Total and Partial Heat Recovery Pressure Drops

To determinate the pressure drop for different versions or at different working condition, please refer to the following formula:

$$PD_2\ (kPa) = PD_1\ (kPa) \times \left(\frac{Q_2\ (l/s)}{Q_1\ (l/s)} \right)^{1.80}$$

where:

PD_2 Pressure drop to be determinate (kPa)
PD_1 Pressure drop at nominal condition (kPa)
Q_2 water flow at new working condition (l/s)
Q_1 water flow at nominal condition (l/s)

How to use the formula: Example

The unit ERAD120E-SS has been selected for working at the following conditions:
- Total heat recovery leaving water temperature 40/50°C
The heating capacity at these working conditions is: 121 kW
The water flow at these working conditions is: 2.89 l/s

The unit ERAD120E-SS at nominal working conditions has the following data:
- Total heat recovery leaving water temperature 40/45°C
- condenser air inlet: 35°C
The heating capacity at these working conditions is: 125 kW
The water flow at these working conditions is: 5.98 l/s
The pressure drop at these working conditions is: 33 kPa

The pressure drop at the selected working condition will be:

$$PD_2\ (kPa) = 33\ (kPa) \times \left(\frac{2.89\ (l/s)}{5.98\ (l/s)} \right)^{1.80}$$

$$PD_2\ (kPa) = 9\ (kPa)$$