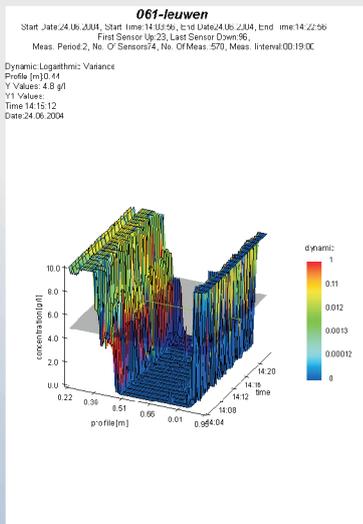


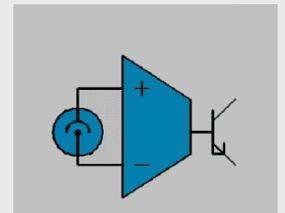
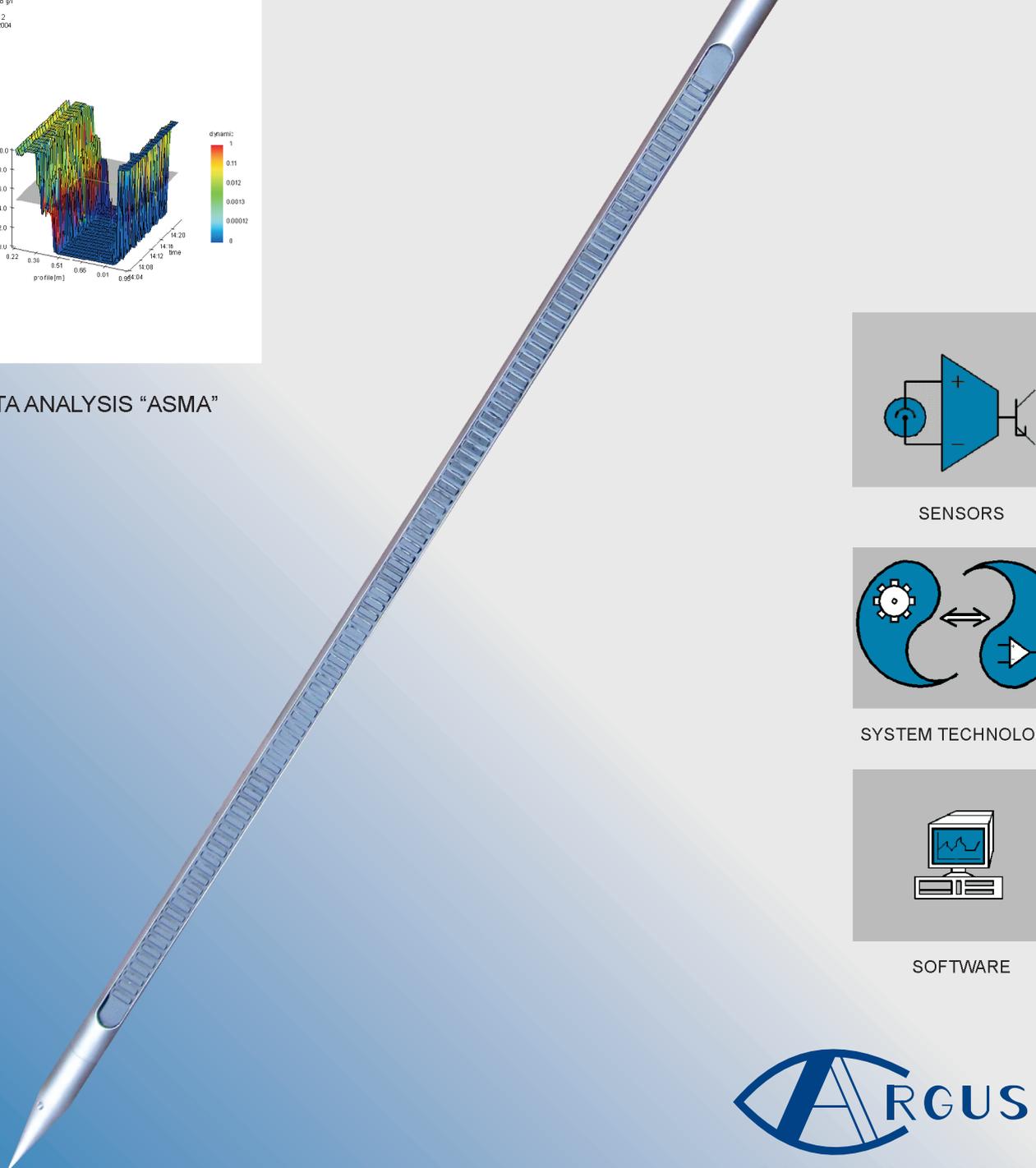
ASM - V

