



**CANADA**  
Hammond Power Solutions  
595 Southgate Drive  
Guelph, Ontario N1G 3W6  
Tel: (519) 822-2441  
Fax: (519) 822-9701  
Toll Free: 1-888-798-8882  
sales@hammondpowersolutions.com

**UNITED STATES**  
Hammond Power Solutions  
1100 Lake Street  
Baraboo, Wisconsin 53913-2866  
Tel: (608) 356-3921  
Fax: (608) 355-7623  
Toll Free: 1-866-705-4684  
sales@hammondpowersolutions.com

**ASIA**  
Hammond Power Solutions Pvt. Ltd.  
D. No. 5-2/222/IP/B, II-Floor, Icon Plaza  
Allwyn X-Roads, Miyapur, Hyderabad 500 049  
Tel: +91-994-995-0009  
marketing-india@hammondpowersolutions.com

**EMEA (Sales Office)**  
Hammond Power Solutions SpA  
Tel: +49 (152) 08800468  
sales-emea@hammondpowersolutions.com



## Transformers & Reactors for your Oil & Gas needs

HPS offers many transformers and line reactors for various Oil & Gas applications. Find the product that best meets your needs:

### Drilling Ship

- HPS Titan® Encapsulated Transformer
- Medium Voltage VPI Transformer
- HPS EnduraCoil™ Cast Resin Transformer
- Marine Duty Transformer

### Liquefied Natural Gas

- HPS Titan® Encapsulated Transformer
- Medium Voltage VPI Transformer
- HPS EnduraCoil™ Cast Resin Transformer
- HPS Centurion® Harmonic Mitigating Transformer

### Refining & Petrochemical

- HPS Titan® Encapsulated Transformer
- Medium Voltage VPI Transformer
- HPS EnduraCoil™ Cast Resin Transformer
- HPS Centurion® Harmonic Mitigating Transformer
- HPS Tribune™ Drive Isolation Transformer

### Offshore Drilling Platform

- HPS Titan® Encapsulated Transformer
- Medium Voltage VPI Transformer
- HPS EnduraCoil™ Cast Resin Transformer
- Marine Duty Transformer

### Gas Processing

- HPS Titan® Encapsulated Transformer
- Medium Voltage VPI Transformer
- HPS EnduraCoil™ Cast Resin Transformer
- HPS Centurion® Harmonic Mitigating Transformer
- HPS Tribune™ Drive Isolation Transformer

### Onshore Drilling Rig

- HPS Titan® Encapsulated Transformer
- Medium Voltage VPI Transformer
- HPS EnduraCoil™ Cast Resin Transformer
- Land Drilling Duty Transformer

### Pipeline & Transportation

- HPS Titan® Encapsulated Transformer
- Medium Voltage VPI Transformer
- HPS EnduraCoil™ Cast Resin Transformer
- HPS Centurion® Harmonic Mitigating Transformer
- HPS Tribune™ Drive Isolation Transformer



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## Oil & Gas Solutions

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power to perform



## OUR EXPERIENCE

The Oil & Gas market covers a broad range of applications and environments, and demands a high level of performance and reliability. Hammond Power Solutions (HPS) offers the broadest variety of transformer and reactor solutions for the difficult applications found in the oil and gas market. Whether it's a standard reactor, a modified Land Drilling Duty transformer, a Class 1, Div. II encapsulated transformer or a custom medium voltage power unit, HPS has the experience to provide a magnetic solution for your application.

HPS draws from a large design team with hundreds of years of combined experience to find a solution to your magnetic needs. Our factories in North America, Europe and India combine to provide the manufacturing expertise and deliverables the Oil & Gas market requires. The engineering and manufacturing experience and dedication to quality and service are the foundation for our success as a leading transformer manufacturer in North America. This provides our customers with the tools and confidence to make their projects successful.

## HPS PRODUCTS

### HPS Titan® - Encapsulated Transformers for Harsh Environments

HPS Titan® Encapsulated Transformer is a leader in the industry for providing a complete solution when it comes to performance and safety in Hazardous Locations or Harsh Environments. Products designed to operate in these conditions must be safe, reliable and affordable.

- Advanced Encapsulated Designs for Harsh Environments & Hazardous locations
- Safe Superior Performance
- Compact Design
- Easy Installation & Hook-up
- Suitable Indoors or Outdoors
- UL Listed for "Class 1, Division 2, Groups A, B, C and D; and Class 1, Zone 2, Group IIC T3 Hazardous Locations.
- ABS Type Approval for "Marine Duty Service and Offshore Applications - Electrical Distribution and Propulsion"

HPS Titan® is competitively priced for the rugged, industrial market. Our facilities have the most modern testing equipment for the requirements of ANSI, OSHA, UL, CSA, IEC, NEMA, ABS, DNV, BV etc.



