

We design, calculate and manufacture all primary elements for flow and temperature measure that the new technologies demand as well as level glass indicators and magnetic levels for medium and high-pressure applications.

Improving our technology is
working for the environment



Century XXI



Made in Spain



Nº: ISO 9001 - 0037273



EIPSA is a company established in the 80´s by a group of technicians having a large experience in the instrumentation's world. Its large introduction in the international market is obtained because of the quality of the products and the service offered. The high degree of competitiveness obtained, as consequence of the new systems of designing and manufacturing we apply, is the key point to achieve our success.

Our policy of investing in newest equipments, our highly trained human resources and our capacity to update our manufacturing range to the newest standard allows us to offer the high-quality product that the market demands.

Our close relationship with engineering companies (such as Técnicas Reunidas, Foster Wheeler, Fluor, TPL, Technip,...) allows us to develop the new designs required by the new technologies.

The manufacture and the required tests are carried out in our own facilities where our laboratories for test and calibration of temperature elements and our R + D + I department are available. All these facilities are to be point out having a high flexibility to cover the specific requirements of our customers.



All our manufacturing processes take into consideration the highest levels of environmental protection and the most restrictive regulations.

The new technologies applied for manufacturing of primary elements and the newest designs, carried out with the highest level of quality, allow us to put into the market reliable, high-performance products. We are endorsed, among others, by ISO 9001:2015 accreditation, including equipment design, the Quality Assurance Group for Owners of Spanish Nuclear Power Plants, as well as the Laboratory Official Madariaga, acting as a notified body in relation to the certification of products that under the European ATEX or International IECEx regulations.

Our products:

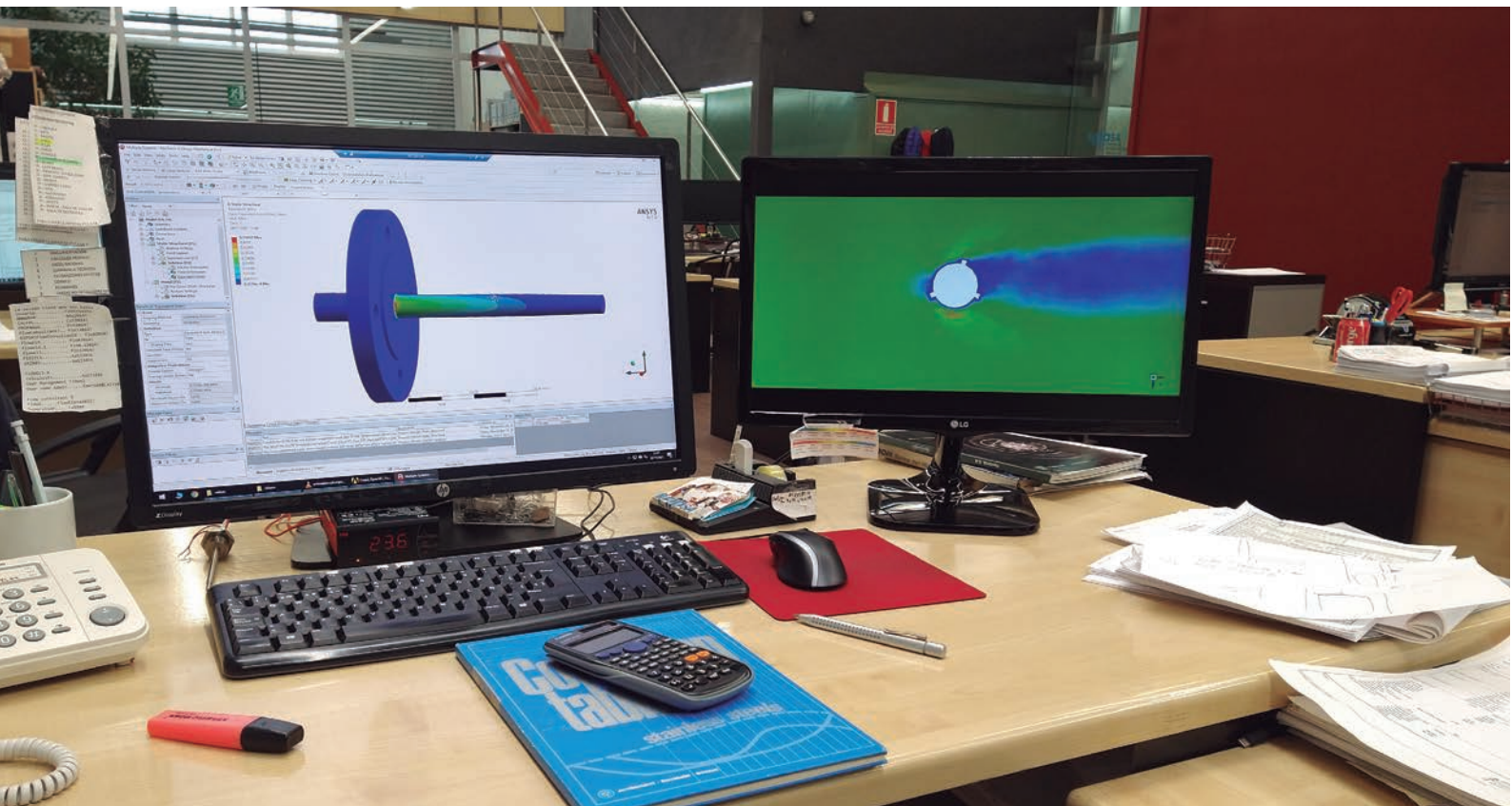
- Flow
- Temperature
- Level indicators
- Valves and accessories instrumentation

