

**AL-KO**

QUALITY FOR LIFE

# AL-KO HYGRO-OPT MEMBRANE HUMIDIFIER

## THE NATURAL ROUTE TO AMBIENT HUMIDITY



# AL-KO HYGRO-OPT MEMBRANE HUMIDIFIER

## THE HYGIENIC FORM OF AIR HUMIDIFICATION

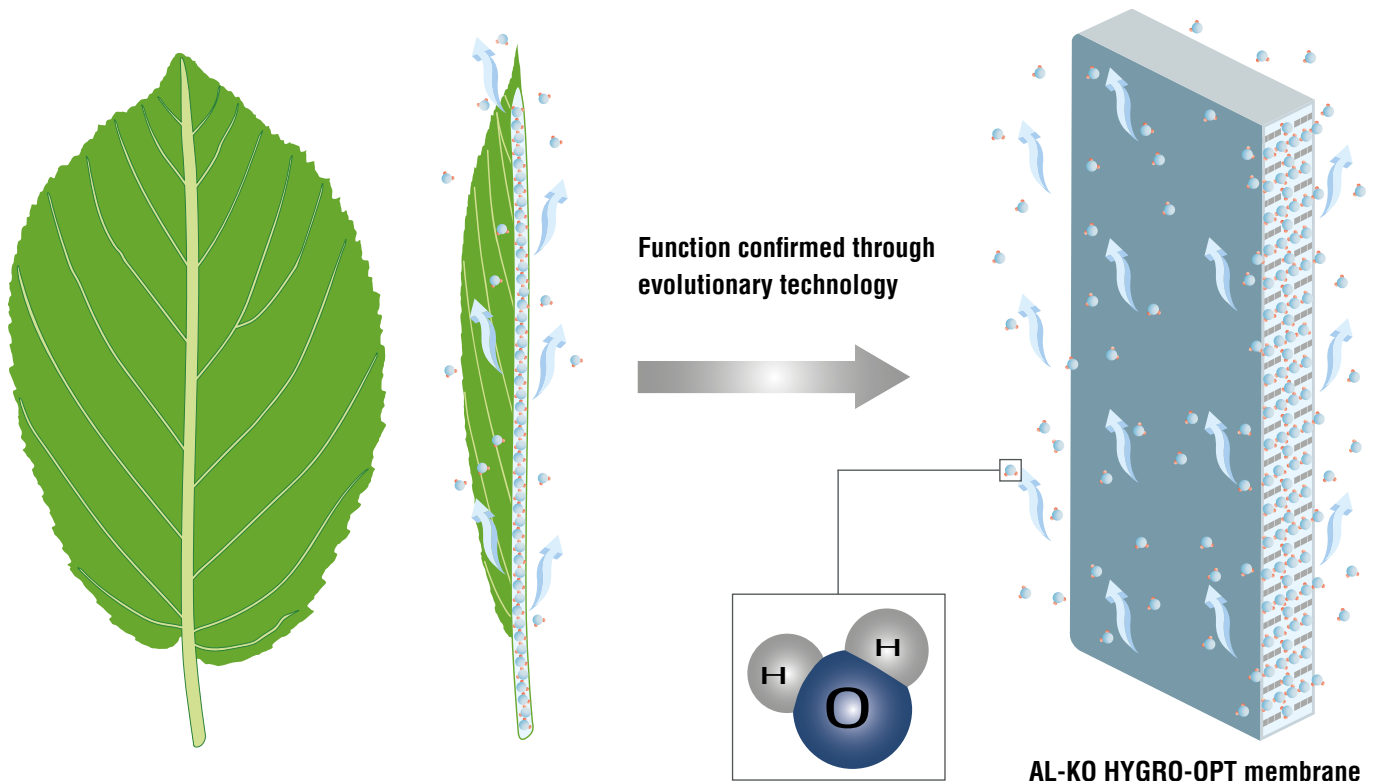
For a feel-good climate like the one found in the natural world, the temperature as well as the air humidity need to be just right. Air humidifiers in ventilation systems fulfill this task in different ways. The AL-KO HYGRO-OPT membrane humidifier, however, is the only humidifier to use the natural principle of evaporation from nature as its inspiration: air humidification takes place like on the leaves of a plant, through the transpiration of water over a membrane.

The tight AL-KO membranes separate water and air, but only allow water molecules to pass through. This means that water enters the air in gaseous form, ensuring aerosol-free and “dry” air humidification. The well-established AL-KO HYGRO-OPT membrane humidifier therefore humidifies continuously, accurately, reliably and with little maintenance required, and most importantly offers excellent hygienic safety by separating the water and air.

