# TZS-RFID-T0030-A-User Manual

Function

This product is specially designed for AGV. Based on ISO15693 protocol, we have developed some targeted functions, mainly used to read and write the data block of the tags . We use this data as the location of the AGV. The working frequency is 13. 56MHz.
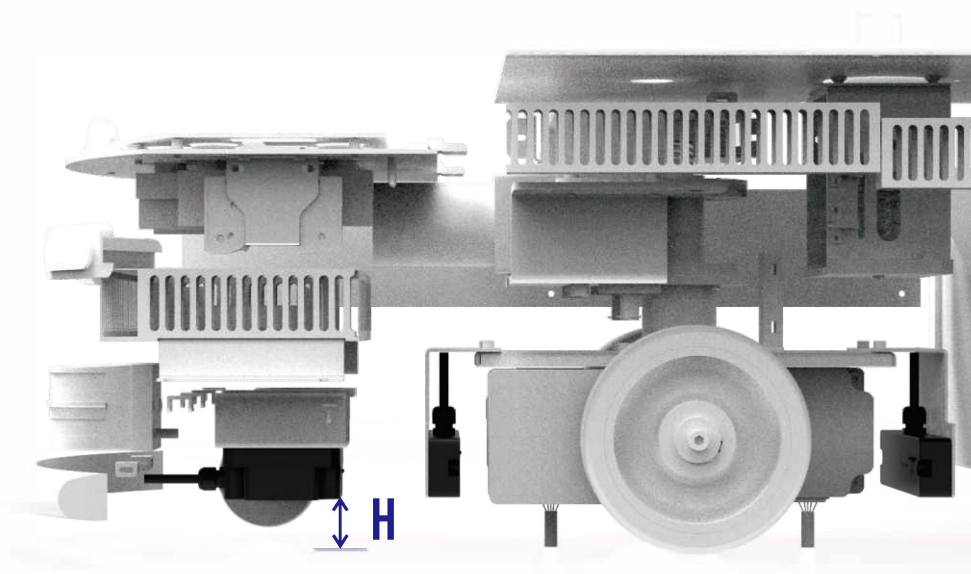
AGV will perform special actions based on the location read out as far as possible.
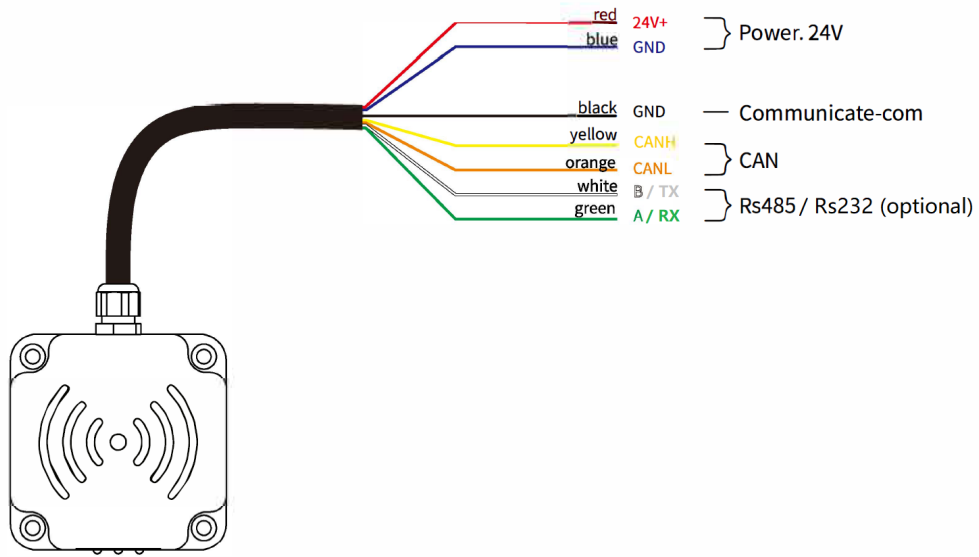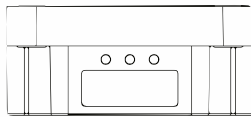
Installation

