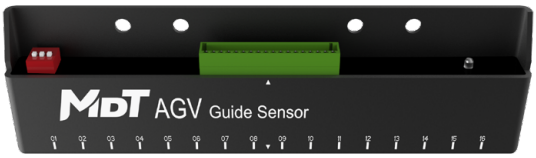
AGV-TMR15Xx

16-Channel, High Sensitivity AGV Magnetic Guide Sensors

Description

The AGV-TMR15X series are 16-channel NPN and PNP output magnetic guide sensor with 10 mm detection accuracy. They are available as standard with N pole, S pole and N/S pole magnetic operating modes including corresponding LED indicators.

The AGV-TMR15X series are adaptive to installation height and tape width with excellent protection against magnetic material interference. Incorporating tunneling magnetoresistance (TMR) technique, the AGV-TMR15X series are designed to provide excellent temperature characteristics, good consistency, fast frequency response, high sensitivity and low power consumption performance.



AGV-TMR15XN、AGV-TMR15XP

Features and Benefits

- Adaptive installation height
- Adaptive magnetic tape width
- Superior protection against magnetic material interference
- Excellent temperature characteristics
- Magnetic tape/marker detection
- N pole, S pole and N/S poles detection modes
- LED indicators for operating modes

Applications

- Automated guided vehicle (AGV)
- Automated guided cart (AGC)
- Trackless mobile shelving
- Logistics sortation

Selection Guide

Part Number	Detection Accuracy	Output Mode	Output Signal	Connector Type	Dimensions	Protection
AGV-TMR15XN	10 mm	NPN circuit switch ON/OFF	16 channels	Pin	178 mm × 17 mm × 50 mm	IP65
AGV-TMR15XP	10 mm	PNP circuit switch ON/OFF	16 channels	Pin	178 mm × 17 mm × 50 mm	IP65

1. Absolute Maximum Ratings

Parameter	Symbol	Min.	Max.	Unit
Supply voltage	V_{CC}	10	30	V
Output voltage	V_{OUT}	-	V_{CC}	V
Magnetic flux density	HE	-	1200	Gs
Operating ambient temperature	T_A	-25	80	°C
Storage ambient temperature	T_{STG}	-25	80	°C

2. Specifications

V_{CC} = 24 V，T_A = 25 °C

Parameter	Symbol	Min.	Typ.	Max.	Unit
Supply voltage	V_{CC}	10	24	30	V
Supply current	I_C	-	50	-	mA
Accuracy	-	-	10	-	mm
Detection height	-	10	30	50	mm
Detection channels	-	-	16	-	-
Response time	t_R	-	1	-	ms
Operating Magnetic field	B	5	15	25	Gs
Operating modes	N pole, S pole, N/S pole				
Housing material	Metal, epoxy resin				
Circuit protection	Reverse polarity protection, overload protection, surge suppression				

3. DIP Switch Operating Modes

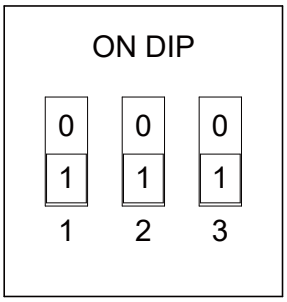


Figure 1. Dip switch top view

Number	Operating Mode	Dialing Logic	LED Indicator
1	N/S pole	000	Red/green LED alternating blink, low rate
2	S pole only	100	Red LED stay lit constantly
3	N pole only	010	Green LED stay lit constantly
4	Zero field calibration	XX1	High rate alternating blink during calibration, off when completed

Note: Keep any magnetic materials at least 50 cm away from AGV sensor detection surface during calibration. Switch the third digit back to zero to enter the normal operation mode after calibration.

4. Pin Configuration

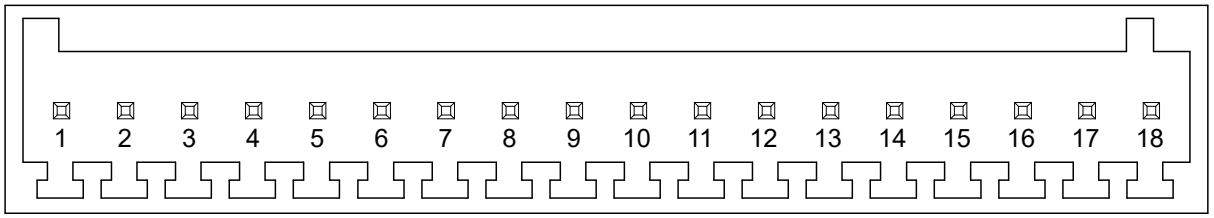


Figure 2. Pin configuration

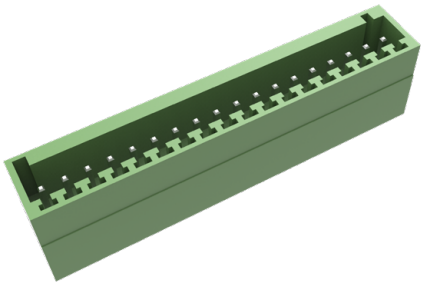


Figure 3. AGV-TMR15X series sensor connector
Connector model:GSP002RC-2.5-18P-11-600A(H)

Pin Number	Name	Function
1	V_{CC}	Supply voltage
2	GND	
3	O1	Output signal
4	O2	
5	O3	
6	O4	
7	O5	
8	O6	
9	O7	
10	O8	
11	O9	
12	O10	
13	O11	
14	O12	
15	O13	
16	O14	
17	O15	
18	O16	

