

# SSA100 Vibration Sensor

## Features

- Real-time FFT analysis inside, output amplitude and frequency data
- MEMS acceleration sensor, single / double / three axis optional
- Max acceleration range  $\pm 16g$ , vibration frequency range  $0 \sim 1.0kHz$
- Cross-axis sensitivity  $\leq \pm 1.5\%FS$ , optional  $\pm 1\%FS$ ,  $\pm 0.5\%FS$ ,  $\pm 0.1\%FS$
- Non-linearity  $\leq 0.5\%FS$
- Acceleration or vibration frequency alarm threshold can be set
- Built in high pass filter, optional low pass filter or bandpass filter



## Descriptions

SSA100, built in on-line FFT analysis, directly outputs single/double/three axis vibration frequency and acceleration data via RS232/RS485/RS422/CAN2.0/CANopen/Ethernet. It can help you to understand and grasp the vibration condition of the measured object in real time and accurately, without the need of expensive data acquisition equipment and analysis software which are not suitable for the working environment on site. SSA100 has built-in high-speed processing chip, which can collect, process and analyze the original vibration acceleration signal and frequency signal in real time. The whole data processing process only needs 1 ms. At the same time, the cross-axis error sensitivity of SSA100 is less 1.5%FS,  $\leq 1.0\%FS$ ,  $\leq 0.5\%FS$  and  $\leq 0.1\%FS$  are optional according to user's needs. SSA100 is a cost-effective vibration measurement product which has higher actual measurement accuracy than the same kind of vibration sensor (the cross-axis sensitivity error is generally about  $\pm 3\%FS$ ).

## Applications

- |                                   |                          |                          |
|-----------------------------------|--------------------------|--------------------------|
| - Engineering machinery           | - Automobile             | - Shipping               |
| - Radar/antenna motion monitoring | - Factory automation     | - Railway transportation |
| - Scientific research & teaching  | - Civil Engineering, etc |                          |

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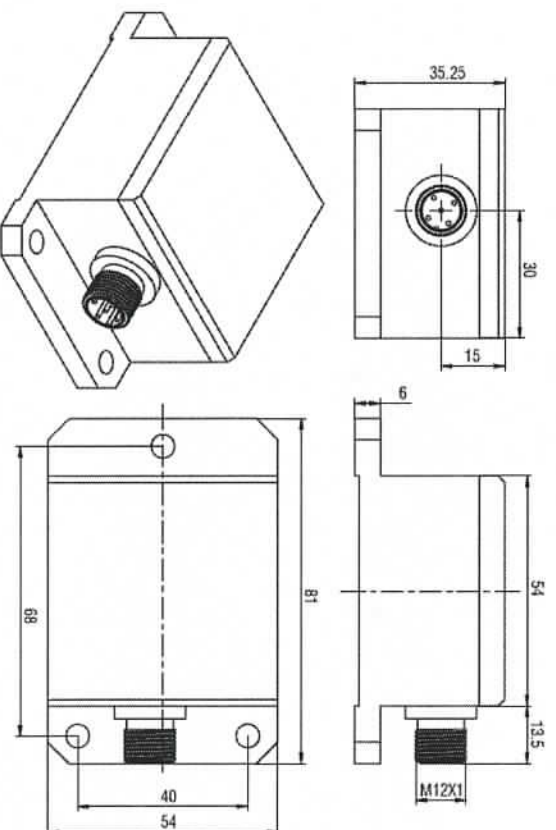
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# Performances

Table 1 Specifications

Acceleration measurement	Range	±1g	±2g	±4g	±8g	±16g
	Resolution	0.1mg	0.25mg	0.5mg	1mg	2mg
	Response frequency	0~1000Hz				
	Nonlinearity	< ±0.5%FS				
Vibration frequency measurement	Range : 0~1000Hz		Accuracy : < ±5%		Resolution : 0.1Hz	
Cross-axis sensitivity	Default≤±1.5%FS , optional≤±1%FS、≤±0.5%FS、≤±0.1%FS					
Zero offset	±5mg@25℃ @±2g range , adjustable on site					
Offset temperature drift coefficient	±0.5mg/K					
Sensitivity temperature drift	±0.01%FS/K					
Measurement axis	1 or 2 or 3 axis					
Digital filter	Low pass filter : 10、20、40、75、150、300、600、1200 Hz, adjustable High pass filter : 1Hz, optional Bandpass filter : 0.2~300Hz, optional					
Output interface	RS232、RS485、RS422、CAN2.0、CANopen、Ethernet					
Output data	Acceleration & Vibration frequency					
Refresh rate	50~400Hz					
Power supply	24±5VDC , ≤200mA					
Operation temperature	-40 ~ 85℃					
Storage temperature	-40 ~ 85℃					
EMC	According GBT17626					
Insulation resistance	≥100MΩ					
MTBF	10 years					
Shock	1500g@1ms , three-axis , half-sine					
Vibration	4grms , 20 ~ 2000Hz , sine					
Protection	IP67					
Connecting	M12-8Pin socket					
Weight	≤150g ( without connector and cable )					

## Dimensions (mm)

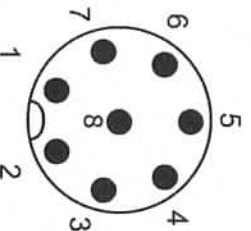


Picture1 SSA100 with M12 connector

## Wiring

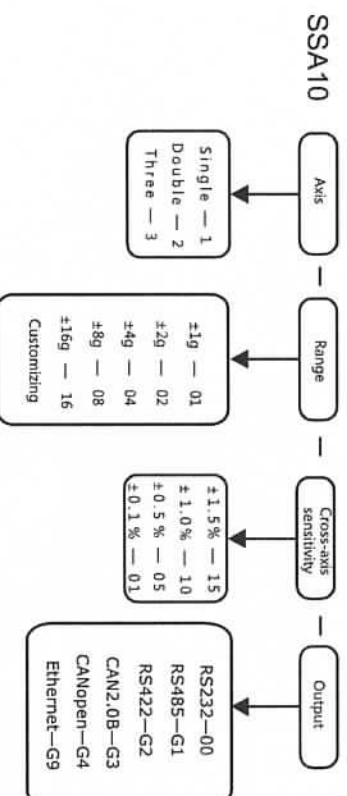
Table 2 Pin definition

Pin	RS232	RS485	RS422	CAN	Ethernet
1	Power+	Power+	Power+	Power+	Power+
2	Power-	Power-	Power-	Power-	Power-
3	Signal GND	Signal GND	Signal GND	Signal GND	Signal GND
4	TXD	A	RXD+	CAN_H	RXD+
5	RXD	B	RXD-	CAN_L	RXD-
6	NC	NC	TXD+	NC	TXD+
7	NC	NC	TXD-	NC	TXD-
8	NC	NC	NC	NC	NC



Picture2 M12 connector socket  
(View from outside)

## Ordering



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