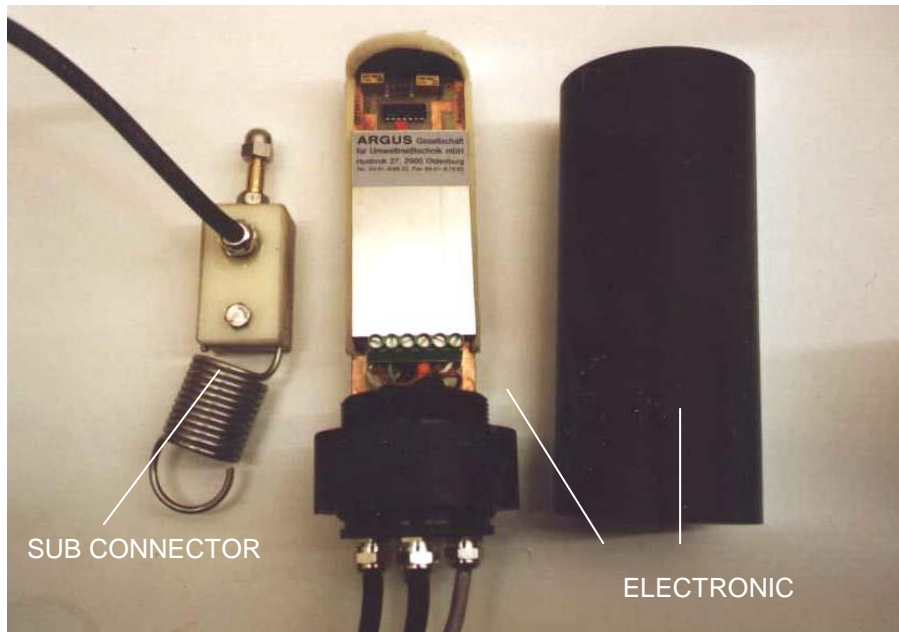


AWG IV



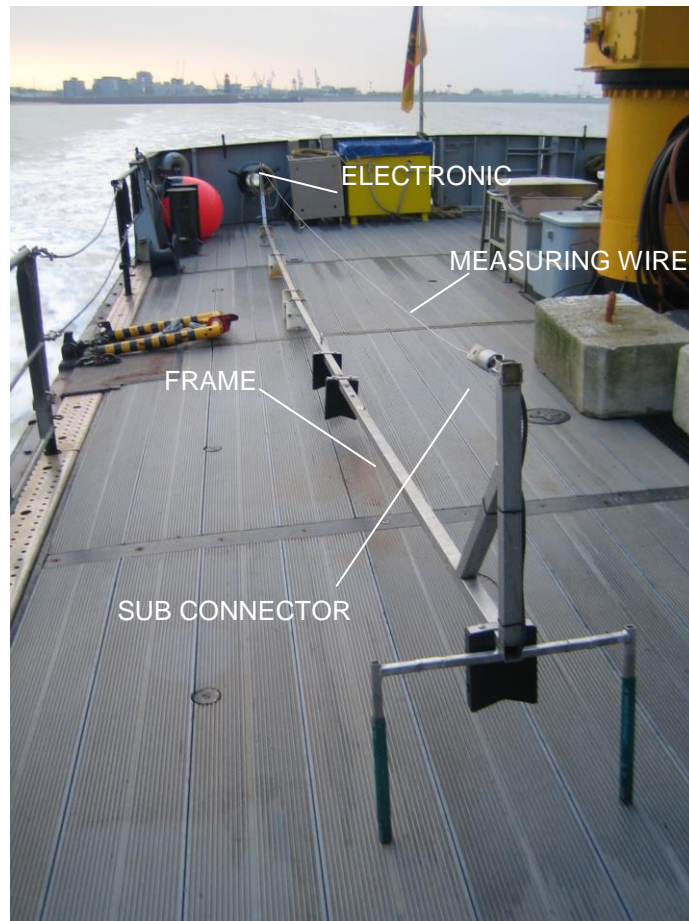
1 Description of the device for AWG IV

The AWG-IV is a very robust wave gauge for shallow water and cost applications. It can be installed in about 2 hours. The output is an analog signal only. The sample rate is about 100Hz. A complete set incl. data logger + gprs modem is available on request.

In general the device consists of the following elements: a special sensor wire, an electronic unit and a support structure. The shipment will be carried out in a disassembled way. After assembling the calibrated version the supply creates a current loop of 0-20 mA, when exposed in water. The actual sensor consists of a special resistant wire with a very low resistance. At this wire an alternating voltage (AC) with app. 1 kHz is been inducted. Because of the AC voltage no electrolysis can occur. The current loop is closed via a tracing back wire, which runs inside the support structure pipes. The measuring wire is spanned between the low end of the support (sub connector) and a clamp contact unit. The wire connection at the electronic housing (head-unit) is carried out via a tension pliers unit. A stainless steel spring at the "sub-unit" provides the required tension of the sensor wire. The stainless steel support structure is also used as a potential electrode and therefore it should not be isolated in any way. If deployed at harbour areas where electric earth currents can not be avoided (noise) the structure should be mounted isolate to sheet pilings or at measuring posts (not necessary for wood posts).

AWG IV

1.1 Assembly



STANDARD

The standard version comes in segments of 2m and must be assembled. And it shall be ordered with the required measuring length. A specific tool set is included in the delivery.

Manual construction

Cut the wire in the needed length. Give two meters more for the tracing back wire. Take the sub unit and fill it with grease. Push the cable through the sub unit inlet and connect it to the inside contact by turning the wire connecting socket screw. Pull on the cable for controlling the connection. Insert the measuring wire into the socket. The sleeve nut has to be tightened up to the point the wire in the socket cannot be turned anymore. Attach the sub unit to the lower frame angle and insert the measuring wire into the socket at the electronic housing. Attach the electronic to the structure as described. Insert the tracing back wire into the electronic casing and connect it to terminals 1 and 2. The electrode cable must run inside the structure pipes.

AWG IV

1.2 Function



A galvanic isolated alternating current is been inducted in stainless steel wire loop. The wire is been spanned in between a support frame. The frame can be mounted with isolation blocks on a circular pile been rammed into the sea bed. Or can be mounted on jetty walls directly. The frame provides conductivity to the media (water) and reads the water level between the wire and the frame. This “electrode” is connected to the measuring input device and serves as a detector. The signal will be amplified, rectified and filtered. The output level is 0-20 mA (0...5V) DC as a linear function of the water level (0.5m bottom offset). The water conductivity should be more than 100 μ S/cm and mixed homogeneously.

AWG IV

1.3 Technical Data

Temperature	in operation non operation	-10 - +40°C -30 - +70°C
Humidity	foot unit Electronic	watertight up to 2 bar watertight IP65
Energy	Voltage	10...30 VDC
	Power	Approx..1,000 mW
Measuring length	Wire	10m max.
Weight	Complete	Approx. 30 kg (10m)

1.4 Measuring tolerance and ranges

Temperature drift		1%
Scaling		0...20mA full wire span 0...5V full wire span
Resolution		3 mm