MachineMotion Pendant Datasheet

Contents

Overview

MachineMotion Pendant V3 provides a plug and play touch screen interface for automated equipment powered by Vention's MachineMotion 2 controller. At 13 inches with two cameras, this Pendant generation is designed to be ergonomically friendly allowing easy operation through a responsive advanced display. When connected to the MachineMotion 2 controller, the Pendant enables machine operators and administrators to run and modify their program in a code-free environment. This product comes with pre-loaded control and machine operations software. Compatible with MachineMotion 2 (CE-CL-010-0001 & CE-CL-010-0004). *This datasheet provides technical specifications for Vention's MachineMotion Pendant V3.2. For details on previous versions, refer to the 'Documentation for Previous Product Versions' section at the bottom of this page.*

This new version of Pendant includes front and rear cameras for the Remote Support feature. It also includes Safety IN & Safety OUT connectors to be daisy-chained with safety modules and devices on the safety loop.
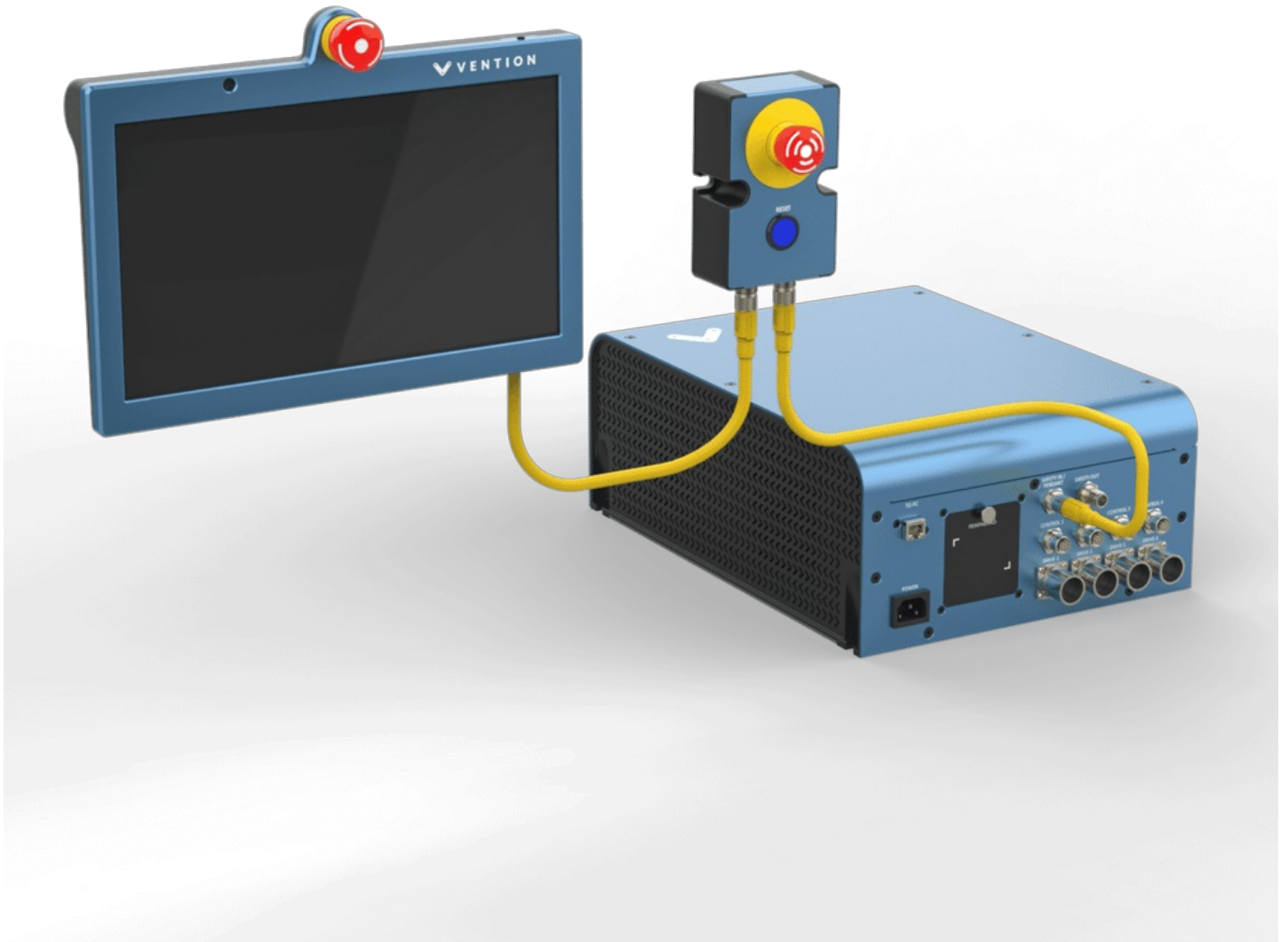
Figure 1: MachineMotion with Pendant V3

