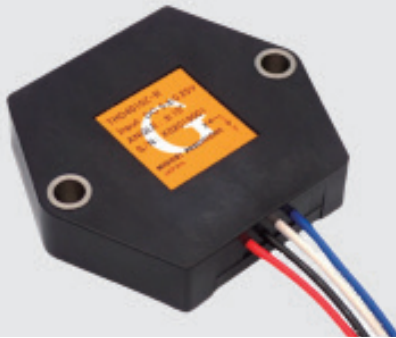


DIGITAL FILTER AND LOW-COST ENVIRONMENTAL RESISTANCE INCLINOMETERS MEMS TILT ANGLE SENSOR

THD4000Z series

RoHS compliant

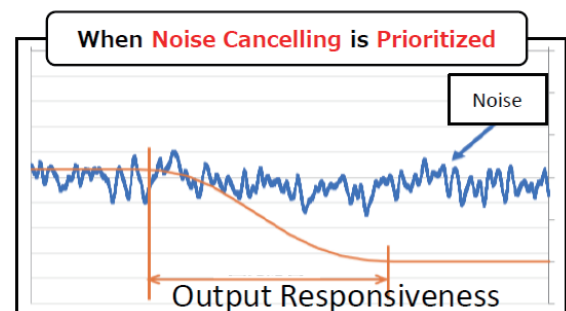
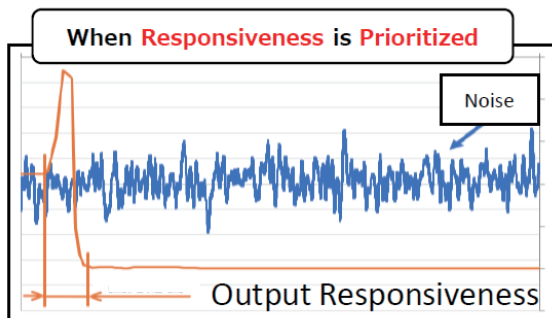


FEATURES

- Environmental Resistance
 - Waterproof/Dustproof: IP67
 - Electromagnetic Immunity: 100 V/m
 - Vibration Suppression Using a Digital Filter
- High Precision
 - Absolute Linearity: $\pm 1\%$ FS
 - Horizontal Temperature Characteristics: $\pm 0.2^\circ$
- Customizable
 - Selectable Effective Tilt Angle: $\pm 10^\circ$ to $\pm 60^\circ$
 - Horizontal Output Zero-Setting Function (Optional)

