

# **AGV Magnetic Guide Sensors**

#### **DESCRIPTION**

AGV-TMR15XP is a 16-channel PNP output magnetic guide sensor with 10 mm detection accuracy. It is available as standard with N pole, S pole and N/S pole magnetic operating modes including corresponding LED indicators.

AGV-TMR15XP sensor is adaptive to installation height and tape width with excellent protection against magnetic material interference. Incorporating tunneling magnetoresistance (TMR) technique, AGV-TMR15XP sensors are designed to provide excellent temperature characteristics, good consistency, fast frequency response, high sensitivity and low power consumption performance.

## **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 operation modes

## **APPLICATIONS**

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

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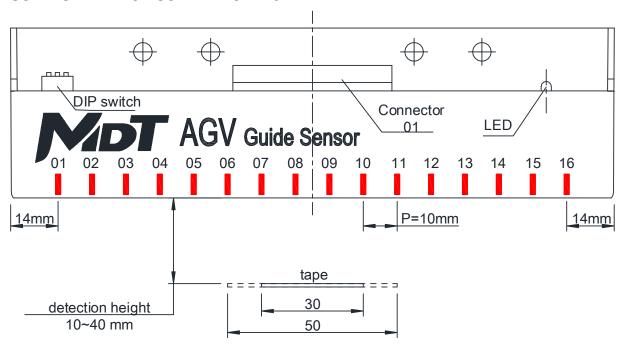
AGV Magnetic Guide Sensors



## **SPECIFICATIONS**

Parameters	Value			
Supply voltage	10 Vdc ~ 30 Vdc			
Supply current	50 mA			
Output type	PNP			
Communication type	Switch ON/OFF			
Accuracy	10 mm			
Resolution	5 mm			
Detection height	10 mm~50 mm			
Optimum Installation Height	30 mm			
Detection channel	16-channel			
Operating mode	N pole, S pole, N/S pole			
LED indicator	N: green stay lit, S: red stay lit, N/S: red/green alternating blink			
Magnetic field	5 Gs~25 Gs			
Operating temperature	-25℃~80℃			
Operating humidity	35%~95%			
Response time	1 ms			
Dimensions	178 mm*17 mm*50 mm			
Potting material	AB glue			
Housing material	Metal, Epoxy Resin			
Ingress Protection	IP65			
Supply voltage	10 Vdc ~ 30 Vdc			

## SENSOR INSTALLATION SCHEMATIC DIAGRAM

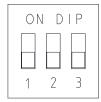


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### **DIP SWITCH OPERATION MODES**



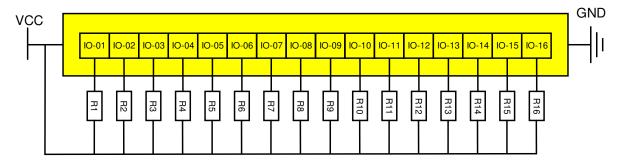
0	0	0
1	1	1

Operation Modes Dialing Logic		LED indicator		
N/S pole	000	red/green LED alternating blink, low rate		
S pole only 100		red LED stay lit constantly		
N pole only 010		green LED stay lit constantly		
Zero field calibration XX1		high rate alternating blink during calibration, off when completed		

#### Note

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

#### NPN OUTPUT INSTRUCTIONS



- A pull-up load resistor is required between VCC and each detects corresponding IO channel. DO NOT connect sensor IO to power supply positive directly.
- 2. VCC of load resistor: 10 Vdc~36 Vdc.
- 3. Resistance of load resistor: 300 ohm~100 kohm.
- 4. IO-01 to IO-16 stands for the signal from the corresponding channel of sensor.
- 5. The voltage level of load resistor is high when sensor of corresponding channel detects signals, and the voltage level of load resistor is zero when no magnetic field is detected.
- 6. NPN collector conducting voltage drop <1V.

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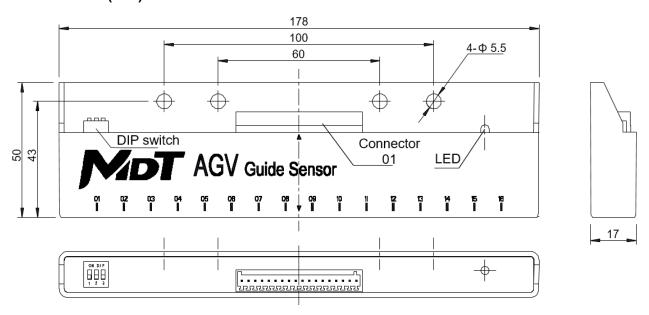
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### **PIN CONFIGURATION**

No.	1	VCC	10	10-08
	2	GND	11	IO-09
/ (3 ~ 11WTD)	3	IO-01	12	IO-10
	4	10-02	13	IO-11
	5	IO-03	14	IO-12
	6	10-04	15	10-13
	7	IO-05	16	IO-14
	8	IO-06	17	IO-15
	9	10-07	18	IO-16

## **DIMENSIONS (mm)**



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