Pi Vision
INSTALLATION, USE AND WARNINGS MANUAL

Edition: 11/2025

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1. Preliminary information

1.1 Device description

The **SECO Pi Vision** 10.1 CM5 is a versatile and modular 10.1-inch HMI designed to meet the evolving needs of industrial applications. Built around Raspberry Pi Compute Module 5 (CM5) and integrating the Clea IoT Software suite, it merges **SECO**'s expertise in hardware engineering and IoT software with Raspberry Pi's advanced computing technology, delivering outstanding performance and flexibility.

The technology developed by **SECO S.p.A.** can be used and applied in various fields.

1.2 Recipients

This manual is intended for general users and professional installers.

IMPORTANT
The user must read this manual before starting any operation.

1.3 Warranty

The warranty shall be **voided** in the event of:

- failure to comply with safety regulations;
- tampering with the device;
- changes to the safety conditions established by the Manufacturer in the device management software;
- improper use of the device;
- use of the device by untrained and/or unauthorized personnel or failure to respect duties, as indicated in the manual;
- changes or repairs carried out by the user without written authorization from the Manufacturer;
- partial or total failure to comply with the instructions;
- defects in the mains power supply (electricity, power supply, etc.);
- poor maintenance;
- use of non-original spare parts;
- exceptional events such as floods, fires (if not triggered by the device).

The complete warranty terms are set out in the sales contract.

IMPORTANT
The Manufacturer is not liable for improper use of the device.

2. Identification

2.1 Manufacturer identification

MANUFACTURER	**SECO Northern Europe GmbH**
Address	Schlachthofstraße 20 21079 Hamburg - Germany +49 40 79189930

2.2 Device identification

Device	Pi Vision
Serial number	XXXXXXXX
Year of manufacturing	WW/YY

2.3 Device identification plate

The device is equipped with an **identification plate** located on the side. The plate features the device identification information to be reported to **SECO S.p.A.** if necessary, as shown in the table:

Example

CAUTION
It is strictly forbidden to remove the identification plate and/or replace it with other plates.

3. Technical specifications

3.1 Pi Vision device hardware specifications

The table below features the board hardware specifications:

Modules	Raspberry Pi Compute Module CM5 CM5102016 CM5104032 CM5108064
Processor	Broadcom BCM2712 quad-core 64-bit Arm Cortex-A76 (Armv8) SoC @ 2.4GHz
Memory	Up to 8GB LPDDR4-4267 SDRAM with ECC
Graphics	VideoCore V3D VII GPU 800 MHz
Peripherals	M.2 M key PCIe socket
External Video Interface	2 X HDMI
Video Resolution	10.1" display, resolution 1280 x 800, LED lifetime 50K hours, 400cd/m² brightness
Mass Storage	Up to 64GB eMMC flash memory microSD card socket for CM5Lite modules
Serial Ports	HAT footprint with 40-pin GPIO connector Up to 5 × UART Up to 5 × I2C Up to 5 × SPI 1 × SDIO interface 1 × DPI (parallel RGB display) 1 × I2S Up to 4 × PWM channels Up to 3 × GPCLK outputs
Networking	2.4 GHz, 5.0 GHz IEEE 802.11 b/g/n/ac wireless Bluetooth 5.0, BLE 1x Gigabit Ethernet PHY supporting IEEE 1588

USB	2 × USB 3.0 sockets
Power	EXTERNAL +5V/5A USB-C PSU
Operating System	Clea OS (Linux Yocto) Raspberry Pi OS
Dimensions	270,1 x 187,1 x 51,7 mm
Mounting Options	Flash mount/Panel mount (By request a Vesa-mount option is possible)
Operating Temperature	0°C ÷ +60°C*
Relative Humidity	5 ÷ 95% @60°C (non-condensing)
Front Panel Protection	IP66 compliant

ATTENTION
***Measured at any point of the heatspreader/heatsink during any and all times (including start-up). Actual temperature will widely depend on application, enclosure and/or environment. Upon customer to consider specific cooling solutions for the final system to keep the heatspreader temperature in the range indicated.**

3.2 Software Specifications

The latest software version is always available on the website at https://developer.seco.com/hardware/product/hmi-solution/pi-vision/.

3.3 CE reference directives

The device has been designed according to the following Directives:

- **2014/30/EU** Electromagnetic Compatibility Directive.
- **2009/125/EC** Ecodesign Directive
- **2012/19/EU** (WEEE)
- **2011/65/EU** (RoHS)
- **1907/2006/EC** (REACH).

The device also meets the requirements of the following standards:

- **EN 62368-1, EN 61010-1.**

3.4 Product Documentation

SECO S.p.A. places the device on the market, equipping and providing it with:

- **CE marking as IT device**
- **UKCA**
- **Declaration of Conformity***
- **User manual***
- **FCC - Part 15 Certification****

*These documents are available after a request to the manufacturer.

3.5 FCC disclaimer

This device complies with Part 15 of FCC Rules, Operation is Subject to following two conditions:
(1) This device may not cause harmful interference, and
(2) This device must accept any interference received including interference that cause undesired operation.
** This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.
This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of

the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected. Consult the dealer or an experienced radio/TV technician for help.

