

MVCxxxx

Machine Vision Controller



Operating Instructions

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1. General

1.1 Information Concerning these Instructions

- These instructions apply to the products Machine Vision Controller MVCxxxx
- They make it possible to use the product safely and efficiently
- These instructions are an integral part of the product and must be kept on hand for the entire duration of its service life.
- Local accident prevention regulations and national work safety regulations must be complied with as well.
- The product is subject to further technical development, and thus the information contained in these operating instructions may also be subject to change. The current version can be found at www.wenglor.com in the product's separate download area.



NOTE!
The operating instructions must be read carefully before using the product and must be kept on hand for later reference.

1.2 Explanations of Symbols

- Safety precautions and warnings are emphasized by means of symbols and attention-getting words.
- Safe use of the product is only possible if these safety precautions and warnings are adhered to.

The safety precautions and warnings are laid out in accordance with the following principle:



ATTENTION-GETTING WORD!
Type and Source of Danger!
Possible consequences in the event that the hazard is disregarded.

- Measures for averting the hazard.

The meanings of the attention-getting words, as well as the scope of the associated hazards, are listed below.



DANGER!
This word indicates a hazard with a high degree of risk which, if not avoided, results in death or severe injury.



WARNING!
This word indicates a hazard with a medium degree of risk which, if not avoided, may result in death or severe injury.



CAUTION!
This word indicates a hazard with a low degree of risk which, if not avoided, may result in minor or moderate injury.



ATTENTION!
This word draws attention to a potentially hazardous situation which, if not avoided, may result in property damage.



NOTE!
A note draws attention to useful tips and suggestions, as well as information regarding efficient, error-free use.

1.3 Limitation of Liability

- The product has been developed taking into account the state of the art as well as the applicable standards and guidelines.
- We reserve the right to make technical changes.
- A valid declaration of conformity can be found at www.wenglor.com in the download area of the product.
- wenglor sensoric elektronische Geräte GmbH (hereinafter „wenglor“) accepts no liability for:
 - » Failure to observe the operating manual,
 - » Unsuitable or improper use of the product,
 - » Excessive use, incorrect or negligent treatment of the product,
 - » Incorrect installation or commissioning,
 - » Use of untrained personnel,
 - » Use of unauthorized spare parts or
 - » Improper or unauthorized changes, modifications or repair work to the products.
- This operating manual does not contain any guarantees/warranties from wenglor with regard to the processes described or certain product properties.
- wenglor assumes no liability with regard to printing errors or other inaccuracies contained in this operating manual, unless it can be proven that wenglor was aware of the errors at the time the operating manual was created.

1.4 Copyrights

- The contents of these instructions are protected by copyright law.
- All rights are reserved by wenglor.
- Commercial reproduction or any other commercial use of the provided content and information, in particular graphics and images, is not permitted without previous written consent from wenglor.

2. For Your Safety

2.1 Use for Intended Purpose

The Machine Vision Controller receives data from the imaging devices (e.g. Machine Vision Cameras or 2D/3D Profile Sensors) via an Ethernet interface, evaluates the data and sends out results via various interfaces. The Machine Vision Controller's compact housing is cooled passively without a fan.

This product can be used in the following industry sectors:

- Special machinery manufacturing
- Heavy machinery manufacturing
- Logistics
- Automotive industry
- Food industry
- Packaging industry
- Pharmaceuticals industry
- Plastics industry
- Woodworking industry
- Consumer goods industry
- Paper industry
- Electronics industry
- Glass industry
- Steel industry
- Aviation industry
- Chemicals industry
- Alternative energy
- Raw materials extraction

2.2 Use for Other than the Intended Purpose

- Not a safety component in accordance with 2006/42/EU (Machinery Directive)
- The product is not suitable for use in potentially explosive atmospheres.
- The product may only be used with accessories supplied or approved by wenglor, or combined with approved products. A list of approved accessories and combination products can be accessed at www.wenglor.com on the product detail page.



DANGER!
Risk of personal injury or property damage in case of use for other than the intended purpose!

Use for other than the intended purpose may lead to hazardous situations.

- Observe instructions regarding use for intended purpose.

2.3 Personnel Qualifications

- Suitable technical training is a prerequisite.
- In-house electronics training is required.
- Trained personnel who use the product must have uninterrupted access to the operating instructions.



DANGER!

Risk of personal injury or property damage in case of incorrect initial start-up and maintenance!

Personal injury and damage to equipment may occur.

- Adequate training and qualification of personnel.
-

2.4 Modification of Products



CAUTION!

Risk of personal injury or property damage if the product is modified!

Personal injury and damage to equipment may occur. Non-observance may result in loss of the CE marking and the guarantee may be rendered null and void.

- Modification of the product is impermissible.
 - Unauthorized opening of the device is not permitted.
-

2.5 General Safety Precautions



CAUTION!

Risk of personal injury or property damage due to hot surfaces!

Danger of burns if the Machine Vision Controller's cooling fins are touched.

- Avoid touching the cooling fins.
-



NOTE!

- These instructions are an integral part of the product and must be kept on hand for the entire duration of its service life
- In the event of possible changes, the respectively current version of the operating instructions can be accessed at www.wenglor.com in the product's separate download area.
- Read the operating instructions carefully before using the product
- Protect the product against contamination and mechanical influences

2.6 Approvals and protection class



3. Technical Data

3.1 Machine Vision Controller with Digital In-/Output

Technical Data	Order No	MVCM001	MVCE001	MVCP001	MVCV001	MVCA001
	Electrical Data					
Supply Voltage	9...48 V DC					
Current consumption (Ub = 24 V)	< 5 A					
Temperature range	0...45 °C					
Number of USB 2.0 ports	2					
Number of USB 3.0 ports	6					
Number of CAM ports RJ45	4					
Number of RTE ports RJ45	---					
Number of LAN ports RJ45	2					
Number of DisplayPort interfaces	2					
Number of VGA ports	1					
Number of PS/2 ports	1					
Number of HDMI ports	1					
Industry protocols	---					
General protocols	Ethernet TCP/IP, FTP, UDP					
Mechanical Data						
Housing	Aluminium, anodised					
Weight	5 kg					
Degree of Protection	IP40					
Wall Mount	yes					
General Data						
Software	uniVision	uniVision Extended	uniVision Script	uniVision Robotics	uniVision AI	
Processor	Intel Core i7					
Cycle rate	4,4 GHz					
RAM	16 GB					
Hard disk	128 GB SSD					
Safety-relevant Data						
MTTFd (EN ISO 13849-1)	42,4 a					

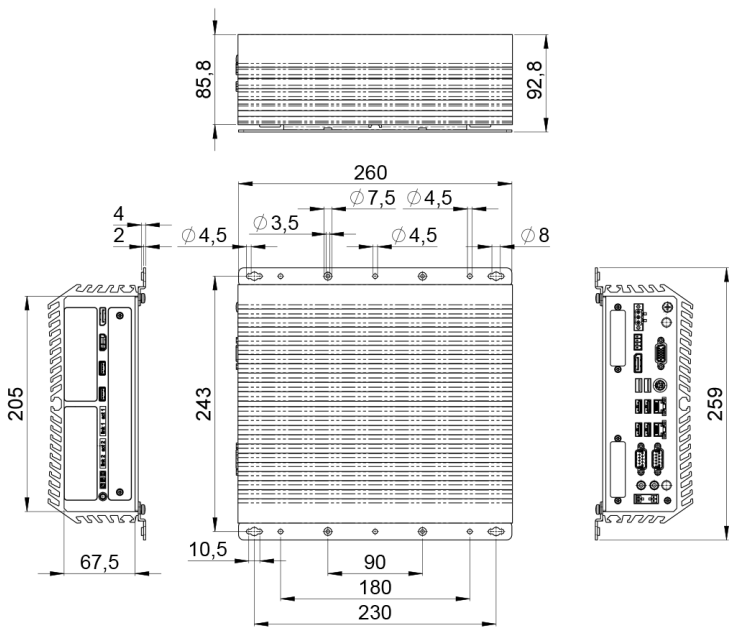


NOTE!
Switching outputs and digital inputs are galvanically isolated, output NPN.

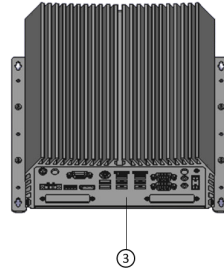
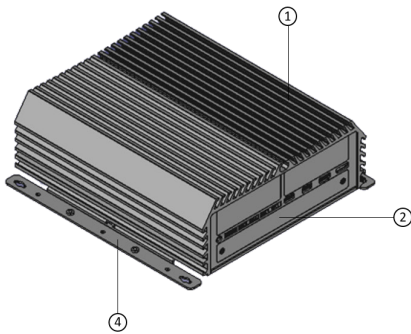
3.2 Machine Vision Controller with Real Time Ethernet

Order No	MVCM101	MVCE101	MVCP101	MVCA101
Technical Data				
Electrical Data				
Supply Voltage	9...48 V DC			
Current consumption (Ub = 24 V)	< 5 A			
Temperature range	0...45 °C			
Number of USB 2.0 ports	2			
Number of USB 3.0 ports	6			
Number of CAM ports RJ45	4			
Number of RTE ports RJ45	2			
Number of LAN ports RJ45	2			
Number of DisplayPort interfaces	2			
Number of VGA ports	1			
Number of PS/2 ports	1			
Number of HDMI ports	1			
Industry protocols	Profinet IO, CC-C, EtherNet/IP, EtherCAT			
General protocols	Ethernet TCP/IP, FTP, UDP			
Mechanical Data				
Housing	Aluminium, anodised			
Weight	5 kg			
Degree of Protection	IP40			
Wall Mount	yes			
General Data				
Software	uniVision	uniVision Extended	uniVision Script	uniVision AI
Processor	Intel Core i7			
Cycle rate	4,4 GHz			
RAM	16 GB			
Hard disk	128 GB SSD			
Safety-relevant Data				
MTTFd (EN ISO 13849-1)	42,4 a			

3.3 Dimensional Drawings



3.4 Layout



- ① = Cooling fins
- ② = Back panel with interfaces
- ③ = Front panel with interfaces
- ④ = Wall mounting system

3.5 Scope of Delivery

- Machine Vision Controller
- Mounting kit for wall mounting
- 1 x Phoenix plug 3-pin for power supply
- 2 x Phoenix plug for digital input/output

4. Transport and Storage

4.1 Transport

Upon receipt of shipment, inspect the goods for damage in transit. In the case of damage, conditionally accept the package and notify the manufacturer of the damage. Then return the device making reference to damage in transit.

4.2 Storage

The following points must be taken into condition with regard to storage:

- Do not store the product outdoors.
- Store the product in a dry, dust-free place.
- Protect the product against mechanical impacts.
- Protect the product against exposure to direct sunlight.



ATTENTION:
Risk of property damage in case of improper storage!
The product may be damaged.

- Comply with storage instructions.
-

5. Installation and Electrical Connection

5.1 System Overview

5.1.1 2D/3D Profile Sensors

Connectable 2D/3D Profile Sensors are listed on our website in the respective product category. Accessories for 2D/3D Profile Sensors are also listed on the product page of the respective sensor.

5.1.2 Machine Vision Cameras and Accessories

Connectable Machine Vision Cameras are listed on our website in the respective product category. Accessories for each Machine Vision Camera are also listed on the respective product pages.

5.1.3 Software

DNNF024	wenglor weHub	Software for network configuration of LAN connector at MVC
DNNF023	uniVision 3 for Windows	Configurable standard software for Windows

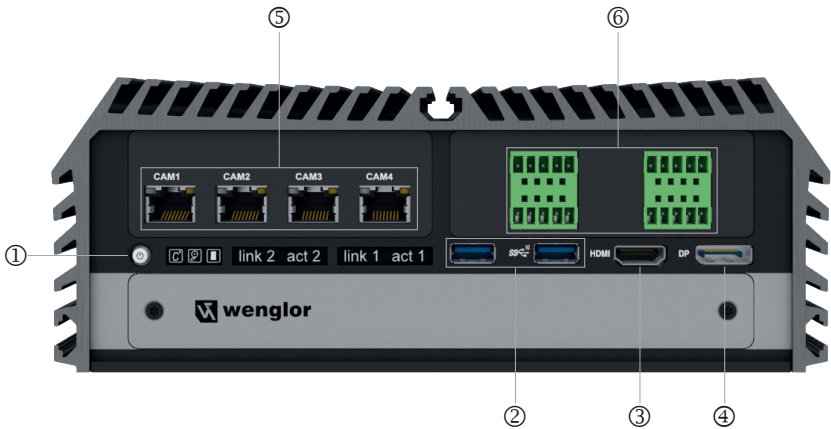
5.1.4 Complementary Accessories

ZNNG026	Monitor with 230 V connector cable, DisplayPort cable
Z0044	Key Pad

5.2 Interfaces

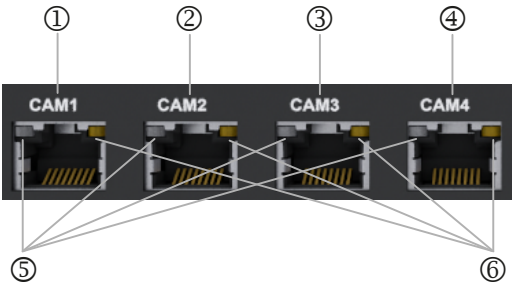
5.2.1 MVCx001

5.2.1.1 Front Panel



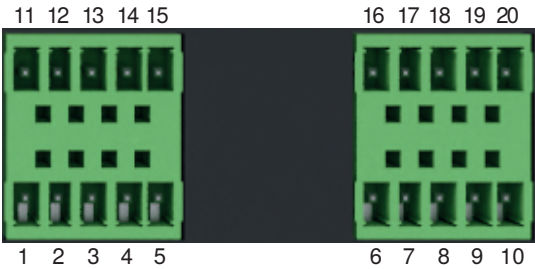
No.	Description	Explanation
1	Button	On/off button (connected to a 24 V power supply, the device starts automatically)
2	USB 3.0	Two USB 3.0 ports for mouse, keyboard, external hard disk etc.
3	HDMI	HDMI port for monitor
4	Displayport	Displayport socket connector for monitor
5	Network interfaces	Gigabit Ethernet RJ45 ports for devices, cameras and 2D/3D Profile Sensors
6	Digital inputs/outputs	8 optically isolated inputs and 8 optically isolated outputs

5.2.1.2 Gigabit Ethernet Connectors



No.	Description	Color	State	Meaning
1	CAM1			
2	CAM2			
3	CAM3			
4	CAM4			
5	LINK	Green	On	1000 MBit Network Link
		Orange	On	100 MBit Network Link
		Off	Off	10 MBit Network Link
6	ACT	Yellow	Flashing	Data activity
		Yellow	On	No activity

5.2.1.3 Digital Inputs and Outputs (DIO)

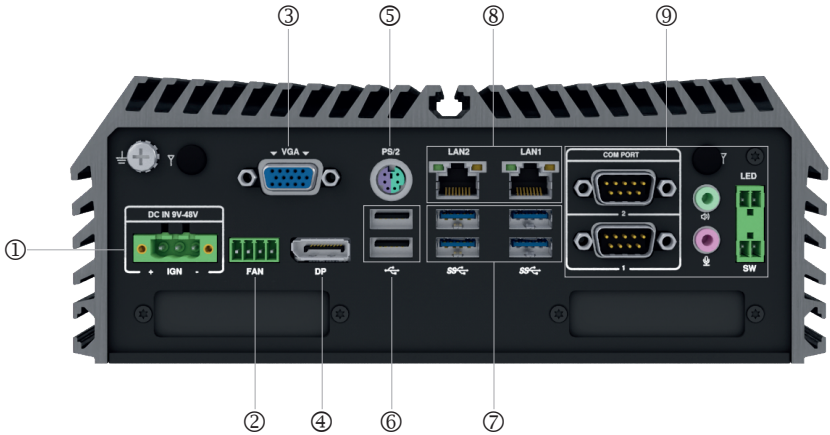


Pin	Function	Pin	Function	Pin	Function	Pin	Function
1	Digital input 1	6	Digital input 5	11	Digital output 1	16	Digital output 5
2	Digital input 2	7	Digital input 6	12	Digital output 2	17	Digital output 6
3	Digital input 3	8	Digital input 7	13	Digital output 3	18	Digital output 7
4	Digital input 4	9	Digital input 8	14	Digital output 4	19	Digital output 8
5	XCOM+ (DC INPUT)	10	2XCOM+ (DC INPUT)	15	XCOM- (GND)	20	2XCOM- (GND)



NOTE!
 The digital inputs and outputs of the MVC operate according to the NPN switching principle (current-reducing). Adaptation to PNP is possible with standard industrial PNP converters.

