Datasheet

BlueComm® 200 – Optical Communications System

Description

BlueComm 200 provides subsea wireless optical communications up to 12.5 Mbps at ranges up to 150 metres.

The system is most effective in low ambient light conditions such as deep water or shallow water night-time operations. It is capable of data transmission rates from 2.5–12.5 Megabits per second (Mbps), enabling a range of application options including wireless telemetry from several concurrent video cameras and tether-free subsea vehicle control.

BlueComm 200 uses an array of high power light emitting diodes (LEDs) that are rapidly modulated to transmit data. Highly sensitive receivers detect the extremely small light signals in order to decode this data and to present it to the user via an Ethernet link.

BlueComm 200 uses time division multiple access (TDMA) methods to providing a bi-directional high speed low latency link that supports TCP/IP based network protocols. Allocation of bandwidth ratios in each direction is user selectable and fully flexible.

The allocation of bandwidths is ideal for applications where high-speed data transfer is mostly required in only one direction such as for extraction of large data volumes from seafloor instrumentation or sensors.

Optional integrated acoustic positioning and communications provide methods for locating the device, waking it up and managing the optical link. Once a connection is established, BlueComm 200 will immediately begin transferring buffered data.

Optical data transmission is highly efficient, enabling more than nine gigabytes of data to be transferred using only the energy contained in a single Lithium D sized battery cell.

BlueComm 200 is available in both shallow and deep rated housings for up to 4,000 metres water depth operation.

Key Features

- 2.5 to 12.5 Mbps at ranges up to 150 metres
- Suitable for moderate to low turbidity dark water, (>200 m depth or night-time) applications
- Highly energy efficient communications provides long battery life
- Data recovery by AUV, ROV or surface deployed dunker system
- Up to 4,000 m depth operation
- Additional white light emitter available for video illumination
- ROV/AUV Remote Control
## Specifications

**BlueComm® 200 – Optical Communications System**

<table>
<thead>
<tr>
<th>Feature</th>
<th>Type 8361 Specifications</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Depth Rating</strong></td>
<td>Housings available for up to 4,000 m operation</td>
</tr>
<tr>
<td><strong>Data Rate</strong></td>
<td>2.5–12.5 Megabits per second</td>
</tr>
<tr>
<td><strong>Optical Communication Range</strong></td>
<td>Up to 150 m</td>
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<tr>
<td><strong>Materials</strong></td>
<td>Anodized aluminium or titanium</td>
</tr>
<tr>
<td><strong>Supply Voltage</strong></td>
<td>24–36 V DC</td>
</tr>
<tr>
<td><strong>Communications Interface</strong></td>
<td>10/100 Base-T Ethernet (static IP address)</td>
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<tr>
<td><strong>Command Interface</strong></td>
<td>Graphical user interface or Ethernet UDP command set</td>
</tr>
</tbody>
</table>

**Receiver Unit**

- **Receive Wavelength**: Broadband visible light
- **Receive Angle**: 180° (omni-directional)
- **Receive Weight in Air/Water**: 7.3/3.1 kg
- **Power Consumption**: 10 W

**Emitter Unit**

- **Optical Transmit Power**: 6 W (Radiated light)
- **Optical Wavelength Options**: 450 nm (royal blue), 400–800 nm (white)
- **Emitter Beam Pattern**: 180° (omni-directional)
- **Power Consumption**: 15 W (bandwidth allocation dependant)
- **Emitter Weight in Air/Water**: 3.6/2.6 kg

**Environmental and Dimensions**

- **Operating Temperature Range**: -5 to 40°C
- **Storage Temperature Range**: -20 to 55°C
- **Dimensions (Length x Diameter)**
  - Receiver: 383.0 x 135.5
  - Emitter: 197.4 x 135.5

*Estimated Weights.*