



Modulo Gen2 North America User Guide

Original instructions

MOD-TN-0003

Issue 2

1 Description

This document is the User Guide for the Modulo Generation 2 (herein after Modulo Gen2) for the North American market.

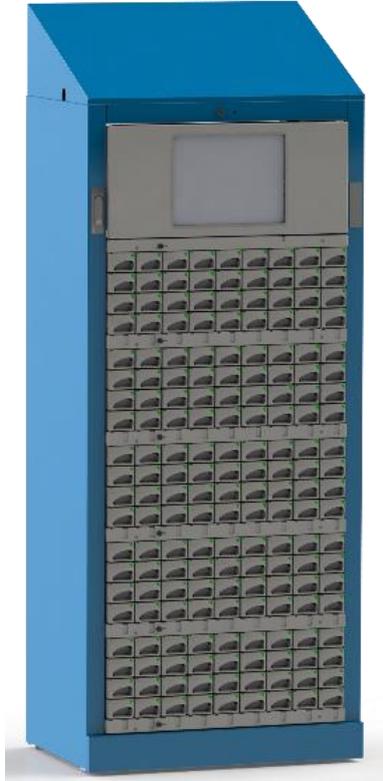


Figure 1 Modulo Gen2 - XL Standalone Variant

1.1 Issue Control

Issue	Date	Author	Notes
1	21 Feb 2018	BB	First Issue
2	02 Aug 2018	BMW	Minor Additions for US Touchscreen

1.2 Caution

120 VAC, 60Hz, 5A, 600W

This Equipment Must Be Earthed

Double Pole/Neutral Fusing

1.3 Warnings

Multiple Supplies

Standalone Modulo Gen2 includes an UPS, isolate external mains and turn off UPS before servicing.

Surge Protection

Standalone Modulo Gen2 includes surge protection on the mains input, insulation resistance must be tested at 250V.

1.4 Contact

Supply Point Systems Inc
220 James Jackson Ave
Cary
NC
27513
USA
Tel: +1 919 466 0037
www.supplypoint.com

Supply Point Systems Limited
Unit B Swift Park
Swift Valley Industrial Estate
Old Leicester Road
Rugby
Warwickshire
CV21 1DZ
United Kingdom
Tel: +44 844 576 1247
www.supplypoint.com

1.5 Fuses

The Modulo Gen2 uses the following types of fuses in critical locations, replace only with the specified part;

- Surge Board, see section 5.2 (Page 11)

Table 1 Safety Critical Fuses

Location	Manufacturer	Part Number	Description
Surge Board	Cooper Bussmann	S505-5-R	5x20mm Time-Delay, Ceramic Tube 5A, 250V

1.6 General Description

The Modulo Gen2 is a software driven vending machine comprising a frame of drawers controlled by a touch screen, or keyboard, and computer interface.

After selecting the product to be withdrawn, a solenoid is activated to release the lock on the drawer containing the product and a visual indication lights to identify the drawer. The user opens the drawer to access the item.

The Modulo Gen2 is configurable;

- Drawers can be divided into multiple compartments by clip in dividers.
- Different sized drawers are available.
- Drawers and dividers can be specified for factory build, but can also be changed in the field.

The Modulo Gen2 is controlled by the Supply Point Inventory Management System. A PC based system which controls one or more Modulo Gen2's, or other Supply Point Systems equipment (generically known as Frames).

- Frames containing the Supply Point Inventory Management System are known as Standalone, or Master, frames.
- Frames managed from another frame are known as Addon, or Slave, frames.

A Std AddOn Modulo Gen2 has a cupboard is fitted in place of the PC and Touchscreen, while an XL Addon Modulo Gen2 has a blanking plate fitted. The cupboard is electronically locked and is controlled in a similar way to the drawers.

The Modulo Gen2 is intended for user operation in commercial/light industrial environment.