5.2.1.4 Back Panel

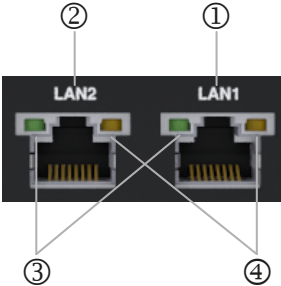


No.	Description	Explanation
1	Voltage supply	9...48 V DC
2	FAN	Not supported
3	VGA	VGA socket connector for monitor
4	Displayport	Displayport socket connector for monitor
5	PS/2	One PS/2 port for mouse or keyboard
6	USB 2.0	Two USB 2.0 ports for mouse, keyboard, external hard disk etc.
7	USB 3.0	Four USB 3.0 ports for mouse, keyboard, external hard disk etc.
8	Network interfaces	10/100/1000 MBit network interface
9	Microphone, LED, SW	Not supported



NOTE!
Connecting the monitor via VGA, the monitor must be connected to the MVC before the Machine Vision Controller is booted. Otherwise, the monitor may not be found by the device.

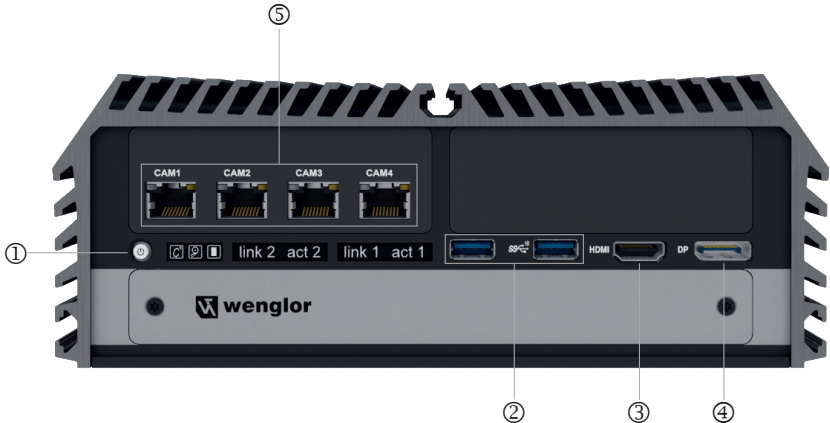
5.2.1.5 Network Interfaces



No.	Description	Color	State	Meaning
1	LAN1			
2	LAN2			
3	LINK	Green	On	1000 MBit Network Link
		Orange	On	100 MBit Network Link
		Off	Off	10 MBit Network Link
4	ACT	Yellow	Flashing	Data activity
		Yellow	On	No activity

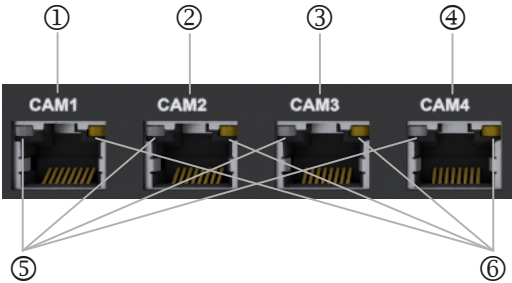
5.2.2 MVCx101

5.2.2.1 Front Panel



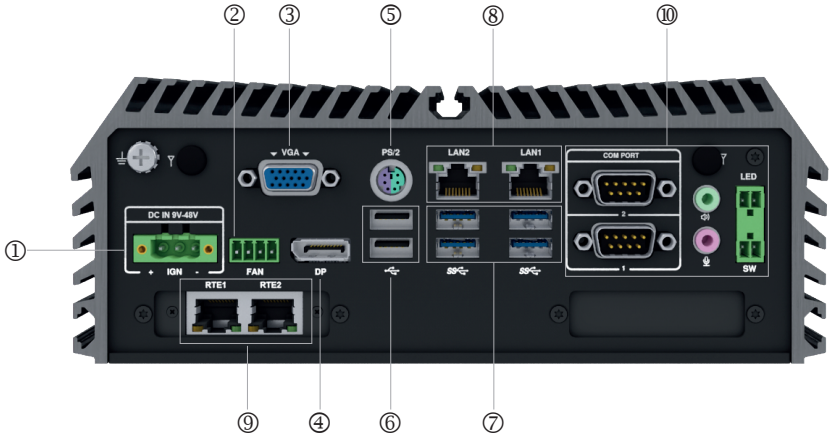
No.	Description	Explanation
1	Button	On/off button
2	USB 3.0	Two USB 3.0 ports for mouse, keyboard, external hard disk etc.
3	HDMI	HDMI port for monitor
4	Displayport	Displayport socket connector for monitor
5	Network interfaces	Gigabit Ethernet RJ45 ports for devices, cameras and 2D/3D Profile Sensors

5.2.2.2 Gigabit Ethernet Connectors



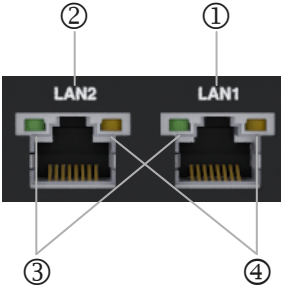
No.	Description	Color	State	Meaning
1	CAM1			
2	CAM2			
3	CAM3			
4	CAM4			
5	LINK	Green	On	1000 MBit Network Link
		Orange	On	100 MBit Network Link
		Off	Off	10 MBit Network Link
6	ACT	Yellow	Flashing	Data activity
		Yellow	On	No activity

5.2.2.3 Back Panel



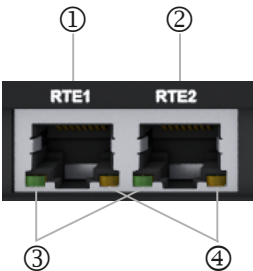
No.	Description	Explanation
1	Voltage supply	9...48 V DC
2	FAN	Not supported
3	VGA	VGA socket connector for monitor
4	Displayport	Displayport socket connector for monitor
5	PS/2	One PS/2 port for mouse or keyboard
6	USB 2.0	Two USB 2.0 ports for mouse, keyboard, external hard disk etc.
7	USB 3.0	Four USB 3.0 ports for mouse, keyboard, external hard disk etc.
8	Network interfaces	10/100/1000 MBit network interface
9	Real Time Ethernet (Profinet, EtherNet/IP, EtherCAT)	Two ports for Real Time Ethernet (PROFINET, EtherNet/IP, EtherCAT)
10	COM, Audio, Micro-phone, LED, SW	Not supported

5.2.2.4 Network Interface Connectors



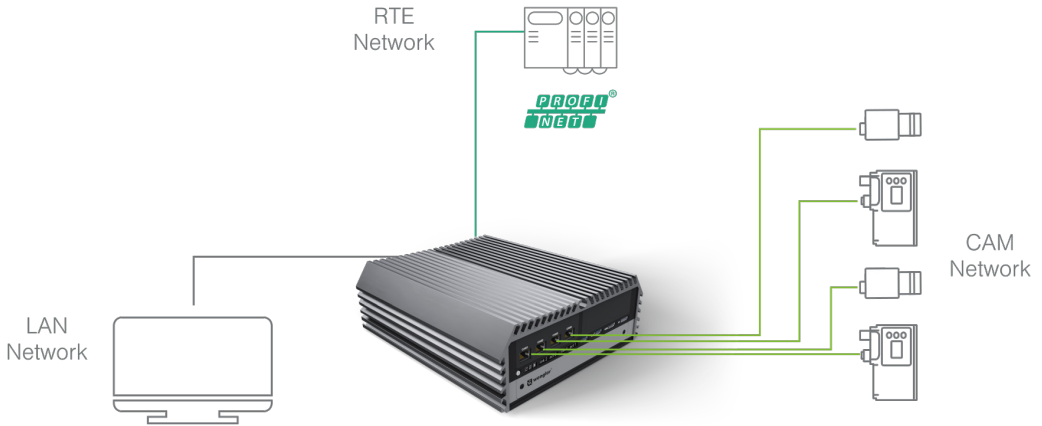
No.	Description	Color	State	Meaning
1	LAN1			
2	LAN2			
5	LINK	Green	On	1000 MBit Network Link
		Orange	On	100 MBit Network Link
		Off	Off	10 MBit Network Link
6	ACT	Yellow	Flashing	Data activity
		Yellow	On	No activity

5.2.2.5 Real Time Ethernet Connectors



No.	Description	Color	State	Meaning
1	RTE1			
2	RTE2			
5	LINK	Green	On	Ethernet connection is available
		Off	Off	No Ethernet connection is available
6	ACT or RX/TX	Yellow	Flashing	Machine Vision Controller sends or receives Ethernet frames
		Off	Off	Machine Vision Controller sends or receives no Ethernet frames

5.3 Connection Options



Separate, completely isolated networks significantly reduce the risk of data collisions and conflicts, for example between the uniVision software and the transmitted camera data.

Depending on the model, the MVCx001 (with digital inputs and outputs) offers two physically separate networks, and the MVCx101 (with RTE network) offers three. This separation ensures reliable, interference-free transmission, especially for time-critical image or profile data for further processing in the controller.

- CAM Network: Up to four different devices can be operated simultaneously at 1 Gbit/s each on the MVC via the four isolated CAM ports on the front. With the help of a network switch, up to 16 devices can even be connected simultaneously.
- LAN Network: Standalone LAN network via two RJ45 connections – ideal for connecting to other networks such as robots, laptops, or PCs.
- RTE Network: Separate RTE network via two RJ45 ports on the rear for communication with a PLC via PROFINET, EtherNet/IP™, or EtherCAT.

5.4 Installation

- Protect the product from contamination during installation.
- Observe all applicable electrical and mechanical regulations, standards, and safety rules
- Protect the product against mechanical influences.
- Make sure that the product is mounted in a mechanically secure fashion.
- Ensure adequate open space around the cooling fins in order to permit effective heat exchange between the Machine Vision Controller and the environment.

NOTE!



Sources of electromagnetic interference in direct proximity to the device may cause malfunctioning.

- Position the device at an adequate distance from sources of interference.
- It's advisable to mount the device inside the control cabinet.



ATTENTION!

Risk of property damage in case of improper installation!

The product may be damaged.

- Comply with installation instructions.



CAUTION!

Risk of personal injury or property damage during installation!

Personal injury and damage to the product may occur.

- Ensure a safe installation environment.
-

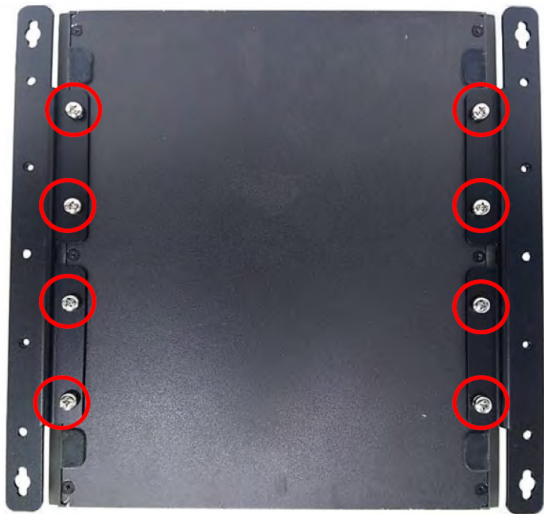
5.4.1 Mechanical Installation

5.4.1.1 Installing Wall Mount

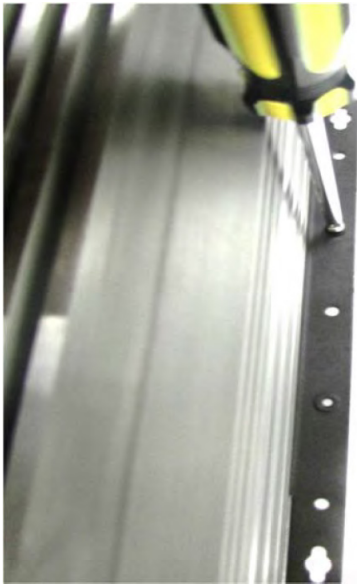
The MVC series offers wall mount kit that customers can install the system on the wall in a convenient and economical way. The wall mount kit is scope of delivery and in the package of the MVC.



1. The mounting holes are at the bottom side of the system. Use the provided 8 screws to fasten the bracket and the system together.



2. Fasten the screws through the bracket mounting holes to mount the system onto the wall.



5.4.1.2 Replacing CMOS Battery



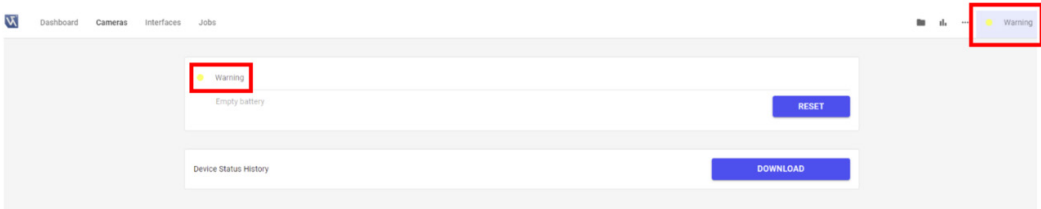
NOTE!
This section is only for the situation that is required to replace the CMOS battery!

If the battery needs to be replaced, this will be indicated both on the device interface and in weHub. A warning message will appear prompting you to replace the battery.

