DOCUMENT

# MA 110.X7.A

Radwag

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Fast and Accurate Measurements
Quick Analysis of Dry Mass and Moisture Content
Automatically Opening Drying Chamber

# MA X7.A
## Moisture Analyzers

ADVANCED MOISTURE CONTENT ANALYSIS

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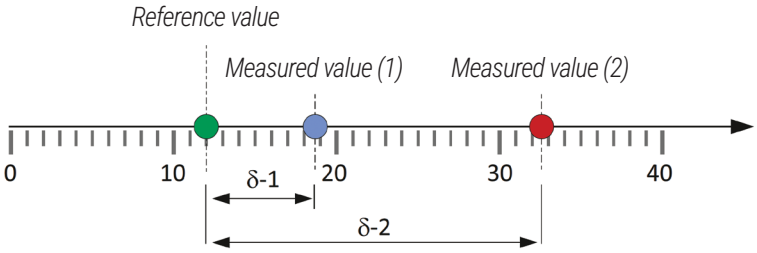
# Measurement Accuracy

## Definition

Measurement accuracy is the closeness of agreement between a measured value and the true value of the measured quantity. A measurement is considered accurate when the difference between the measured value and the true value (reference value) is very small.




Switch on the moisture analyzer to the mains at least 1 hour before starting the test.

## Equipment

Glass fiber filters, pipette, NaCl standard.

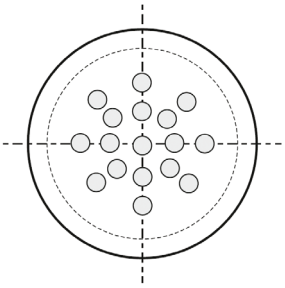
## Set the drying parameters

| Drying profile | Temperature | Power* | Auto switch off | Result |
|---|---|---|---|---|
| Standard | 105 °C | 100% | Auto 2 | Dry mass |

*only for PMV 5Y

## Procedure

- put the filter on the moisture analyzer pan
- start drying after adding approx. 1 g of NaCl on the pan
  note: sodium chloride sould be doses onto the filter in drops
- take 6 measurements and records the results
- calculate the mean value of the series of measurements
- compare the mean value with the value given in the EAN code



*Filter view*

## EAN code structure

| | |
|---|---|
| 04 | Week of the year |
| 25 | Number of the day |
| 1022 | Dry matter content (decimal separator omitted) (1022 = 10.22%) |
| 15 | Repeatability value (15 = 0.15%) |
| 08 | Two digits as pattern number in the format 01, 02... 99 |
| 2 | Check digit |

## Sample calculation

Reference value = 10.22%

Measured value as mean value = 10.15%

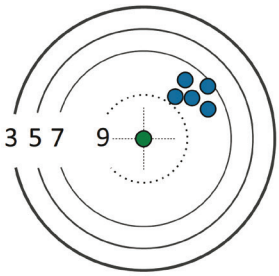
Accuracy of measurements A = 10.15% – 10.22% = 0.07%

# Measurement Precision

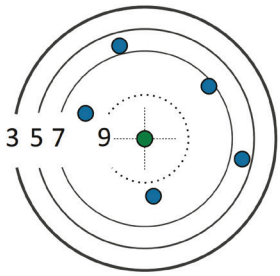
## Definition

Measurement precision is the closeness of agreement between results obtained in a series of measurements performed under the same conditions by the same operator.
Measurement precision is usually expressed as a standard deviation.

*Precise but inaccurate*




*Imprecise and inaccurate*

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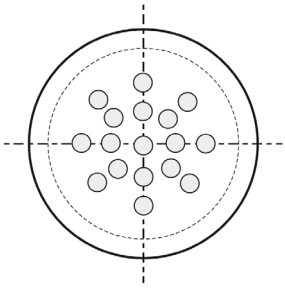
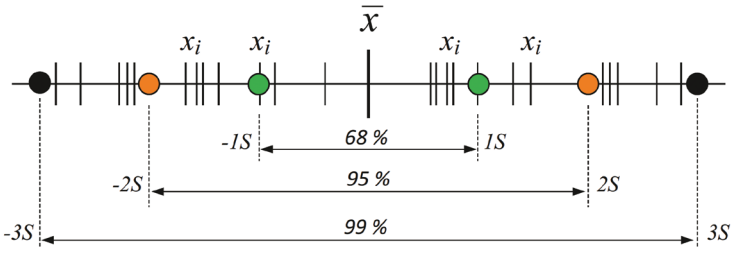


*Filter view*

## Exemplary results

| | | | | | | |
|---|---|---|---|---|---|---|
| 10.1232% | 10.1502% | 10.1316% | 10.1653% | 10.1267% | 10.1942% | **S = 0.03%** |

Using the 3-sigma rule, it is possible to determine with a certain probability the range within which the moisture content result is expected to lie.




*3-sigma rule*

# PMV 5Y

## Microwave Moisture Analyzers

HIGHLY PRECISE ANALYSE AND FAST DRYING PROCESS

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