

Multi Channel Survey System for Underwater Applications MAGNETO[®] MX3D UW



Features

- Depth rating 300 m (other ratings on request)
- 5 x Fluxgate magnetometer FGM3D UW series per DAU
- DAUs cascable to double or triple number of used sensors
- 2 x RS232 for connecting GPS, altimeter or AHRS
- up to 10,000 Hz sampling rate
- up to 4,000 Hz bandwidth
- 24 Bit ADC resolution
- data output via Ethernet port (10/100 MBit, full duplex)
- flexible system setup

The MAGNETO[®] MX3D UW is an excellent low logistics multi channel system for magnetic measurements of soil structures in marine and offshore applications.

The submersible measurement system is equipped with high-resolution FGM3D UW 3-axis Fluxgate sensors, having a sampling rate of up to 10,000 Hz. The sensor data is digitized with 24 Bit by the data acquisition unit MX3D UW.

Having a scalable structure and featuring data output via TCP/IP, the system can be easily integrated into existing

infrastructures such as vessels, ROVs, AUVs or ROTVs due to its default data transfer protocol. Thus it can be used with various software solutions such as QINSy, EIVA or Hypack.

The MAGNETO[®] MX3D UW corresponds not only to the demands of precise data acquisition in underwater applications, but is also highly flexible, compatible and can be easily integrated into existing survey systems!

Applications

- UXO detection
- pipeline detection/tracking
- archaeological prospection

Technical Data MX3D UW

Sensors		FGM3D/100 UW II
Measurement Range		$\pm 100,000$ nT (others available upon request)
Noise		<15 pT _{rms} /√ Hz @ f = 1 Hz
Bandwidth		2,000 Hz standard, 4,000 Hz upon request
Length		263 mm
Diameter		45 mm
Power Supply		$\pm 12 \dots \pm 15$ V
Current Consumption		± 26 mA
Cable Length to MX3D UW		0.5 to 100 m
Weight (Air/Water/Salt Water)		444 g/188 g/182 g

Data Acquisition		MX3D UW DAU
Number of Sensors		1 to 5 units per digitizer, cascable
Number AUX Sensors		2 (serial, GPS, altimeter, AHRS, etc.)
Sampling Range		200 Hz to 10,000 Hz (others available upon request)
Resolution (ADC)		24 bit
Input		15x analogue channel, 1x RS232
Output		10/100 mBits/s, full duplex
Start-up current		2.5 A (restricted)
Power Supply		10...32 VDC
Current consumption (at 200 Hz sampling rate)		max. 10 W (including 5 sensors)
Ethernet Cable Length		max. 100 m (min. Cat6), extendible via DSL modem
Bandwidth requirements		approx. 750 kbit/s (5 sensors, 1,000 Hz sampling rate)
Connectors		Sensors: Subconn MCBH8F, Voltage/LAN: DBH13M
Dimensions		Diameter: 98 mm, Length (w/o connector): 324 mm, Volume: 1,694 Liters
Weight (Air/Water/Salt Water)		2,949.4 g /1,250 g/1,210 g

Options of Integrations	
Sensor Position towards Carrier System	Variable, minimum distance depending on carrier system
Integration of Sensors	Variable adjustment
Distance of Sensors	Variable, typical ≤ 0.5 m



The MX3D UW is an **open system**. Being located on the ROV/ROTV, the MX3D UW electronics transmits the data via TCP/IP to the vessel, thus allowing for a highly flexible integration of the MX3D UW in existing systems.

The FGM3D UW II sensors allow for a horizontal integration (towards the moving direction) in the ROV/ROTV, thus resulting in improved hydrodynamics. Due to its high sampling rate of up to 6 kHz, the amount of available data is extremely high even when driving at high speed.

The MX3D UW offers full flexibility over full range of water depth and customer application. It allows for customization in nearly any extend.