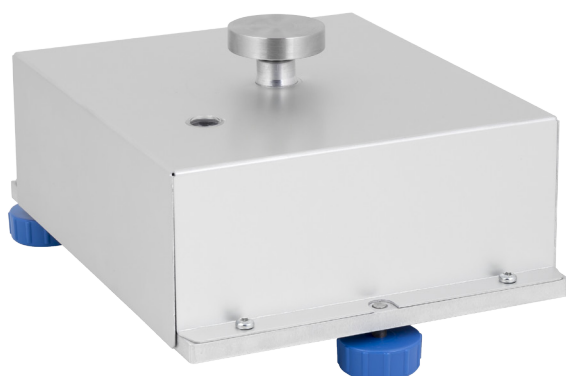
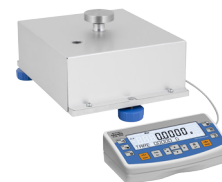


# MAS weighing modules

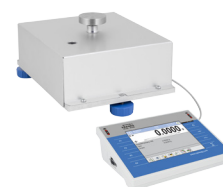
Series of professional electromagnetic modules of high resolution ensures highly precise and fast measurement in laboratory.



MAS Weighing module



MAS Module with R panel



MAS Module with Y panel

## Features

### High Resolution

High resolution is the characteristic feature of the advanced line of MAS weighing modules. Their operation is based on an EMFC converter. The modules are intended to be a component of laboratory workstations and to be integrated into production lines.

### Ease of Integration

MAS designs enable fast and easy installation at any surface. A weighing terminal is connected to the modules with up to 5-metre long cable facilitating ergonomics of use. Modules offer option of under-pan weighing.

### Databases and Alibi Memory

Both panels, R and Y, feature internal databases of products and operators. The databases are secure thanks to implemented modules of ALIBI memory. The panels, being functional devices, provide you with option of easy data import and export.

### Precise Measurement

Automatic adjustment system ensures accuracy even under changing ambient conditions. The most precise measurement is guaranteed, this is thanks to the repeatability parameter.

### Communication Interfaces

Wide range of communication interfaces facilitates connection of the printer, fast transfer of data using the USB flash drive, and cooperation with PC software. Version of MAS module without a control panel, and version with the control panel of R type have both been equipped with RS232 and USB type B interfaces (to be found on the housing). Weighing modules operated via the Y control panel feature 2 x RS232; 2 x USB type A; Ethernet; 4 x IN/OUT; Wi-Fi® interfaces (to be found on the control panel).

### Customized Control Panels

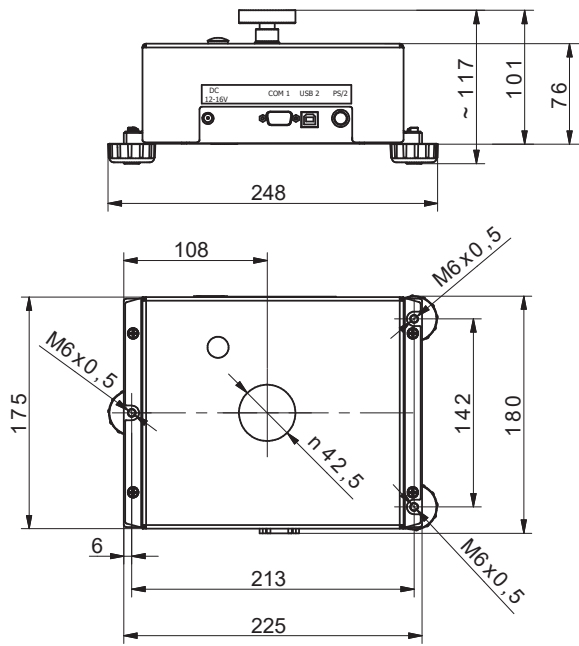
Weighing modules are offered with R or Y control panels. The first one has been equipped with LCD and its functionality is equal to functionality of a standard laboratory balance. The second is a multifunctional weighing terminal providing you with applications such as formulations, checkweighing, SQC and differential weighing.

	MAS 220	MAS 220.R	MAS 220.Y
Maximum capacity [Max]	220 g	220 g	220 g
Minimum load	10 mg	10 mg	10 mg
Readability [d]	0,1 mg	0,1 mg	0,1 mg
Verification scale interval [e]	—	—	—
Tare range	-220 g	-220 g	-220 g
Repeatability (5% Max)*	0,08 mg	0,08 mg	0,08 mg
Repeatability (Max) *	0,1 mg	0,1 mg	0,1 mg
Linearity	± 0,2 mg	± 0,2 mg	± 0,2 mg
Sensitivity temperature drift**	$1 \times 10^{-6} / ^\circ\text{C} \times R_t$	$1 \times 10^{-6} / ^\circ\text{C} \times R_t$	$1 \times 10^{-6} / ^\circ\text{C} \times R_t$
Stabilization time	3,5 s	3,5 s	3,5 s
Adjustment	internal	internal	internal
Verification	—	—	—
OIML Class	—	—	—
Construction material	aluminium	aluminium	aluminium
Weighing pan material	AISI304 stainless steel	AISI304 stainless steel	AISI304 stainless steel
Display	—	LCD (with backlight)	5.7" colour, resistive touch screen
Panel – Module cable length***	—	1 meter	1 meter
Protection class	IP 32	IP 32	IP 32
USB-A	—	—	2
USB-B	1	1	—
RS 232	1	1	2
Ethernet	—	—	10 / 100 Mbit
WiFi®	—	—	802.11 b/g/n
IN/OUT	—	—	4 × IN, 4 × OUT
Power supply	12 ÷ 16 V DC	12 ÷ 16 V DC	13,5 ÷ 16 V DC
Power consumption	10 W	10 W	10 W
Operating temperature	+10 ÷ +40 °C	+10 ÷ +40 °C	+10 ÷ +40 °C
Atmospheric humidity****	40 ÷ 80%	40 ÷ 80%	40 ÷ 80%
Transport and storage temperature	-20 ÷ +50 °C	-20 ÷ +50 °C	-20 ÷ +50 °C
Weighing pan dimensions	Ø 42 mm	Ø 42 mm	Ø 42 mm
Weighing device dimensions	248 × 180 × 117 mm	248 × 180 × 117 mm	248 × 180 × 117 mm
Net weight	3 kg	3,6 kg	3,6 kg
Gross weight	3,6 kg	4,2 kg	4,2 kg
Packaging dimensions	515 × 340 × 285 mm	515 × 340 × 285 mm	515 × 340 × 285 mm

