

DT034

FAST-RESPONSE SENSOR IN THERMOWELL

For reliable instantaneous
temperature measurement in
severe operating conditions
in nuclear environments

- **High measurement accuracy**
- Response time less than **3.7 seconds** in thermowell
- **K1-qualified** according to RCCE
- **Technology compliant** with the requirements of **3rd-generation reactors**



Nuclear



■ Operation

Mounted in a thermowell, the **DT034** sensor provides temperature control and protection for the primary loops of pressurized-water reactors (PWRs). Qualified to withstand a loss-of-coolant accident (LOCA), this sensor meets the requirements for third-generation reactors.

Fixed to the pipe by means of a boss or mounted in a scoop, the DT034 contributes to:

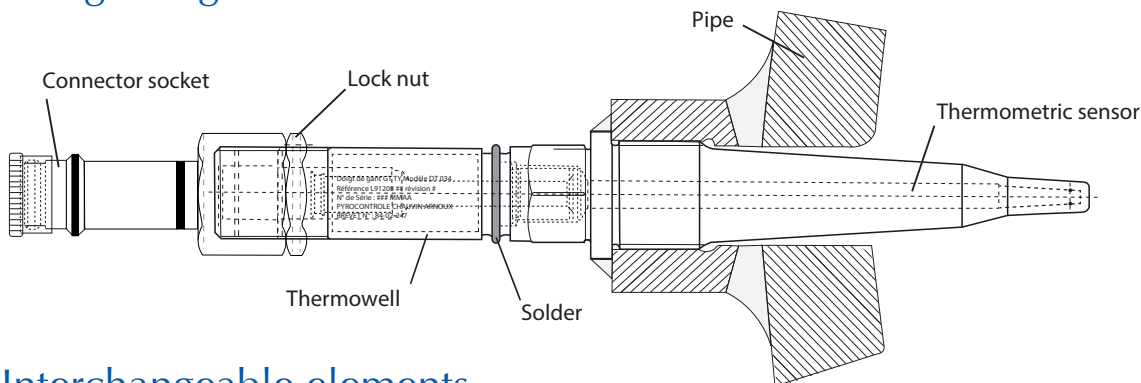
- **ensuring reactor safety** if abnormal temperature levels are detected
- **controlling reactor power** and **optimizing the efficiency of the nuclear plant** by controlling temperature stability of the primary loop water output from the reactor.

Fixed on the extension piece of the thermowell, this is a single-piece sensor used with a welded connector.

■ Technical specifications

Temperature sensor	
Temperature range	0 / + 400 °C
Qualified sensor	K1 accord to RCC-E
Qualification level	SC1
Response time	< 3.7 s under nominal operating conditions < 4.45 s for a fluid speed of 1 m/s, step 20 °C to 70 °C
Measuring element	Pt100, 4-wire mounting
Measuring current	Maximum current < 3 mA to maintain the required accuracy Maximum value without destruction: 40 mA for 3 min.
Measurement accuracy	Class B according to IEC751
Electrical insulation	Ri ≥ 100 MΩat 100 Vp-p from 20 °C to 200 °C Ri ≥ 1 MΩat 100 Vp-p above 200 °C
Electrical connection	Welded leakproof connector socket, SOURIAU type 8NA1Y1212
Thermowell	Material: Austenitic stainless steel Nominal pressure: 175 bars / Test pressure: 260 bars

■ Design diagram



■ Interchangeable elements

Element	Code to order
Sensor	L912081-100
Metal gasket	LA08130-000

■ Certifications

Pyrocontrole is certified **ISO 9001** for Quality Management and **ISO 14001** for control of the environmental impact. For its dedicated equipment for the Chinese civilian nuclear industry, Pyrocontrole has **HAF 604** certification.

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