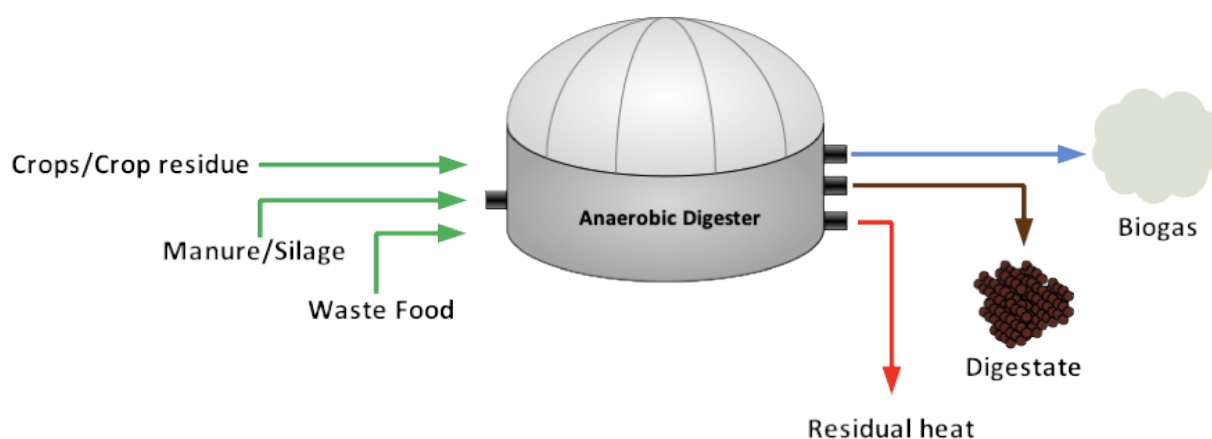




Hydronix

## Controlling moisture in Digestate

With the ever-increasing effects of global warming on the environment, governments have agreed to reduce the carbon released into the atmosphere. A major contributor to global carbon emissions is the use of fossil fuels. As a result, the use of renewable fuel sources has become a major new industry.



The utilisation of Anaerobic Digesters (AD) is now becoming a major source of renewable gas (Biomethane). AD is a naturally occurring process using micro-organisms in the absence of air in which animal and plant materials, known as biomass, are broken down. The process is performed in sealed tanks or digesters. The main output of the process is biogas which can be used to generate electricity or directly fed into the existing gas network. The by-products of AD are residual heat and digestate. The digestate is a nutrient-rich matter that can be used as a fuel, fertiliser, or animal bedding.

### The need to measure the moisture content of digestate

The digestate that is produced in the AD process needs to be dried for several reasons:

- Reduced handling and spreading costs
- Reduced transport costs on and off-site
- An additional blending of the digestate can be performed to produce fertiliser or create a fuel source
- Control of the final product for use in animal bedding
- Utilising the waste heat energy produced in the AD process

Control of the moisture during processing and for storage is vital to produce a final product suitable for its intended market.

### The benefits of installing Hydronix microwave moisture measurement sensors

- Dryers can be used more efficiently thereby reducing energy costs
- Improved and consistent product
- Reduction of spoilt/wasted material
- Not affected by dust or colour
- Automation of the drying process, reducing the need for manual intervention

### Recommended Installation

The installation method is dependent on the application and the dryer type. The majority of digestate dryers are of the horizontal bed design. The material is moved along the dryer and heat is passed through the bed and the material. The dwell time and temperature are controlled to ensure the product is at the correct moisture when it exits the dryer.

We recommend that you install the sensor in the cool zone, using a skid, so it is positioned on top of the flowing material coming out of the dryer.

You can also install the sensor after the dryer in the material transport system, either in a screw or chain conveyor.

