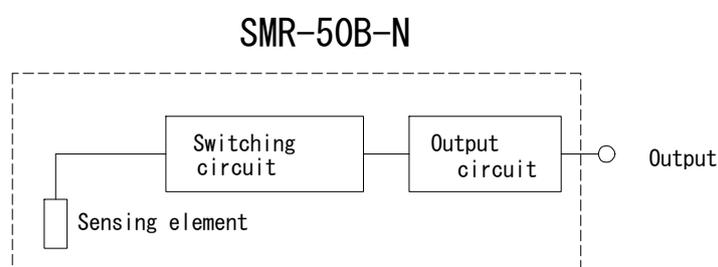


## ***SMR-50B-N Spot Mark Reader*** **INSTRUCTIONS**

### 1. Summary

SMR-50B-N is designed for reading Address Mark Magnet SMG-100N (N-pole is up. /Yellow laminate), that will be installed at stopping position or at a branch of magnetic navigation type AGV. By accumulating each Address Mark Magnet, an AGV recognizes its location on the AGV route.



Address Mark Magnet (N-pole surface/SMG-100N)

### Internal constructions

### 2. Specifications

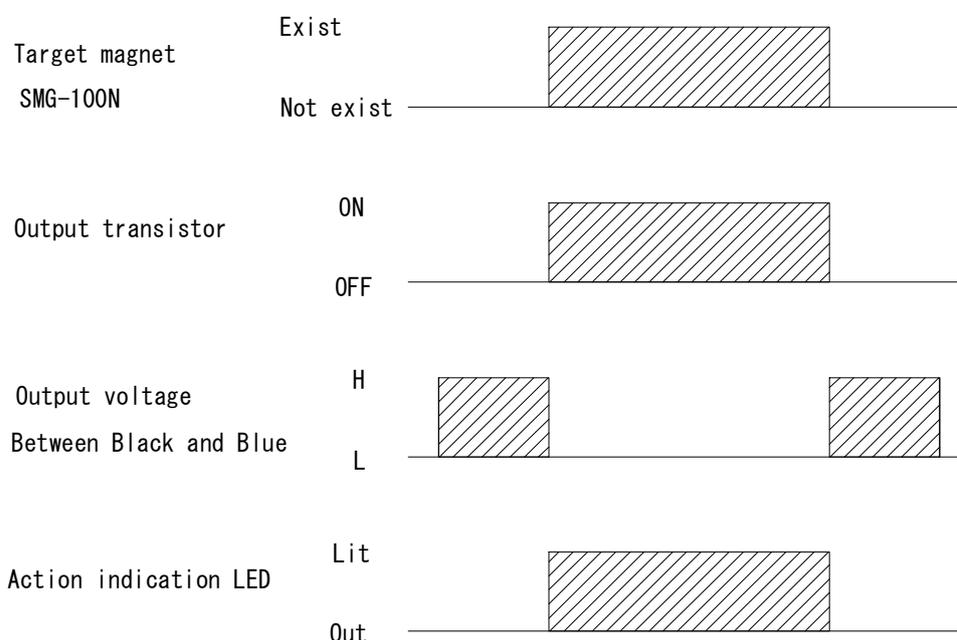
Item	Content
Power supply	DC+10 V to +30V, ripple 1% max.
Power consumption	15mA max.
Operation temperature	from -10 to +60°C
Operation humidity	from 35% to 95%RH (avoid dew condensation)
Storage temperature	from -20 to +70°C
Operation humidity	from 35% to 95%RH (avoid dew condensation)
Housing	IP-54 (IEC standard)
Operation Air gap	from 15 to 40mm (with SMG-100N) ※1
Target Magnet	SMG-100N (N-pole up)
Sensitivity	0.5mT±0.1mT and over (N-pole/at 25°C) ※2 (Will be operated by S-pole of 8mT and over)
Hysteresis	0.2mT max. ※2
Stability for Power supply	±0.1mT max. (fluctuation from DC+10V to +30V)
Stability for Temperature	±0.15mT max. (fluctuation from -10°C to +60°C)

Output Circuit	NPN open collector (Normally open)
Output Capacity	DC 30V max. sink current 100mA max (Residual voltage 1V max.)
Response	1ms max.
Output code	φ5 Oil & cold resistant cord 0.3mm <sup>2</sup> Insulator & sheath; heat-resistant PVC
Lead color	Brown; DC+10 to 30V Blue; 0V Black; Output