Failure to replace the battery in a timely manner may result in malfunctions and delays during the device startup process.

Please use a CR2032 battery when replacing the CMOS battery.

1. Warning appears



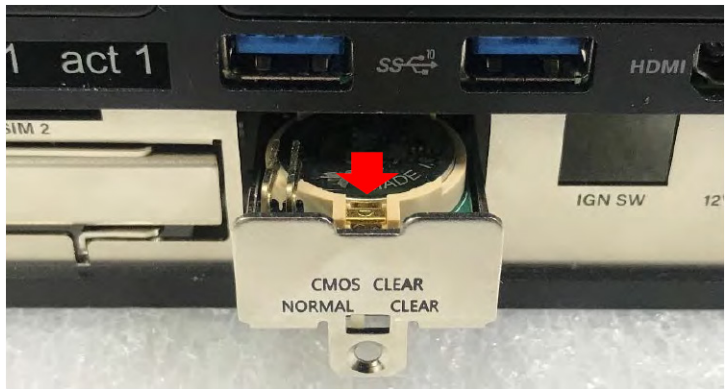
2. Loosen the two screws to remove the cover plate of maintenance zone.



3. Locate the removable CMOS battery and loosen the screw.



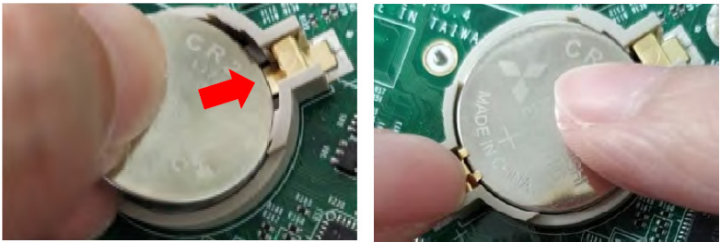
4. Pull out the CMOS battery bracket with assistance of a tweezer.



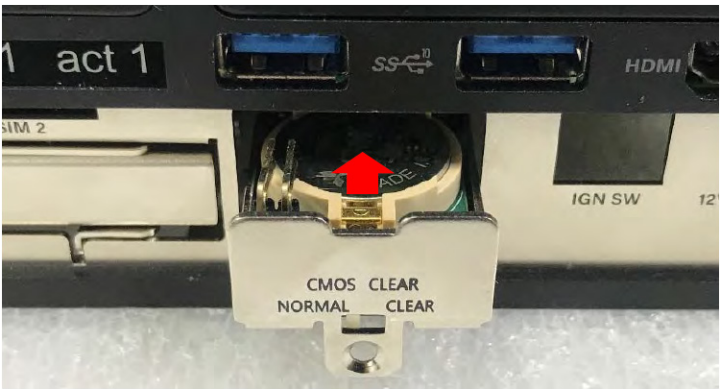
5. Remove the battery by pressing the metal tab backwards slightly as indicated.



6. Pay attention to the direction of “+” and “-” signs on the battery. Push the battery into the slot from the “-” side and pull the metal tab backwards to make the battery fully installed in the slot.



7. Insert the battery bracket firmly.



8. Fasten the screw.



9. Fix the cover plate of maintenance zone by fastening the two screws.



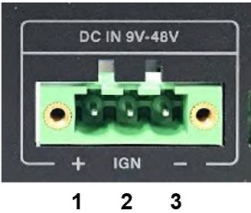
10. After the battery has been replaced, the warning signal must be reset manually.



NOTE!
If the device does not start automatically after replacing the battery, press the power button to switch it on manually.

5.4.2 Electrical Connection to Power Supply

- Connect the product to 9 to 48 V DC.



Pin	Description
1	9...48 V DC
2	Ignition (IGN)
3	Ground (GND)



NOTE!
Use a 24 V/5 A power supply or higher to ensure that the Machine Vision Controller has a sufficient power supply.
An insufficient power supply could cause to an automatic restart of the device.

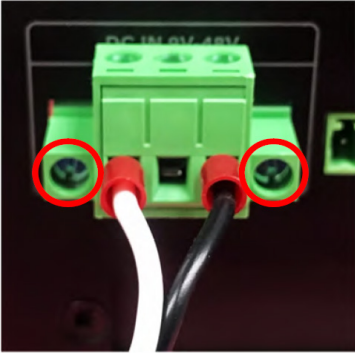
1. Locate the DC_IN1 power connector



2. Aim the V- wire at the V- port of the connector, and aim the V+ wire at the V+ port of the connector. Then connect the phoenix contacts of the power supply to the DC_IN connector.



3. Fasten the two screws to fix the Phoenix contacts.



NOTE!



In formal use, please use new Phoenix contacts and make sure the screws are tightened to avoid poor connection. A new Phoenix connector is scope of delivery and in the package of the MVC.

6. Operating System weOS

weOS is a linux-based operating system specially developed for the tasks of the Machine Vision Controller MVC for industrial applications and it is working with the wenglor uniVision software. With the right accessories such as a monitor, mouse and key pad, you can work on the MVC via the user interface. Find the accessories under point „[5.1.4 Complementary Accessories](#)“. The interfaces for the correct connection can be found under „[5.2 Interfaces](#)“.



NOTE!

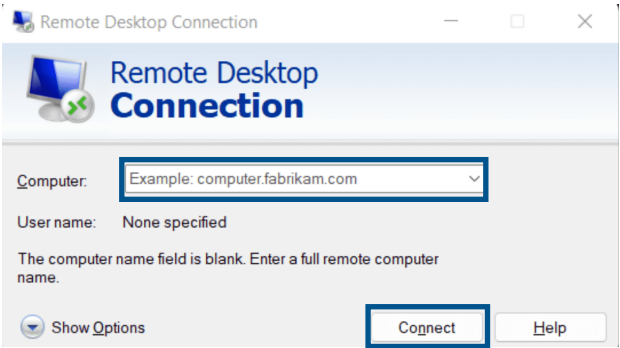
Connecting the monitor via VGA, the monitor must be connected to the MVC before the Machine Vision Controller is booted. Otherwise, the monitor may not be found by the device.

It is also possible to establish a connection to the MVC with a laptop via “Remote Desktop” „[6.1 Connection with Remote Desktop](#)“.

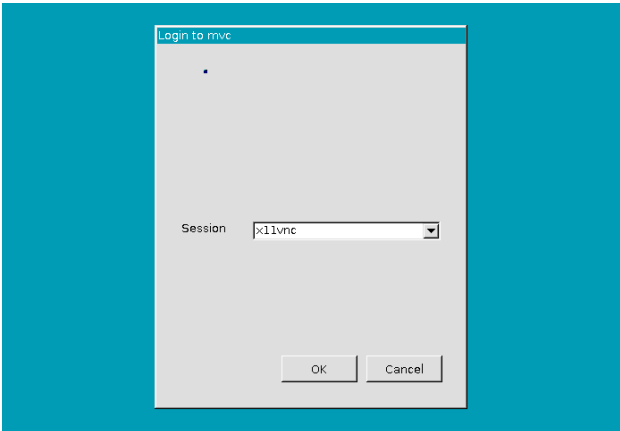
An additional way to connect to the Machine Vision Controller and uniVision is via the Device website „[8. Device Website](#)“.

6.1 Connection with Remote Desktop

Connect your Laptop via Ethernet cable to the MVC (LAN Ports).
Open Remote Desktop on your laptop using the IP address of the MVC and click connect.
Default IP address: 192.168.100.1



A new window will appear, allowing you to connect directly to the desktop version of the Machine Vision Controller.



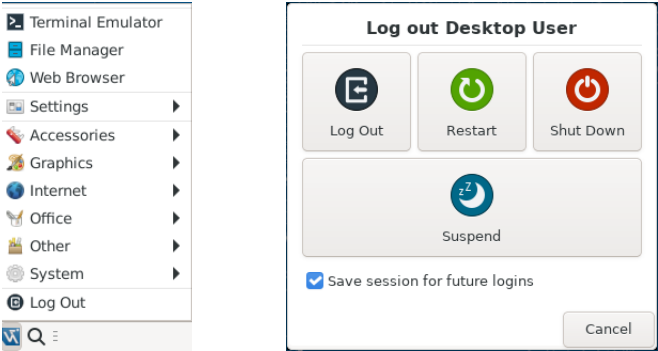
NOTE!
The remote desktop connection is enabled by default, but can be secured with a user name and password.

6.2 Desktop MVC

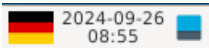
On the Machine Vision Controller MVC are some basic features as on every standard PC.



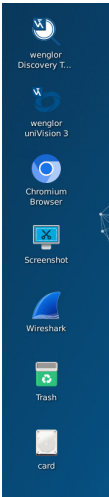
1. Under the start button you will find common apps such as the Internet, web browser, file management, system settings and a logout button.



2. Settings for language, time and date can be easily changed in the toolbar



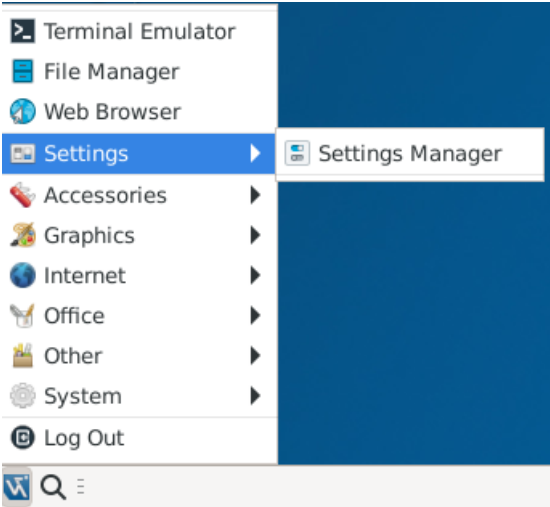
The icons of the most important applications can already be found on the desktop. This allows all the necessary functions of the Machine Vision Controller to be operated.



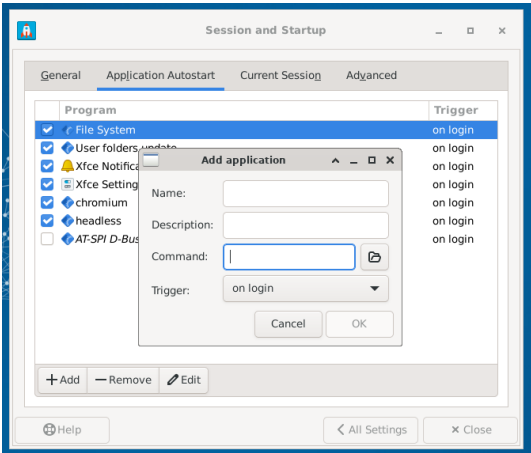
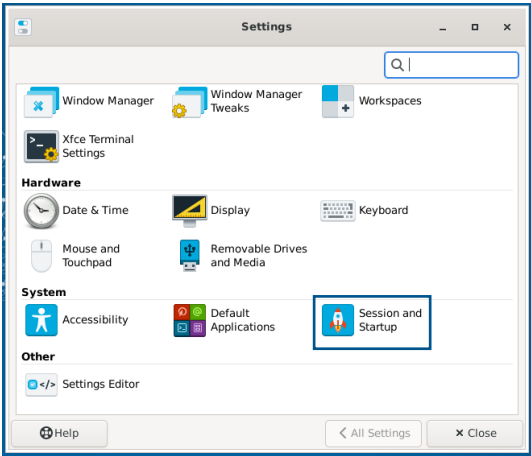
6.3 Setting up Automatic Program Start

To start a program automatically when the system boots up, configure the desired program in the MVC's autostart settings.

You can find the "Setting Manager" under "Settings" on the start screen.



In the Setting Manager, you can easily add and remove programs for autostart under “Session and Startup” in the Application Autostart section.



Select the desired program and activate the option for automatic program start when the device starts up.

Example of a command to automatically launch a web visualization in full-screen mode (the “Command” field):

```
bash -c "sleep 15 && /usr/bin/chromium --start-fullscreen --no-first-run \
--no-default-browser-check --disable-session-crashed-bubble \
http://localhost/processing-instance-1/visualization/"
```

The delay (sleep 15) ensures that the browser does not start until other automatically launched applications (e.g., wenglor VisionApp360) have already opened in the foreground. The parameter --disable-session-crashed-bubble suppresses the message “Chromium did not exit properly,” which would otherwise need to be acknowledged with a mouse click after a hard shutdown (e.g., power loss) - this is important for devices without input capabilities. The URL is project-specific and must be replaced with the actual address of the visualization.

7. Software wenglor weHub

The software wenglor weHub can be installed on any Windows 10 (22H2) and 11 (22H2) PC for finding Machine Vision Controllers that are connected via the LAN Ethernet connectors of the MVC, for setting up the LAN Ethernet configuration of the MVC and for accessing the device website of the MVC.

The software is also available on the MVC to find the MVC itself (e.g. if the IP address of LAN is unknown when a monitor is connected to the MVC) and to find other Machine Vision Devices that are connected via the LAN Ethernet connectors of the MVC. For more information, see:

<https://www.wenglor.com/p/DNNF024>

NOTE!



The Machine Vision Controller MVC does not support internet connection at the LAN network adapters. Consequently, the full AI Loop is not supported via the weHub software on the MVC. Instead, use weHub on the MVC only to locally store data (e.g. images) in weHub. Once finished, export the file and import it on another device (e.g. PC) with internet connection and installed weHub software to upload the data to AI Lab.

8. Device Website

Access the device website via entering directly the IP address of the LAN Ethernet adapter of the Machine Vision Device in any supported browser (default IP address: 192.168.100.1).

NOTE!

- Cabling must be capable of 1 Bbit/s throughout the entire network.
- Make sure that the network settings of the LAN Ethernet adapter of the Machine Vision Controller and the PC fit together. Use a unique network configuration for the LAN Ethernet adapter of the Machine Vision Controller within the LAN network.
- Keep the networks for LAN, RTE and CAM separated in order to optimize the performance of the Machine Vision Controller.
- The network configuration of the LAN Ethernet adapter of the Machine Vision Controller must be different to the network configuration of the RTE and CAM ports of the MVC. The network configuration of the CAM ports on the MVC is fix and reserved. Trying to use one of the reserved IP addresses results into an error message. The following IP addresses are reserved for the CAM Ethernet adapters of the MVC:
 - » 192.168.90.1 – 192.168.90.255
 - » 192.168.91.1 – 192.168.91.255
 - » 192.168.92.1 – 192.168.92.255
 - » 192.168.93.1 – 192.168.93.255
- Furthermore, the following IP addresses are reserved and not allowed at the LAN port of the Machine Vision Controller:
 - » 169.254.0.0/16
 - » 0.0.0.0/8
 - » 1.0.0.0/8
 - » 127.0.0.0/8
 - » 224.0.0.0/4
 - » 233.252.0.0/24
 - » 240.0.0.0/4
 - » 255.255.255.255/3
- Use the software wenglor weHub to find Machine Vision Controllers, to adjust the LAN Ethernet configuration and to access the device website of the MVC. For details, check the operating instructions of the software wenglor weHub ([DNNF024](#)).
- The Machine Vision Controller MVC does not support internet connection at the LAN network adapters.



