OPTIMUS ELECTRONIC POWER STEERING HELM

APPLICATIONS
Marine steering helm:
EPS steer-by-wire, single or multiple stations
Industrial steering wheel units:
Off-highway, mobile equipment, agriculture, forklifts

FEATURES
• Rugged electronic steering unit for 12VDC marine or industrial applications.
• Four mounting options: Front Mount, Back Mount, Sport Plus Tilt, Classic Tilt.
• Programmable number of turns lock-to-lock
• Adjustable end stops and steering resistance with speed.
• Dual redundant, non-contact magneto-resistive rotary sensing inputs
• Standard Fault-Tolerant CAN BUS output. Optional proprietary protocol upon customer request.
• Double angular contact bearings for greater side loading capabilities.
• Meets or exceeds ABYC, ISO and SAE electrical and environmental requirements.

The first Electronic Power Steering Helm designed specifically for the marine environment.
This new patented SeaStar Solutions electronic helm seamlessly fits any dashboard.
• It is fully plug and play with CAN compliant vessel control systems.
• Fully customizable software maximises comfort and performance for each installation.

SPECIFICATIONS

Connection
• 2 x FCI 6-Pin Male, Apex-2.8
• Built in CAN network tee for multi-station connection

Mechanical
• Adjustable end stop brake torque: 15-200 in-lbs [1-20Nm]
• Adjustable background steering resistance: 15-27 in-lbs [1-3Nm]
• Zero Drift, low deadband (less than 3.5°)
• Steering angle sensor resolution: 0.05° helm angle
• Steering torque variability, relative, both directions: +/- 20%
• Brake deactivation movement: 0.25° helm angle
• Side load resistance: 100 lbf [ABYC P-21]
• Durability: 100,000 steering cycles lock-to-lock [ABYC P-27]
• Flammability rating: V0 [UL-94]
• Connector tensile pull resistance: 60 lbf [ISO 10133]

Electrical
• Operating voltage: 9-16 VDC [SAE J1455]
• Max current drawn: 2 Amps, at maximum brake force.
• Typical current drawn: Less than 300mA
• Protected from reverse polarity, power interruption
• Power transient protection: Switching transient, starter motor disturbance, and load dump [SAE J1113-11]
• Conducted immunity: 10 Vrms, Criteria A [IEC 60945]
• Radiated immunity: 30V/m, Criteria A [IEC 60945]
• Electrostatic discharge protection: 6kV contact, 8kV air [IACS E10]
• Compass safe distance: 61 cm, at 1° [IEC 60945]

CAN Bus Communications
• HS-CAN: High speed CAN 2.0B 250 kbps [SAE J-1939]
• FT-CAN: Fault tolerant CAN 125 kbps [SAE J-1939]
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Environmental

- Operating temperature: -18°C to +77°C [ISO 25197]
- Storage temperature: -40°C to +85°C [ISO 25197]
- Corrosion resistance: 300 hours salt spay [ASTM B117]
- Water ingress protection: IPX7 [IEC 60529]

- Random vibration: 0.0284 g²/Hz [ABYC P-27]
- Resonant vibration: 4 G zero-peak, 20-2000 Hz [ABYC P-27]
- Thermal shock: 100 cycles
- Mechanical shock: 50 G, 11 msec half-sine shape [ISO 25197]

HELM OPTIONS

FIXED HELM OPTIONS

<table>
<thead>
<tr>
<th>Front Mount</th>
<th>Rear Mount</th>
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TILT HELM OPTIONS

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<tr>
<th>Sport Plus Tilt</th>
<th>Classic Tilt</th>
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TECHNICAL DATA - Front mount model

[Dimensions and images of the helm components and design.]