

# SIEMENS

## SINUMERIK

### SINUMERIK Edge Analyze MyMachine /Condition

#### Installation Manual

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#### Preface

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Valid for control system:  
SINUMERIK 840D sl/ 840DE sl


Software  
Analyze MyMachine /Condition, Version 2.1


## Legal information

### Warning notice system

This manual contains notices you have to observe in order to ensure your personal safety, as well as to prevent damage to property. The notices referring to your personal safety are highlighted in the manual by a safety alert symbol, notices referring only to property damage have no safety alert symbol. These notices shown below are graded according to the degree of danger.

 <b>DANGER</b>
indicates that death or severe personal injury <b>will</b> result if proper precautions are not taken.

 <b>WARNING</b>
indicates that death or severe personal injury <b>may</b> result if proper precautions are not taken.

 <b>CAUTION</b>
indicates that minor personal injury can result if proper precautions are not taken.

<b>NOTICE</b>
indicates that property damage can result if proper precautions are not taken.


If more than one degree of danger is present, the warning notice representing the highest degree of danger will be used. A notice warning of injury to persons with a safety alert symbol may also include a warning relating to property damage.

### Qualified Personnel

The product/system described in this documentation may be operated only by **personnel qualified** for the specific task in accordance with the relevant documentation, in particular its warning notices and safety instructions. Qualified personnel are those who, based on their training and experience, are capable of identifying risks and avoiding potential hazards when working with these products/systems.

### Proper use of Siemens products

Note the following:

 <b>WARNING</b>
Siemens products may only be used for the applications described in the catalog and in the relevant technical documentation. If products and components from other manufacturers are used, these must be recommended or approved by Siemens. Proper transport, storage, installation, assembly, commissioning, operation and maintenance are required to ensure that the products operate safely and without any problems. The permissible ambient conditions must be complied with. The information in the relevant documentation must be observed.

### Trademarks

All names identified by ® are registered trademarks of Siemens AG. The remaining trademarks in this publication may be trademarks whose use by third parties for their own purposes could violate the rights of the owner.

### Disclaimer of Liability

We have reviewed the contents of this publication to ensure consistency with the hardware and software described. Since variance cannot be precluded entirely, we cannot guarantee full consistency. However, the information in this publication is reviewed regularly and any necessary corrections are included in subsequent editions.

# Preface

## SINUMERIK documentation

The SINUMERIK documentation is organized into the following categories:

- General documentation/catalogs
- User documentation
- Manufacturer/service documentation

## Additional information

You can find information on the following topics at the following address (<https://support.industry.siemens.com/cs/de/en/view/108464614>):

- Ordering documentation/overview of documentation
- Additional links to download documents
- Using documentation online (find and search in manuals/information)

If you have any questions regarding the technical documentation (e.g. suggestions, corrections), please send an e-mail to the following address (<mailto:docu.motioncontrol@siemens.com>).

## mySupport/Documentation

At the following address (<https://support.industry.siemens.com/My/ww/en/documentation>), you can find information on how to create your own individual documentation based on Siemens' content, and adapt it for your own machine documentation.

## Training

At the following address (<http://www.siemens.com/sitrain>), you can find information about SITRAIN (Siemens training on products, systems and solutions for automation and drives).

## FAQs

You can find Frequently Asked Questions in the Service&Support pages under Product Support (<https://support.industry.siemens.com/cs/de/en/ps/faq>).

## SINUMERIK

You can find information about SINUMERIK at the following address (<http://www.siemens.com/sinumerik>).

## Target group

This document addresses commissioning engineers and machine tool manufacturers. The document provides detailed information required by commissioning engineers to commission the SINUMERIK Integrate software.

## Benefits

The software installation manual instructs the target group on how to install and uninstall the software correctly.

## Standard scope

This documentation describes the functionality of the standard scope. Additions or revisions made by the machine manufacturer are documented by the machine manufacturer.

Other functions not described in this documentation might be executable in the control system. This does not, however, represent an obligation to supply such functions with a new control system or when servicing.

For the sake of simplicity, this documentation does not contain all detailed information about all types of the product and cannot cover every conceivable case of installation, operation, or maintenance.

## Note regarding the General Data Protection Regulation

Siemens respects the principles of data privacy, in particular the data minimization rules (privacy by design). For this product, this means:

The products process the following personal data: User name, password, optionally name and first name. It does not involve data from the personal or private sphere. The above mentioned data is required for the access restriction function (login). The data saved is limited to the absolute minimum as this is absolutely necessary to make a differentiation between the access rights. The above-mentioned data cannot be saved with anonymity or with pseudo-anonymity as the objective of differentiating access rights would not be possible. Our products do not automatically delete the data mentioned above. If necessary, this data can be deleted in the corresponding user administration. If you have any questions, then please contact our customer support organization.

