

Overview receiver functionality

The overview below is written for piston tanks but can also be applied to a buoyancy system equipped with elastic ballast tanks for air or water that are controlled with pumps and valves¹.

- The receiver is actually more of a controller. It combines multiple functions, one of which is the receiver.
- Uses digital radio communication for reliable data communication.
- Besides servo outputs also digital/on-off outputs are supported (NPN, ULN2003).
- Provides high current power supply distribution to servo and on-off outputs.
- Uses external ESCs for the propeller and buoyancy system.
- Supports different types of (rechargeable) battery technologies in the range of 6 to 12V (lead acid, NiMH and Lithium/LiPo).
- Can be used without, with one or with two piston tanks². This includes four inputs³ for end-limit switches to stop a piston tank in case it has reached one of its ends. Provides an option to compensate for small speed differences between piston tanks (potentiometer on transmitter)⁴.
- Multiple built-in safety measures that distinguishes between fatal and non-fatal errors. Note a non-fatal error is overruled by a fatal error.
- Upon a fatal error (e.g. low battery) the piston tanks are emptied and further diving is not permitted.
- In the event of a non-fatal error (e.g. no RF reception) the propulsion is stopped until the cause ceases to exist. A non-fatal error that remains active for a longer period of time without interruption, causes the piston tanks to start emptying. It is an option to have the piston tanks start emptying right away. Once the cause of a non-fatal error has been resolved (RF link restored), the emptying of the tanks is stopped and diving may continue.
- Supports a fatal error input (e.g. water penetration detector and/or max depth detector).
- Supports a latched fatal error output (e.g. to release a buoy).
- Optional reverse thrust. In case of an error the propeller is run for a few seconds in the reverse direction. This to slow down/stop the forward motion of the vessel.
- Supports X-rudders or dual propellers.
- A run-after time can be set for a ballast system with valves and pumps. This is after an end limit sensor has been activated (delayed switch-off).

¹ Selection of buoyancy systems via software. Pumps and valves operate synchronously. Which valves are controlled depend on the direction of rotation of the pumps.

² Or elastic ballast tanks.

³ In case of a buoyancy system with elastic tanks these inputs can be used to stop a pump in case the elastic tank is full or empty.

⁴ In case of a buoyancy system with elastic tanks the speed of pumps is adjustable with a potentiometer on the transmitter.
