



Benewake TF-UP01 High-Precision Long-Distance Single-Point Lidar User Manual

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TF-UP01 HIGH-PRECISION LONG-DISTANCE SINGLE-POINT LIDAR USER MANUAL



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Benewake (Beijing) Co., Ltd.

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Described Product

High-precision long-range single-point LiDAR: TF-UP01

Manufacturer

Benewake (Beijing) Co., Ltd. NO.28 Xinxu Road Haidian District Beijing, PRC

Legal information

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Original document

This document is an original document of Benewake.

Warning

The TF-UP01 range finder is equipped with a laser diode emitting in the visible spectrum. It is a class 2 laser product according to IEC 60825-1:2014.



WARNING: OPTICAL RADIATION DO NOT STARE INTO THE BEAM

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ABOUT THIS DOCUMENT

The User Manual is an operating Instructions for TF-UP01, which describes how to set up and configure the interfaces.

The User Manual contains detailed information about the interfaces including syntax and available functionality. It focuses on TF-UP01 specific topics and does not describe the basic technology behind each interface.

The details of the result output formatting and the contents and syntax of the command channels are shared by several interfaces. They are described in an appendix valid for all relevant interfaces.

Intended Readers

The intended readers of the User Manual are users working with integration between the TF-UP01 and other equipment, for example, PLC programmers and Custom HMI developers.

The readers are assumed to have knowledge about the TF-UP01 product and features as described in the datasheet for TF-UP01. The readers are also assumed to have knowledge about the basic functionality of the technology of the interfaces used for the integration.

Symbols and document conventions

The following symbols and conventions are used in this document:



WARNING Indicates a situation presenting possible danger, which may lead to death or serious injuries if not prevented.



CAUTION

Indicates a situation presenting possible danger, which may lead to moderate or minor injuries if not prevented.



NOTICE

Indicates a situation presenting possible danger, which may lead to property damage if not prevented.



NOTE Indicates useful tips and recommendations.

GENERAL INFORMATION

Intended use

The TF-UP01 laser rangefinder modules have been developed for range measuring of static and moving objects in the field of industrial applications.

The TF-UP01 measures distance up to 150m with high precision and supports fast-ranging rates of up to 50 Hz. Based on phase comparison technology the range finder is capable of accuracies of +/-3mm and below. It is powered and controlled via interfaces, UART, CAN, RS-485 and RS-232.

Safety Advice

Read the safety advice carefully before starting to operate the TF-UP01 laser range finder. That way you will achieve a long product lifetime and will make optimum use of the device while avoiding damage to the device and human injuries.



WARNING

The TF-UP01 laser range finder is equipped with a laser diode emitting in the visible spectrum. **DO NOT STARE INTO THE BEAM!**



CAUTION

Ensure there is no voltage applied when establishing a connection to the device and while integrating the device into the upper system. There is a potential risk of damage to the device or of an electric shock to the operator. Follow the integration advices when integrating the device in the upper system. Also, observe the safety distances when using the device. There is a potential risk of damage to the device or of an electric shock to the operator. Do not touch the electronic parts of the device when the device is in operation or connected to the power supply. There is a potential risk of damage to the device or of an electric shock to the operator. Do not disassemble the device or parts thereof. There is a risk of human injury by laser radiation and/or electric shock. The disassembly of the device or parts thereof will void the warranty.



NOTICE

Do not operate the device when there is any damage visible.

Contact customer service for further assistance.

Keep the device away from water and other liquids. Avoid any soiling by dust or other contaminants. Always handle the device with due care. When cleaning the device, follow the cleaning instructions.

Avoid touching the optics and do not use the device if the optics are soiled or clouded.

Do not perform any modification to the device as this may cause potential harm to the operator and the device. Any modification on the device will void the warranty.



NOTE

To clean TF-UP01, ensure it is disconnected from the battery or power supply. If the housing or the lenses are slightly soiled, they can be easily cleaned with a soft, slightly moistened optical cleaning cloth.

To avoid contamination of the device, always store it in the transportation package it was delivered in. Keep the device away from water, dust, and other contaminants.

Maintenance, Service, and Repair

The TF-UP01 is designed maintenance/service free so no maintenance of the device is required. In case the TF-UP01 is damaged, contact customer service with bw@benewake.com for assistance. For the TF-UP01 to be repaired the device has to be returned to the manufacturer.

