Weighing Modules

WX Weighing Modules

Productivity

in automation,

flexibility in the lab

The Modular Solution

Fast, Flexible, Easy to Integrate

METTLER TOLEDO

High-Precision Weighing
in Automated Processes

The WXS weighing modules of METTLER TOLEDO are a new dimension in automated weighing for instruments, machines, and systems. Packaged in a compact and rugged stainless steel housing, the weighing module introduces state-of-the-art technology to your automated processes.

Maximum reliability
The concept of "on-board weighing" with 10-microgram resolution in second-intervals guarantees high productivity paired with seamless quality control and traceability.

Maximum flexibility
Thanks to its ultra-low profile and unlimited accessibility, the load cell can be integrated virtually anywhere, while the electronic unit and the optional terminal can be placed in any convenient location.

Safe investment
The high flexibility is not only based on the modular design. Rather, the WX weighing modules can be precisely configured for almost any application because of the vastly expanded parameter setting options. A PC software is included for easy configuration. The application decides which limit values the weighing module will use as a "stability criterion." Thanks to advanced, flexibly adjustable filters, highly precise weighing is feasible in even the most difficult environments.

Always ready for use
Load cell, electronic unit, and terminal can be replaced independently of each other. In case of a defect, your system is up and running within minutes.

Integrated
7 different interface options are available as plug-in modules. The RS232 standard interface remains completely available for service and configuration tasks.

Rugged
The stainless steel housing with attachment flanges and industrial-strength plug is highly durable and guarantees optimal reliability and a long service life.

Individual
The adapter weighing pan allows for custom-tailored system assemblies with an additional preload of up to 78 g.

Flexible
The electronic unit can be flexibly attached, for example with the supplied mounting bracket and DIN rail clip. Thanks to the cable length of up to 5 m per load cell, the design options are endless.

Expandable
The optional weigh-below adapter makes it easy to attach suspended loads. The all-around overload protection stays in effect.

Modular
The unit is now also available without a terminal. The application decides whether and how a terminal will be used.

360° Accessibility
for Maximum Freedom of Movement

Free accessibility from all sides and minimum space requirements. WXT weighing modules allow for highest flexibility in setup and operation. WXT always offers an ideal solution, even in locations where space is at a premium or with applications that require transportability or have to follow special process requirements.

Single unit
The monochrome standard terminal can be permanently attached to the electronic unit with the terminal holder.

Optimal solution
The functional scope and ease of use are ideally adapted to your requirements with two different terminals.

Level bubble
Thanks to the clearly visible level bubble and two adjustable feet, you can level the scale at any time.

Accessories

Evaporation trap
For using WXT as a stationary or mobile scale for pipette calibration.

Simple cleaning

Scales must allow for thorough cleaning to avoid cross-contamination. The simple housing design without visible screws or indentations does not allow dirt to settle in any place. And, what's more, the weighing pan can be removed in two quick steps. Simply snap on the supplied plastic cover to get the analytical balance ready for cleaning with a hose. Thanks to the industrial plug of protection class IP67, this procedure is completely harmless in terms of electrical safety.

Draft shield
Quick to install, with flexible uses.

Technical data

WXS – component vision	Housing	Terminal	OrderNo
WXS205S/15	stainless steel 316L (1.4404)	–	11121003
WXSS205*	stainless steel 316L (1.4404)	Standard (monochrome)	11121001
WXS205SDU/15 DualRange	stainless steel 316L (1.4404)	–	11121008
WXSS205DU DualRange*	stainless steel 316L (1.4404)	Standard (monochrome)	11121006
WXS204S/15	stainless steel 316L (1.4404)	–	11121023
WXSS204*	stainless steel 316L (1.4404)	Standard (monochrome)	11121021

WXT – component vision	Housing	Terminal	OrderNo
WXTS205*	white, powder-coated	Standard (monochrome)	11121011
WXTP205	white, powder-coated	Professional (in color)	11121012
WXTS205DU DualRange*	white, powder-coated	Standard (monochrome)	11121016
WXTP205DU DualRange	white, powder-coated	Professional (on color)	11121017
WXTS204*	white, powder-coated	Standard (monochrome)	11121026
WXTP204	white, powder-coated	Professional (in color)	11121027

