The MSA display solution utilizes a state of the art TFT touchscreen. The MSA is designed to make complex tasks more simplistic; it sets the benchmark for future balance operations. Ethernet port and SD card reader standard. The new Cubis is the first user-configurable and customizable laboratory balance series designed for users who always need the most advanced weighing technology, but who also want to invest only in what is necessary for the task at hand. Every Cubis uncompromisingly implements your specific requirement profile and application needs. Cubis meets the strict criteria for Advanced Pharma Compliance. Its ideal for quality management systems in the regulated areas of pharmaceutical, chemical and food industries.

The Cubis series is a modular system that offers a choice of display and control units, weighing modules and draft shields. With Cubis, you never have to invest in completely new equipment. This is what makes the Cubis modular design so special, with a number of unique advantages:

1. **Optimal interchangeability or extension of modules**
2. **Shorter innovation cycles for individual modules**
3. **Faster development of additional modules**
4. **A full range of accessories that enable you to customize your balance even further**

All Cubis controls are easy to use, clearly designed and logically structured. Their user guidance features prevent time-consuming and cost-intensive operating errors.

In addition, you can adjust the tilting angle of the display and control unit to ensure optimal viewing at all times. All Cubis units come with standard internal motorized calibration.

With Cubis there’s a choice of three display and control units. They cover the entire range of laboratory applications from simple weighing right up to management of complex work sequences by means of defined tasks and the User/Password Management menu.

### Specifications

<table>
<thead>
<tr>
<th>Feature</th>
<th>Specification</th>
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<td><strong>Display</strong></td>
<td>High Resolution color TFT, 5.7” graphic display</td>
</tr>
<tr>
<td><strong>Protection</strong></td>
<td>Degree of protection against dust and water</td>
</tr>
<tr>
<td><strong>Operation</strong></td>
<td>Touch Screen, Keys for main basic functions</td>
</tr>
<tr>
<td><strong>Display</strong></td>
<td>High Resolution color TFT, 5.7” graphic display</td>
</tr>
</tbody>
</table>

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### Display

- **Average Stabilization Time:**< 1 second
- **Repeatability:** ± 0.01g
- **Average Response Time:** < 1.5 seconds
- **Linearity:** ± 0.006g
- **Corner Load (mg):** 20 (5000)
- **Minimum Sample Weight:** 15
- **Sensitivity:** ± ppm/K 2
- **External Calibration Weight:** 10 (E2) 5 (E2)
- **Display Update Rate:** 0.1-0.4 seconds
- **Weighing Pan (W x D):** 206 x 206 x 1.1
- **Draft Shield:** No draft shield. For weighing modules with pan sizes of 206 x 206 mm.

### Protection

- **Degree of protection against dust and water**
- **Touch Screen, Keys for main basic functions**
- **High Resolution color TFT, 5.7” graphic display**

### Balance Operations

- **Capacity x Readability:** 2060 x 0.01g
- **Pan Size:** 206 x 206 mm
- **Model:** MSA1202S-100-D0
- **SKU:** MSA1202S-100-D0
- **Free Ground Shipping within the 48 continental US States**

Please Call (800)832-0055

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**Features**

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All Cubis controls are easy to use, clearly designed and logically structured. Their user guidance features prevent time-consuming and cost-intensive operating errors.

In addition, you can adjust the tilting angle of the display and control unit to ensure optimal viewing at all times. All Cubis units come with standard internal motorized calibration.

With Cubis, there's a choice of three display and control units. They cover the entire range of laboratory applications... right on up to management of complex work sequences by means of defined tasks and the User/Password Management menu.

Specifications:

Power Requirements: 100-240V~, -15%/+10%, 50-60Hz, 1,0A

Input Voltage: 15 Vdc, ± 5%

Ambient Temperature, Operation: +5 °C...+41°F - +104°F

Highest Relative Humidity: 80% for temperatures up to 31°C/88° F, decreasing linearly up to 50% relative humidity for 40°C/104°F

Safety of electrical equipment: According to EN 61010-1:2001: Safety requirements for electrical equipment for measurement, control, and laboratory use - Part 1: General requirements

Electromagnetic Compatibility: According to EN 61326-1:2006: Safety requirements for electrical equipment for measurement, control, and laboratory use - Part 1: General requirements

Interference Resistance: Suitable for use in industrial areas

Immunity to Interference: Class B: Suitable for use in residential areas and areas that are connected to a low voltage network that also supply residential buildings.

Options:

- MSA8201S-000-D0
- MSA5201S-000-D0

Capacity: 8200g x 100mg, ± 0.05g

-5200 g, ± 0.1g

200 (5000)

100

±: ppm/K 4

5 (F2)

0.1-0.4 seconds

206 x 206/8.1 x 8.1

No draft shield. For weighing modules with pan sizes of 206 x 206 mm.