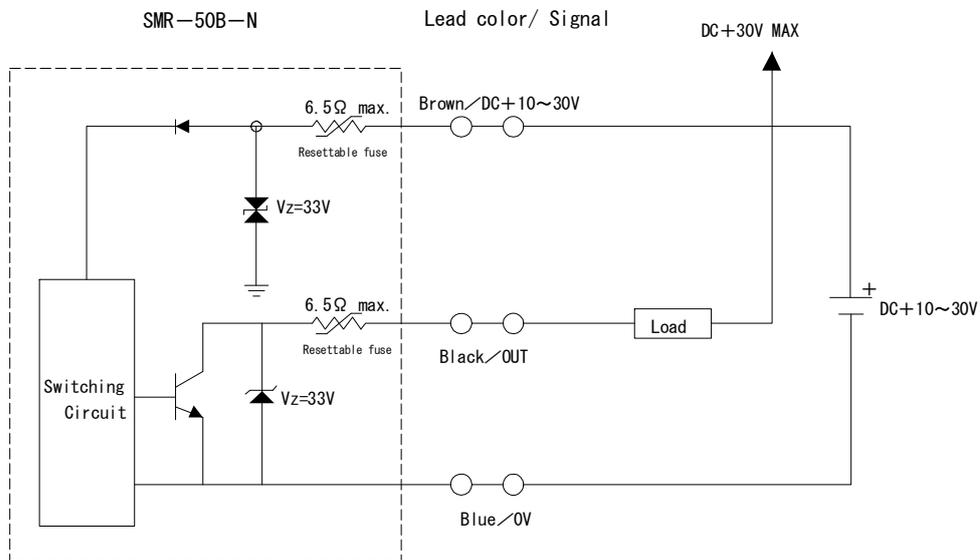
※ 1. SMR-50B-N may detects SMG-100S (S-pole upper faced magnet) when SMR-50B-N approaches much closer to it. Since opposite polarity (N-pole) may exist on both outsides of SMG-100S's edge, and the magnetic flux density (N-pole) may strong enough to operate SMR-50B-N.

※ 2. The value is measured by MACOME in-house apparatus.

Output time chart

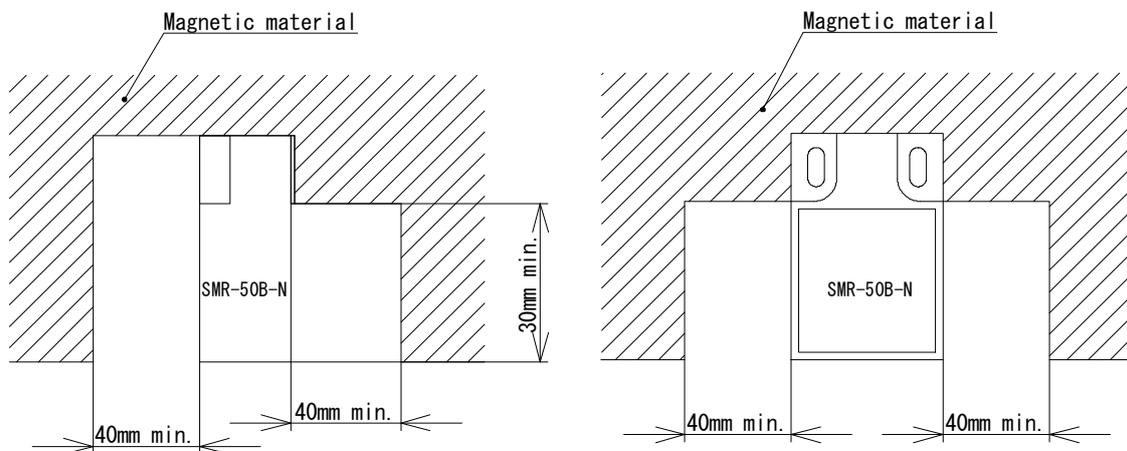


### 3. Wiring



### 4. Mounting

(1) SMR-50B-N should keep distance from magnetism generators such as a motor. Vicinity of magnetic material may cause SMR-50B-N inaccurate output. In case of mounting SMR-50B-N on magnetic material, keep distance from the material as follows.