1.6.1 Variants

Modulo Gen2 frames are available in two widths;

- Standard (Std) width
- XL width, 50% wider than the standard

This leads to four basic variants;

- MODULO.0002M Std Standalone
- MODULO.XL02M XL Standalone
- MODULO.0002S Std AddOn
- MODULO.XL02S XL AddOn



Figure 2 Modulo Gen2 Variants

1.6.2 Frame Interconnect

Frames are connected using the PICBUS;

- The PICBUS is exposed on the back of the Modulo Gen2, on two SpeakOn connectors. These connectors, which are internally connected, make it easy to position a new Frame beside an existing Frame and connect the PICBUS using the supplied SpeakOn/PICBUS cable.
- Up to nine AddOn Frames can be attached to a Standalone Frame.
- Each Frame requires a unique Frame Address, these are set by jumpers on the Control Board in each Frame.
- The PICBUS provides power and control.
- The PICBUS is SELV rated.

2 Installation

2.1 General

2.1.1 Location

The Modulo Gen2 requires a floor with negligible risk from vibration or instability and capable of supporting;

- 140kg (empty Std) + anticipated contents
- 160kg (empty XL) + anticipated contents

- Maximum contents, 660lbs (300kg), uniformly distributed

The Modulo Gen2 must be installed level, four adjustable feet allow minor unevenness in the floor to be accommodated.

The Modulo Gen2 must be bolted to the floor, or wall.

2.1.2 Standalone - Mains Connection

The Standalone Modulo Gen2 is supplied with a captive mains cord fitted with a NEMA 5-15 plug. The mains cord must be connected to a suitable mains outlet;

- The mains outlet must provide an Earth connection.
- The mains outlet is the disconnect device, access to it must be unobstructed.

Should it be necessary to change the mains cord and/or plug;

- The cord and plug must be approved and correctly rated for the country of use
- The cord and plug must be installed by a qualified person
- The cord and plug must provide an earth connection

2.1.3 AddOn – Connection to Adjacent Frame

Connect to an adjacent Frame using the supplied SpeakOn/PICBUS cable, either SpeakOn connector can be used.

2.2 Frame Address

The Frame Address is usually specified at time of ordering, however it can be changed as detailed in section 5.1 (Page 10).

Note: A different Address must be used in each attached Frame.

3 Electronics

3.1 Block Diagram

The Electronics arrangement is shown below;

- See Figure 3 for Standalone Modulo Gen2
- See Figure 4 for AddOn Modulo Gen2.