PRODUCT DESCRIPTION

Appearance Overview

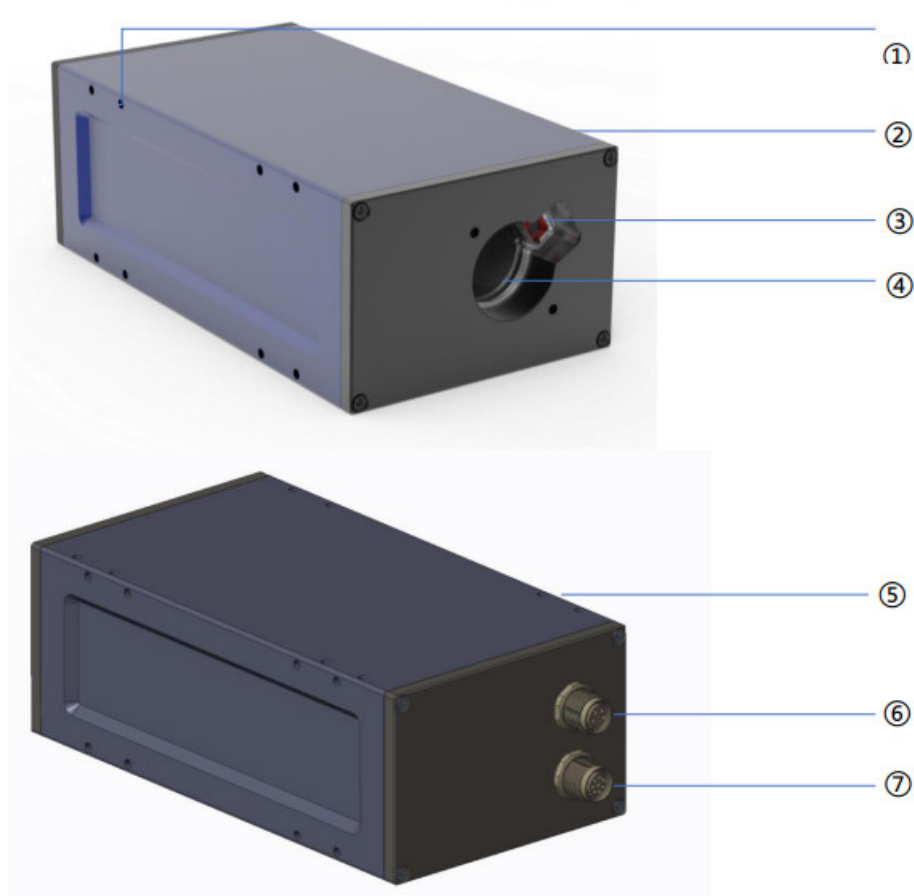


Figure 1 Module view of TF-UP01

1. 3mm diameter side hole (5mm deep) for mounting (16x)
2. Aluminum alloy housing
3. TX aperture
4. RX aperture
5. 3mm diameter bottom hole (5mm deep) for mounting (8x)
6. Power connector, female, 4pin
7. Data connector, female, 8pin