Features

- Plug and Play compatibility with MachineMotion 2 controller
- Pre-loaded MachineLogic, for code-free automation sequence editing
- Application launcher for machine operators
- Manual machine operation mode
- Detect and connect to a desired Wi-Fi network
- Front and rear facing cameras for Remote Support function (to be purchased separately)
- Safety IN & Safety OUT connectors for daisy-chaining on Vention safety loop
- Volume & Power buttons
- Removable handle

Important Notes

Safety

The Pendant V3 displays an emergency stop button and can act as an input unit of safety functions.

A complete safety system normally includes sensors or input units, logic units and contactors or output units. The manufacturer of the installation or machine is responsible for ensuring proper functioning of the whole system and validating the control system into which the Pendant V3 is integrated. Vention cannot guarantee all specifications of an installation or a machine without being responsible for the risk assessment and the design of the safety system. Vention takes over no liability for recommendations which are given or implied in the following description.

The following items must be taken into consideration during the design, risk assessment & installation of the safety system :

- The emergency stop button of the Pendant V3 shall not be put into operation only after the safety functions have been tested during the commissioning.
- Fault masking shall be considered.
- The use of the Pendant V3 does not prevent the automatic start of the devices connected to the Safety OUT ports. According to EN IEC 60204-1:2018 and EN ISO 10218-1:2011 it is not allowed to restart automatically after emergency stop. Therefore the control systems of the connected devices have to disable the automatic start after emergency stop.
- If the Pendant V3 is the last device on the safety chain, a Safety Jumper (CE-SA-102-0001) must be installed on the Safety In port.
- Opening the Pendant V3 or implementing unauthorized changes voids any warranty.


Functional error! Danger to life, risk of serious injuries or property damage

- The Pendant V3 can only be connected to Vention safety devices.
- The Pendant V3 is designed to operate in indoor environments without dust or high humidity. Dust and dampness may lead to malfunction. Do not install or operate the Safety Module outdoors.

