



AVL Butanol Remover

Safe Exhaust Handling and Interference-Free CPC Operation

THE CHALLENGE

Condensation particle counters (CPCs) are the core technology behind ultrafine particle monitoring. To detect particles far below 100 nanometers, a CPC grows them in a supersaturated vapor of a working fluid. In butanol-based CPCs, such as the AVL UltraFine Particle Monitor, that fluid is 1-butanol, and the instrument exhaust therefore carries butanol vapor.

In modern air quality stations, this exhaust is a problem. Butanol vapor is an odor nuisance and a workplace-safety concern in enclosed shelters. More critically, it biases co-located measurements of volatile organic compounds (VOCs), distorting data across an entire multi-pollutant station.

Without dedicated exhaust treatment, a butanol-based CPC cannot be safely operated alongside the VOC and trace-gas instrumentation that modern monitoring networks rely on.

THE AVL SOLUTION

The AVL Butanol Remover is a compact exhaust-treatment module installed downstream of any butanol-based CPC. Through heated catalytic oxidation it converts butanol vapor into carbon dioxide and water, releasing only clean, odor-free air.

With a removal efficiency of $\geq 99.9\%$, it eliminates interference with VOC measurements and makes a CPC safe to operate in shared shelters and enclosed monitoring stations. Temperature is controlled automatically, and the device needs no consumables and no routine servicing.

Compatible with all commercial CPCs at flow rates up to 2 NI/min, the Butanol Remover completes the AVL ultrafine particle monitoring chain, ensuring reliable, interference-free operation in any air quality network.

SAFE EXHAUST HANDLING AND INTERFERENCE-FREE OPERATION



The AVL Butanol Remover eliminates butanol vapor from CPC exhaust, ensuring safe, odor-free operation. It prevents interference with VOC measurements, making it an essential component for multi-pollutant monitoring stations. The catalytic process requires no consumables and no operator interaction, supporting continuous, unattended long-term monitoring.



AVL Butanol Remover - downstream CPC exhaust-treatment module

KEY FACTS

- Removal efficiency $\geq 99.9\%$
- Heated catalytic conversion
- No consumables, no routine maintenance
- Automatic temperature control
- Compatible with all commercial CPCs (up to 2 NI/min)
- Potential-free status relay for station integration

1

CPC exhaust carrying butanol vapor is drawn into the heated catalytic stage.

2

Butanol is catalytically oxidized into carbon dioxide and water at $\geq 99.9\%$ efficiency.

3

Clean, odor-free air is released; exhaust temperature stays below 40 °C.

TECHNICAL DATA

Order code	TM4882UFBR.01
Operating principle	Heated catalytic oxidation
Removal efficiency	$\geq 99.9\%$
Max. flow rate	2 NI/min
Exhaust air temperature	$< 40\text{ °C}$
Warm-up time	approx. 20 min
Consumables	None
Dimensions (W×H×D)	214 × 120 × 370 mm
Weight	4.5 kg
Mains supply	100-230 V AC, 50-60 Hz
Power consumption	max. 135 W
Compliance	CE, UKCA, RoHS

APPLICATIONS

- Multi-pollutant air quality monitoring stations
- Networks co-locating CPCs with VOC or trace-gas analyzers
- Research laboratories running long-term aerosol measurements
- Enclosed shelters where butanol odor or workplace safety is a concern
- Any butanol-based CPC requiring safe, clean exhaust handling