### ADVANTAGES AT A GLANCE:

- | Dry on the air side
- | Permanently clean unit without build-up
- | Hygienically safe thanks to membrane barrier
- | Economical
- | Low-maintenance
- | Wear-free

### TAKING THE LEAF OF A PLANT AS NATURAL INSPIRATION: THE AL-KO HYDRO-OPT MEMBRANE



# AL-KO HYGRO-OPT IN DETAIL

## HYGIENIC:

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Aerosol-free humidification from the smooth membranes (pockets) offers the operator more safety and ensures a dry environment in the humidifier room as well as in the downstream air channel. This effectively counteracts the growth of micro-organisms.

With this new technology, no evaporation distance is required. Micro-organisms, particles and larger molecules are held back by the tight AL-KO membrane.

## EFFECTIVELY CONTROLLED:

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If the humidifier stops or is operated at partial load, an air technology bypass is used to steplessly control the humidifier performance and further minimise pressure losses. Even the smallest humidification requirements can be addressed with spot-on accuracy during the transitional period.

## ECONOMICAL:

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- | 100% water uptake without residual excess water.
- | Pressureless circuit with small circulating volumes, ensuring minimal pump current consumption.
- | Integrated bypass for minimum air-side resistances.

## SAFE:

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- | Oil-free pump, nozzle-free system, wear-free, constant performance control without valve pacing.
- | Low cleaning requirements in the ventilation system thanks to the use of membranes and deionised water.

## MAINTENANCE-FREE:

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- | If the humidifier is going to be out of operation for a while, automatic drainage and a flushing function on the installation-side supply line ensure safety during the downtime.



AL-KO HYGRO-OPT membrane

# AL-KO HYGRO-OPT IN DETAIL



## AREA OF APPLICATION:

- | As an adiabatic humidifier up to a humidification of 3 g/kg of air.
- | With optional plate exchanger for heating medium connection for isothermic (same-temperature) humidification of max. 6 g/kg of air.

## AL-KO HYGRO-OPT EQUIPMENT:

- | Integrated bypass flap for stepless control
- | Pipework chamber with pump and valves (optionally with heating media connection), electrically heated to ensure frost-free operation when set up outside
- | Controlled water in-feed at max 3.5 bar
- | Switching cabinet in IP 65
- | Siemens Climatix compact regulator with comprehensive control options:
  - | Time-controlled automatic blowdown, specification VDI 6022
  - | Time-controlled automatic pipe flushing, specification VDI 6023
  - | Performance control via installation-side 0-10 Volt signal and potential-free contact as well as fault message output
  - | Automatic monitoring of water supply, leaks and frost danger
  - | Function monitoring of the pump, valves, sensors and temperature gauges
  - | BACnet/IP, LON or Mod-bus systems, RTU (option)



AL-KO Technology Centre in Kötz: HYGRO-OPT membrane humidifier in use since 2015

# TECHNICAL DATA

Equipment size		One row of registers					Two rows of registers				
		08 x 08	12 x 08	12 x 12	16 x 12	16 x 16	08 x 08	12 x 08	12 x 12	16 x 12	16 x 16
<b>Volume flows</b> (1 - 2.5 m/s)	m <sup>3</sup> /h	1000 - 3400	2000 - 5000	3000 - 7600	4000 - 10000	5000 - 13500	1000 - 3400	2000 - 5000	3000 - 7600	4000 - 10000	5000 - 13500

## Performance range

<b>Adiabatic humidification max.</b>	g/kg	2.3					3.5				
<b>Thermal humidification max.</b>	g/kg	4.1					6.1				
<b>Humidifier performance max.</b>	Litres/h	11	17	25	34	45	19	29	44	58	78
<b>Air resistance incl. flap</b>	Pa	14 - 75					25 - 130				

**Note:** Humidification, humidifier performance and air resistance are greatly dependent on the condition of the air entry and volume of air. Exact values are calculated by the AL-KO THERM design software.

## Connections

Electrical connection	FD water connection	Water outlet	Optional heating connection
230 V / 1 Ph / 50 Hz / 2.5 - 4.5 A	IT 1/2"	3x hose nipple 1/2"	PWW 70/50, 2 x IT 3/4"

## Dimensions and weights

Equipment size		One row of registers					Two rows of registers				
		08 x 08	12 x 08	12 x 12	16 x 12	16 x 16	08 x 08	12 x 08	12 x 12	16 x 12	16 x 16
<b>External housing length</b>	mm	1454	1607	1607	1607	1607	1454	1607	1607	1607	1607
<b>Total width with hydraulics and switching cabinet</b>	mm	1348	1654	1654	1960	1960	1348	1654	1654	1960	1960

With hydraulic overhang 459 mm and switching cabinet 200 mm

<b>Weight at delivery</b>	kg	228	304	357	392	454	241	323	387	431	503
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Figures show configuration examples which are not available in every market.  
Please ask your AL-KO advisor.

Provided by your AL-KO partner:

Subject to modifications in response to technical developments.  
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