Engineering Units Conversion

Quick reference for instrumentation and control engineers

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Volume flow

From	To	Multiply by
m³/h	US gpm	4.4029
m³/h	L/s	0.27778
m³/h	ft³/min	0.58858
US gpm	m³/h	0.22712
bbl/day	m³/h	0.0066245
L/min	m³/h	0.06

Mass flow

From	To	Multiply by
kg/h	lb/h	2.20462
t/h	kg/s	0.27778
kg/s	kg/h	3600

Pressure

From	To	Multiply by
bar	kPa	100
bar	psi	14.5038
psi	kPa	6.89476
mbar	mmH_2O	10.197
inH_2O	Pa	249.09
mmHg	Pa	133.322
atm	bar	1.01325

Temperature

°C to °F	**°F = °C × 1.8 + 32**
°F to °C	**°C = (°F − 32) ÷ 1.8**
°C to K	**K = °C + 273.15**
Difference	**1 K = 1 °C = 1.8 °F**

Power and energy

From	To	Multiply by
kW	BTU/h	3412.14
kW	hp (metric)	1.35962
kW	hp (mechanical)	1.34102
kWh	MJ	3.6
kcal	kJ	4.1868

Viscosity and density

From	To	Multiply by
cP	mPa·s	1
cSt	mm²/s	1
cP	cSt	÷ density (g/cm³)
g/cm³	kg/m³	1000
lb/ft³	kg/m³	16.0185

Length and area

From	To	Multiply by
inch	mm	25.4
ft	m	0.3048
in²	mm²	645.16
AWG 18	mm²	0.823

Gas reference conditions

- Normal (Nm³): 0 °C, 1.01325 bar a (common).
- Standard (Sm³): 15 °C, 1.01325 bar a (common).
- US standard (SCF): 60 °F, 14.696 psia.
- Always state the basis.