
Datasheet

BlueComm[®] 100 – Optical Communications System



Description

The BlueComm 100 optical communications system provides subsea wireless telemetry at broad band speeds and ranges up to 15 metres.

BlueComm 100 can be used in all water conditions including shallow water daytime conditions where high ambient light is present. It is capable of data transmission rates from 1 to 5 megabits per second (Mbps).

The system uses an array of high power light emitting diodes (LEDs) that are rapidly modulated to transmit data. Sensitive receivers are capable of detecting low energy light signals and decoding the communication data in the presence of significant ambient noise generated by daylight operation.

BlueComm 100 supports bi-directional optical communications and can be combined with an acoustic link for long range command and control.

The system is bi-directional using time division multiple access (TDMA) methods to provide a 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 software supplied with BlueComm 100 enables system configuration and provides link diagnostics during operation.

Application examples include data recovery from seafloor instruments, wireless video transfer and also tether-free subsea vehicle control.

The optional acoustic link provides a method for locating, and waking up a seafloor instrument prior to data recovery. The low latency feature of the system enables human-in-the-loop vehicle control.

Optical data transmission is highly efficient, enabling more than 1 gigabyte of data to be transferred by BlueComm 100 using only the equivalent energy contained in a single Lithium D sized battery cell.

BlueComm 100 has a titanium housing with a 4,000 metre depth rating, matching the depth rating of most work-class ROVs.

Typical Applications

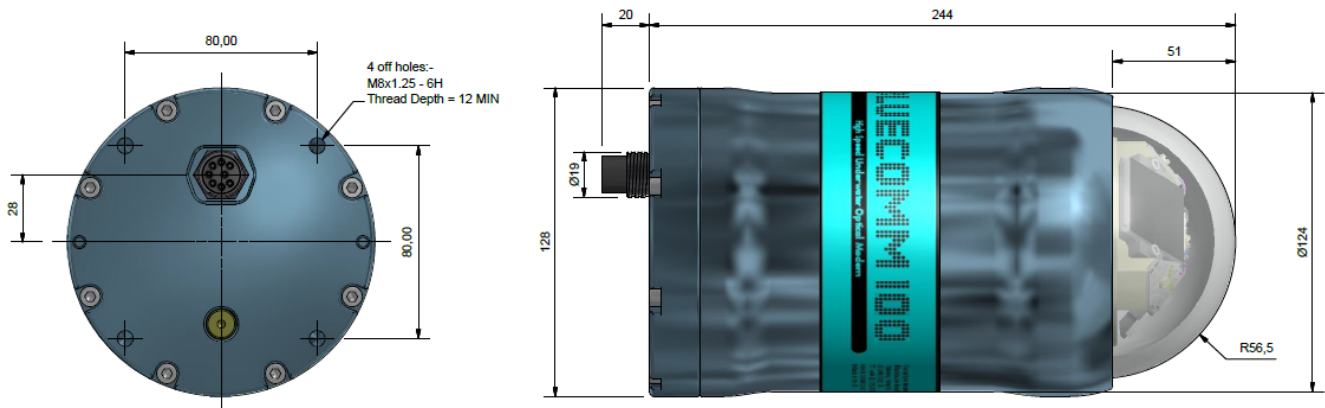
- Live video transmission
- Harvesting of large data sets from subsea instrumentation
- Tether-free subsea vehicle control

Key Features

- 1 to 5 Mbps at ranges of up to 15 metres
- Suitable for shallow or deep water applications
- Highly energy efficient communications provides long battery life
- Optional integrated long range acoustic communications and positioning for command and control
- Data recovery from seafloor instruments and tether-free subsea vehicle control
- 4,000 m depth operation

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Feature	Type 8360-100 Specification
Depth Rating	4,000 m
Data Rate	1–5 Megabits per second
Optical Communication Range	1–15 m
Materials	Titanium and glass dome
Supply Voltage	24–36 V DC
Rear Connector Type	Subconn MCBH8F Ti
Communications Interface	10/100 Base-T Ethernet (Static IP Address)
Power consumption	10–30 W (dependent on transmit ratio)
Command Interface	Graphical User Interface / UDP Command Set
Communications Type	Bidirectional, Time Division Multiplexing
Optical Transmit Power	6 W (radiometric)
Optical Wavelength	450 nm (royal blue)
Emitter Beam Pattern	60° (half angle)
Receive Beam Pattern	60° (half angle)
Dimensions; Length x Diameter	264 mm x 128 mm
Operating Temperature Range	-5 to 40°C
Storage Temperature Range	-20 to 55°C
Weight in Air/Water	5.2/2.4 kg