* These models are available as legel-for-trade version

Nominal		205	205DU	204
Maximum capacity	nom.	220g	220g	220g
Readability	nom.	0.01mg	0.1mg	0.1mg
Maximum capacity, fine range	nom.	–	111g	–
Readability, fine range	nom.	–	0.01mg	–
Zero setting range (legal-for-trade versions)		20g	20g	20g
Measurement properties properties apply to environment coditions				
Specification temperature		10 ... 30 °C	10 ... 30 °C	10 ... 30 °C
Specification humidity		20 ... 80 %rH	20 ... 80 %rH	20 ... 80 %rH
Specification pressure		–	–	–
Limit values				
Repeatability (measured at)		0.04mg (200g)	0.07mg (200g)	0.1mg (200g)
Repeatability at low load (measured at)		0.02mg (10g)	–	0.07mg (10g)
Repeatability, fine range (measured at)		–	0.03mg (100g)	–
Repeatability at low load, fine range (measured at)		–	0.02mg (10g)	–
Linearity		0.15mg	0.2mg	0.25mg
Eccentric load deviation as per OIML R76 (measured at)		0.3mg (100g)	0.3mg (100g)	0.4mg (100g)
Sensitivity offset		$2.5 \times 10^{-6} \cdot Rnt$	$3 \times 10^{-6} \cdot Rnt$	$4 \times 10^{-6} \cdot Rnt$
Sensitivity temperature drift [1]		$1.5 \times 10^{-6}/°C \cdot Rnt$	$1.5 \times 10^{-6}/°C \cdot Rnt$	$1.5 \times 10^{-6}/°C \cdot Rnt$
Sensitivity stability [2]		$2.5 \times 10^{-6}/a \cdot Rnt$	$2.5 \times 10^{-6}/a \cdot Rnt$	$2.5 \times 10^{-6}/a \cdot Rnt$
Typical values				
Repeatability [1]	typ.	$0.015mg + 8 \times 10^{-8} \cdot Rgr$	$0.04mg + 1.2 \times 10^{-7} \cdot Rgr$	$0.05mg + 1.5 \times 10^{-7} \cdot Rgr$
Repeatability, fine range [1]	typ.	–	$0.025mg + 5 \times 10^{-8} \cdot Rgr$	–
Differential linearity deviation	typ.	$\sqrt{5} \times 10^{-12}g \cdot Rnt$	$\sqrt{2} \times 10^{-11}g \cdot Rnt$	$\sqrt{5} \times 10^{-11}g \cdot Rnt$
Differential eccentric load deviation	typ.	$6 \times 10^{-7} \cdot Rnt$	$8 \times 10^{-7} \cdot Rnt$	$1 \times 10^{-6} \cdot Rnt$
Sensitivity offset [2]	typ.	$5 \times 10^{-7} \cdot Rnt$	$7 \times 10^{-7} \cdot Rnt$	$1 \times 10^{-6} \cdot Rnt$
Minimum weight (according to USP) [1] [3]	typ.	$45mg + 2.4 \times 10^{-4} \cdot Rgr$	$120mg + 3.6 \times 10^{-4} \cdot Rgr$	$150mg + 4.5 \times 10^{-4} \cdot Rgr$
Minimum weight (according to USP), fine range [1] [3]	typ.	–	$75mg + 1.5 \times 10^{-4} \cdot Rgr$	–
Minimum weight (@ U=1%, 2 sd) [1]	typ.	$3mg + 1.6 \times 10^{-5} \cdot Rgrr$	$8mg + 2.4 \times 10^{-5} \cdot Rgr$	$10mg + 3 \times 10^{-5} \cdot Rgr$
Minimum weight (@ U=1%, 2 sd), fine range [1] [3]	typ.	–	$5mg + 1 \times 10^{-5} \cdot Rgr$	–
Dynamics				
Settling time	typ.	3s	2s	2s
Settling time, fine range	typ.	–	3s	–
Interface update rate	max.	23/s	23/s	23/s
Interface update rate in "FastHost" mode	max.	92/s	92/s	92/s
Weighing time (including time for opening and closing of standard draft shield)		5s	5s/3s	3s
General data				
Protection class		Weighing module in operation: IP30 Weighing module with snapped on plastic cover: IP45 Electronic unit: IP40 SWT and PWT terminal: IP54		
Weight of weighing module with standard weighing pan	nom.	3.415kg (WXS) / 3.412kg (WXT)		

