Application report

Moisture measurement of plastic granulate

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1. What is the initial situation?

- Plastic pellets can absorb moisture during storage or conveying
- Before extrusion, the moisture content must be below 0.1%, otherwise the quality of the end product will be inadequate (bubble formation, surface defects)

2. Solution

- Moisture measurement in the hopper before the extruder.
- Plastic granules or powder are blown into the silo and mixed.

Measuring the product moisture of plastic granulate in the hopper

3. What needs to be considered during planning and implementation?

- Use process questionnaire
- If possible, take a photo or video of the measuring point and send it in with the questionnaire for clarification
- Plan the application precisely and discuss it with the customer.
- Due to the low product moisture content (0.05 - 0.1% moisture), measurement under stable conditions is very important
- These conditions are present in the hopper, for example
- The measurement should be carried out with constantly moving material or statically under the same conditions (silo always full, measured value triggering with full detector)
- Calibration is carried out in the process, no static calibration with the sensor removed, if possible with maximum measured value spread (e.g. 0.03% and 0.2%)
- If the silo is emptied quickly, measured values may fluctuate during dynamic measurement as the bulk density changes

4. Customer benefits:

- Improving the quality of the end product
- Continuous process monitoring (laboratory measurement often only possible at standstill, i.e. 1-2x per shift)

5. What restrictions exist:

- Measurement of extremely dry material not possible (e.g. 0.02 - 0.05% after dryer)

6. Why our solution is the best:

- Stable sensor with low measured value drift (if the temperature remains as constant as possible)
- Competitor sensors drift extremely in the low moisture range, making their measured values often unusable

7. References

- Infiana, Germany
- Rehau, Germany
- Plasma Kunststofftechnik, Germany

If you have any questions or concerns, please do not hesitate to contact us!

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