Software Included

MachineMotion 2 comes with pre-loaded control and machine operations software – all of which is accessible through the MachineMotion Pendant or via computer with an Ethernet connection.
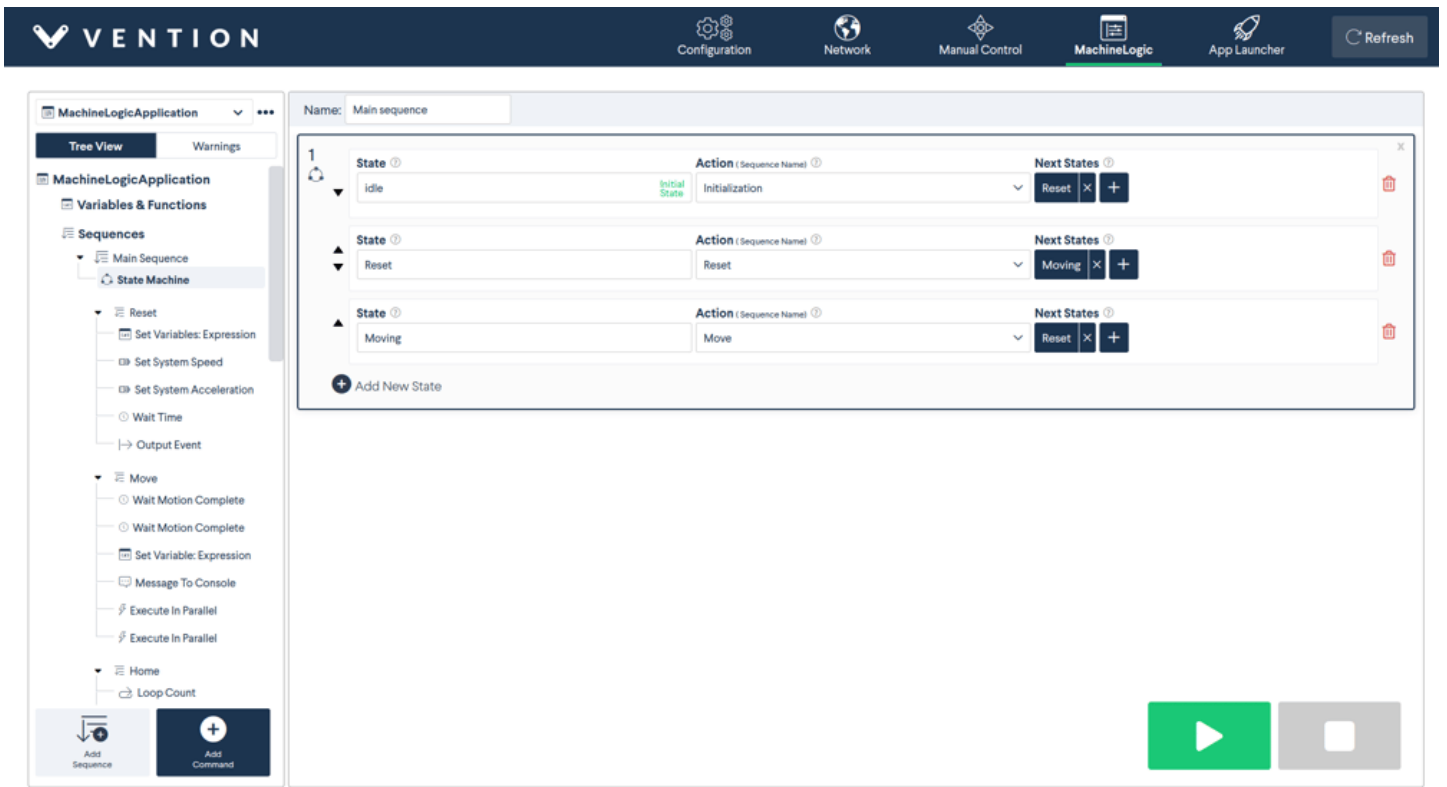
Control Center
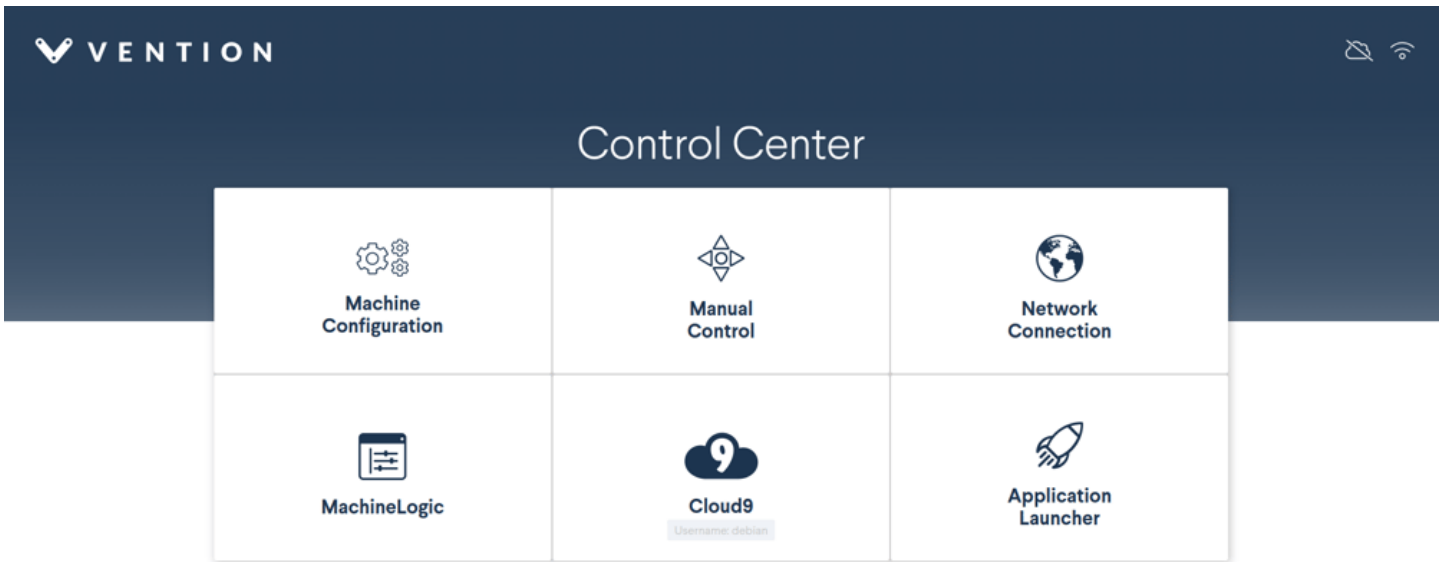
Figure 2: Control Center

