

OTK-01 Tritium Condensation Sampler



OTK-01 product series represents the tritium sampler that uses the condensation method, and that does not require an absorption medium. It is used for the gaseous discharges monitoring in nuclear facilities.

Purpose

The OTK-01 tritium condensation samplers are intended for the sampling by the condensation one-way method. The tritium (^3H) content bonded in H_2O molecules is consequently evaluated in the samples.

The air in the discharge points of the nuclear facilities is sampled and evaluated.

Description

The device is designed for installing on walls or other suitable structures. It works on the humidity condensation principle. The medium is sucked into the condensation unit, in which the water vapour condenses on the cooled membranes. Tritium, which is contained and chemically bonded in H_2O , is captured in a liquid condensate. Then, the condensate is evaluated.

The basic unit is a condensation unit. When you start the air sampling the air is sucked from the connected line via the condensation unit. The trapped condensate remains in the cooler.

The condensation cooler maintains a temperature below 4°C (39°F) by thermostat control. Continuous air humidity condensation is achieved by cooling below the dew point temperature.

The K0518-01 model contains an air operated diaphragm pump, a diaphragm gas meter and a shock absorber. The K0518-02 model needs the air supply from other source.

The condensate is collected in a tank which is located in thermally insulated heat exchanger and which reduces the back sample evaporation. The collected condensate is easily sampled into a collection vessel via the output valve.

Main Advantages

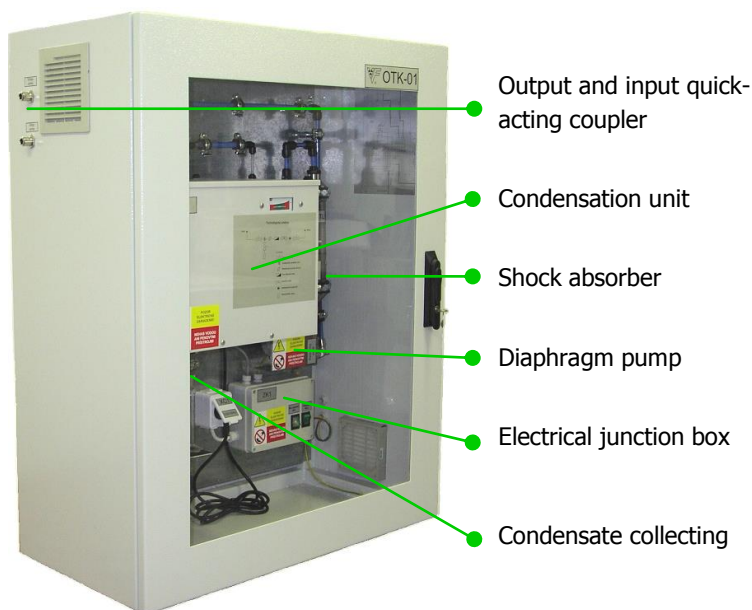
- No absorption medium
- Compact equipment
- Comfortable handling
- Minimum maintenance costs

Specification

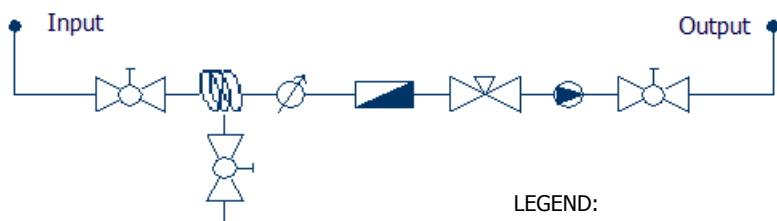
Condensation unit

Medium output temperature	+2 ~ 12 °C (35.5 ~ 53.5 °F) factory setting: +3 °C (37.5 °F)
Pressure loss in cooling system	approx. 25 mbar (18.75 mmHg) for V = 250 L/h (8.83 cfph)
Rise time	approx. 35 min.
Condensate discharge	quick-acting coupler diam. of 12 mm (½ in)

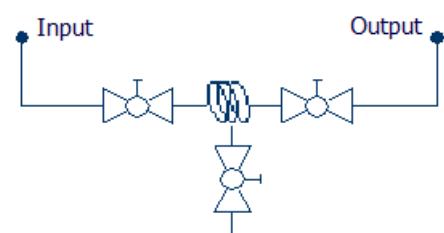
Description



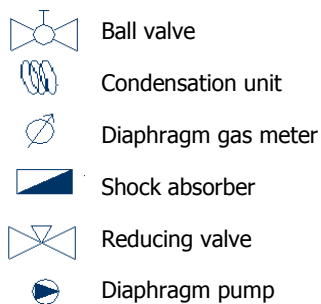
0518-01 model block diagram:



K0518-02 model block diagram:



LEGEND:



Specification

OTK-01 Series

Operating medium pressure range	0.5 ~ 2 bar (375 ~ 1500 mmHg)
Medium temperature range	+5 ~ 80 °C (41 ~ 176 °F)
Flow rate	max. 250 l/h (8.83 cfph) without additional resistance in line adjustable for K0518-01
Power	230 V, 50 Hz
Input power	500 VA for K0518-01 300 VA for K0518-02
Medium connection	Quick-acting coupler diam. of 10 mm (3/8 in)
Dimensions (W x D x H)	800 x 400 x 1000 mm (31½ x 15¾ x 39½ in)
Weight	app. 50 kg (110 lb)
Operating environment	non-explosive, non-aggressive
Ambient temperature	+5 ~ 40 °C (41 ~ 104 °F)
Air relative humidity	max. 75%

Models and Accessories

Model	Description
K0518-01	OTK-01 model including pump and gas meter
K0518-02	OTK-01 model without pump and gas meter
Optional Accessories	
K0518-50	Sample Vessel for OTK-01
Alternative Products	
K0221	V3Ha - Tritium Sampler (using sorption medium)



Flexible solutions

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