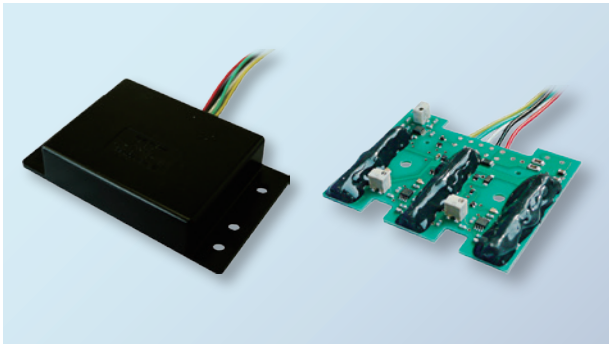


□Model list

N pole detection	MGM-3N401-MC
S pole detection	MGM-3S401-MC

>PCB type

N pole detection	MGM-3N401-PC
S pole detection	MGM-3S401-PC

Application

- Automatic guided vehicles guidance

Characteristics

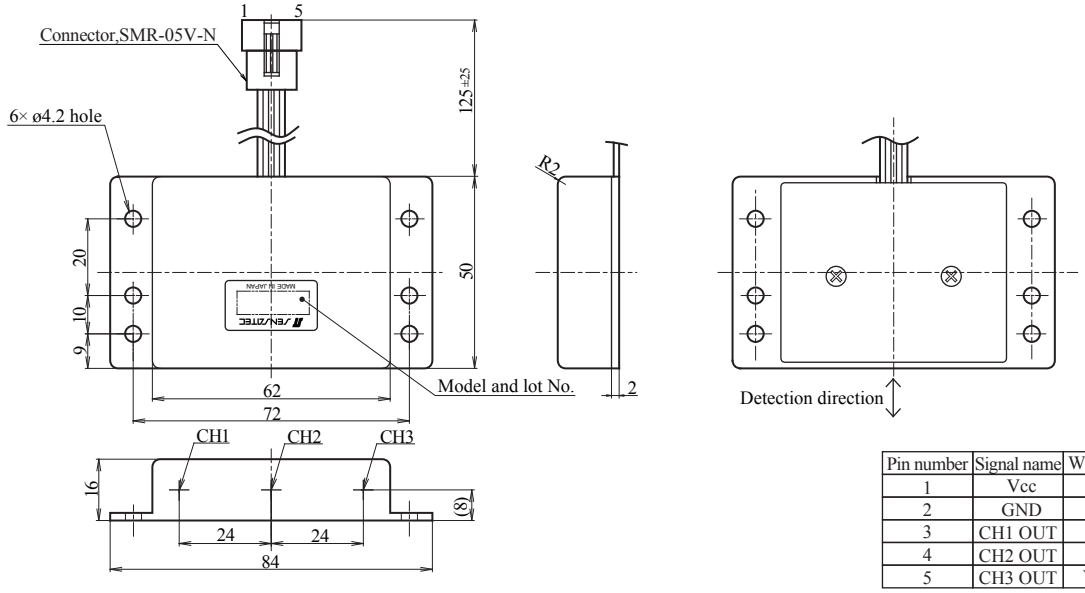
- High-sensitivity electromagnetic sensor that detects the magnetism at three points.
- Perfect as a guide sensor for automatic guided vehicles (AGV). The sensitivity can be lowered to adapt to the usage environment.
- Open collector output to output directly to digital circuits.
- MGM-3□401-MC: Can be used in a variety of environments thanks to its superior dust-proof plastic case filled with silicone rubber.
- MGM-3□401-PC: PCB not enclosed in a case to increase the installation possibilities.

Rating and performance

Model name	**MGM-3N401-MC**	**MGM-3S401-MC**	**MGM-3N401-PC**	**MGM-3S401-PC**
Detection surface	Front side detection			
Detection sensitivity	400 μT ±100 μT (with a rubber plate magnet of 30 x 30 x t1.5 mm)			
Power supply voltage	12 V to 24 V DC (Operating voltage range: 10 V to 30 V DC)			
Power consumption	DC 50 mA or less			
Output	DC 30 V DC 100 mA or less NPN transistor open collector			
Output residual voltage	DC 1 V or less (load current DC100 mA)			
Operation configuration	Normally open (On output with magnetic field)			
Operation display	-		Red LED (lit when On output)	
Number of detection points and pitch	3 point / 24 mm			
Response time	500 μs or less			
Hysteresis	30 μT or less (with a rubber plate magnet of 30 x 30 x t1.5 mm)			
Reference detection distances	72 mm (*for the MG50-1 series)			
Operating set distance	5 to 50 mm (*the MG50-1 series)			
Detection polarity	N pole	S pole	N pole	S pole
Operating temperature range	-10 to 60 °C (-20 to 70 °C during storage) (no condensation)			
Operating humidity range	95% RH or less (95% RH or less during storage) (no condensation)		90% RH or less (90% RH or less during storage) (no condensation)	
Withstand voltage	1 min at AC 500 V 50/60 Hz (between the live part and case)		-	
Insulation resistance	100 MΩ or more measured with an ohmmeter at DC 500 V (between the live part and case)		-	
Vibration resistance	Durability: 2 hours in each X, Y, Z direction at 10 to 55 Hz and with peak-to-peak amplitude of 1.5 mm (at power off)			
Shock resistance	Durability: 3 times at 500 m/s^2 (approx. 50 G) in each X, Y, Z direction (at power off)			
Protection rating	IP67 (except for the connector part)		-	
Case material	ABS		-	
Connector	Connector: SMR-05V-N (5-pin), housing: SMP-05V, contact: SYM-001T-P0.6 (from J.S.T. Mfg. Co., Ltd.)			

