

Weighing Components for Remote Inventory Solutions



Digital Integration

Make your shelf talk! With the direct integration of A/D converters close to the weighing point you get stable and easy to use digital communication of the stock levels.



Vending machines

Weighing is very useful for all types of MRO or PPE materials, which can not be dispensed or controlled in traditional ways. Vending machines allow full accountability and therefore save your valuable assets from excessive use.



Warehouse solutions

Weighing sensors are integrated with smart shelves. Digital communication allows checking the weight and quantity of any bin at any time from anywhere on the internet. You will never run out of supply anymore!



Wireless Integration

Using highly reliable and power efficient ZigBee technology, also mobile or decentralized units can easily be integrated into an inventory solution.



Weighing can make you lean

By controlling inventory in real time

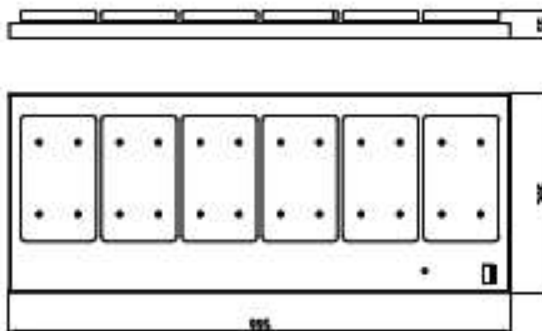
Weighing sensors are the perfect tool to remotely monitor inventory levels. They can be used in a number of different ways: integrated in shelves, on mobile racks, in industrial vending machines or in jobsite containers. All the weighing electronics have digital connectivity for easy integration into existing networks. This allows remote computer access to your inventory levels. From any place you want you can check not only the actual stock but also analyze usage trends to optimize the supply chain. In combination with appropriate access control such systems can also be used for direct accountability of item or tool check out.



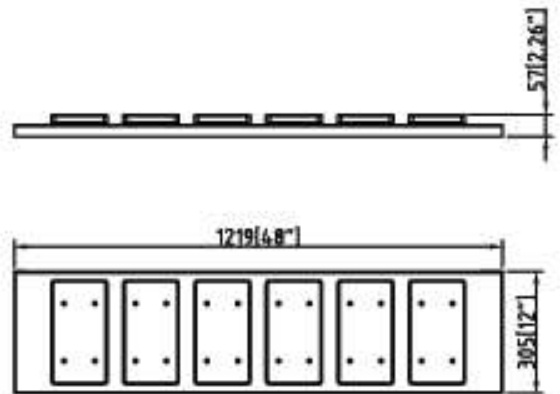
Smart Shelves

Smart shelf systems include a shelf, integrated scales, and an A/D converter. Shelves have either 4, 6, or 8 integrated scales mounted on the top. These shelves can be daisy chained using standard CAT5 cables. The cable integrates serial

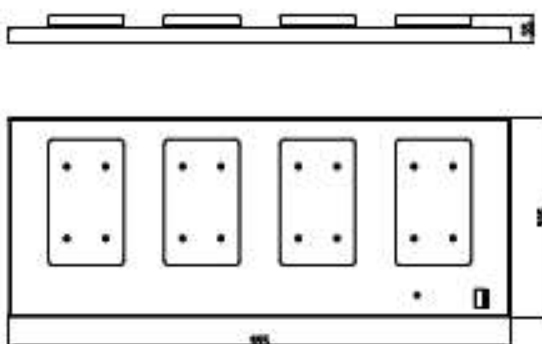
communication and power supply with one simple connection. The shelves are compatible with SSI Schoeffer and BITO racking systems. They are available in these sizes and capacity ranges:



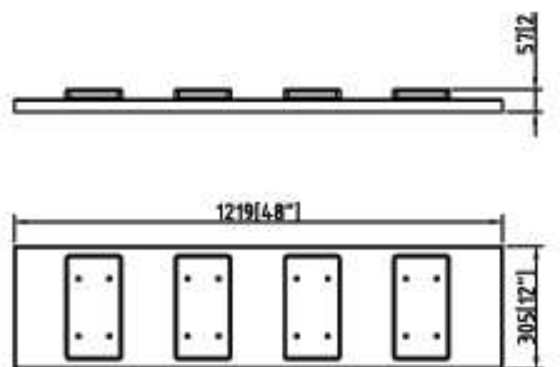
Type #: F60025
6x25lb, shelf size 995mmx395mm