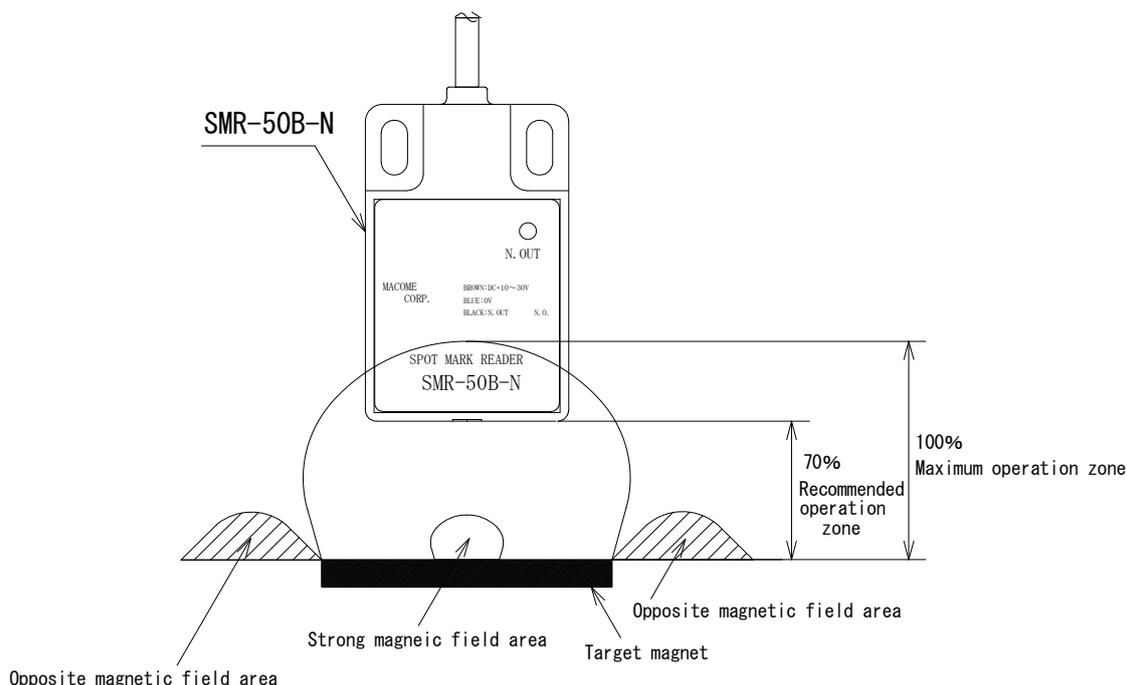
(2) Recommended air gap

Applicable operation zone with SMR-100N is 15~40mm.

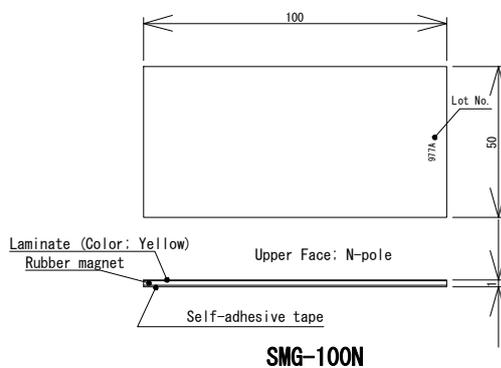
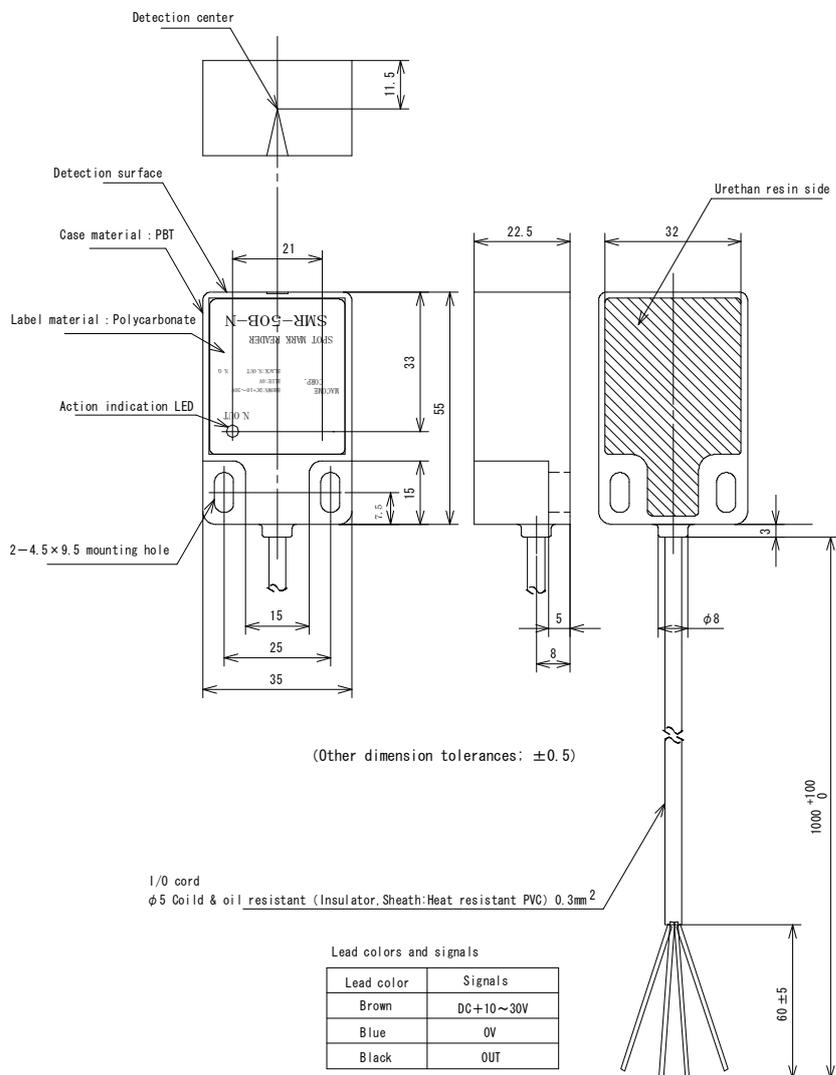
In case of mating with other magnet;

