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# Innovation for custom solutions.

Viewline – the new generation in instrumentation.

- Combi instruments/multifunction gauges
- Tachometer
- Speedometer
- Gauges for engine monitoring
- Navigation instruments

**VDO**

**VDO**

# Always on course – now and in the future.

With our range of products and services, we have always been at the cutting edge of tomorrow's trends. We are committed to developing new ideas, driving forward innovation and offering our partners advanced solutions – and that's a promise.

As technology demands in the pleasure boat industry become more complex, it is increasingly important to have fully customised, reliable solutions available that also meet all future requirements. With our experience, innovative capabilities and outstanding technological expertise, we are the partner you need to overcome the marine challenges of today and tomorrow.

What drives us is the enthusiasm of our employees, their commitment and passion for modern pleasure boats with their myriad technical possibilities – and above all the wishes of our customers.

In our 50 plus years of experience as a supplier of instruments to the pleasure boat industry, we have introduced numerous innovations. Focused research and development, an open mind for what's new and a dedication to finding the ideal solution are all embedded in our DNA.

Viewline continues this tradition while setting new standards in marine instrumentation. These specialist custom solutions give our partners the best possible support in the fields of marine navigation and engine monitoring in sailing yachts and motor boats – now and in the future.



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Viewline 85 mm tachometer



Clearly structured dial design with good readability

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

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

## 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 maximum 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. Maximum precision and the deployment of pioneering technologies are therefore 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 Viewline instruments for panel and flush mounting offer a high level of installation flexibility. With or without bezels, the modular concept allows maximum design variation. Furthermore, all solutions have full backlight technology, which is unique in this sector. Viewline is our forward-looking instrumentation concept, standing for quality, flexibility, customised design and diversity.

### Benefiting in the long-term from new technologies.

In developing the Viewline instrumentation, we paid careful attention to the requirements of manufacturers. With Viewline, we have created a cross-platform standard that offers maximum freedom in respect of cockpit design.

### Simple conversion and easy exchange.

Our aim was to be forward-looking while creating the Viewline design concept, thereby ensuring that it delivers a high degree of installation freedom and flexibility. Trouble-free upgrading or conversion to Viewline is therefore possible at any time. As an experienced and reliable partner of leading boat manufacturers, we assist during the planning stage and ensure seamless integration and optimum utilisation of all the advantages that Viewline offers.

### Viewline benefits at a glance:

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



# Certified quality and innovative technology.

Viewline offers a comprehensive modular, modern series of instruments for engine monitoring and navigation. With more functions and greater flexibility in installation and design, Viewline increases the scope for creative cockpit customisation. High manufacturing standards combined with technical perfection guarantee the highest levels of reliability and readability.

## Panel and flush mounting.

All Viewline instruments can be conveniently mounted in the instrument panel. It is possible to use the modular bezels for installation or to integrate instruments without bezels (flush installation). This allows a high level of 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 itself is corrosion-free. Distracting reflections are practically eliminated and resistance to seawater is thus particularly high. The domed design also ensures that water flows off quickly when instruments are mounted horizontally.



Double lens section



Highly visible LED warning lights – up to five warning lights possible



Bezels: choice of colour and design

## 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 for 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 speedometer instruments have an additional digital display:

- Display size 37 mm x 11 mm
- Quick and reliable 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 (e.g., battery, temperature, mileage indicator, etc.)
- Individual function selection via external button



**Full backlight technology.**

The dials and pointers of all Viewline instruments feature full backlight technology:

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



**Combi and multifunction gauges\*.**

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

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

\* On request

**Programmable displays.**

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

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

**Signal inputs.**

Viewline offers the following options for the signal inputs:

- NMEA 0183 data input for all navigation instruments
- Standard tachometer and speedometer signals
- Second frequency input (option)
- Standard signals for engine monitoring and onboard power supply
- Signal inputs for special sensors (option)
- Up to five usable switching inputs for control/warning lights within the OEM version (option)



# Clear and multifunctional – the new Viewline instruments.

In addition to the standard platform, our 85 mm and 110 mm Viewline combi displays and 110 mm Viewline multifunction gauges now also offer manufacturers the opportunity to create solutions comprising combi and multifunction devices.