MachineLogic

Figure 3: MachineLogic
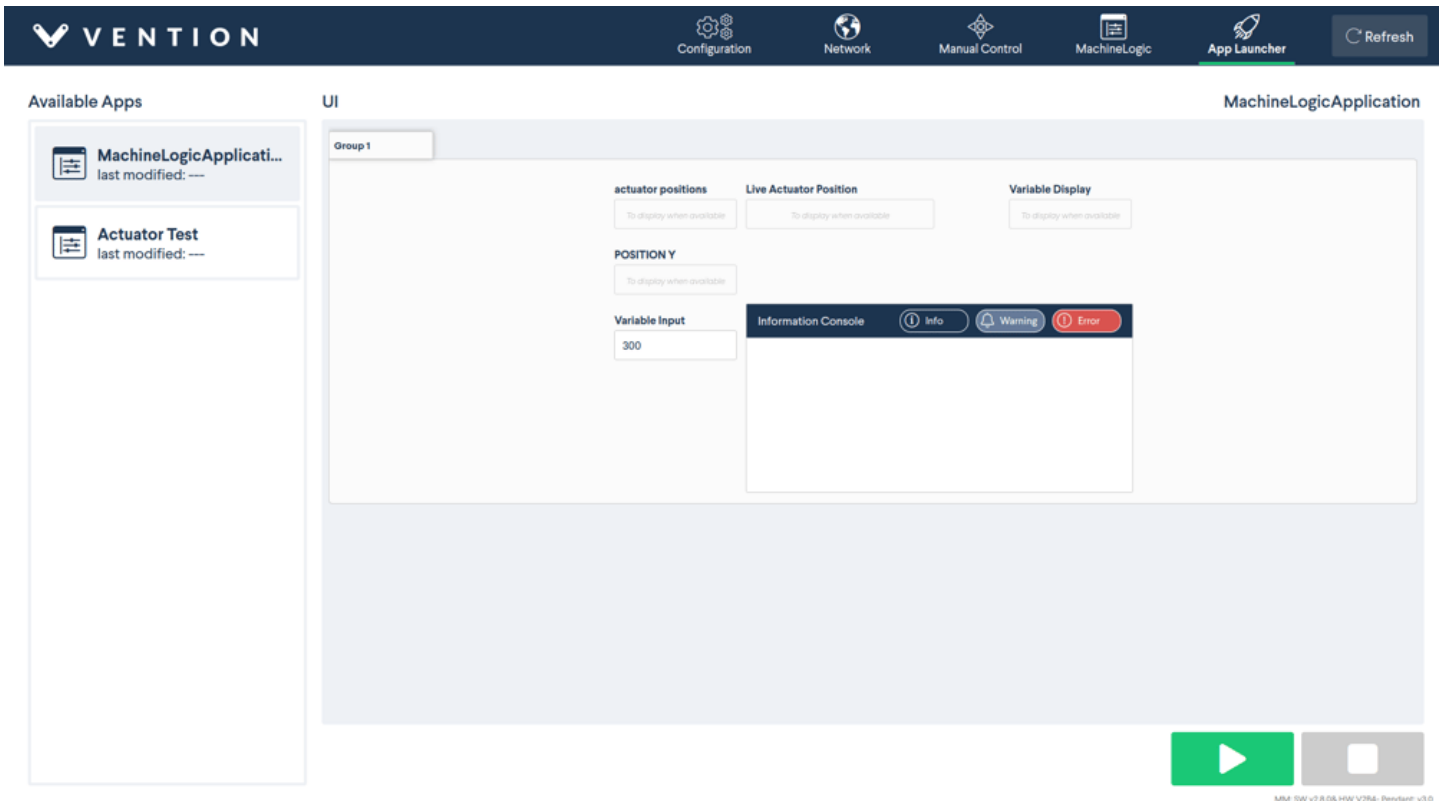
Application Launcher