CAUTION
No changes shall be made to the equipment without the manufacturer's permission as this may void the user's authority to operate the equipment

IMPORTANT
The Manufacturer is not liable for improper use of the device.

4. Safety devices

4.1 Warnings

CAUTION
It is the user's responsibility to apply preventive and protective measures, in accordance with the legislation of the country of installation and use of the device.

CAUTION
Only use the accessories supplied by the manufacturer.

CAUTION
Only connect certified peripherals / devices to the device.

CAUTION
Always disconnect the electrical power supply before carrying out any work on the device.

CAUTION
Check that the electrical voltage meets the values indicated in this manual before connecting the device.

CAUTION
Disconnect the device from any power source before cleaning.

CAUTION
Do not use liquid detergents or sprays for cleaning the device.

CAUTION
Do not pour liquids of any kind on the device. This may cause fires and/or electric shocks.

CAUTION
Keep the device away from exposure to moisture values outside the admissible range indicated in this manual.

CAUTION
It is strictly forbidden to modify the appliance in order not to compromise the characteristics relating to the declared requirements.

CAUTION
No changes shall be made to the equipment without the manufacturer's permission as this may void the user's authority to operate the equipment.

Whenever handling the device, ground yourself through an anti-static wrist strap. Placement of the board on an anti-static surface is also highly recommended.

Always switch the power off, and unplug the power supply unit, before handling the board and/or connecting cables or other boards.

Avoid using metallic components - like paper clips, screws and similar - near the board when connected to a power supply, to avoid short circuits due to unwanted contacts with other board components.

If the board has become wet, never connect it to any external power supply unit or battery.

Check carefully that all cables are correctly connected and that they are not damaged.

Batteries should not exceed the storage temperature of -20/+40°C and a relative humidity of 60±15%. Danger of explosion if the battery is replaced with another one of the wrong type. Batteries must be disposed of as required by the European directive.

4.2 Safety pictograms affixed on the device and used in the manual

The device and the manual are equipped with symbols, as indicated in the table below:

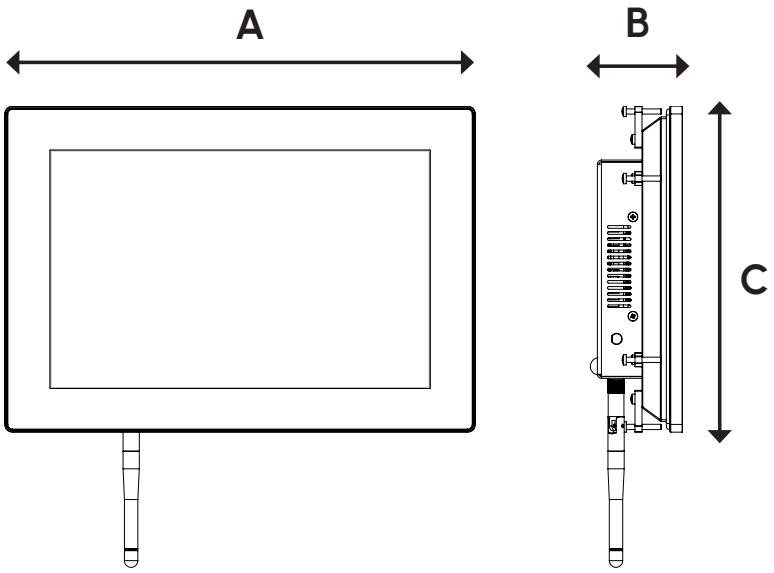
PICTOGRAM	DESCRIPTION
	**CE marking**
	**WEEE /RAEE** Indicates the separate collection of electronic and electrical equipment according to Directive 2012/19/EU.
	Symbol used to indicate the need to consult the instruction manual before using the equipment.
	Symbol used to identify important warnings for the safety of the user and/or of the device.
	Warning! Read the manual before use.

5. Characteristics and components of the device

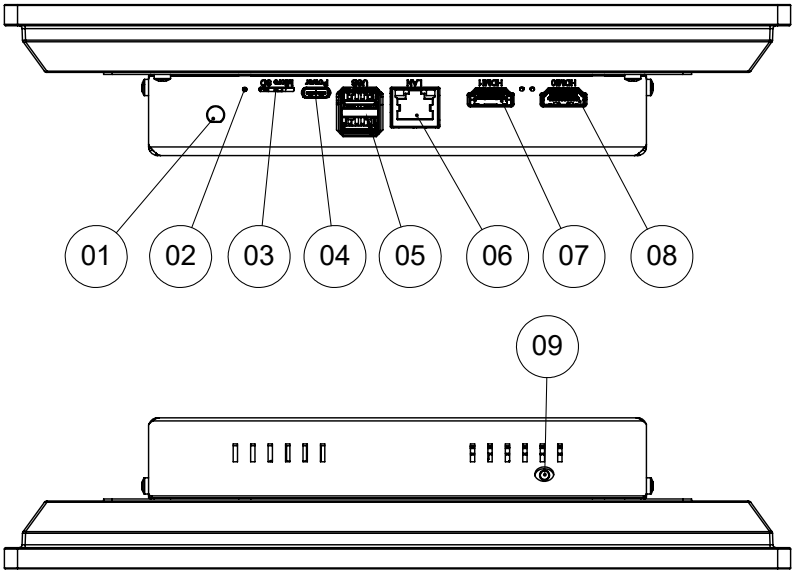
The **SECO Pi Vision** 10.1 CM5 serves as a comprehensive development platform for OEMs and startups looking to create next-generation solutions. Equipped with an industrial-grade display, it facilitates a smooth path from prototype to mass production. With built-in support for IoT and AI applications, its modular design enables tailored solutions, with **SECO** streamlining integration in just a few months.

