Tilt sensors

Low cost, AN Series

- High performance, 1-Axis and 2-Axis tilt sensors.
- Low cost.
- High input voltage.
- Build around proven iMEMS technology.
- Analog and serial outputs available.

Applications

- Laser levelling
- Equipment monitoring
- Instrumentation

AN Series

The AN Series of low cost tilt sensors offer an easy way to measure inclination from ±40°. Available in 1-Axis or 2-Axis configuration, they target applications from levelling to equipment monitoring. The AN Series can be fited in any testing instrument where **level** or **acceleration** has to be measured. Build around the proven iMEMS technology, the AN Series of tilt sensors offer performances comparable to traditional tilt sensors but at lower cost.

The AN Series sensors output a direct analog voltage, which can be interfaced to an A/D or other data acquisition hardware without the use of any external signal conditioning electronics. Available as options, the AN Series offers RS-232 or RS-485 half-duplex serial communication link (TTL level). Measurement can then be read using a simple communication protocol.

The AN Series is offered with a 4-pin or 8-pin DIN plug connector depending on selected options. The shielded cable prevents noise from affecting measurements outputs. High input voltage range is available to be compatible with most 42V and higher applications.

Connector

Pin	Color	4-pins (Without –C option)[1]	8-pins (With –C1 option)[2]	8-pins (With –C2 option)[2]
1	Black	Ground	Ground	Ground
2	White	Pitch axis Out	Pitch axis Out	Pitch axis Out
3	Red	Power In	Power In	Power In
4	Green	Roll axis Out	Roll axis Out	Roll axis Out
5	Orange		NC	NC
6	Blue		Communication TX output	Communication TX output
7	White/Black		Communication RX input	Communication RX input
8	Red/Black		NC	RS-485 direction output

1- Singatron Enterprises YE-1154
2- Singatron Enterprises YE-1158a

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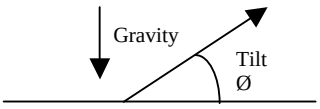
Principle of operation



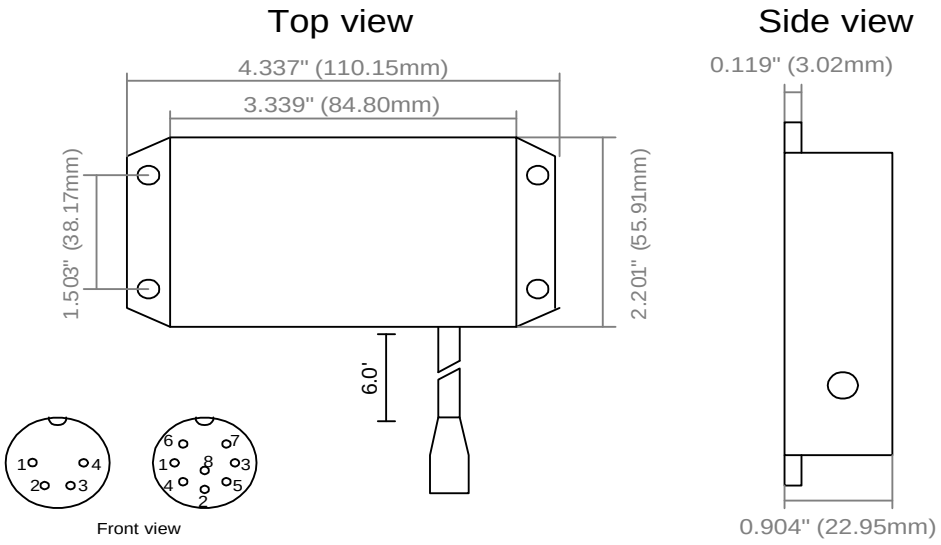
Tilt sensors output voltage varies in accordance with inclination relative to gravity. When sensor is parallel to the earth's surface, output tilt in degree is calculated as follows:

$Ø = SIN^{-1} (Vout / 1.841)$

Refer to application note AN-03028-01 for details about serial communication.

Specifications	Without –C option	With –C option
Performance		
Linear angular range (°)	± 40	± 40
Acceleration range (g)	± 2	±2
Sensitivity (mV/g)	191 ± 29	191 ± 29
Transversal Sensitivity (% Span)	± 2	± 2
Non-Linearity (% FS)	± 0.2	± 0.2
Alignment Error (deg)	± 1	± 1
Bandwidth (Hz)	DC - 100	DC - 100
Environment		
Operating Temp Range (°C)	0 to 70°C	0 to 70°C
Electrical		
Supply Voltage (Volts)		
L: suffix	+ 3.3 to 16	+ 3.3 to 16
H: suffix	+ 10 to 60	+ 10 to 60
Supply Current (mA)	4	7
Zero angle output (Volts)	1.65	1.65
Span output (Volts)	0.764	0.764
Output Current (mA)	125	125
Physical		
Size (In)	3.3 x 2.2 x 0.96	3.3 x 2.2 x 0.96
(mm)	85 x 56 x 25	85 x 56 x 25

Mechanical



Ordering Information

GS311ANvx(-Option)

v = Input voltage L=Low voltage H=High voltage
x = Axis configuration 1=Pitch 2=Roll 3=Pitch and Roll

Communication options (L3/H3 only)
-C1 = RS-232
-C2 = RS-485 half-duplex

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