TZS-RFID-T0099-A

SET RF. PWR

36.5

13.9

L=1500mm

∅6.5

4-∅5.5

82

65

65

82
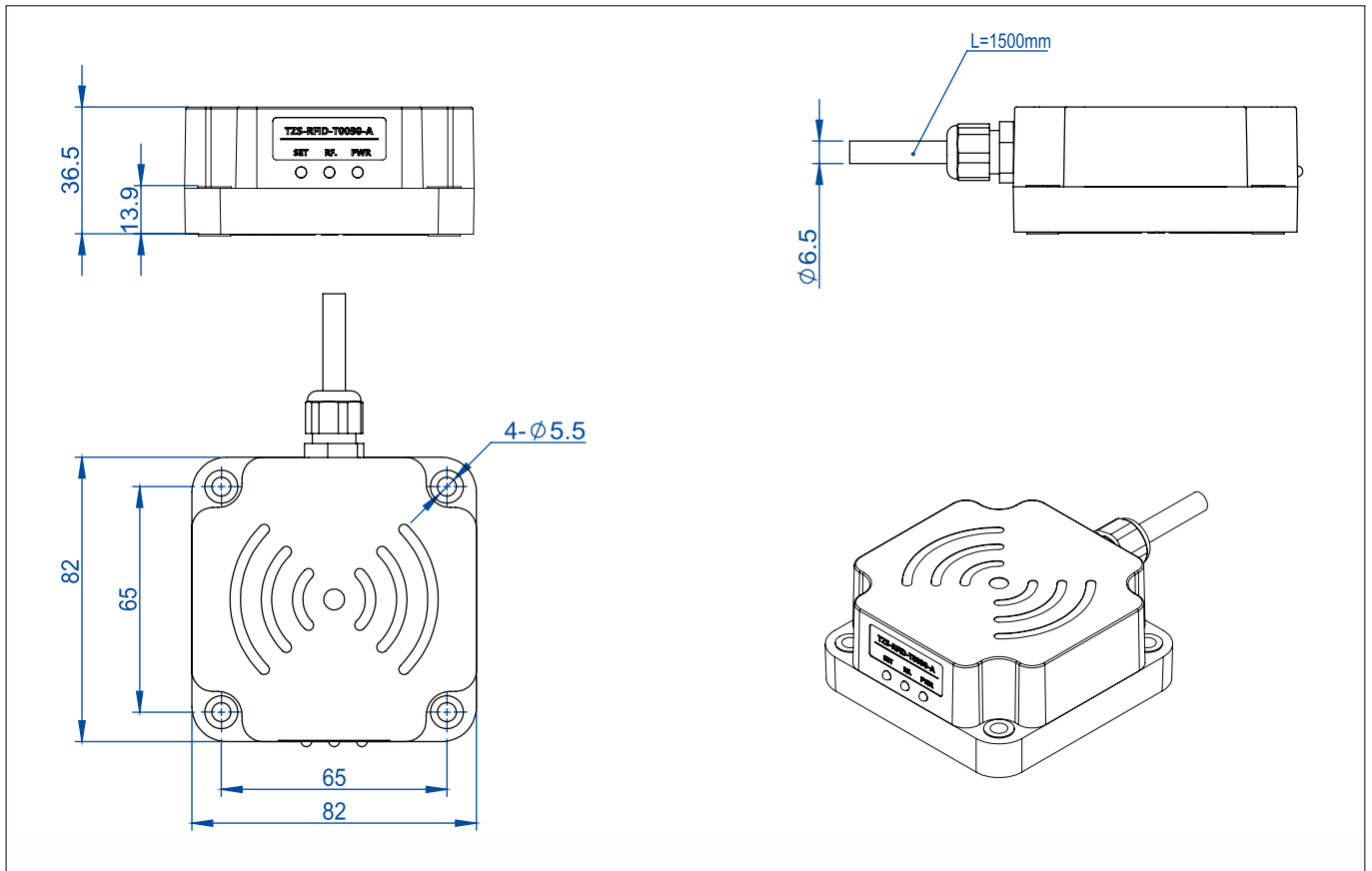
Mount H

The bottom surface to the ground distance **H** should be around 35mm for best performance.

Pin Assignment

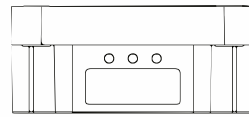| Wire	Signal	Function
red	24V+	Power. 24V
blue	GND	
black	GND	Communicate-com
yellow	CANH	CAN
orange	CANL	
white	B / TX	Rs485 / Rs232 (optional)
green	A / RX	

TZS-RFID-T0030-A offer 3 ways to obtain the Sensor data.

