

## F-FMD

The FORCE flooded member detection device, F-FMD subsea measurement unit has an ultrasonic probe that can detect water ingress behind any steel structures offshore up to approximately 50" members. A large amplifier enables the scanner to propagate sound through large diameter pipes.



*F-SEGMENT scanner for subsea ultrasonic inspection*

### Features

The ROSCAN system; comprising of a real time computer that controls a digital NDT system.

- Topside workstation for real-time control and evaluation.
- A communication and transport system including the ROV and its umbilical.
- Low weight and small size. Subsea titanium computer-container: Ø190 L=500mm, weight is ~20kg/44lb in air.
- Depth compensated marinised stepper motors.
- Easily interfaced by any work class ROV. Communication through a twisted pair in the ROV umbilical current loop, or RS232/RS485 or Ethernet interface.
- Suction pad keep the unit in position, allowing the ROV manipulator to let go of the scanner after positioning.



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## Operation

### *Pre-dive preparations*

Testing of scanner operation and establishing communication through the ROV umbilical topside. Calibration and establishing of reference level according to customer specifications for reporting all detected indications.

### *Diving*

The scanner is placed in position by the ROV manipulator. The suction pump is activated to attach the unit in the actual position.

The operator takes the measurement. The ultrasonic probe is positioned exactly normal to the steel surface where the flooded member or alternatively where the reduced wall thickness due to corrosion or erosion is expected.

## Mechanical design

Lightweight unit consisting of a protection bar, a suction pad and the ultrasonic probe  
The scanner size is approximately

- 110 x 200 x 80 mm

Weight in air is approximately 3 kg.

When each point measurement is complete, a quick assessment of the recorded scanning data is performed, allowing re-scanning of interesting areas to quality assure flooded member detection found.

When measurement and analyzing is completed the unit can quickly be relocated by the diver or ROV to the next location subject to flooded member detection or wall thickness inspection.

Further information:

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