DIGITAL FILTER FEATURE

General Filters

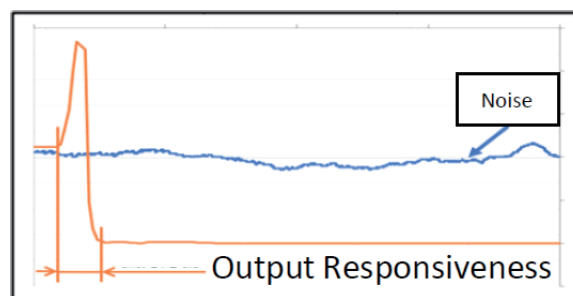


Trade-off between responsiveness and noise cancellation



Improvement

THD4000 Series

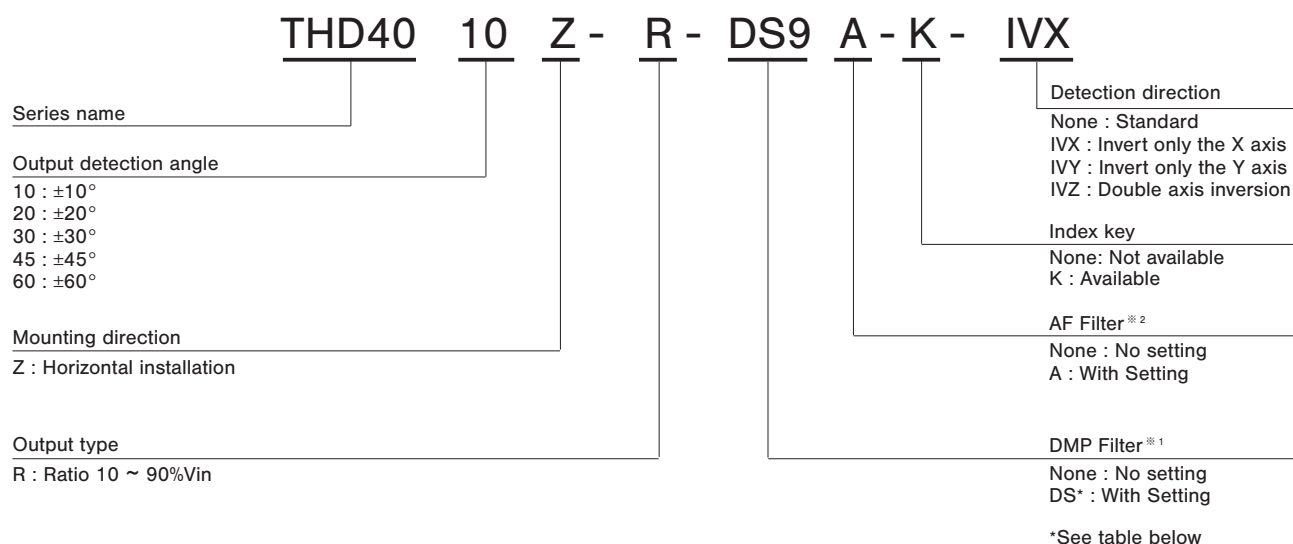


Simultaneous High Responsiveness and Noise Cancellation

THD4000Z

INCLINOMETERS

■ PART NUMBER DESIGNATION



※ 1 : Option to suppress braking vibration noise. Selecting 'None' outputs the raw characteristics of the MEMS accelerometer.

※ 2 : Option to suppress low frequencies beyond DMP filter capability. Improves tilt angle stability when stationary.

Part No.	Level	Cut-off frequency	Time constant
None	0	—	100 ms
DS1	1	9.3 Hz	120 ms
DS2	2	7.7 Hz	120 ms
DS3	3	6.3 Hz	130 ms
DS4	4	5.2Hz	130 ms
DS5	5	4.3 Hz	140 ms
DS6	6	3.6 Hz	150 ms
DS7	7	2.9 Hz	160 ms
DS8	8	2.4 Hz	180 ms
DS9	9	2.0 Hz	200 ms (Standard)
DSA	10	1.7 Hz	220 ms
DSB	11	1.4 Hz	260 ms
DSC	12	1.2 Hz	290 ms
DSD	13	0.9 Hz	360 ms
DSE	14	0.8 Hz	410 ms
DSF	15	0.6 Hz	490 ms

THD4000Z

INCLINOMETERS

STANDARD SPECIFICATIONS

Electrical characteristics

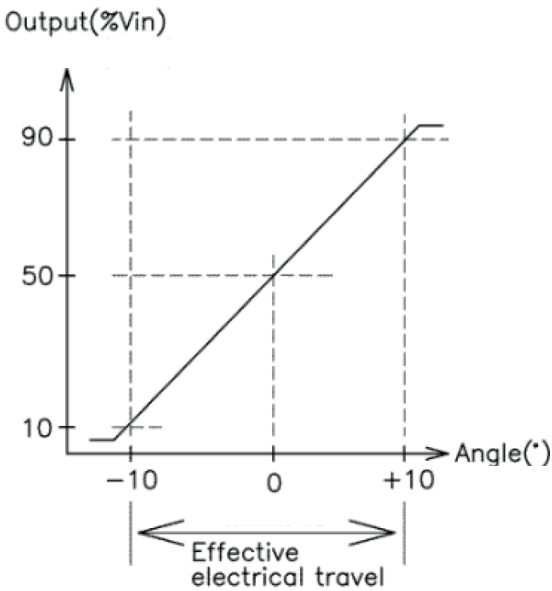
Effective Tilt Angle	$\pm 10^{\circ}$, $\pm 20^{\circ}$, $\pm 30^{\circ}$, $\pm 45^{\circ}$, $\pm 60^{\circ}$
Absolute Linearity	$\pm 1\%FS$
Input Voltage	5 ± 0.25 VDC
Output Signal	Ratiometric Voltage
Output Range	10 ~ 90%Vin
Temperature Characteristics	$\pm 0.2^{\circ}$ (Horizontal)
Dimensions	W69.5 × H16 × D60 mm
Moutning	M6 mounting screws AWG#20 wire 4 strand

