Mtec highly concentrated know how



WELCOME TO PROMTEC

proMtec Theisen GmbH was founded in 1996 and is a worldwide leader for the develop, manufacturing and sales of high-end measurement technologies for process control various industrial sectors.

proMtec is located in the Albtal business area of Ettlingen, in Baden-Württemberg, Germany. This is a strategic region for leading technology companies in Germany with a high concentration of expert knowledge available, which favors proMtec to offer 90% of all components manufactured in Germany as custom-made products.



"OUR SOLUTIONS EMERGE FROM UNDERSTANDING THE NEEDS OF OUR CUSTOMERS."

proMtec's technologic solutions provide the online density, concentration, moisture and turbidity of an extensive list of applications, in liquids, solutions, mixtures, slurries or bulk materials.

With over 8000 instruments installed in more than 60 countries around the world, we have a farreaching record of successful applications, which include breweries, food and sugar industries, as well as chemical and pharmaceutical industries.

On the next pages, you will be introduced to the four big families of sensors we developed:

- µ-ICC 2.45
- TOF 1500
- OMC 2500
- ITC 880

THE SUPERIOR CONCEPT

The Inline Concentration Control μ -ICC 2.45 is proMtec's first development, and it is also the technology that made proMtec a renowned company worldwide.

The μ -ICC 2.45 measures the concentration, the density, the dry matter content or the water content of a liquid, a suspension or a slurry product during its processing.

Microwave concentration measurements are based on the principle that microwaves are absorbed by free water molecules. \bigcirc

With microwaves you radiate through the whole cross-section of a pipeline from which you get a representative measurement.

While radiating through a liquid product with microwaves, the measurement signal experiences a phase shift in comparison to a reference signal and a damping of the amplitude, which directly correlates with the water content and the dry matter content of the material.



WHAT BENEFITS WILL THE μ-ICC 2.45 OFFER YOU?

- The system is appropriate for rough industrial process conditions. You will get a long-life reliable measurement.
- The measurement parameters are set to the controller by a user-friendly menu.
- Several geometries and sensors are available for various installation places - insertion sensors for vessels and inline pipelines and integrated sensors to be installed in tubes.
- The sensors measure directly in the mainstream of the process.

"WITH OUR SENSORS YOU HAVE THE HIGHEST STANDARD FOR PRECISE ONLINE MEASUREMENTS CURRENTLY AVAILABLE IN THE MARKET."

USER-FRIENDLY INTERFACE

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REAL-TIME MEASUREMENTS

"PROMTEC'S NEWEST TECHNOLOGY, THE **TOF 1500** HAS PROVEN ITS VALUE."

THE NEWEST DEVELOPMENT

The TOF 1500 Concentration Measurement is our latest release in the market. The instrument combines compact design with the highest technical standards. We named it TOF 1500, from the expression in English *"time-of-flight"*, due to the fact that the measurement is based on the time that wave pulses take to flow through the medium.

The system concept is based on many years of successful experience with transmission measurement technologies. These TOF-pulses are completely harmless to humans or to the environment, as well as it causes no alterations to the product.

For most process stages in which the product to be measured is a solution, the TOF I 500 performs greatly. The major restriction to its application is found in the presence of high concentration of suspended solids, which may impair significantly the flow of the pulses through the medium and therefore compromise the measurements.

HOW DOES TOF 1500 WORK?

Both instalation and calibration of TOF 1500 measuring systems are simple and easily performed after all technical details are clarified. Once running, the TOF works as following:

- The TOF pulse is sent into the measuring medium by the transmitter.
- The pulse is collected by the receiver.
- The system receives the time that the pulses take to "travel" through the medium.
- In the evaluation unit, the raw signal is converted into the concentration unit defined by the user.

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OUR ENTIRELY CONTACTLESS MOISTURE ANALYSER

OMC 2500 reliably and precisely determines online the moisture or dry mass content of bulk materials, suspensions or pasty materials.

