



AirKat Zero-gas generators

- hydrocarbon free auxiliary air by catalytic oxidation at high temperature
- eliminating methane completely
- flow (continuous operation) up to 12 l/min, others: on request
- constantly highly purified air for high requirements also for immission applications
- control of operating temperature; overload protection
- molecular sieve in stainless steel refill-cartridge
- compressed air particle filter for gas-in and gas-out
- alarm contact for dysfunction
- customer specific adaptation possible



**AirKat
Zero-gas generator**
← 19-inch rack (3U)
tabletop version →



Applications

The „zero“-gas generators AirKat provide highly clean hydrocarbon and CO free zero-grade air as reference gas with continuously excellent quality.

A typical application is the supply of zero air and also burner auxiliary air for gas analysers with flame ionisation detectors (FID) or for gas chromatographs. They are also suitable for zero-line corrections of CO-analysers.

The zero-gas generators advantageously and profitably take the place of gas cylinders in use. They amortize in a short period of time, supersede the troublesome handling of gas cylinders and excludes the uncertainty of a varying rest-content of pollutants in cylinder gases.

Principle Function

The function of the generators AirKat is based on catalytic oxidation at high temperatures. Hydrocarbons and carbonmonoxide are finally transferred to carbondioxide and water. As catalyst Palladium is used. Special aluminium-oxide pellets serve as carrier material. They are heated up with the help of an infra-red radiator in a heat isolated reactor up to 420 °C. The high temperature also guarantees an effective conversion of methane.

The uncleaned gasmix streams through a particle filter, gets into the catalytic reactor, is led through a cooling unit with effective cooling and finally streams through a molecular sieve (for refilling) With this also the small amounts of the reaction products water vapour and carbondioxide are removed from the gas stream.

The converter is built to withstand pressure and works up to an operating pressure of 6 bar.

Ambient air provided e.g. by a membrane compressor or by a central pressurized air supply is converted to zero-grade air of high grade.

Construction

The zero-gas generator is available as rack version (19-inch rack, 3U), wall fastening version or as tabletop unit. Standard versions: flow up to 6 l/min and 12 l/min, others on request.

Indicating and operating function controlling elements (temperature-, dysfunction, operating information and power button) are positioned on the front plate. The 700 ml stainless steel cartridge (behind the swivelling front plate) with molecular sieve material is refillable.

Accessible from the rear side are gas inlet and outlet, mains input with fuse, alarm contacts for operating control (temperature control) and the fan.

The zero-gas generators AirKat are robust low maintenance instruments which were constructed for continuous operation.

Maintenance

Maintenance activities mainly concern a change of the molecular sieve material (cartridge inside) and the insets of the compressed air filters of gas inlet and outlet (rear, off the units).

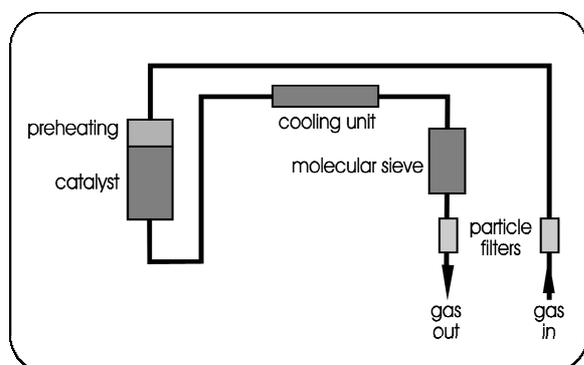
The maintenance interval mainly depends on the humidity of the air supply.

We recommend a change in six months intervals.

The heating element is a wear and tear spare part.

Scheme of gas flow

The set up of the zero-gas generators AirKat is shown schematically in the figure below. All conduits and fittings are executed in high-grade steel.



Gas flow scheme of zero-air reactors

Dimensions

AirKat 6 / 12 l/min (19-inch rack) height: 3 U (132 mm)
width: 19 inch (437 mm)
depth: 350 / 460 mm
weight: appr. 10 / 13 kg

AirKat 6 / 12 l/min (tabletop unit) height: 400 / 600 mm
width: 400 mm
depth: 210 mm
weight: appr. 17 / 19,5 kg

Specifications

Function principle:	complete catalytic oxidation, CH-free zero air, suitable for analytical instruments
Max. input pressure:	max. 6 bar inside unit
Gas flow: (standard)	max. 6 l/min, contin. max. 12 l/min, contin. others: on request
Temperature reactor:	420 °C
Warm up time:	~ 20 minutes
Temperature regulation:	microprocessor controlled 2 point regulator with PID-feedback
Temperature indication:	3-digits for temperature one LED for operation one LED for failure
Failure indication:	potential free relay for controlling (opening and closing contacts)
Compression fittings:	6 mm compression fittings, stainless steel others: on request
Power supply:	220V ... 240V / 50Hz [110V / 60 Hz]
Power consumption:	~ 240 / 365 W at start (6 l/min / 12 l/min) ~ 110 / 190 W mean at permanent operation
Cartridge mol. sieve: (for refilling)	behind the swivelling front panel volume: 700 ml stainless steel
Pressure filters:	2, for gas-in and gas-out
Temperature range:	15 – 35 °C
Protector class:	IP 20

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