ARGUS SUSPENSION METER

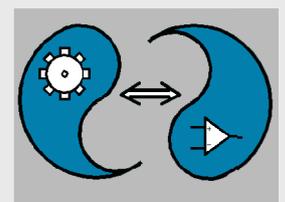
ACCURATE PROFILE MEASUREMENTS
OF TURBIDITY AT THE BOTTOM OF
MARINE ENVIRONMENTS



DATA ANALYSIS "ASMA"



SENSORS



SYSTEM TECHNOLOGY



SOFTWARE



gesellschaft für umweltmesstechnik mbh



Surf zone application



Scour monitoring



Harbour survey

ASM -V

The instrument was developed based on the ASM-IV series. It records a profile of high resolution turbidity above the bottom in marine environments.

The instrument operates with backscatter infrared sensors (850 nm) embedded in a titanium rod. The sensors are placed on an active board at a distance of 10 mm. This means that 100 sensors are mounted per metre.

Each sensor pair consists of an infrared transmitter and a detector. Both are embedded in a small optic housing. The special geometry and filters protect the sensors from ambient light interference. The sample volume to be detected depends on the density of the suspension and can be 10 cm³. The maximum distance of particles to be sampled is 100 mm max. The sample time for each pair of sensors is 50 µs for 1 second interval. The maximum sensor numbers per instrument is 512.

The instrument contains three additional sensors.

- An inclinometer for two directions will give the actual angle between ground and the instrument.
- A pressure gauge senses the actual depth of the location of the instrument and it gives information about tides.
- A temperature sensor detects the temperature of the steel housing which is related to the water temperature.

Activation and power supply for the sensors as well as the data transmitter are controlled by a battery powered central unit, sealed-in the head of the instrument. It consists of a microprocessor, a data memory, the additional sensors and the energy supply. An IRDA communication unit and a RS 485 sub connector manage the data transfer between the instrument and a PC, without opening the ASM housing.

The energy consumption of the instrument is very low and < 15 mAs. That means one 9V block alkaline battery will provide the necessary energy for 2 months, assuming a sample rate of 10 measurements every 5 minutes, or the energy for a standby status of approx. 6 months. The capacity of 8Mb in the standard model will provide a measuring time of approx. 4 weeks in total, without weakening the battery. A data and radio communication server is available on request.

The microprocessor carries out all tasks necessary for control. Incoming data is processed by the microprocessor and stored in the memory.

The software ASMA is needed to communicate with the instrument and analyse the raw data

Specifications

- Measuring method: optical
- Sensors: backscatter infrared sensors (850nm)
- Sensor spacing: 10 mm
- Number of sensors: 96, 144, 192 per meter
- Measuring section: 0.96 m (Type S), 1.44 m (Type N), 1.92 m (Type L)
- Length of instrument: 1.64 m (Type S), 2.12 m (Type N), 2.60 m (Type L)
- Dimensions of the instrument:
 - Sensor area: 30 mm (Type -S, -N), 35mm (Type -L) diameter
 - Head: 57 mm diameter
- Connector type: Subconn MCBH4M
- Measuring frequency: 1 sec. minimum
- Sampling no. rate: 255 samples maximum
- Memory capacity: 8MB
- Measuring range: 0...2000 NTU (FTU) formazin standard
custom calibration on request
- Energy supplies:
 - Main supply: one alkaline 9 V block battery (minimum)
two lithium 9 V block battery for maximum energy source
 - Memory backup: Gold cap
- Weight: 4 kg (Type -S), 5.5 kg (Type -N), 7.5 kg (Type -L)
- Ambient temperature: -5 +40°C
- Installation depth: 40 m water depth max. other on request

Manager
Joerg R. Gutkuhn

Address
Goethestrasse 35
27721 Ritterhude, Germany
Phone: +49(0) 4292 9923-35, Fax: -65
E-mail: info@argusnet.de

Agent:

Registry
District court Walsrode HRB 121846