

MA.X2.A MOISTURE ANALYZERS



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MA.X2.A moisture analyzers are hi-tech measuring instruments intended for quick determination of relative moisture content, dry mass content and other parameters in samples of different substances.

MA.X2.A series is equipped with innovative system: the drying chamber can be opened and closed automatically using button or proximity sensors.

Highlights of MA X2.A series moisture analyzer:

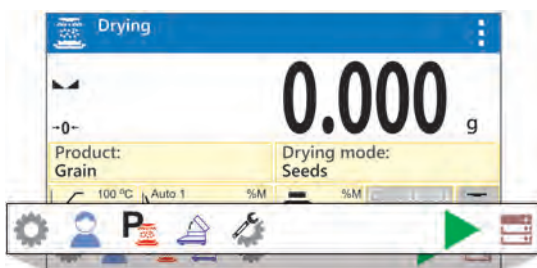
- Automatically opened drying chamber
- Automated drying process
- **DRYING FORECAST** – Prognosis of the Drying Process

Result

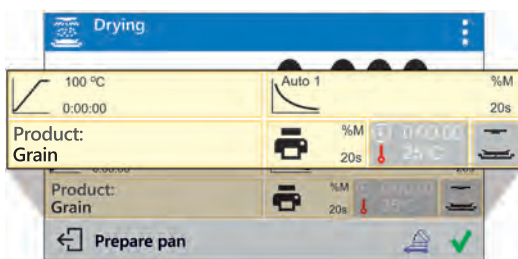
- Modern interface
- Touchscreen
- Programmable display
- Easy configuration of information arrangement
- Wide range of databases – work optimization
- Databases – security and archiving of your work results
- USB interface allowing export of results and databases
- E2R software allowing on-line control over your work

Interface

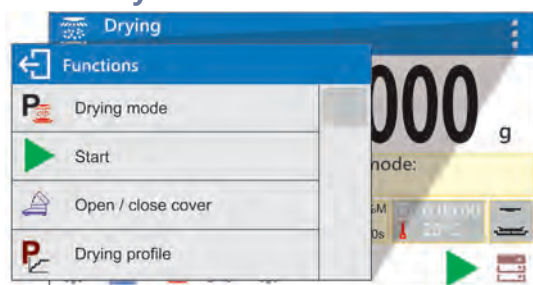
Hot-Keys



Labels and information fields

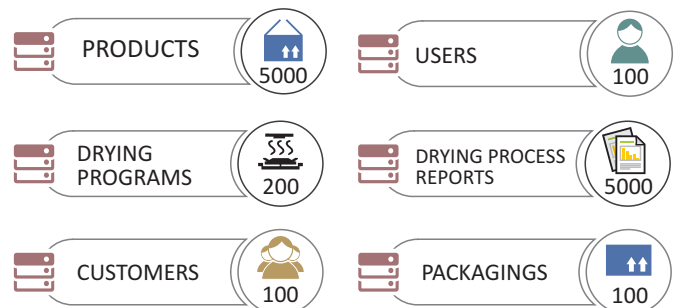


Functions keys



Databases

Drying process can be carried out for any temperature and set for a specific product using following databases:



GLP/GMP Printouts

An example of a printout

Information on drying parameters and moisture content result can be printed immediately using following elements: header – GLP – footer. Each of those elements can be customized in order to create a printout consistent with the requirements (GLP/GMP).

| Drying process report | |
|-----------------------|------------|
| Start date | 2016.07.02 |
| End date | 14:24:02 |
| Operator | John Smith |
| Product | Grain |
| Drying mode | Seeds |
| Drying parameters | |
| Drying profile | Standard |
| 110 °C | |
| Finish mode | Automatic3 |
| 1mg/60s | |
| Indication | %M |
| Interval | 30 s |
| Start mass | 2,595 g |
| ----- | |
| 0:00:30 | ? 0,694%M |
| 0:01:00 | ? 0,694%M |
| 0:01:30 | ? 0,694%M |
| ----- | |
| 0:07:00 | ? 0,694%M |
| 0:07:23 | ? 0,694%M |
| Status | Completed |
| End date | 2016.08.03 |
| End time | 0:07:23 |
| Drying time | 14:24:02 |
| End mass | 2,315 g |
| Indication | 10,790 %M |

DRYING FORECAST - Prognosis of the Drying Process Result

MA X2.A series moisture analyzers are now equipped with DRYING FORECAST function that enables to shorten the drying process. If you do not care about the highest accuracy and increased measurement error (ranging from 5% to 20% of the end value) you can shorten the drying process up to 6 times. It is an option dedicated for users who require fast and multiple estimation of materials moisture content.

