Overview of Formulas

Flow rate:	$\dot{V} = \frac{\dot{Q}}{(Tv - Tr) \cdot cp \cdot \rho}$	**Flow temperature:**	**tv** [K]
Mass flow rate:	$\dot{m} = \frac{\dot{Q}}{\Delta t \cdot cp}$	**Return temperature:**	**tr** [K] Δt **= tv-tr**
Kv value	$kv = \dot{v} \cdot \sqrt{\frac{\Delta p_0 \cdot \rho}{\Delta p \cdot \rho_0}}$	**Room temperature:**	**ti** [K]
Kv values in parallel:	$kv_{ges} = kv_1 + kv_2$	**Heat requirement:**	$\dot{Q}$ [W]
Kv value in series:	$kv_{ges} = \frac{kv_1 \cdot kv_2}{\sqrt{kv_1^2 + kv_2^2}}$	**Flow rate:**	$\dot{V}$ [m³/h]
Differential pressure from Kv value:	$\Delta p = \left(\frac{v}{kv}\right)^2 \cdot \frac{\rho \cdot \Delta p_0}{\rho_0}$	**Specific heat capacity:**	**cp** [Wh/kg/K]
Differential pressure from tete value:	$\Delta p = \sum \zeta \cdot \frac{\rho \cdot u^2}{200}$	**Specific density:**	ρ [kg/m³] ρ_0 = 999.1 kg/m³ (Water 15ºC)
Thermal buoyancy:	$\Delta p = H \cdot g \cdot (\rho_r - \rho_v)$	**Flow:**	ρ_v = 971.6 kg/m³ (Water 80ºC)
Radiator enlargement ratio (acc. to EN442):	$f = \left[49{,}83 \cdot \frac{\ln \frac{t_v - t_i}{t_r - t_i}}{\Delta t} \right]^n$	**Return:**	ρ_v = 983.2 kg/m³ (Water 60ºC)
		Differential pressure:	Δp [mbar], 1 mbar = 100 Pa
		Differential pressure unit:	Δp_0 1000mbar
		Kv value:	**kv** [m³/h]
		Flow velocity:	**u** [m/s]
		Mass flow rate:	$\dot{m}$ [kg/h]
		Gravity constant:	**g** = 9.81 m/s²
		Radiator index?/exponent?:	**n** ~1,3 for flat radiator
		Height above sea level:	**H** [m]