



R. M. YOUNG COMPANY

APPLICATION NOTE AN100

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SUBJECT: Correcting barometric pressure readings for altitude.

Since air density varies with altitude, barometric pressure readings are commonly normalized to an equivalent sea level value by applying a correction factor based on the altitude of the measurement site. The correction factor may be calculated as follows:

$$P_{corr} = A * (1 - (1 - H/B) ^ C)$$

where: P_{corr} is the correction factor to add to the uncorrected barometric pressure reading
H is the Height (altitude)

For English units (P_{corr} in inHg, H in feet):

$$A = 29.92$$

$$B = 145442.2$$

$$C = 5.256$$

For Metric units (P_{corr} in mB, H in meters):

$$A = 1013.25$$

$$B = 44330.77$$

$$C = 5.256$$

Example:

Uncorrected barometric pressure reading of 29.13 inHg at 610 ft altitude.

$$P_{corr} = 29.92 * (1 - (1 - 610/145442.2) ^ 5.256)$$

$$P_{corr} = 0.65 \text{ inHg}$$

Add 0.65 inHg to 29.13 inHg for result.

Barometric pressure reading normalized to sea level = 29.78 inHg

This formula is based on the U.S. Standard Atmosphere, 1976.