ALUMINA SENSOR SYSTEMS

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A Brilliant Idea behind Every Product

CERAMIC-TO-METAL ASSEMBLIES FOR SENSOR TECHNOLOGY

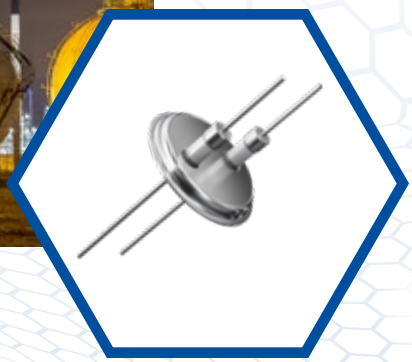
The product family of ceramic-to-metal assemblies for sensor, measurement and control technology, as well as high-pressure and high-temperature applications.

All our components in sensor technology are innovative and show excellent electrical and mechanical properties. In close cooperation with our customers, we create solutions true to our motto: „A brilliant idea in every product“.

We have been successfully producing ceramic-to-metal assemblies for sensor technology for more than 50 years.

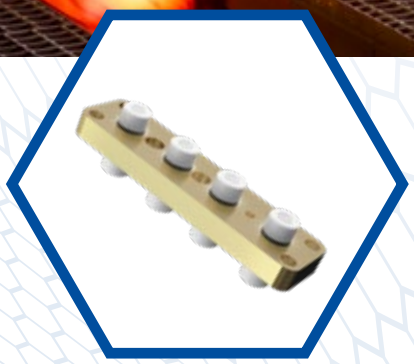
CERAMIC-TO-METAL ASSEMBLIES FOR SENSOR TECHNOLOGY

CERAMIC
MULTI-LAYER-RING
GILDED WITH
SENSOR CONNECTIONS



DOUBLE FEEDTHROUGH
FOR GAS DETECTOR

CERAMIC HIGH-PRESSURE FEEDTHROUGH
GAS INDUSTRY UP TO 2000 BAR



MEASERING BAR FOR
X-RAY DETECTOR
INSULATION RESISTANCE > 10^{12} Ω

SENSOR FOR SHIP ENGINES

QUADRUPLE FEEDTHROUGH
FOR MEDICAL APPLICATION

THE ALUMINA SYSTEMS PRODUCT FAMILY FOR SENSOR TECHNOLOGY:

We offer you an individual solution, regardless of whether you need a ceramic feedthrough up to 2000 bar or an insulation resistance in the teraohm range for a sensor.

We not only rely on our technical competence and many years of experience. The finite element method (FEM) enables us to carry out a numerical component design in advance of the construction for the sensor technology. The FEM takes into account the special material properties of ceramic materials. The soldering process itself is simulated as a stress (="composite stresses") and- if necessary- external stresses such as temperature changes or mechanical loads are applied. Using this special FEM, our products are engineered for superior durability and reliability, and are able to meet unique requirements.

Ceramic-to-metal assemblies have several key advantages over other materials such as plastic or glass. In contrast to plastic composite parts, ceramic-to-metal assemblies parts are suitable for ultra-high vacuum (helium leak rate 10^{-8} mbar L/s). On request, high-vacuum connections up to a helium leak rate of 10^{-11} mbar L/s can also be produced. Compared to glass, alumina shows higher mechanical and thermal stability. Our products are therefore ideally suited for use in sensor technology.

With our technical know-how, we are able to develop customer-specific solutions for the most complex requirements in sensor technology.

In our Alumina Sensor Systems product family, for example, we produce:

- Feedthroughs for medical applications such as implants and instruments
- Composite components for mass spectrometry
- Assemblies for gas detectors
- Electron beam manipulators for microscopes (TEM, SEM)
- Components in particle accelerators
- Plug connections and feedthrough for the use in nuclear power plants
- Aerospace sensors
- Sensors for controlling internal combustion engines
- Sensors for X-ray detectors, for example in steel production
- High pressure feedthroughs for the oil and gas industry
- Components for energy storage
- Electrical signal feedthroughs

We look forward to working with you.

OUR EXPERTS – ALWAYS THERE FOR YOU!

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