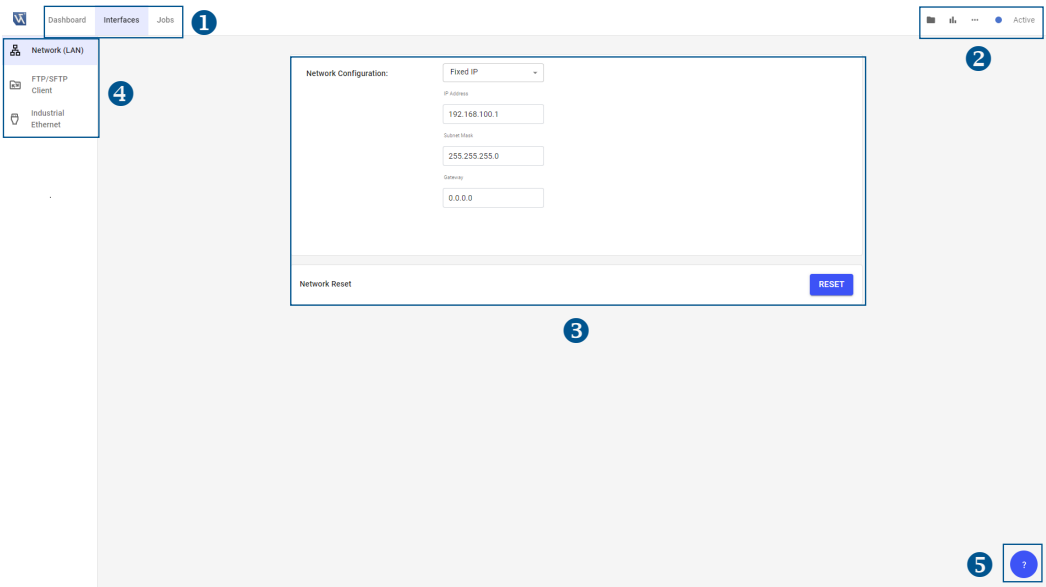
Supported minimum browser versions (tested on Windows 10 (22H2) and Windows 11 (22H2) PCs):

- Chrome 108
- Firefox 108
- Microsoft Edge 108
- Chromium 111

8.1 Structure of Device Website

The device website is divided into several areas:

- (1) Tabs
- (2) Icon menu bar
- (3) Workspace
- (4) Side navigation
- (5) Help button (see section „8.10 Help Button“)



8.2 Dashboard

By default, the tab “Dashboard” shows the details of the Machine Vision Controller.

DashboardCamerasInterfacesJobs

Calibri14F K U S Hintergrundfüllung

Active

Device Details:

Name

Machine Vision Controller

Type

Machine Vision Controller

Article Number

MVCM101

Manufacturer

wenglor samsonic GmbH

Firmware Version

3.6.0

Manufactured

2024-08-13

Serial Number

60115

MAC Address

2C:94:54:06:08:FD

uniVision Version:

3.7.0

Host ID:

2c94540608fd

More info:

<https://www.wenglor.com/product/MVCM101>

Additional software packages

wenglor weHub: Configure network settings

wenglor uniVision 3: Configure uniVision job

Adjust the name, if needed (limited to 63 characters).

The uniVision version of the device shows which version of the software wenglor uniVision 3 on the PC can connect to the device.

NOTE!



- The first two digits of the uniVision version of the device and the software wenglor uniVision 3 on the PC must fit together in order to connect (e.g. uniVision version 3.3.0 on MVC is compatible with software wenglor uniVision 3.3.0 on PC).
- For details about compatability between firmware and uniVision version, see the release notes and the operating instructions of the software wenglor uniVision 3 ([DNNF023](#)).

The host ID is a device specific identifier. It is helpful for HALCON script users in order to execute a HALCON script only on one specific device (for individual licensing). For details, see uniVision operating instructions ([DNNF023](#) → Module HALCON Script).

“More info” opens a new tab in the browser with the product detail page on the wenglor website (only available with internet access).

The section “Additional software packages” provides direct links to download further software products.

8.3 Cameras

Open the tab “Cameras” to see and edit all connected input devices (cameras). The page lists all supported Machine Vision Cameras and 2D/3D Profile Sensors connected to the CAM ports of the Machine Vision Controller and it shows the IP addresses of the input devices. Furthermore, it is possible to assign 2D/3D Profile Sensors to the “VisionApp 360” in order to use the 2D/3D Profile Sensors with the software VisionApp 360 (By default, 2D/3D Profile Sensors are assigned to “uniVision”).

The Machine Vision Controller handles the assignment of the network configuration for the input devices automatically. This can result in reboots of the input devices in case of network changes.

NOTE!



Do not change the network configuration of the input device manually (e.g. at 2D/3D Profile Sensor via the OLED display or on the device website of the 2D/3D Profile Sensor). Instead use the IP address of the page and enter it in the software VisionApp 360. For details, check the operating instruction of the VisionApp 360.

DashboardCamerasInterfacesJobs

Type	Article Number	Serial Number	IP Address	Assigned to	Access Status
Machine Vision Camera	BBVK007	233000297	192.168.91.11	uniVision	● Not connected
Machine Vision Camera	MV-CS016-10GM	K19668678	192.168.92.10	uniVision	● Connected
2D/3D Profile Sensors	MLSL123	001821	192.168.90.13	VisionApp360	● Not connected

NOTE!



- The page lists only input devices that are connected via the CAM ports of the MVC.
- The following input devices are supported:
 - » 2D/3D Profile Sensors of the weCat3D series (minimum firmware version 2.4.0; only devices in operating mode “Profile Generator” are found)
 - » Machine Vision Cameras BBVK (minimum firmware version 1.97.54.10)
 - » Machine Vision Cameras BBZK (minimum firmware version for BBZK001-004 is 3.4.54, for BBZK005 is 4.0.5 and for BBZK006 is 4.0.4)
- Connect the input devices directly at the four CAM ports of the Machine Vision Controller for best network performance. If working with more than four input device, use a switch to bring several devices together at one of the CAM ports. Keep in mind that the network bandwidth then splits between the devices and the camera settings must be set correctly.
- Cabling must be capable of 1 GBit/S throughout the entire network.

8.4 Interfaces

Open the tab “Interfaces” to see and edit all interface settings.

8.4.1 Network (LAN)

In the side navigation “Network (LAN)” it is possible to adjust the LAN network configuration of the MVC Machine Vision Controller.

Dashboard

Interfaces

Jobs

Network (LAN)

FTP/SFTP Client

Industrial Ethernet

Network Configuration:

Fixed IP

IP Address

192.168.100.1

Subnet Mask

255.255.255.0

Gateway

0.0.0.0

Network Reset

RESET

Configuration for LAN Ethernet adapter of Machine Vision Controller:

- Fixed IP: Set fix IP address, subnet mask and gateway of the Machine Vision Controller.
- Obtain IP: DHCP server in the network can assign network settings automatically to the Machine Vision Controller.

NOTE!

- Cabling must be capable of 1 GBit/s throughout the entire network.
- Use a unique network configuration for the LAN Ethernet adapter of the Machine Vision Controller within the LAN network.
- Keep the networks for LAN, RTE and CAM separated in order to optimize the performance of the Machine Vision Controller.
- The network configuration of the LAN Ethernet adapter of the Machine Vision Controller must be different to the network configuration of the RTE and CAM ports of the MVC. The network configuration of the CAM ports on the MVC is fixed and reserved. Trying to use one of the reserved IP addresses results in an error message. The following IP addresses are reserved for the CAM Ethernet adapters of the MVC:
 - » 192.168.90.1 – 192.168.90.255
 - » 192.168.91.1 – 192.168.91.255
 - » 192.168.92.1 – 192.168.92.255
 - » 192.168.93.1 – 192.168.93.255
- Furthermore, the following IP addresses are reserved and not allowed at the LAN port of the Machine Vision Controller:
 - » 169.254.0.0/16
 - » 0.0.0.0/8
 - » 1.0.0.0/8
 - » 127.0.0.0/8
 - » 224.0.0.0/4
 - » 233.252.0.0/24
 - » 240.0.0.0/4
 - » 255.255.255.255/3
- Confirm the reboot info to start the network change. During the network change, a software reboot is done automatically.
- If there is no DHCP server in the network, the Machine Vision Controller will start after a certain time with a backup network configuration.
- After network changes, enter the new IP address in the browser or open the software wenglor weHub in order to find the device again (for details, see operating instructions of software wenglor weHub [DNNF024](#)).
- The Machine Vision Controller MVC does not support internet connection at the LAN network adapters.



“Network reset” resets the LAN Ethernet configuration of the device to its defaults:

- IP address: 192.168.100.1
- Subnet mask: 255.255.255.0
- Gateway: 0.0.0.0

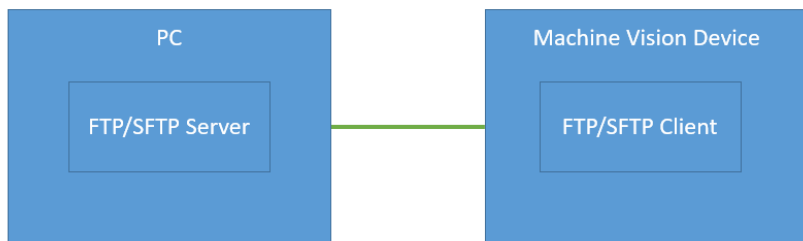


NOTE!

Confirm the reboot info to start the network reset. During the network reset, a software reboot is done automatically.

8.4.2 FTP/SFTP Client

Adjust the side navigation “FTP/SFTP Client” to store data of Device FTP on an external FTP or SFTP server in the network (e.g. on the PC).



FTP/SFTP Client Settings:

- Select the protocol FTP or SFTP
- Enter the IP address of the device where the FTP/SFTP server is running on (e.g. the PC)
- Enter the username and password of the FTP/SFTP server

NOTE!

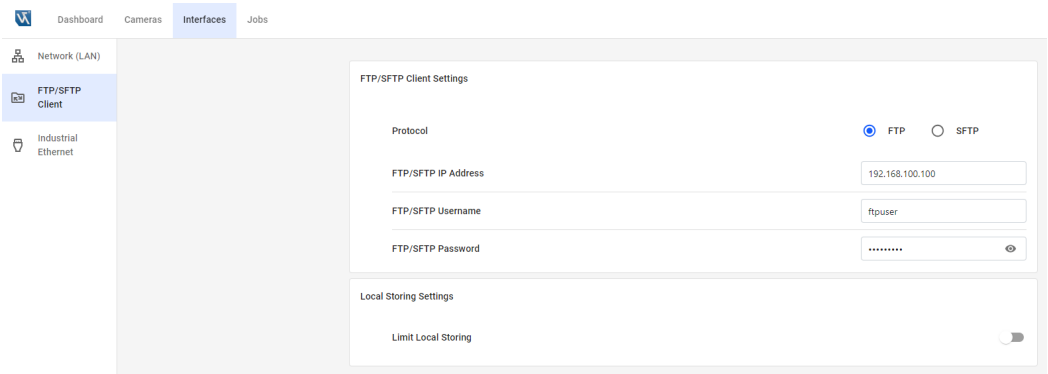


- Password is only visible if authentication is deactivated or, in case of activated authentication, if user of user group admin or admin (default) is logged in.
- For details about process data via Device FTP, see operating instructions of the software wenglor uniVision 3 [DNNF023](#).

Local Storing Settings:

Limit local storing of files on the Machine Vision Controller to have a maximum number of files in the input and/ or output folder (see section „8.6 File Management“). If files are stored automatically by uniVision (e.g. via Device FTP → Data Sink set to local input or output folder), the files with the oldest creation time are automatically deleted if exceeding the maximum number of files (independent of the file type or file ending). Sub folders and files within sub folders are ignored (not counted and not deleted). Deleting the oldest files is done regularly (not in realtime).

- Limit Local Storing: Enables or disables to limit local storing. By default, limit local storing is disabled.
- Number of Files: Defines the maximum number of files that is stored in the file location (only available if Limit Local Storing is enabled).
- Location: Defines the file location to limit local storing (only available if Limit Local Storing is enabled). Select local input folder, local output folder or local input and output folder.



NOTE!

Do not enable “Limit Local Storing” for 24/7 usage as it can result in a very high amount of writing cycles which can damage the SSD. Only recommended to enable the setting in case of job setup and optimization for a limited time. For 24/7 use case use instead Device Volatile Ring Buffer within the uniVision job which stores the data in RAM.

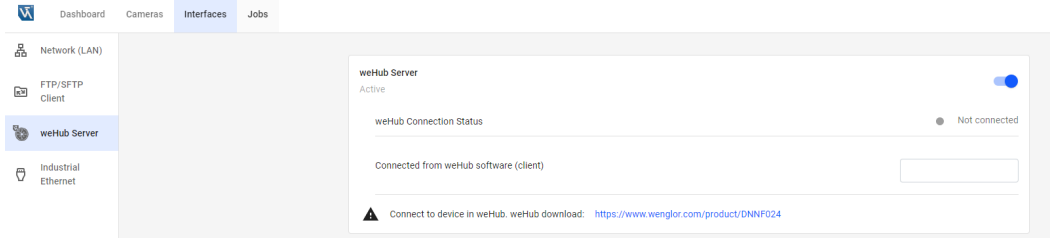
8.4.3 weHub Server

Adjust the side navigation “weHub Server” in order to adjust the weHub server settings.

- weHub Server: Activate or deactivate the weHub Server (by default activated). A connection from the weHub client software is only possible, if the weHub Server on the Machine Vision Device is active. Maximum one connection is possible to the weHub Server on the Machine Vision Device.
- weHub Connection Status: Shows if any weHub client software is connected to the weHub Server on the Machine Vision Device or not.
- Connected from weHub software (client): Shows the IP address of the device where the weHub client software runs if it is connected to the Machine Vision Device.

NOTE!

- Download and install the software wenglor weHub from the wenglor website ([DNNF024](#)). Activate the slider “Auto connect weHub to device” in order to connect to the weHub server on the Machine Vision Device.
- Connecting from the weHub software to Machine Vision Devices allows to directly upload images to AI Lab and to directly download models from AI Lab for Module Image AI within the uniVision job. For details, see [DNNF023](#) and the Getting Started documentation for the AI Loop.