The primary flow and temperature elements along with their associated instrumentation effectively control a wide variety of production processes. Therefore, great reliability, high repeatability and adequate precision are required.

We design, calculate and manufacture all the primary elements for flow and temperature measurement demanded by new technologies, as well as glass and magnetic level indicators for medium and high-pressure applications.

Our quality assurance system includes equipment design and complies with ISO 9001:2015. We offer products approved for hazardous areas according to IECEx and ATEX regulations.





Simulation of instrumentation equipment through Finite elements, CFD and FEA

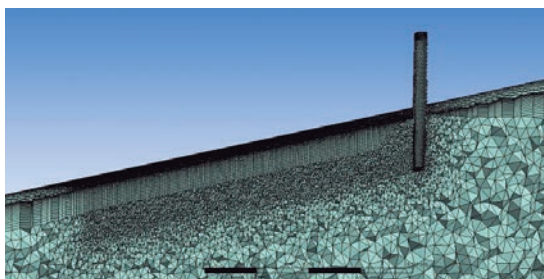
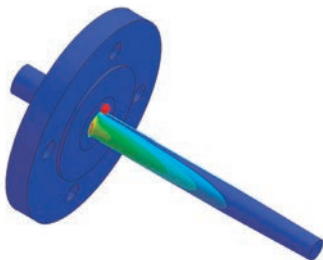
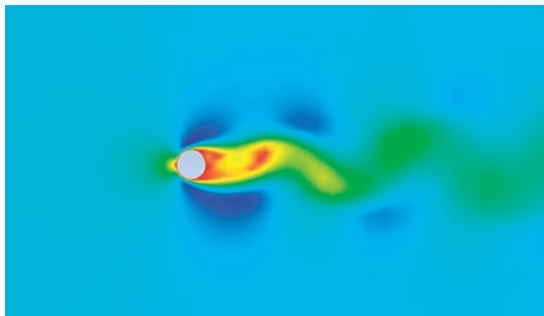
Until now, the design methodology used was governed by the standards of the different international associations. But for some years we have also applied to our designs, the methodology based on the simulation and analysis by finite elements through the ANSYS software, which allows us to anticipate with more accuracy the physics and behaviour of our products, applying the regulatory and verification standards that this methodology has.

This method allows us to more accurately analyse the behaviour of certain materials under extreme conditions (temperature, tensions, vibrations, etc...), thus verifying the high degree of reliability of the manufactured equipment.

Being able to simulate extreme conditions allows us to guarantee functionality and achieve excellent levels of quality.

Using the possibilities offered by this type of software for modelling, the EIPSA departments: Technical and R+D+I, with the supervision of the quality team, are working and researching in the following fields:

- Analysis of turbulence created in the different profiles of the equipment, highlighting the development of the new **Vorticrack®** thermowell.
- Pipe flow analysis.
- Heat transfer analysis in temperature measurement elements.
- Verification of thicknesses in pressurized equipment.
- Analysis of turbulence created in the



Structural and fluid-dynamic analysis images of a thermowell.