1. Operation air gap should be within 70% of the maximum operation zone.
2. Strong magnetic field area may exist in a center of the magnet. SMR-50B-N will operate in an opposite strong magnetic field which is more than 8mT.
3. Opposite magnetic field also may exist at edges of the magnet.

Arrange proper operation air gap in case of mating with other magnets.

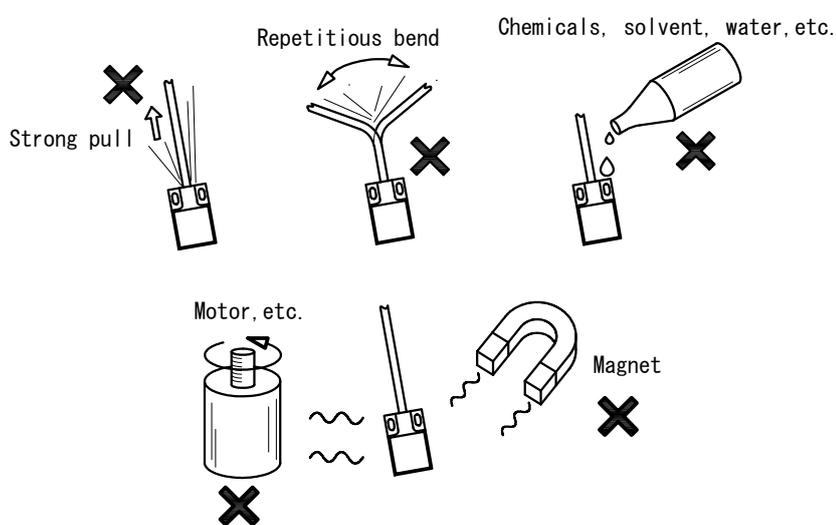


## 5. External Dimensions



## 6. Notices

- Wire the output cord separately from power line.
- Strong tension or repeatable bending to the output cord may cause snapping of wires.
- Keep away for water since the housing is neither water nor splash proof.
- Keep away from solvent chemicals (acetone, thinner) since a case or a cord may deformed by those substances.



## 7. Warranty

Goods are warranted (exchange or repair) return to factory basis against defects in workmanship and material for a period of one year from a date of delivery.

The damage caused by following reasons is out of the warranty.

- (1) Inappropriate installation and usage.
- (2) Abnormal effect from peripheral equipment.
- (3) Alternation or repair without us.
- (4) Force majeure.

The Induced damage is out of the warranty.

## 8. Range of service

Prices on the price list are not including following fees. Consult us for the fees.

- (1) Adjustment, instruction and presence at installation.
- (2) Maintenance and repair.
- (3) Technical advice and training.

