TEMPERATURE:

$$T = \frac{b[\frac{aT_d}{b+T_d} - ln(\frac{RH}{100})]}{a + ln(\frac{RH}{100}) - \frac{aT_d}{b+T_d}}$$

DEWPOINT:

$$T_d = \frac{b[ln(\frac{RH}{100}) + \frac{aT}{b+T}]}{a - ln(\frac{RH}{100}) - \frac{aT}{b+T}}$$

RELATIVE HUMIDITY:

$$RH = 100\frac{exp(\frac{aT_d}{b+T_d})}{exp(\frac{aT}{b+T})}$$

where:

a = 17.625
b = 243.04
T is in ºC
T_d is in ºC
RH is in %

Based on the August-Roche-Magnus approximation, considered valid for:

0 ºC $< T <$ 60 ºC
1% $< RH <$ 100%
0 ºC $< T_d <$ 50 ºC

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