Type #: F60025a
6x25lb, shelf size 48"x12"



Type #: F40050
4x50lb, shelf size 995mmx395mm



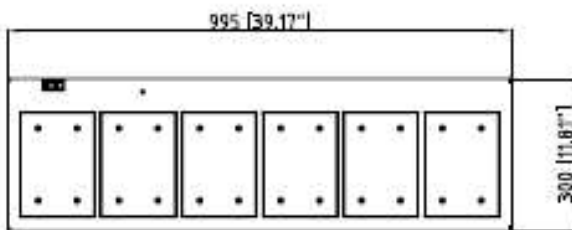
Type #: F40050a
4x50lb, shelf size 48"x12"

Smart Shelves for Mobile Systems

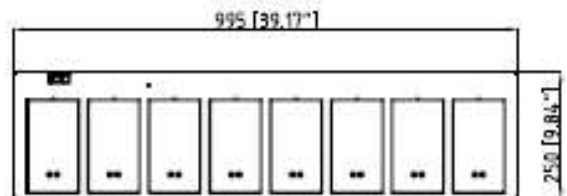
These smart shelves can also be mounted on mobile carts. Together with the battery powered and Zig-Bee based network components they build mobile systems. This allows moving the inventory close to the point of use, but still monitoring all inventories online.

All the shelves include integrated scales and an A/D converter. Shelves have 4, 6, or 8 integrated

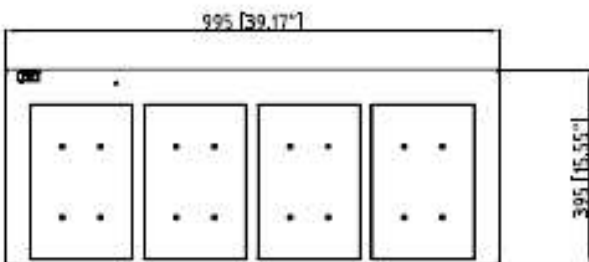
scales mounted on the top. The shelves can be daisy chained using standard CAT5 cables. The cables integrate serial communication and power supply with one simple connection. They are available in these sizes and capacity ranges:



Type #: MW0606
6x6kg, shelf size 995mmx300mm



Type #: MW0802
8x1.5 kg, shelf size 995mmx250mm

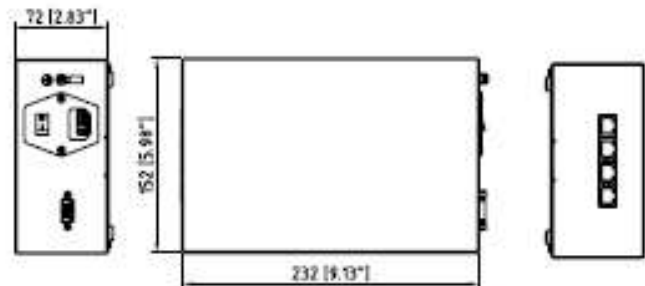


Type #: MW0415
4x15kg, shelf size 995mmx395mm

Network Components

Power Supply & Converter Box

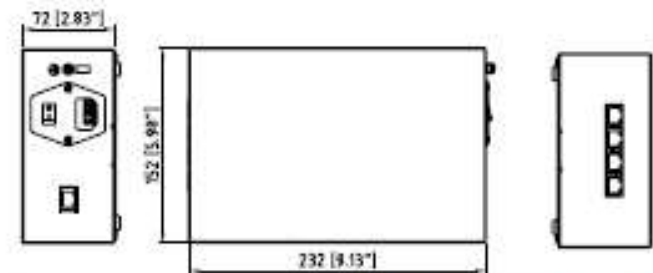
The power supply and converter box converts the RS232 from a PC into four RS-485 to connect smart shelves or A/D boards. The unit also provides power to the scales. With this box and Enhanced CAT5 networking cable, up to 32 smart shelves or A/D boards can be connected. The maximum distance in the network is 20m.



