

Endura AZ30 series probe

Combustion oxygen monitor



Endura AZ30 maximum surface temperature operating conditions

Measurement made easy

—
Endura AZ30
series combustion
oxygen monitor

Introduction

This Product Guide explains why the AZ30 can be used in installations up to 800 °C (1472 °F).

Frequently asked question:

Why does it look like AZ30 is only certified for hazardous areas up to 60/70 °C (140/158 °F)?

Answer:

This is wrong. You can install the AZ30 in a hazardous area installation where the process gas is anything up to 800 °C (1472 °F) and where the environment outside the process is anything up to 70 °C (158 °F).

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If you would like to discuss this further, please feel free to contact me.

Regards,

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The reason for the confusion

The hazardous area certification includes a statement that the surface temperature will not exceed 70 °C (158 °F) when in operation. Above a certain surface temperature, there is a danger that the stainless-steel surface itself is hot enough to ignite any flammable gases that may be present.

The probe contains a mains-powered heater which heats the zirconia sensor to 700 °C (1292 °F). However, the thermal insulation around the sensor and heater ensures the outside of the probe is always below 70 °C (158 °F) if the probe is switched on in a 'room temperature' environment – this will be the case if the customer switches their process off but leaves the AZ30 powered.

If the customer switches their process on, the probe is not operating in a 'room temperature' environment.

It could be operating in gases up to 800 °C (1472 °F). Obviously, it is impossible for the surface of an in situ probe to be less than 70 °C (158 °F) if the process temperature is anything up to 800 °C (1472 °F)!

This means that during operating conditions, you could argue that this part of the approval is invalid. This will be the case with any ATEX device directly installed in hot processes, like exhaust gas or steam.

But why would you fear the probe surface being hot enough to ignite a combustible gas which surrounds the probe, when the combustible gas has already combusted?

Remember, the application is usually exhaust gas.

Something to remember

This is just one small aspect of hazardous area design. For example, AZ30 has been designed to reduce flame paths and with contained enclosures that applies equally when the process is on or off. Full details are outside the scope of this Product Guide.