

WATER DEAERATION

Membrane Unit

- Final oxygen below 10 ppb
- Water prefiltration
- Expandable capacity



Deaerated water is used in the brewing industry for flushing filters, centrifuges, pipes, tanks, etc. When used to adjust the alcohol concentration or original gravity after filtration, residual oxygen concentration of the deaerated water is critical as it directly influences the quality and shelf life of the final product.

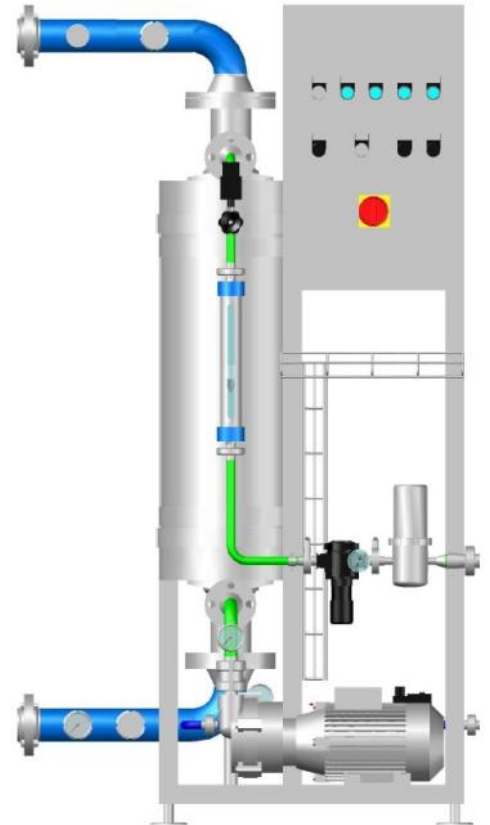
Designed for the most efficient deaeration of water, DENWEL provides a fully automated solution able to economically achieve oxygen levels below 10 ppb.

W A T E R D E A E R A T I O N

Principle

The membrane contactor contains thousands of microporous hydrophobic hollow fibers. They form a large internal surface ensuring a maximal contact area between gas and liquid. A strip gas (CO₂ or N₂) is applied on the inside of the hollow fibers and pulled out by a vacuum. The water flows in counter current on the outside of the fibers. The high difference in partial pressure forces the oxygen out of the liquid. Depending on the required oxygen level or the total capacity, several membrane contactors can be arranged in parallel and/ or series for optimal performance.

The unit has an uncompromising sanitary design and is fully cleanable. The polypropylene hollow fibers are FDA approved and CIP compatible. For prolonged high performance given concentrations and gentle temperature gradient must be applied.



Technical data

Final Oxygen:	less than 10 ppb (0,01 ppm)
Pressure:	operating 2 to 4 barg, 30 to 60 psig
Temperature:	operating 10 to 30 °C, 40 to 90 °F
CIP:	50 °C, 120 °F, at 7 barg, 100 psig; Max. 65 °C, 150 °F, at 2 barg, 30 psig
CO ₂ / N ₂ purity:	99,995 %
Stripping gas flow:	app. 0,5 g/l (final O ₂ and water temperature dependent)
Carbonation:	0 g/l
Connection:	Tri-clamp; other connections upon request
Dimensions:	from Height 1,6 m, 63"; Width 0,7 m, 47"; Depth 0,6 m, 24"
Weight:	from 550 lb, 250 kg
Material:	Stainless Steel 304, EPDM, PE, PSU, PP

DWD010M	DN 25	1"	4 to 10 hl/h	2 to 4 gpm	4 to 8 bbls/h
DWD025M	DN 25	1"	10 to 25 hl/h	5 to 11 gpm	9 to 21 bbls/h
DWD040M	DN 40	1½"	16 to 40 hl/h	8 to 17 gpm	14 to 34 bbls/h
DWD075M	DN 40	1½"	30 to 75 hl/h	14 to 33 gpm	26 to 63 bbls/h
DWD100M	DN 50	2"	40 to 100 hl/h	18 to 44 gpm	35 to 85 bbls/h
DWD150M	DN 50	2"	60 to 150 hl/h	27 to 66 gpm	52 to 127 bbls/h
DWD200M	DN 65	2½"	80 to 200 hl/h	36 to 88 gpm	69 to 170 bbls/h