

## Temperature Conversion

To convert between degrees Fahrenheit ( $^{\circ}F$ ) and Celsius ( $^{\circ}C$ ):

$$T_c = \frac{5}{9} \times (T_f - 32)$$

$$T_f = \frac{9}{5} \times T_c + 32$$

where:  $T_c$  is temperature in Celsius  
 $T_f$  is temperature in Fahrenheit

To convert between Fahrenheit ( $^{\circ}F$ ) and Kelvin ( $K$ ):

$$T_f = \frac{9}{5} \times (T_K - 273.15) + 32$$

$$T_K = \left( \frac{5}{9} \times (T_f - 32) \right) + 273.15$$

where:  $T_f$  is temperature in Fahrenheit  
 $T_K$  is temperature in Kelvin

To convert between degrees Fahrenheit ( $^{\circ}F$ ) to Rankine ( $R$ ):

$$T_f = T_R - 459.69$$

$$T_R = T_f + 459.69$$

where:  $T_f$  is temperature in Fahrenheit  
 $T_R$  is temperature in Rankine

To convert between degrees Celsius ( $^{\circ}C$ ) to Kelvin ( $K$ ):

$$T_c = T_K + 273.15$$
$$T_K = T_c - 273.15$$

where:  $T_c$  is temperature in Celsius  
 $T_K$  is temperature in Kelvin

To convert between degrees Celsius ( $^{\circ}C$ ) to Rankine (R):

$$T_c = \frac{5}{9} \times (T_R - 491.69)$$
$$T_R = \frac{9}{5} \times T_c + 491.69$$

where:  $T_c$  is temperature in Celsius  
 $T_R$  is temperature in Rankine

To convert between Kelvin ( $K$ ) and Rankine ( $R$ ):

$$T_K = \frac{5}{9} \times (T_R - 764.84)$$
$$T_R = \frac{9}{5} \times T_K + 764.84$$

where:  $T_K$  is temperature in Kelvin  
 $T_R$  is temperature in Rankine