

Portable Sonar System for Bomb Disposal Divers



A non-magnetic sonar, equipped with navigation and communication systems, makes it easier for divers to locate submerged objects. In order to assist bomb disposal divers in their operations in coastal and port areas, RTSys (France) has designed a new portable sonar: the SonaDive. It has been developed to detect and locate various types of submerged explosives, whilst enabling the diver to stay at a safe distance. The device can also be used for searches for shipwrecks, bodies and debris. Its use in the civilian sector facilitates the observation of the seabed (aquatic plant habitats, coral reefs, port areas, etc.) for scientific research and marine environment monitoring.

The SonaDive is equipped with an advanced navigation system, based on a navigation unit, a GPS, an immersion sensor and a Doppler Velocity Log (DVL) as standard.

Programmed using a GPS on the surface, the device can maintain its position with an accuracy of 5 to 10m when immersed at more than 500m. Immersion at greater depths is in the process of being tested. The operation carried out can be programmed and saved for future use, thus enabling the user to note points of interest to be explored further at a later date, or to carry out monitoring over an extended period of time, by reprogramming and repeating the same operation several months after the first. The GPS can also be turned towards the surface during the operations.

Scanning in High Resolution

The SonaDive can also be equipped with two interchangeable detection systems, set by the user: a DET sonar system for long distance detection (0-100m) and an HR (high-resolution) sonar system, for close range operations. The second, dual frequency sonar system enables divers to change from medium distance observation (0-40m) to very close range observation (0-10m) during their dive. A high-resolution video camera completes this observation device, which is fully adapted to the marine environment, for the detailed monitoring of aquatic plant life, coral reefs, and other coastal areas that are difficult to access. An optional gradiometer can be added to this device in order to make it easier for the diver to get closer to buried metal objects .

Tested by bomb disposal divers, the SonaDive was singled out for its ease of use, notably thanks to its large 12-inch screen, its neutral buoyancy in water (adaptable depending on the marine environment; fresh, brackish, or salty water) and its user-friendly control panel. It has a battery life of over 6 hours, which can be prolonged thanks to the sequential replacement of its batteries underwater. This procedure does not require the device to be powered off.

Communication with the Surface

The device is supplied with a waterproof tablet. This tablet is used to programme, visualise and replay operations at a later date. As an option, the SonaDive enables the diver to provide its precise location and to communicate with the surface.