

# SeaBat® T20-S

## Subsea multibeam echosounder

The SeaBat T20-S offers superior image quality, engineered for the demanding marine environment and built from the ground up to evolve with your business.

Combined with the Subsea Sonar Processor the T20-S provides the highest quality survey data in a fully integrated sonar processing and data storage unit housed in a subsea pressure vessel. Smaller form factor and reduced operational power to extend mission time for battery powered underwater vehicles. Internal data storage for self-contained survey solution, and interfacing via standard Ethernet to reduce integration time.

### Product features

- Tracker – powerful tool for automated control
- Selectable Beam Density – you define what you need to get the job done. Minimize data storage rates to only what you require.

### Optional extra features

- FlexMode – increase data density where you need it most
- X-Range – improve range and reduce the impact of external noise
- Pipe Detection & Tracking – unique to SeaBat, optimize detection of pipes and automated steering of FlexMode sector. (Project Specific)
- Multi-Detect - Multiple detections for enhanced detail over complex features and water column targets.

For detailed description see relevant feature description document.



### T20-S sonar head assembly

- 200/400kHz
- Robust titanium housing
- Lower power, smaller form factor

### T20-S Standard configuration

- EM7219 Receiver array
- TC2160 (400kHz) Projector
- TC2163 (200kHz) Projector
- Subsea Sonar Processor
- 6000m titanium pressure housing
- 22- 60V DC input
- Wet cable set
- Survey data storage 2.0 TB for approx. 600 hours

### Options:

- Wet-end brackets (customized)
- Motion and positioning sensors
- Teledyne RESON Sound Velocity Probes
- Teledyne RESON PDS Survey Package
- Teledyne RESON Service Level Agreements
- Available without pressure housing

SeaBat<sup>®</sup> T20-S

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T20 ACOUSTIC PERFORMANCE

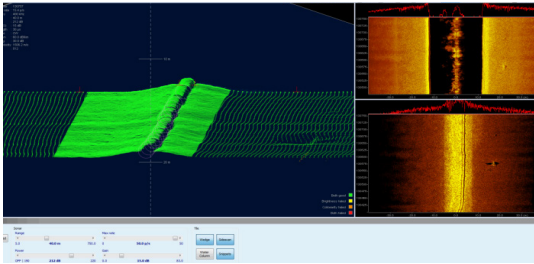
|                                                                  | SeaBat T20-S Deep                    |             | SeaBat T20-S Shallow             |
|------------------------------------------------------------------|--------------------------------------|-------------|----------------------------------|
| Sonar operating frequency:                                       | 400kHz                               | 200kHz      | 190-420kHz                       |
| Across-track receiver beam width (nominal values <sup>1</sup> ): | 1° (center)                          | 2° (center) | 1°@400kHz, 2°@200Khz             |
| Along -track trasmit beam width (nominal values <sup>1</sup> ):  | 1°                                   | 2°          | 1°@400kHz, 2°@200Khz             |
| Number of beams:                                                 | Min 10, Max 1024                     |             |                                  |
| Swath coverage (up to):                                          | 140° Equi -Distant (170° Equi-Angle) |             |                                  |
| Typical range (CW) <sup>2</sup> :                                | 0.5-150m                             | 0.5-300m    | 0.5-150m@400kHz, 0.5-300m@200kHz |
| Max range (CW) <sup>3</sup> :                                    | 225m                                 | 400m        | 225m@400kHz, 400m@200kHz         |
| Typical range (FM) <sup>2</sup> :                                | 0.5-180m                             | 0.5-450m    | 0.5-180m@400kHz, 0.5-450m@200kHz |
| Max range (FM) <sup>3</sup> :                                    | 300m                                 | 575m        | 300m@400kHz, 575m@200kHz         |
| Ping rate (range dependent):                                     | Up to 50 pings/s                     |             |                                  |
| Pulse length:                                                    | 15-300µs (CW) 300µs – 20ms (FM)      |             |                                  |
| Depth resolution:                                                | 6mm                                  |             |                                  |
| Depth rating:                                                    | 6000m                                | 6000m       | 400m                             |

For relevant tolerances for dimensions above and detailed outlined drawings see Product Description

<sup>1</sup> All beam widths measured at -3dB, unsteered with a sound velocity of 1480m/s.  
<sup>2</sup> This is the range within which the system is normally operated. It consists of the minimum range below the sensor to a range value corresponding to max swath -50%  
<sup>3</sup> This is a single value corresponding to the range at which the swath has reduced to 10% of its maximum value.

POWERFUL FEATURE SET

The systems provides uncompromised data quality combined with a range of powerful software features at an attractive price, with options for future feature expansions to grow with your needs.



T20-S SYSTEM SPECIFICATIONS

| Input voltage:                                  | 22- 60V DC                                                                                              |            |             |                 |                   |
|-------------------------------------------------|---------------------------------------------------------------------------------------------------------|------------|-------------|-----------------|-------------------|
| Power (approx):                                 | Average 110W. Peak 370W                                                                                 |            |             |                 |                   |
| Transducer cable lenght:                        | 3m standard (1m, 10m optional)                                                                          |            |             |                 |                   |
| Temperature (operational / storage):            | Subsea Sonar Processor: -2°C to +36°C / -30°C to +70°C<br>Sonar wet-end: -2°C to +36°C / -30°C to +70°C |            |             |                 |                   |
|                                                 | height [mm]                                                                                             | width [mm] | lenght [mm] | weight [kg/air] | weight [kg/water] |
| T20 Rx (EM7219):                                | 123                                                                                                     | 254        | 102         | 5.0             | 2.2               |
| T20 Tx 400kHz (TC2160):                         | 77                                                                                                      | 62         | 284         | 2.0             | 1.9               |
| T20 Tx 200kHz (TC2163):                         | 115                                                                                                     | 100        | 280         | 7.5             | 5.0               |
| Subsea Sonar Processor (with pressure housing): | 538                                                                                                     | 174        | n/a         | 24.4            | 12.0              |

For relevant tolerances for dimensions above and detailed outlined drawings see Product Description or contact Teledyne RESON Engineering Services for more information.