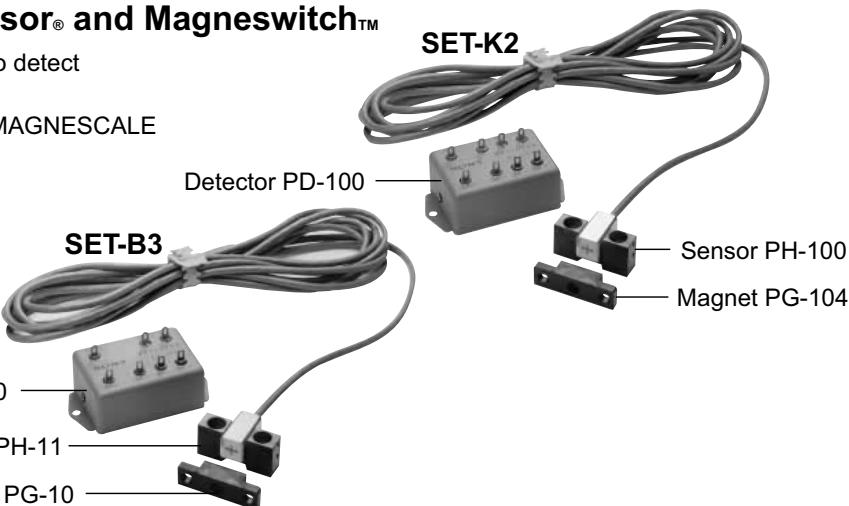


SET-B3/SET-K2

Magnesensor® / Magneswitch™

High accuracy non-contact Magnesensor® and Magneswitch™

- Magnesensor SET-B3 can be used as a zero point or to detect small displacements.
- Magneswitch SET-K2 can be used as a zero point for MAGNESCALE and rotary encoders.
- Excellent resistance to workshop conditions.
- Compact and lightweight. Non-contact design.
- Repeatability: $\pm 1 \mu\text{m}$
- Max response frequency: 1.7 kHz
- Output signal: analog (SET-B3) / pulse (SET-K2)
- Power supply: +12 V DC

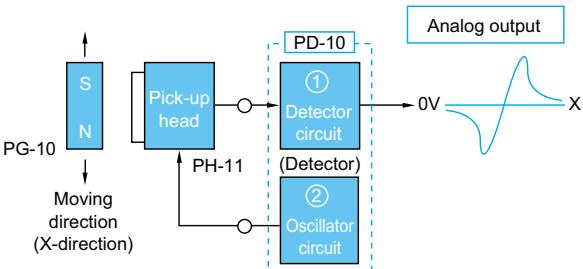


■ Specifications

Model	Magnesensor SET-B3	Magneswitch SET-K2
Repeatability	$\pm 1 \mu\text{m}$ (under same conditions) (Note1)	
Operating range	—	$8 \pm 1 \text{ mm} / 0.31 \pm 0.04"$ (at 0.5 mm/ 0.019" clearance) (Note4)
Clearance	Max. 2.5 mm/ 0.09"	Max. 3 mm/ 0.11"
Max. response frequency	1.7 kHz (Note2)	max.delay: 0.1 ms (Note2)
Power supply	+12 V DC $\pm 5\%$	+12 V DC $\pm 10\%$
Power consumption	Max. 40 mA	Max. 20 mA
Output impedance	3 k Ω	12 k Ω
Temperature characteristics	0.3 $\mu\text{m}/ ^\circ\text{C}$ (zero drift)	0.8 $\mu\text{m}/ ^\circ\text{C}$ (Note5)
Voltage characteristics	0.2 μm or less/ % (zero drift)	8 $\mu\text{m}/\text{V}$
Operating temperature	-10°C to 50°C/ 14°F to 122°F	
Cable length (sensor)	3 m/ 9.8' (extendable up to 15 m/ 49.2' by MSK-5000) (Note3)	3 m/ 9.8' (extendable up to 30 m/ 98' by MSK-5000) (Note3)
Cable length (detector)	Max. 100 m/ 328.0' by MSK-5100	Max. 20 m/ 65.6' by MSK-5100

■ Configuration

Magnesensor SET-B3

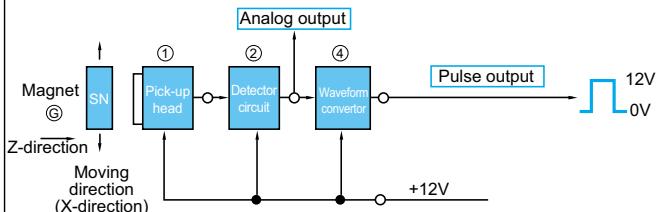


Note 1 Repeatability conditions: temperature change within $\pm 1.2^\circ\text{C}$, voltage change within $\pm 0.12 \text{ V}$, clearance change less than $3 \mu\text{m}$, speed change less than 10 mm/s.

Note 2 Response speed conditions: response frequency 1.7 kHz, which is an input signal frequency where the relative output level drops by 3 dB. Max.response speed is about 9 m/s when the standard PG-10-910 magnet is used.

Note 3 Cable extension: Output voltage decreases about 2.3 %/m by cable extension.

Magneswitch SET-K2



*Analog output checker MSA-3 is also available

Accuracy	1 μm	5 μm	10 μm
Pulse	10mm/s	50mm/s	100mm/s

Max.speed change at the time of position detection at a constant speed.

Note 1 Repeatability: indicates the accuracy of the position at which the pulse output goes ON. Conditions for $\pm 1 \mu\text{m}$ are: clearance 0.5 mm, temperature change within $\pm 1.2^\circ\text{C}$, voltage change within $\pm 0.12 \text{ V}$, clearance change less than $3 \mu\text{m}$, speed change less than 10 mm/s.

Note 2 Response speed Max. delay 0.1 m/s

This is a proper time constant of the detector circuit and indicates a max. delay (T) from detection to pulse output rise. Max. response speed is l/T where l is a practically allowable detection tolerance. When the detector's proper time constant is taken into account in use, the time delay is negligible. (e.g.: the detector head and magnet are operated at the same speed.) The detector element's max. response speed is 10 MHz.

Note 3 When extending the cable, check the noise caused by external equipment.

Note 4 Clearance affects the operating range and repeatability.

Note 5 Watch the temperature characteristics.