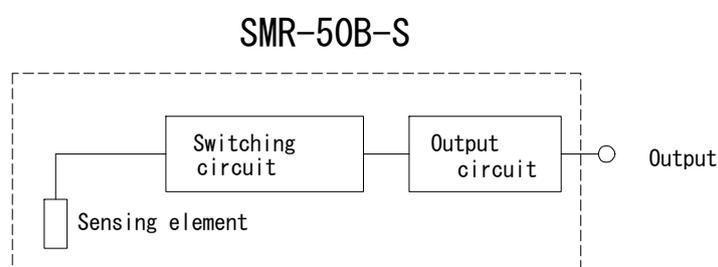
\* Specifications are subject to change without notice. \*

		承認	作成
図番	SMR-50B-01D-EN0		
作成日	April 2, 2010		

## ***SMR-50B-S Spot Mark Reader*** **INSTRUCTIONS**

### 1. Summary

SMR-50B-S is designed for reading Address Mark Magnet SMG-100S (S-pole is up. /Green laminate), that will be installed at stopping position or at a branch of magnetic navigation type AGV. By accumulating each Address Mark Magnet, an AGV recognizes its location on the AGV route.



Address Mark Magnet (S-pole surface/SMG-100S)

### Internal constructions

### 2. Specifications

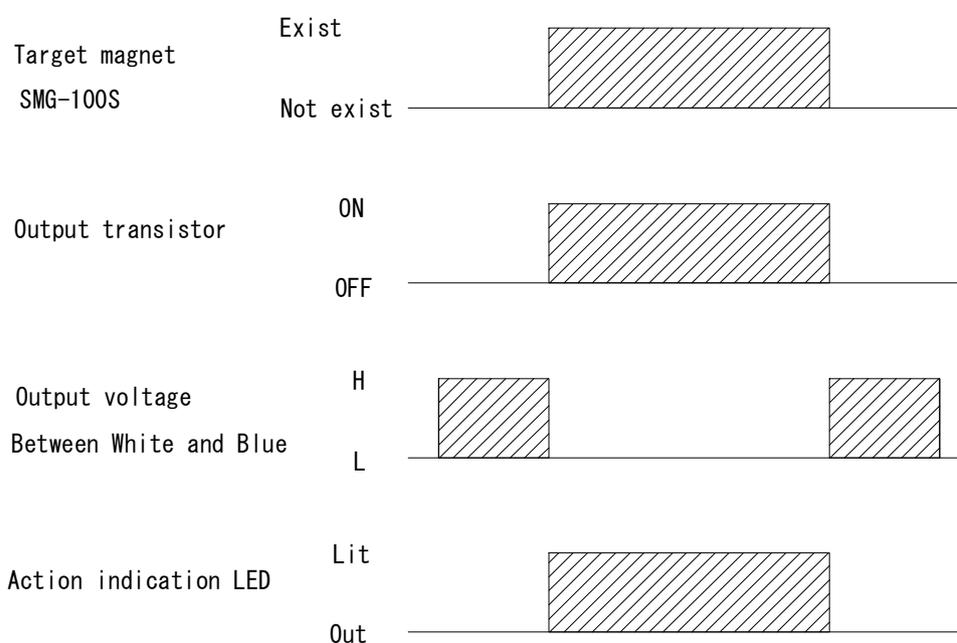
Item	Content
Power supply	DC+10 V to +30V, ripple 1% max.
Power consumption	15mA max.
Operation temperature	from -10 to +60°C
Operation humidity	from 35% to 95%RH (avoid dew condensation)
Storage temperature	from -20 to +70°C
Operation humidity	from 35% to 95%RH (avoid dew condensation)
Housing	IP-54 (IEC standard)
Operation Air gap	from 15 to 40mm (with SMG-100S) ※1
Target Magnet	SMG-100S (S-pole up)
Sensitivity	0.5mT±0.1mT and over (S-pole/at 25°C) ※2 (Will be operated by N-pole of 8mT and over)
Hysteresis	0.2mT max. ※2
Stability for Power supply	±0.1mT max. (fluctuation from DC+10V to +30V)
Stability for Temperature	±0.15mT max. (fluctuation from -10°C to +60°C)

Output Circuit	NPN open collector (Normally open)
Output Capacity	DC 30V max. sink current 100mA max (Residual voltage 1V max.)
Response	1ms max.
Output code	φ5 Oil & cold resistant cord 0.3mm <sup>2</sup> Insulator & sheath; heat-resistant PVC
Lead color	Brown; DC+10 to 30V Blue; 0V White; Output