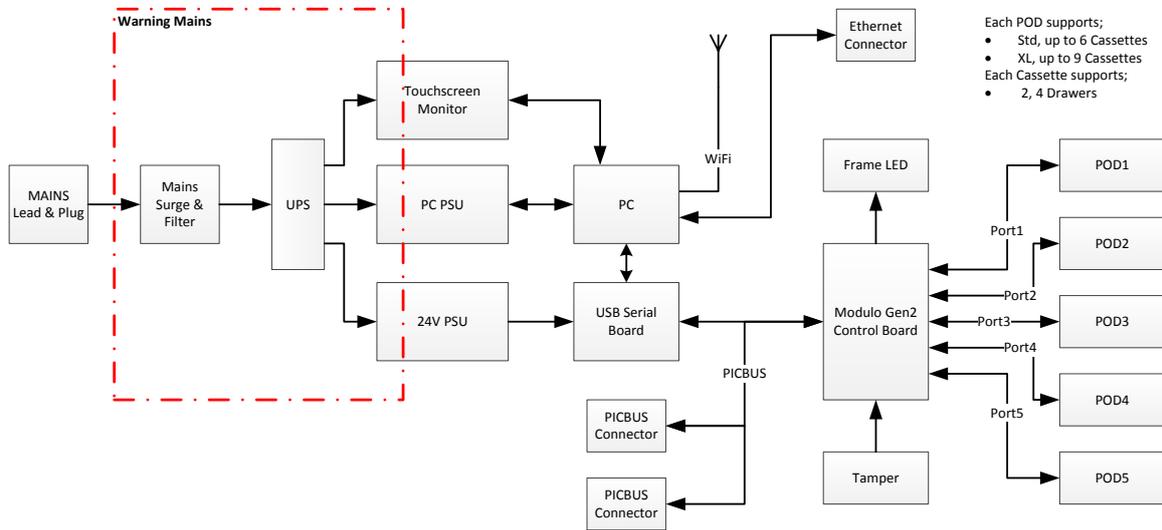


Figure 3 Standalone Modulo Gen2 Electronics Block Diagram

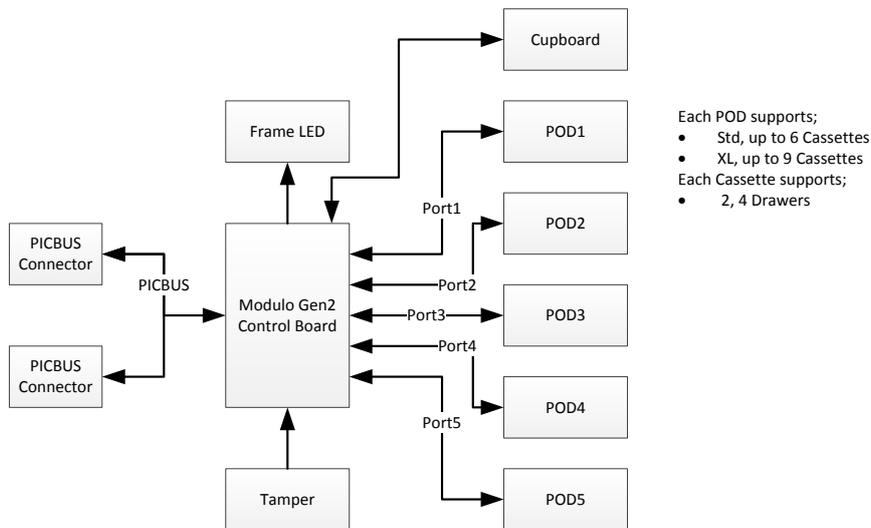


Figure 4 AddOn Modulo Gen2 Electronics Block Diagram