## Technical Support

Country-specific telephone numbers for technical support are provided in the Internet at the following address (<https://support.industry.siemens.com/sc/ww/en/sc/2090>) in the "Contact" area.


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# Fundamental safety instructions

## 1.1 General safety instructions

 <b>WARNING</b>
<b>Danger to life if the safety instructions and residual risks are not observed</b>
If the safety instructions and residual risks in the associated hardware documentation are not observed, accidents involving severe injuries or death can occur.
<ul style="list-style-type: none"><li>• Observe the safety instructions given in the hardware documentation.</li><li>• Consider the residual risks for the risk evaluation.</li></ul>

 <b>WARNING</b>
<b>Malfunctions of the machine as a result of incorrect or changed parameter settings</b>
As a result of incorrect or changed parameterization, machines can malfunction, which in turn can lead to injuries or death.
<ul style="list-style-type: none"><li>• Protect the parameterization against unauthorized access.</li><li>• Handle possible malfunctions by taking suitable measures, e.g. emergency stop or emergency off.</li></ul>

## 1.2 Warranty and liability for application examples

Application examples are not binding and do not claim to be complete regarding configuration, equipment or any eventuality which may arise. Application examples do not represent specific customer solutions, but are only intended to provide support for typical tasks.

As the user you yourself are responsible for ensuring that the products described are operated correctly. Application examples do not relieve you of your responsibility for safe handling when using, installing, operating and maintaining the equipment.



## 1.3 Security information

Siemens provides products and solutions with industrial security functions that support the secure operation of plants, systems, machines and networks.

In order to protect plants, systems, machines and networks against cyber threats, it is necessary to implement – and continuously maintain – a holistic, state-of-the-art industrial security concept. Siemens' products and solutions constitute one element of such a concept.

Customers are responsible for preventing unauthorized access to their plants, systems, machines and networks. Such systems, machines and components should only be connected to an enterprise network or the internet if and to the extent such a connection is necessary and only when appropriate security measures (e.g. firewalls and/or network segmentation) are in place.

For additional information on industrial security measures that may be implemented, please visit

<https://www.siemens.com/industrialsecurity> (<https://www.siemens.com/industrialsecurity>).

Siemens' products and solutions undergo continuous development to make them more secure. Siemens strongly recommends that product updates are applied as soon as they are available and that the latest product versions are used. Use of product versions that are no longer supported, and failure to apply the latest updates may increase customer's exposure to cyber threats.

To stay informed about product updates, subscribe to the Siemens Industrial Security RSS Feed under

<https://www.siemens.com/industrialsecurity> (<https://new.siemens.com/global/en/products/services/cert.html#Subscriptions>).

Further information is provided on the Internet:

Industrial Security Configuration Manual (<https://support.industry.siemens.com/cs/ww/en/view/108862708>)

### WARNING

#### Unsafe operating states resulting from software manipulation

Software manipulations, e.g. viruses, Trojans, or worms, can cause unsafe operating states in your system that may lead to death, serious injury, and property damage.

- Keep the software up to date.
- Incorporate the automation and drive components into a holistic, state-of-the-art industrial security concept for the installation or machine.
- Make sure that you include all installed products into the holistic industrial security concept.
- Protect files stored on exchangeable storage media from malicious software by with suitable protection measures, e.g. virus scanners.
- On completion of commissioning, check all security-related settings.



# Introduction

## 2.1 System requirements

Analyze MyMachine /Condition is a hybrid SINUMERIK Edge application consisting of a SINUMERIK Edge application and a MindSphere application. The MindSphere application can only be used in conjunction with the SINUMERIK Edge application.

SINUMERIK Edge must be commissioned in order to be able to use Analyze MyMachine / Condition.

**Further information** about commissioning is provided in:

- Industrial Edge User Documentation
- MindSphere (<https://siemens.mindsphere.io/en>)

No additional steps are required for the MindSphere application of Analyze MyMachine / Condition. The application is directly visible in the tenant after publication.

Observe the following system preconditions.

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### Note

#### Memory requirements

In the MindSphere application, Analyze MyMachine /Condition generates files for data transmission. These files are not automatically deleted in MindSphere.

To free up memory space, manually delete the files that are no longer required.

