innovative
Sensor
Technology



MEDICAL DEVICES

Sensor components & solutions
for MedTech and BioTech







physical · chemical · biological

MEDICAL DEVICES

Sensors for medical devices

Device safety goes hand-in-hand with the reliability of its components. iST's cutting-edge sensor technology delivers high reliability components to monitor and control critical parameters, including:

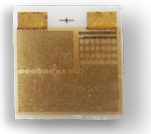
- Metabolites in cell cultures and organ perfusion systems
- Temperature in hemodialysis and cryogenic cell culture storage
- Flow in anesthetic gas blending and ventilators
- Conductivity in critical care patient monitoring
- Humidity and infrared emitters for sensitive breathing gas analysers

At iST scalable sensor manufacturing technologies meet application-focused design.

Temperature

Enzymatic activity in biological systems is closely tied to temperature. Fast and precise temperature measurement is therefore the starting point of many physical processes, from cold filtration to shock-freezing and cold-chain transport, from PCR thermocyclers to skin treatment and equipment sterilization. iST`s platinum RTD elements present unsurpassed long-term stability and unlimited product lifespan. Standardized and custom chip formats and assemblies leave nothing to wish for.

BondSens



Product code 104316

SMD



Product code 101865

Platinum RTD



Product code 155261

Microheaters

A glass coated platinum structure with high power density for controlled spot heating is useful for sample conditioning, electronics conditioning or in direct thermal treatments like vein ablation. At iST a unique manufacturing portfolio allows to select the most suitable material combination, such as various ceramic, silicon and glass substrates shaped and miniaturized to fit individual application requirements.

- Thick-film or thin-film
- Inert and long-term stable
- Custom form and resistance



Product code 155506

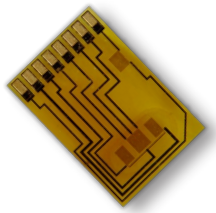


About iST Microheaters

Gas flow and breathing air analysis

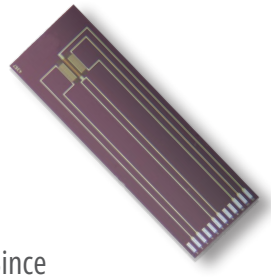
Sensitive mass flow analysis is critical in gas supply systems. In breath analysis each intake and exhale counts. Thermal measuring principles are advantageous for various medical applications, because of their reliability and sensitivity. Ceramic, glass and silicon components are available to balance response time and dynamic measuring range in every geometry.

- Calorimetric mass flow and flow direction detection with <10ms response time
- Anemometric mass flow with good signal resolution from <0.1m/s to >100m/s



Product code 103743

MicroFlowSens MFS02



Product code 105050

Silicon Flow Sensor SFS01

Conductivity sensors

Electric conductivity corresponds to the total ion (salt) concentration in a liquid. Since a crucial part of homeostasis is maintaining ionic balance, conductivity is a critical parameter for buffered cell culture media, as well as blood purification processes like dialysis or ICU continuous kidney monitoring.

- Inert, non-porous platinum electrodes
- Wide measuring ranges covering 10 µS/cm to 200 mS/cm without polarization effects
- High precision with accurate 0 to 120° C temperature compensation
- Ready for a scalable assembly process



Product code 103850

Conductivity sensor with integrated temperature sensor

Blood gas analyzers

iST's robust enzymatic biosensors combine the reliability of electrochemical techniques with the specificity of biological recognition processes. This construction offers great advantages in size, cost, sensitivity, selectivity, and fast reponse for their application in blood gas analyzers.

Biosensor IV4

The IV4 biosensor is a flexible stripe with large form factor ideal fir direct shipping in the measurement media. It is designed for the detection of a single analyte, glucose as standard.

- Ideal for applications that require in-line continuous measurement
- Excellent long-term stability & long shelf life
- Gamma and beta sterilization compatible
- Fast response time & outstanding reliability
- Suitable for bioreactors or aseptic media



Product code 105192

iST offers a wide range of sensors based on different technologies suitable for any application.

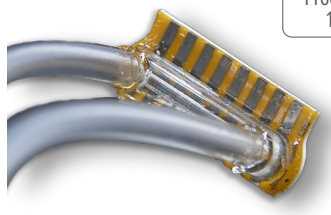
Standard or customized

Biosensor LV5

Our LV5 sensor is a flow-through biosensor and offers multi-parametric measurements.
Up to 4 analytes can be measured simultaneously (glucose, lactate, glutamine, glutamate).

- Very small flow cell (1 µL)
- Excellent long-term stability over a month in continuous measurement mode
- Long shelf life (under appropriate environmental conditions)
- Suitable for continuous and analyzer measurement modes

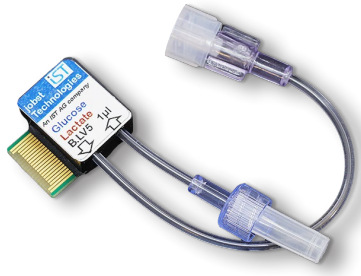
Product code 105117



Biosensor LV5, packaged sensor

Flow-through biosensor for multiparametric measurement

- Measuring glucose and lactate as standard
- Flow range rating: 0.3 µL to 1 µL
- Fluidic connection: Ø inner: 0.5 mm
- Working electrode: Platinum covered with enzyme membrane



Product code 105128

SIX Biosensor transmitters - Evalutation Kit for Amperometric Biosensors

Encased SIX biosensor transmitter with USB-connectivitiy for PC operation

- 6-channel poly-potentiostat with fixed working potential
- Evaluation Kit compatible with B.LV5 and B.IV4 enzymatic biosensors
- Bipolar current measuremet range
- For medical devices and industrial applications

Product code 105452



Disclaimer
Evaluation product for professionals to be used solely for research and development purposes!
Not for medical and diagnostic use. Not to be used for humans. For more information contact IST AG.