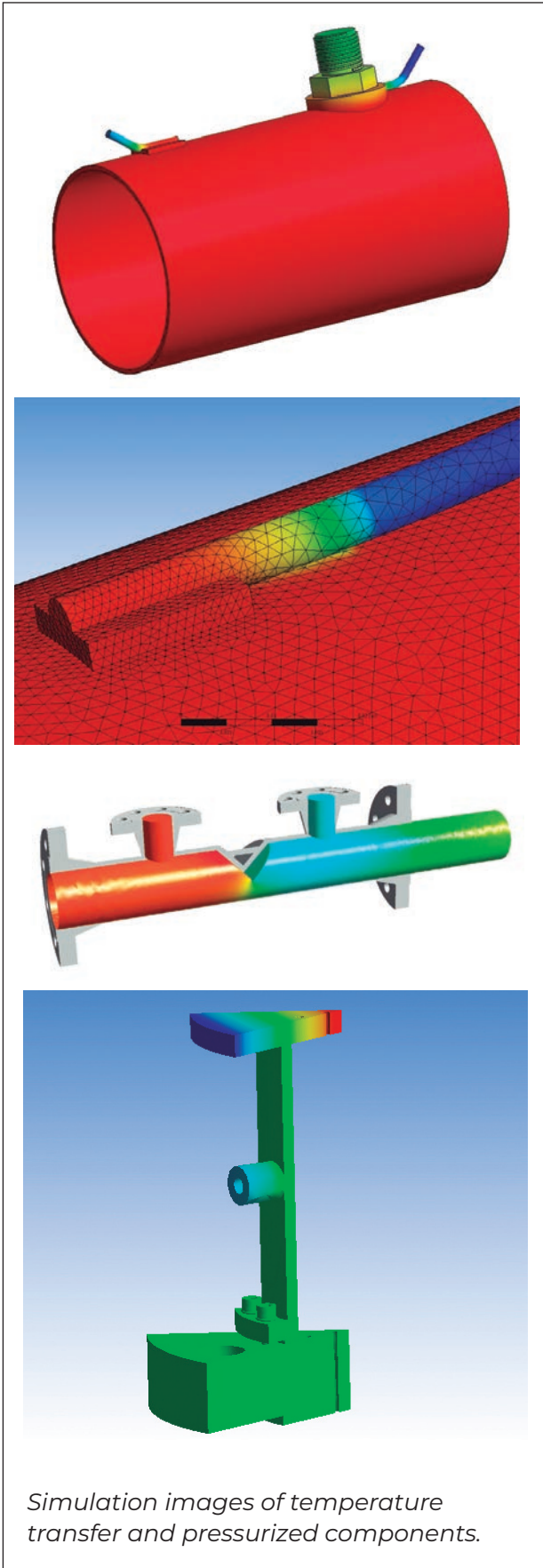
different profiles of the equipment, highlighting the development of the new **Vorticrack®** thermowell.

It is one of the most important analyses applied to our manufacturing range. In the case of thermowells, it has allowed us to simulate different geometries, perfecting the design and obtaining our **Vorticrack®** thermowell model. This new geometry affects the vortices generated on their surface in two ways: it decreases their energy, and it achieves a distribution with no dominant shedding frequency.

Due to the complexity that resides in the study of the vortices generated on surfaces exposed to fluids in motion, the incorporation of this software to carry out the analysis has been fundamental, since it has reduced the calculation time, minimizing the need for scale or real models for their analysis. physical check.

- Pipe flow analysis.

The division of the medium under study by means of meshing allows the individual analysis of each of the elements to reach a global solution. The benefits of these studies lie in the fact that once all the boundary conditions have been introduced and verified, key values can be studied: loss of load, output speeds, voltages in the equipment, sonic conditions or possibilities of cavitation and flashing not expected with the initial data.



This allows anticipating the right solution for the required equipment.

- Heat transfer analysis in temperature measurement elements.

In these analyses, where the transfer values or thermal conductivity of the different materials considered are key, we seek to optimize our designs so that the response of the sensor element is not affected, and the signal is produced and detected as soon as possible and with the greatest accuracy.

They are always associated with a study of mechanical properties, since they must withstand both critical conditions of speed and corrosion inside the pipes in the case of sheaths, and day/night thermal amplitudes and corrosive environments in the case of skin-point.

-Thickness check in pressurized equipment.

