



TFmini VS TFmini-S

1. Product Upgrade Overview

TFmini-S is a single-point ranging Lidar based on TFmini upgrade. The blind zone of it is reduced from 30cm to 10cm, the outdoor ranging performance is further improved, the distance range is not disturbed by ambient light, which can be consistent with the indoor range, and the accuracy is further optimized. The error performance at 10% reflectivity approaches the background of 90% reflectivity, and the interface supports UART and I2C switching at any time.

2. Technical Specifications and Parameters

Table1 the Key Parameters of TFmini and TFmini-S

参数名称		TFmini	TFmini-S
Product performance	Operating range	0.3~12m@90% reflectivity	0.1m~12m@90% reflectivity
	Accuracy	±6cm@ (0.3-6m) ① ±1%@ (6m-12m)	±6cm@ (0.1-6m) ① ±1%@ (6m-12m)
	Distance resolution	1cm	1cm
	Frame rate	100Hz	100Hz
	Ambient light immunity	70Klux	70Klux
	Operation temperature	0°C~60°C	0°C~60°C
	Enclosure rating	/	/
Optical parameters	Light source	LED	VCSEL
	Central wavelength	850nm	850nm
	Photobiological safety	Exemption Level (EN62471)	Class1 (IEC60825)
	FOV	2.3°②	2°②
Electrical parameters	Supply voltage	5V±0.1V	5V±0.1V
	Average current	≤140mA	≤140mA
	Power consumption	≤0.7W	≤0.7W
	Peak current	800mA	200mA
	Communication level	LVTTTL (3.3V)	LVTTTL (3.3V)
	Communication interface	UART	UART / I2C
Others	Dimension	42mm*15mm*16mm (L*W*H)	42mm*15mm*16mm (L*W*H)
	Housing	ABS+PC	ABS+PC
	Storage temperature	-20°C~75°C	-20°C~75°C
	Weight	5g±0.3g	5g±0.3g
	Cable length	10cm	10cm

① Range based on the indoor test with the standard white board (90% reflectivity) at 25°C as the detection object;

② The angle is the theoretical value, but the actual angle has some deviation.



3. Product Appearance and Structure

TFmini

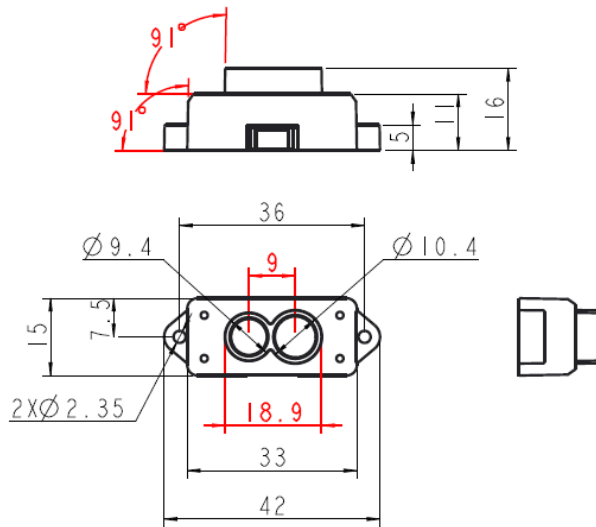


Fig.1 TFmini Dimensions

TFmini-S

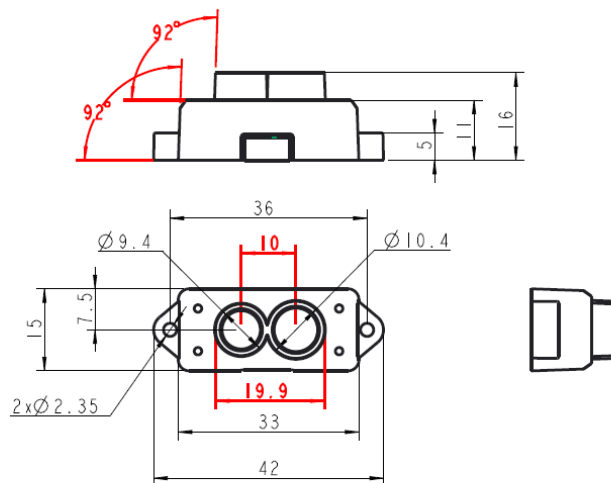


Fig.2 TFmini-S Dimensions (Increase the center distance of the lens by 1 mm)



4. Communication Interface

Table 1 Serial port communication protocol

Communication	UART (TFmini)	UART (TFmini-S)
Default baud rate	115200 (adjustable)	115200 (adjustable)
Data bit	8	8
Stop bit	1	1
Parity check	None	None

5. Configurable parameters

Table3 the Configurable parameters of TFmini and TFmini-S

Configurable items	Description	TFmini Default	TFmini-S Default
communication interface	support communication interface configuration	UART only	UART or I2C
Frame rate	Support serial port baud rate configuration	Adjustable from 1Hz to 100Hz	Adjustable from 1Hz to 1000Hz
Protocol format	Support 3 kinds of output format: 9Bytes (cm) 、Pixhawk、 9Bytes (mm)	9Bytes(cm)	9Bytes(cm)
Low-power Consumption Mode	enable/disable low-power mode	Not support	Off
Baud rate	Support baud rate setting of 9600-921600	115200	115200
Trigger sources	Setting internal trigger mode or external trigger mode	internal trigger	internal trigger
Restore factory settings	Restore all configurations to factory configuration	/	/