5.1 Measurement layout

Length (A)	270 mm
Width (B)	49 mm
Height (C)	188 mm
Panel Cutout	260 mm x 177 mm



5.2 Connectors



POS.	Description
01	Antenna out
02	Status LED
03	SD-Card Slot
04	USB Type-C / Power
05	USB Type-A
06	LAN
07	HDMI 1
08	HDMI 2
09	Reset

6. Installation

6.1 Permitted environmental conditions

Use of the device and of associated control systems that differ from those listed below is **not** permitted.

In particular, the installation and operation environment must **not** be:

- Exposed to environmental temperatures outside the range of 0°C to +60°C.
- Exposed to altitudes above 2,000 m a.s.l.
- Exposed to excessive humidity (minimum 5%, maximum 85 %) and rapid changes in relative humidity (above 0.005 p.u./h).
- Exposed to corrosive fumes.
- Exposed to excessive dust.
- Exposed to abrasive dust.
- Exposed to oil vapours.
- Exposed to powder or gas explosive mixtures.
- Exposed to salt air.
- Exposed to vibrations, impacts or abnormal shocks.
- Exposed to weather conditions beyond the limits permitted or dripping.
- Exposure to unusual transport or storage conditions.
- Exposure to high or rapid thermal changes (above 5K/h).
- Presence of nuclear radiation.
- The conductors of the command and control circuits directly connected to the supply voltage must be protected against overcurrents.
- The conductors of the command and control circuits fed by a transformer or by a DC supply must be protected against overcurrent.
- In command and control circuits connected to a protective equipotential circuit, the requirement is satisfied by inserting a protective device against overcurrents in the isolated conductor.

CAUTION

Environmental conditions that differ from those specified may seriously damage the device. Positioning the device in environments that do not correspond to those indicated shall render the warranty null and void for the parts to be replaced.

SECO S.p.A. shall not be held liable if these instructions are not complied with.

6.2 Installing the device

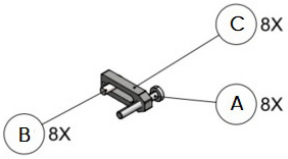
CAUTION
The power supply must meet the following specifications:

- **Voltage : +5V**
- **Current : 5A max**

SECO S.p.A. shall not be held liable if these instructions are not complied with.

To install the device properly on **machine/wall/sheet/other support,** follow the procedure below:

1	Make sure the electric connection on the destination machine is off and the electric power supply is disconnected from the device;
2	Fix the device to the existing support using the screws that will be screwed in matching the holes **(A)** in the plate;
3	Proceed to connect the electric supply to the device.
4	Proceed to electrically connect the destination machine.



Item Number	Quantity	Component Number	Object Description
A	8	205E0760L0050	Screw M3 x 20 DIN7985 A4
B	8	DM01-00006B	Bracket Panel Mount MV
C	8	4GH410-0171-01P	M3 x 10 DIN7985 4.8-GALZN

To install the device properly on **machine/sheet/other** with **VESA Mount Solution** (available only by request) follow the procedure below:

1	Make sure the electric connection on the destination machine is off and the electric power supply is disconnected from the device;
2	Proceed to fasten the device to the standard **VESA support** screwing the screws in correspondence of the plate holes **(A)**;
3	Proceed to connect the electric supply to the device;
4	Proceed to electrically connect the destination machine.

SECO S.p.A. shall not be held liable if these instructions are not complied with.

6.3 Versions available

The **Pi Vision** device is available in different versions that integrate various configurations.

Below the table with the main configurations of the device:

SF-F33-1111-0010-C0	(CM5102016)
SF-F33-1121-0010-C0	(CM5104032)
SF-F33-1131-0010-C0	(CM5108064)
In addition, the power supply EU (+5V / 5A) must be ordered separately.	
Power Supply EU (+5V / 5 A)	3032030101000
Power Supply UK (+5V / 5 A)	3032030101001
Power Supply US (+5V / 5 A)	3032030101002

7. Maintenance

User should clean the product with a dry cloth when necessary, based on his visual inspection.

CAUTION
Disconnect the device from any power source before cleaning operation.

WARNING
The enclosure of the device must be cleaned only with a dry cloth.

After cleaning, the user should check that the product is still correctly installed.

8. Waste disposal

Electrical equipment no longer in use must not be thrown away with normal municipal waste. The substances and materials it contains must be disposed of separately in an appropriate manner.
The device must be disposed correctly as it is a waste of electric and electronic equipment (WEEE).