Figure 4: Application Launcher

Manual Mode
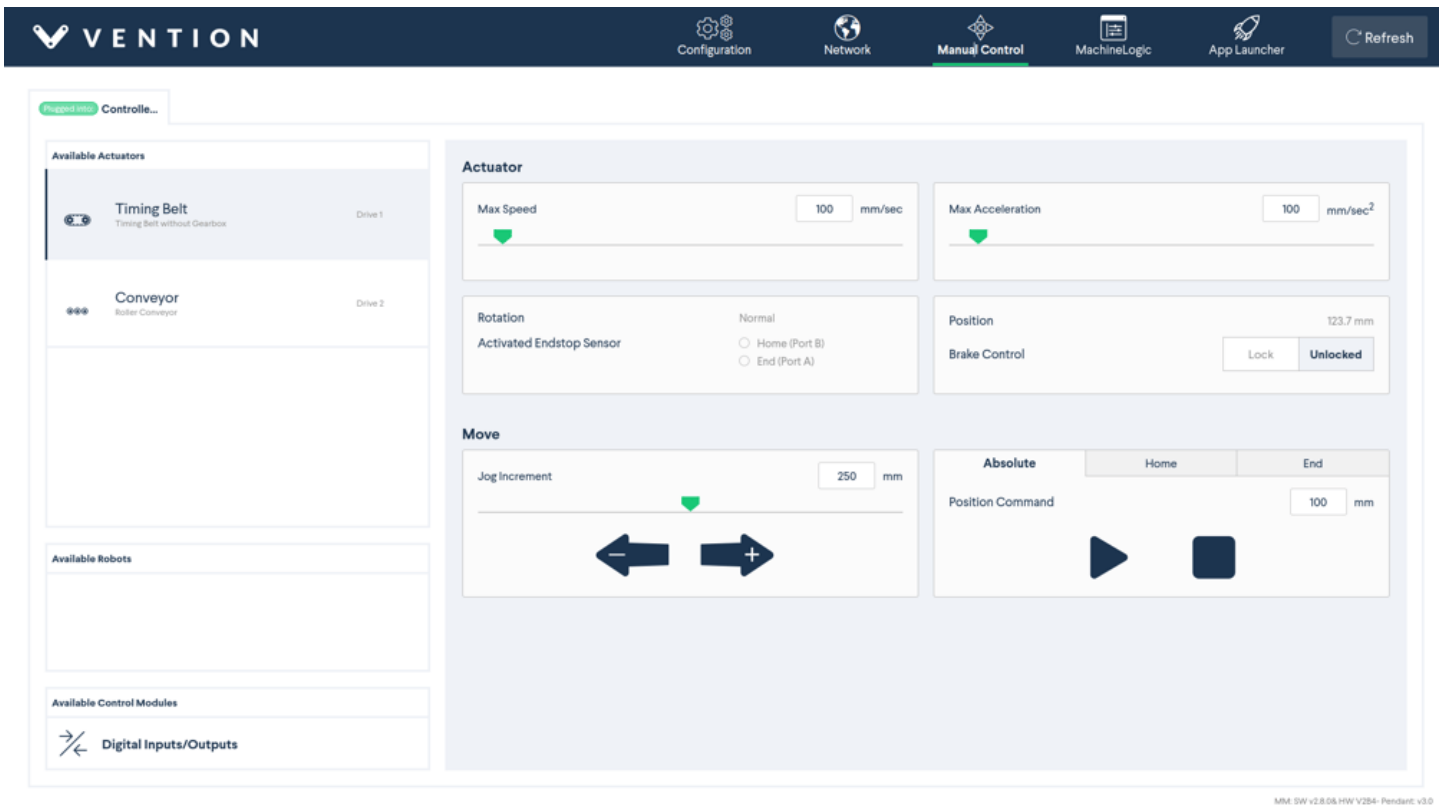
Figure 5: Manual Mode

Technical Specifications

Mechanical Specifications

Item	Specification
Shock resistance	Enclosure validated as per IEC-60068-2-31
Ingress protection	IP40
Mounting	- VESA mounting holes - Mounting bracket compatible (ST-RB-002-0005)

