

## In-line Flue gas probe AMS 3210-860/150 Ex Zone 2



### The Application:

The In-Line Flue gas probe AMS 321x-860/150 Ex is equipped with a Zircon dioxide sensor located in the tip of the probe. The Flue gas probe AMS 321x-860/150 Ex can be used for the measurement of Oxygen in flue gases from gaseous, liquid and solid fuels and biomass in Ex-Zone 1 and 2. In Applications with solid fuels and biomass the In-Line Flue gas probe AMS 321x-860/150 Ex is equipped with an additional Stainless steel tube to protect the probe against abrasion.

### The Measuring Principle:

All AMS Flue gas probes are equipped with Zircon dioxide sensors with Platinum electrodes which distinguish themselves by a long lifetime in the process. The location of the Zircon dioxide sensor at the top of the probe guarantee extremely fast responses of the In-Line Flue gas probe AMS 321x-860/150 Ex. The Transmitters AMS 3220 and AMS 5200 supply the current for the heater in the Zircon dioxide sensor. To increase the stability of the measuring values, the sensor temperature is regulated within low limits. Simultaneously the Transmitters AMS 3220 and AMS 5200 monitor continuously all functions and readings of the In-Line Flue gas probe AMS 321x-860/150 Ex. The Transmitters AMS 3220 and AMS 5200 are available in certified Ex-d housings for use in probe AMS 321x-860-150 Ex.

### **The Measuring System:**

Typically continuous Oxygen measuring systems are consisting of a Flue gas probe with built in Zircon dioxide sensor, a Transmitter and a Pneumatic unit. The Pneumatic unit supplies continuously instrument air to the Zircon dioxide sensor which serves as Reference air. Via a second gas inlet port at the probe flange the Zircon dioxide sensor can be supplied with calibration gas to verify and correct the calibration of the sensor in regular intervals. The Pneumatic unit and the Flue gas probe are connected by two high pressure pneumatic hoses. A multi wire, protected cable connects the Transmitter to the Flue gas probe electronically. Due to the modular construction of the Oxygen measuring systems of AMS the Transmitter can be installed inside the housing of the Pneumatic unit. This reduces the required length of both high pressure pneumatic hose and protected cable. The power supply for the Transmitter and the Flue gas probe is also installed in the GRP-housing of the Pneumatic unit. The flue gas probe, the Transmitter and the Pneumatic unit are manufactured according to the protection class IP 65. To replace an already existing continuous oxygen measuring system the In-Line Flue gas probe AMS 321x-860/150 Ex can be fitted with all flange sizes both in DIN and ANSI dimensions. Optional the In-Line Flue gas probe AMS 321x-860/150 Ex can be equipped with time controlled back purge for high dust applications and with Auto-calibration for the automatic, time controlled calibration.

## Technical Data

ZrO2 probe	<b>AMS 3210-860/150 Ex Zone 2</b>
Ex-classification	ATEX II 3G Ex nC IIB + H2 T3
Measuring principle	ZrO2 probe with Pt-electrodes
Application	Residual oxygen in flue gas
Construction	ZrO2 sensor installed in the tip of the probe with stainless steel sintermetalfilter screwed on, designed as a flame arrestor
Flue gas temp., max.	500 °C Option: High temp. Modification up to 1.150 °C only for Ex-Zone 2
Dust content (flue gas)	max. 5 Gram/Nm <sup>3</sup> , if higher shield to protect against abrasion or separate protecting tube
Flue gas velocity	max. 20 m/Sec. or separate protecting tube
Time for pre-heating	~ 10 Minutes
T90-Time	< 20 Seconds
Reaction time	< 3 Seconds
Probe length	150 – 860 mm
Connecting flanges	DN 80 PN 40 (other on request)
Material	Standard: Stainless steel 1.4571 Option: INCONEL
Installation in the stack	pointing downward
Protection	IP65
Reference air supply	by separate pneumatic unit
Calibration gas supply	by separate pneumatic unit
Weight	ca. 12,5 kg
Accessoires Transmitter Pneumatic unit	AMS 5200 / AMS 3220 in housing IP 65 or Ex-d GRP housing, dimensions: 600 x 600 x 200 mm / 800 x 600 x 300 mm
Version: AMS 3211-860/150 E V-2021-08	

Specifications subject to change