Rgr = Gross weight
Rnt = Net weight (of sample)
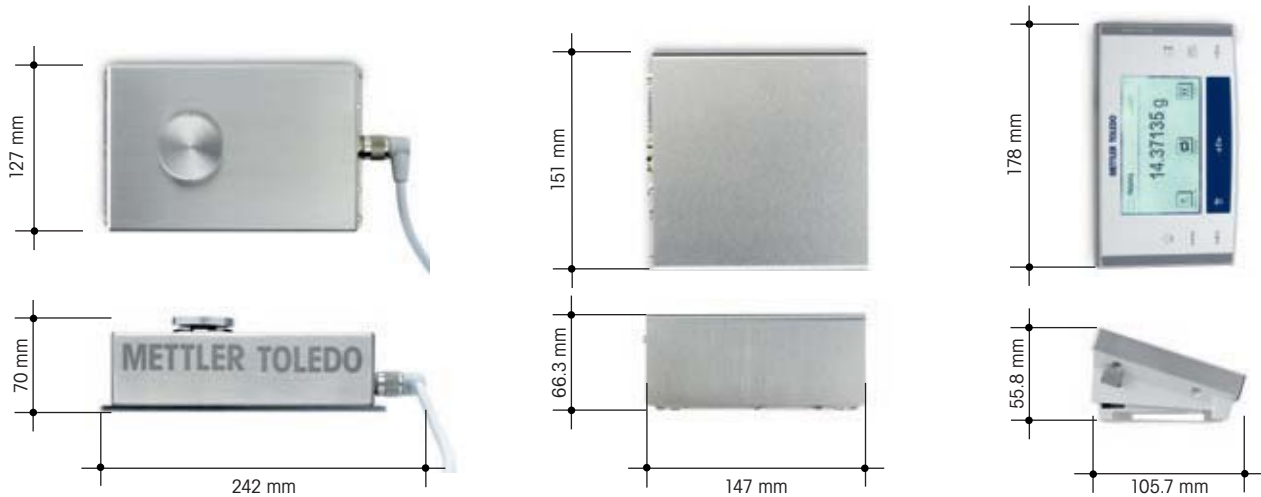sd = Standard deviation
a = Year (annum)

[1] Temperature range 10 ... 30 °C
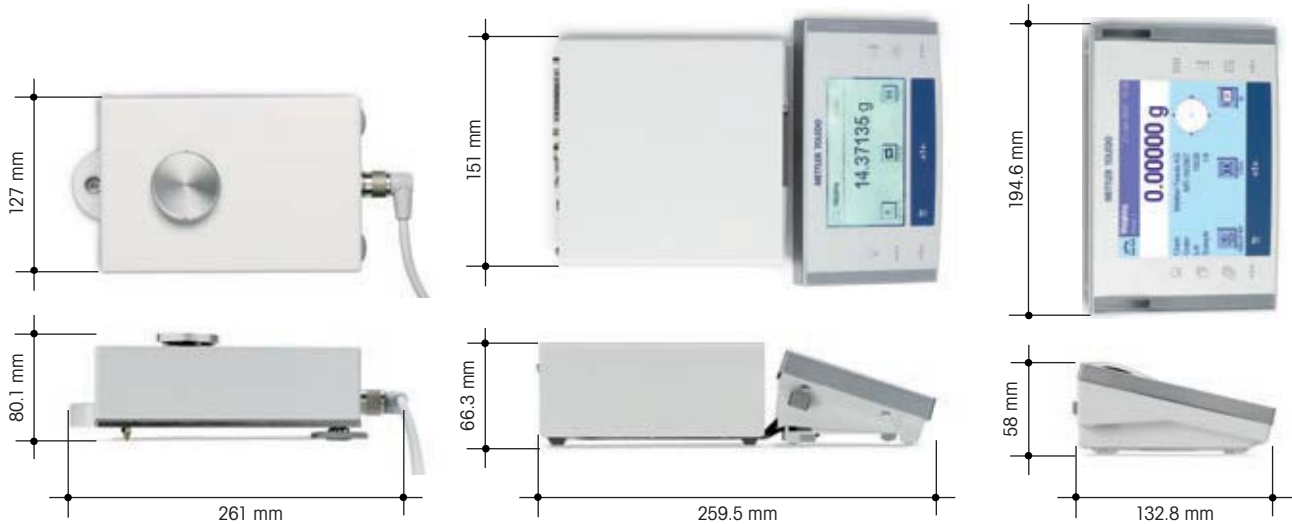[2] Stability of sensitivity as from first installation with FACT
[3] The MinWeigh weight can be improved using the following measures:
– Select suitable weighing parameters
– Select a better location
– Use smaller tare containers

