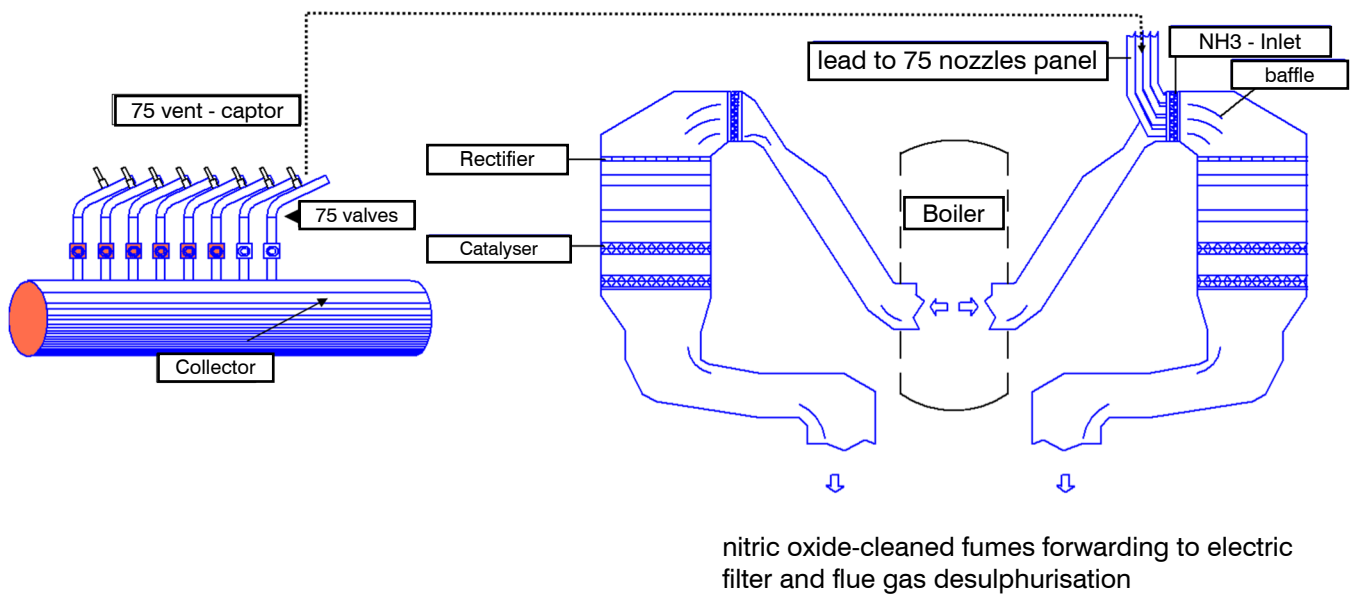


## Flow measurement of ammonia gas (NH<sub>3</sub>) (ammonia-air mixture) to prepare the fumes of Coal Power Stations

### INTRODUCTION

From the combustion chamber the fumes are led to the catalyser. Before entrance of the fumes to the catalyser each flue holds 75 nozzles. These nozzles make sure the „NO-freight“ get a proportional allotment of NH<sub>3</sub>. The 75 nozzles get fed by ammonia gas (NH<sub>3</sub>) which comes from a collector led through 75 pipes (DN100). The flue gas together with the ammonia-air mixture are led to the catalyser for further reaction. Here the real reduction of NO (nitrogen monoxid) takes place. The „final product“ of the catalysing is nitrogen and water (water vapor).



### PROBLEM

The spreading of the ammonia gas is manually adjusted by hand valves. Since the 75 nozzles are located at different spots of the fumes flow the input amount of NH<sub>3</sub> for each nozzle varies. In case of too much NH<sub>3</sub> the NH<sub>3</sub> gets through. By contrast of too less NH<sub>3</sub> flue gas will contain too much of the nitric oxide; whereby the legal requirements would no longer be observed. The limit value of the nitric oxide is 200 mg/Nm<sup>3</sup>.

### SOLUTION & BENEFIT

All 150 vent-captor units of type 3205.30/xx S120 (flow meter with analog output 4 – 20 mA) installed in a power plant have been specially developed for this kind of application. Together with the customer the vent-captor has been steadily optimised.

Since behind each valve a vent-captor has been integrated the customer always gets a repeatable and accurate reading of the inflowing gas volume; so that in case of any flow change (e. g. blockage in the nozzle section) a reproducible new adjustment of the vent-captor would be possible.