3.2 Physical Layout

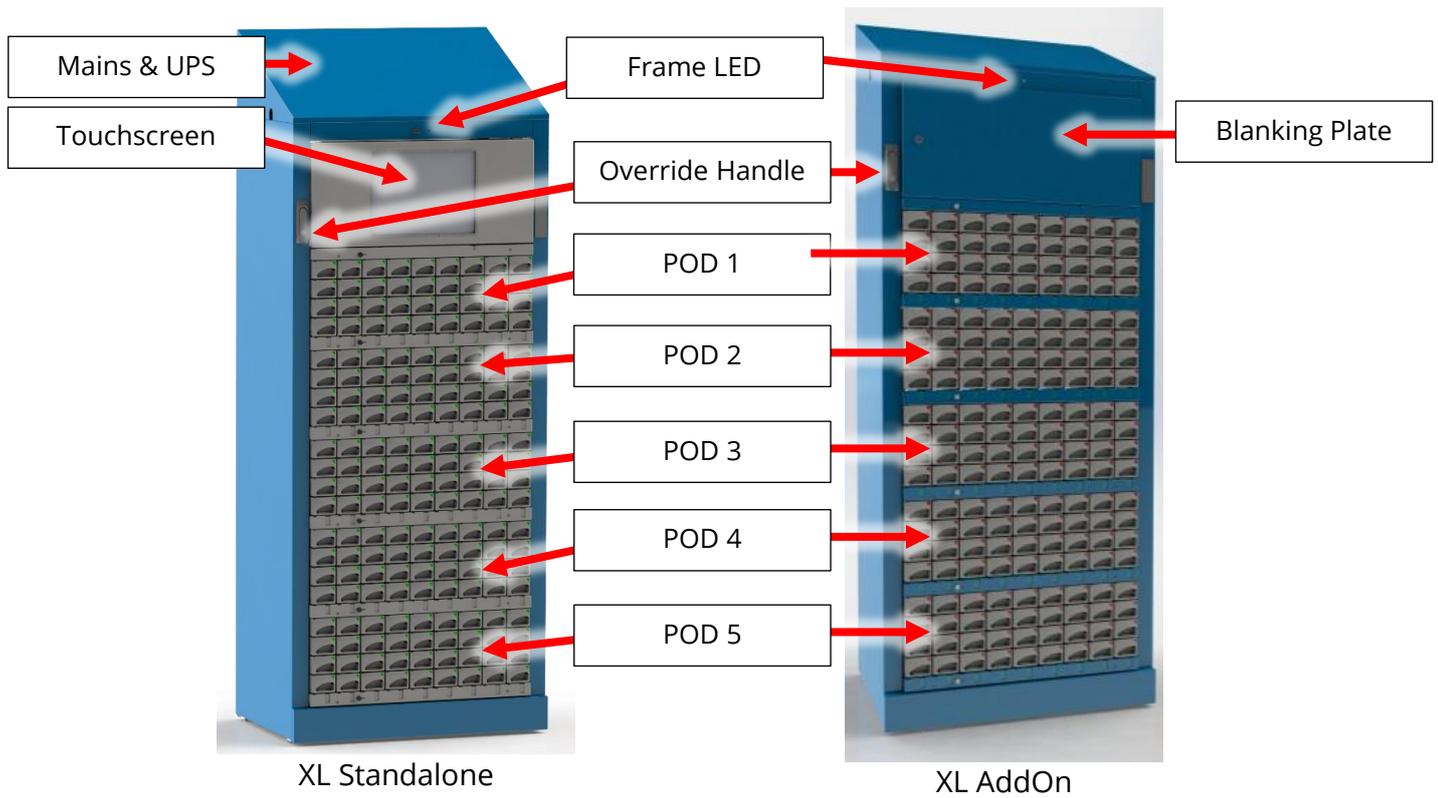


Figure 5 Modulo Gen2 - Front View

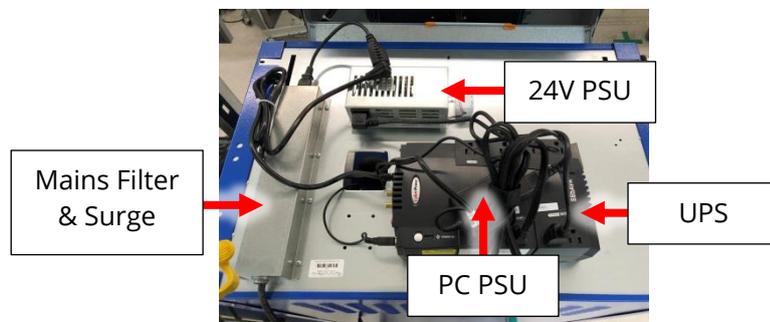


Figure 6 Standalone Modulo Gen2 - Arrangement in Lid (viewed from back)