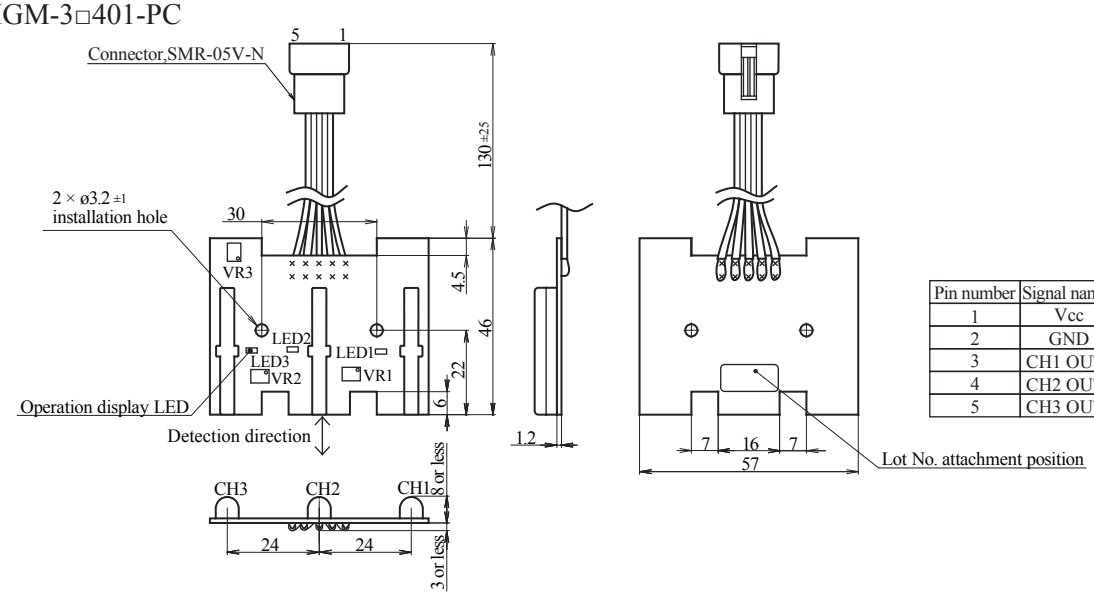
External dimensions diagram

MGM-3□401-MC



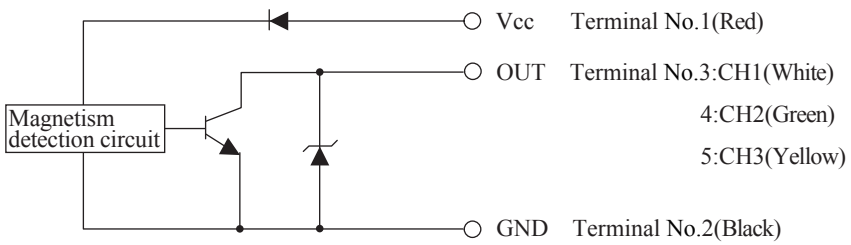
Pin number	Signal name	Wire color
1	Vcc	Red
2	GND	Black
3	CH1 OUT	White
4	CH2 OUT	Green
5	CH3 OUT	Yellow

MGM-3□401-PC



Pin number	Signal name	Wire color
1	Vcc	Red
2	GND	Black
3	CH1 OUT	White
4	CH2 OUT	Green
5	CH3 OUT	Yellow

Output circuit



Usage precautions

1. The detection characteristics will vary if magnetism generating devices, such as inverters or motors, are near the electromagnetic sensor installation location. Check the characteristics before using the sensor.
2. MGM-3□401-PC: Use non-magnetic metal for the installation screw and the casing.
3. MGM-3□401-PC: When using a metal casing, pay attention that the PCB and the parts do not contact.
4. MGM-3□401-PC: Note that the sensor may not operate correctly when the sensitivity is high due to ambient temperature change and electromagnetic noise.
5. See General usage precautions for automatic guided vehicles electromagnetic sensors for other precautions.

*For a detailed specification of the other, please refer to specifications.