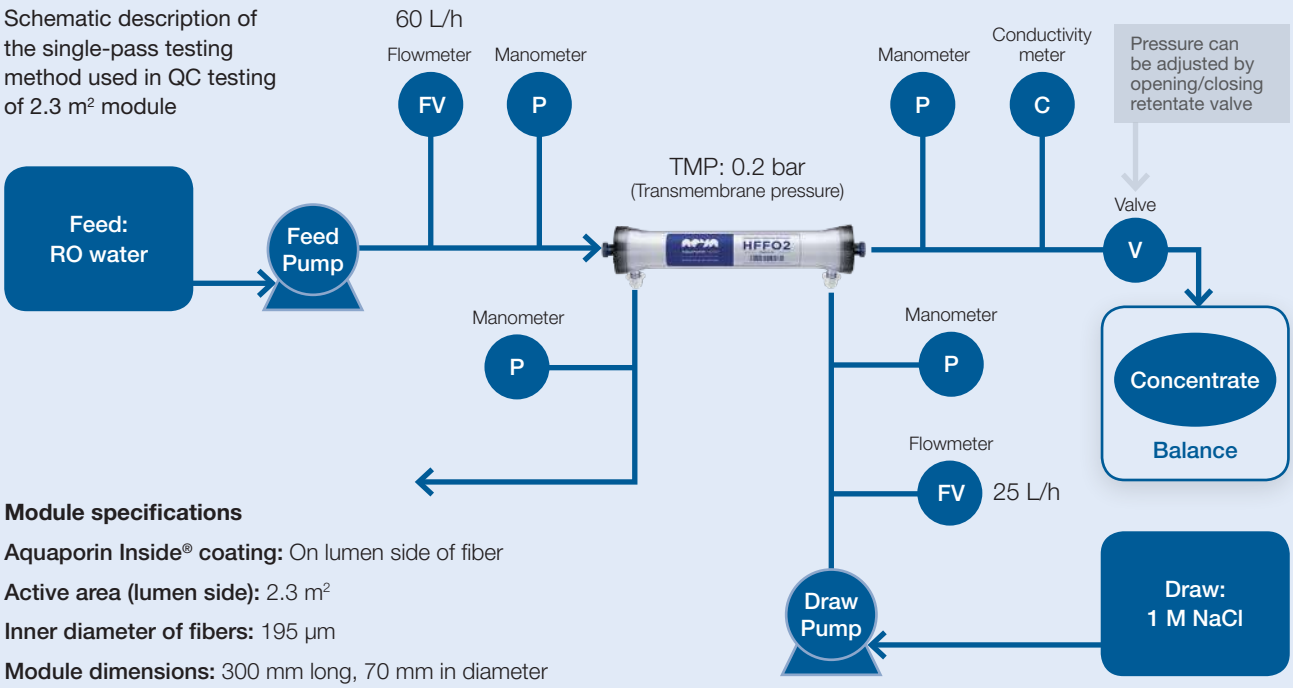
Aquaporin Inside® HFFO2 Standard Test Setup

Schematic description of the single-pass testing method used in QC testing of 2.3 m² module



Module specifications

Aquaporin Inside® coating: On lumen side of fiber

Active area (lumen side): 2.3 m²

Inner diameter of fibers: 195 µm

Module dimensions: 300 mm long, 70 mm in diameter

The flow rate of the concentrate was measured on the balance and abstracted from the flow rate of the feed in order to calculate the water flux through the membrane according to Eq.1.

$$J_w = \frac{\dot{Q}_{Feed} - \dot{Q}_{Concentrate}}{A} \quad (1)$$

where:

J_w	is water flux (L/m²h)
$\dot{Q}_{Feed}$	is flow rate of feed (L/h)
$\dot{Q}_{Concentrate}$	is flow rate of concentrate (L/h)
A	is membrane area (m²)

* In order to maintain the water flux and reverse salt flux between the experiments, it is strongly recommended to flush the FO module with DI water after use. We propose to flush the module with DI water for 5 min from the feed and draw side at 25 L/h and subsequently for 30 min only from the feed side at 25 L/h.

Conductivity of the concentrate is measured in order to calculate the reverse salt flux according to the Eq. 2.

$$J_S = \frac{\dot{Q}_{Concentrate}}{A} \kappa B \quad (2)$$

where:

J_S	is reverse salt flux (g/m²h)
$\dot{Q}_{Concentrate}$	is flow rate of concentrate (L/h)
A	is membrane area (m²)
κ	is conductivity (µS/cm)
B	is proportionality coefficient (0,5362 µS/cm per 1 mg/L of NaCl)

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