



SEAMAP
A MIND Technology Business

SEAMAP SEALINK™ 24 CHANNEL TENSION MODULE

24 CHANNEL DATA ACQUISITION

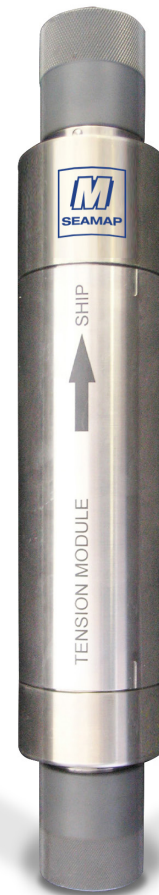
Seamap's SeaLink 24 Channel Tension Module is designed to complement the SeaLink 24 Digital Modules and provide cable tension readings along the cable in the SeaLink 3840 Recording System. The SeaLink 24 Channel Tension Cell Modules are designed to be placed in the head, middle and tail of the cable. Tension readings of each tension module are displayed in real time by the SeaLink 3840 Recording System.

The SeaLink 24 Digital Module is the base building block of the system and is powered via a 750 mA DC constant current loop. The 24 channel analog input is capable of sampling at $\frac{1}{8}$, $\frac{1}{4}$, $\frac{1}{2}$, 1, 2 and 4ms via 24bit delta sigma converters. Digitized data including data from other modules in the array are transmitted to the recording system via Seamap's proven proprietary telemetry system over common electrical twisted pairs. The power, control, data acquisition and systems diagnostics of the modules are performed via the SeaLink workstation on the recording vessel / platform.

The SeaLink 24 Channel Tension Module is enclosed in a 3.0" (76.2mm) OD titanium tube with end-caps. The SeaLink module has a crush depth of 6,925m. The Seamap custom SeaLink 56 pin connector has proven reliable and durable in the harshest environment. All SeaLink Modules have double O-Rings and are Nitrogen filled to ensure mechanical integrity.

The SeaLink 24bit Data Acquisition Systems is based on proven technology and can be configured for many applications including marine seismic data collection.

Custom designs and customizing SeaLink Modules are available upon request. All exposed in-sea metals are titanium.



Key Features:

- 24 Channels in one Module with Tension Cell
- Selectable Gain
- Selectable Low Cut and High Cut Filters
- Lower Power Consumption
- High Channel Capacity – 480 Channels @ $\frac{1}{4}$ ms per Array
- Continuous Data Collection
- Sample Rates of $\frac{1}{8}$, $\frac{1}{4}$, $\frac{1}{2}$, 1, 2 & 4 ms
- Reduced Component Count

Applications:

- Marine 2D / 3D / 4D Seismic
- High Resolution Seismic
- Ultra High Resolution Seismic
- HR3D Ultra High Resolution Seismic
- Ocean Bottom Cable (OBC)
- Vertical Arrays
- Reservoir Monitoring
- Passive Acoustic Seismic

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Specifications:

SeaLink 24 Channel Tension Module																																		
Tension Cell	1 Cell Per Module	Measurement range: 0 to 20,000 lbs. Measurement accurate over operational range: ± 6%; 0 to 1,200 lbs. Operational Temperature range: 15° C to +71° C (60° F to 160° F), Crush depth: 1524 meters Note: Display in lbs. or Kg																																
Number of Seismic Channels	24 Per Module 4 Data Lines (Programmable Per-Application Requirement)																																	
		<table><tr><th>Rate</th><th>Int.</th><th>#Chan</th><th>#Mod</th></tr><tr><td>8000</td><td>0.125</td><td>240</td><td>10</td></tr><tr><td>4000</td><td>0.25</td><td>480</td><td>20</td></tr><tr><td>2000</td><td>0.50</td><td>1,008</td><td>42</td></tr><tr><td>1000</td><td>1.00</td><td>2,016</td><td>84</td></tr><tr><td>500</td><td>2.00</td><td>4,128</td><td>172</td></tr><tr><td>333</td><td>3.00</td><td>Custom</td><td></td></tr><tr><td>250</td><td>4.00</td><td>Custom</td><td></td></tr></table>	Rate	Int.	#Chan	#Mod	8000	0.125	240	10	4000	0.25	480	20	2000	0.50	1,008	42	1000	1.00	2,016	84	500	2.00	4,128	172	333	3.00	Custom		250	4.00	Custom	
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Non-Seismic Channels Allocated	NAD Channels	Internal Pressure Internal Temperature Voltage Measurements Current Measurements																																
Analog/Digital Converter	24bit Delta Sigma Type																																	
Dynamic Range	> 112 dB (5-206 Hz)	Based on 2ms Sample Rate																																
Distortion	THD < 0.003%	Based on 2ms Sample Rate																																
Lower Power Consumption	Less than 8 watts per module																																	
Preamplifier Type	Voltage Mode Differential Input	Selectable Gain +1.0% accuracy: 0 to 36 dB Increments in 6dB steps																																
Low Cut Filter	Analog	2.5Hz or 5Hz 6db/Oct (Hydrophone Cap + Input Z)																																
Low Cut Filter	Digital Infinite Impulse (IIR) Filter	Selectable Settings: 0.1 to 10Hz in 1 Hz Increments 6db/Oct																																
High Cut Filter	Digital Linear Phase																																	
Selectable Sample Rates	0.125 ms 0.25 ms 0.5 ms 1.0 ms 2.0 ms 4.0 ms	-3 dB Corner Frequency: 3304Hz -3 dB Corner Frequency: 1652Hz -3 dB Corner Frequency: 824Hz -3 dB Corner Frequency: 412Hz -3 dB Corner Frequency: 206Hz Custom																																
Functional Testing	Source: Internal Test Oscillator, Frequency: 31.25 Hz, Sine Wave																																	
Tests	DC Offset, RMS Noise, Channel Gain Accuracy, Impulse Response Hydrophone Leakage, Harmonic Distortion, Crosstalk																																	
SeaLink 24 Digital Module Physical Dimensions	Length: 15.763" (400.38 mm) Overall: 21.233" (539.31 mm) OD: 3.0" (76.2 mm)	Weight in air: 8 lbs (3.629 Kg) Weight in water: 4 lbs (1.814 Kg)																																

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