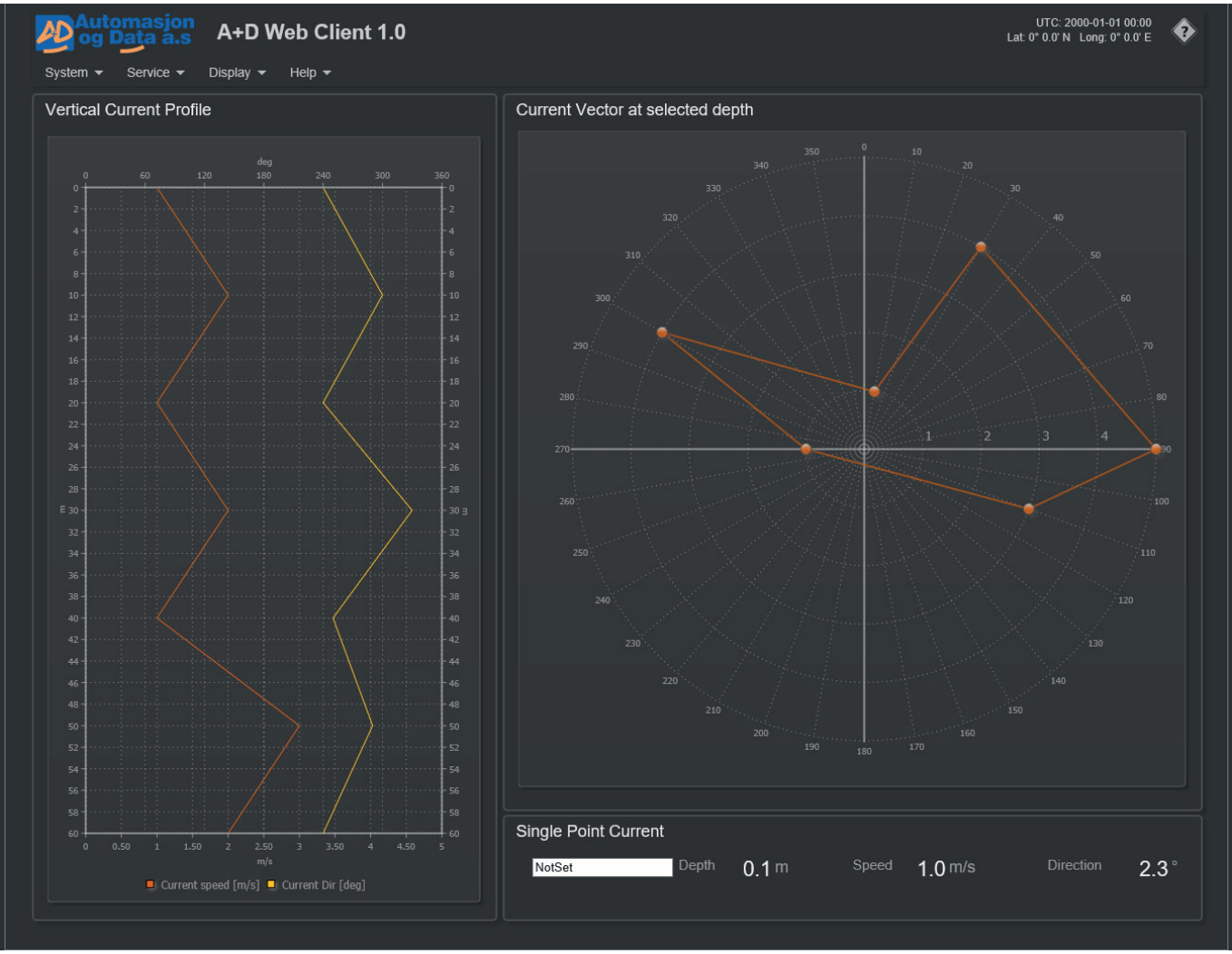
SEA CURRENT SENSORS AND PROFILERS



Current Profiling Systems based upon the Acoustic Doppler technology (ADCP) have been used on offshore rigs and vessels for many years with good results. Both Vertical and Horizontal ADCPs have been installed in some of the harshest environments in the world with proven results, even in deepwater applications.

We have delivered a large number of sensors designed for through-hull installation or to hang over the side of a vessel or platform. Such sensors often require special tailor-made handling equipment in order to deploy and recover these sensors safely. We therefore have a comprehensive assortment of different solutions for deployment hardware, large and small, that can be used as a basis for designing a customer-specific solution whenever needed.

Data can easily be interchanged with other systems and specific data outputs can be configured to local and remote users. Data from offshore systems can be sent to onshore users or remote users through a wide variety of data transfer methods, data lines, paper reports, email reports or web pages.