Key Points

Dig a hole on the mag Tap about the tag size and place the tag in the hole.

Place RFID Tags on the Mag Taps directly.

PVC Material

If there will be heavy Payload to pass by. You should need to add protection over the tags.

Seperator

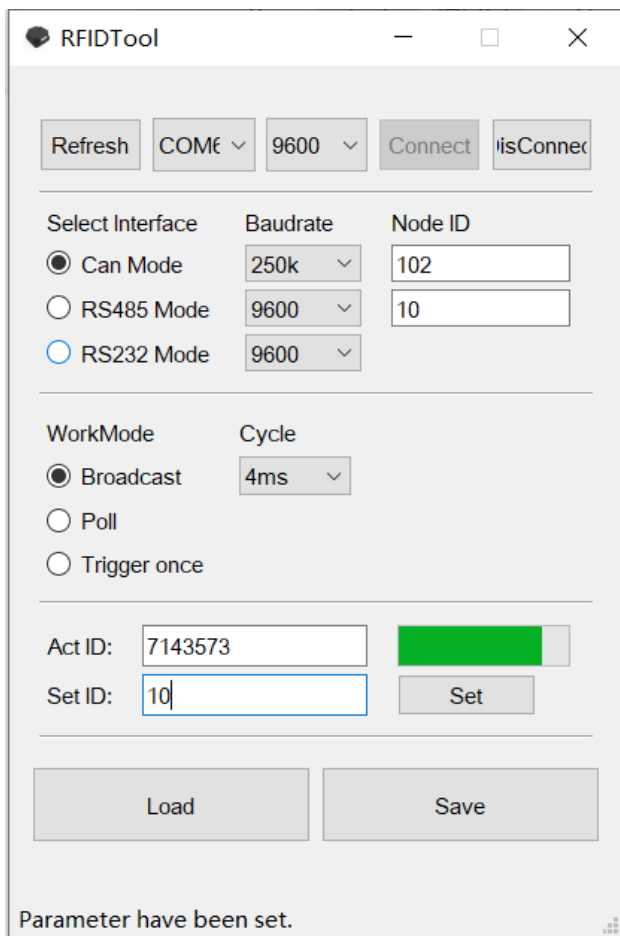If the tag is laid on the metal floor. It is strongly recommended to lay a layer of absorbing material.

Software

Use the 'RFIDToolCom.exe' to configure the sensor. RFIDToolCom is a free-installation software as below.

Software Interface

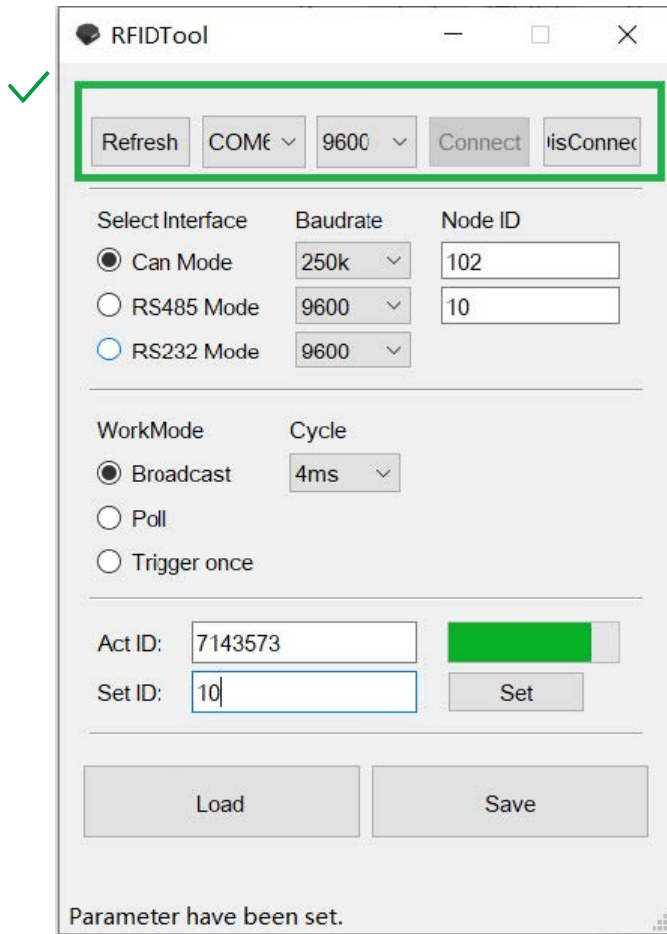**Note:** You need to 'save' the configuration to the sensor by pressing Save button. You can also read out the configuration out of the sensor.