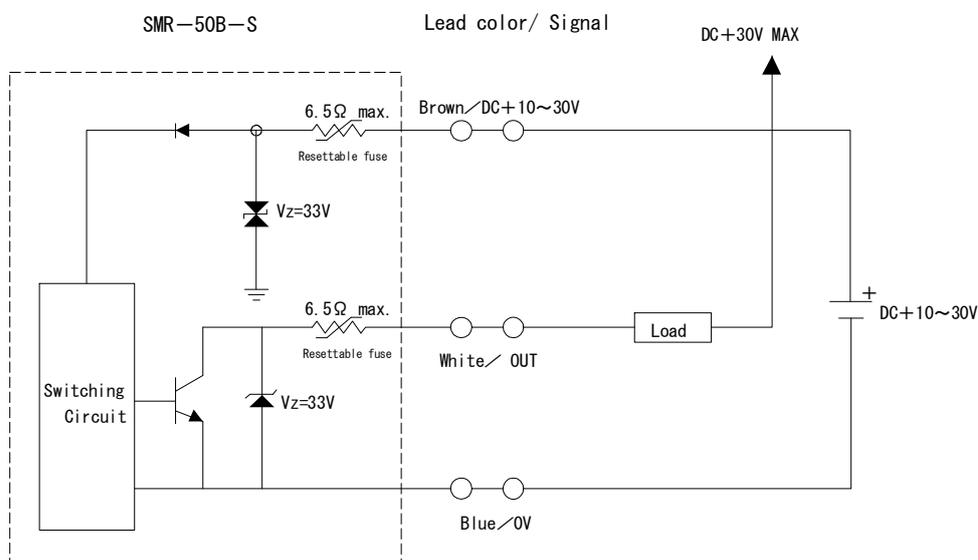
※ 1. SMR-50B-S may detects SMG-100N (N-pole upper faced magnet) when SMR-50B-S approaches much closer to it. Since opposite polarity (S-pole) may exist on both outsides of SMG-100N's edge, and the magnetic flux density (S-pole) may strong enough to operate SMR-50B-S.

※ 2. The value is measured by MACOME in-house apparatus.

Output time chart

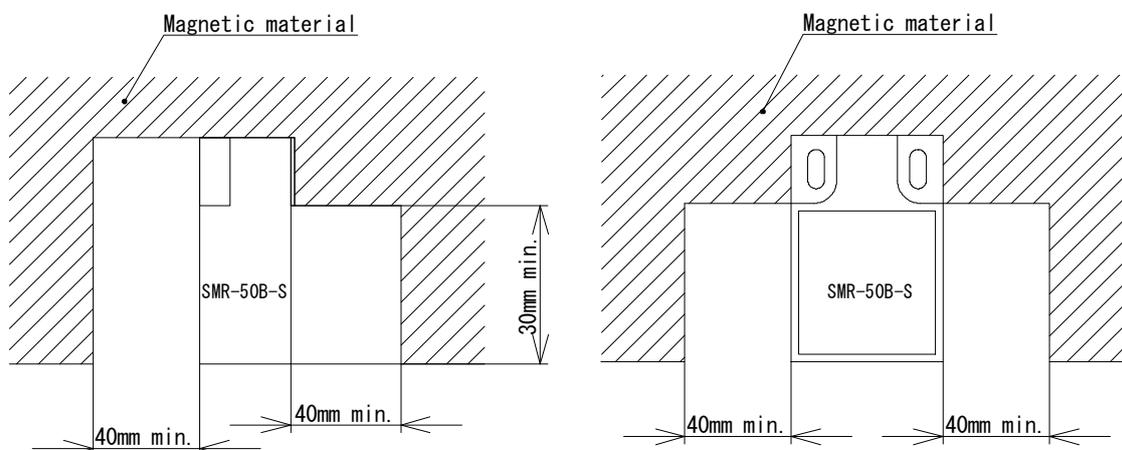


### 3. Wiring



### 4. Mounting

(1) SMR-50B-S should keep distance from magnetism generators such as a motor. Vicinity of magnetic material may cause SMR-50B-S inaccurate output. In case of mounting SMR-50B-S on magnetic material, keep distance from the material as follows.