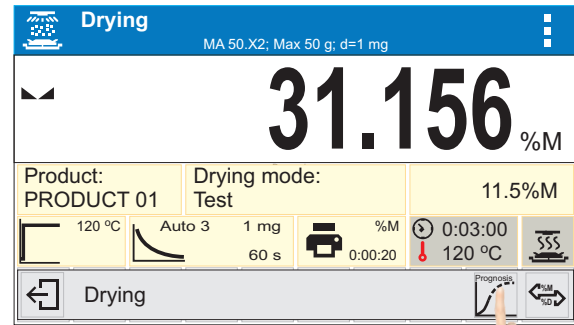
DRYING FORECAST method is a prognosis of the end result, carried out before the drying process is completed.

Based on characteristics of current drying curve, created online, moisture analyzer estimates the end result of the drying process.

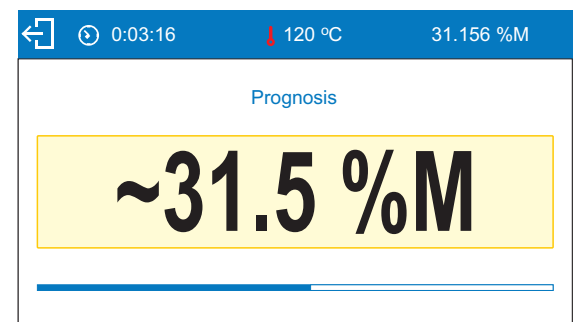
It is an approximate result characterized with small error of +/- 10% of the end result for most of the products and +/- 20% for products that require drying process to be longer (such as plastics, gels and materials containing more than 30% of water).

The calculation algorithm adapts to the drying material features and estimates first end result. The value of the prognosis is more accurate when the process takes more time. You can specify the time and accuracy of the process.

Enabling Prognosis Function



Prognosis of the Drying Process Result

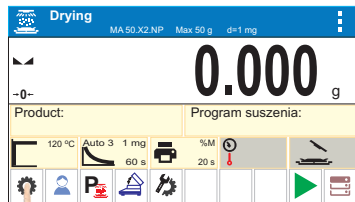


Enabling DRYING FORECAST Function in MA.X2.A

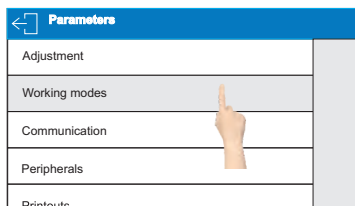
By default, DRYING FORECAST function is disabled.

In order to enable it:

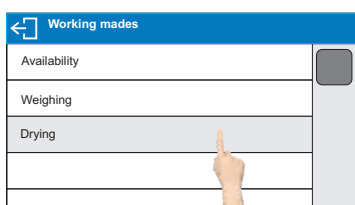
1. Select 'Settings' menu located in the left bottom corner of the screen



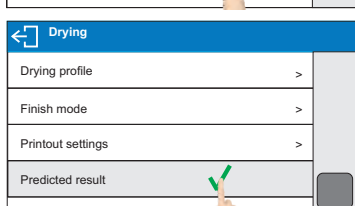
2. Select 'Working modes' submenu



3. Select 'Drying' mode



4. Use the scroll bar on the right to reach end of the menu



5. Enable DRYING FORECAST function by selecting 'Prognosis' parameter

Drying Process Report Containing Prognosis

| Drying process report | |
|---------------------------|------------|
| Start date | 2016.11.14 |
| Start time | 14:41:55 |
| User | John |
| Product | PRODUCT 01 |
| Drying mode | Test |
| Drying process parameters | |
| Drying profile | Standard |
| 120°C | |
| Finish mode | Auto3 |
| 1mg/60s | |
| Indication | %M |
| Interval | 20s |
| Start mass | 0.796 g |
| ----- | |
| 0:00:00 | 0.000 %M |
| 0:00:20 | 1.508 %M |
| 0:00:40 | 7.412 %M |
| 0:01:00 | 15.578 %M |
| 0:01:20 | 21.859 %M |
| 0:01:40 | 26.256 %M |
| 0:02:00 | 29.020 %M |
| 0:02:20 | 30.528 %M |
| 0:02:40 | 31.030 %M |
| 0:03:00 | 31.156 %M |
| 0:03:16 | 31.156 %M |
| Status | Aborted |
| Drying time | 0:03:16 |
| End mass | 0.548 g |
| Indication | 31.156 %M |
| Predicted result | 31.5%M |