- Power input: 100~240VAC 1.3A 50/60Hz
- Power output: +12VDC 2.0A
- Serial interface: RS-232 (to PC), 4x RS-485 (to weighing sensors)
- Operating temperature: 0 to 40°C (32 to 104°F)
- Weight: 1.6kg

Network Repeater

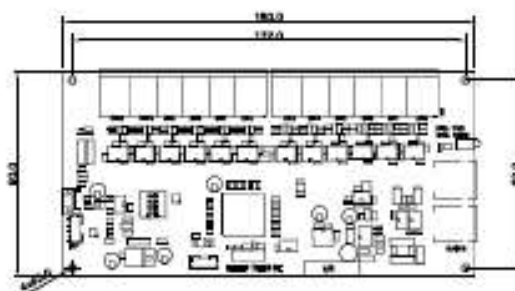
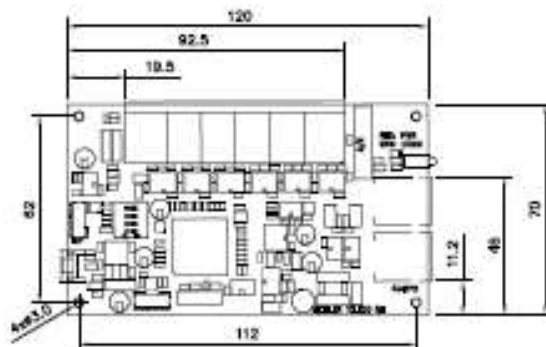
If the distance in the RS485 network exceeds 20m or if more than 32 shelves or electronic boards are connected to the system, repeaters must be used to reinforce signal and power supply.



- Power input: 100~240VAC 1.3A 50/60 Hz
- Power output: +12VDC 2.0A
- Serial interface : RS-485 (to converter), 4x RS-485 (to weighing sensors)
- Operating temperature: 0 to 40°C (32 to 104 °F)
- Weight: 1.6kg

A/D Boards

A/D boards are available with 6 or 12 weighing channels. They convert the analog load signal from a weighing pad into serial RS485. Smart shelves have these boards already integrated. It is possible to combine A/D boards and smart shelves in the same network.



- Power input: 12 VDC, 65 mA
- Serial interface: 2x RS-485 (daisy chain)
- Operating temperature: 0 to 40°C (32 to 104 °F)
- Temperature effect on span: 8 ppm/°C
- Temperature effect on zero: 15 ppm/°C

Wireless Smart Shelf Systems

The Wireless Data Uploader and Wireless Data Server allow building a network of mobile and decentralized smart shelves. They can be part of a stationary smart shelf system or independent. In any combination, a smart shelf network can manage a maximum of up to 999 weighing points.

The wireless communication is based on ZigBee. As Zigbee can use any participant in a network also as router, it builds a very stable communication and is ideal to connect mobile devices.



Wireless Data Uploader

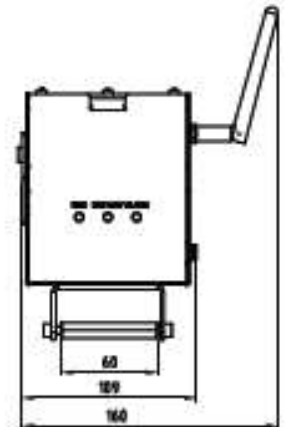
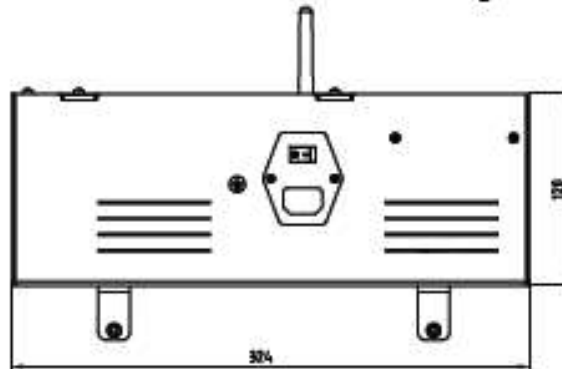
The Wireless Data Uploader is part of a mobile smart shelf system. The uploader can be mounted directly on a mobile cart. It locally connects to up to 16 smart shelves, providing power and serial communication. The built in battery can be recharged during operations, using a standard main power connection. The weight data and diagnostic messages are transmitted via Zigbee to a local Data Collector.

To save battery, the uploader has a built in sleep mode. The sleep intervals can be set individually between 0 and 120 minutes. With a setting of 30 minutes, a system typically runs 14 days without recharging.

Optionally the Wireless Data Uploader is also available with wireless communication, but without battery for main power connection. This is very useful for decentralized, fixed installations.