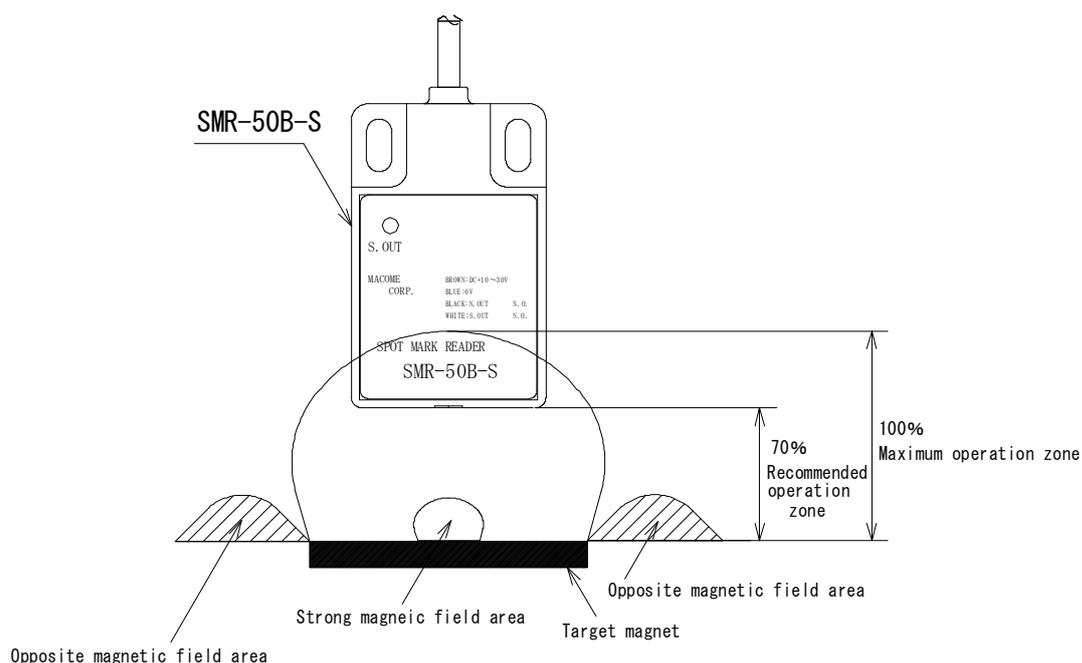
(2) Recommended air gap

Applicable operation zone with SMR-100S is 15~40mm.

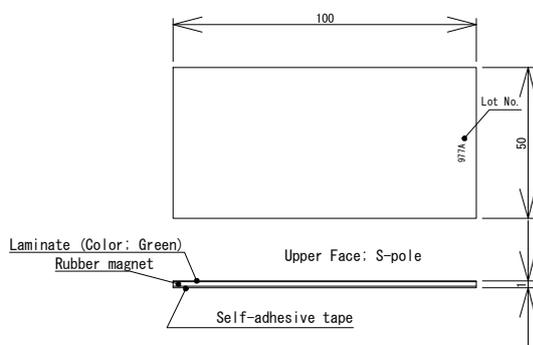
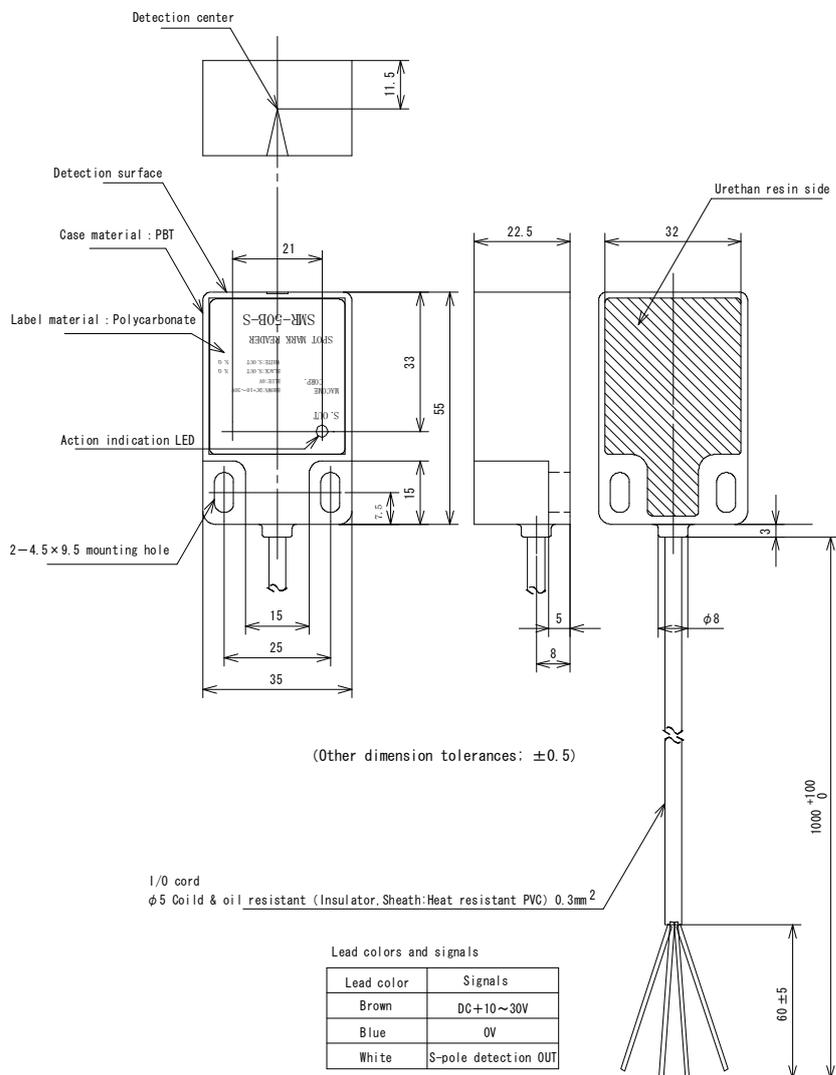
In case of mating with other magnet;