The concern for the improvement and quality of our products forces us to study all the characteristics of the equipment that is subjected to extreme conditions of pressure or temperature. Mainly in relation to pipe thicknesses or chamber thicknesses, such as those of glass or magnetic levels, since they are the last barrier.



Our facilities

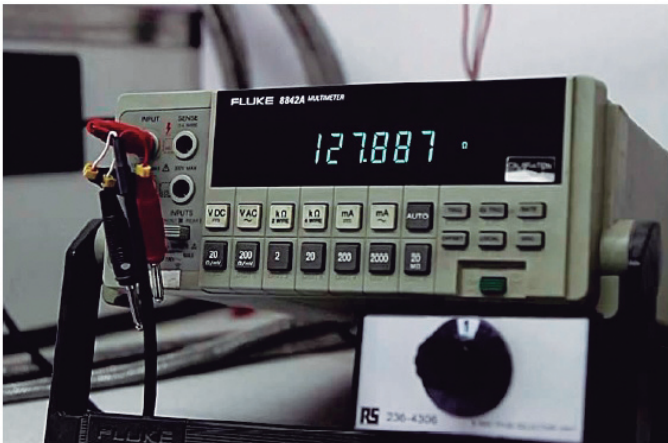
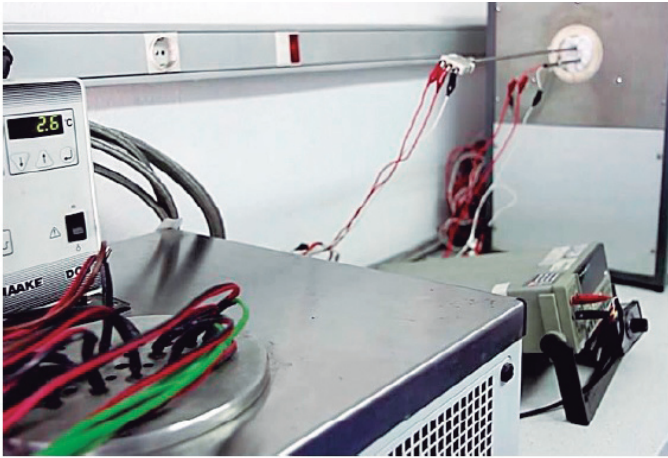
Engineering companies increasingly turn to suppliers so that we can develop our own products (R + D + I), with specific designs and calculations. This motivates us to bet on greater specialization and more specific machinery.

That is why at EIPSA we have incorporated new machines into our usual machinery that allow us, apart from working with more precision, to increase production capacity.

Among others, we have introduced a 5-axis machining center, allowing us extra machining movements and thus facilitating the manufacture of flow and temperature elements and Vorticrack® thermowell.

We have modernized the ideal micro welding methods for pyrometry, temperature sensors and thermocouples.

Automated drill, allowing increased production, deep drilling machines, reaching until 1.5 meters deep.



The calibration of the products is a decisive step for the certification of the instruments.