Signature

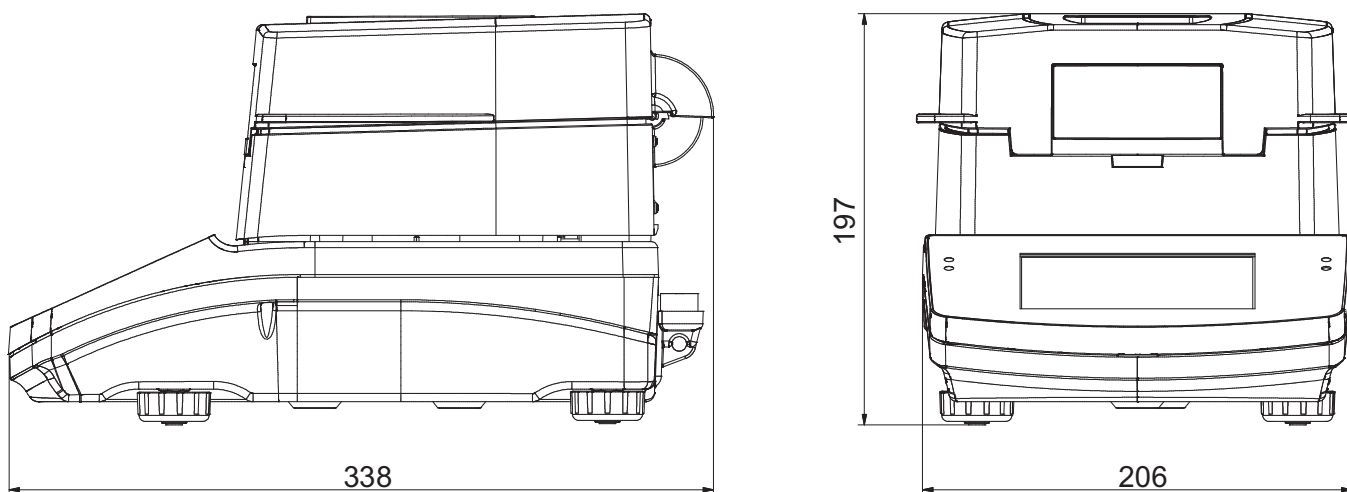
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Technical specification:

| | MA 50/1.X2.A | MA 50.X2.A | MA 110.X2.A | MA 210.X2.A |
|--------------------------------|---|------------|-------------|-------------|
| Max capacity | 50 g | 50 g | 110 g | 210 g |
| Readability [d] | 0,1 mg | 1 mg | 1 mg | 1 mg |
| Tare range | -50 g | -50 g | -110 g | -210 g |
| Max sample weight | 50 g | 50 g | 110 g | 210 g |
| Moisture readout accuracy | 0,0001 % | 0,001 % | 0,001 % | 0,001 % |
| Moisture content repeatability | 0,05% (sample weight of 2 g), 0,01% (sample weight of 10 g) | | | |
| Max sample height | h= 20 mm | | | |
| Weighing pan size | Ø 90 mm, h= 8 mm | | | |
| Drying temeprature range | max. 160° C | | | |
| Heating module * | IR emitter | | | |
| Drying mode | 4 drying modes (standard, quick, step, mild) | | | |
| Auto switch-off options | 4 options (time-defined, automatic, manual, user-defined) | | | |
| Additional functions | Control of sample weight prior drying process | | | |
| Working temperature | +10 ÷ +40 °C | | | |
| Power supply | 230 V | | | |
| Display | LCD 5" capacitive touchscreen | | | |
| Interface | 1×RS 232, 1×USB-A, 1×USB-B, 1×Wireless Connection | | | |
| Proximity sensors | 2 | | | |
| Net weight/gross weight | 5,2 kg / 6,7 kg | | | |
| Packaging size | 47 × 38 × 34 cm | | | |

* Heating element options: WH - halogen (max= 250° C), NS - metal heater (max=160° C)

Dimensions:



Additional equipment:

| | |
|--|---|
| Anti-Vibration Table (coated or stainless steel) | GT105k-12/Z Control Thermometer |
| EPSON Printer | Adjustment Weight |
| Disposable Weighing Pans | R-LAB PC Software |
| PC Keyboard | Calbe RS 232 (balance - computer) "P0108" |
| Water Vapour Permeability Determination Set | Cable RS 232 (balance - Epson, Citizen printer) "P0151" |