

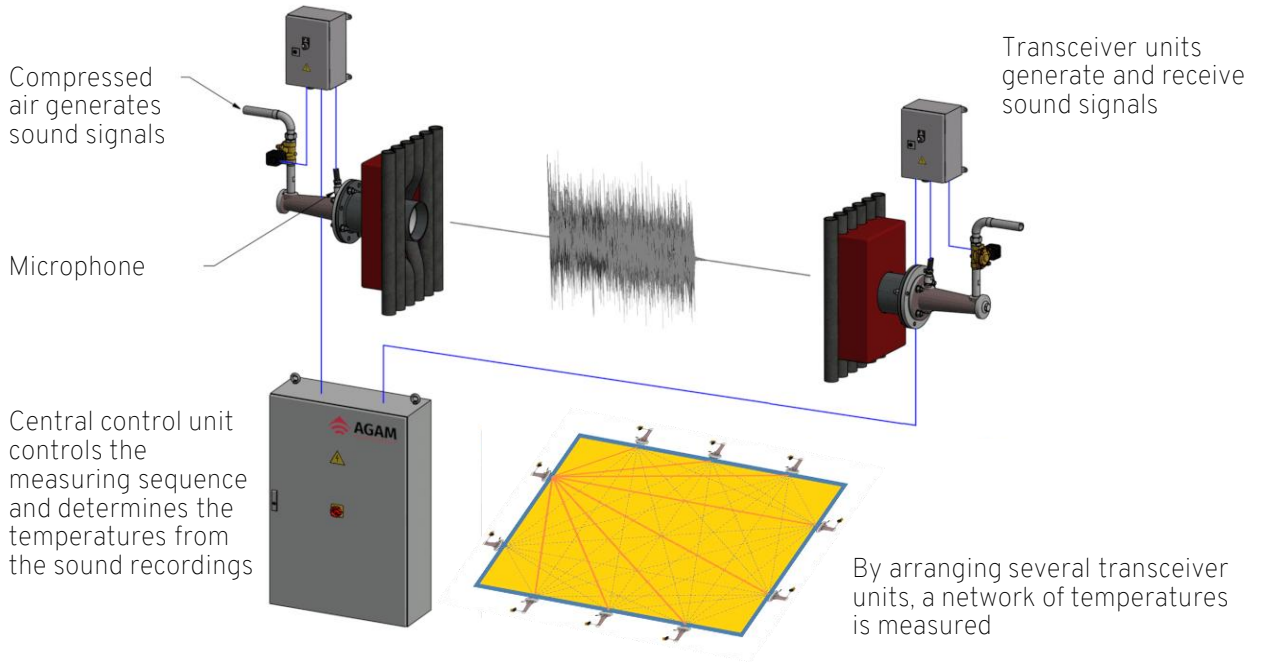
# 2D TEMPERATURE MEASUREMENT WITH SOUND



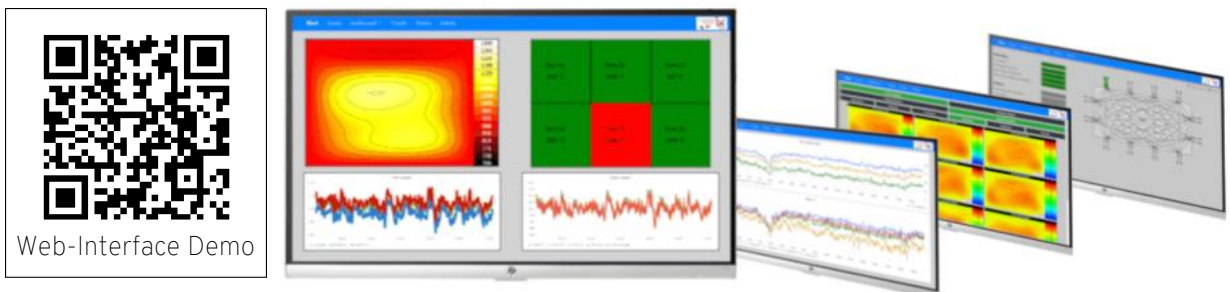
**AGAM**  
real gas temperature

# THE AGAM MEASUREMENT METHOD

AGAM measures the true gas temperature free of radiation errors thanks to a simple physical principle: the speed of sound in a gas depends on the temperature. From this direct relationship, we have developed a robust measurement method that provides two-dimensional temperature information from the furnace with the highest precision in real time.



Graphical web interface allows intuitive operation and control



# AREAS OF APPLICATION

- Waste to energy plants
- Firings with substitute fuels
- Coal (hard coal and lignite) firing systems
- Stationary and circulating fluidized bed boilers
- Rotary kilns
- Blast furnaces
- Refineries



AGAM fulfills essential tasks:

- AGAM enables **active balancing control**. Equalizing temperatures increases efficiency and reduces boiler wear due to corrosion and slagging. Fuel savings, emission reductions, longer operation times and shorter shutdowns are achieved.
- Because AGAM determines temperatures in real time, it can provide a 2 to 3 minute faster signal for **combustion control** compared to the steam value. The integration of this indicator into the performance control loop minimizes deviations from the setpoint.
- Determining zone temperatures for **controlling SNCR** to achieve denitrification goals, as well as reducing the amount of reduction agent used.

With AGAM, we have been setting standards since 1990 and are the world market leader in 2D gas temperature measurement. In over 350 plants on all continents, AGAM is an important element for efficient and environmentally friendly operation.

# YOUR ADVANTAGES AT A GLANCE

- Real gas temperature - without radiation errors
- 2D temperature distribution in the cross section with highest resolution
- Precise from 20 to 2000 °C
- Non-contact, self-cleaning and without drift
- Robust, low maintenance hardware
- Fast 2D measurement in real time

## DEVELOPMENTS

After more than 30 years of plant experience in difficult process conditions, the AGAM system has been in its third generation since 2019. The AGAM G3 trumps its competitors with continuous advancements. Key developments include:

- Faster measurement time
- Very high local temperature resolution
- Modern visualization in the web browser
- Various interfaces for connection to the customer's control system
- Reduced compressed air consumption
- QAL1 certification for official temperature monitoring for authorities
- Regular updates with always new features, such as
  - Leakage detection
  - Simple support request with data transfer via QR code
  - Backup and recovery functions
  - Use of sound echoes for higher resolution