

## NS-A-4101 Sensor Controller



The NS-A-4101 is a single channel stand-alone electronic module for driving the NX and NC NanoSensor series. It operates by measuring the change in capacitance of a parallel plate capacitor and outputs an analogue voltage proportional to the NanoSensor gap.

The voltage output varies linearly between -5V and +5V as the sensor gap changes from 50% to 150% of the nominal NanoSensor gap, this scaling is user settable.

Its compact size, stand alone operation and high resolution makes this ideal for upgrading existing systems where Nanopositioning is required.

### Key features

- Sub-nanometer position resolution
- Linearity error down to 0.02%
- Factory selectable bandwidth (100Hz or 1kHz or 10kHz)
- Multiple units can be synchronized to reduce electronic interference for applications requiring multiple systems

### Applications

When combined with Nanosensors

- Metrology
- Precision alignment
- Vibration monitoring
- Building custom closed loop Nanopositioning systems

**NS-A-4101**  
Sensor Controller

**Technical Specifications**

Parameter	Value	Unit	Comments
<b>Mechanical</b>			
<b>Size (Width x Depth x Height)</b>	210 x 120 x 70	mm	
<b>Power connector</b>	5 pin DIN	V	Mains supply provided by Queensgate
<b>Sensor connector</b>	Lemo size 00		
<b>Position monitor connector</b>	BNC and SMB		
<b>Power ON/OFF switch</b>	Push button		
<b>Electrical</b>			
<b>DC Power input</b>	Input 1 – Positive rail	+15V ± 0.75	V
	Input 2 – Negative rail	+15V ± 0.75	V
<b>Position Monitor Range</b>	10 to +10	V	
<b>Position Monitor load</b>	2	kΩ	
<b>NanoSensor bandwidth</b>	100 or 1k or 10k	Hz	Factory set
<b>Environmental (Operating and survival)</b>			
<b>Operating temperature</b>	10 to 40	°C	
<b>Relative Humidity</b>	0 to 80	%RH	Non-condensing
<b>Survival temperature</b>	-20 to 70	°C	Non-operational
<b>Survival Relative Humidity</b>	0 to 95	%RH	Non-condensing

**Ordering Information**

Part Number	Description
QGNS-A-4101	NS-A-4101 Sensor Controller