Software

RFIDTool — □ ✕

| Refresh | COM6 ∨ | 9600 ∨ | Connect | DisConnect |

Select Interface **Baudrate** **Node ID**
- ⦿ Can Mode | 250k ∨ | 102
- ○ RS485 Mode | 9600 ∨ | 10
- ○ RS232 Mode | 9600 ∨ |

WorkMode **Cycle**
- ⦿ Broadcast | 4ms ∨
- ○ Poll
- ○ Trigger once

Act ID: 7143573
Set ID: 10   Set

| Load | Save |

Parameter have been set.

We can connect to the sensor by Rs485 or Rs232 all the time. The default communicate parameter is as below

data bit   : 8
parity bit : 1
parity mode : None
baud rate : 9600bps

Check your connect diagram if you can not connect to the sensor.

PC — Mag.
A ——— A
B ——— B
GND ——— GND Optional

RS485 connection

PC — Mag.
RX ⤬ RX
TX ⤬ TX
GND ——— GND

RS232 connection

Note: You need to 'save' the configuration to the sensor by pressing Save button. You can also read out the configuration out of the sensor.

Software

As what we show above. You can configure the sensor work mode to broadcast Poll by Master or Trigger once .
Trigger once means the sensor only respond one time when the new tags detects.
The respond interface can be one of Can or Rs485.

Note: Rs232 reserved for sensor with 232 cable.

Note: You need to 'save' the configuration to the sensor by pressing Save button.
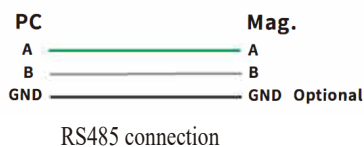You can also read out the configuration out of the sensor.

Software
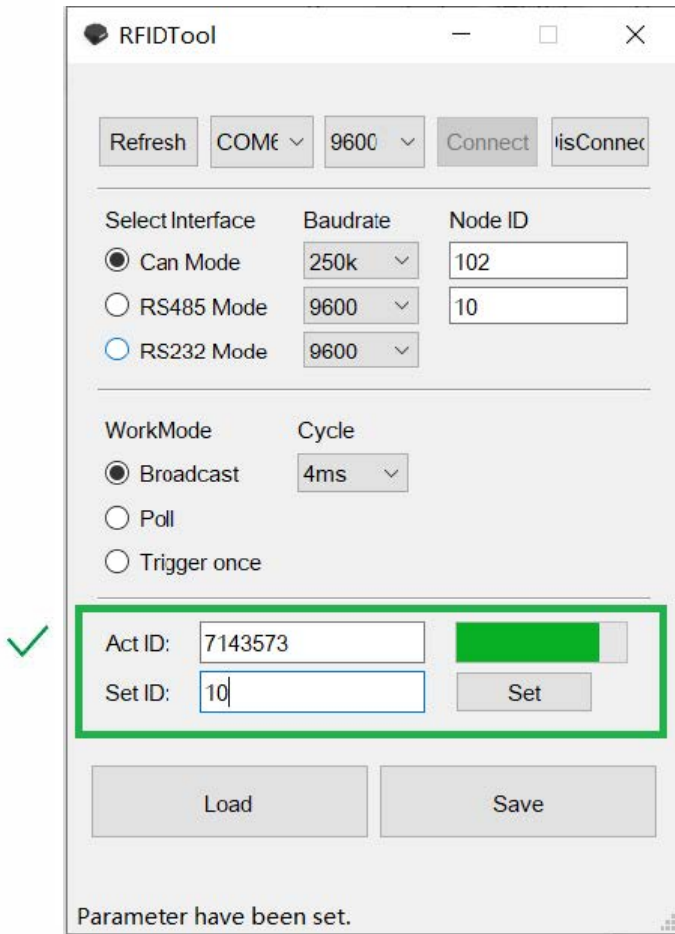
The ActID shows the Tags ID read out. The process bar shows the RF Strength of the tag.

