

Catalytic Zero-Air Generator AMS 8100 / AMS 8150 Ex



The Application:

The Catalytic Zero-Air Generators model AMS 8100 and AMS 8150 Ex are designed to produce hydrocarbon and carbon monoxide free Zero-Air. The main application of the AMS 8100 and AMS 8150 Ex are generation of hydrocarbon and carbon monoxide free burner and control air for FID's and gas chromatographs. The Catalytic Zero-Air Generators model AMS 8100 and AMS 8150 Ex removes CO quantitatively from ambient air. This so-called Zero-Air can be used for zero-air corrections in CO-analysers which are used for immission monitoring.

The Catalyst:

The operating principle of the Catalytic Zero-Air generators AMS 8100 und AMS 8150 Ex is the catalytic oxidation. The catalyst consists of Pt / PD which is vapour deposited on granulated Aluminium oxide. In the catalytic reactor the catalyst is heated to ca. 400°C. Since this temperature is well below the ignition temperature of most hydrocarbons as well as Hydrogen and Carbon dioxide, the AMS Zero-Air Generator AMS 8100 and AMS 8150 Ex can also be operated in hazardous areas.

The Catalytic Reactor:

The granulated Catalyst is situated, tightly packed in a coiled metal tube and is heated with an infrared heater. Due to the specific geometry of the reactor the air is meandering through the granulated catalyst. The retention time of the designated Zero-Air in the catalytic reactor is most important. The Catalytic Zero-Air Generator AMS 8100 and AMS 8150 Ex produce a Zero-Air volume of 600 NI/h. This high volume of generated Zero-Air makes these instruments one of the most powerful devices commercially available.

The Heat exchanger:

To increase the effectivity of the system the Zero-Air Generator AMS 8100 and AMS 8150 Ex are equipped with a counterflow heat exchanger in the gas pathway. Due to the specific cross section of the heat exchanger the inlet air is heated to 300 °C, while the Zero-Air at the outlet is only 35 °C. A Mol-sieve at the outlet of the Zero-Air generators cleans off finally condensate and nitric oxides.

Operation in hazardous areas:

The Catalytic Zero-Air generator AMS 8150 Ex is designed for use in hazardous areas classified as Zone 2 according to Ex p IIC T 3. To achieve Zone 2 classification the entire housing is purged continuously with Air. The continous purging generates a overpressure of ≥ 5 mbar. The purge air is used simultaneously to cool the electronic components.

Technical Data

Catalytic air purifier	AMS 8100 / AMS 8150 Ex Zone 2
Ex-classification	Ex p IIC T3
Principle	catalytic oxydation
Catalyst	Pt/Pd on granulated Al ₂ O ₃
Inlet pressure	15 bar (abs.)
Operating pressure	3 bar (abs.)
Gas flow	600 NI/h
Time for pre-heating	ca. 30 min.
Reactor temperature	ca. 400 °C
Gas connection	6 mm ferrule pack
Power supply	230 VAC 50/60 Hz
Power consumption	600 VA
Hi / Low Alarm	temperature, potential-free relay, 60 V / 1A
Flow monitoring	
AMS 8100 (Option)	potential-free relay, 60 V / 1A
AMS 8150 (Standard)	potential-free relay, 60 V / 1A
Dimensions HxBxT	
AMS 8100	166 x 520 x 400 mm or 19" rack
AMS 8150	750 x 500 x 300 mm 960 x 500 x 300 mm with filters
Purification of water and nitrogen oxides	Molecular sieve
Cleaning the air at the device input (option)	Oil separator, Dust filter
Version: AMS 8100/8150 Ex E V-2013-07	

Specification subject to change.