Electrical Specifications

Item	Specification
Processor	Intel® Core™ i3-N300 Processor 0.8 GHz (6MB Cache, up to 3.8 GHz, 8 cores, 8 Threads)
Graphics Display	13.3-inch, FHD (1920 x 1080) OLED 16:9 aspect ratio, 0.2ms response time, 60Hz refresh rate, 550nits HDR peak brightness, 100% DCI-P3 color gamut, 1,000,000:1, VESA CERTIFIED Display HDR True Black 500, 1.07 billion colors, PANTONE Validated, Glossy display, 70% less harmful blue light, TÜV Rheinland-certified, SGS Eye Care Display, Touch screen
Memory	8GB LPDDR5 on board
Storage	256G UFS 2.1
Front and rear facing cameras	5MP 2592(H) x 1944(V) - Auto Focus
Audio	- Smart Amp Technology - Built-in 4-way stereo speakers - Built-in array microphone
Network and Communication	Wi-Fi 6(802.11ax) (Dual band) 2*2
Ethernet Switch	3 ports 10/100MB
Battery	50WHrs, 2S1P, 2-cell Li-ion
Power Consumption	- Charging: 25W - Fully charged: 12W
Nominal Input Voltage	24V
Input Voltage range	23.5V-25V

Item	Specification
Safety Cable length connected to Safety OUT	Up to 50m
Emergency Stop Button	2x NC Dry contact channels
Connectors	• 2x USB 2.0 Type A (to be used with USB cables shorter than 3 meters) • Safety OUT: M12A-12 pins Male • Safety IN: M12A-12 pins Female
Hardware Compatibility	• MachineMotion 2 controller - One Drive: CE-CL-010-0001 • MachineMotion 2 controller - Four Drive: CE-CL-010-0004

Pin Out

Safety IN – M12A-12 pins Female

Pin	Description
1	24V
2	0V
3	MachineMotion Safety Channel 1 Contact 1
4	MachineMotion Safety Channel 1 Contact 2
5	MachineMotion Safety Channel 2 Contact 1
6	MachineMotion Safety Channel 2 Contact 2
7	Reset Contact 1
8	Reset Contact 2
9	Safety IN Ethernet TX+
10	Safety IN Ethernet TX-
11	Safety IN Ethernet RX+
12	Safety IN Ethernet RX-

Safety OUT – M12A-12 pins Male

Pin	Description

Pin	Description
1	24V
2	0V
3	MachineMotion Safety Channel 1 Contact 1
4	MachineMotion Safety Channel 1 Contact 2
5	MachineMotion Safety Channel 2 Contact 1
6	MachineMotion Safety Channel 2 Contact 2
7	Reset Contact 1
8	Reset Contact 2
9	Safety OUT Ethernet TX+
10	Safety OUT Ethernet TX-
11	Safety OUT Ethernet RX+
12	Safety OUT Ethernet RX-

Mechanical Specifications

Item	Specification
Shock resistance	Enclosure validated as per IEC-60068-2-31
Ingress protection	IP40
Mounting	- VESA mounting holes - Mounting bracket compatible (ST-RB-002-0005)

