

Electrostatic capacitance detection sensor 1-axis acceleration sensor

GF1



Direct mount



Bracket

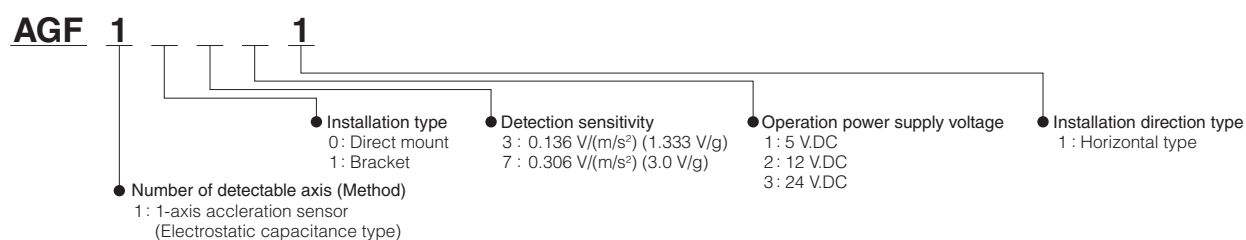
Features

- High precision, High reliability : Superior offset voltage temperature characteristics (± 33 mg (Typ.))
- High sensitivity : 1.333 to 3.0 V/g
- Compact size : 58×36.5×33 mm 2.283×1.437×1.299 inch (Direct-mount type)
- RoHS compliant

Typical Applications

- Automobiles : 4WD-ABS control, neutral control, idling stop system and suspension control
- Special vehicles : Inclination detection (for enhanced safety and operating efficiency) of agricultural machine, construction machine and welfare vehicles
- Photovoltaic generation : Sun tracking panels

Ordering Information



Product Types

Carton : 80 pcs. (Bracket), 150 pcs. (Direct mount)

Product name	Operation power supply voltage	Acceleration detection range	Detection sensitivity	Installation type	Part number
1-axis acceleration sensor GF1	5 V.DC	± 11.76 m/s ² (± 1.2 g)	0.136 V/(m/s ²) (1.333 V/g)	Bracket	AGF11311
		± 4.9 m/s ² (± 0.5 g)	0.306 V/(m/s ²) (3.0 V/g)	Direct mount	AGF10711
	12 V.DC	± 11.76 m/s ² (± 1.2 g)	0.136 V/(m/s ²) (1.333 V/g)	Direct mount	AGF10321
		± 4.9 m/s ² (± 0.5 g)	0.306 V/(m/s ²) (3.0 V/g)	Direct mount	AGF10721
	24 V.DC	± 11.76 m/s ² (± 1.2 g)	0.136 V/(m/s ²) (1.333 V/g)	Direct mount	AGF10331
		± 4.9 m/s ² (± 0.5 g)	0.306 V/(m/s ²) (3.0 V/g)	Direct mount	AGF10731

Absolute Maximum Ratings

Product name		Unit	Absolute maximum ratings			Remarks
			AGF1□□11 (Power supply: 5 V.DC type)	AGF1□□21 (Power supply: 12 V.DC type)	AGF1□□31 (Power supply: 24 V.DC type)	
Maximum allowable voltage		V.DC	7	16	30	Max. Ta=25 °C 68 °F
Maximum applied acceleration	AGF1□3□1	g	15			Max.
	AGF1□7□1		5			Max.
Storage temperature range		°C °F	-30 to 85 -22 to 185			
Operation temperature range		°C °F	-30 to 85 -22 to 185			
Anti-shock characteristic		g	5,000			Max.
Grade of protection *			IP67			

Note : * Performance when matching connector is connected.

Electrical Characteristics

● AGF1□3□1 (Sensitivity : 1.333 V/g type)

Item	Unit	Performance			Remarks
		AGF1□□11 (Power supply: 5 V.DC type)	AGF1□□21 (Power supply: 12 V.DC type)	AGF1□□31 (Power supply: 24 V.DC type)	
Operation power supply voltage	V.DC	5 V.DC±5 %	12 V.DC±10 %	24 V.DC±10 %	−30 °C to +85 °C −22 °F to +185 °F
Acceleration detection range *1	g (°)	±1.2 (90)			
Current consumption	mA	10	15		0g, Ta=20 °C 68 °F, Max
Sensitivity	V/g	1.333±3 %			−30 °C to +85 °C −22 °F to +185 °F
Offset voltage (0g)	V	2.5±0.1			Ta=20 °C 68 °F
Offset voltage temperature characteristic	V	±0.093			−30 °C to +85 °C −22 °F to +185 °F
Other axis sensitivity	%	±5			Ta=20 °C 68 °F
Non-linearity *2	%FS	±1			Ta=20 °C 68 °F
Frequency response	Hz	10 to 15			−3 dB point
Clamping voltage VH *3	V	4.5	−	−	Typ.
Clamping voltage VL *3	V	0.5	−	−	Typ.

● AGF1□7□1 (Sensitivity : 3.0 V/g type)

Item	Unit	Performance			Remarks
		AGF1□□11 (Power supply: 5 V.DC type)	AGF1□□21 (Power supply: 12 V.DC type)	AGF1□□31 (Power supply: 24 V.DC type)	
Operation power supply voltage	V.DC	5 V.DC±5 %	12 V.DC±10 %	24 V.DC±10 %	−30 °C to +85 °C −22 °F to +185 °F
Acceleration detection range *1	g (°)	±0.5 (30)			
Current consumption	mA	10	15		0g, Ta=20 °C 68 °F, Max.
Sensitivity	V/g	3.0±3 %			−30 °C to +85 °C −22 °F to +185 °F
Offset voltage (0g)	V	2.5±0.1			Ta=20 °C 68 °F
Offset voltage temperature characteristic	V	±0.21			−30 °C to +85 °C −22 °F to +185 °F
Other axis sensitivity	%	±5			Ta=20 °C 68 °F
Non-linearity *2	%FS	±1			Ta=20 °C 68 °F
Frequency response	Hz	10 to 15			−3 dB point
Clamping voltage VH *3	V	4.5	−	−	Typ.
Clamping voltage VL *3	V	0.5	−	−	Typ.

Note : *1 The acceleration unit "g" means 9.8 m/s².

*2 Maximum error from linear output that connects +1.2 g and −1.2 g output. (AGF1□3□1)

Maximum error from linear output that connects +0.5 g and −0.5 g output. (AGF1□7□1)

*3 The 12 V and 24 V.DC operating power supply voltage types can also be compatible with the clamping voltage. Please consult us.