Rotronic's Certificate of Calibration Key Notes

1. The "Limit" column on the calibration certificate differs from an "accuracy" specification as the accuracy specification of the instrument is designed to indicate how closely the instrument can reproduce the readings of a reference device. It does not take into consideration any uncertainty of the readings of the reference device. The accuracy specification also does not take into consideration the long term drift in the readings of an instrument due to environmental or other factors between calibrations. The Limit value listed on the calibration certificate is calculated based on the expected 1 year performance of the instrument based on manufacturer specifications. Internal controls still ensure that the As-Left Error values are less than the specified Accuracy of the instrument.

2. The "Result" column provides a pass (P), fail (F) or indeterminate (I) statement. ISO 17025:2017 requires that when statements of conformance are made on a calibration certificate the measurement uncertainty be considered. There are many different methods for accomplishing this. Rotronic has selected a method where the Probability of False Accept (PFA) or False Accept Risk (FAR) is limited to a maximum of 2%. This is accomplished through the use of a guardband to create more stringent acceptance limits. Figure 1 below illustrates how the guardband is applied to the measurements of the unit under test. The indeterminate result is a measured value that exceeds the acceptance limit created by the guardband calculation but is still less than the specified limit of the instrument.

   In previous calibration certificates a result that is now defined as indeterminate would have been defined as a pass result. An indeterminate result indicates that while the measurement is within the specifications there is a False Accept Risk of greater than 2% that the measurement is out of tolerance. It is the responsibility of the end user to determine the level of risk that is acceptable for their processes.

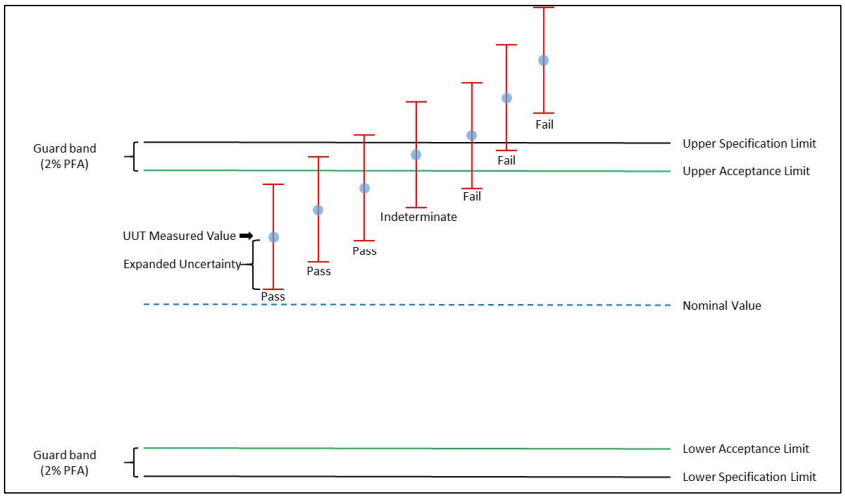

Figure 1: Pass/Fail/Indeterminate Illustration

3. The Run Temperature (RT) column denotes the temperature of the air inside the humidity chamber where the calibration takes place. Relative Humidity is not an absolute measure of water vapor present. The absolute amount of water vapor present is a function of the relative humidity reading and the temperature of the air in the calibration chamber. (Note this column does not appear on all calibration certificates.)

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