- Power input: 120-240VAC 1.0A 50/60Hz

- Sleep mode intervals: 0 to 9999 minutes
- Serial interface: RS-232 (for local configuration), 2x RS-485 (to weighing sensors), RS-485 (hardwire connections to a smart shelves network)
- Operating temperature: 0 to 40°C (32 to 104 °F)
- Weight: 5.7 kg

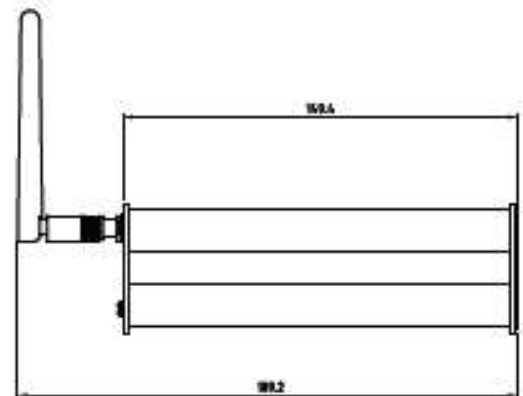
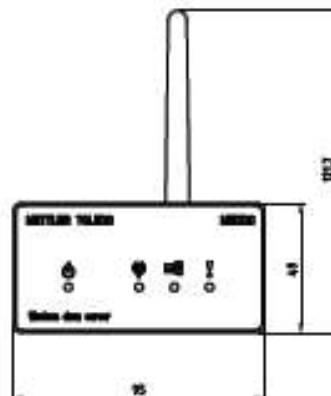


Wireless Data Server

The Wireless Data Server collects the weight and diagnostic information from a network of local Wireless Data Uploaders. This information is stored locally and shared via RS-232 to a smart shelf network. A smart shelf network can use hard-wired and wireless smart shelves in any combination.

- Power input: +12 VDC 200mA
- Serial interface: RS-232 (for local configuration), RS-485 (to Smart Shelves network)

- Operating temperature: 0 to 40°C (32 to 104 °F)
- Weight: 0.42 kg



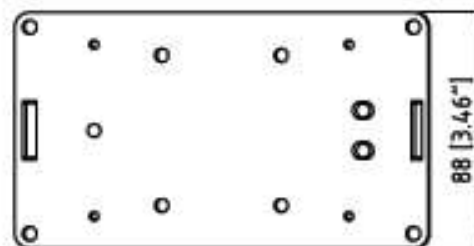
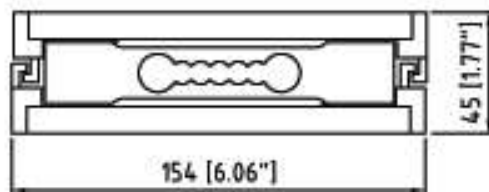


Weighing Pads

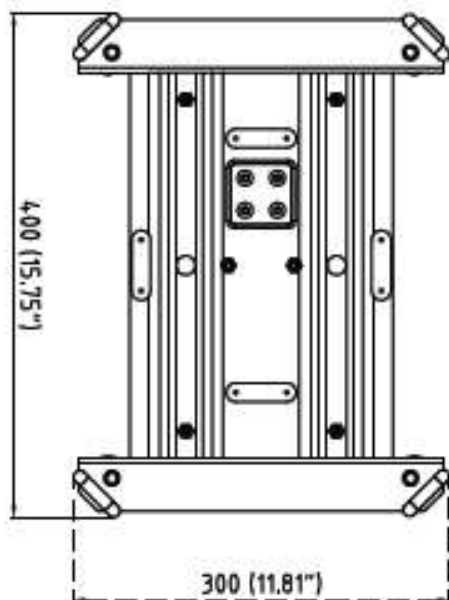
Weighing pads can be used to retrofit scales into existing shelf systems where not every bin requires a scale or to build individual scales for integration into shelf systems or machines. They consist of the load cell and a mounting assembly to simplify integration and protect the load cell.

The scales are available with 5 lb, 25 lb, 50 lb, 150 lb, 8 kg and 20 kg load cells.

All pads come standard with 1m or 3m of cable and plugs compatible with the A/D boards.



5 lb, 25 lb, 50 lb, 8 kg and 20 kg pads are identical pads are identical in size.



150 lb pad



Accuracy	%FS	0.03
Rated Output	mWV	2.0 ± 0.2
Non-linearity	%FS	0.02
Hysteresis	%FS	0.02
Repeatability	%FS	0.02
Creep	%FS/30 min	0.03
Zero Balance	%FS	2.0
Temperature Effect for Span	%FS/10°C	0.05
Compensated Temp Range	°C (°F)	-20 to +40
Operating Temp Range	°C (°F)	-20 to +65
Safe Overload	%FS	150
Ultimate Overload	%FS	300
Rating		IP65





What are your benefits from real time Inventory?