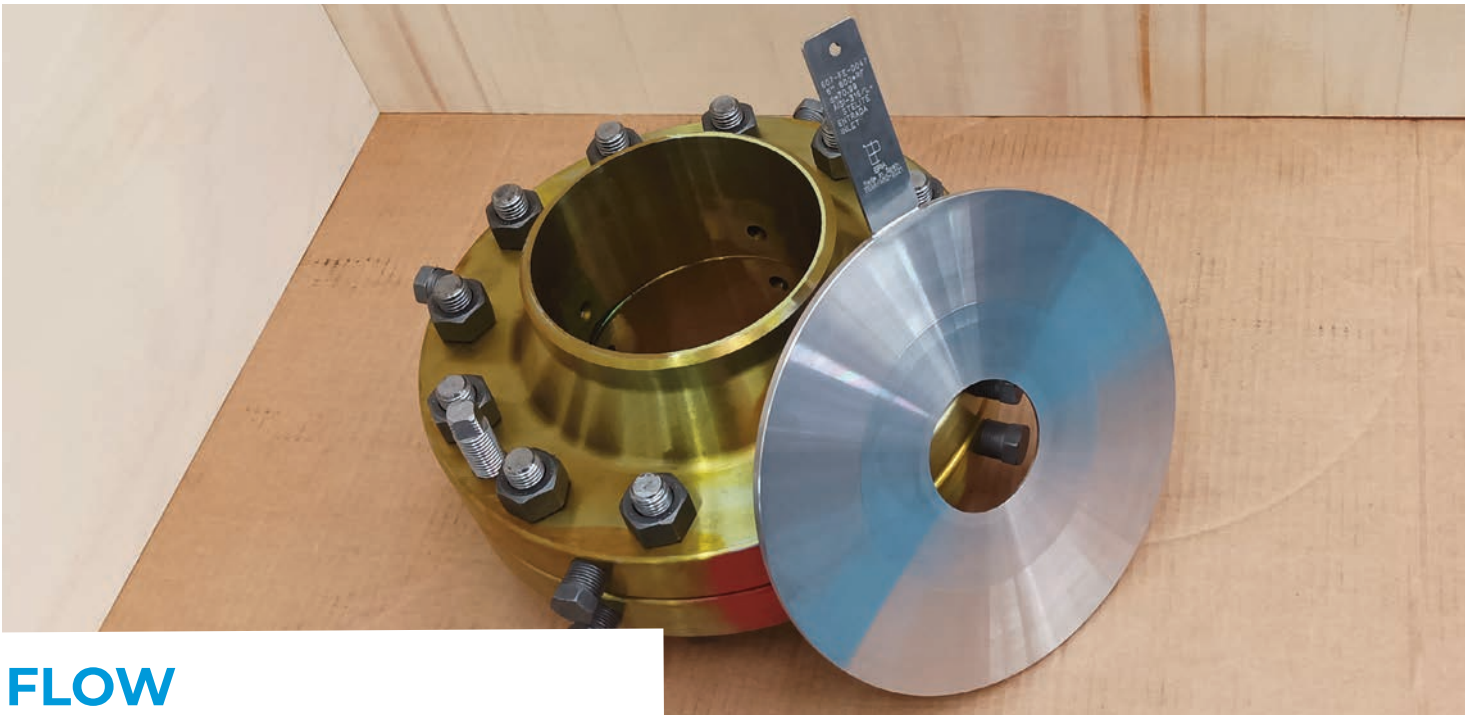
These calibrations are carried out in our testing laboratory following rigorous procedures.



№: ISO 9001 - 0037273

Our products:

- Measurement Flow
- Measurement temperature
- Level indicators
- Valves and accessories instrumentation



FLOW

Flow rate measurement by differential pressure is widely employed due to its excellent installation-maintenance cost to performance ratio.

The new differential pressure transmitter designs, which are increasingly more accurate and able of integrating a larger number of process variables, support the future of this type of measuring equipments.

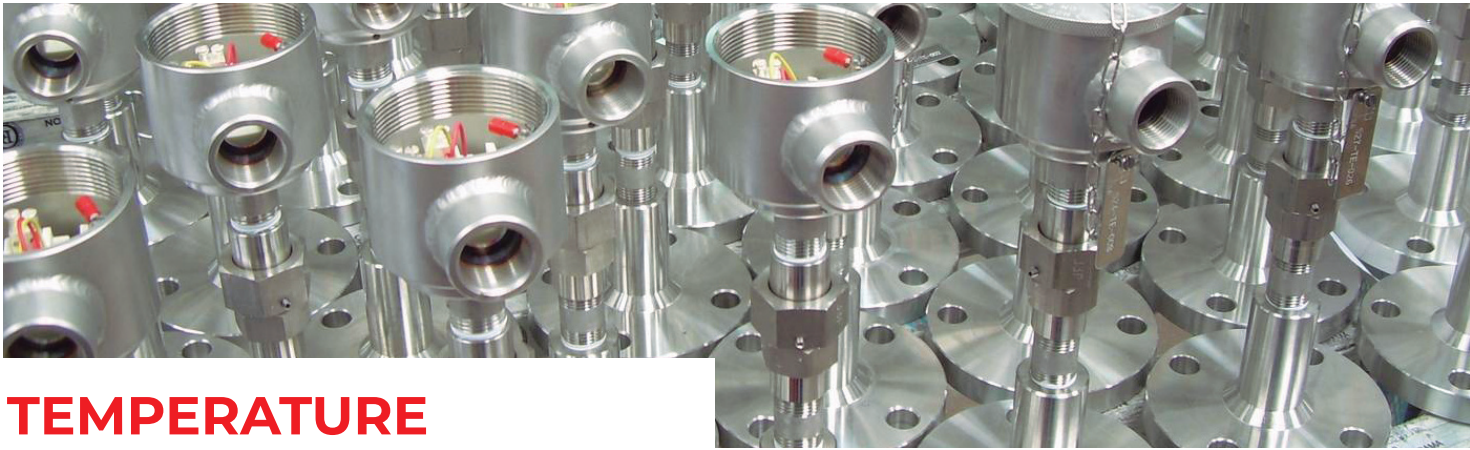
This group of primary flow elements includes:

- Orifice flanges and plates..
- Integrated orifice plate with pressure taps.
- Meter-Run.
- Flow Nozzle.
- Venturi tubes.
- Pitot tube.
- Wedge.
- Simple Restriction Orifice.
- Multistage restriction orifice.

The design and manufacturing are in accordance with the regulations: ISO 5167, AGA 3, ANSI/API-2530 or ASME, among others.

In addition to these devices we manufacture restriction orifices either to limit the flow or to generate a permanent pressure loss. These devices can be designed as single restriction orifice plate or multistage.

Our manufacturing range is increase with flow straighteners as devices which remove or significantly reduce swirl, allowing that straight length pipe required by the standards be shortest.



TEMPERATURE

EIPSA has registered the new VORTICRACK thermowell forged without welds. Which can be manufactured with a helical design for pipes with high speeds. Forged flanged thermowell without welding VORTICRACK is a great advance in safety with respect to the traditional flanged sheath with full penetration welding.

In this group of primary temperature measurement elements we include:

- Thermocouples.
- Thermoresistances PT-100.
- Thermowells.
- Skin points.
- Multipoints.
- Multipoint temperature set.
- Environment temperature measurement set.
- Bimetallic thermometers.

These new designs offer additional advantages as large useful life, faster response time, better stability, higher isolation values and therefore, high accuracy and reliability. Our TEMPERATURE technology allows us to offer from sensor elements with diameters as small as one millimeter to surface temperature measurement

elements built in larger diameters and with alloys suitable for the process atmosphere.

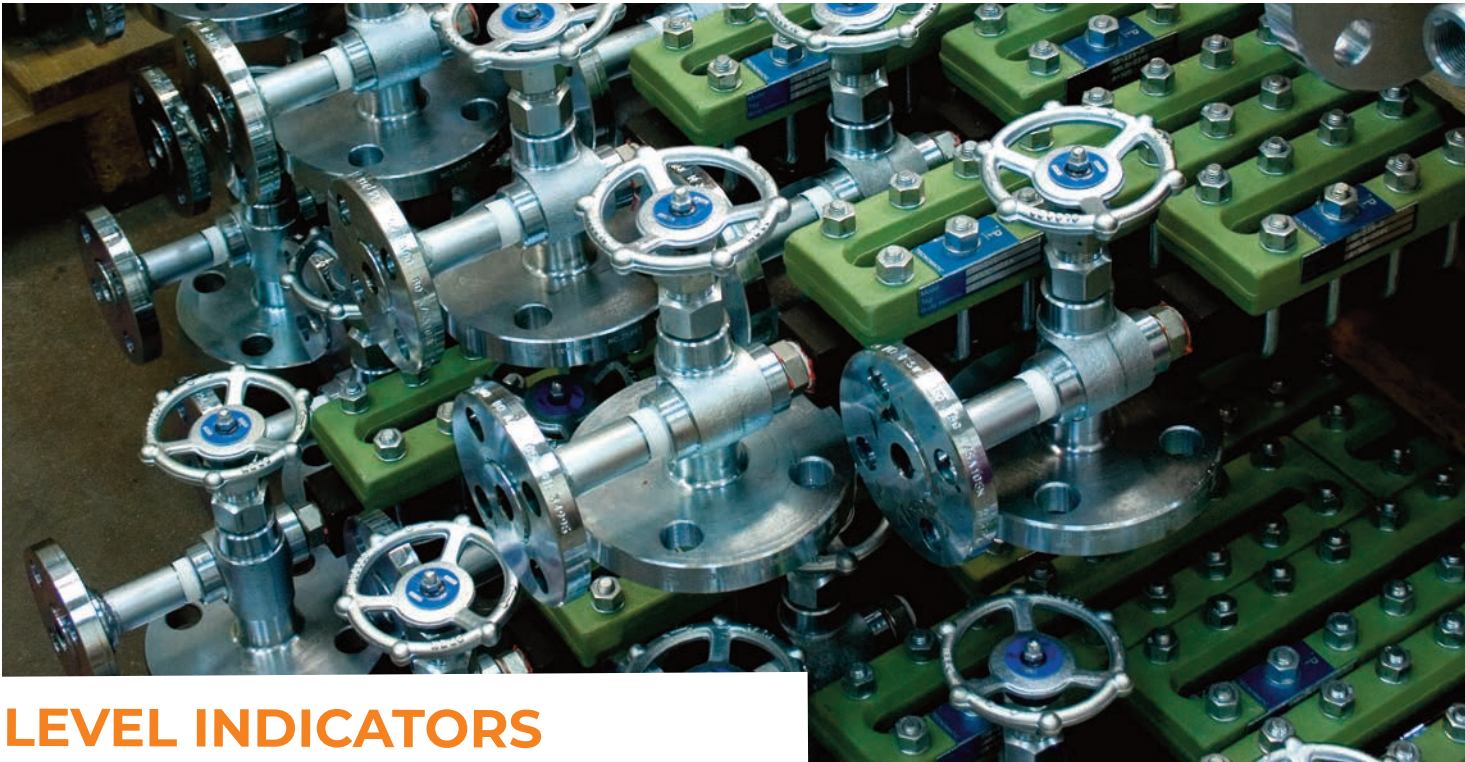
Our production range of sensors is complemented by their appropriate protection wells and our connection heads, electrically approved under ATEX standard, for housing terminal blocks or temperature transmitters.