Environmental characteristics

Operating Temperature	-30 ~ 85°C
Electromagnetic Wave Resistance	100 V/m (ISO11452-2, -3)
Radiated Field Strength	CISPR25
ESD	± 16 kV (IEC61000-4-2)
IP Rating	IP67

OUTPUT CHARACTERISTICS

(e.g., Effective Tilt Angle = $\pm 10^{\circ}$)

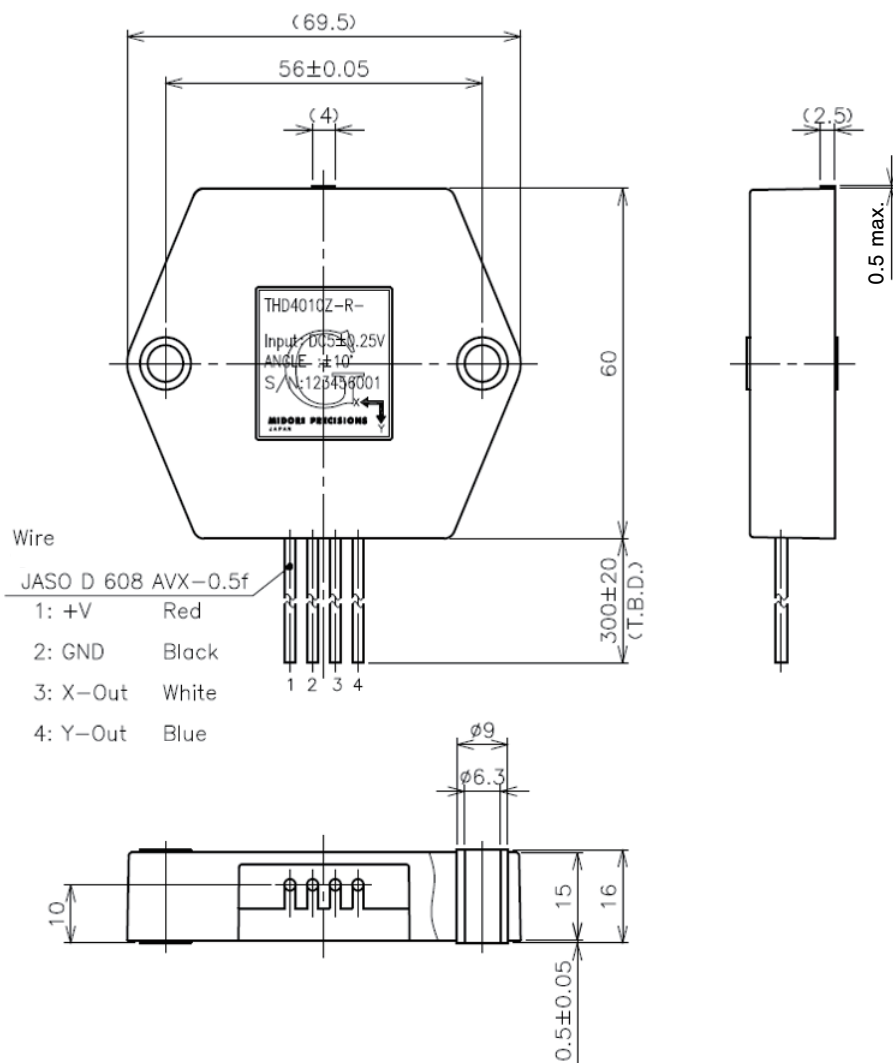


THD4000Z

INCLINOMETERS

OUTLINE DIMENSIONS

(Unit:mm)



TILT DIRECTION (e.g., Effective Tilt Angle = $\pm 10^\circ$)