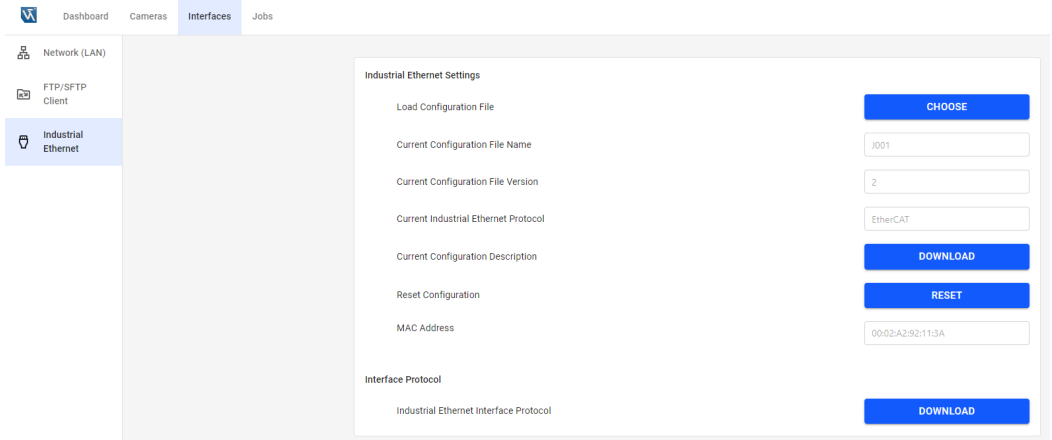


8.4.4 Industrial Ethernet

Adjust the side navigation “Industrial Ethernet” in order to communicate via Industrial Ethernet (e.g. PROFINET) to communication partners via the RTE connector of the Machine Vision Device.



- NOTE!**
- The side navigation “Industrial Ethernet” is only visible if supported by the Machine Vision Controller.



The following options are available:

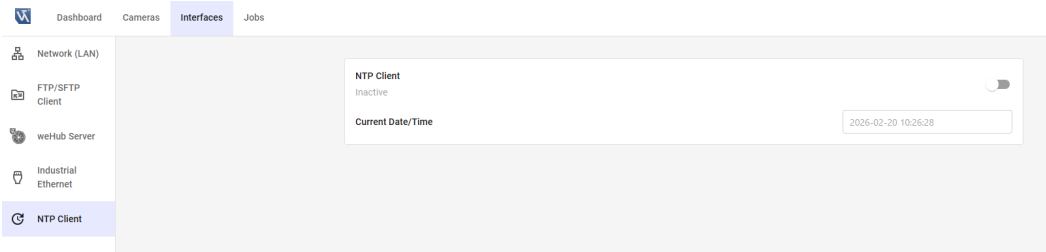
- Load Configuration File: Enables to load a different configuration file for the user-defined process data.
- Current Configuration File Name: Shows the current name of the configuration file.
- Current Configuration File Version: Shows the current version of the configuration file.
- Current Industrial Ethernet Protocol: Shows the current Industrial Ethernet protocol (e.g. PROFINET).
- Current Configuration Description: Opens a separate tab with the description of the current configuration.
- Reset Configuration: Resets the configuration file to the default configuration (E001). Resetting the configuration file requires a device reboot.
- MAC Address: Shows the MAC Address of the RTE connector (in order to identify the device if using BootP at EtherNet/IP).
- Industrial Ethernet Interface Protocol: Opens a separate tab with the interface protocol for Industrial Ethernet



NOTE!
For details, see interface protocol [DNNF023](#).

8.4.5 NTP Client

Adjust the sidebox “NTP Client” in order to connect to a NTP server in the LAN network. By default, the NTP client is deactivated and the current date and time is displayed.



Activate the NTP client in order to connect to a NTP server in the LAN network.

- NTP Server: Enter the IP address of the device where the NTP server runs on (e.g. PC).
- Timezone: Select the relevant timezone.
- In Sync: Returns if the current date and time are in sync with the NTP server or not.

Dashboard

Cameras

Interfaces

Jobs

Network (LAN)

FTP/SFTP Client

weHub Server

Industrial Ethernet

NTP Client

NTP Client

Active

Settings

NTP Server

192.168.100.104

Timezone

Europe/Berlin

In Sync

In Sync

Current Date/Time

2026-02-20 10:27:04

NOTE!



- The synchronization of date and time can take up to one minute.
- Make sure to run a NTP server in the LAN network that is accessible by the device. For example, enable the NTP server that is available on Windows 11 PCs via opening the registry editor. Set Enabled to 1 at "HKLM\System\CurrentControlSet\Services\W32Time\TimeProviders\NtpServer"

Registrierungs-Editor

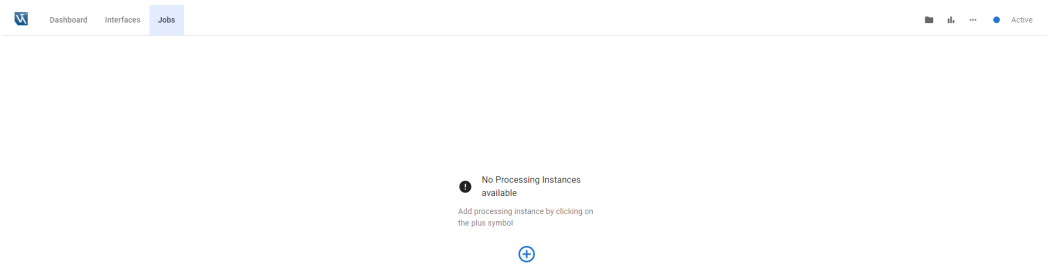
Datei Bearbeiten Ansicht Favoriten Hilfe

Computer\HKEY_LOCAL_MACHINE\SYSTEM\CurrentControlSet\Services\W32Time\TimeProviders\NtpServer

	Name	Typ	Daten
> vwwifflt	(Standard)	REG_...	(Wert nicht festgelegt)
> vwwifmp	AllowNonstandardModeCombinations	REG_...	0x00000001 (1)
> W32Time	ChainDisable	REG_...	0x00000000 (0)
> > Config	ChainEntryTimeout	REG_...	0x0000010 (16)
> > > Parameters	ChainLoggingRate	REG_...	0x000001e (30)
> > > SecureTimeLimits	ChainMaxEntries	REG_...	0x00000080 (128)
> > > Security	ChainMaxHostEntries	REG_...	0x00000004 (4)
> > > > TimeProviders	DllName	REG_...	%systemroot%\system32\w32time.dll
> > > > > NtpClient	Enabled	REG_...	0x00000001 (1)
> > > > > > NtpServer	EventLogFlags	REG_...	0x00000000 (0)
> > > > > > > VMICTimeProvider	InputProvider	REG_...	0x00000000 (0)
> > > > > > > > TriggerInfo	RequireSecureTimeSyncRequests	REG_...	0x00000000 (0)
> > > > > > > > > WaaSMedicSvc			
> > > > > > > > > WacomPen			
> > > > > > > > > WalletService			
> > > > > > > > > wanarp			
> > > > > > > > > wanarpv6			
> > > > > > > > > WarpJITSvc			
> > > > > > > > > WavesAudioService			
> > > > > > > > > WavesSysSvc			
> > > > > > > > > wbengine			
> > > > > > > > > WbioSvc			
> > > > > > > > > wcfifs			

8.5 Jobs

Open the tab “Jobs” in order to see and edit the uniVision job settings.
By default, the page “Jobs” on the Machine Vision Controller is empty.



Click on the plus symbol to create a processing instance with an input device that is connected via one of the four CAM ports of the Machine Vision Controller.

NOTE!

- The device search lists only input devices that are connected via the CAM ports of the MVC.
- The following input devices are supported:
 - » 2D/3D Profile Sensors of the weCat3D series (minimum firmware version 2.4.0; only devices in operating mode “Profile Generator” are found)
 - » Machine Vision Cameras BBVK (minimum firmware version 1.97.54.10)
 - » Machine Vision Cameras BBZK (minimum firmware version for BBZK001-004 is 3.4.54, for BBZK005 is 4.0.5 and for BBZK006 is 4.0.4)
- Connect the input devices directly at the four CAM ports of the Machine Vision Controller for best network performance. If working with more than four input device, use a switch to bring several devices together at one of the CAM ports. Keep in mind that the network bandwidth then splits between the devices and the camera settings must be set correctly.
- Cabling must be capable of 1 GBit/S throughout the entire network.



Select the relevant input device in order to create a processing instance.

Select Input Device

Search

Type	Article Number	Serial Number	IP Address	MAC Address
Machine Vision Camera	MV-CS016-10GM	K19668678	192.168.91.10	34BD20091DF4
Machine Vision Camera	BBVK007	233000297	192.168.92.11	1C0FAF0C1DA8
2D-/3D-profile sensors	MLSL123	1821	192.168.90.12	544A050A1997

CANCEL

CREATE

The page “Jobs” shows then the processing instance.

Dashboard

Cameras

Interfaces

Jobs

we_processing_instance_1

● Active

Running

Current Job

11.u3p

uniVision 3 is required for editing the job. uniVision 3 download: <https://www.wenglor.com/product/DNMF023>

Visualization

11.u3p

Machine Vision Controller

47

It is possible to create up to 16 processing instances. Each processing instance can have exactly one input device. Several input devices at one processing instance are not supported.

Dashboard

Interfaces

Jobs

we_processing_instance_1

● Active: Running ⓘ ✎ 🗑

Current Job

No job available

✎

⚠ uniVision 3 is required for editing the job. uniVision 3 download: <https://www.wenglor.com/product/DNNF023>

Visualization

No job available

✎

⬇

we_processing_instance_2

● Active: Running ⓘ ✎ 🗑

Current Job

No job available

✎

⚠ uniVision 3 is required for editing the job. uniVision 3 download: <https://www.wenglor.com/product/DNNF023>

Visualization

No job available

✎

⬇

⬇

It is possible to delete the processing instance, to edit the name of the processing instance and to show the available network ports. Furthermore, it is possible to see the current status of the Processing Instance and to download the history of the maximum 50 last warnings or errors that happened after booting (warnings and errors are not kept at reboots of the device or the Processing Instance).

NOTE!
For details about the different ports and the warnings and errors of the processing instance, see operating instructions of software wenglor uniVision 3 [DNNF023](#).

we_processing_instance_1 - Interfaces

Name	↑	Protocol	Port
LIMA Read-Only		TCP	33040
LIMA Read/Write Full		TCP	33020
LIMA Read/Write Limited		TCP	33060

OK

48

Device Website

By default, the Processing Instance boots with the last loaded job. If no job is available, it boots with an empty (undefined) job. It is also possible to select one specific fix start job of the project folder on the device.



NOTE!
Upload or download of uniVision jobs is possible via File Management (see section „8.6 File Management“).

By default, the Processing Instance keeps the last acquisition status after booting. It is possible to select the option to automatically start or stop the acquisition after booting.



NOTE!
Active acquisition means that the device is ready to receive trigger signals.

DashboardInterfacesJobs

we_processing_instance_1

Active: Running

Current Job

No job available

uniVision 3 is required for editing the job. uniVision 3 download: <https://www.wenglor.com/product/DNNF023>

Visualization

No job available

Startup Policy

Job

Fix start job

Last loaded job

Acquisition

Automatically start

Automatically stop

Keep last state

Input Device

Type	Article Number	Serial Number	IP Address	MAC Address
2D-/3D-profile sensors	MLSL123	1821	192.168.90.12	544A050A1997

Robot Server

Inactive

Switching to another input device is possible by clicking on the edit icon next to the input device. Switching from a Machine Vision Camera to a 2D/3D Profile Sensor and reverse is not supported. If needed, delete the processing instance and create a new processing instance with the different device type.

Machine Vision Controller

49

Click in the section “Digital IOs” on the button CHOOSE to add digital inputs or outputs of the MVC to the processing instance or to remove digital IOs of the MVC from the processing instance.

NOTE!



- The section “Digital IOs” is only visible if supported by the Machine Vision Controller.
- Editing the digital IOs of a processing instance requires a restart of the processing instance. Make sure to store the uniVision job settings before adding or removing IOs. A warning message is shown before the restart of the processing instance.
- Removing all digital inputs or all digital outputs of a processing instance is possible via the reset icon.

Digital Input

☐ Digital Input 1

☒ Digital Input 2

☒ Digital Input 3

☐ Digital Input 4

☐ Digital Input 5

☐ Digital Input 6

☐ Digital Input 7

☐ Digital Input 8

Digital Output

☐ Digital Output 1

☒ Digital Output 2

☒ Digital Output 3

☐ Digital Output 4

☐ Digital Output 5

☐ Digital Output 6

☐ Digital Output 7

☐ Digital Output 8

CANCEL

CONFIRM

The processing instance then shows the associated digital inputs and outputs.

Dashboard

Interfaces

Jobs

we_processing_instance_1

● Active: Running ⓘ ✎ 🗑

Current Job

No job available

✎

⚠ uniVision 3 is required for editing the job. uniVision 3 download: <https://www.wenglor.com/product/DNNF023>

Visualization

No job available

✎

Startup Policy

Job

☐ Fix start job ☒ Last loaded job

Acquisition

☐ Automatically start ☐ Automatically stop ☒ Keep last state

Input Device

Type	Article Number	Serial Number	MAC Address	
2D-/3D-profile sensors	MLSL123	1821	544A050A1997	✎

Digital I/Os

Digital Input 2
Digital Input 3

Digital Output 2
Digital Output 3

CHOOSE

Robot Server

Inactive

🔌

ⓘ

By default, the robot server is deactivated. Activate it, if the communication to robots is needed. For Processing Instances with Machine Vision Cameras, the following settings appear.

DashboardCamerasInterfacesJobs

we_processing_instance_1

ActiveRunning

Current Job

No job available

⚠️ uniVision 3 is required for editing the job. uniVision 3 download: <https://www.wenglor.com/product/DNNF023>

Visualization

No job available

Startup Policy

Job

Fix start job

Last loaded job

Acquisition

Automatically start

Automatically stop

Keep last state

Input Device

Type	Article Number	Serial Number	IP Address	MAC Address
Machine Vision Camera	UV-C0219-1059F	478668C79	192.168.92.10	84:8D:2D:28:1D:F4

Robot Server

Active

Settings

Robot Manufacturer

Robot Port

Current Calibration File

Load Calibration File

Status

Robot Connection

Processing Instance Connection

Device Robot

Error

UR Polyscope 5 URCap

6008

No calibration available

CHOOSE

Not connected

Connected

Not connected

No calibration file available. Please calibrate the camera using the robot.

- Robot Manufacturer: Select the relevant robot manufacturer (UR Polyscope 5 URCap, UR Polyscope X Script, Kuka, ABB, Kassow Robotics, Fanuc or Generic).
- Robot Port: Depending on the robot manufacturer the default port is shown. Edit the port, if needed. Make sure to use a unique port (especially if working with several processing instances).
- Current Calibration File: Shows the name of the currently loaded calibration file.
- Load Calibration File: Allows to load another calibration file. The calibration file is only valid for one specific input device and valid only if the relation between camera, lens and robot is unchanged (e.g. it gets invalid if the camera position is changed or if the lens is changed).

NOTE!

- Upload or download of calibration files is possible via File Management (see section „8.6 File Management“).
- Do not change the name of the calibration file.
- Loading another calibration file from the device website requires to disconnect and re-connect again from robot side to the robot server in order to get the changes also on robot side (e.g. in the URCap).
- For more details about robot vision, see operating instructions of software wenglor uniVision 3 [DNNF023](#).