We are able of manufacturing all types of thermowells in the material required by the process with a total thermowell length up to 1500 millimetres without welding.

Our background allows us to offer our customers those multipoint temperature element designs that your process needs, to monitor all temperatures points required by each application.

These multipoint temperature elements, whichever is the selected design, are widely mounted over reactors to have an appropriate map of temperatures.

The complete set of sensors, protection sleeve and connection head is approved by ATEX, IECEx, GOST, CU TR.



LEVEL INDICATORS

In those applications where a device to control the level of a vessel is not necessary, but said level must be known, glass level indicators may perform this function.

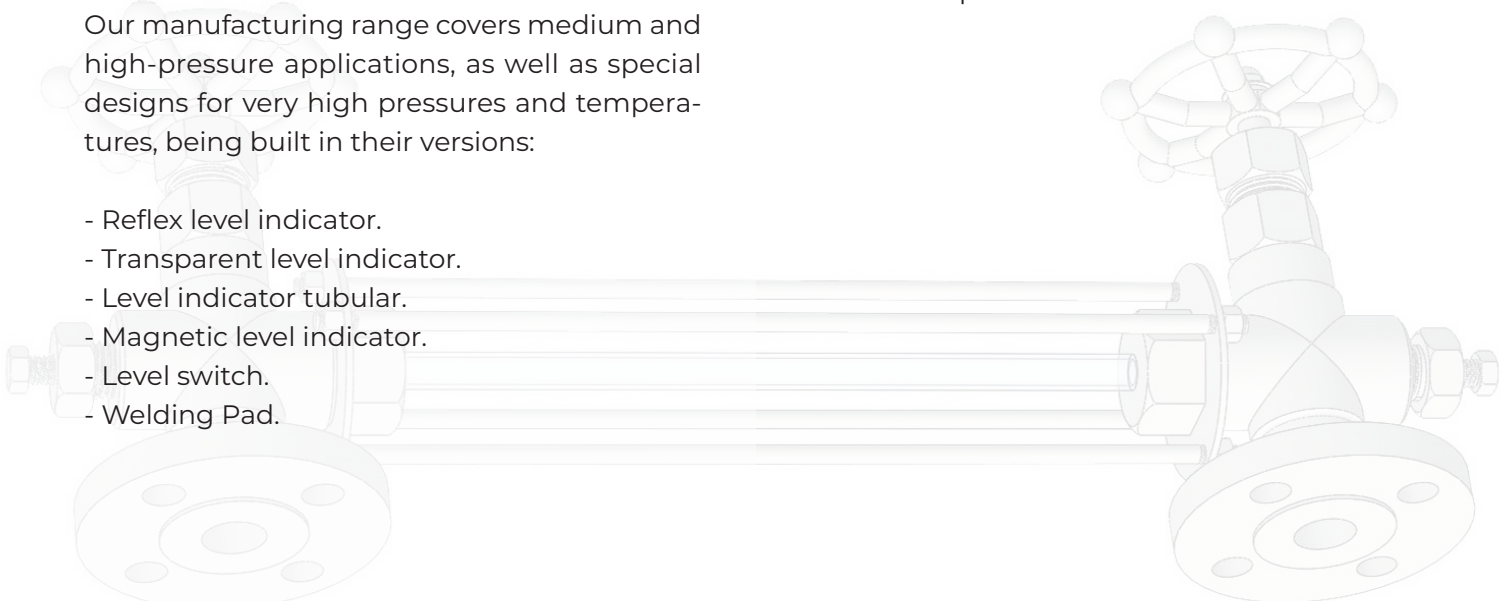
The most popular designs are glass (reflection and transparency) and magnetic levels.