Dimensional drawing

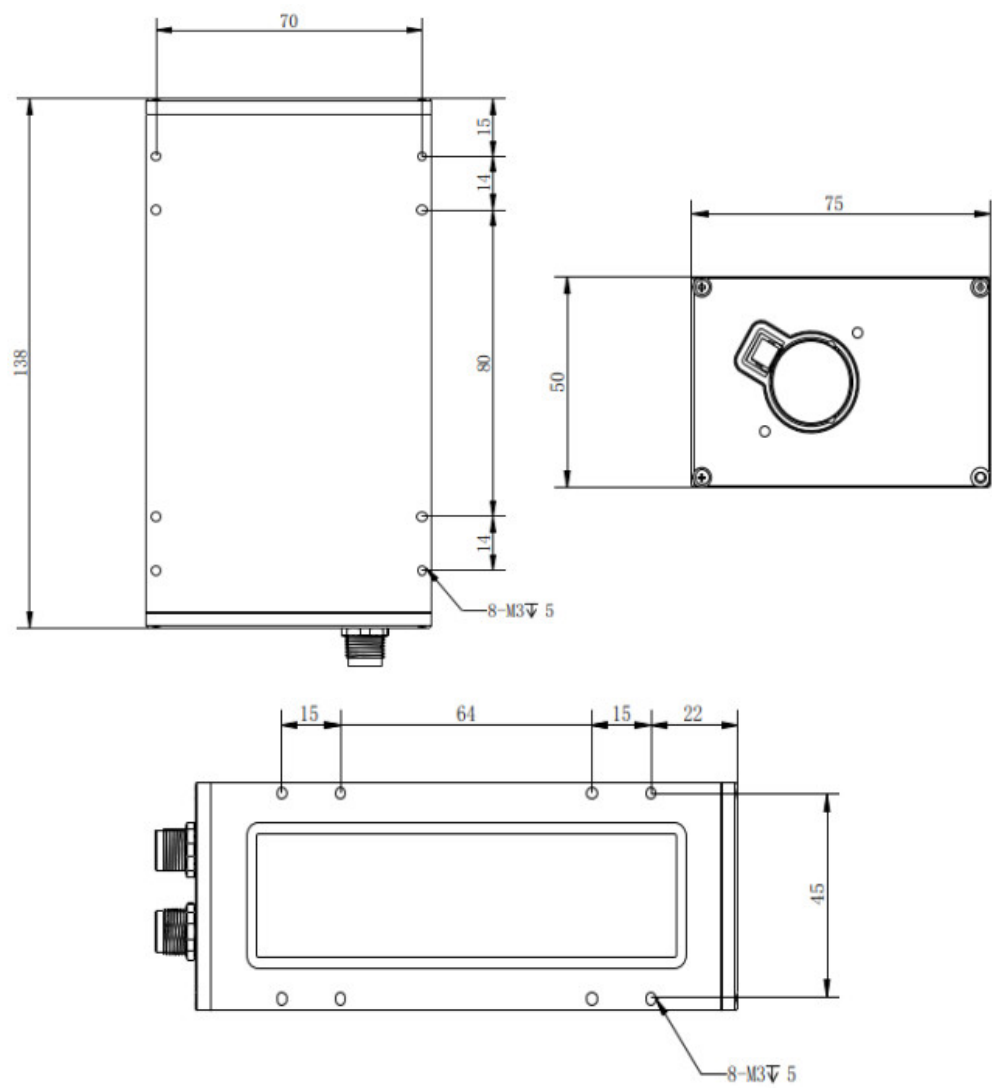
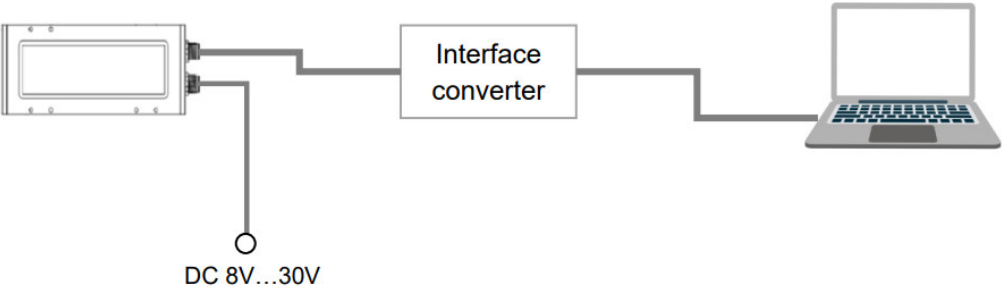
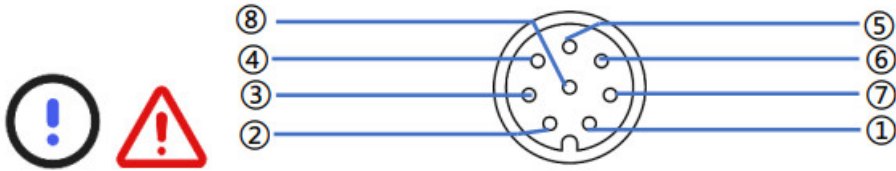


Figure 2 Dimensional drawing of TF-UP01

Technical specification

Table 1 Technical specification of TF-UP01





Documents / Resources

	Benewake TF-UP01 High-Precision Long-Distance Single-Point Lidar [pdf] User Manual TF-UP01, High-Precision Long-Distance Single-Point Lidar
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References

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