For Processing Instances with 2D/3D Profile Sensors, the following settings appear.

DashboardInterfacesJobs

we_processing_instance_1

ActiveRunning

Current Job

No job available

univision 3 is required for editing the job. univision 3 download: <https://www.wenglor.com/product/DNNF023>

Visualization

No job available

Startup Policy

Job

Fix start jobLast loaded job

Acquisition

Automatically startAutomatically stopKeep last state

Input Device

Type	Article Number	Serial Number	IP Address	MAC Address
2D/3D-profile sensors	MLSL123	1E21	192.168.96.12	5444020A1997

Robot Server

Active

Settings

Robot Manufacturer

Kuka

Robot Port

6008

Status

Robot Connection

Processing Instance Connection

Device Robot

Error

Not connectedConnectedNot connectedNo Error

- Robot Manufacturer: Select the relevant robot manufacturer (Kuka SeamTech 4.0, Kuka SeamTech 2 and 3., ABB, Fanuc, Yaskawa or Kawasaki).
- Robot Port: Depending on the robot manufacturer the default port is shown. Edit the port, if needed. Make sure to use a unique port (especially if working with several processing instances).



NOTE!
For more details about robot welding, see operating instructions of software wenglor uniVision 3 [DNNF023](#) and separate operating instructions for optical seam tracking solutions.

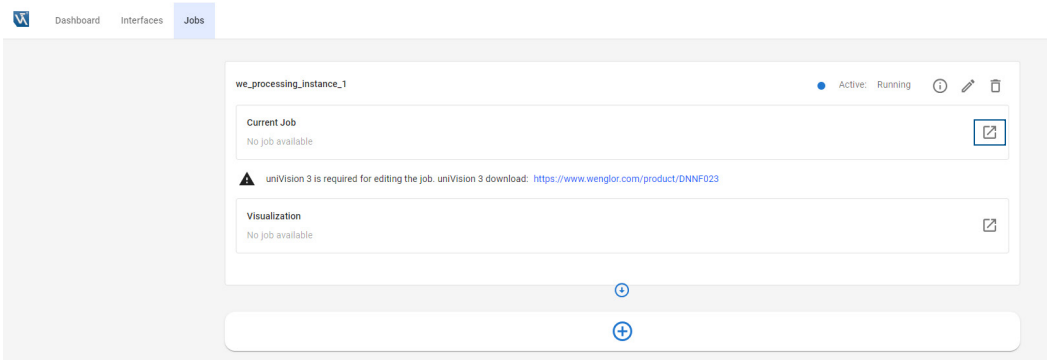
The following status is shown for the robot server:

- Robot Connection: Shows if the robot is connected to the robot server or not.
- Processing Instance Connection: Shows if the robot server is connected to the processing instance via the LIMA Read/Write Limited port or not.
- Device Robot: Shows if the robot server is connected to Device Robot Vision or to Device Robot Weld Seam Tracking or not.
- Error: Shows if there is any error (e.g. if port is already in use).

Click on “Edit job” in the section “Current job” in order to open the uniVision software for editing the uniVision job.

NOTE!

- Make sure that the suitable version of the software wenglor uniVision 3 is installed on the PC.
- For details about the suitable version of the software wenglor uniVision 3, check the uniVi-
sion version of the device at the tab “Dashboard” (see section „8.2 Dashboard“).
- Click on the link to open the product detail page of the software wenglor uniVision 3
([DNNF023](#)) in order to download the suitable software version at “Downloads” → “Soft-
and Firmware” (only available with internet access).
- The uniVision software is described in detail in the operating instructions of the software
wenglor uniVision 3 [DNNF023](#).

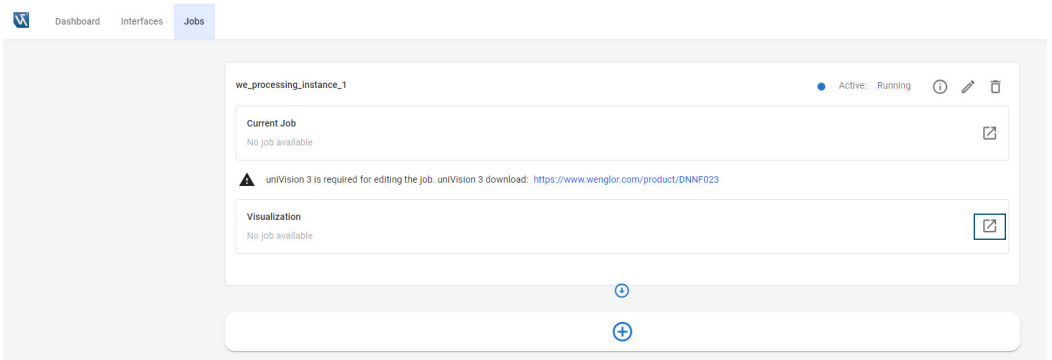


Click on visualization opens the webbased job visualization in a separate tab of the browser.



NOTE!

The webbased visualization is described in the operating instructions of the software wenglor uniVision 3 [DNNF023](#).



8.6 File Management

Click in the icon menu bar on the “File Management” icon in order to access files on the Machine Vision Device.

The following folders are available:

- Calibration: Contains calibration files for robot vision (see section „8.5 Jobs“).
- Input: Contains data (e.g. images or profiles) for the simulation mode. For details, see operating instructions of software wenglor uniVision 3 ([DNNF023](#)).
- Output: Contains data (e.g. images, profiles or text files) stored via Device FTP. For details, see operating instructions of [DNNF023](#).
- Projects: Contains uniVision job files.
- Teach-plus: Contains one single teachplus file for storing the uniVision job file temporarily on the device before downloading it to the projects folder of the host PC. For details, see operating instructions of [DNNF023](#).

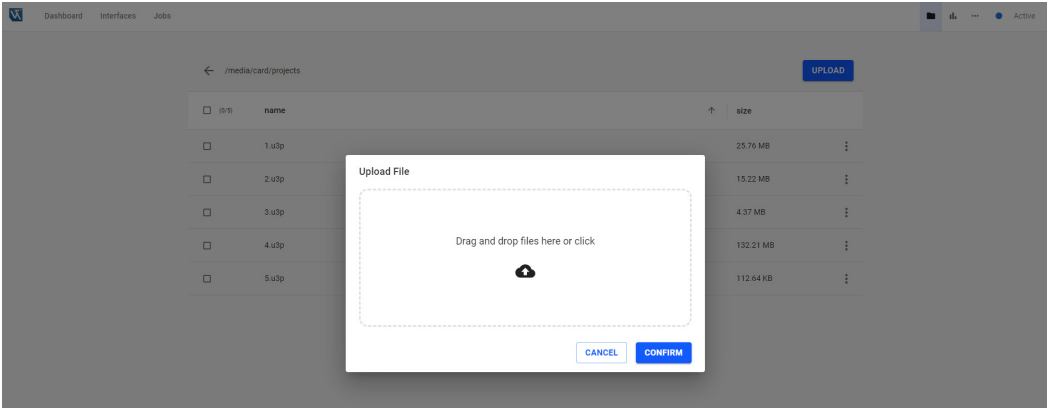


Select one of the folders (e.g. projects) to access the files.



Click on the button “New Folder” to create a new folder.

Click on the button “Upload” in order to upload files to the folder.



Click on the extended menu to rename, duplicate, copy to, move to, download or delete files.



NOTE!



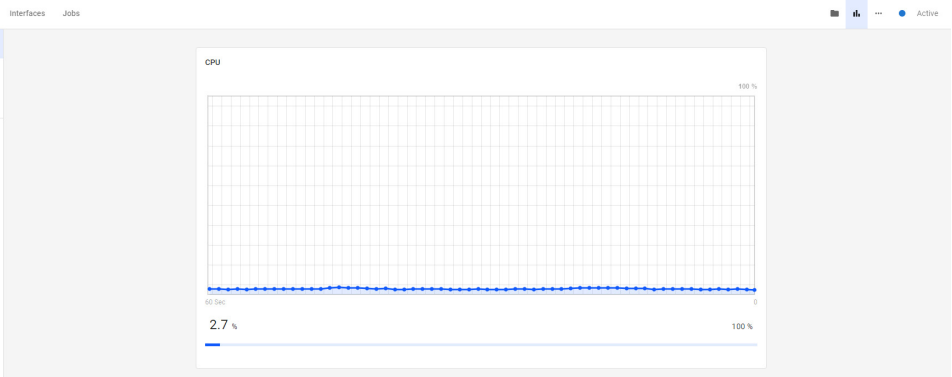
- It is possible to select several files in order to duplicate, copy to, move to, download or delete them.
- Do not edit the name of calibration files.

8.7 Diagnosis

Click in the icon menu bar on the “Diagnosis” icon in order to get further diagnosis info.

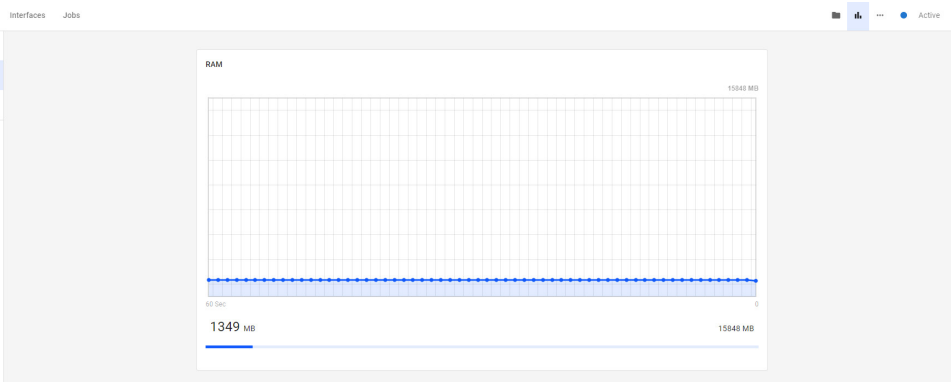
8.7.1 CPU

The side navigation “CPU” shows the CPU load of the Machine Vision Device for a maximum of the last 60 seconds.



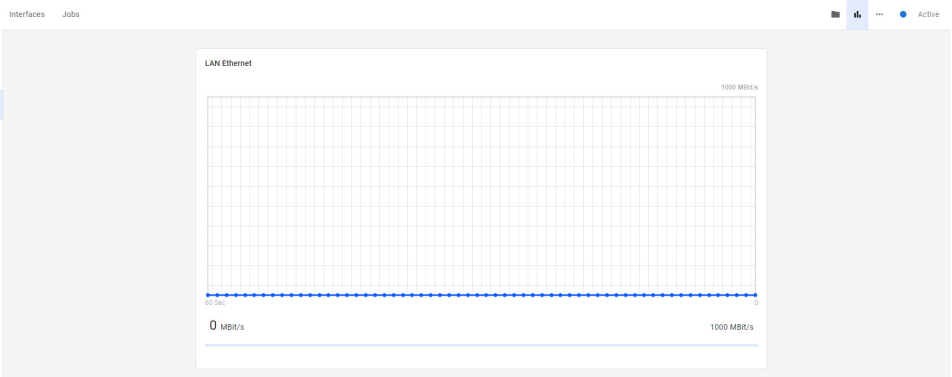
8.7.2 RAM

The side navigation “RAM” shows the RAM usage of the Machine Vision Device for a maximum of the last 60 seconds.



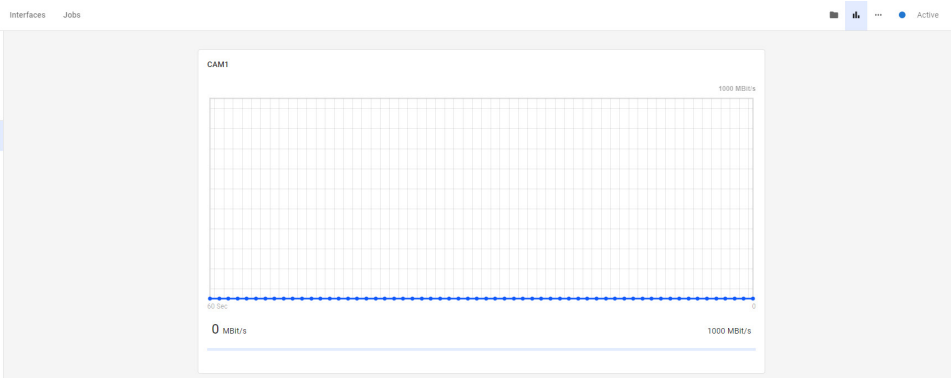
8.7.3 LAN Ethernet

The side navigation “LAN Ethernet” shows the network load at the LAN connector of the Machine Vision Device for a maximum of the last 60 seconds.



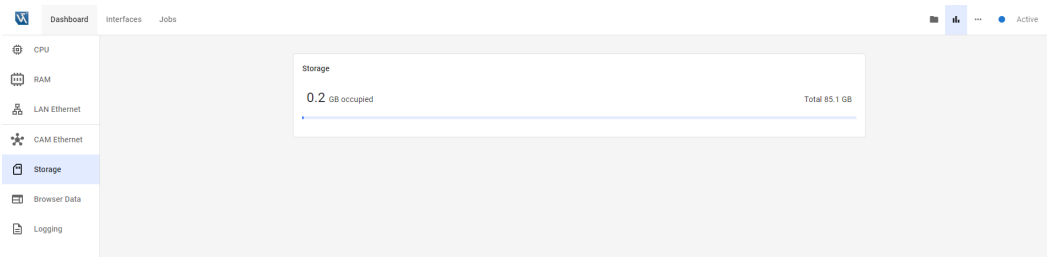
8.7.4 CAM Ethernet

The side navigation “CAM Ethernet” shows the network load at the four CAM connectors of the Machine Vision Device for a maximum of the last 60 seconds.



8.7.5 Storage

The side navigation “Storage” shows the currently occupied and the complete available user storage of the Machine Vision Device.



8.7.6 Temperature

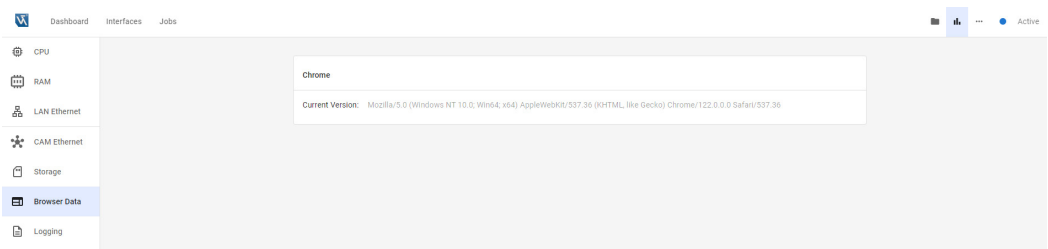
The side navigation “Temperature” shows the temperature values of all temperature sensors within the Machine Vision Device for a maximum of the last 60 seconds.