Stock control

- Never run out of supply

Automatic replenishments

- Simplify order and receiving processes

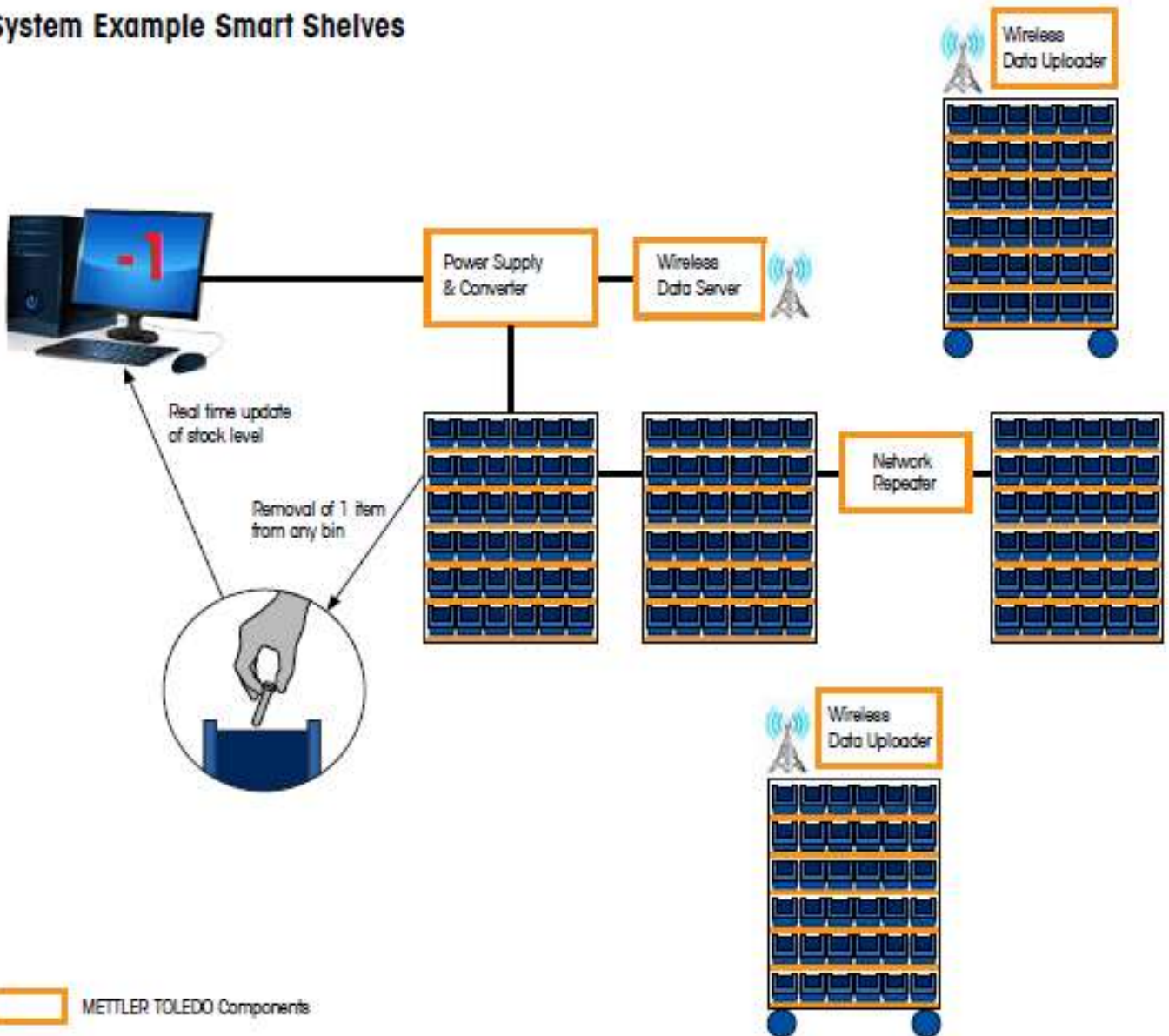
Usage trend analysis

- Maintain a secure supply chain

Accountability

- Control and monitor the usage of high value items

System Example Smart Shelves





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