



G1/2"

85

≈ 75

≈ 82

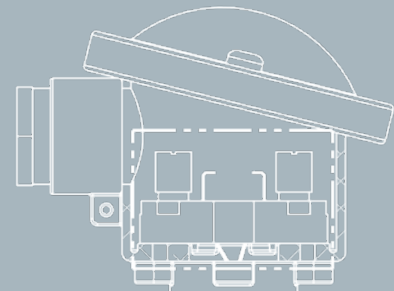
∅ 6

33

∅ 44

SENSORS CATALOGUE

TEMPERATURE MEASUREMENT IN INDUSTRIAL ENVIRONMENTS



∅ 1/2"

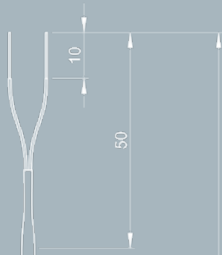
1/2

≈ 35

L3

L2

R45 ≥ ∅ 1/2"
R60 ≥ ∅ 3/4"



10

50

2000

PG7

∅ 18

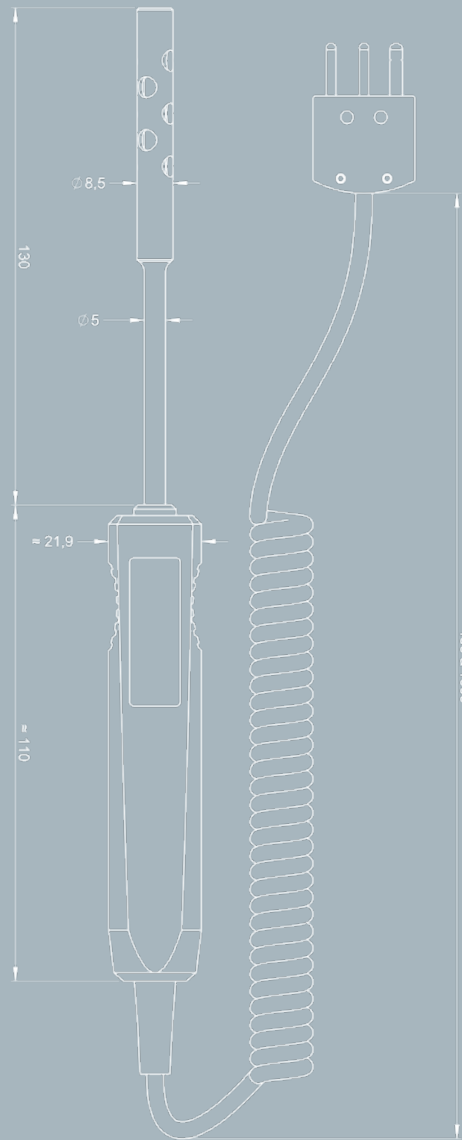
80

100

∅ 15

∅ 6,5

5



∅ 8,5

∅ 5

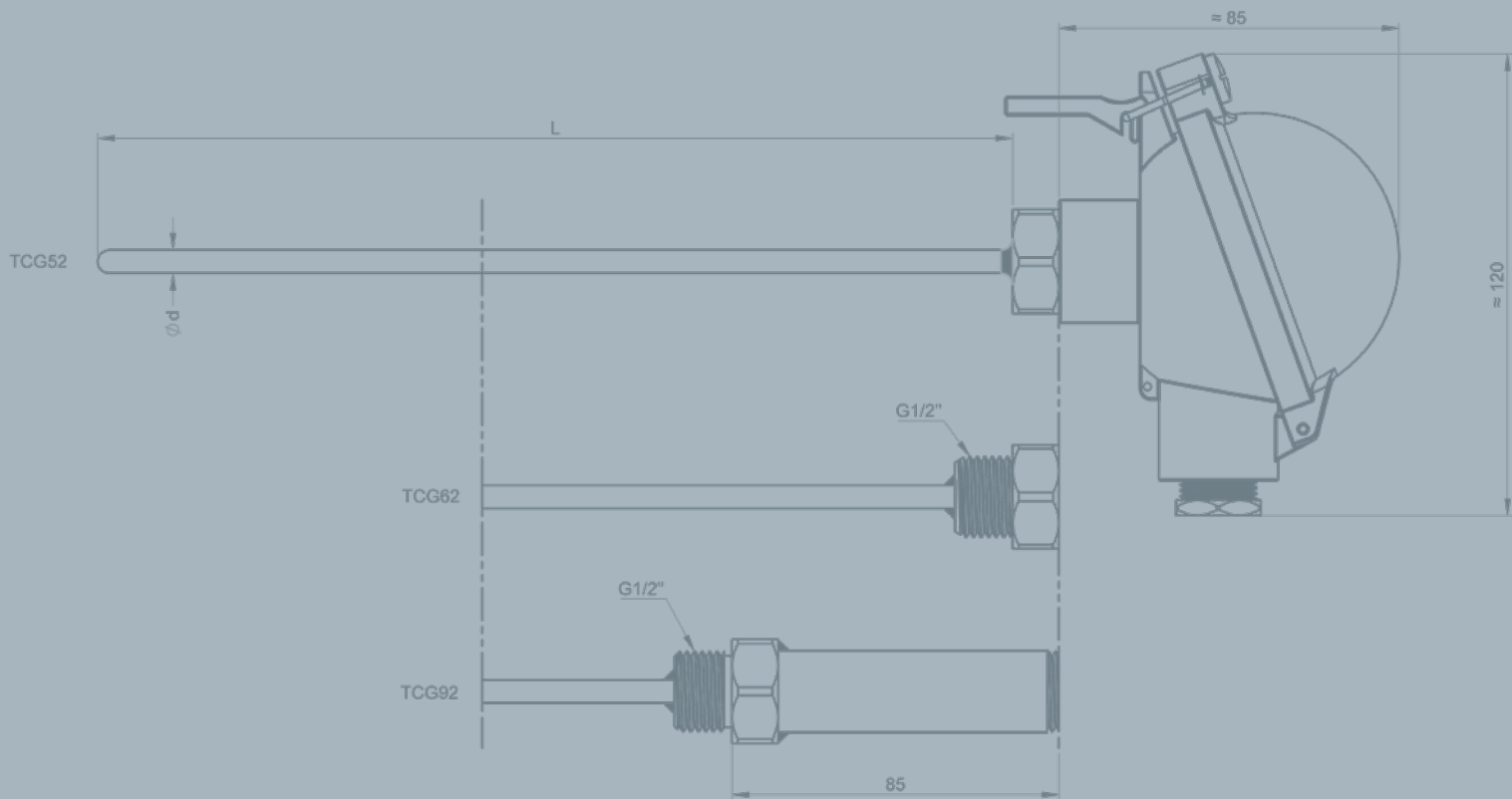
130

≈ 21,9

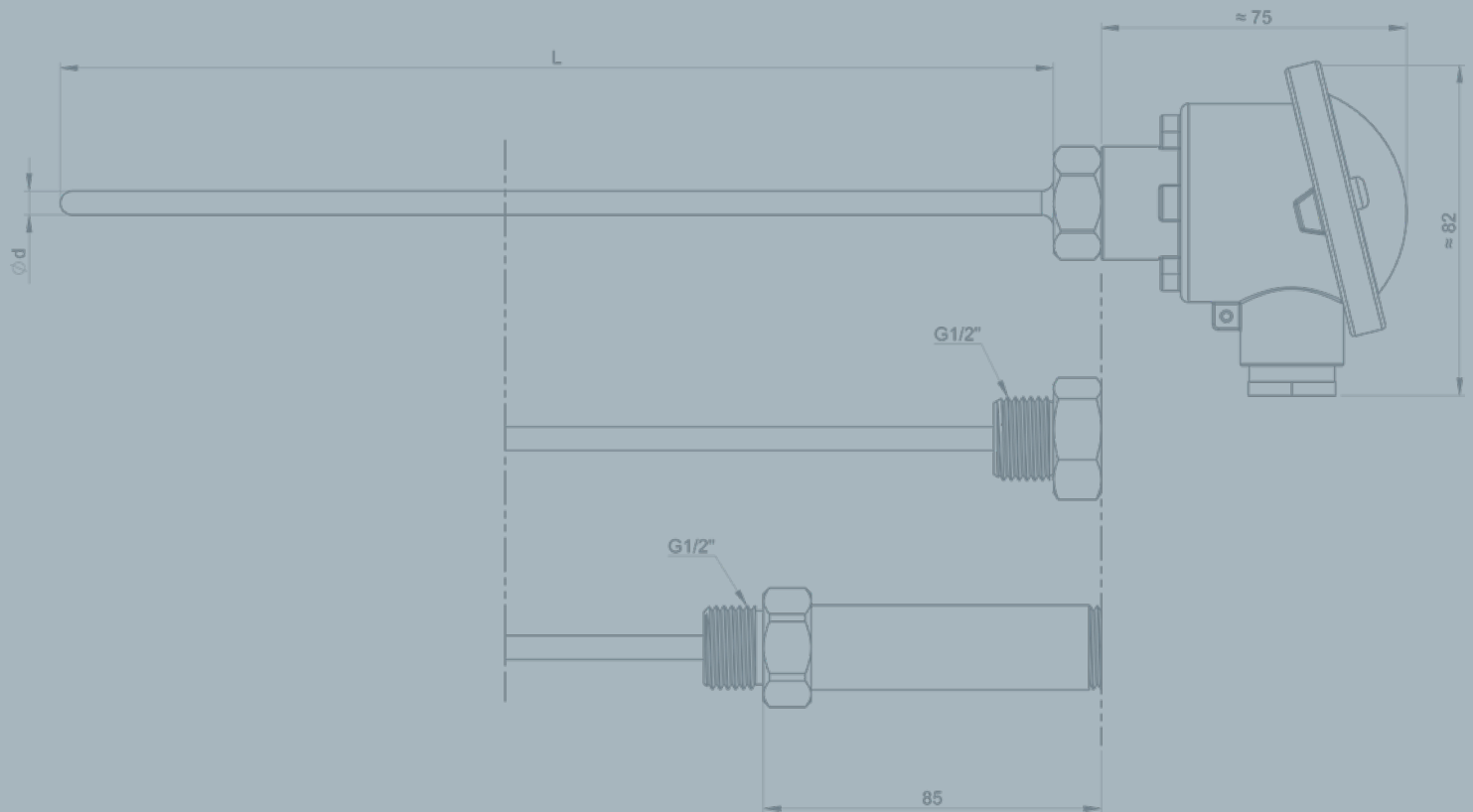
≈ 110

450 à 1000





SENSORS FOR HIGH-PRESSURE APPLICATIONS



Some processes in the chemicals sector require very high pressures to produce quality products. One such process is the manufacture of low-density polyethylene (LDPE).

The LDPE production process is divided into five operations:

- Compression of the gas: after intake of ethylene, the gas is compressed in the first compressor with unreacted gas from the process. This initial compressed gas is remixed with unreacted gas and then enters the second compressor.
- Polymerization: an initiator (organic peroxide) is added to this second compressed gas in the reactor. It is mixed by a stirring device. Polymerization is achieved under specific pressure and temperature conditions.