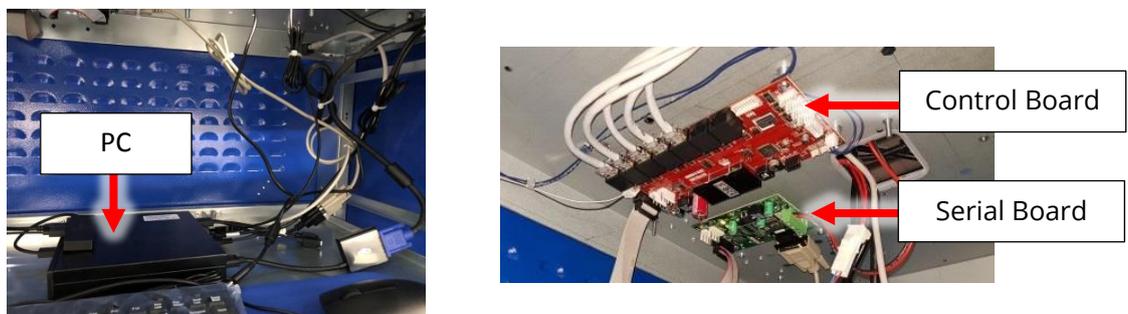


Figure 7 Standalone Modulo Gen2 - Arrangement Behind Touchscreen

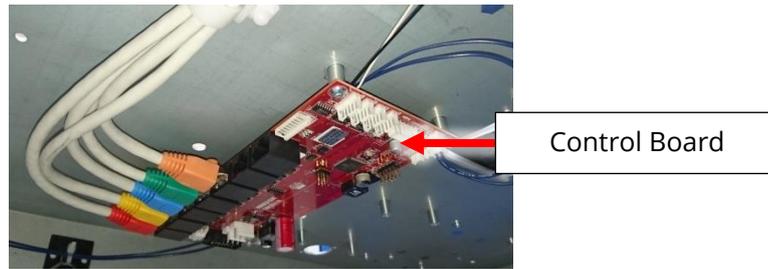


Figure 8 AddOn Modulo Gen2 - Arrangement Above Cupboard

3.3 Frame LED

The Frame LED illuminates to identify the Modulo Gen2 frame to use for the current transaction.

This assists the User in identifying the selected Frame in a multiple Frame machine.

4 Operation

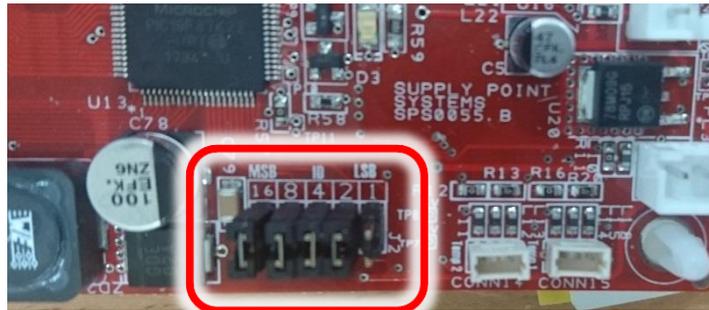
Refer to SupplyPoint Software User Guide

5 Maintenance

5.1 Setting Frame Address

The Frame Address is set on the ID Header on the Modulo Gen2 Controller Board, see Figure 9.

Note: If you change the Frame Address you MUST disconnect and reconnect the PICBUS for the change to take effect.

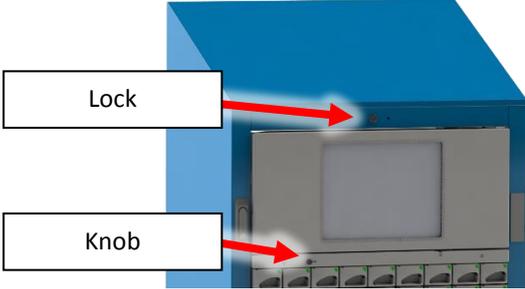
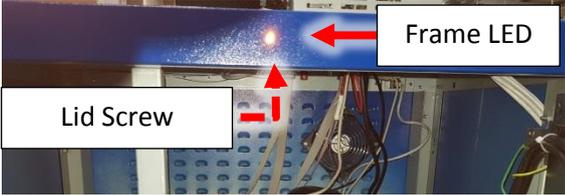