5. Dimensions

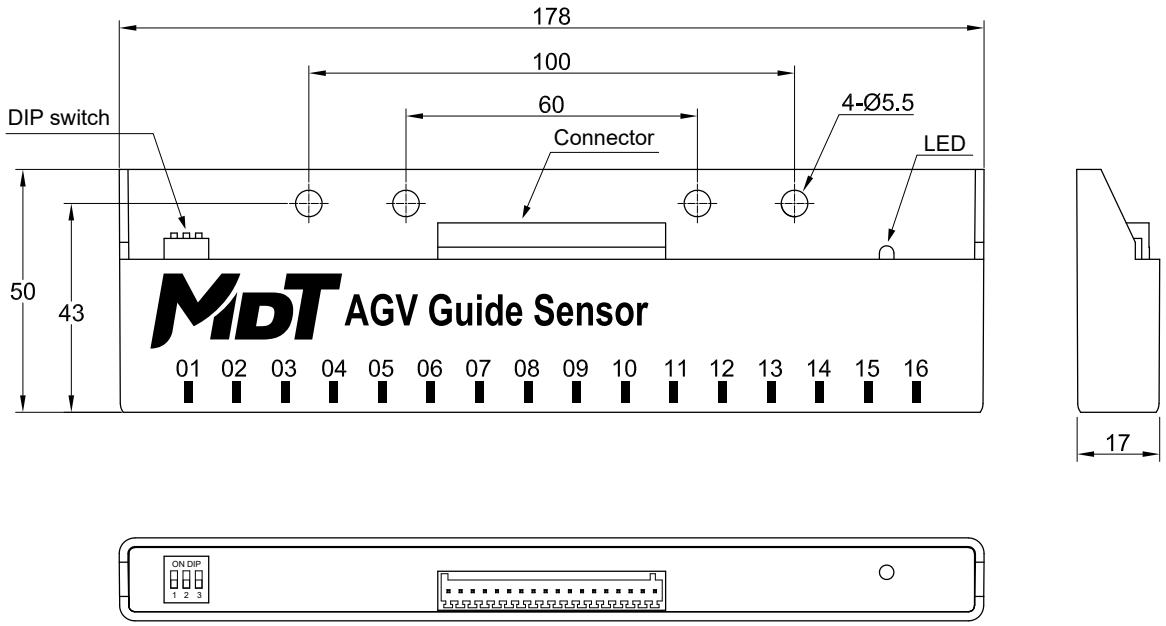


Figure 4. Package dimensions diagram (unit: mm)

6. Sensor Installation Schematic Diagram

Vertical distance between 10 mm to 40 mm is recommended between the bottom of AGV-TMR15X series AGV guide sensor and magnetic tape with width of 30 mm to 50 mm.

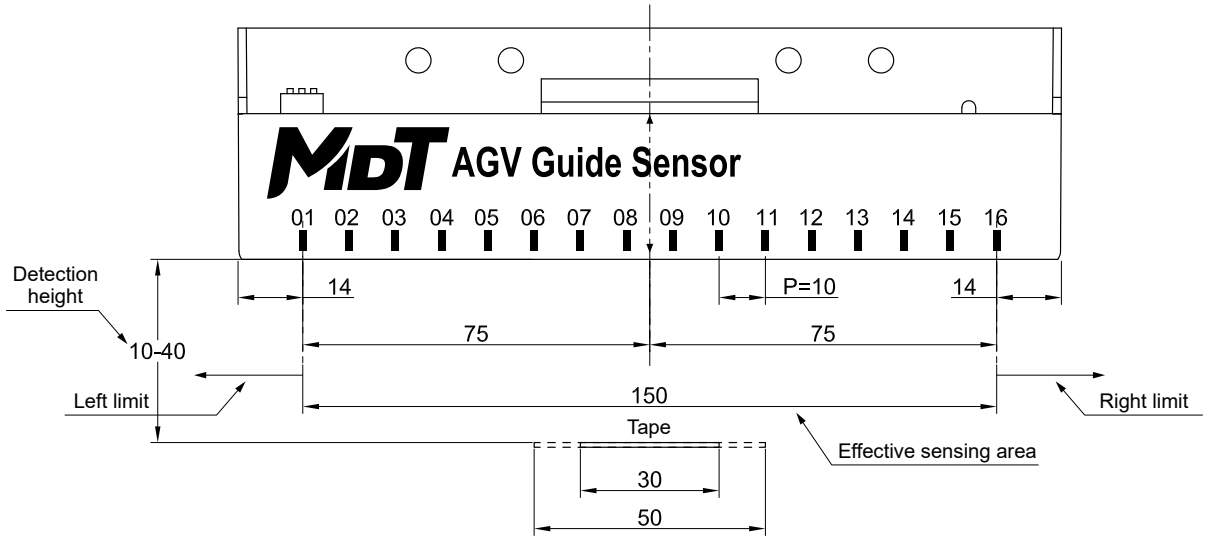


Figure 5. Installation schematic diagram (unit: mm)

Recycling

The product(s) in this document need to be handed over to a qualified solid waste management services company for recycling in accordance with relevant regulations on waste classification after the end of the product(s) life.

MULTIDIMENSION
MultiDimension Technology Co., Ltd.
No.2 Guangdong Road, Zhangjiagang Free Trade Zone, Jiangsu, China
Web：www.dowaytech.com/en E-mail：info@dowaytech.com