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### Note

Analyze MyMachine /Condition sends the content of the file to the SIEMENS operator tenant for the MindSphere application.

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## Hardware

The following hardware components must be installed:

- SINUMERIK control  
The following control systems are supported:
  - SINUMERIK 840D sl NCU 7x0.3 [B]
- SINUMERIK Edge:
  - SIMATIC IPC227E Nanobox with TPM (Trusted Platform Module) support and with Internet access

## 2.1 System requirements

- Optional PCU from 50.5 or IPC from SIMATIC IPC427E with SINUMERIK Operate if functionality "Integrating Analyze MyMachine /Condition in a SINUMERIK control system (Page 26)" is used.
- Operating PC  
The following screen resolutions are supported:
  - 1366x768
  - 1600x900
  - 1920x1080

### SINUMERIK Edge and MindSphere

- A MindSphere account exists.
- SINUMERIK Edge has been commissioned.

Components	Version
SINUMERIK Edge	from V2.2

"From" refers to the specified and all subsequent versions in the line.

- SINUMERIK Edge was onboarded with a MindSphere tenant.
- All of the components for establishing communication between the SINUMERIK control and SINUMERIK Edge are installed and active.
  - Adapter Framework
  - SINUMERIK Adapter
  - Samba Server
  - The MindSphere Analyze MyMachine /Condition application is visible in the tenant.

### SINUMERIK control

The following SINUMERIK Operate versions are supported:

Components	Version
SINUMERIK 840D sl	from 4.5 SP4
	from 4.7 SP2 HF1
	from 4.8 SP2
	from 4.92
	from 4.93

"From" refers to the specified and all subsequent versions in the line.



#### Software option

To measure quadrant errors, you require option "Polynomial interpolation" (6FC5800-0AM18-0YB0)

**Software option**

To determine the frequency response using measuring function "Auto Servo Tuning" (AST) on the SINUMERIK control, you require option "AST CALL BY PART PROG" (6FC5800-0AS10-0YB0)

Activate option "AST CALL BY PART PROG" and configure function "Auto Servo Tuning" using SINUMERIK-Operate.

Additional information is provided in Chapter: Configuring Auto Servo Tuning using SINUMERIK Operate (Page 31)

**Installing Google Chrome**

Google Chrome must be installed on the PCU/IPC if the "Integrating Analyze MyMachine / Condition in a SINUMERIK control system (Page 26)" functionality is to be used.

- Load the Google Chrome offline installer and transfer it to a USB flash drive.
- Open the installation file in the SINUMERIK control, and follow the installation instructions.

**Additional information** on processing files in the SINUMERIK control is provided in the Commissioning Manual Base Software and Operating Software.

**Operating PC**

An Internet browser has been installed. The use of Google Chrome, version V84.x or higher, is recommended.

## 2.2 Constraints

### Invalid measurement results

**Description**

If measurements are performed on a SINUMERIK control using SINUMERIK Operate Version 4.5.x, invalid measurement results for measurement groups will sporadically occur.

**Remedy**

No remedy possible.

### Loss of input data

**Description**

If you click on "Back" while setting up a measurement in the browser, the data already entered is lost.

**Remedy**

No remedy possible.

### Changing the machine model

**Description**

The machine model was changed in SINUMERIK with reference to axis settings or other axis-relevant machine configurations on the SINUMERIK.

**Remedy**

Restart Analyze MyMachine /Condition.

### Several NC programs on the SINUMERIK control

**Description**

2 NC programs were simultaneously generated on the SINUMERIK Edge network drive. The same measurement is available twice on the SINUMERIK control.

**Remedy**

Do not allow the NC program to run with a content of 0 byte.

No additional remedy is possible.

### Buttons not visible

**Description**

In rare cases, the buttons in the "Basic Configuration" tab of the "Configure Measurement" window are not visible because they are covered by the footer.

**Remedy**

Press the <CTRL> + <F5> keys. The window is reloaded.

Notice: All changes have to be entered again.

**Automatic update of the "Traffic light view"**

**Description**

After installing or restarting the system, the automatic update of the "Traffic light view" does not function.

**Remedy**

Delete the data from your browser cache.

**The user interface does not respond**

**Description**

The user interface of Analyze MyMachine /Condition does not respond as the application has crashed.