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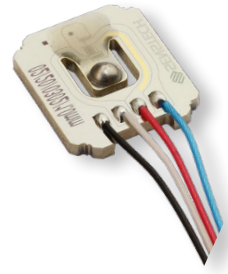
Senstech AG

Senstech has many years of experience in the development and production of sensors. Some of their products for medical technology have been in production for over 20 years. All production steps - from raw sheet metal to the finished sensor - are carried out at Senstech in Switzerland.

FEM simulations are used to optimize the design of prototypes during the development phase. As an ISO 9001 and ISO 13485 certified company, Senstech is familiar with the regulatory framework of the industry.

Manipulation AID in infusion/insulin pumps

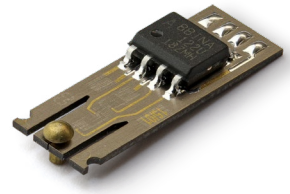
- A force sensor measures the contact pressure on the plunger of the pump
- This enables the device to verify that the syringe or ampoule has been inserted correctly
- Flexible contacting and housing options make this sensor suitable for a wid variety of applications



Product code 155894

Pressure surveillance in ophthalmic surgery equipment

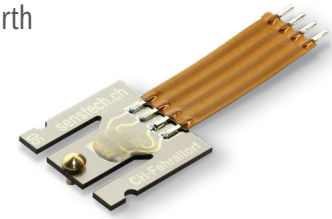
- Measurement of irrigation fluid pressure in phacoemulsification systems
- The sensor is actuated in both push and pull direction (vacuum and overpressure)
- Integrated signal amplifier and interference filter ensures reliable signal transmission



Visit our webshop

Hardness measurement for cardiotocography

- Used as measuring element to monitor the contractions during childbirth
- Senstech sensor used in several product generations since the 1990s



Visit our webshop

OEM force sensors

Whether you need a force sensor for greater loads or a force sensor with special dimensions or even a sensor individually customized to you application requirements. Senstech develops according to your specifications, such as installation situation, environmental influences, error tolerances.

Customized sensor solutions for your application

Benefit from an agile co-creation of your next sensor solution. Use our competence at component level and focus on your added value for fast and successful product development - from simple design adaptations to new measuring principles: from concept prototyping to high-volume manufacturing.

Design

- Conceptioning
- Material selection
- Process technology
- Layout & geometry

Patterning

- Photolithography
- Screen printing
- Laser trimming
- Dry & wet etching

Packaging

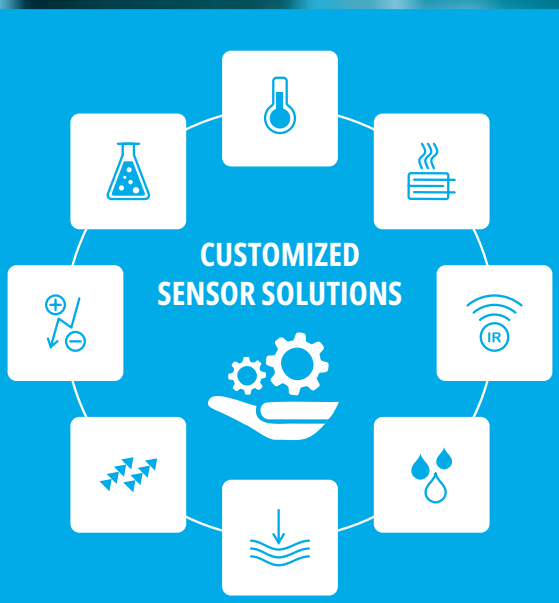
- Welding
- Bonding
- Soldering
- Hot-melt molding
- Injection molding

Services

- Electrical testing
- Optical/AOI testing
- ESD testing
- Calibration
- Metrology

Connection

- PTFE or PEEK insulated
- Ag, Ni/Au, Pt wire
- Cu/Ag, Cu/Ni wire
- AWG 34 to 20
- Flat or round wire
- Multistranded cables
- Ultra-thin wires
- Custom lengths
- Bondable, solderable
- Brazeable, weldable
- SMD & FlipChip
- ...and many more



Substrate

- Alumina
- Zirconia
- Sapphire
- Steel
- Copper
- Glass
- Polyimide
- Aluminium nitride
- Silicon

Metal thin film

- Pt
- Rh
- Ti
- Ni
- W
- Cr
- Ag
- Au
- Al
- Mo
- Alloys

Metal thick film

- Pt
- Au
- Ag
- Ni/Cr and other alloys

Dielectric thin film

- SiO_2
- Si_3N_4
- Ta_2O_5
- Polymers

Dielectric thick film

- Glass
- Organic polymers

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