The measurement is 100% contactless, with a light beam filtered in the near-infrared region (NIR). Due to the rather higher wavelength of NIR compared to visible light (VIS), there is a greater penetration depth into the sample regardless of its color.

"A COMPLETELY CONTACTLESS SOLUTION FOR A REAL-TIME CONTROL OF MOISTURE."

To calibrate the OMC 2500, an internal software gathers the referenced NIR measured values of the known material moisture. Multiple data points are interpolated with the internal fitting curve and stored as a final calibration curve for the specific material.

proMtec's expertise added to the great performance of the OMC 2500 makes its use possible even for challenging applications.

Amongst our installations, you will find:

- sugar crystals
- beet pulp
- dry starch
- sand and clay
- coal
- ceramic
- inorganic salts and oxides
- fertilisers
- wood chips.



TURBIDITY AND SUSPENDED SOLIDS MEASUREMENT

Turbidity measurement is essential for quality and process control in various applications such as drinking water production, sludge concentration measurement in wastewater treatment plants, product loss detection in dairies, filtration efficiency control in sugar production, in food, beverage, chemical and pharmaceutical industries.

The ITC 880 sensors provide you with full flexibility, being mounted directly in the pipe or in a tank.

ITC 880 processes the raw signal and displays it based on your preferred unit:

- ppm (parts per million)
- % (percentage)
- FTU (Formazin Turbidity Unit)
- NTU (Nephelometric Turbidty Unit) and many more.

"PROMTEC SENSORS ARE YOUR EYES INSIDE THE PROCESS, READY TO DETECT WITH PRECISION THE ESSENTIAL PARAMETERS FOR AN OUTSTANDING PRODUCTION."

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WIDE APPLICATION POSSIBILITIES

proMtec started in 1996 with the microwave technology in the sugar industry, at first mostly used for Brix determination in crystallisation pans. From that moment until today, we have constantly forged new paths for our technologies.

Nowadays, with the development of our new families of sensors, you can find proMtec in an extensive list of applications. The versatility of our products combined to the experience of our team of experts makes nearly every installation possible. "WITH OVER 20 YEARS OF EXPERIENCE, WE HAVE BROKEN GROUND FOR SEVERAL NEW APPLICATIONS."

A GLIMPSE OF WHERE YOU CAN FIND US

sugar industry

- sugar juice
- sugar crystals
- beet and cane mud and pulp
- lime milk
- dairy industry
 - cheese production
 - milk
- minerals industry
 - sand
 - ceramic
 - coal
 - clay

- food and beverage industries
 - meat processing / gelatine
 - tomato sauce
 - olive oil production /margarine
 - gluten
 - cacao
 - grains
- chemical industry
 - inorganic salts
 - acids and hydroxides
 - proteins
 - alcohols, glycoles, etheres, estheres, amines and amides





PROMTEC WORLDWIDE

All measurement solutions from proMtec are adapted to the individual conditions of the customer. All services are provided from a single source - from requirements analysis, project planning to commissioning.

The high-precision measurement technology from proMtec is used worldwide in a wide variety of industrial environments. The company supplies customers in 60 countries around the world. A network of external sales and service partners enables sales worldwide. Our partners have been especially trained to be able to carry out the commissioning on site - due to the complexity of the systems, short coordination and intervention are very often essential with ongoing production process.

proMtec's philosophy is that the success of our business is only possible because of our strong sales and technical partners. For that reason, you can expect from our team in Germany a close relationship with our direct customers and partners, to ensure a high-end service.

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proMtec Theisen GmbH focuses on the development of industrial measurement technology. The company benefits from the high level of expertise of its founder and managing director Karl-Heinz Theisen, who already has 30 years of experience in this segment.

Karl-Heinz Theisen founded proMtec Theisen GmbH in 1996. He studied physics and mathematics at the Ruhr University in Bochum and has been involved in measurement technology for almost 30 years. He uses his unique expertise in the field to further develop existing technologies.



"Industrial measurement technology is a highly dynamic field. There is never 'enough' when it comes to the development and enhancement of online measuring solutions."

Karl-Heinz Theisen

Managing Director and Owner





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