**Remedy**

1. Open the MindSphere application Manage MySINUMERIK Edge App Management.
2. Restart Analyze MyMachine /Condition.





# Installation

## 3.1 Installing components

### Procedure

Install the following applications for Analyze MyMachine /Condition from MindSphere to SINUMERIK Edge:

Application name: analyzemymachinecondition

Version: 2.1.0

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#### Note

##### License fees

If you reinstall the Edge application of Analyze MyMachine /Condition on a re-onboarded asset for which you have already paid for a single license, please contact your local Siemens sales office to ensure that the fees are not charged twice.

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**Further information** about SINUMERIK Edge is provided in:

- Industrial Edge User Documentation
- MindSphere (<https://siemens.mindsphere.io/en>)

### Software update

If you perform a software update for the Edge application of Analyze MyMachine /Condition from Version 1.1. to Version 2.0 or higher, the following configuration steps are necessary:

- Update the SGUD variable.  
Channel-specific variable SGUD (Page 24)
- Update the application configuration.  
Configuring the SINUMERIK Edge Application (Page 19)
- Update the SINUMERIK Adapter HF data configuration from MindSphere Manage MySinumerik Edge /App Management Application to the Analyze MyMachine /Condition application-specific configuration.
- After the software has been updated there are two directories on Samba-Share:
  - analyzemymachine
  - analyzemymachineconditionDirectory "analyzemymachine" is no longer used from Version 2.0.
- Clear your browser cache to update the software user interfaces.

*3.1 Installing components*

# Configuration

## 4.1 Configuring the SINUMERIK Edge Application

If you load the Analyze MyMachine /Condition application to the asset using MindSphere, the SINUMERIK Edge application must be configured before you can use the application.

### Procedure

1. Log into MindSphere and select "App Management".
2. Click on the desired asset.  
A list opens with the installed services of this asset.
3. Click on the small arrow to view the details for "analyzemymachinecondition".
4. Under "Operations", click on the "Edit App Instance Configuration" button.  
"Config Edit" opens.
5. The standard configuration for "axisid=1" can be found under "datasourceConfig → requiredDatasource → 0 → services → subscription-service/v1 → subscriptions → 0 → datapoints".  
Enter the following values for each axis used by Analyze MyMachine /Condition:
  - DES\_POS|[axisId]
  - ENC1\_POS|[axisId]
  - ENC2\_POS|[axisId]
  - TORQUE|[axisId]
 Example: DES\_POS|1
6. For frequency response tests, enter the name of the network drive under "specificConfig".  
As the default "Field : Value" pair of values, "SambaDrive": "//DEV\_5" is stored. Replace value "//DEV\_5" with the value of field "Symbolic" of the network drive, which is connected with the Samba Share of SINUMERIK Edge.
  - For SINUMERIK Version 4.5, use value "Path" of the network drive without the Edge name/ IP address. For example, path = "//192.168.214.249/Share" > "//Share".
  - For SINUMERIK Version 4.7 and higher, use network drive "Share name". For example, Share name = "Share" > "//Share"

**You will find further information** on configuration of the network drive in SINUMERIK Operate in Chapter Configuring file sharing between SINUMERIK Edge and the SINUMERIK control (Page 21).
7. Press the "Save" button to save the changes.

## 4.2 Configuring the SINUMERIK Adapter Service

If you load the Analyze MyMachine /Condition application to the asset using MindSphere, the SINUMERIK Adapter Service must be configured before you use the application.

### Procedure

1. Log into MindSphere and select "App Management".
2. Click on the desired asset.  
A list opens with the installed services of this asset.
3. Click on the small arrow to view the details for "sinumerikadapter".



4. Under "Operations", click on the "Edit App Instance Configuration" button.  
"Config Edit" opens.
5. Enter the NCU serial number under "specificConfig → serialNumber".
6. Press the "Save" button to save the changes.

### Locating the NCU serial number

1. In SINUMERIK Operate, press key <MENU SELECT> or <F10>.
2. Select the "Setup" operating area.
3. Press softkey "Mach. data".
4. Press softkey "General MD".
5. Check MD18030[0] \$MN\_HW\_SERIAL\_NUMBER in the list of parameters.

## 4.3 Configuring file sharing between SINUMERIK Edge and the SINUMERIK control

Analyze MyMachine/Condition uses NC program code to perform measurements. As soon as a measurement is saved, Analyze MyMachine/Condition generates an NC program and saves it to the file system of SINUMERIK Edge. To perform this measurement, the NC program must be transferred to the file system of the SINUMERIK control.

To do this, configure file sharing between SINUMERIK Edge and the SINUMERIK control as follows:

1. Install and configure the "sambaserver" file sharing application on the SINUMERIK Edge.
2. Configure a network drive for the SINUMERIK control and connect the drive to the SINUMERIK Edge file sharing system.