The following temperature sensors are available:

- CPU Core 0 Temperature
- CPU Core 1 Temperature
- CPU Core 2 Temperature
- CPU Core 3 Temperature
- CPU Core 4 Temperature
- CPU Core 5 Temperature
- CPU Core 6 Temperature
- CPU Core 7 Temperature

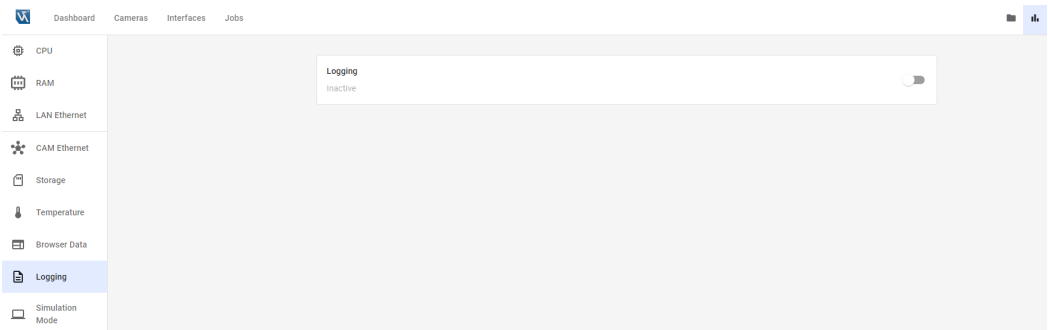
8.7.7 Browser Data

The side navigation “Browser Data” shows the version of the currently used browser.



8.7.8 Logging

The side navigation “Logging” allows to download logging info for all services of the device in one zip file for the wenglor support and development team. Enabling “Logging” requires a reboot of the device (by default “Logging” is disabled).



8.7.9 Simulation Mode

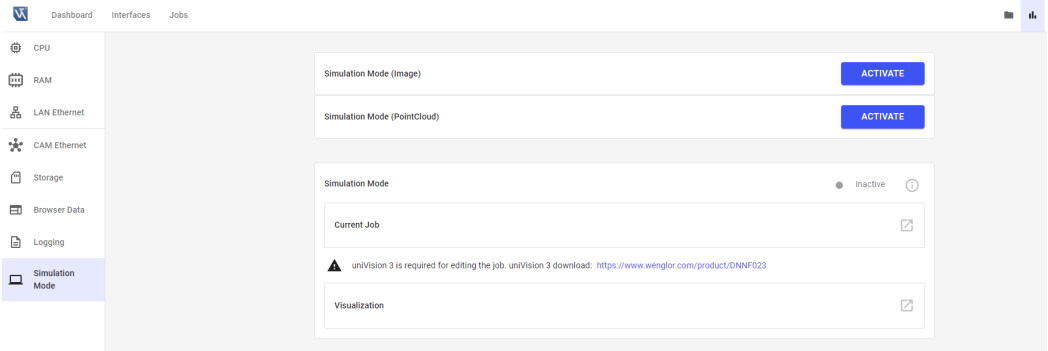
The side navigation “Simulation Mode” allows to activate the simulation mode on the Machine Vision Device. It is possible to evaluate reference data (e.g. images) of the input folder (see File Management on device website) in order to check the performance (process times) for each module on the real device.

Two modes are available:

- Simulation Mode (Image): To evaluate 2D images of the input folder (bmp images with 8 bit depth and with maximum size of 24 MP).
- Simulation Mode (Profile): To evaluate profiles of the input folder (ply pointclouds).



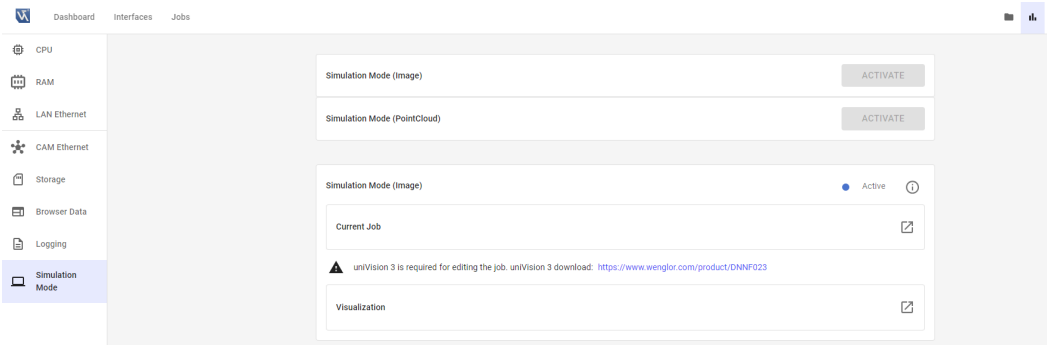
NOTE!
Activating the simulation mode stops all active processing instances on the Machine Vision Device. Make sure to save the jobs of active processing instances before activating the Simulation Mode. Only a single simulation mode is possible at the same time.



Open the current job in order to create a new job in simulation mode via the software wenglor uniVision 3 or open the visualization in a new browser tab in order to create a job specific visualization.



NOTE!
In Simulation Mode only certain interfaces are supported. For details, see operating instructions of software wenglor uniVision 3 ([DNNF023](#)).



Reboot the device in order to exit the simulation mode and to start again in normal operating mode.



NOTE!
For details about the simulation mode on the Machine Vision Device, see the operating instructions of [DNNF023](#).

8.8 Settings

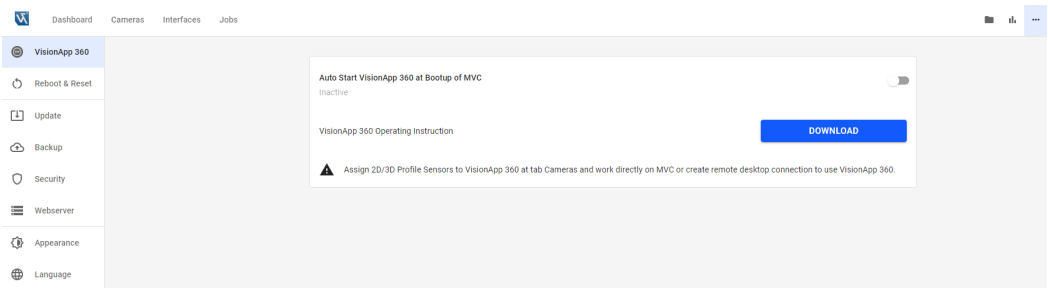
Click in the menu bar on the “Settings” icon for further device settings.

8.8.1 VisionApp 360

By default, the software VisionApp 360 is not started when booting the Machine Vision Controller. Enabling “Auto Start VisionApp 360 at Bootup of MVC” directly starts the software VisionApp 360 and automatically starts it at each bootup of the MVC. Connect monitor, keyboard and mouse directly to the MVC or create a remote desktop connection from the PC via the LAN network to the MVC in order to setup the software VisionApp 360.

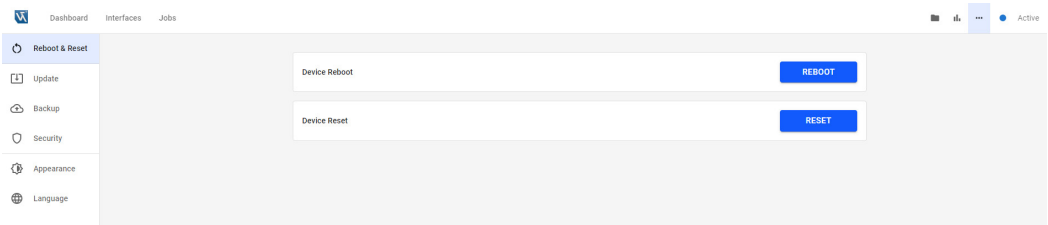


NOTE!
Use the software VisionApp 360 to combine the height profiles of several 2D/3D Profile Sensors to one united height profile (e.g. to calculate 360° cross sections). For details, see the operating instruction of the VisionApp 360.



8.8.2 Reboot & Reset

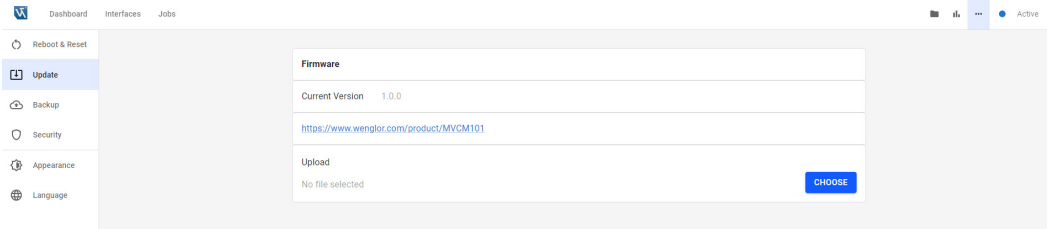
The side navigation “Reboot & Reset” allows to perform a software reboot of the device. Furthermore, it is possible to reset the settings of the device website to the defaults.



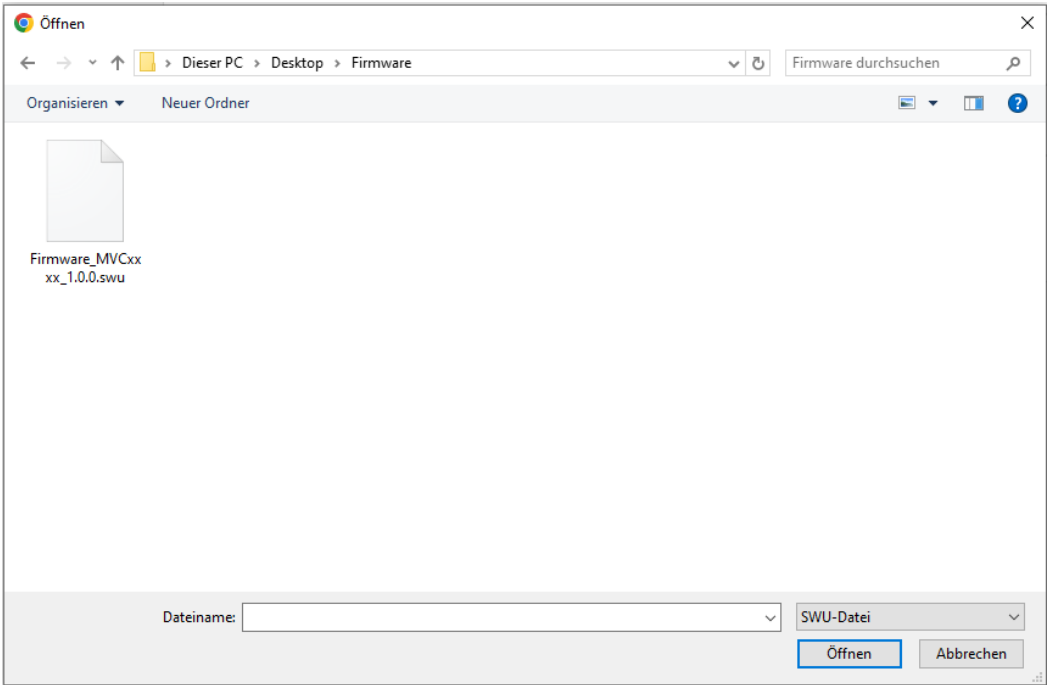
NOTE!
Device reset only resets the settings on the device website. It does not reset the camera settings (e.g. exposure time), the uniVision jobs or the calibration files. Furthermore, the LAN network settings and the configuration file for Industrial Ethernet are not reset. Resetting the LAN network settings and the RTE configuration file is possible separately.

8.8.3 Update

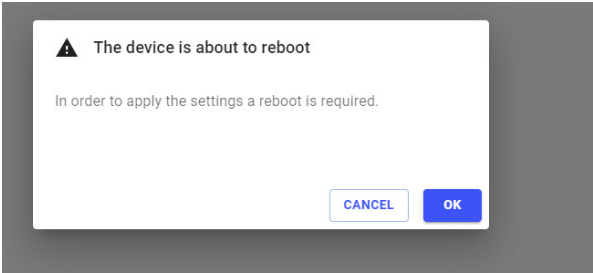
The side navigation “Update” shows the current firmware version and allows to update the firmware of the device. “Current version” shows the current firmware version. Clicking on the link opens a new tab in the browser to the product detail page on the wenglor website. The latest firmware version is available at “Downloads” → “Soft- and Firmware” (only available with internet access).



Click on “Choose” and select the *.swu firmware update file.



Click on OK to start the firmware update. During the firmware update, a software reboot is automatically done.



Firmware Compatibility

The firmware version number consists of three digits (e.g. Firmware MVC 1.0.0)

- Major release: The first digit is changed (no compatability).
- Feature release: The second digit is changed.
- Bugfix release: The third digit is changed.

The following applies with regard to the compatibility of the device website:

- At a bugfix release, the settings of the device website are unchanged.
- At a feature release upgrade (second digit increases), the settings of the device website remain.
- At a feature release downgrade (second digit decreases), it is possible that the settings of the device website are set back to default.

NOTE!



- A backup of the device settings for the device website is done when the device settings change at a firmware update or downgrade (contains maximum one backup file).
- Contact the wenglor support team (email to support@wenglor.com) in case of activating again the settings of the device website on a compatible firmware version.

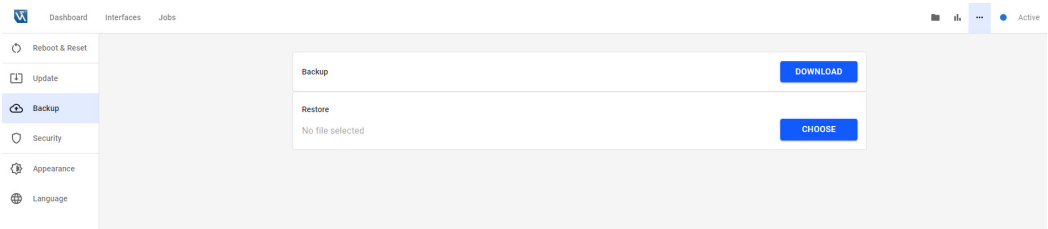
8.8.4 Backup

- The side navigation “Backup” allows to create and to restore a backup of the settings for the device website.
- Backup: Creates a backup file for the settings of the device website.
 - Restore: Allows to restore a backup on the device. Restoring a backup file is only possible in case of the same device type (article number) and the same firmware version of the device. If loading the backup file on another device with the same article number, make sure that the same firmware version (and if needed the same configuration file for Industrial Ethernet) is installed on it before restoring the backup

NOTE!



- The backup does not include the content of the file location /media/card (e.g. uniVision jobs or calibration files for robot vision). Store uniVision jobs and calibration files separately, if needed.
- The backup does not include the configuration file for Industrial Ethernet. Make sure to install the suitable configuration file for Industrial Ethernet individually.
- The backup does not include the network configuration of the LAN Ethernet connector. Make sure to set the LAN network configuration accordingly.



8.8.5 Security

The side navigation “Security” allows to activate authentication in order to protect the device from unwanted changes. After activating authentication, the button “Login” appears at the icon menu bar. The following table shows the rights for each user group.

