NMEA 2000 Network will completely change the way you think about networking. It will finally answer the hard questions of hidden costs, ease of installation, simplicity, configurability and scalability. The NMEA 2000 network is an open true plug and play system, installing is just a matter of plugging in. Subtracting a device from the network is simple; just remove it, the network continues to share data. When new NMEA 2000 certified products are purchased, the owner, boat dealer or electronics dealer will only have to plug the new certified product onto the network. The boat will always be ready for the future. Only NMEA 2000 certified products can communicate with each other. NMEA 2000 can increase your bottom line profitability.

The NMEA 2000 Marine Network Standard was developed by various companies in and outside of the industry. More than 40 marine organizations have invested time and resources to create NMEA 2000 based on CAN (Controller Area Network). In addition, other experts outside of the marine industry included, Kvaser AB, Oklahoma State University, Sun Microsystems, and the U.S. Coast Guard Research and Development provided countless hours of support. Today, the standard continues to evolve meeting industry needs by energetic and committed industry professionals collaborating in a structured Working Group. Internationally, the International Electrotechnical Commission is in the process of adopting NMEA 2000 as the network standard for the use on SOLAS class vessels with its standard 61162-3.

Now is the time to give customers what they want

Customers increasingly want choices to customize and integrate different products. Closed proprietary systems do not provide customers the flexibility they come to expect and want in the world today.

- The NMEA 2000 “open” Standard provides the best of class products
- No need to be “locked in” on one particular vendor for the entire boat
- NMEA 2000 certified products provide the customer with choices
- Products are certified by NMEA to assure that the devices will behave properly on the network. Only NMEA 2000 certified products can communicate on the network and share data and information.
Increase your profitability
NMEA 2000 will lower the overall costs of installing and configuring networks

• **Employee productivity.** NMEA certified devices are self addressing. Just connect the device into the network and the device automatically understands its priority on the network and all other devices understand as well. No need for configuration of the device. NMEA is self-configuring, no setup is required. No master and no controller. Employees have time to perform other priority work.

• **Simple installation.** One single network cable backbone replaces the “old” myriad of cables. Power and data are all shared on the same cable. Some NMEA 2000 devices receive power from the network. This results in a substantial reduction in the overall parts inventory and a reduction of warehousing costs. All parts are the same no matter what size of boat or network needs.

• **Eliminates hidden costs.** The NMEA 2000 Physical Layer eliminates those constant hidden costs of training and employee training. The physical layer is keyed with screw-on connectivity assuring correct polarity and connectivity strength.

• **Diagnostic tools.** Simple tools are available. No guess on locating any possible network issues. The network is smart. If a node is constantly sending error messages, the node will automatically shut down while the rest of the network continues sharing data.

“NMEA 2000 really works, and it's going to make boating better. Simplicity, redundancy, multi manufacturer flexibility—my first hands-on experience with NMEA 2000 was, as we say up here in Maine, a corker! This relatively simple setup was pleasantly similar to working with Tinkertoys. The wires are made up in various lengths with keyed male and female ends—virtually foolproof. So all I had to do was screw together the cables and wire the one power feed; everything came on, and the display recognized all sensors and was ready to show me screens of info. If I were fitting out a new boat or refitting an old one, there'd be a NMEA 2000 trunk running through her, and I'd be looking at electronics, engines, and whatever other systems could take good advantage of it.”

Used with permission. Ben Ellison, Power and Motor Yacht

"I am convinced that networked electronics and, to an even greater extent, the application of the same technology to whole-boat power distribution systems, will result in the greatest revolution in boat systems that we have seen in at least three decades. The NMEA, with its NMEA 2000 protocol and corresponding 'physical layer', is in the forefront of this revolution, and playing a powerful leadership role." Used with permission. Nigel Calder

The NMEA 2000 Standard is a complete network protocol
• It is an “open” standard based on CAN (Controller Area Network)
  • Bandwidth protection scheme so mission critical data always get thru
  • Every message has a pre-defined priority
• Exchange of data between disparate devices manufactured by a variety of manufacturers

### NMEA 2000 Specifications

<table>
<thead>
<tr>
<th>Physical Layer</th>
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<tbody>
<tr>
<td>Light ≤ 100m (328 ft) 4 Amps per backbone leg</td>
</tr>
<tr>
<td>Heavy ≤ 200 m (656ft) 8 Amps per backbone leg</td>
</tr>
<tr>
<td>Drop ≤ 6m (19ft)</td>
</tr>
<tr>
<td>Estimated cumulative drops ≤ 70m (230 ft)</td>
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</tbody>
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<table>
<thead>
<tr>
<th>Power</th>
</tr>
</thead>
<tbody>
<tr>
<td>Interface circuits operate between 9.0 to 16.0 volts</td>
</tr>
<tr>
<td>Single point of ground</td>
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</tbody>
</table>

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