### Configuring a file sharing application on the SINUMERIK Edge

1. Log into MindSphere and select "App Management".
2. Click on the desired asset.  
A list opens with the installed services of this asset.
3. If the "sambaserver" application is not installed, install this application.  
**You will find further information** on installing Edge applications in the Industrial Edge user manual.
4. Click the small arrow to view the details for "sambaserver".

App Name	Release Name	Version	Description	Operations
adapterframework	Test-candidate-EdgeV2.0	3.1.0-249	Test candidate EdgeV2.0 PRELIMINARY - ONLY FOR INTERNAL USAGE!	Install Remove
analyzemachinecondition	analyzemachinecondition- 1.0.0-119	1.0.0-119	Analyze My Machine /Condition	Install Remove
sambaserver	SambaServer-Edge-V1.2	V2.1.0	SambaServer component for sharing files between EdgeBox and SINUMERIK	Install Remove

Instance Name	Status	Cloud Upload	Operations
sambaserver.SambaServer-Edge-V1.2	RUNNING		

5. Under "Operations", click on the "Edit App Instance Configuration" button.  
"Config Edit" opens.

4.3 Configuring file sharing between SINUMERIK Edge and the SINUMERIK control

- The user name and password are stored under the entry "specificConfig → sambaCredentials".  
Use this logon data to configure the logical drive in SINUMERIK Operate.

**Config Edit**



- Click the "Save" button to save your changes.

**Configuring the network drive in SINUMERIK Operate**

The following parameters are used for the network drive:

Entry	Description
Type	NW Windows
User name and password	The logon data for the file system of SINUMERIK Edge are defined in the "sambaserver" application.
SINUMERIK 4.5	
Path	The path comprises the IP address of SINUMERIK Edge and the share name of the directory. The following entry is used as default: //192.168.214.249/share The IP address can deviate from this depending on the settings in the Mind-Sphere Asset Manager.
SINUMERIK 4.7 and higher	
Computer name	The default setting of the IP address of the SINUMERIK Edge is as follows: 192.168.214.249 The IP address can deviate from this depending on the settings in the Mind-Sphere Asset Manager.
Share name	share
Softkey	
Access level	Select the axis level so that the machine operator can access the drive. The following entry is used as default: "Key switch 0"
Softkey text	Softkey labeling, e.g. "AMM/C"

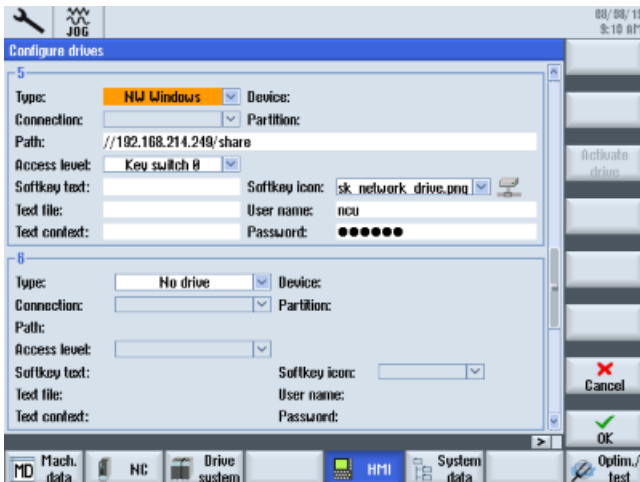
**Procedure**

- Start SINUMERIK Operate.
- Press the "Setup" softkey.

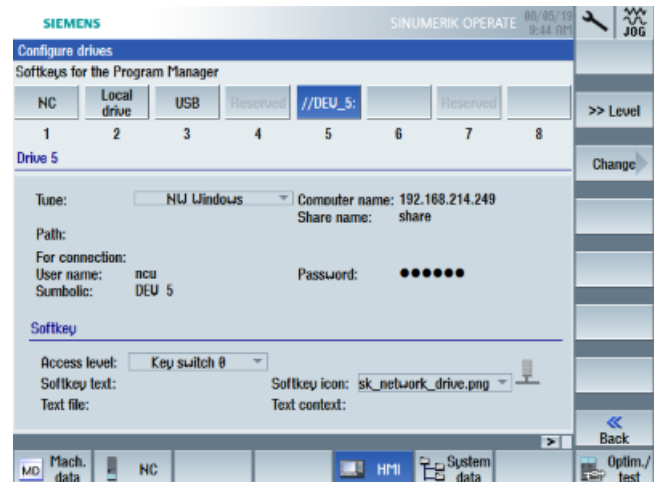
## 4.3 Configuring file sharing between SINUMERIK Edge and the SINUMERIK control

3. Press the "HMI" and "Log. drive" softkeys.  
The "Set Up Drives" window opens.
4. Select a free softkey.
5. Complete the entries.

