

TF03, as a single-point long distance LiDAR in accordance with the industrial level, mainly targets at the intelligent transportation system, industrial UAV, automotive industry, industry and other applications.

To maximize different requirements in different applications and scenarios, TF03 can be compatible with a variety of communication interfaces, featuring IP67 high-intensity bodywork and the measurement frequency as high as 10KHz. It not only has powerful performance and rich interfaces, but also is small in volume, so that it could be integrated more easily in applications. In addition, TF03 contains a compensation algorithm targeting outdoor highlight environment, so that it could still work normally in highlight environment. Besides, it also has a variety of measurement models and parameters for custom configurations, so as to meet the ranging needs of different customers.



■ Technical specifications

Parameters name		Parameters value
Product performance	Range ^①	180m@90% reflectivity,70m@10% reflectivity 130m@90% reflectivity&100Klux, 50m@10%reflectivity&100Klux
	Non-detection zone	10cm
	Distance resolution	1cm
	Accuracy	±10cm(less than 10m),1%(more than 10m)
	Repeatability	1σ : <3cm
	Frame rate ^②	1Hz-1000Hz adjustable(default 100Hz)
	Ambient light immunity	100Klux
	Over range output	180m(default value, revisable)
Optical parameters	light source	LD
	Wavelength of light source	905nm
	Detection angle ^③	0.5°
	Spot size	100m away:100cm*28cm(horizontal*vertical)
	Laser class	CLASS 1 (IEC 60825)
Electrical parameters	Supply voltage	DC 5V (≥180mA)
	Average current	≤180mA
	Power consumption	≤0.9W
	Peak current	≤180mA
	Communication voltage level	3.3V

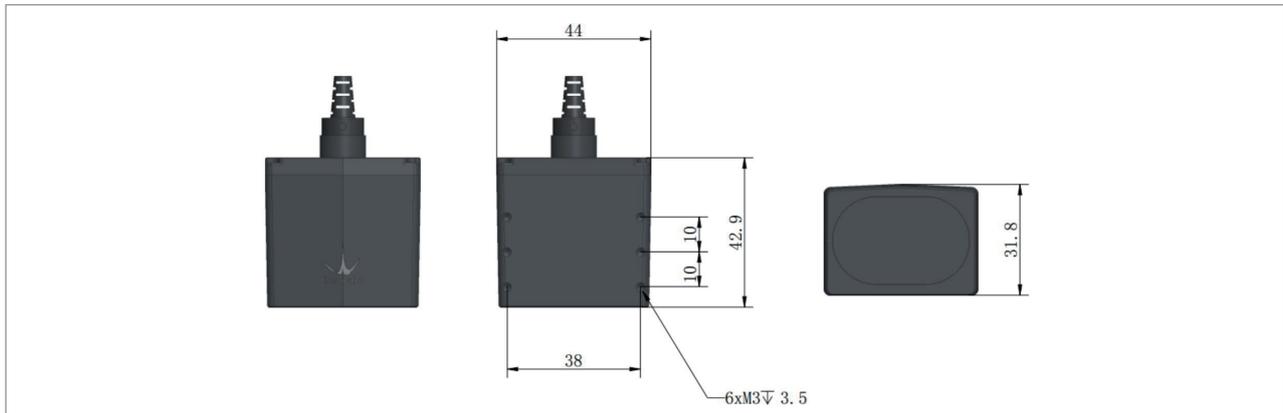
Parameters name		Parameters value
Others	Wiring length	70cm
	Dimension	44mm*43mm*32mm(L*W*H)
	Weight	77g
	Enclosure Material	Aluminum alloy
	Installation specification	6 pieces of mounting hole at the bottom, specification is M3*3.5mm
	Working temperature	-25~60°C
	Storage temperatuere	-40~85°C
	Enclosure ratingIV	IP67

Notes:① Measuring range, accuracy and repeatability are measured in white board (90% reflectivity) and will be somewhat different in the case of different reflectivity or light sensitivity conditions.

② The highest frame rate can be customized for 10KHz.

③ Detection angle means FOV of light spot, horizontal is different with vertical, the detection angle in the parameters table means the maximum one, which means the horizontal one. Note: Lidar's horizontal axis and light spot's axis are same when logo face up.

Product dimensions



TF03 dimensions (Left 1: top view; Left 2: upward view; Left 3: front view)

Communication protocol

Serial port and Can are supported by TF03

TF03 serial port communication protocol

Communication Protocol	UART
Baud rate	115200
Data bit	8
Stop bit	1
Checksum bit	none

TF03 CAN communication protocol

Communication Protocol	CAN
Baud rate	1M
Receiving ID	0x3003
Sending ID	0x3
Frame format	Default sending frame is standard frame, receiving frame support standard frame and extended frame

■ Configurable parameters

Configurable item	Description	Factory configuration
Custom frame rate	Detection frame rate could be configured by related command, range 1~1000Hz	100Hz
Over range output	This value will be pushed output when measuring value more than this value	180m
Output format	Serial port/Pixhawk/IO	Serial port
Custom baud rate	a) Serial port baud rate could be customized b) CAN port baud rate could be customized, CAN ID could be changed	/
Factory reset	Factory reset could be done by tf03_setup GUI software	/
Configuration saved when power cut	Parameters could be saved when power cut by related command	/

Note: More configuration parameters and command could be found in the production manual.

■ Product Certification



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