Functionality	Admin or admin (default)	Setter	Worker	Logged off
Software wenglor weHub: • Find devices • Open devices extended view • Access device website	Yes	Yes	Yes	Yes
Software wenglor weHub: • Edit name and network settings • Enable and disable “Auto connect weHub to device”	Yes	No	No	No
Device website: See properties	Yes	Yes	Yes	Yes

Device website: Edit properties	Yes	No	No	No
Access and edit job configuration via software wenglor uniVision 3	Yes	Yes	No	No
Access and see webbased visualization	Yes	Yes	Yes	Yes
Interact in Run Mode on webbased visualization	Yes	Yes	Yes	No
Edit webbased visualization	Yes	Yes	No	No



NOTE!
Remember usernames and passwords! In case of lost passwords, contact support@wenglor.com

By default authentication is deactivated.

Enable “Authentication” and click on OK.

Authentication is to be activated on the device

In order to see or edit parameters login is necessary.

CANCEL

OK

If authentication is active, the button “Login” appears in the icon menu bar.

Dashboard

Interfaces

Jobs

Reboot & Reset

Update

Backup

Security

Appearance

Language

Authentication

Active

MVC Desktop User

Name

User

Password

Auto Login

LOGIN

Active

Enter username and password. Use admin (default) to login for the first time.

- Username: admin
- Password: admin

Login

Username

Username

Password

Password

CANCEL

LOGIN

Edit username or password of admin (default) via clicking on “Manage account”.

NOTE!



- Change the password of admin (default) to prevent unwanted access on the device.
- The admin (default) account cannot be deleted and it is not possible to change the user group.

Dashboard Interfaces Jobs

Active

AD admin

Username admin

Password

CHANGE PASSWORD

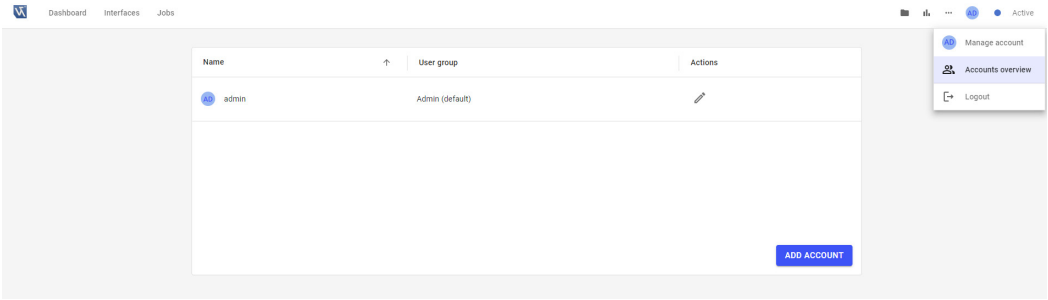
User group Admin (default)

Manage account

Accounts overview

Logout

Admins and admin (default) can create new accounts, edit and delete other accounts. Setter and Worker can only change the own username or password.



Enter username, password and user group when creating new accounts.

Add new account

Username

Username

Password

Password

Confirm password

Confirm password

User group

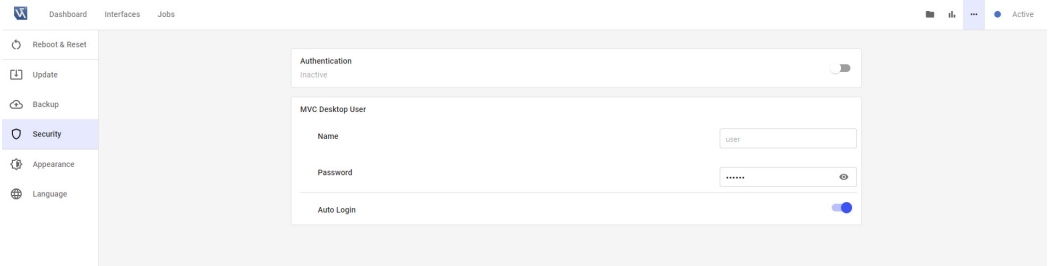
Admin

CANCEL

CREATE

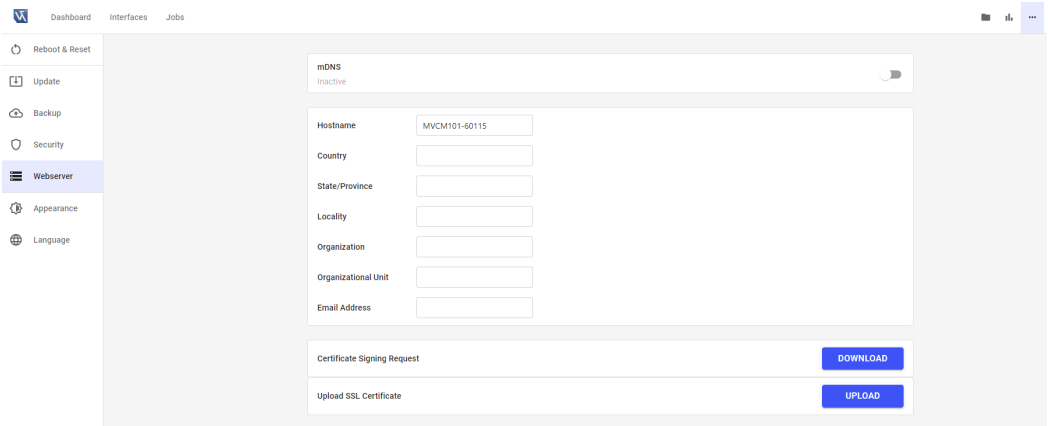
Furthermore, the settings of the MVC Desktop User are shown. Use the Desktop User to login when a monitor is connected directly to the Machine Vision Controller or when using a remote desktop connection e.g. from a Windows PC to the Machine Vision Controller via the LAN interface of the MVC.

- Name: Shows the name of the desktop user with the name “user” (not editable).
- Password: See and edit the password of the desktop user (default “vision”). The password is only visible if authentication is deactivated or, in case of activated authentication, if user of user group admin or admin (default) is logged in. Changing the setting, requires a software reboot.
- Auto Login: Enables or disables automatic login at the MVC after booting if using a monitor directly at the MVC or if connecting via remote desktop connection (by default enabled).



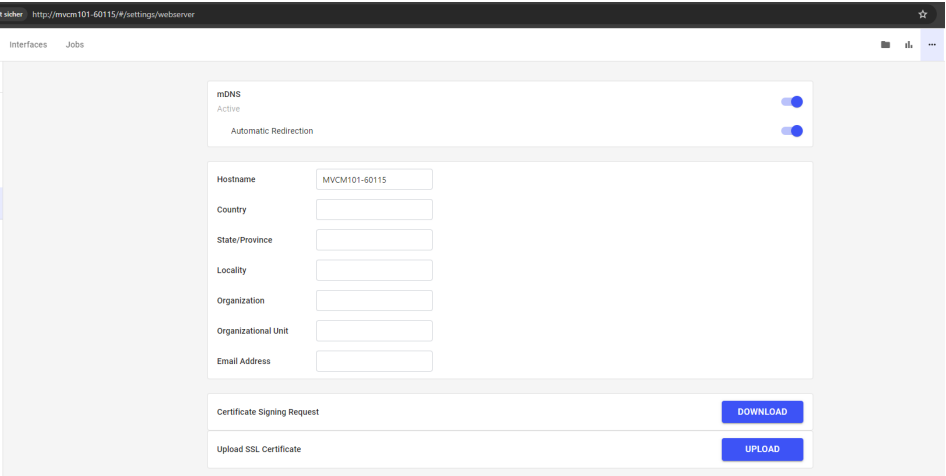
8.8.6 Webserver

The side navigation “Webserver” allows to configure the webserver.



Activate mDNS in order to access the device website via the hostname. By default, the hostname is “article number”-“serial number” (e.g. mvcm101-60115).

Refresh the browser in order to see the automatic redirection of the IP address to the hostname in the address line of the browser (if “Automatic Redirection” is active).



Enter country, state/province, locality, organization, organizational unit and email address before generating the certificate signing request.



NOTE!
For creating the SSL certificate of the Machine Vision Device and in order to add it as trusted device at your PC, please get in touch with your IT department.

After successfully uploading the SSL certificate, the parameter HTTPS appears. Activate it in order to access the device via https. Refresh the browser in order to see the automatic redirection of http to https (if “Automatic Redirection” is active).

Dashboard

Interfaces

Jobs

Reboot & Reset

Update

Backup

Security

Webserver

Appearance

Language

mDNS

Active

Automatic Redirection

Hostname

MVCM101-60115

Country

DE

State/Province

Baden-Württemberg

Locality

Tettmang

Organization

wenglor sensoric GmbH

Organizational Unit

wenglor sensoric GmbH

Email Address

info@wenglor.com

Certificate Signing Request

DOWNLOAD

Upload SSL Certificate

Certificate valid until 7/1/2026

UPLOAD

HTTPS

Active

Automatic Redirection



NOTE!
Delete the browser data after deactivating mDNS or HTTPS in order to access again the device website.

8.8.7 Appearance

The side navigation “Appearance” allows to activate or deactivate dark theme. By default, dark theme is deactivated.

Dashboard

Interfaces

Jobs

Reboot & Reset

Update

Backup

Security

Appearance

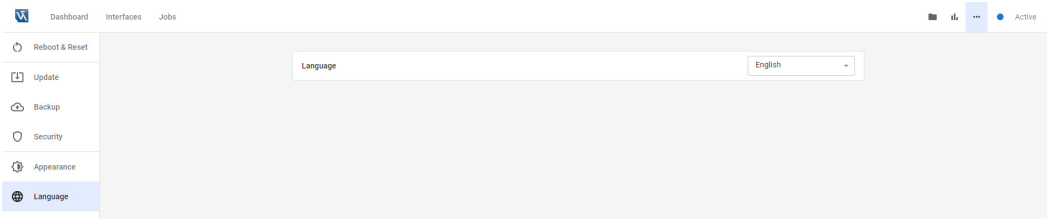
Language

Dark Theme

Inactive

8.8.8 Language

The side navigation “Language” defines the user language of the device website (DE, EN, FR, IT, ES, PT, NL, HU, TR, ZH, RU).



8.9 Device Status

Open the device status in the icon menu bar for further status info. Furthermore, it is possible to download the history of the maximum 50 last device status warnings and errors (automatically reset after rebooting the device).



The device status signals the following states:

- Blue: Active (Running)
- Yellow: Warning (e.g. in case of high temperature, high CPU load, high RAM, high storage usage, high LAN or high CAM Ethernet. Typically warning is sent, if CPU load, RAM, storage usage, CAM or LAN Ethernet is bigger than 90% for more than 3 seconds.)
- Red: Error (e.g. in case of a crashed software service)

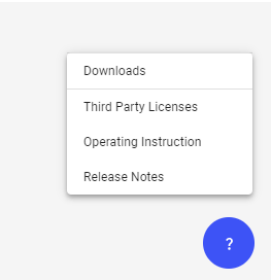
Details of warnings and errors:

Message	Level	Description
High CPU load	Warning	Active in case of high CPU load. Check the device website (Diagnosis).
High RAM	Warning	Active in case of high RAM. Check the device website (Diagnosis).
High storage usage	Warning	Active in case of high storage usage. Check the device website (Diagnosis).
High LAN Ethernet	Warning	Active in case of high LAN Ethernet. Check the device website (Diagnosis).

Message	Level	Description
High CAM Ethernet	Warning	Active in case of high CAM Ethernet. Check the device website (Diagnosis).
High temperature	Warning	Active in case of high temperature. Check the device website (Diagnosis).
Storage end of life	Warning	Active in case of storage end of life. Check the hardware.
Empty battery	Warning	Active in case of empty battery. Exchange the battery of the Machine Vision Controller MVC and reset the warning on the device website of the MVC (at the device status). For details, see section „5.3.1.2 Replacing CMOS Battery“.
Crashed software service	Error	Active in case of any crashed software service. Check the device status in the weHub software, check the device website for details (if available) or reboot the device.

8.10 Help Button

Open the help button to access further information.



- Downloads: Opens a new tab in the browser with the product detail page of the device containing all available downloads on the wenglor website (only available with internet access).
- Third Party Licenses: Opens a new tab in the browser to access the third party licenses of the device (no internet access necessary).



NOTE!
Third party software licenses are also available on the wenglor website:
<https://www.wenglor.com/License/s/License>.

- Operating Instructions: Opens the operating instructions of the Machine Vision Device in a new tab of the browser.
- Release Notes: Opens the release notes of the Machine Vision Device in a new tab of the browser containing the changes between different firmware versions.

9. Software wenglor uniVision 3

The uniVision jobs are parameterized with the uniVision software (version 3.3.0 or higher). For details on the parameterization of the MVC, please refer to the operating instructions of the wenglor uniVision 3 software. For more information, see: <https://www.wenglor.com/p/DNNF023>

10. Maintenance Instructions

NOTE!



- This wenglor Machine Vision Controller is maintenance-free.
- Cleaning and inspection of the plug connections at regular intervals is advisable.
- Do not clean with solvents or cleansers which could damage the device.
- The product must be protected against contamination.

11. Proper Disposal

wenglor sensoric GmbH does not accept the return of unusable or irreparable products. Respectively valid national waste disposal regulations apply to product disposal.

12. Change Index of Operating Instructions

Version	Date	Description	Compatibility
1.0.0	07.10.2024	Initial version of the operating instructions for the MVC Machine Vision Controller	Firmware MVC 1.0.0 Software: wenglor uniVision 3.3.0
1.0.1	06.11.2024	Small bugfix and adaptations	Firmware MVC 1.0.2 Software: wenglor uniVision 3.3.2
1.1.0	30.01.2025	Update description for version 1.1.0 of MVC firmware	Firmware MVC: 1.1.0 Software: wenglor uniVision 3.4.0
1.2.0	14.05.2025	Updated description for version 1.2.0 of MVC firmware	Firmware MVC: 1.2.0 Software: wenglor uniVision 3.5.0
1.3.0	20.08.2025	Updated description for version 1.3.0 of MVC firmware	Firmware MVC: 1.3.0 Software: wenglor uniVision 3.6.0
1.4.0	15.01.2026	Added sections „5.4 Connection Options“ and „6.3 Setting up Automatic Program Start“	Firmware MVC: 1.3.0 Software: wenglor uniVision 3.6.0
1.5.0	03.06.2026	Updated description for version 1.4.0 of MVC firmware	Firmware MVC: 1.4.0 Software: wenglor uniVision 3.7.0
1.6.0	10.08.2026	Addition to the section „6.3 Setting up Automatic Program Start“	Firmware MVC: 1.4.0 Software: wenglor uniVision 3.7.0

13. Appendix

13.1 Declarations of Conformity

Declarations of conformity can be found on our website at www.wenglor.com in the product's separate download area.

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For further wenglor contacts, please see www.wenglor.com

13.2 Third Party Licenses

Third party licenses used on the MVC Machine Vision Controller are available via the device website (see section „8.10 Help Button“) or on the wenglor website (requires internet access) at:

<https://www.wenglor.com/License/s/License>