Cement Manufacturing

Temperature sensors

Reliability, performance and long life span for your temperature processes

Measuring your requirements
Pyrocontrole

YOUR PARTNER FOR TEMPERATURE MEASUREMENT

Pyrocontrole, a company in the Chauvin Arnoux Group, the European leader in measurement, designs and manufactures industrial temperature measurement and control systems. Thanks to its extensive know-how, Pyrocontrole has become a key partner of the major industries.

Keeping as close as possible to the constraints facing cement manufacturers, Pyrocontrole has developed a comprehensive, specific range of temperature sensors which are reliable, rugged, dust-resistant, shockproof and capable of withstanding extreme temperatures.

We guarantee a long life span for our sensors by using high-quality materials and experienced teams to make them.

Our offering is part of a global approach helping to reduce your maintenance costs and cut your energy spending.

INTERNATIONAL PRESENCE

Thanks to its membership of the Chauvin Arnoux Group, Pyrocontrole is present worldwide, represented by a network of ten subsidiaries and an export department.

Sales teams and technical sites in China enable us to cover the whole continent of Asia with quick response backed by a high-performance strategy.

QUALIFICATION AND TESTING

Our team of metrological experts performs the inspections and the entry tests for materials, as well as the checks at the end of the manufacturing process, according to the requirements linked to the order.

For this, we have integrated resources in our factory:

- Laboratory with COFRAC accreditation no. 2-1385 for calibration by comparison up to 1,550 °C.
- Temperature sensor response time measurement bench in accordance with the NF EN 60751 standard.
- Specialized room equipped for welding and penetrant testing according to the NF EN 571-1 standard.
- Bench specially equipped for hydrostatic testing.
- Radiography for checking the welds and the positioning of the measuring elements.

Depending on how demanding your requirements are, Pyrocontrole proposes an in-situ verification method without dismantling and without halting production to ensure that your temperature measurements remain accurate over time. Simple, reliable and quick to set up, our temperature assembly technology with in-situ calibration offers significant advantages in terms of energy saving, productivity, quality and traceability.

TESTS AND VALIDATIONS

- Calibration in our laboratory with CoFrac accreditation no. 2-1385, from -40 °C to +1,550 °C
- PED, provision of design calculation notes
- Non-destructive tests
  - Penetrant testing of welds
  - Helium test
  - Hydrostatic test
  - Radiography of welds

MATERIAL TRACEABILITY AND MANUFACTURING METHOD

- CCPU material certificate
- PMI tests on sensors, welds and finished flanges
- DMOS (description of welding operating method), QMOS (qualification of welding operating method), QS (welder qualification)

IN-SITU CALIBRATION WITHOUT LOSING PRODUCTIVITY, ACCORDING TO YOUR OWN SCHEDULE

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CONCEPTION

Drawing on measurement know-how built up over a long period, Pyrocontrole contributes "temperature measurement expertise" to the Chauvin Arnoux Group's industrial processes. The temperature probes and sensors are designed in the R&D department in Lyon. The equipment is also machined, assembled and checked in France by experienced, qualified teams who guarantee quality and reliability.

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Smoke-box sensor
This sensor is capable of withstanding high temperatures and high concentrations of clinker dust. It monitors the temperature of the hot gases recovered from the rotary kiln and from the preheater tower.
Sensing element: Pt100
Measurement withstand: up to 1,300 °C

Thermowell sensor
Immersed in the liquid fuel, this thermowell sensor is equipped with an interchangeable sensing element which avoids any loss of tightness on the installation and prevents shutdown and/or draining of the process.
Sensing element: Pt100
Measurement range: ambient temperature

Temperature transmitters & controllers

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<th>Probe-head transmitter PRETOP</th>
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<td>HART option</td>
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</table>

Choice of more than 1,000 temperature control solutions: 1 or 2 inputs, fixed or universal, outputs: relays or 4-20 mA, on-off or PID control, self-adapting and fuzzy logic...

Flue sensor
Used in discharge chimneys, this sensor measures and controls the temperature of the gases discharged into the atmosphere. In this way, it can be used to ensure correct operation of the installation and environmentally-friendly production.
Sensing element: Pt100
Measurement withstand: up to 350 °C

Conditioning tower sensor
Installed to check the temperature of the gases, its rugged, compact design makes it highly resistant to shocks and vibrations. Its sensing element is protected by a stainless-steel sheath capable of withstanding corrosive gases.
Sensing element: Pt100
Measurement withstand: up to 450 °C

Cyclone sensor
Installed upstream and downstream (discharge chute) of each cyclone, this sensor measures the gas and material temperatures. This monitoring helps to control and prevent any obstructions due to clogging of the fines. For the lower levels, the sensor is equipped with anti-abrasion protection. This rugged sensor withstands severe mechanical shocks.
Sensing element: Pt100
Measurement withstand: up to 700 °C

Motor-bearing sensor
Located near the bearing greasers and resistant to vibrations, this sensor checks the temperature of the bearing reliably and instantaneously. It can detect at an early stage any overheating which may lead to malfunctions.
Sensing element: Pt100
Measurement withstand: up to 200 °C

Smoke-box sensor
This sensor is capable of withstanding high temperatures and high concentrations of clinker dust. It monitors the temperature of the hot gases recovered from the rotary kiln and from the preheater tower.
Sensing element: Pt100
Measurement withstand: up to 1,300 °C

Thermowell sensor
Immersed in the liquid fuel, this thermowell sensor is equipped with an interchangeable sensing element which avoids any loss of tightness on the installation and prevents shutdown and/or draining of the process.
Sensing element: Pt100
Measurement range: ambient temperature

Multi-point sensor
Fixed onto the process by a flange, the ATEX / IECEx-qualified multi-point sensor comprises several probes of different lengths. This multi-point assembly makes it possible to gather enough information on the thermal gradation to map any overheating of the tank sufficiently quickly.
Sensitive elements: Pt100
Measurement range: ambient temperature

Find all the technical specifications of these temperature sensors and accessories in our Cement Manufacturing Selection Guide which can be downloaded from our website at www.pyrocontrole.com.
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With its seven brands (Chauvin Arnoux®, Metrix®, Multimetrix®, Enerdis®, Pyrocontrole®, AEMC® and AMRA®) and its metrology and regulatory testing subsidiary, Manumesure, Chauvin Arnoux is one of the European leaders in measurement, energy performance, industrial thermography and metrology.