Degree of protection against dust and water: Touch Screen, Keys for main basic functions

High Resolution color TFT, 5.7" graphic display
### Specifications

<table>
<thead>
<tr>
<th>Series</th>
<th>MSA14202S-100-D0</th>
<th>MSA14202P-100-D0</th>
<th>MSA10202S-100-D0</th>
<th>MSU14202S-100-D0</th>
<th>MSU10202S-100-D0</th>
<th>MSA14202S-100-D0</th>
<th>MSU10202S-100-D0</th>
<th>MSE14202S-100-D0</th>
<th>MSE10202S-100-D0</th>
</tr>
</thead>
<tbody>
<tr>
<td>Model with Toploading Balance</td>
<td>14200g x 0.01g</td>
<td>3500g x 0.01g</td>
<td>7000g x 0.02g</td>
<td>14200g x 0.01g</td>
<td>14200g x 0.01g</td>
<td>10200g x 0.01g</td>
<td>14200g x 0.01g</td>
<td>10200g x 0.01g</td>
<td>14200g x 0.01g</td>
</tr>
<tr>
<td>Capacity x Readability</td>
<td>14200g x 0.01g</td>
<td>3500g x 0.01g</td>
<td>7000g x 0.02g</td>
<td>14200g x 0.01g</td>
<td>14200g x 0.01g</td>
<td>10200g x 0.01g</td>
<td>14200g x 0.01g</td>
<td>10200g x 0.01g</td>
<td>14200g x 0.01g</td>
</tr>
<tr>
<td>Tare range (subtracting)</td>
<td>-14200g</td>
<td>-14200g</td>
<td>-10200g</td>
<td>-14200g</td>
<td>-10200g</td>
<td>-14200g</td>
<td>-10200g</td>
<td>-14200g</td>
<td>-10200g</td>
</tr>
<tr>
<td>Repeatability</td>
<td>10</td>
<td>10</td>
<td>20</td>
<td>10</td>
<td>7</td>
<td>10</td>
<td>10</td>
<td>7</td>
<td>7</td>
</tr>
<tr>
<td>Linearity</td>
<td>0.1% - 0.4%</td>
<td>0.1% - 0.4%</td>
<td>0.1% - 0.4%</td>
<td>0.1% - 0.4%</td>
<td>0.1% - 0.4%</td>
<td>0.1% - 0.4%</td>
<td>0.1% - 0.4%</td>
<td>0.1% - 0.4%</td>
<td>0.1% - 0.4%</td>
</tr>
<tr>
<td>Corner load (test load)</td>
<td>20mg (5,000g)</td>
<td>40mg (6,000g)</td>
<td>20mg (6,000g)</td>
<td>20mg (6,000g)</td>
<td>40mg (6,000g)</td>
<td>20mg (6,000g)</td>
<td>40mg (6,000g)</td>
<td>40mg (5,000g)</td>
<td>40mg (5,000g)</td>
</tr>
<tr>
<td>Optimal starting point of the operating range*</td>
<td>8.2 g</td>
<td>8.2 g</td>
<td>8.2 g</td>
<td>8.2 g</td>
<td>8.2 g</td>
<td>8.2 g</td>
<td>8.2 g</td>
<td>8.2 g</td>
<td>8.2 g</td>
</tr>
<tr>
<td>Sensitivity drift</td>
<td>±ppm/K 1.5</td>
<td>±ppm/K 1.5</td>
<td>±ppm/K 2</td>
<td>±ppm/K 1.5</td>
<td>±ppm/K 1.5</td>
<td>±ppm/K 1.5</td>
<td>±ppm/K 1.5</td>
<td>±ppm/K 1.5</td>
<td>±ppm/K 1.5</td>
</tr>
<tr>
<td>Typical measurement time</td>
<td>≤ 1.5 s</td>
<td>≤ 1.5 s</td>
<td>≤ 1.5 s</td>
<td>≤ 1.5 s</td>
<td>≤ 1.5 s</td>
<td>≤ 1.5 s</td>
<td>≤ 1.5 s</td>
<td>≤ 1.5 s</td>
<td>≤ 1.5 s</td>
</tr>
<tr>
<td>External standard calibration value (min. accuracy class)</td>
<td>10kg (E2)</td>
<td>10kg (E2)</td>
<td>10kg (E2)</td>
<td>10kg (E2)</td>
<td>10kg (E2)</td>
<td>10kg (E2)</td>
<td>10kg (E2)</td>
<td>10kg (E2)</td>
<td>10kg (E2)</td>
</tr>
<tr>
<td>Display result (depending on the set filter level)</td>
<td>0.1s – 0.4s</td>
<td>0.1s – 0.4s</td>
<td>0.1s – 0.4s</td>
<td>0.1s – 0.4s</td>
<td>0.1s – 0.4s</td>
<td>0.1s – 0.4s</td>
<td>0.1s – 0.4s</td>
<td>0.1s – 0.4s</td>
<td>0.1s – 0.4s</td>
</tr>
<tr>
<td>Weighting pan size (W x D)</td>
<td>206 x 206 mm</td>
<td>206 x 206 mm</td>
<td>206 x 206 mm</td>
<td>206 x 206 mm</td>
<td>206 x 206 mm</td>
<td>206 x 206 mm</td>
<td>206 x 206 mm</td>
<td>206 x 206 mm</td>
<td>206 x 206 mm</td>
</tr>
<tr>
<td>Operation</td>
<td>Touch screen, keys for central basic functions</td>
<td>Keys</td>
<td>Removable display and control unit</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Display</td>
<td>High-resolution color TFT, 5.7&quot; graphic display</td>
<td>Keys</td>
<td>Liquid crystal display, black-and-white</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Adaptation of the display and control unit</td>
<td>Tiltable display, removable display and control unit</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Standard data interfaces</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>SD card reader</td>
<td>Integrated as standard into display unit</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Operation of the motorized draft shield (only for DA, draft shields)</td>
<td>Activated by side keys or touch-free using IR switch (optional); learning capability</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Applications</td>
<td>Unit conversion, SQmin function for minimum initial weight according to USP; isoCAL automatic calibration</td>
<td>adjustment function, individual identifiers, density determination, statistics, calculations, averaging, weighing in percent, low-controlled functions, totaling, DKD measurement uncertainty, second tare memory, counting, checkweighing, alibi memory, audit trail</td>
<td></td>
<td></td>
<td></td>
<td></td>
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<td></td>
<td></td>
</tr>
</tbody>
</table>