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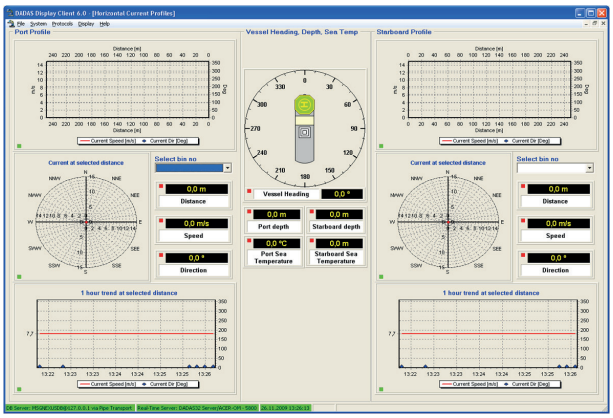


Current sensors or profilers—overview

- Measuring ocean currents from a current meter type sensor has been done for a long time. In the early days these were mechanical sensors, later single point current meters and over the last decades also compact current profilers with shorter or longer measurements range. Sensors are now available with profiling range up to more than 1000 meters from a single instrument for deepwater applications.

Several sensors can be combined in order to obtain longer measurement range, including ROV-mounted sensors for ultra-deepwater applications.

Current sensors—single point

A single point current meter is typically used as a fixed sensor or hanging over the side of a vessel or platform by a winch and davit type arrangement. These sensors are normally small and compact units installed at the specific depth where the current measurements are needed.

- Current sensors can be combined or integrated with other in-situ measurement instruments, such as CTD-sensors, wave and tide sensors, water quality sensors, pollution sensors etc.

Current profilers—short range

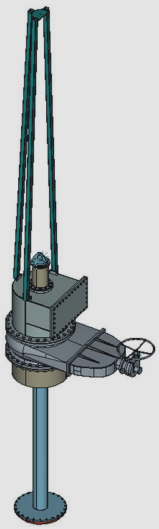
Current profilers can be made with shorter or longer measurement ranges. Typical short range current profilers are made with a profiling range from a few meters up to 50-100 meters. These sensors are well suited for applications where a specific area needs to be measured, typically for harbours and shallow-waters.

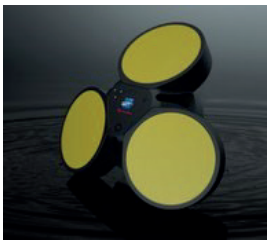
Current profilers can be made down-looking or uplooking for a variety of installation options.

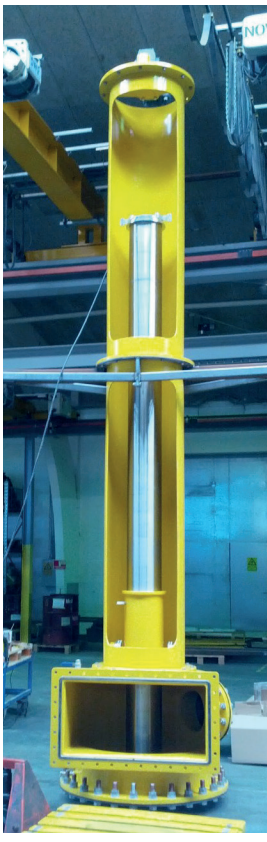
Current profilers—long range

- The measurements range of a long range current profiler varies a lot with the water quality. New and state-of-the-art ADCPs can in some areas measure up to 1000-1500 meters under optimum conditions. A combination with ROV or Riser-mounted sensors makes it possible to measure full ocean depth using a fully integrated data set.

Current profilers can be made down-looking or uplooking for a variety of installation options.







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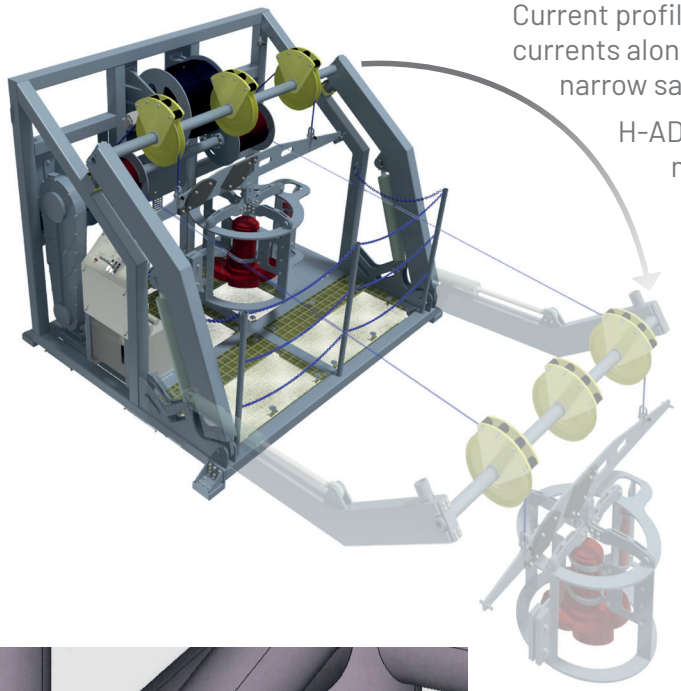
Horizontal current profilers—H-ADCP