## SINUMERIK 4.5



## SINUMERIK 4.7 and higher



## Further information

Additional information on configuring the softkeys and the logical drives is provided in the Universal Operating Manual.

## 4.4 Channel-specific variable SGUD

The Analyze MyMachine /Condition application requires a channel-specific SGUD variable. It is created in the control system in SINUMERIK Operate.

### Procedure

1. Press <MENU SELECT>.
2. Select the "Setup" operating area.
3. Press the "System data" softkey.
4. In the data tree, select the "NC data" folder and then open the "Definitions" folder.
5. Select file "SGUD" file
  - OR -
  - press the "New" softkey.
    - The "Any New Program" window opens.
    - Select the entry "Definition DEF" from the "Type" drop-down list:
    - Select the entry "SGUD" from the "Name" drop-down list:
    - Press the "OK" softkey.
6. Select the file.
7. Double-click the file.
  - OR -
  - Press the "Open" softkey.
8. Enter the following line:

```
DEF CHAN INT _AMMC_TRIGGER_PARAM=8
M30
```
9. Press the "Exit" softkey to close the editor.
10. Press the "Activate" softkey to activate the user variable.



## 4.5 Configuring the SINUMERIK control system for the execution of external measurement programs

An automatically generated NC parts program cannot be executed on the SINUMERIK control system if the size of the program exceeds the size of the reserved program memory. In particular, NC part programs created for measuring groups with inputs for secure positions often exceed the maximum size.

### Procedure

The following settings should be made to avoid this error:

1. Change the value of machine data MD18360 \$MN\_MM\_EXT\_PROG\_BUFFER\_SIZE, to increase the size of the FIPO buffer.  
The value must be greater than the size of the measurement program.
2. Increase the value of machine data MD18362 \$MN\_MM\_EXT\_PROG\_NUM to run multi-channel measuring programs.
3. Use the software option "Execution from external storage (EES)".
4. Shift the measurement program into the NC memory.

### Finding machine data MD18360

1. In SINUMERIK Operate, press key <MENU SELECT> or <F10>.
2. Select the "Setup" operating area.
3. Press softkey "Mach. data".
4. Press softkey "General MD".
5. Check MD18360 \$MN\_MM\_EXT\_PROG\_BUFFER\_SIZE in the list of machine data.

## 4.6 Integrating Analyze MyMachine /Condition in a SINUMERIK control system

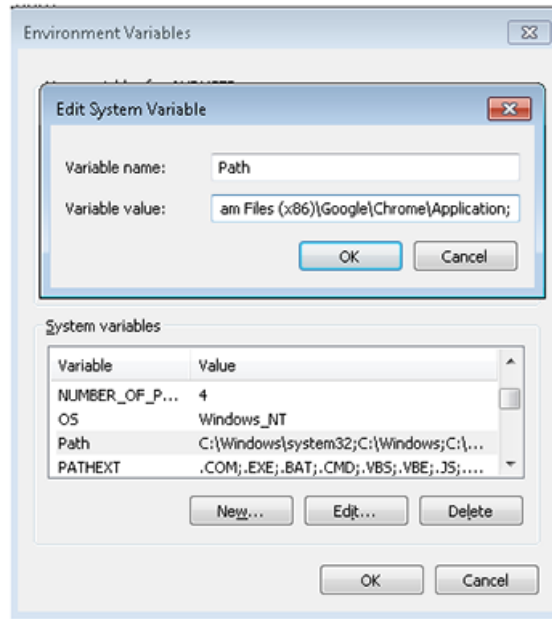
To display the machine operator view in SINUMERIK Operate ("Traffic light function"), an operating system-specific environment variable must be added to the window system of the PCU/IPC in order to allow Google Chrome to be displayed in SINUMERIK Operate.

## Procedure

1. Ensure that environment variable "Path" contains the following path for Google Chrome. If the path for Google Chrome has not been created, insert the path at the end of the "Path" variable:

C:\Program Files (x86)\Google\Chrome\Application;

Be careful not to delete any paths that have already been created in the "Path" variable.



2. To create a softkey for Analyze MyMachine /Condition in SINUMERIK Operate, you must extend the following files to include the specified lines. If they do not exist, then generate the files.