When the tags strength is strong enough. The set button will be active and you can set the new ID you input in the setID to the tag.

Note: You need to 'save' the configuration to the sensor by pressing Save button. You can also read out the configuration out of the sensor.

CanData

Our RFID Reader will only read the first 8 bytes of the data blocks of the Tags from block address 0.

CanData

There are 8 bytes for each can data frame. Two frame total 16 bytes.
Can frame : DLC=8, RTR=DATA, IDE=STANDARD.

Frame 01:

Byte01	Byte02	Byte03	Byte04	Byte05	Byte06	Byte07	Byte08
01	0	0	Strength	Data1	Data2	Data3	Data4

Frame 02:

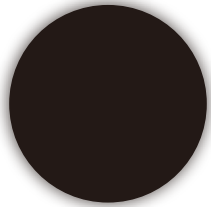| Byte01	Byte02	Byte03	Byte04	Byte05	Byte06	Byte07	Byte08
02	0	0	Strength	Data5	Data6	Data7	Data8

Calculate method

We only use the first 4 byte to be the tag ID. Data1 is the highest byte. So the 32bit Data for ID should be calculated as below.

Act ID = Data1 x 2^24 + Data2 x 2^16 + Data3 x 2^8 + Data4 x 2^0.

or

Act ID = Data1<<24 | Data2<<16 | Data3<<8 | Data4<<0.

Rs485

Communicate parameters.

data bit   : 8
parity bit : 1
parity mode : None
baud rate : 9600 / 19200 / 38400 bps

ModBus Function Supported: 04H
Address Range：1000 ~ 100A.

DATA:

1000	1001	1002	1003	1004	1005	1006	1007	1008	1009	100A
0	State: 0:detect 1:not detect	Field strength 0~28	Data1	Data2	Data3	Data4	Data5	Data6	Data7	Data8

We only use the first 4 byte to be the tag ID. Data1 is the highest byte. So the 32bit Data for ID should be calculated as below.

Act ID = Data1 x 2^24 + Data2 x 2^16 + Data3 x 2^8 + Data4 x 2^0.

or

Act ID = Data1<<24 | Data2<<16 | Data3<<8 | Data4<<0.

Broadcast Mode

Communicate parameters.

data bit   : 8
parity bit : 1
parity mode : None
baud rate : 9600 / 19200 / 38400 bps

Data frame :

Byte01	Byte02	Byte03	Byte04	Byte05	Byte06	Byte07	Byte08
0xAA	0x53	0x29	0x01	Node	state 0:detect 1:not detect	Field Strength 0~28	Data1
Byte09	Byte10	Byte11	Byte12	Byte13	Byte14	Byte15	Byte16
Data2	Data3	Data4	Data5	Data6	Data7	Data8	0xAE

Rs232

Request data by define data frame。

Request Data:

Byte01	Byte02	Byte03	Byte04	Byte05	Byte06	Byte07
0xAA	0x57	0x04	0x00	0x00	0x01	0xA1

Respond data:

Byte01	Byte02	Byte03	Byte04	Byte05	Byte06	Byte07	Byte08
0xAA	0x53	0x29	0x01	0x00	state 0:detect 1:not detect	Field Strength 0~28	Data1
Byte09	Byte10	Byte11	Byte12	Byte13	Byte14	Byte15	Byte16
Data2	Data3	Data4	Data5	Data6	Data7	Data8	0xAE

We only use the first 4 byte to be the tag ID. Data1 is the highest byte. So the 32bit Data for ID should be calculated as below.

Act ID = Data1 x 2^24 + Data2 x 2^16 + Data3 x 2^8 + Data4 x 2^0.

or

Act ID = Data1<<24 | Data2<<16 | Data3<<8 | Data4<<0.

Broadcast Mode

Communicate parameters.

data bit : 8
parity bit : 1
parity mode : None
baud rate : 9600 / 19200 / 38400 bps

Data frame :

Byte01	Byte02	Byte03	Byte04	Byte05	Byte06	Byte07	Byte08
0xAA	0x53	0x29	0x01	0x00	state 0:detect 1:not detect	Field Strength 0~28	Data1
Byte09	Byte10	Byte11	Byte12	Byte13	Byte14	Byte15	Byte16
Data2	Data3	Data4	Data5	Data6	Data7	Data8	0xAE