

Bridgesensor Application Tips

Bandwidth vs. Response Time

When selecting a signal conditioner for a load cell or pressure transducer it is important to consider the settling time of the cell/transducer and the frequency response of the signal conditioner. The Bridgesensors are available with low pass filters (i.e.. 3Hz frequency response) for static measurements or wider bandwidths (i.e.. 2kHz frequency response) for more dynamic measurements. The table below illustrates the frequency response/response time relationship for most of the Bridgesensors.

Cutoff Frequency	Response Time (to 0.1%)
10 kHz	250 μ s
5 kHz	500 μ s
2 kHz	700 μ s
10 Hz	90 ms
3 Hz	300 ms

Bridgesensor Minimum Full Scale Input Signal

The table below can be used as a quick guide for the best Bridgesensor to use for various input signals. The table begins with the lowest input signal for a full scale 20mA or +10V output.

Model	Input Range	Output
162MK	2 mV - 5 V	\pm 10 V
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437	2.5 mV - 50 V	4 - 20 mA
433	5 mV - 50 mV	Isolated 4 - 20 mA
463	5 mV - 50 mV	Isolated 0 to +10 V
465	10 mV - 250 mV	\pm 10 V
430	10 mV - 50 mV	4 - 20 mA
460	40 mV - 250 mV	\pm 10 V

NOTE: All of the Bridgesensors listed above have adjustable excitation which will allow the user to increase or decrease the full scale transducer output.

Single vs. Multiple Channel Operation

All of the Bridgesensors are designed as single channel Bridge conditioners. For multiple channel operation, the modules in the 4XX package, such as the 465, may be mounted on a DIN rail using the DIN 400 or mounted on a user supplied backplane using the molded through holes. The modules mounted on a PC card, such as the 162MK, can be mounted on the 8600 backplane, 8100 rails, or 8250 rackmount frame.

Using the Sense Leads

Sense leads are available on all Bridgesensor designs. The function of the Sense leads is to regulate the excitation voltage directly at the bridge. This removes errors due to lead resistance. Systems in which the Sense leads are connected to the bridge are called six wire systems. If the user chooses not to connect the Sense leads at the bridge (four wire configuration), the + Sense must be jumpered to + Excitation and the - Sense must be jumpered to - Excitation. Otherwise the excitation supply will not be regulated and will drift.

Using the Bridgesensor Without the Built-In Excitation Source

Internally, the Bridgesensor - Excitation is tied to the Amplifier Common. In some situations it may be preferable to use an alternative excitation source to drive the bridge. If this is done, be sure that the - excitation source is connected to the amplifier common of the Bridgesensor. This will provide a DC return path. If this connection is not made, the amplifier will drift.