

ECLIPSE®

APPLICATION CASE STUDY



Magnetrol®
HYGIENIC MEASUREMENT
SOLUTIONS

ECLIPSE®
GUIDED WAVE RADAR



HART
COMMUNICATION PROTOCOL



Eclipse® Guided Wave Radar for Chocolate Mousse

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Application:

The customer required a continuous, reliable and repeatable level measurement in a filling system with multiple storage containers in order to measure the level of chocolate mousse at various stages of foaming.

A total of five measurements were used to produce the liquid crude with several additional steps to a ready-made chocolate mousse. The product temperature is approximately +39° F to +50° F (+4° C to +10° C) and a pressure of 0–14.5 psig (0–1 bar).

Problem:

The demands on measurement technology were very high, since the medium, depending on the degree of foaming, became more and more attached and was losing its flow ability.

Furthermore, by changing the foaming, the behavior of the medium's reflectivity also changed.

In tests with different measuring systems of our competitors (from capacitive to guided wave radar), it always came down to signal loss, measurement errors and massive loss of production by over- and underfilling of the reservoir.

Due to the strong buildup of the final product, a contact-based capacitive measurement technique was excluded.

Due to the hygienic requirements and the lack of fluidity, a float could not be used.

With the foam-like character of the product, the use of through-air radar and GWR of our competitors was difficult or impossible.

Solution:

The Magnetrol® Eclipse® could measure the level of foam, which varied greatly at each intermediate step, and control the dosing, foaming and further processing.

After an adjustment of the sensitivity, the entire measuring range produced results that allowed the customer to do without additional measurements for high/low level detection. Also, the built-in tank agitator or auger did not disturb the measurement.

By using ECLIPSE Model 705 GWR with a single rod probe, the customer obtained optimal results.

Result:

After the screening of the measuring technique and the use within an experimental facility, the client was fully convinced, and the customer explicitly required the plant manufacturer to install the MAGNETROL ECLIPSE units in all five tanks.

ECLIPSE is also the preferred choice for two other filling lines, scheduled for delivery in 2012.

A total of 15 ECLIPSE units will be installed when the project is complete.



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