Our manufacturing range covers medium and high-pressure applications, as well as special designs for very high pressures and temperatures, being built in their versions:

- Reflex level indicator.
- Transparent level indicator.
- Level indicator tubular.
- Magnetic level indicator.
- Level switch.
- Welding Pad.

These indicators are usually delivered with special off-set valves designed for this application, allowing the cleaning of the glasses and including a security device in case of glass breaking.

Accessories such as illuminators, approved by ATEX, mica protective sheets, or Kel-F, heater tubes, or other devices are assembled together with the equipment in accordance with the needs of the process.





ACCESSORIES

Completing our manufacturing range are some elements necessary for the correct measurement of the different variables of the process, whether it be the flow rate, the temperature or the level, allowing the union between the primary and the secondary element, the conditioning of the signal, the separation of fluids in different phases, taking samples directly from the process, maintenance and inspection tasks.

We have those associated devices and valves to carry out said interconnection:

- Instrumentation Valves.
- Manifolds.
- Condensate pots.
- Drip rings.
- Instrumentation panels.
- Sample probes.
- Cooling coils.

This equipment can be supplied as accessories to the main equipment or on demand to complete other supplies made.

They are manufactured under the highest quality levels and are the response to EIPSA to provide a complete supply to the needs of our customers.



Sectors of action

ENERGY

PETROCHEMISTRY

CHEMICALS

FERTILIZERS

MINERALS

FOOD SECTOR

GLASS, CERAMIC AND FIBERS

AUTOMOTIVE

FEEDING

PHARMACEUTICAL LABORATORIES

PULP AND PAPER INDUSTRY

SUPPLIERS OF CAPITAL GOODS

ENGINEERING

RENEWABLE

EIPSA in the world

Our company, totally Spanish, exports a high percentage of its production and has an extensive list of national and international references.



- ▶▶ Saudi Arabia
- ▶▶ Algeria
- ▶▶ Argentina
- ▶▶ Australia
- ▶▶ Bangladeshi
- ▶▶ Belgium
- ▶▶ Bolivia
- ▶▶ Brazil
- ▶▶ Chile
- ▶▶ Colombia
- ▶▶ Costa Rica
- ▶▶ Cuba
- ▶▶ Denmark
- ▶▶ Ecuador
- ▶▶ Egypt
- ▶▶ United Arab Emirates
- ▶▶ Slovenia
- ▶▶ Russian Federation
- ▶▶ Finland
- ▶▶ France
- ▶▶ Holland
- ▶▶ Hungary
- ▶▶ Indonesia
- ▶▶ Iran
- ▶▶ Jordan
- ▶▶ Kuwait
- ▶▶ Lithuania
- ▶▶ Morocco
- ▶▶ Mexico
- ▶▶ Norway
- ▶▶ Panama
- ▶▶ Peru
- ▶▶ Portugal
- ▶▶ China
- ▶▶ Singapore
- ▶▶ Thailand
- ▶▶ Tunisia
- ▶▶ Turkey
- ▶▶ U.S.A

Our Certifications and Approvals

- ISO 9001:2015
- ATEX
- IECEX
- CU TR
- Nuclear Spanish Plants
- PATTERN APPROVAL (PAC)
- ARAMCO Approval
- KNPC Approval
- REPRO register
- Oman Oil & Gas Approval
- Sabic Approval
- YPBF Approval
- Petronas Approval
- Petróleos de Venezuela (PDVSA)
- KOC Approval
- CEPSA Approval
- SIEMENS Approval





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