

DynFAS MW – Microwave sensor for optimising crystallisation



Precisely measured process values form the basis for optimum production. In the past 12 years, the microwave sensor has become a standard solution for determining the dry substance content (Brix) of sugar solutions. From the beginning, BMA has put its trust in this technology and continuously supported its further development. With the DynFAS MW, BMA is now offering a state-of-the-art measuring instrument based on microwave transmission measuring technology. The sensor measures the Brix value directly inside the vacuum pan with high accuracy and in real time throughout the entire crystallisation process. Thanks to our engineering know-how, the crystallisation process can be optimised to maximum efficiency. BMA is your contact for a system solution.

The optimum crystallisation of sugar can be achieved when specific points such as the seeding point and the end of tightening are reliably identified. This applies to all products (refined sugar, white and high-raw sugar, i.e. 'A', 'B' and 'C' product). Our sensor will support your experience by delivering an exact measured value.

We strongly recommend equipping new crystallisation plants with microwave technology. Existing plants that are still operated manually can be modernised step by step.

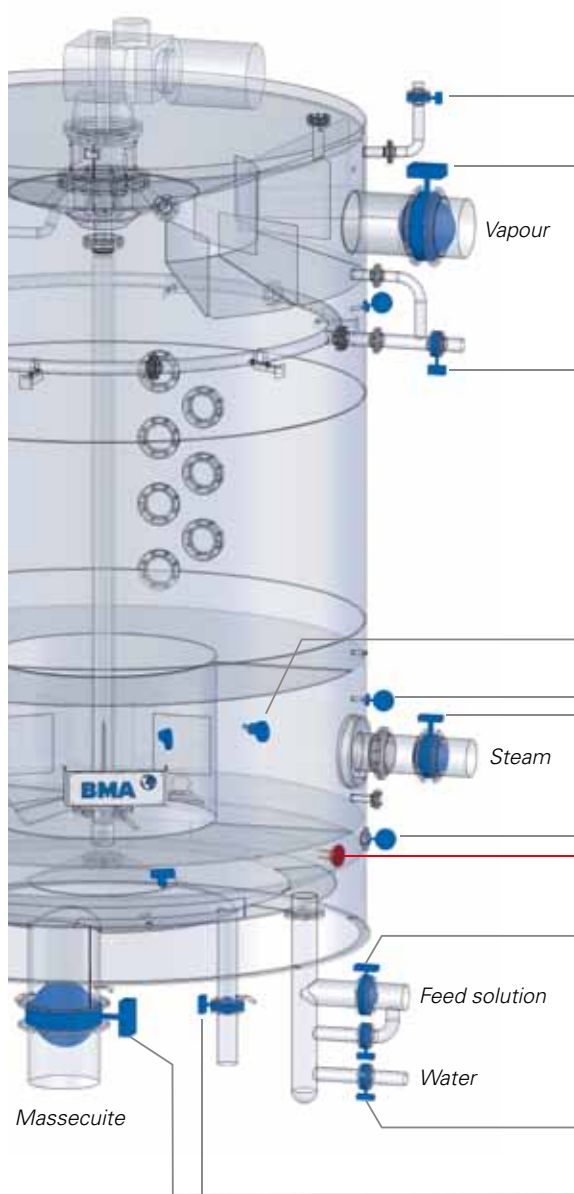
In many cases the sensor as a stand-alone solution is the first step in modernisation. It provides the operator with useful information for determining the seeding point and continuing with the crystallisation process.

In connection with a corresponding control unit, the crystallisation process can be automated successively.

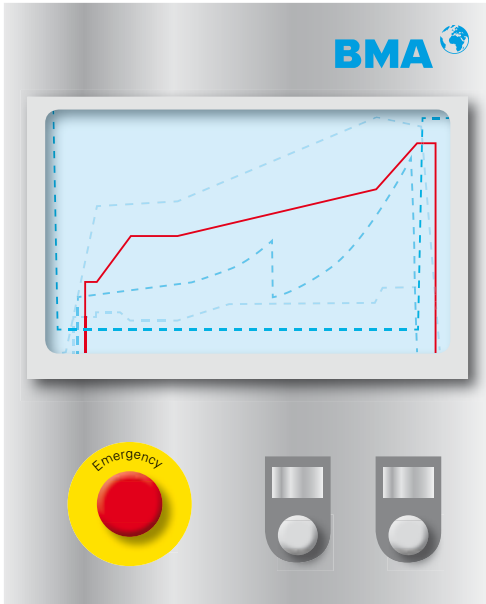
The highest level of extension is a complete automation solution, where the entire crystallisation process of several pans is controlled fully automatically from feeding up to dropping.

Each modernisation measure contributes to an improvement in the process while enabling a higher yield, constant quality, lower water requirements, better centrifugal operation and shorter downtimes.

The measuring method is based on fundamental physical effects: the microwave propagates from the transmitter to the receiver. When wave propagation is disturbed, the wave characteristics, e.g. intensity and phasing, change. The change in these parameters can be measured.



The microwave is particularly affected by water molecules, whereas sugar (melted or crystalline) hardly influences the wave. The more sugar is contained in the aqueous solution, the less the microwave is changed on its way through the product. This varying change is measured and can be converted into Brix.



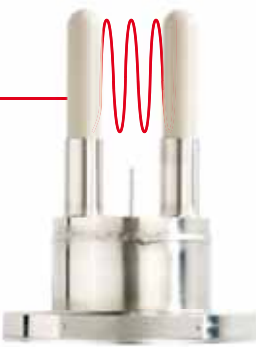
microwave cable. There is a choice of different probes tailored to particular applications. Their operation is menu-driven using function keys and several languages are available. Calibration is simple and can be done directly on the unit.

The measuring signal is shown on the display and can be transmitted as an analogue signal to a higher-level control system.

Further fields of application

The sensor is a multi-purpose measuring instrument for determining the dry substance content of solutions. In addition to measurements in a crystallisation process, any other dry substance content in a product stream or, for example, the concentration of lime milk, can be measured.

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The microwave output used is absolutely harmless for human beings and does not change the product. A mobile phone emits ten thousand times as much microwave radiation.

The sensor consists of a probe in contact with the product and a computer-based analysing unit, which are connected to each other by a special

Benefits

- Reliable, exact measured value
- Simple calibration directly on the device
- Optimised crystallisation process
- Constant product quality
- More effective centrifugal operation
- Existing plants can be modernised step by step