

Single Axis Servo Inclinometer Package

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Highly sensitive ±1°, environmentally sealed servo inclinometer with ±5 Volt output signal

Description

The SBS1U sensor box is packaged in a solid and compact pressure-cast aluminum housing (IP65) with an integrated sensor for highly sensitive single axis inclination or acceleration measurements.

Within the box are 2 sections: a voltage amplifier with a ±5 Volt output signal and a separate highly stable voltage regulator that supplies power to the sensor.

The amplifier also contains an active low pass filter to suppress interference signals and transient suppression to ensure conformance to EMV regulations. The sensor and the amplifier are galvanically isolated from the housing to avoid interference from signals generated by undefined earth currents. An asymmetric 0 to 5V or a symmetrical ±5V analog voltage signal, each mutually inverse, can be measured on both signal outputs.

The tightly sealed PG metal cable connector and the compact dimensions of the 100% metal sensor housing enable this high quality measurement system to be used under severe operating conditions.

Applications

The SBS1U is recommended for use where extremely precise inclination and acceleration measurements must be taken under difficult conditions and harsh environments.

Typical applications include stability monitoring in the building, machinery, and construction industries as well as inclination monitoring of bridges, dams, towers, tunnels, slopes, and of all structures where there is risk of earthquakes or collapse.

Features

- Servo inclinometer with ±1° measurement range and extremely high resolution
- ±5V output signal for reduced error susceptibility over long signal cables
- Rugged IP65 rated pressure-cast aluminum housing with seawater resistant coating
- 12VDC ± 20% supply voltage
- Output signal calibration to customer's specifications
- Sensor and voltage scaling galvanically isolated from housing
- **EMC Protected**
- Highly stable internal voltage regulator
- Reverse voltage polarity protected
- High mechanical shock resistance
- Internal low pass filter for interfering frequency suppression



SBS1U

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TERMINAL CONNECTIONS Max.: 6 x 1.5mm² (6 x 16 AWG) CABLE CONNECTION PG9, clamping range 6.5mm - 9.5mm (metal with integrated strain relief) MEASUREMENT RANGE Max. ±1 degree RESOLUTION 0.01 arc seconds = 48μm/km! PPOTECTION LEVEL INSTALLATION POSITION PERATING VOLTAGE OPTIONS 0.2Volt or 24Volt (±10%) OPERATING CURRENT Max. 100mA STANDARD ASYMMETRIC OUTPUT VOLTAGE RANGE (GND → UA+) STANDARD ASYMMETRIC OUTPUT VOLTAGE RANGE (GND → UA+) 4.5V 0.5V STANDARD SYMMETRICAL OUTPUT VOLTAGE RANGE (GND → UA+) ASYMMETRIC ZERO OUTPUT VOLTAGE (GND → UA+) ASYMMETRIC ZERO OUTPUT VOLTAGE (GND → UA+) SYMMETRIC ZERO OUTPUT VOLTAGE (GND → UA+) SYMMETRIC ZERO OUTPUT VOLTAGE (JUA → JUA+) SYMMETRIC ZERO OUTPUT VOLTAGE (JUA → JUA+) ASYMMETRIC ZERO OUTPUT VOLTAGE (JUA → JUA+) SYMMETRIC ZERO OUTPUT VOLTAGE (JUA → JUA+) ASYMMETRIC ZERO OUTPUT ASYMMETRIC ZERO OUTPUT ASYMETR	TECHNICAL DATA				
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SIGNAL RESPONSE TIME Approx. 2 seconds (98% OF THE EXPECTED VALUE) JUMP OVERRUN FUNCTION PT2 procedure AMBIENT OPERATING TEMPERATURE -40 +85 °C	OUTPUT DRIVER	Operational amplifier TLC2274			
JUMP OVERRUN FUNCTION PT2 procedure AMBIENT OPERATING TEMPERATURE -40 +85 °C	ADJUSTMENT CONTROL	Amplification			
AMBIENT OPERATING TEMPERATURE -40 +85 °C	SIGNAL RESPONSE TIME	Approx. 2 seconds (98% OF THE EXPECTED VALUE)			
15	JUMP OVERRUN FUNCTION	PT2 procedure			
MECHANICAL ANGLE ADJUSTMENT RANGE ±2°	AMBIENT OPERATING TEMPERATURE	-40 +85 °C			
	MECHANICAL ANGLE ADJUSTMENT RANGE	±2°			

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FIGURE 1: MOUNTING POSITION, DIMENSIONS IN [MM], AND TERMINAL CONNECTIONS

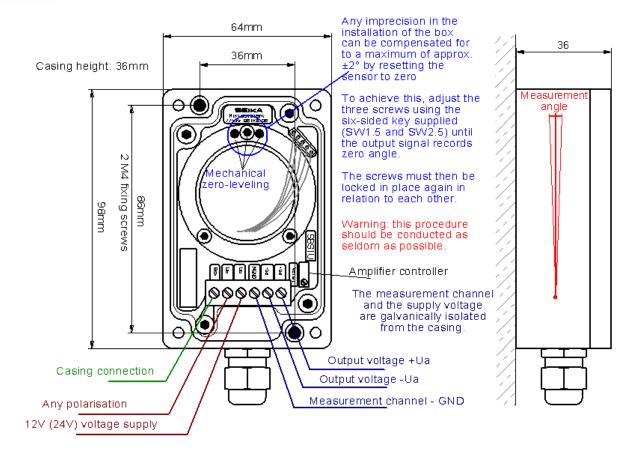
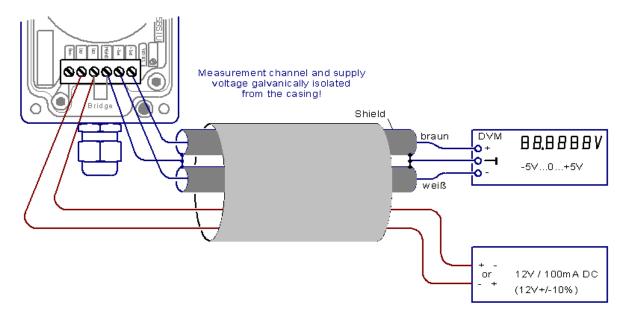


FIGURE2: CABLE CONNECTIONS



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