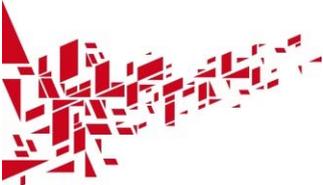




Greytip Shark Subsea Camera

USER MANUAL



Greytip Shark - User Manual

Revision History

Rev. No	Description	Date of Rev
1.0	Issued for use	18.04.17
1.1	New product picture	25.01.18

Contents

Contact	3
Safety information	3
Warranty	3
1 General Description	4
1.1 Regarding these Instructions for Use	4
1.2 Main Features.....	4
2 Technical Specifications.....	4
2.1 Power	5
3 Installation Instructions.....	5
3.1 Unpacking and testing.....	5
3.2 Function test.....	5
3.3 Mechanical Installation	6
3.4 Electrical installation.....	6
3.4.1 Camera subsea connector	6
4 Operational Instructions.....	6
4.1 Hazards and protective measures.....	6
4.2 Over-temperature precautions	6
5 Maintenance	7
5.1 General maintenance.....	7
5.2 Service and Repair	7
5.3 Packing & Shipping	7



Greytip Shark - User Manual

Contact

for assistance / clarification on any of the contents of this manual, please contact:

Imenco AS

Subsea Electronics

Kophaug 3

5570 Akسدal NORWAY

Tel: +47 52 86 41 00

E-mail: electronics@imenco.com

Safety information

IMPORTANT! The Imenco Greytip Subsea Camera is a technically advanced product. Please make sure to read and understand all sections of this manual before installing or operating this product. Installation of this product should only be performed by qualified personnel.

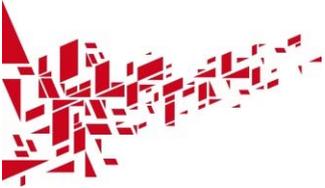
WARNING! This product contains no user serviceable parts. *Do not open, alter or disassemble this product.* Failure to comply with this warning can result in damage to equipment and void of warranty. The camera is filled with inert gas at manufacture.

WARNING! *The housing is NOT connected to any Protective Earth circuits.*

The metal housing has no electrical contact with any of the circuits inside the camera. This is to isolate the camera housing from other equipment that includes dangerous high voltage and to minimize corrosion that otherwise might be intensified by electrical contact to other nearby metal equipment or structures exposed to the sea water.

Warranty

Be sure to read and comply with **Imenco's Terms & Conditions** that the Greytip camera was sold under.



Greytip Shark - User Manual

1 General Description

1.1 Regarding these Instructions for Use

The intended use of these instructions is to provide and guide the operator/user of the equipment with instructions on the technical specifics of the product, how it functions, the safety aspects of its use, how to prepare, operate and maintain the product.

All information in this document is provided commercial in confidence and shall not be published or disclosed, wholly or in part to any other party without Imenco's written permission.

Copyright © 2015 IMENCO. All Rights Reserved.

1.2 Main Features

- High quality SD video
- Small size
- Depth rating 6.000 m

2 Technical Specifications

Video format	SD Composite Video 1.0 V p-p (75 Ω)
Video resolution	750 TVL
Sensitivity	0.1 lux
Lens system	Fixed focal length / fixed focus
View port material	Acrylic
View Angle Horizontal:	53° in seawater
Diagonal:	64° in seawater
Minimum Working Distance	0.2 m in seawater
Standard Connector	5507 - 1508
Housing material	Duplex Stainless Steel
Maximum Depth	6,000 m seawater
Mass in air	0.5 kg
Mass in seawater	0.4 kg
Diameter	36 mm
Length (excl. connector)	110 mm
Power input	24 VDC – 2.5W (16 – 36VDC)
Operating temperature range	-5°C to +50°C



Greytip Shark - User Manual

2.1 Power

The camera is powered by a DC voltage applied to two connector power pins. The circuit includes reverse polarity protection, but the polarity must be correct for the camera to power up.

The camera housing is not connected to any pin in the subsea connector or any terminal of the electrical circuits inside the camera.

IMPORTANT! *The camera housing is not connected to Protective Earth.*

3 Installation Instructions

Make sure that **Imenco's Terms & Conditions** are followed when using this product.

3.1 Unpacking and testing

When having received the camera, do a visual inspection for damage of the packet or any of the parts.

The packet should include:

- *Greytip Zoom Subsea Camera*
- *User manual hard copy (this document)*
- *Pressure Test certificate*
- *Quality Control certificate / connector pin-out document*

3.2 Function test

A preliminary function test should be performed prior to full scale installation. This is to familiarize the user with the control functions and to verify that the system is fully operational after shipment.

Follow these steps to power up and check the proper functioning of the camera:

- 1) Clear necessary space on your working desk and gather the
 - a. The Greytip camera
 - b. Power supply providing DC anywhere between 16V and 36V and min. 10W
 - c. Test cable
 - d. Monitor with SD video input
- 2) Do not power up the camera yet.
Lubricate the subsea connector and mate it properly.
- 3) Now turn on the DC power to the Camera



Greytip Shark - User Manual

3.3 Mechanical Installation

Installation of this product should only be performed by qualified personnel.

Do not open the camera when carrying out the installation.

Mount the camera on a secure and vibration free surface and strap the cable for stress relief to the supporting structure.

The camera should be electrically isolated from the mounting base in order to minimize any corrosion current between the relatively noble Titanium housing of the camera and surrounding metal structures.

A reference mark at the rear top of the camera housing can be used for alignment.

3.4 Electrical installation

IMPORTANT!

- Installation of this product should only be performed by qualified personnel.
- Verify that the connector pin assignments match with the system where the camera is being installed. Mind the connector pin numbers and wire colours as necessary.
- Do not connect/disconnect the subsea connector when the power is ON.

3.4.1 Camera subsea connector

The Greytip camera can be supplied with various connector configurations. Please refer to the supplied QC document for your specific camera.

4 Operational Instructions

4.1 Hazards and protective measures

The Greytip camera does not generate or use dangerous high electrical voltages. The camera is filled with inert gas at atmospheric pressure. Follow the safety information at the beginning of this manual.

4.2 Over-temperature precautions

The camera is designed for operation in water that will absorb the heat generated by the camera. Imenco acknowledges that the camera must be checked on deck before operation as well as tested and demonstrated in house, but the conditions when operating the camera in air may not provide sufficient cooling. Remember that sunlight and/or high outside temperature will add significant heat to the camera.



5 Maintenance

5.1 General maintenance

After use in seawater or other corrosive environments, rinse the unit and cables in fresh water.

Inspect the front port for dirt and dust and remove any surface dirt using compressed air. Clean the front port glass using a mild detergent and a soft cloth. Do not use alcohol or solvent based cleaning solutions because that could damage the pressure seals and glass coating. Avoid circular wiping patterns.

Reapply silicon based lubricant to the connector regularly as needed.

5.2 Service and Repair

This product contains no user serviceable parts. Service and modifications are to be carried out by Imenco personnel or by qualified third party after appointment. Failure to comply may result in personal injury, damage to equipment and loss of warranty.

If the Spinner camera seems to be not working properly, please try to speed up the service that Imenco can provide by describing the problem in specific terms from the person who have first handed observed the fault. Remember if necessary to describe the system where the camera is installed since the root cause sometimes can originate outside a failing part in an advanced system.

5.3 Packing & Shipping

The packing & shipping of the goods shall generally be according to Imenco's approved procedures.

Warning:

The Greytip camera includes fragile parts which must not be subject to vibrations and shock during transport.