Physical Interface

Power Button Functionality

- Pressing once on the power button while the Pendant V3 is OFF will power it ON.
- Pressing more than 10 seconds on the power button while the Pendant is ON will power it OFF.
- The Pendant goes into low brightness mode after 30 minutes of no interaction. Pressing once on the power button while the Pendant is ON and in low brightness mode will change the display to full brightness.
- If the Pendant is not connected to a MachineMotion controller, it will power OFF after 10 minutes.
- The Pendant V3 includes 2 optional camera privacy covers (as shown in Figures 6 & 7) which can be installed by the user if required.
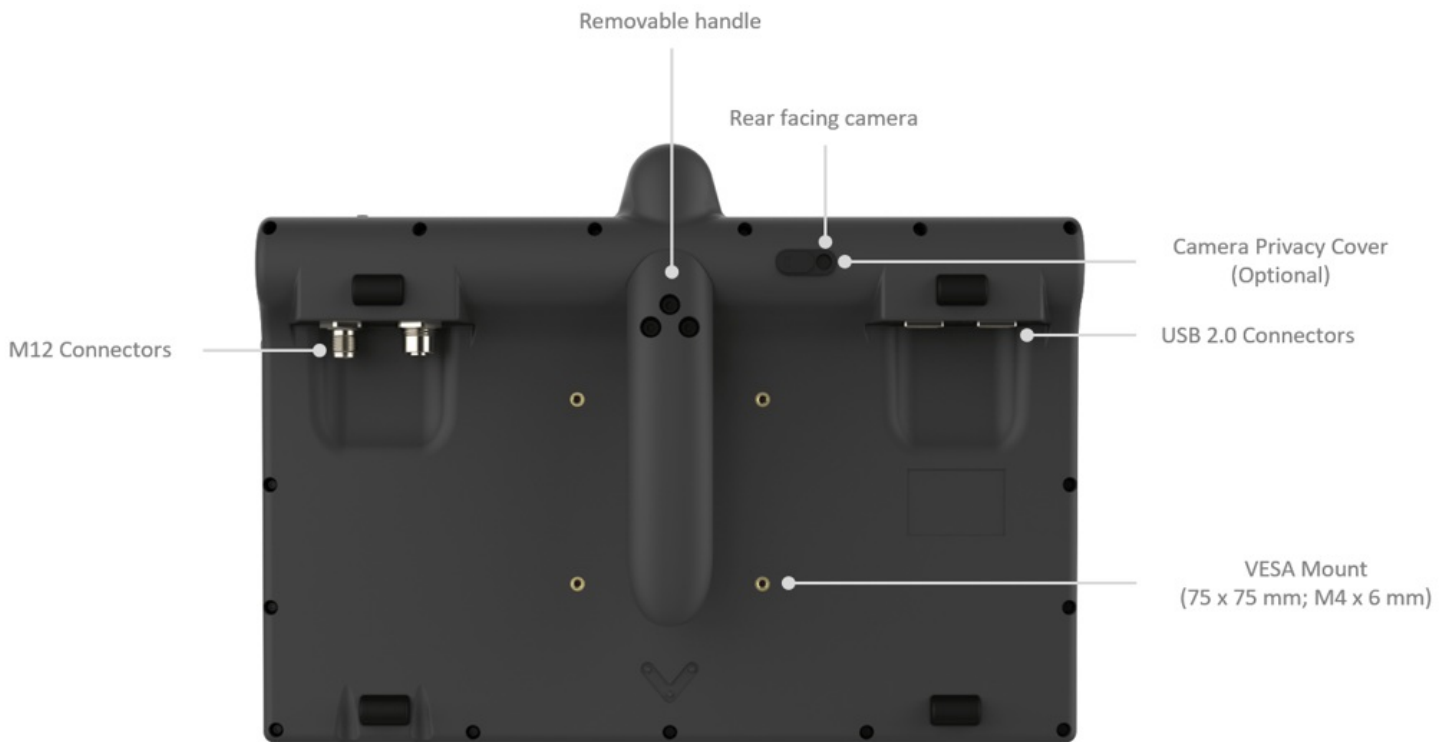
Figure 6: Pendant V3 Front

Figure 7: Pendant V3 Back

Safety Data

The pendant V3 displays an emergency stop button which is connected to the safety loop of a MachineMotion v2.

When evaluating the performance of a safety function utilizing the pendant V3 attention shall be made in regards to the number of daisy chained emergency stop buttons and interlock devices. Fault masking reduces the performance level of the safety function. Guidance on fault masking can be found in ISO/TR

24119.

Safety data can be found in the following table depending on if the Pendant V3 is daisy chained or not.

Function	PL	Cat.	MTTF$_d$	DC$_{avg}$
Pendant V3 - Daisy Chained	d	3	697	60.01%
Pendant V3 Single unit	e	3	698	97.72%

The above information have been calculated based on the following operation conditions :

Data	Value	Unit
d_{op}	365	days/years
h_{op}	24	hours/days
t_{cycle}	8640	s/cycle

EU Declaration of Conformity

The Pendant V3 is in compliance with the Machinery directive, the RoHS directive and the RED. The EU declaration of conformity is available in the documentation section of the product details page of the Pendant V3.

Documentation for Previous Product Versions

MachineMotion 2 Pendant v2.0 & v3.0 & v3.1

MachineMotion 2 Pendant V3.1 Datasheet
MachineMotion 2 Pendant V3.0 Datasheet
MachineMotion 2 Pendant V2.0

MachineMotion 1 Pendant v1.0

MachineMotion 1 Pendant Datasheet