DIPMATE® ESSENTIAL
BACKHOE DREDGING MONITORING SYSTEM

Cost-competitive monitoring system providing full insight during backhoe dredging

seatools

UNDERWATER SPECIALISTS

Cost-competitive backhoe dredging monitoring system providing full insight

The DipMate® Essential is a 3D backhoe dredger monitoring and registration system that can be (retro)fitted on virtually any backhoe or dipper dredger. The system – fourth generation at present – visualizes and registers the dredging process in real time, and facilitates achieving high dredging tolerances at a minimum of over-dredging. The DipMate Essential system is designed to excel in common dredging environments known for intense dirt, humidity, and vibrations.

With 60+ DipMate systems active in the field, DipMate® is the backhoe dredging monitoring and control system of choice for operators around the world. An achievement that is largely attributed to 16 years of field feedback processed in an ever-more capable system. As a result, the system contains a well-developed and operator-friendly MMI, including all available functionalities for effective backhoe dredger monitoring.

Backhoe dredger "Dragamar" – Etermar

Backhoe dredger "Johannes" – Joh. Wacht GmbH

KEY FEATURES

1 **Highly accurate for minimum of over-dredging**
Our DipMate® systems are known for their high levels of accuracy. Among others, we incorporate sensors of the highest quality throughout the entire backhoe dredging visualization system to achieve these levels.

2 **Compact and easy to integrate**
The compact size of the DipMate Essential leaves sufficient room in the operator cabin – even in cabins of smaller-sized land excavators.

3 **Cost-competitive system**
The new, fourth-generation DipMate® series is entirely based on digital sensor technology and features a simple yet effective system architecture. This combination yields a cost-effective system that includes all essentials for efficient backhoe dredging.

OTHER FEATURES

- Highly reliable system
- Safe dredging thanks to integrated warning functionalities
- Highly customizable MMI
- High update rate for accurate and smooth process visualization
- Wide range of (terrain) data exchange possibilities
- 24/7 support for all systems in the field
- Remote access for effective troubleshooting
- Supports any excavator attachment, including buckets, clamshells, grabs, shears, and hammers

LIST OF OPTIONS

The standard DipMate® Essential system includes:

- 15" Rugged panel PC (other sizes available on request)
- Electronics box
- Sensors, including mounting materials
- Custom-size cables, including connectors
- Documentation
- Software license

The following features are optional:

A 2nd industrial panel PC
A second monitor console provides the operator with parallel additional views in high detail (a side view in addition to the standard top view, e.g.) for optimal insight into the dredging process. A dual panel PC configuration, also, safeguards operational continuation in case one panel PC fails.

B Slave station, including monitor
A slave station panel PC facilitates remote monitoring of the dredging process in real time, such as from an office or a vessel's bridge. The setup allows for efficient cooperation between the crane operator and other involved personnel, such as a surveyor or barge master.

C Sensor cable protection
To ensure additional protection of sensor cables on the boom, stick, and lever/bucket, cables can be covered in hydraulic hoses.

D Spud pole height measurement
This option provides accurate measurement of the distance between the spud pole and the pontoon deck. As such, it provides accurate insight into the pontoon's anchoring operation. Measurement is performed by installing a rugged Seatools wire length measurement sensor or by a digital rotation sensor.

E Draft sensor
A draft sensor can be fitted for accurate pontoon draft measurement. This entails a 0-1600 mBar absolute pressure transmitter mounted in a stainless steel 316L housing, to which a certified (DNV) bronze slide valve is added.
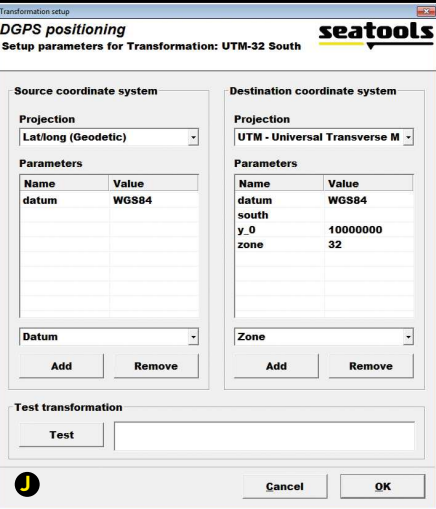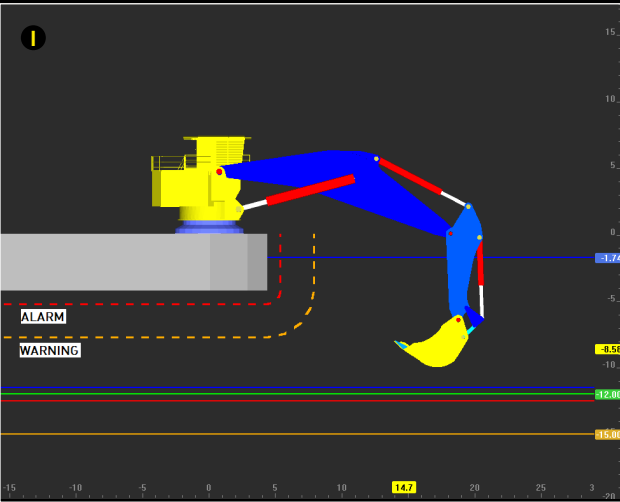
F Pontoon roll and pitch sensor
To ensure system accuracy in case the GPS antenna is not fitted to the crane itself, a roll and pitch sensor can be mounted on the pontoon.

