

# SensoBox

## Signal Conditioning Amplifier

## Data Sheet

### Modular Constant Current Amplifier

The SensoBox family from Acoutronic, provides a flexible general signal-conditioning amplifier for use with accelerometers, microphone preamplifiers and many other type of sensors wich requires signal conditioning and filtering. SensoBox is available with up to 16 channels, and fits into a 19" rack or alternatively, can be used as a portable instrument for mobile applications.

#### Modular

By using separate Input/Output modules for each individual channel, the user has the freedom to expand the system at a later stage, by adding additional Input/Output modules, as the requirements grows.

#### Signal Conditioning

SensoBox is designed to handle all your need for signal conditioning in multichannel applications. The system supports up to 16 IEPE (ICP®) sensor inputs including use of a 4 mA current source at 24 VDC. The gain is programmable from 1 to 64 in steps of 1. Programmable preamplification of x1, x10 and x100 are also available. For Low-Pass filtering, an Elliptic or Linear Phase filter can be used. Single & Double integration are available as an option.

#### Software control

A Windows-based control software admit the user to control and setup the SensoBox remotely, via the RS-232 interface. All channels could be individually configured and settings can be stored on disk and later recalled. Alternatively, configuration of the system can be done using the front panel buttons and settings shown on the LCD-display.

#### I/O-connectors

The input and output signal connectors are available via BNC sockets on the front panel and optionally via two 37-pin D-sub connectors at the rear.

#### Mobile applications

The built in DC power supply lets the SensoBox to be powered from 10 to 36VDC, and makes it a perfect instrumentation partner for sound & vibration measurements in the field. A 90-260 VAC power supply is also available.

#### **Additional SensoBox features include:**

- Up to 16 channels
- BNC and 37-pin D-Sub connectors
- Gain from 1 to 64 and x10 & x100
- IEPE sensor inputs, 4 mA / 24 VDC
- Low-Pass filters, Elliptic & Linear Phase
- Singel & double Integration (optional)
- RS-232 Interface for software control
- DC Power Supply for mobile applications
- AC Power Supply for lab. environment

# SensoBox Specifications

## Signal Input Connectors

- From 1 up to 16 Input Channels
- Choice of BNC connectors and 37-pol D-sub connectors
- Versions with both BNC and D-sub connectors are switch selective per channel between BNC or D-sub
- BNC and D-sub outputs are electrically parallel

## Input Signal

- $\pm 10$  V Differential mode
- $\pm 12$  V Common mode

## Output Signal

- $\pm 10$  V
- $\pm 20$  mA Common ground

## Noise

- $20 \mu\text{V}_{\text{RMS}}$  0.1 Hz - 20 kHz

## Grounding

- Floating

## Sensor LED Indicators

- Open input
- Short circuit
- Overload

## IEPE Sensor Supply

- Constant Current: 4 mA ( $\pm 15\%$ )
- Voltage Supply: 24 VDC ( $\pm 20\%$ )

## Gain

- From 1 to 64, Programmable in steps of 1
- Programmable preamplification of x1, x10 and x100
- Accuracy:  $\pm 1\%$ , 5 ppm/ $^{\circ}\text{C}$

## Bandwidth

- 1 Hz to 50 kHz  $\pm 5\%$
- 0.1 Hz to 100 kHz -3dB

## Optional Filters

- Low-Pass Elliptic or Linear Phase, 8<sup>th</sup> orders
- Programmable filter cut-off frequency from 12 Hz to 50 kHz
- Noise with LP-filter,  $f_c = 2$  kHz:  $170 \mu\text{V}_{\text{RMS}}$  0.1 Hz - 20 kHz

## Optional Integration

- Single and double integration
- Cut-off frequency: 1 Hz

## Digital Control Interface

- One RS-232 interface to control all functions and settings from computer, 2<sup>nd</sup> RS-232 interface available for "daisy chain" of additional SensoBox units.
- Optional LCD display & keypad for local control
- Windows based software support (console)

## Power Requirements

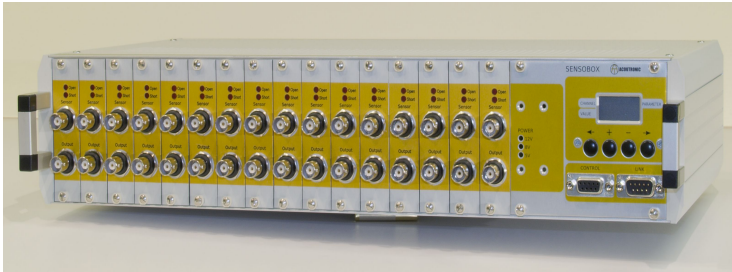
- Factory option of DC or AC Power Input.
  - AC input Range: 90-264 VAC (40-65Hz)
  - DC Input Range: 10-36 VDC, Rectified for any polarity
- Power requirements: 50 Watt

## Environmental Specifications

- Operating temp: 0 to  $+50^{\circ}\text{C}$
- Storage temp:  $-40$  to  $+85^{\circ}\text{C}$
- Relative humidity: 5% to 90% non-condensing

## Mechanical Specifications

- May be used as a rack mounted unit or instrument case
- Height: 80,0 mm (2U)
- Width: 482,6 mm
- Depth: 250,4 mm
- Weight: 5 kg
- Cover material: Sheet steel
- Vibration: Designed to meet requirements in IEC1670-3 Test VIII



Distributed by:

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## Additional Resources

For further information and product offerings, please visit the Acoutronic web site at:  
[www.acoutronic.se](http://www.acoutronic.se)

## Ordering Options

SensoBox	A	B	C	D	E	F	G
AC CCA	-						
<b>A = Number of channels</b> 1 = 1 channel      7 = 7 channels      D = 13 channels 2 = 2 channels    8 = 8 channels      E = 14 channels 3 = 3 channels    9 = 9 channels      F = 15 channels 4 = 4 channels    A = 10 channels     G = 16 channels 5 = 5 channels    B = 11 channels 6 = 6 channels    C = 12 channels							
<b>B = Power Supply</b> 1 = DC (10-36 VDC) 2 = DC & AC (10-36 VDC / 90-264 VAC)							
<b>C = Low Pass Filtering</b> 1 = No filtering 2 = Elliptic & linear phase							
<b>D = Integration</b> 1 = No integration 2 = Single and double integration							
<b>E = Signal Input/Output Connectors</b> 1 = BNC connectors on front (In/Out) 2 = BNC connectors on front and 37-pin D-Sub connectors on rear (In/Out)							
<b>F = Front panel Control Options</b> 1 = 2 x RS-232 interfaces for Computer control and daisy chain 2 = 2 x RS-232 interfaces and LCD display & keypad for local control							
<b>G = Enclosure Options</b> 1 = Desktop with front handles 2 = Rack mount with front flanges							
<b>Computer Control Software for SensoBox</b>							
<b>AC CCA-SOFT01</b>							
AC CCA-SOFT01 is a Windows-based® software for controlling the SensoBox via the RS-232 interface							