### Series

<table>
<thead>
<tr>
<th>Series</th>
<th>MSA</th>
<th>MSU</th>
<th>MSE</th>
</tr>
</thead>
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<tr>
<td>Hierarchical password protection</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Integrated alibi memory</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>User management</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Calibration storage</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Audit trail</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Action hierarchies for warning and intervention functions</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Self-test - Levelling control</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Self-test - Automatic motorized leveling, Q-Level</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Self-test - Automatic time- and temperature-dependent calibration, isoCAL</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Self-test - Monitoring of the operating range according to USP Ch. 41, 5.2.31m</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Self-test - Automatic reproducibility test, repnTest</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Support</td>
<td>Guidance - Monitoring pre-selectable calibration routines in UserCal (with Q-App)</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Tamper Protection</td>
<td>Compliance Support</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Inspection Equipment Monitoring</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
</tbody>
</table>

** = Typical minimum sample weight acc. to USP (United States Pharmacopoeia), USP31-NF28 **
Display tiltable; Control unit detachable

- USB (built into weighing module)
- RS-232C port for connecting accessories, 25-pin (built into weighing module)
- Ethernet (built into display and control unit)
  - Built into display and control unit as a standard feature
  - Activated by positive feedback tactile keys or touch-free using IR switch (optional); learning function
- Mass unit conversion by toggling
- SQmin function for minimum sample weigh according to the USP
- isoCAL automatic calibration/adjustment function
- Customized identification
- Density determination
- Statistics
- Calculation
- Averaging (weigh averaging)
- Formulation
- Weighing in percent

Time-Controlled Functions
- Totalizing
- Second tare memory
- Counting
- Over/under checkweighing

*Position acc. to OIML R76

** = Typical minimum sample weight acc. to USP (United States Pharmacopoeia), USP31-NF26

MSE 10202S
MSE10202S-100-DO
10200g x 0.01g
-10200g
7
20mg (5,000g)
8.2 g
±ppm/K 2
<
1.5 s
10kg (E2)
0.1s – 0.4s
206 x 206 mm

Keys
- Liquid crystal display, black-and white
- Removable display and control unit
  - USB (integrated into weighing module)
  - RS-232C accessory interface, 25-pin (integrated into weighing module)
- Unit conversion, isoCAL automatic calibration, density determination (buoyancy method only), calculations, averaging, net, total, formulation, weighing in percent, counting, totalizing
<table>
<thead>
<tr>
<th>Applications</th>
<th>Workflows</th>
<th>Downloadable apps (application software)</th>
<th>YES</th>
<th>YES</th>
<th>YES</th>
</tr>
</thead>
<tbody>
<tr>
<td>Applications</td>
<td>Workflows</td>
<td>Integration of individual SOPs (workflows)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
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<tr>
<td>Applications</td>
<td>Workflows</td>
<td>Direct LIMS integration</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
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<tr>
<td>Applications</td>
<td>Workflows</td>
<td>Advanced communication via web services</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Interfaces</td>
<td>Serial</td>
<td></td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Interfaces</td>
<td>Network-compatible</td>
<td></td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
</tr>
<tr>
<td>Integrated electrostatic eliminator, Q-Stat (DI draft shield)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Variable vessel holder, Q-Grip (0.01mg/0.1mg readability only)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weighing pan for laboratory hood or laminar flow bench, Q-Grid</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IR sensor, foot switch, barcode reader (optional accessories)</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Programmable automatic draft shield doors</td>
<td>YES</td>
<td>YES</td>
<td>YES</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>