1. Operation air gap should be within 70% of the maximum operation zone.
2. Strong magnetic field area may exist in a center of the magnet. SMR-50B-S will operate in an opposite strong magnetic field which is more than 8mT.
3. Opposite magnetic field also may exist at edges of the magnet.

Arrange proper operation air gap in case of mating with other magnets.



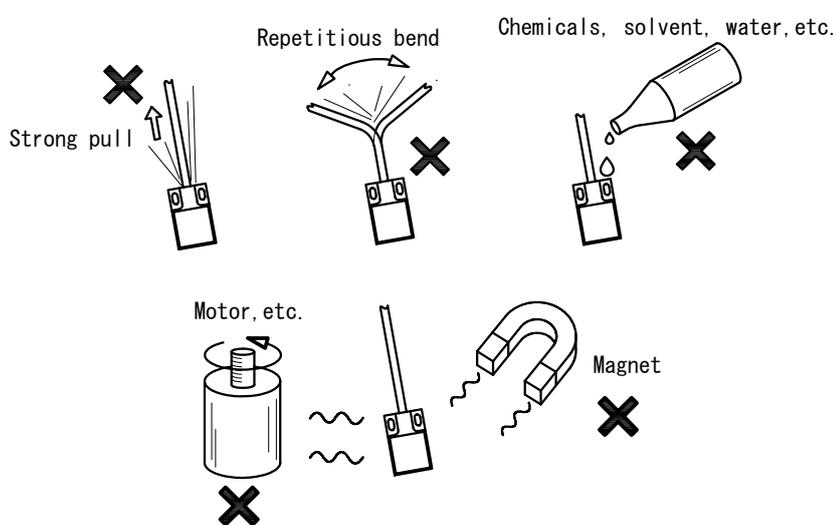
## 5. External Dimensions



**SMG-100S**

## 6. Notices

- Wire the output cord separately from power line.
- Strong tension or repeatable bending to the output cord may cause snapping of wires.
- Keep away for water since the housing is neither water nor splash proof.
- Keep away from solvent chemicals (acetone, thinner) since a case or a cord may deformed by those substances.



## 7. Warranty

Goods are warranted (exchange or repair) return to factory basis against defects in workmanship and material for a period of one year from a date of delivery.

The damage caused by following reasons is out of the warranty.

- (1) Inappropriate installation and usage.
- (2) Abnormal effect from peripheral equipment.
- (3) Alternation or repair without us.
- (4) Force majeure.

The Induced damage is out of the warranty.

## 8. Range of service

Prices on the price list are not including following fees. Consult us for the fees.

- (1) Adjustment, instruction and presence at installation.
- (2) Maintenance and repair.
- (3) Technical advice and training.

\* Specifications are subject to change without notice. \*

		承認	作成
図番	SMR-50B-08D-EN0		
作成日	April 2, 2010		