**Further information** on processing files in the SINUMERIK control system is provided in the Commissioning Manual SINUMERIK 840 D sl Base Software and Operating Software.

### Note

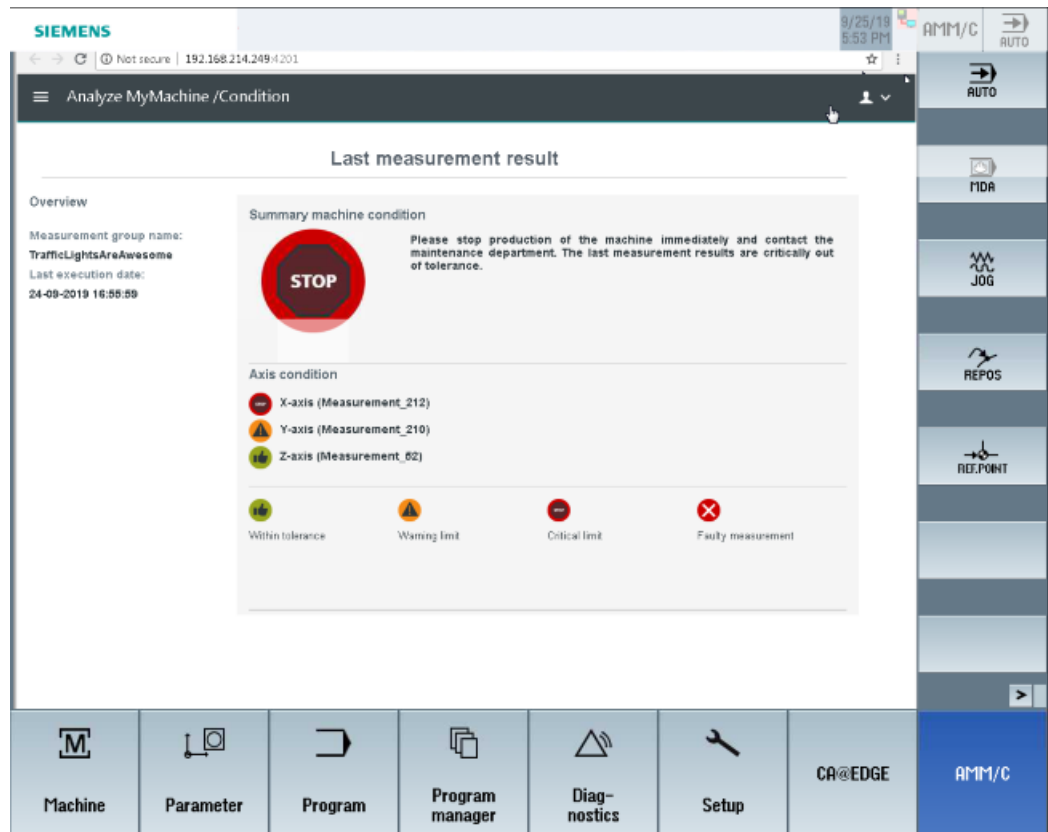
To obtain a better overview, [new line] is specified if a line break should be made in the code.

```
- C:\Program Files (x86)\Siemens\MotionControl\oem\sinumerik\hmi
  \cfg\systemconfiguration.ini:
  [processes]
  PROC600= process:=ChromeOEM, cmdline:="chrome.exe http://
  192.168.214.249:4201", oemframe:=true, deferred:=true,
  windowname:="AnalyzeMyMachineCondition",
  classname:="Chrome_WidgetWin_1" [New line]
  [areas] [New line]
  AREA600= name:=AMM/C, process:=ChromeOEM,
  panel:=SlHdStdHeaderPanel [New line]
```

4.6 Integrating Analyze MyMachine /Condition in a SINUMERIK control system

```
- C:\Program Files (x86)\Siemens\MotionControl\compat\user  
  \OEMFRAME.ini:  
  [chrome]  
  nSwitchToTaskAfterTermination = -2  
  nSecondsToFindWindow=10  
  fForceTaskFocus=1
```

3. Restart the SINUMERIK control system.
4. Open SINUMERIK Operate, and check whether softkey "AMM/C" is displayed in the operating area menu.
5. When commissioning the system for the first time, shift the Google Chrome window using the mouse so that the Chrome window does not overlap the vertical and horizontal softkey bars.
6. Press key <F10> to exit Analyze MyMachine /Condition.