G Slew sensor
In case crane heading cannot be derived from the DGPS positioning system, a slew sensor can provide accurate heading determination.

The dredging marks exchange module facilitates real time dredging data exchange between different dredgers operating in the same area.

H Dredging marks exchange module
By means of a wireless link, this module facilitates real-time dredging data exchange between different dredgers operating in the same area. Real-time, collective insight in the dredging terrain increases efficiency of subsequent dredging operations, or operations that run in parallel. This option requires a wireless connection between cranes. This connection is not included in the module, but can be delivered on request.

I Safety warning module
This module facilitates safe backhoe dredging by enabling the operator to set limits on the operational range of the dredger and its components. The module warns the operator in case he threatens to exceed pre-set limits. By applying this module, the possibility of exceeding the maximum operational range is profoundly reduced. Limits can be set for virtually any crane member (rotational) position, including boom, slew, heading, crane roll and pitch, pontoon roll and pitch, and bucket-pontoon distance.

J Grid conversion module
This software module enables flexible conversion from the Lat/Long grid to the Northing/Easting grid.

K Remote access module for effective troubleshooting
Seatools' DipMate systems can be executed with a remote access module for cost-effective and rapid troubleshooting. From our head office in the Netherlands, we assist operators on any system, anywhere in the world.
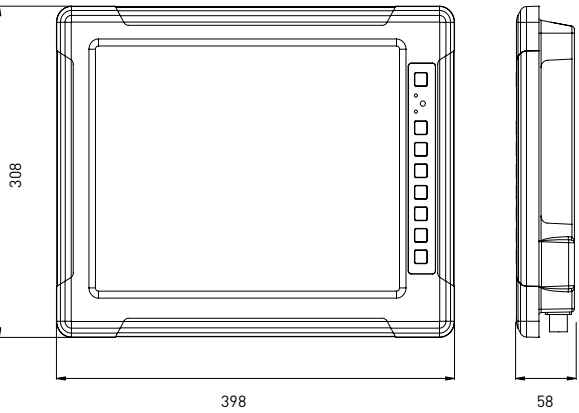
L Languages
The standard DipMate software can be delivered in English, German, Spanish, Portuguese, Chinese, Russian, and Dutch.
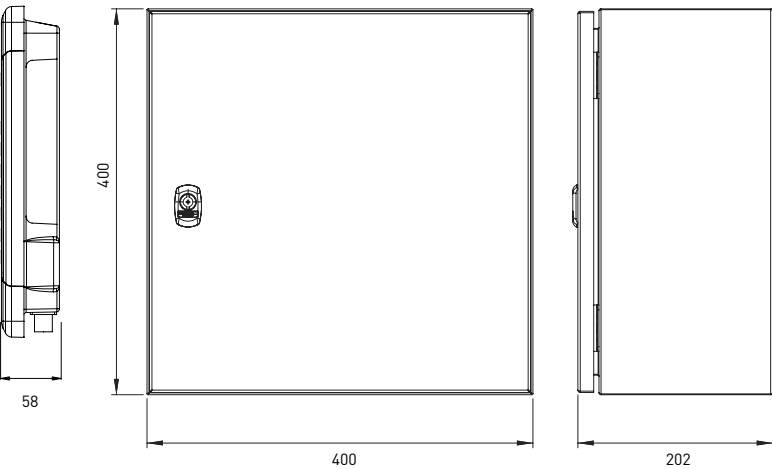
DIMENSIONS

PANEL PC

308

398

58

ELECTRONIC BOX

400

400

202

SPECIFICATIONS

KEY SPECIFICATIONS DIPMATE® ESSENTIAL

Power supply	24 V DC
Power consumption	Approx. 110 W
IP grade	
Electronics box	IP 66
Panel PC	IP 67
Sensors	100 m.s.w. depth rating
Additional data supply interfaces	Serial (2-4X), Ethernet (2X), USB (2X)
Main dimensions	See detailed drawings

DIPMATE® PRO

In addition to our DipMate® Essential system, Seatools offers the DipMate® Pro. The DipMate Pro system facilitates even greater backhoe dredging efficiency and safety through various operator assistance functionalities, such as a boom control module and a pipeline protection module. While the DipMate Essential serves medium-duty backhoe dredgers, the Pro system was designed to endure heavy dredging conditions such as severe shock loads, as may occur during rock excavation. Learn more about the Pro system on www.seatools.com, or contact our sales department.

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