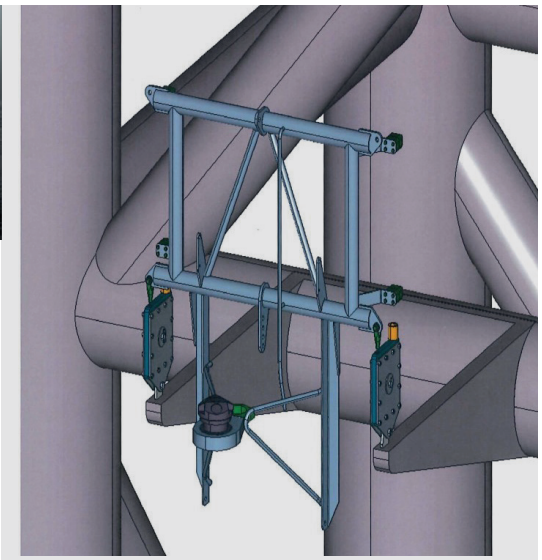
Current profilers can also be installed horizontally to measure sea currents along a horizontal line. Typical applications are harbours, narrow sailing areas, tanker loading areas and FPSOs.

H-ADCPs can be installed using any of the above installation methods or as fixed installations.

Deployment systems —winch based systems

- Current sensors can be installed hanging over the side of a vessel or platform from a load-bearing cable. This normally requires a small winch and a sheave arrangement and often also a davit or similar arrangement to deploy the sensor.

We have available a wide variety of designs from small handwinch systems to heavy duty solutions and our experienced designers can easily adapt these to specific requirements.

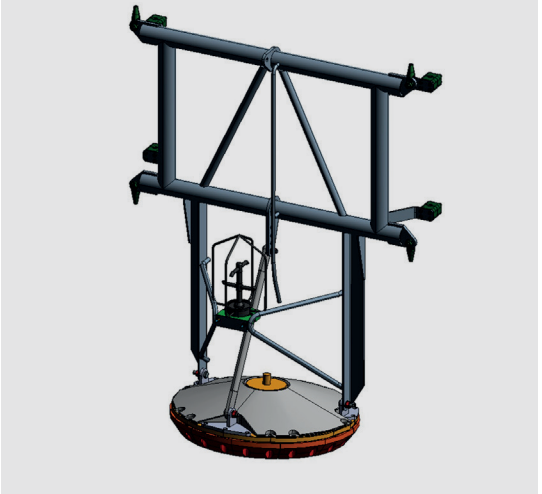


Deployment systems—guideline-based installations

Larger ADCPs must be installed on a stable mounting frame in order to provide high quality measurements and also to be able to survive rough offshore weather conditions.

For vessels, FPSOs or platforms where inboard installations is not possible, we have developed an external guideline-based installation method that has proven feasible even under the roughest weather conditions. This method can be adapted for most kind of ADCP sensors, including horizontal sensor (H-ADCP), and is also available for smaller instruments.

We have several years of experience in operating such systems offshore, including offshore Brazil and Angola, where they have survived in very harsh environments.



Deployment systems—through hull installations

- An inboard installation in a protected environment is the preferred installation method for the larger ADCPs. An installation package containing a certified gate valve, a docking section and a pistontype lowering arrangement can be provided to safely deploy and recover expensive and delicate equipment even in extreme weather conditions.

We have developed a flexible certified gate valve solutions for sensors with a diameter up to 100 cm. These can be adapted or modified to customer specified projects as required.

Contact WISE Group for further details on highly specialized systems or to discuss your specific project.

Installation and commissioning services Offshore experience

We have a well qualified team of field service engineers who can undertake service work on all kinds of meteorological and oceanographic sensors and systems.

All our engineers have extensive experience from offshore work, shipyard work and onshore work.

Onshore service and calibration services

We are also able to service and calibrate all kinds of sensors and MetOcean equipment used in offshorerenewable projects. Our workshop is equipped for servicing and calibrating many different kinds of sensors and instrumentation.

Operation and maintenance services - O&M

The WISE team of field service engineers can also undertake O&M service work on MetOcean sensorsand systems as well as on other kinds of sensors and systems. Our engineers can take care of preparing O&M schedules, carry out maintenance visits, analyse data, service equipment and many other related tasks.

We can also offer online preventive service contracts for systems that can be reached online.

Turn-key instrumentation projects

We can take full responsibility for all aspects of offshore instrumentation projects from design of the system, engineering, system integration, installation, commissioning, operation and maintenance to data management and data analysis.

CERTIFICATIONS:

WISE GROUP:
ENVIRONMENTAL INSTRUMENTATION
IS OUR SPECIALITY!

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