

Marine Market Applications

Custom Electronics & Fluid Level Sensors

Standex design engineers often think 'out of the box' to develop custom marine solutions – like the "voice coil" we developed for use in an outboard marine engine. This coil, which is completely immersed in fuel, energizes the fuel injectors. This engine has the highest efficiency and cleanest operating performance of any marine engine. In addition to the electronics functioning properly, we had to develop a seal that would isolate the electronics from its corrosive and highly combustible environment.

We've also designed keyless ignition components and systems – and other custom electronic components and assemblies that marine design engineers might need. And our experience with advanced fluid level sensor technology is at work on the high seas and lakes across the globe. In fact, marine design engineers rely on Standex to provide components as well as ideas, engineering expertise and assistance at every stage. Whether a project is in design, test or production – Standex delivers.

We can provide components or integrate them into value-added assemblies to streamline production and reduce assembly time and cost. In house capabilities – including molding, stamping, winding, termination and assembly – make us unique – and uniquely qualified to handle marine applications. And our "global footprint" means that we manufacture worldwide to simplify shipping, logistics and costs of getting your parts wherever they are needed.

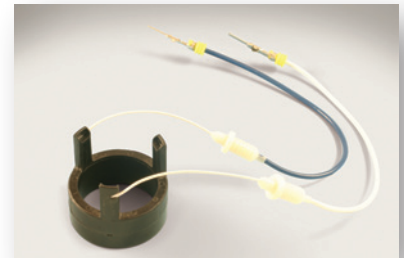
**Call today for your
marine market needs.
We'll get you moving in
no time!**

Custom Standex parts for marine applications:

- "voice coil" for fuel injector
- Liquid level sensor assemblies for corrosive, conductive environments
- Immobilizer coils for ignition switches
- Keyless receiver antennas for marine ignition systems
- Proximity sensors for hood latch verification and other marine applications
- Non-intrusive sensing capability (externally mounted sensors)
- Float-level sensors for various liquids
- Low voltage lighting transformers for dashboard lighting applications
- High frequency inductors for engine control
- Three-phase power supplies for naval applications

Marine Design Capabilities:

- Experienced in Marine Standards and Design Requirements
- Low, High & Radio Frequency Magnetic Component Engineering
- Sensor & Reed Switch Engineering
- Fully Equipped Certified Test Labs
- Mechanical Engineering & Electronic Component Packaging
- 3-D Solid Modeling Design
- Plastic Molding Capabilities
- Wire Prep and Wire Harness Assembly
- Rapid Prototyping
- Complete, In House Machine shop
- Laser welding
- Hi-volume, Progressive Die Stamping
- Glass to Metal Sealing
- # 52 gauge to #4 gauge & Foil Magnetic Component Winding
- Wind and Assemble all core shapes and types
- Connector & Terminal Engineering
- Power Supply & Other Systems Engineering
- Our manufacturing facilities are Registered to ISO/TS16949:2002



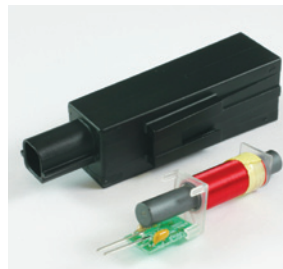
Marine Market Product Guide

Laboratory test capabilities for Marine applications:

- Thermal Shock Testing (-70°C to 200°C, LN2 boost assures less than a 5 minute air-temperature recovery time).
- Thermal Cycle Testing (-68°C to 177°C)
- Humidity Testing (-18°C to 93°C, 98% RH, cycle temp or steady state).
- Vibration Testing (Sine or Random profile, 1" pk-pk displacement, 0 to 80 g pk, 5 to 2000 HZ)
- Mechanical Shock Drop Testing (½ sine 50g 11ms, ½ sine 1500g .5ms, or sawtooth 100g 6ms)
- Hi Temp Testing (Up to 260°C)
- Salt Fog Testing
- Solderability Testing



Voice coil to energize fuel injectors for marine outboard engine



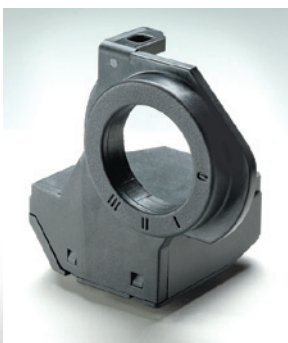
Keyless entry device for marine applications



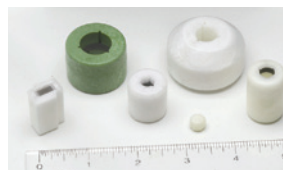
Liquid level sensors for all types of marine fluids



Three phase power supplies for naval/military applications



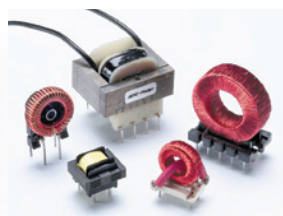
Immobilizer coils for security applications



Molded magnets for activating reed switches in fluid level sensor applications



Magnetic reed switches for position sensing



Bobbin wound high frequency transformers for automotive power supply applications