

Electric Dehumidifier
ROSAHL
Product Specification

Model : MDL-3



RYOSAI TECHNICA CO.,LTD.

1. Application

This specification document is applied to model MDL-3 of Electric Dehumidifier "ROSAHL".

2. Outline

Drawing No. : RB-R30X0047 (Refer to page 5)

3. Specifications

- 1) Applicable Volume : ~ 0.5 m³
- 2) Element Terminal Voltage : 2.9 ~ 3.3V DC
- 3) Power Consumption : 2W (at 20 deg C, 60%RH)
- 4) Weight : 20g
- 5) Operating Temperature : -10 ~ 50 deg C
- 6) Operating Humidity : 90%RH or less
- 7) Storage Temperature : -20 ~ 60 deg C
- 8) Storage Humidity : 90%RH or less
- 9) RoHS Directive : Less than the legal limit of the ten substances

4. Ability and Characteristics

- 1) Dehumidifying Performance : 4g/day (at 30 deg C, 60%RH) *at the shipment
- 2) Rated Current : 0.9A or less
- 3) Inrush Current : 7A (at 30 deg C, 60%RH) *Reference value

5. Life

The dehumidifying performance will reduce during use. (How much it reduces depends on the operating environment and conditions.)

By the specifications of the applied product, the permissible level of the degradation of the Dehumidifier changes, therefore the life is defined as half-life of performance.

Half-life of performance : About 4~6 years

*Continuously operation at 18 deg C (Annual average temperature in Japan)

6. Indication * Indicated the following items.

- 1) Model Name
- 2) Manufacturing Number
- 3) Polarity (+/-)
- 4) Dehumidifying side

7. Delivery Inspection *Tested the following inspection items.

- 1) Appearance
- 2) Dehumidifying Performance : Ability measurement (100% inspection)
- 3) Indication
- 4) State of Packaging

8. Accessory

Connecting cable with push connector : 1 piece

*Gasket is not included

9. Packaging Specifications

ROSAHL are packed in the box to avoid breakage failure while transport.

10. Precautions for Use of ROSAHL

- 1) Attach a protective cover as needed not to touch the dehumidifying / humidifying surface of a membrane with a hand and an object.
- 2) Confirm the dehumidifying / humidifying surface of a membrane not to get a wrong direction before installation. Attaching ROSAHL by mistake will adversely affect several things in the container.
- 3) Keep strictly the following about power supply to ROSAHL
 - (1) Do not reverse the polarity. Confirm a polarity indication of ROSAHL.
Dehumidification changes to humidification when you get a wrong polarity, which may result in an adverse effect on several things in the container. Furthermore, it causes a chemical reaction in a porous electrode of cathode side and it causes the trouble of ROSAHL.
 - (2) ROSAHL usually has a big rush current when the power is turned on.
Therefore, we recommend the following power supply.
 - (3) Use a dedicated power supply for each membrane. When multiple membrane are connected in series or parallel, the trouble of one membrane may cause all other membranes to be disabled.
 - (4) The water vapor go through a membrane of ROSAHL. If you switch off a power supply, outside water vapor is returned into a container and the humidity is restored.

Table 1. Recommended Power Supply Specifications

Rated output voltage	3V DC
Rated output current	2A
Overcurrent protection function * Note	Required
Overvoltage protection function	Required
Output voltage variation	0.1V or less
Ripple noise	0.2V or less
Others	In accordance with the specifications of commercially available power supply

Note : Use a constant or fold-back current limiting regarding overcurrent protection function. You cannot use the power supply with the Hiccup mode current limiting type, because the voltage more than 2V is necessary for ROSAHL when an overcurrent protection function worked. Also ROSAHL may not work correctly depending on a characteristic of fold-back current limiting.

- 4) A container must be an airtightness container. If a container has low airtightness and moisture-permeable material, the results may not be what you expected.
- 5) Attach ROSAHL in the center of the inner side surface of a container with a gasket.
(Do not attach it on a top or bottom surface.)
- 6) If you use ROSAHL with a gasket that contains an antioxidant, crystal materials may be generated on the surface of a membrane. When you choose a gasket, evaluate it enough.
- 7) Do not use silicon-based sealing materials to improve airtightness of a container.
(Silicon-based sealing materials generate oxime gas and siloxane gas.
As a result, the performance of ROSAHL reduce in a short term.)
Additionally, when using any other sealing materials, ROSAHL must be attached after sealing materials are completely cured. Volatile substances generated during curing affect the performance of ROSAHL.
[Recommended products] : modified silicon caulk (Konishi Co., Ltd.)
- 8) Do not expose a moisture discharging side of a membrane to water. When using outdoors, be sure to attach a cover or vent filter to protect a membrane from water or insects.
- 9) Attach a moisture-permeable sheet to a membrane to protect ROSAHL from much dust or oil mists.
[Recommended products] : Vent Filter TEMISH S-NTF2131A-S06 (Nitto Denko Corporation)
- 10) Keep the moisture discharging side of a membrane well ventilated.
- 11) Do not use ROSAHL with vapor phase corrosion inhibitor or insect repellent.
Do not use ROSAHL in a place having high density of organic gas.
- 12) Do not do remodeling. ROSAHL may break down.
- 13) When you use a silicon gasket for attachment, you need to vulcanize it (200 deg C / 6 hours) not to quickly degrade the performance of ROSAHL.

[Precautions in the Use for the Storage Cabinet]

1. When you use ROSAHL to dehumidify into the storage cabinet, do not store volatile rust preventive or things that organic gas volatilizes. The volatile gas which is released from goods reacted at a membrane's anode and new harmful gas is produced. As a result, not only it causes decrease in performance of the ROSAHL, but also it might adversely affect on goods in the storage cabinet. We cannot guarantee even if harm occurs to the stored valuables under the influence of new produced gas.
Please evaluate enough when you use ROSAHL for the storage cabinet.
2. The maker who produces and sells storage cabinet equipped with ROSAHL should explain that enough for end users using the storage cabinet.

