# THERMOELECTRIC DEHUMIDIFIER

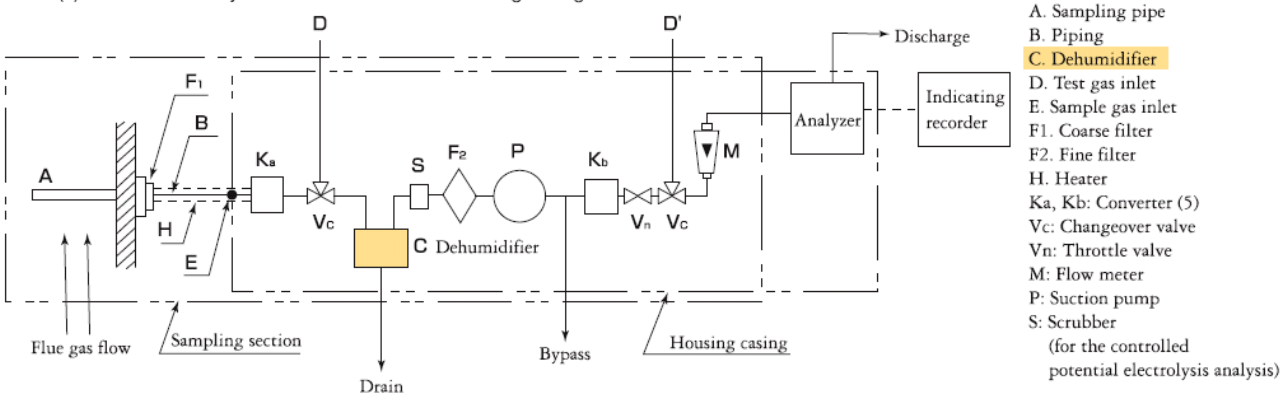
**Indispensable for dehumidification or for controlling the moisture at a constant level in the gas sampling section of the environmental pollution gas analyzer**

This thermoelectric dehumidifier uses KELK's quality thermo module that has a high reputation among users.
Because of its high accuracy,reliability,and convenience,KELK's thermoelectric dehumidifier is indispensable at the pre-processing stage for various gas analyzers as many users have found out.The DH-109-1-R and DH-209-1-R models introduced below are compact and lightweight due the switching power supply that can easily be housed in the measurement systems casing.
These are RoHS compliant models.


## Applications

Application example:Excerpt from JIS B 7982
(Automated measuring systems and analyzers for nitrogen oxides in flue gas)

8.2 Composition
The system consists of the sampling section, analyzer, and the indicating recorder(4) shown in Fig. 1.
Note (4) The recorder may be inside or outside the housing casing.




Note (5) The converter is installed at Ka or Kb. Ka may be outside the casing.

8.3 Sampling section
The sampling section has the function to remove dust from the flue gas and to dehumidify or to control the moisture in the gas constant. This section continuously supplies a constant amount of required sample gas to the analyzer while suppressing the loss of components as much as possible. This section consists of the sampling pipe, coarse filter, piping, dehumidifier, fine filter, suction pump, flow meter, changeover valve, throttle valve, test gas inlet, converter, and scrubber.
(5) Dehumidifier
The dehumidifier is designed to eliminate moisture in the sample or reaction gas. It uses one of the following dehumidification methods: air-cooling, thermoelectric cooling, or the semi-permeable membrane dehumidification method (based on selective permeation of steam)

## Specifications

| | Model | DH-109C-1-R | DH-209C-1-R |
|---|---|---|---|
| Dehumidification performance | Outside air temperature | 40℃ (Maximum gas flow and outlet gas dew point specified below are guaranteed at this temperature.) | |
| | Inlet gas temperature | 40℃ | |
| | Inlet gas dew point | 40℃ | |
| | Maximum gas flow | 1.5ℓ/min | Parallel arrangement 1.5ℓ/min per channel / Serial arrangement 3ℓ/min |
| | Outlet gas dew point | 1~3℃ | 1~3℃ |
| | Short-term ripple | ± 0.1℃ | ± 0.1℃ |
| Temperature control | Temperature control method | PID linear control | |
| | Temperature setting accuracy | 1.0℃ ± 0.5℃ | 1.0℃ ± 0.5℃ |
| | Temperature control accuracy | ± 0.1℃ | ± 0.1℃ |

| Model | | DH-109C-1-R | DH-209C-1-R |
|---|---|---|---|
| No. of channels | | Single | Double |
| Cooling method | | Thermoelectric cooling with thermo module | |
| Heat radiation method | | Forced air cooling,with built-in fan | |
| Material of portion in contact | Inside | Impermeable carbon,hard PVC,Fluorocarbon Resin | |
| | Joint | Polyethylene,O-ring(fluorocarbon rubber) | |
| Joints | | Rc 1/4 | |
| Power supply | | AC 100V 1.4A 50/60Hz | AC100V 2A 50/60Hz |
| Overall dimensions(mm)*1 | | W200*D167*H250 | W236*D167*H255 |
| Weight | | 4kg | 5kg |
| Frame material | | SUS430 | |

*1:Not including the dimensions of any projections.