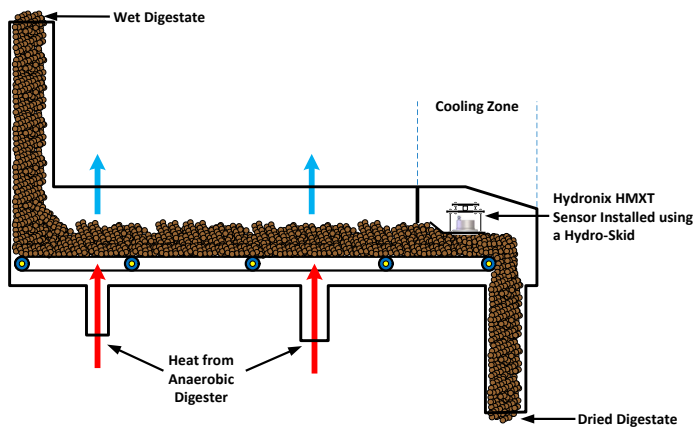


Figure 1: Hydro-Mix XT Dryer Installation Method



Figure 2: Hydro-Mix XT Installed

## Result after installing the sensors

A well-implemented installation will measure the moisture levels of the materials exiting the dryer to an accuracy of +/- 0.5% enabling the dryer to be controlled more precisely.

Real-time control of the dryer (as opposed to waiting for oven tests) ensures that the dryer is controlled instantaneously resulting in increased energy efficiency. There is also a reduction in the amount of substandard or wasted product caused by the time delay between periodic sampling and subsequent dryer adjustment.

## Hydro-Mix XT sensors

Hydro-Mix XT sensors are constructed of stainless steel and have an abrasion-proof ceramic measuring faceplate. The sensor is designed to be installed flush-mounted with the surface of a skid or mechanical material transport system, allowing the material to flow freely over the measuring faceplate without causing any build-up.



Hydronix sensors have configurable parameters for built in filters to reduce and eliminate noise caused by flow disruption. The sensor features numerous output options available directly from the sensor or via Hydronix gateway devices. The Hydronix Hydro-Com software enables simple set-up and configuration of the sensor using a PC or laptop and USB connection.

## Conclusion

The inclusion of a microwave moisture measurement system into the existing process will help you to:

- achieve consistent quality products
- reduce the number of spoilt materials
- provide instant savings
- repay its capital expenditure in a very short time.

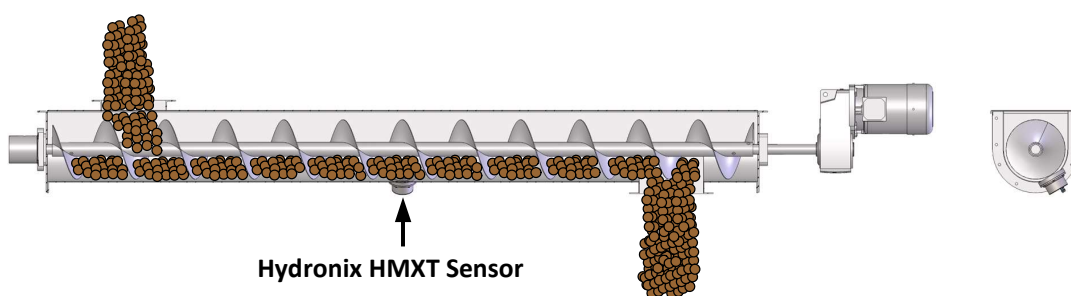


Figure 3: Hydro-Mix XT Screw Conveyor Installation

## About Hydronix

Hydronix is the world's leading manufacturer of digital microwave sensors for online moisture measurement. Hydronix was established in 1982 and pioneered the microwave moisture measurement technique. With over 85,000 systems installed worldwide, Hydronix is the preferred choice for many OEMs and end-users in industries ranging from animal feed, grain, sugar, aggregates, and many others.

For further information please visit our website: [www.hydronix.com](http://www.hydronix.com) or email us at [enquiries@hydronix.com](mailto:enquiries@hydronix.com)