Combi displays\*

### Combi displays\*

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

### Combi displays\* – technical data at a glance:

- Two frequency inputs for rev counter/speedometer (option)
- Operating voltage 8–32 V
- Indication error < 2.5% over the entire display range
- Current consumption < 150 mA, with warning light (LED)
- Optional: up to five integrated warning lights (LED)
- Output for acoustic alert (option)
- Various sensor inputs
- LC display size 37 mm x 11 mm
- Display function e.g., for clock, trip, odometer, etc. via externally switchable button
- Reverse polarity protection
- Anti-fog double lens
- Front panel with IP 67 protection rating
- 85 or 110 mm installation diameter

\* OEM-specific / on request

2-in-1  
driving speed/trim2-in-1  
pitot speedo/fuel level4-in-1  
battery voltage/temperature/pressure/fuel

### The latest generation of multifunction gauges – the Viewline X-in-1 series.

If different types of information are needed in a small amount of space, manufacturers can now choose from our latest multifunction gauges. The new Viewline 2-in-1 and 4-in-1 combinations minimise cabling effort and can be installed without taking up much space, thus saving costs.

### Multifunction devices – technical data at a glance:

#### 2-in-1 – driving speed/trim.

- Operating voltage 10–16 V
- Indication error < 3.6° on trim gauge
- Indication error < 2.5% on tachometer
- Current consumption < 175 mA, with two integrated warning lights (LED)
- Output for acoustic alert (option)
- Reverse polarity protection
- Sensor inputs as per separate instruments
- Display function e.g., for clock, trip, etc. via externally switchable button

#### 2-in-1 – pitot speedo/fuel level.

- Operating voltage 10–16 V
- Indication error as per separate instruments
- Current consumption < 160 mA, with integrated warning light (LED)
- Reverse polarity protection
- Sensor inputs as per separate instruments

#### 4-in-1 – battery voltage/temperature/ pressure/fuel.

- Operating voltage 10–16 V
- Indication error < 3.6°
- Current consumption < 500 mA, with 5 integrated warning lights (LED)
- Reverse polarity protection
- Sensor inputs as per separate instruments





## Your cockpit solution with Viewline 85 mm.

Our 85 mm Viewline instruments perfectly complement the cockpit environment with their black or white dial design. Every cockpit can be individually customised using the flexible bezel system (detachable and clip-on bezels).



### Synchronizer.

On pleasure boats with twin engine installations, the Viewline synchronizer is an indispensable aid to ensuring correct synchronised running of both units.

- 8 and 14 pole Tyco/Hirschmann bush housing
- Operating voltage 8–32 V
- Accuracy +/- 2.5 %
- Current consumption 150 mA
- 2nd frequency input
- Connection for external alerts (option)
- Number of pulses settable via button and/or software
- Anti-fog double lens
- Front panel with IP 67 protection rating
- 85 mm installation diameter



### 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.

- 8 and 14 pole Tyco/Hirschmann bush housing
- Operating voltage 8–32 V
- Current consumption < 150 mA
- Mechanical specification as per tachometer and speedometer
- Anti-fog double lens
- Front panel with IP 67 protection rating
- 85 mm installation diameter



### Tachometer.

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

- 8 and 14 pole Tyco/Hirschmann bush housing
- Operating voltage 8–32 V
- Accuracy +/- 2.5 %
- 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 button for display toggling
- Connection for external alerts (option)
- Number of pulses settable via button and/or software
- Anti-fog double lens
- Front panel with IP 67 protection rating
- 85 mm installation diameter





### Depth.

VDO's depth indicator measures the water depth. Thanks to the integrated, freely configurable alarm, you're sure to have a safe and relaxed journey in shallow or deep waters.

- 8 and 14 pole Tyco/Hirschmann bush housing
- Operating voltage 8–32 V
- Accuracy +/- 2.5 % (depending on the nature of the bottom and water quality)
- Current consumption < 150 mA, with integrated warning light (LED)
- Warning light for configurable shallow water alarm
- NMEA input for active NMEA 0183 depth sensor
- Display with various functions, e.g., water temperature, depth, shallow water alarm, time, voltage, etc.
- Mechanical specification as per tachometer and speedometer
- Reverse polarity protection
- Anti-fog double lens
- Front panel with IP 67 protection rating
- 85 mm installation diameter



### Wind.

The Viewline wind indicator provides information about the apparent wind speed and wind direction. A wind speed alarm can also be configured.

