TF03-180 LiDAR

(Long-range distance sensor)

TF03-180 is an industrial-grade long-range LiDAR. Its maximum detection range can reach 100m. With integrated compensating algorithm for outdoor glare and other interference, TF03-180 can work under strong light environment and rain, fog and snow conditions[1]. Multiple built-in operating modes let customers to change its parameters and configuration to meet different applications.

Main product features

- High frame rate
- IP67 protection
- Small size
- Various interface

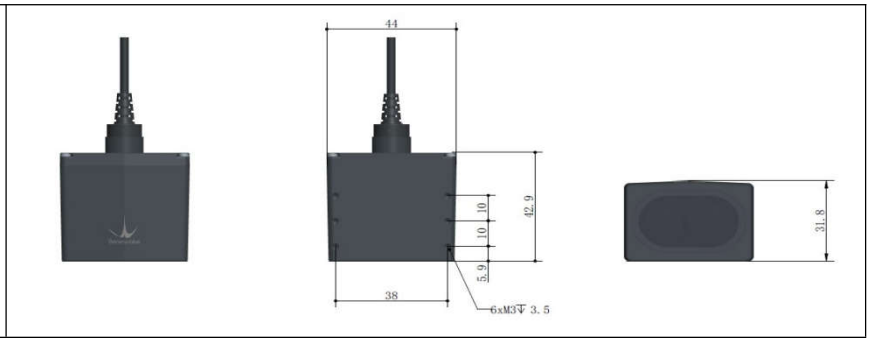
Main application scenarios

- Vehicle collision avoidance and safety warning
- Traffic flow statistics
- Camera trigger
- UAV assisted takeoff and landing

SPECIFICATIONS

Parameters		Standard version	RS485/RS232 version
Product performance	Operating range	0.1-180m@90% reflectivity 0.1-70m@10% reflectivity 0.1-130m@90% reflectivity&100Klux 0.1-50m@10% reflectivity&100Klux	
	Accuracy[2]		±10cm (within 10m), 1% (10m and further)
	Distance resolution		1cm

	Frame rate[3]		1Hz~1000Hz adjustable (default 100Hz)	
	Repeatability		1σ：<3cm	
	Ambient light immunity		100Klux	
	Operation temperature		-25~60℃	
	Enclosure rating		IP67	
Optical parameters	Light source		LD	
	Central wavelength		905nm	
	Photobiological safety		Class1（EN60825）	
	FOV[4]		0.5°	
Electrical parameters	Supply voltage		5V~24V	
	Average current		≤150mA @ 5V，≤80mA @ 12V，≤50mA @ 24V	
	Power consumption		≤1W	
	peak current		150mA	
	Communication interface level		LVTTL（3.3V）	RS485/RS232
	Communication interface		UART/CAN	RS485/RS232
Others	Dimension		44mm*43mm*32mm(L*W*H)	
	Enclosure material		Aluminum alloy	
	Storage temperature		-40~85℃	
	Weight		89g±3g	92g±3g
	Cable length		70cm	
Communication Interface	UART/RS485/RS232		CAN	
	Baud rate	115200	Baud rate	1000kbps
	Data bit	8	Data bit	0x3003
	Stop bit	1	Stop bit	0x3
	Checksum bit	N/A	Frame format	Standard frame[5]

Dimensions	

1.Rain, snow and fog conditions generally refer to moderate rain, snow and below. Moderate rainfall < 25mm/24h or < 7.9mm/h

2.The detection range is measured at temperature of 25℃. Accuracy and repeatability are measured with white board (90% reflectivity).

3.The highest frame rate can be customized to 10KHz, please contact us for detailed information.

4.FOV, field of view, consists of vertical angle and horizontal angle.

5.Please check Product manual for detailed information.

CONFIGURABLE PARAMETERS

Configurable parameters	Description	Default setting
Frame rate	Output frame rate could be configured by related command, range 1~1000Hz[1]	100Hz
Communication interfaces	UART/CAN can be switched with command	UART
	RS485/RS232 can be switched with command	RS485
Baud rate	a) Serial port baud rate could be customized b) CAN port baud rate could be customized, CAN ID could be modified	/
Restore default	TF03-180 can be restored to the factory settings	/
Save configuration	After defining the configuration parameters, you can send the corresponding command to choose to save the configuration permanently	/

Note: for more configurable parameters and instructions, please refer to the user manual.

1.The highest frame rate can be customized to 10KHz, please contact us for detailed information.

WIRING

Since the product upgrade in Aug. 2020, TF03's wiring has also been upgraded.

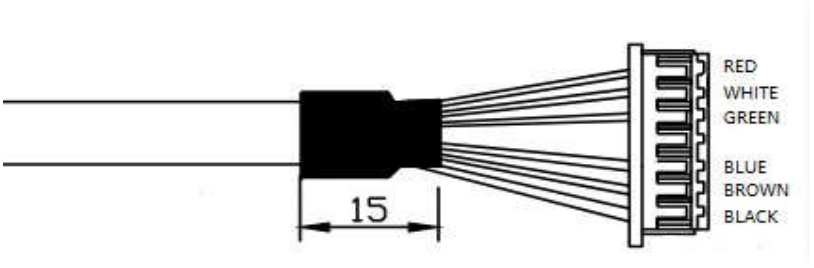


Figure 2 Wiring of new version TF03-180

Below is new version TF03's pin definition and function description.

No.	Color	Standard version		RS485 version	
		PIN definition	Function	PIN definition	Function
1	Red	VCC	Power supply	VCC	Power supply
2	White	CAN_L	CAN_L	RS485-B/RS232-RX	RS485-B/RS232
3	Green	CAN_H	CAN_H	RS485-A/RS232-TX	RS485-A/RS232
4	/	/	/	/	/
5	Blue	UART_RX	UART receive	UART_RX	UART
6	Brown	UART_TX	UART transport	UART_TX	UART
7	Black	GND	Ground	GND	Ground

1.The UART interface of TF03-100 RS485 version is debugging interface. It cannot be used to read detection data.