschmann MQS plug
- $\pm 3.6^\circ$ angle degree accuracy over the entire display area
- Operating voltage 10–16 volt, 16–32 volt with dropping resistor
- Current consumption < 130 mA
- Reverse polarity protection
- Input signal: standard Ohm values
- 90° display angle
- 52 mm installation diameter
- Anti-fog double lens
- Front panel in compliance with IP 67 protection rating



Ammeter

The Viewline ammeter provides an overview of the entire electrical system. The level of current being drawn and the supply current are clearly displayed and the shunt – a measurement resistor can be inserted into the measurement point in a matter of seconds. The fine connecting cable that runs from the shunt to the gauge is easy to lay without taking up much space.

- 52 mm installation diameter
- 240° display angle
- 8 pole Tyco/Hirschmann MQS plug
- $< 2.5\%$ accuracy over the entire display area
- Operating voltage 8–32 volt
- Current consumption < 100 mA with LED warning light
- Integrated red LED warning light
- Reverse polarity protection
- Anti-fog double lens
- Front panel in compliance with IP 67 protection rating
- Programmable warning point (PC-software)



Pyrometer

The Viewline pyrometer indicates the exhaust temperature at the end of the exhaust pipe (up to 900°C). The relationship of this value to the maximum permitted exhaust temperature shows how efficient combustion is at that particular load. A rise in temperature is therefore an important early warning signal.

- 52 mm installation diameter
- 240° display angle
- 8 pole Tyco/Hirschmann MQS plug
- $< 2.5\%$ accuracy over the entire display area
- Operating voltage 8–32 volt
- Current consumption < 100 mA with LED warning light
- Integrated red LED warning light
- Reverse polarity protection
- Anti-fog double lens
- Front panel in compliance with IP 67 protection rating
- Programmable warning point (PC-software)



Tachometer

The 52 mm Viewline tachometer is the ideal solution if a space-saving gauge in a panel or in the engine compartment is required.

- 52 mm installation diameter
- 240° display angle
- 8 pole Tyco/Hirschmann MQS plug
- <2.5% accuracy over the entire display area
- Operating voltage 8–32 volt
- Current consumption < 100 mA with LED warning light
- Integrated red LED warning light
- Reverse polarity protection
- Anti-fog double lens
- Front panel in compliance with IP 67 protection rating
- Programmable warning point (PC-software)
- Input for KL1, KL W, inductive sensor, light coil (outboard)
- Various number of pulses can be adjusted by using software

Hours counter

The Viewline operating hours counter makes it easy to stick to a proper maintenance schedule. It is only activated when the engine is running so only genuine engine operating hours are counted.

- 52 mm installation diameter
- 8 pole Tyco/Hirschmann MQS plug
- Operating voltage 8–32 volt
- Current consumption < 50 mA with LED function light (red)
- Reverse polarity protection
- Anti-fog double lens
- Front panel in compliance with IP 67 protection rating



Freshwater/wastewater

The Viewline water tank gauge indicates the level of freshwater or wastewater. Capacity sensors can be fitted with a maximum depth of up to 1500 mm.

- 52 mm installation diameter
- 240° display angle
- 8 pole Tyco/Hirschmann MQS plug
- <2.5% accuracy over the entire display area
- Operating voltage 8–32 volt
- Current consumption < 100 mA with LED warning light
- Integrated red LED warning light
- Reverse polarity protection
- Anti-fog double lens
- Front panel in compliance with IP 67 protection rating
- Programmable tank shape (optional using PC-software)

Quartz clock

The clearly readable dial on the Viewline quartz clock gives every pleasure boat and yacht cockpit the stylish look.

- 52 mm installation diameter
- 8 pole Tyco/Hirschmann MQS plug
- Operating voltage 8–32 volt
- Reverse polarity protection
- Anti-fog double lens
- Front panel in compliance with IP 67 protection rating



Temperature gauge

The Viewline outside temperature gauge can display both the engine compartment temperature as well as the current air temperature.

- 52 mm installation diameter
- 240° display angle
- 8 pole Tyco/Hirschmann MQS plug
- <2.5% accuracy over the entire display area
- Operating voltage 8–32 volt
- Current consumption < 100 mA with LED warning light
- Integrated red LED warning light
- Reverse polarity protection
- Anti-fog double lens
- Front panel in compliance with IP 67 protection rating
- Programmable warning point (PC-software)



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