

WITTENSTEIN motion control provides intelligent and integrated mechatronic actuation systems of highest reliability for rotative and linear motion.

WITTENSTEIN subsea electric actuators and underwater defence actuation systems set standards in reliability and durability. When it comes to **low noise, low magnetic signature**, long-term corrosion resistance of surfaces and materials in salty atmospheres, extreme shock resistance or short-term overload of drive systems, we are uniquely qualified.

Our products are ideal for use in underwater robotics, propulsion and steering control, submarine and valves applications, torpedoes or light weapon stations (on the surface).

WITTENSTEIN motion control develops both customer-specific mechatronic drive systems that conform to military standards for extreme environmental conditions and subsea electric actuators for use in water depths up to and beyond 3,000 meters for Oil and Gas applications.

Undersea Applications

Submarine

- Propulsion motors
- E-steering systems
- Pump drives
- Torpedo Launch Control Mechanism
- Torpedo Fin Control Drives

ROV – Underwater Robotics

- Robot arm actuator



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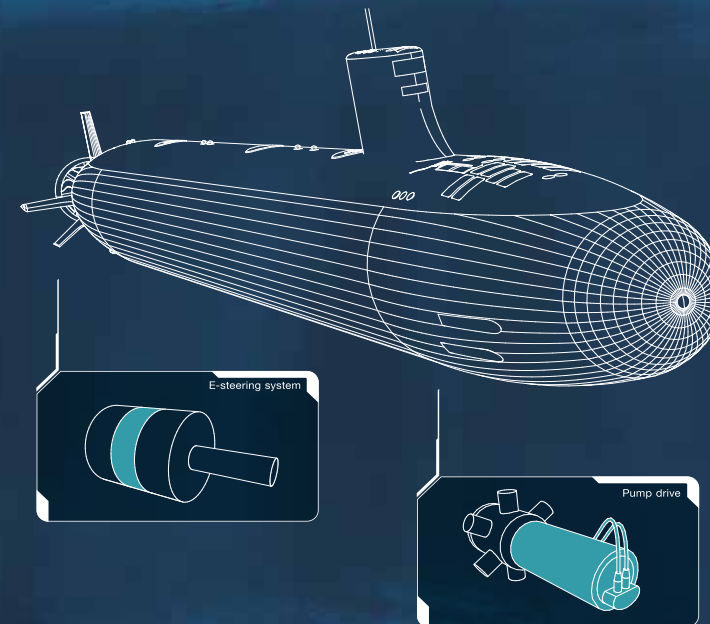
WITTENSTEIN – one with the future
www.wittenstein-motion-control.com

WMC_Subsea-Defence-Applications_en-2018_Changes reserved!



Mechatronic Actuation Systems Undersea Defence Applications

Undersea
since 2001



Solutions for Undersea Defence Applications

Your Benefits:

- System engineering to customer specification
- Tried-and-tested manufacturing processes
- Longer operating times
- Low acoustic profile
- Small footprint



Our Know-how:

In-house design and manufacturing of mechatronic solutions which are:

- Highly integrated
- Highly reliable
- Highly accurate and dynamic
- Built for extreme environmental conditions
- Built to fit under strict space restrictions

Integrated Systems from One Source: WITTENSTEIN motion control



Specialized in power and control electronics for high and low voltage technology

- Product range from 18V up to 900V DC bus voltage
- AC 3 phase input with active PFC, optional
- Up to 1,000A output current
- Customized housings and electric interfaces
- Ambient temperature up to 165°F / 75°C
- Resistant against shock and vibrations
- EMC-qualified
- Protected against explosions (ATEX), optional
- Suitable for safety concepts (SIL 3 / IEC 61508), optional
- Full redundancy, optional
- Digital controllers with field proven software
- Several control interfaces (CANopen, Ethernet)



Specialized in brushless servomotors with high performance technology

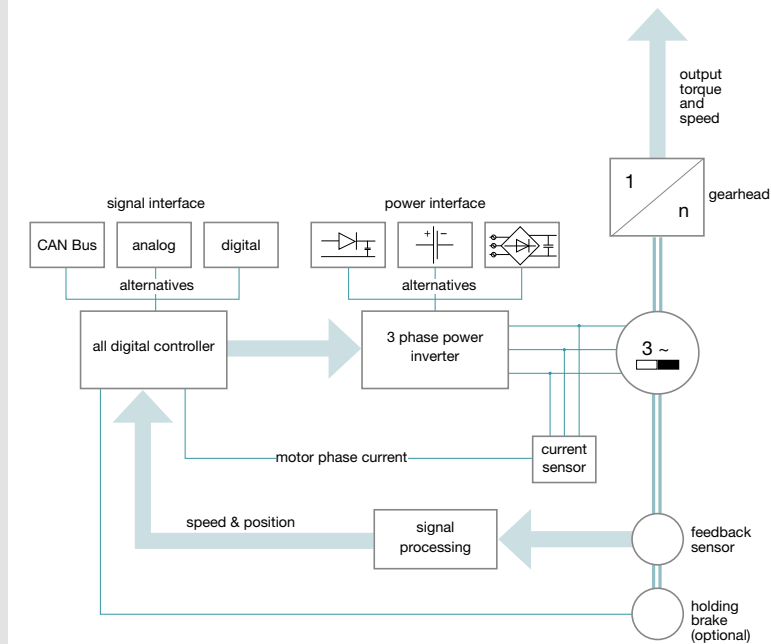
- Product range from 10W up to 200kW & 18V to 900V
- Ambient temperature up to 480°F / 250°C
- Operation in high radiation environment, optional
- Operation in oil and other fluids, optional
- Pressure resistant up to 25,000 psi / 1,800 bar
- Extremely high power density
- Extraordinary overload capacity
- Several feedback options
- Full redundancy, optional



Perfectly Harmonized Components for a Closed Loop Motion Control

Specialized in gear technology with low-backlash, highest precision, highest reliability

- Based on widely deployed WITTENSTEIN technology
- Product range up to 40,000 Nm output torque
- Planetary gear ratios 4:1 to 220:1 standard, others optional
- Extraordinary overload capacity
- Extremely high mechanical stiffness
- Standard backlash < 1 arc min
- Ambient temperatures -67°F ...+260°F / -55°C ...+125°C
- WITTENSTEIN special gear technology: hollow shaft, highest load density



All our products are designed for extreme environmental conditions and based on common modules – built and assembled in reliable manufacturing processes of the WITTENSTEIN group