### HPS Land Drilling Transformers

HPS land drilling transformers have been specifically designed and built for the land drilling market. These innovative designs provide ideal solutions for the drilling environment, where quality, ease of installation, portability, environmental concerns and durability are key.

HPS dry-type land drilling transformers feature the industry's best technology and manufacturing processes. They feature designs that are built to withstand the vibration and shock associated not only with the difficult day-to-day drilling conditions, but also the transportation between job sites.

- Heavy-duty core & coil and frame construction
- Durable HV and LV cable supports
- Rugged Type 3R enclosures with heavy-duty enclosure supports
- Strapping and tie-down provisions
- Forklift capabilities 500 kVA and above



### HPS Marine Duty Transformers

HPS offers a marine duty option on our distribution, potted and power transformers. These rugged marine designs have been developed utilizing decades of commercial and military experience in hostile environments. ABS type approved products have been developed to meet the unique requirements of marine applications including workboats, offshore oil rigs, tankers, FPSO vessels, near shore and other harsh environments.

HPS dry-type marine duty transformers have ratings up to 30 MVA and 46 kV class and feature the most modern engineering and manufacturing technologies. HPS' facilities have testing equipment to meet standards including ABS, ANSI, CSA, DMV, IEC, Lloyds Registry, MIL specs, NEMA, UL, CE and Transport Canada Marine Safety.

- Enhanced system corrosion protection for salt environments (tin plating for exposed conductors, stainless steel hardware & nameplates)
- Fungus resistant
- Braced for marine applications
- Type 2 or Type 3R (per ABS requirements)
- UV protection for outdoor enclosures
- UL50 or Zinc Chromate plating frames, channels



### HPS Low Voltage Distribution Transformers

HPS offers a variety of transformer types and energy efficiency levels to meet your most demanding applications. Regardless of your transformer location we have a transformer that fits your application needs, designed, tested and certified accordingly.

HPS Sentinel® G energy efficient general purpose distribution transformers are rated for 600 volts and below. They are generally used for supplying lighting, heating, motorized machine and power loads from electrical distribution systems.

HPS Sentinel® K energy efficient K-factor transformers are the ideal solution for harmonic distortion associated with non-linear loads. They have been designed to tolerate the heating generated by harmonics.

HPS Sentinel® H energy efficient harmonic mitigating transformers are required for severe non-linear loading conditions. They are specifically designed to treat the harmonics generated by non-linear power electronic loads such as computer equipment.



### HPS Medium Voltage (Power) Transformers

HPS has decades of experience designing medium voltage power transformers for the difficult applications and environments found in the Oil & Gas markets. HPS offers a wide range of dry-type VPI and Cast Coil (EnduraCoil™) products. Dry-type transformers offer several advantages over oil transformers including lower fire risk, fewer environmental contamination concerns, proven insulation systems for high ambient temperatures and lower installation and maintenance costs.

- Options up to 34 MVA, 46 kVA Class and 250 kV BIL
- ISO 9001:2015 manufacturing and engineering processes
- Meets or exceeds CSA C22.2 No. 47, CSA C9-02, DOE 10 CFR Part 431 and NRCAN SOR/2018-201 efficiency levels
- Global VPI ratings including: UL, CSA, IEC, ABS, DMV, BV, and Lloyds
- Cast Resin ratings including UL and CSA.
- Minimal maintenance required beyond removing surface contaminants, such as dirt



### HPS Power Quality Products

Whether it's a refinery or an off-shore production platform, power quality is a very important factor to maintain machine uptime and production. HPS offers a wide range of magnetics to mitigate these issues.

Reactors and drive isolation transformers offers harmonic mitigation from the drive while helping protect the device from other line disturbances such as voltage spikes.

DV/DT filters offer motor protection by limiting voltage spikes and providing common mode and rise time reduction for long lead applications.

K-rated transformers offer an electrostatic shield, a 200% rated neutral and the ability to handle the additional heat caused by harmonics without being de-rated.

Even better, Harmonic Mitigating Transformers using zig-zag windings, can cancel harmonics from single phase sources in their windings; and when multiple units are used, can offer additional mitigation of three-phase non-linear loads at the service entrance.

Additional products and options including air core reactors, grounding transformers and integral TVSS protection can further enhance a sites power quality.