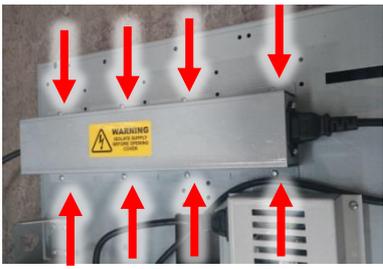
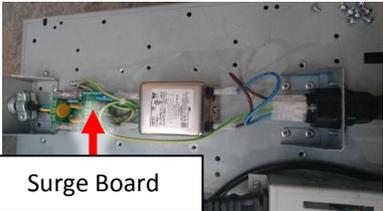
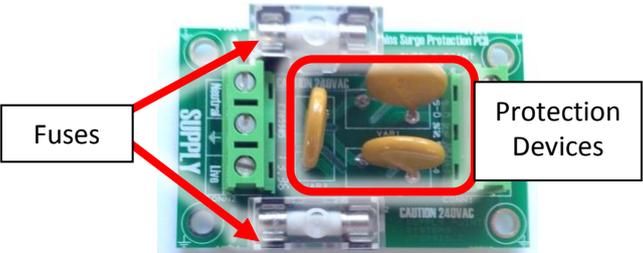
Frame No.	MSB				LSB				
1	1	1	1	1	0				
2	1	1	1	1	0				
3	1	1	1	0	0				
4	1	1	0	1	1				
5	1	1	0	1	0				
6	1	1	0	0	1				
7	1	1	0	0	0				
8	1	0	1	1	1				
9	1	0	1	1	0				
10	1	0	1	0	1				

Key	
1	Jumper Fitted
0	Jumper Not Fitted

Figure 9 Frame Address Jumper Setting

5.2 Surge Board Fuses

Isolate Mains	
<p>Operate Override</p> <ul style="list-style-type: none"> • Unlock override handle • Pull handle out and rotate half turn clockwise 	
<p>Open Screen</p> <ul style="list-style-type: none"> • Loosen black knob (two turns, DO NOT remove) • Slide knob to the right, as far as it will go • Open screen; <ul style="list-style-type: none"> ○ Unlock lock above monitor ○ Pull screen outwards, lift up 	
<p>Remove Top Cover</p> <ul style="list-style-type: none"> • Remove screw that secure top cover • Push top panel towards the back, to disengage clips in back corners • Remove top cover 	

<p>Remove Mains Input Cover</p> <ul style="list-style-type: none"> Remove 8x screws 	
<p>Remove Cover</p> <ul style="list-style-type: none"> Expose Surge Board and Filter <p>(Note: image shows European wiring colors)</p>	
<p>Remove plastic covers over fuses</p> <ul style="list-style-type: none"> Replacement fuse must be Cooper Bussman part number S505-5-R Always refit plastic covers Replace Surge Board if any of the Protection Devices are damaged or discoloured. 	
<p>Refit, reverse of the above sequence</p>	

6 Other

6.1 Environment

6.1.1 Temperature

Operating Temperature 32°F to 104°F (0°C to 40°C)

Non-Operating/Storage Temperature -22°F to 140°F (-30°C to 60°C)

6.1.2 Humidity

Operating Humidity 20% to 80% non-condensing.

Non-Operating/Storage Humidity 5% to 95%.

6.1.3 Altitude

Not intended for use at altitudes in excess of 6500ft (2000m) above sea level.

6.1.4 Pollution

Only to be used in Pollution Degree 2 approved environments.

Normally only nonconductive pollution occurs.

6.2 Size and Weight

6.2.1 Std

(D x W x H) in: 20.1 x 21.5 x 78.7

(D x W x H) mm: 510 x 545 x 2000

310lbs (140kg) (empty)

6.2.2 XL

(D x W x H) in: 20.1 x 30.1 x 78.7

(D x W x H) mm: 510 x 765 x 2000

350lbs (160kg) (empty)

6.3 Power

120 VAC, 60Hz, 5A, 600W

6.4 Capacity

Maximum 660lbs (300kg) load, uniformly distributed.

Maximum 11lbs (5kg) load, in an individual drawer.

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