- 8 and 14 pole Tyco/Hirschmann bush housing
- Operating voltage 8–32 V
- Accuracy +/- 2.5 % (depending on sensor installation)
- Current consumption < 150 mA, with integrated warning light (LED)
- NMEA input for active NMEA 0183 wind sensor
- Warning light for configurable wind speed alarm
- Display with various functions, e.g., apparent wind speed, maximum wind speed, atmospheric pressure, ambient air temperature, time, voltage, etc.
- Mechanical specification as per tachometer and speedometer
- Reverse polarity protection
- Anti-fog double lens
- Front panel with IP 67 protection rating
- 85 mm installation diameter



### Close hauled wind display.

The close hauled wind display indicates the apparent wind direction with 2x magnification. Ideal for regatta sailors to detect and use small changes in wind direction.

- 8 and 14 pole Tyco/Hirschmann bush housing
- Operating voltage 8–32 V
- Accuracy +/- 2.5 % (depending on sensor installation)
- Current consumption < 150 mA, with integrated warning light (LED)
- Warning light for configurable wind speed alarm
- NMEA input for active NMEA 0183 wind sensor
- Display with various functions, e.g., apparent wind speed, maximum wind speed, atmospheric pressure, ambient air temperature, time, voltage, etc.
- Mechanical specification as per tachometer and speedometer
- Reverse polarity protection
- Anti-fog double lens
- Front panel with IP 67 protection rating
- 85 mm installation diameter



### Sumlog®.

The classic electronic route distance calculator with or without compass functionality.

- 8 and 14 pole Tyco/Hirschmann bush housing
- Operating voltage 8–32 V
- Accuracy +/- 2.5 %
- Current consumption < 150 mA, with integrated warning light (LED)
- Warning light for set speed limit
- Display with various functions, e.g., depth, water temperature, compass course, course over ground, GPS time, steering aid, voltage, trip, distance, etc.
- NMEA input for active NMEA 0183 paddle-wheel sensor, GPS or compass sensor
- Mechanical specification as per tachometer and speedometer
- Reverse polarity protection
- Anti-fog double lens
- Front panel with IP 67 protection rating
- 85 mm installation diameter



### Pitot speedo.

The Viewline mechanical speedometer displays the speed of the boat, based on data provided by the pitot tube.

- 8 pole Tyco/Hirschmann bush housing
- Operating voltage 10–16 V
- Accuracy +/- 2 kn
- Current consumption < 35 mA
- Reverse polarity protection
- Anti-fog double lens
- Front panel with IP 67 protection rating
- 85 mm installation diameter





# Reliable engine monitoring with Viewline 52 mm.

In conjunction with Viewline, to complement the 110 mm and 85 mm devices, we offer a useful range of engine monitoring devices with an installation diameter of 52 mm, plus dials available in black and white. Due to the flexible bezel system (detachable and clip-on front bezels), each cockpit can be individually customised.



## Fuel gauge.

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

- 8 pole Tyco/Hirschmann MQS plug
- +/- 3.6° angle degree accuracy over the entire display range
- Operating voltage 10–16 volt, 16–32 volt with dropping resistor
- Current consumption < 150 mA, with integrated warning light (LED)
- Input signal: standard ohm values
- 90° display angle
- Optional makepoint switch can be connected
- Reverse polarity protection
- Anti-fog double lens
- Front panel with IP 67 protection rating
- 52 mm installation diameter



## Quartz clock.

The clearly readable dial on the Viewline quartz clock adds a stylish touch to every pleasure boat and yacht cockpit.

- 8 pole Tyco/Hirschmann MQS plug
- Operating voltage 10–16 volt, 18–32 volt
- Current consumption < 10 mA
- Reverse polarity protection
- Anti-fog double lens
- Front panel with IP 67 protection rating
- 52 mm installation diameter



## 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.

- 8 pole Tyco/Hirschmann MQS plug
- Operating voltage 8–32 V
- Current consumption < 30 mA, with integrated LED warning light (red)
- Reverse polarity protection
- Anti-fog double lens
- Front panel with IP 67 protection rating
- 52 mm installation diameter



## Freshwater.

The Viewline freshwater tank gauge indicates the level of freshwater. Capacity sensors can be fitted for a maximum depth of up to 1,500 mm.