- Separation of the gas: the unreacted gas is then separated by passing it through 3 distinct separators. This separated gas is then recovered for reinjection upstream of the two compressors. It should be noted that some of the gas will be excluded from the process.
- Extrusion: once the unreacted gas has been removed, the polymers can be extruded in granulate form.
- Storage and conditioning: the granules are dried and stored according to their particle size. Degassing is performed by hot air injection.

The pressure in the polymerization process may be between 1,000 and 3,000 bar. Furthermore, the temperature is a critical quantity for the polymerization process, so it is crucial to monitor it. This means being capable of designing and manufacturing quick, accurate temperature sensors which can withstand these high pressures.

Pyrocontrole proposes temperature sensors capable of withstanding up to 4,700 bar (i.e. more than 1.5xPN). A design can be developed which is tailored to suit your installation and operating constraints. Please do not hesitate to contact us for a quotation.



HPTEMP

THERMOCOUPLE

CLASS
1

IEC
584-1

UP TO
4700
BAR



DESCRIPTION

Temperature Sensor for high pressures up to 4,700 bars. HPtemp is designed to measure temperature in extreme pressure environments such as LDPE units.

Developed to measure temperatures in high-pressure environments, this qualified sensor can be used for reliable, accurate measurement of fluid temperatures, with a response time under one second.

Comprising a part immersed in the fluid, it is mounted using a screwed fitting and fixed with a double socket taper providing very high-level leak-tightness.

SPECIFICATIONS

Operating temperature	Up to 350°C
Response time	0.6 s
Maximum pressure	3,500 bars
Test pressure	4,700 bars
Fluid speed supported	100 m/s
Measuring element	Duplex K thermocouple
Protective sheath	Diameter from 1.5 to 6 mm Metal, 316L Fastening by screwed fitting Double socket taper for tightness

STRENGTHS

- Pressure range up to 4,700 bars
- Very short response time: less than one second
- Withstands shocks and vibrations
- ATEX/ IECEx-compliant
- Particularly compact: 3 mm diameter

EXAMPLES**CONTACT US FOR OTHER REQUESTS**

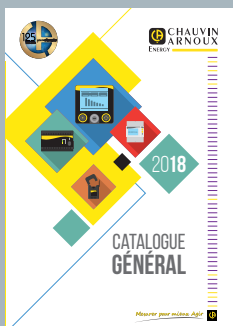
Our R&D team can develop tailored temperature sensors according to your specifications.



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