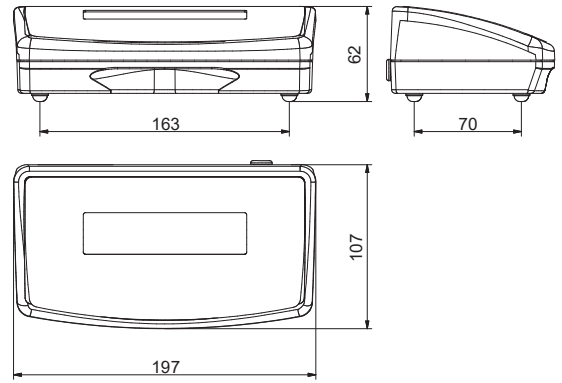
- Rt net weight  
\* repeatability is expressed as a standard deviation from 10 weighing cycles  
\*\* parameter determined in the following temperature range: +15 ÷ +35 °C  
\*\*\* optional solution with 5 m cable  
\*\*\*\* non-condensing conditions

Wi-Fi® is a registered trademark of Wi-Fi® Alliance.

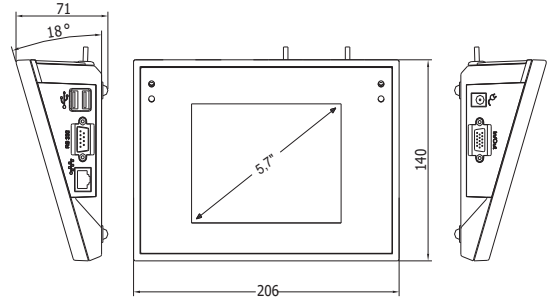
# Dimensions



MAS Weighing module



R operator panel

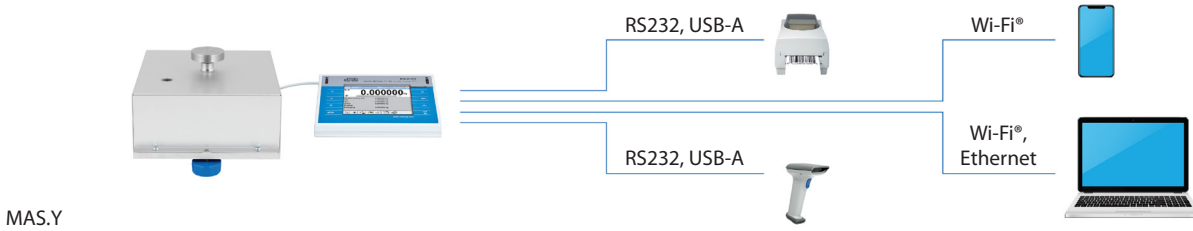


Y operator panel

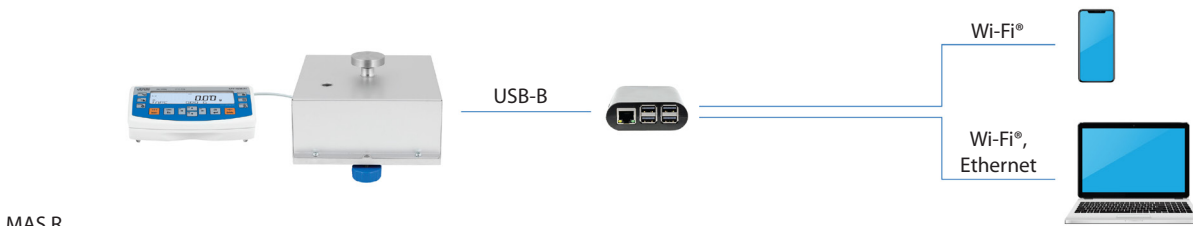
# MAS - Configurations



MAS



MAS.Y



MAS.R

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## Accessories

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### **Weighing Tables**

- granite antivibration table
- antivibration tables for laboratory balances

### **Peripheral Devices**

- Epson printer
- RPanel Box for MAS and MAS.R Modules

### **Ambient Conditions**

- antistatic ionizer DJ-04

### **Cables, Converters**

- P0108: RS 232 cable (balance-computer)
- P0151: RS 232 cable (balance - Epson printer)

### **Other**

- ZR-02 power supply with battery

## Dedicated Software

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### **RPanel for MAS and MAS.R Modules**

- With RPanel, the complete functionality of R series balances is available on the PC.