

The instruNet 100 (part #iNet-100 or iNet-100B) has the following Stability and Drift Characteristics:

<i>Gain Drift:</i>	+/- 7ppm-per-degree-C Maximum
<i>Offset Drift:</i>	Calibrated to 0 during software Reset or AutoCalibration
<i>Gain Stability:</i>	1yr: 27ppm/1yr Typical, 50ppm/1yr Max 2yr: 39ppm/2yr Typical, 62ppm/2yr Max
<i>Offset Stability:</i>	Calibrated to 0 during software Reset.

## Drift and Stability Overview

With measurement accuracy, there are two primary sources of errors: Stability and Drift. Stability is an error that is a function of time, whereas Drift is a function of temperature (of the measurement electronics). And in each case, there are two kinds of errors: those which are added to the measured value (i.e. an offset error) and those that are multiplied by the measured value (i.e. a gain error). Offset errors are set to 0, since the instruNet electronics automatically calibrates them out when the unit is first run, or when the Calibrate button is pressed. Therefore, there are two remaining sources of error: Gain Time Stability (i.e. ppm/yr) and Offset Temperature Drift (i.e. ppm/C).

## What is Gain Time Stability?

Stability is the error that occurs over a period of time, often due to resistors and semiconductors that change slightly over time. Gain Stability is often defined as ppm-per-year. For example 30ppm/1yr Stability could result in a 1.000030 error factor that is multiplied by the measured value to produce a 0.003% error of the read value.

## What is Gain Temperature Drift?

Gain Drift involves an error term (which is a function of temperature) that is multiplied by the measured value. For example, a 4ppm/C gain drift coefficient after a 5 degree change would result in a  $1.000004 * 5 = 1.000020$  factor being MULTIPLIED by the measured value (i.e. a 0.002% error).