WXS component version

127 mm
70 mm
242 mm

151 mm
66.3 mm
147 mm

178 mm
55.8 mm
105.7 mm

14.37135 g
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WXT Tischversion

127 mm
80.1 mm
261 mm

151 mm
66.3 mm
259.5 mm

194.6 mm
58 mm
132.8 mm

14.37135 g
0.00000 g
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Standard equipment and functionalities

All WX weighing modules
• Overload protection for vertical and horizontal loads
• Additive preload up to max. 19 g (78 g on adapter weighing pan)
• FACT, fully automated temperature-controlled internal adjustment
• Integrated RS232 interface
• Slot for second interface (7 options)
• 2 Aux connections for METTLER TOLEDO ErgoSens or external sensing device
• Mechanical interface for weigh-below adapter
• Versatile weighing parameter configuration
• Freely adjustable stability criteria
• Power supply with AC/DC adapter, incl. country-specific power cable
• Standard weighing pan 50 mm
• Adapter weighing pan 36 mm with 3xM3 threaded holes
• Production certificate with module-specific measuring values
• Comprehensive documentation, including PC software

WXS component version
• Electronic unit – load cell connector cable, 1.5 m/5ft
• Terminal – electronic unit connector cable, 2 m/6.5ft
• Mounting bracket for electronic unit (including DIN clip)

WXT benchtop version
• Electronic unit – load cell connector cable, 0.5 m /1.6ft
• Terminal – electronic unit connector cable, 0.6 m /1.9ft
• Terminal holder for connection with electronic unit (WXTS)
• Built-in precision level bubble

WX-specific accessories

Interface options (plug-in modules) and accessories	Order. No.
RS232C (second RS232C interface)	11132500
LocalCAN: For connecting up to 5 devices with LocalCAN connection	11132505
MiniMettler (backwards compatible with older METTLER TOLEDO devices) [1]	11132510
PS/2: For connecting commercial keyboards and barcode readers [1]	11132520
BT (Bluetooth): For wireless control of up to 7 peripheral devices [1]	11132530
BTS (Bluetooth): For wireless connection to a BT-P42 printer, a second BT-BLD display or PC [1]	11132535
Ethernet: For connecting to an Ethernet network	11132515
USB RS232C converter	11103691

[1] Only in conjunction with terminal

External communication modules	
Profibus module	42102809
DeviceNet module	42102810

Connecting cables	
Load cell – electronic unit connecting cable: 0.5 m /1.6 ft	11121442
Load cell – electronic unit connecting cable: 1.5 m /5ft	11121440
Load cell – electronic unit connecting cable: 5 m /16.4ft	11121441
Terminal – electronic unit connector cable, 6-pin: 0.575 m/1.9ft	11132124
Terminal – electronic unit connector cable, 6-pin: 0.945 m/3.1ft	11132129
Terminal – electronic unit connector cable, 6-pin: 2 m/6.5ft	11132133

Miscellaneous	
Weighing pan ø 85mm	00238762
Weighing below adapter (for weighing suspended loads) Note: An authorized service technician must perform the installation	11121081
Mounting bracket for WXS electronic unit, including DIN clip and mounting screws	11121254
Terminal holder for SWT terminal, including mounting screws	11121255
Flexible glass draft shield with sliding door	11121071
Universal carrying case for all WXS/WXT weighing modules	11121160
Pipette calibration set with evaporation trap (6/20ml)	11138010
Pipette calibration set with evaporation trap (100ml)	11138009
Pipette calibration set complete (6/20ml) (evaporation trap, suction pump, thermometer, OIML weights, etc.)	11121165

Package solutions – custom-tailored and practical.

Our trend-setting, sustainable package solutions are the result of carefully matched products and services. Both belong together and supplement one another, for your benefit. As the market leader, METTLER TOLEDO also offers individually customized solutions. In addition to professional consulting and comprehensive engineering as the basis of developing custom-tailored solutions, our global sales and service network guarantees individual customer support and ensures the long-term value of the weighing modules installed by METTLER TOLEDO.

www.mt.com/wx

More information