- 8 pole Tyco/Hirschmann MQS plug
- +/- 3.6° angle degree accuracy over the entire display range
- Operating voltage 10–16 volt, 16–32 volt with dropping resistor
- Current consumption < 150 mA, with integrated LED warning light (red)
- Input signal: 4–20 mA current consumption (VDO freshwater sensor)
- 90° display angle
- Reverse polarity protection
- Anti-fog double lens
- Front panel with IP 67 protection rating
- 52 mm installation diameter



## Blackwater.

The Viewline blackwater tank gauge indicates the level of blackwater. Capacity sensors can be fitted for a maximum depth of up to 1,500 mm.

- 8 pole Tyco/Hirschmann MQS plug
- < 2.5% accuracy over the entire display range
- Operating voltage 8–32 V
- Current consumption < 100 mA, with integrated warning light (LED)
- Input signal: 4–20 mA current consumption (VDO blackwater sensor)
- 240° display angle
- Reverse polarity protection
- Anti-fog double lens
- Front panel with IP 67 protection rating
- 52 mm installation diameter



## Temperature.

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

- 8 pole Tyco/Hirschmann MQS plug
- +/- 3.6° angle degree accuracy over the entire display range
- Operating voltage 10–16 volt, 16–32 volt with dropping resistor
- Current consumption < 150 mA, with integrated warning light (LED)
- Input signal: standard ohm values
- 90° display angle
- Optional makepoint switch can be connected
- Reverse polarity protection
- Anti-fog double lens
- Front panel with IP 67 protection rating
- 52 mm installation diameter



## 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. Even potential deep discharges can be detected.

- 8 pole Tyco/Hirschmann MQS plug
- +/- 3.6° angle degree accuracy over the entire display range
- Operating voltage 8–16 volt, 18–32 volt
- Current consumption < 150 mA, with integrated warning light (LED)
- 90° display angle
- Reverse polarity protection
- Anti-fog double lens
- Front panel with IP 67 protection rating
- 52 mm installation diameter



#### 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.

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



#### 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.

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



#### Trim.

The Viewline trim gauge provides information about the position of the engine in relation to the boat's stern. In this way the skipper always knows whether the drive is in the raised or lowered position. He can also optimise the boat's trim.

- 8 pole Tyco/Hirschmann MQS plug
- +/- 3.6° angle degree accuracy over the entire display range
- Operating voltage 10–16 volt, 16–32 volt with dropping resistor
- Current consumption < 150 mA, with integrated warning light (LED)
- Input signal: standard ohm values
- 90° display angle
- Optional makepoint switch can be connected
- Reverse polarity protection
- Anti-fog double lens
- Front panel with IP 67 protection rating
- 52 mm installation diameter



#### 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.

- 8 pole Tyco/Hirschmann MQS plug
- +/- 3.6° angle degree accuracy over the entire display range
- Operating voltage 10–16 volt, 16–32 volt with dropping resistor
- Current consumption < 150 mA
- Input signal: standard ohm values
- 90° display angle
- Reverse polarity protection
- Anti-fog double lens
- Front panel with IP 67 protection rating
- 52 mm installation diameter



#### 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.

- 8 pole Tyco/Hirschmann MQS plug
- < 2.5% accuracy over the entire display range
- Operating voltage 8–32 V
- Current consumption < 100 mA, with integrated warning light (LED)
- 240° display angle
- Programmable warning point (via optional PC software)
- Input for KL1, KL W, inductive sensor, light coil (outboard)
- Number of pulses settable via optional PC software
- Reverse polarity protection
- Anti-fog double lens
- Front panel with IP 67 protection rating
- 52 mm installation diameter



#### Outside temperature gauge.

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

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



#### Pressure.

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

- 8 pole Tyco/Hirschmann MQS plug
- +/- 3.6° angle degree accuracy over the entire display range
- Operating voltage 10–16 volt, 16–32 volt with dropping resistor
- Current consumption < 150 mA, with integrated warning light (LED)
- Input signal: standard ohm values
- 90° display angle
- Optional makepoint switch can be connected
- Reverse polarity protection
- Anti-fog double lens
- Front panel with IP 67 protection rating
- 52 mm installation diameter



#### Mechanical water pressure gauge.

The Viewline water pressure gauge detects fluctuations in coolant pressure, ensuring that you stay informed as to whether the coolant amount and pressure meet current requirements.

- 8 pole Tyco/Hirschmann bush housing
- Operating voltage 10–16 V
- Accuracy +/- 0.15 bar
- Current consumption < 35 mA
- Reverse polarity protection
- Anti-fog double lens
- Front panel with IP 67 protection rating
- 52 mm installation diameter