Possible error causes

Check the following if Analyze MyMachine /Condition was not successfully integrated in SINUMERIK Operate:

- Carefully ensure that another program is not using the process number and area number. In the example: PROC600 and AREA600
- Check the window name using the "FindWindow" Window tool on the PCU. The name could differ from that of the configuration.

## 4.7 Defining users and roles (SINUMERIK Edge application)

To work with the SINUMERIK Edge application Analyze MyMachine /Condition, create the following user groups in the "miniweb" administration environment.

### User groups and authorizations

User group	Authorizations
OEMMachineCommissioningEngineer	Can log on at the operating PC Can create, edit and delete a series of measurements
OEMServiceEngineer	Can log on at the operating PC Can view a series of measurements Is not authorized to edit a series of measurements

### Procedure

1. Enter the following address in the browser:  
`https://<ip-address-of-edgebox>:5443`  
Refer to the following manual for the necessary login data: SINUMERIK Edge, Industrial Edge, System Manual
2. Navigate to "Security > User manager".
3. Generate the user groups.
4. Create one or more users.
5. Assign the users to the required user group.

## 4.8 Defining users and roles (MindSphere application)

The following roles are available in the MindSphere application Analyze My Machine /Condition:

- Standard users
  - ammcondition
- Administrator
  - ammcondition

You process/edit users, roles and rights in the MindSphere application "MindSphere Settings".

**Further information** can be found at: MindSphere documentation (<https://siemens.mindsphere.io/en/docs/mindaccess.html>)

---

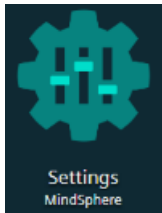
### Note

For security reasons it is recommended that you use Multi Factor Authentication for your tenant.

---

### Procedure

1. The MindSphere launch pad is open.
2. Click the MindSphere application "MindSphere Settings".



3. Create or edit the user.
4. Assign the "ammcondition" role.

## 4.9 Configuring Auto Servo Tuning using SINUMERIK Operate

You have the possibility of testing the "Frequency response" characteristic value Analyze MyMachine /Condition application.

Use the SINUMERIK Operate operating software to configure the Auto Servo Tuning.

### Requirement



#### Software option

To determine the frequency response using measuring function "Auto Servo Tuning" (AST) on the SINUMERIK control, you require option "AST CALL BY PART PROG" (6FC5800-0AS10-0YB0)

### Procedure

1. Set the license for AUTO-Servo-Tuning:
  - Select the "Setup" operating area.
  - Press the menu forward key.
  - Press the "Licenses" softkey.
  - Press the "All options" softkey.
  - Activate the checkbox for option "AST CALL BY PART PROG".
2. Set machine data MD 19334 \$ON\_SYSTEM\_FUNCTION\_MASK to value "400H".
3. In SINUMERIK Operate, open menu "Auto Servo Tuning options".
  - Select the "Setup" operating area.
  - Press softkey "Optim. Test".
  - Press softkey "Auto Servo Tuning".
4. Configure the Auto Servo Tuning using AST strategy template 109 "109. Measure and validate existing settings" for each axis for which the frequency response test is performed in Analyze MyMachine /Condition.  
**Additional information** on how to use AST is provided in the AST Operating Manual.
5. Execute the measurement for one axis using strategy template number 109 in the menu "Auto Servo Tuning".
6. Click on "Save to file" to save the strategy file in a directory.
7. Enter the path of this file for the relevant axis in Analyze MyMachine /Condition in window "Axis settings".
8. Repeat the operation for each axis being used. Save each strategy file in a separate directory.





# Appendix

## A.1 List of abbreviations

Admin	Administrator (user role)
AMM /C	Analyze MyMachine /Condition
AST	Auto Servo Tuning: Automatic servo tuning
CNC	Computerized Numerical Control:
COM	Communication
DIR	Directory:
FAQ	Frequently Asked Questions
h	Hour
HTTP	Hypertext Transfer Protocol
HTTPS	HyperText Transfer Protocol Secure,
IB	Commissioning engineer (user role)
ID	Identification number
IE	Internet Explorer
IFC	Interface Client
IoT	Internet of Things
IPC	Industrial PC
MB	Megabyte
MFA	Multi Factor Authentication
MLFB	Machine-Readable Product Code
MMM	Manage MyMachines
MMM /R	Manage MyMachines /Remote
MO	Machine operator
MSTT	Machine control panel
NC	Numerical Control: Numerical control
NCU	Numerical Control Unit: NC hardware unit
OEM	Original Equipment Manufacturer
OP	Operation Panel: Operating equipment
PC	Personal Computer
PCU	PC Unit: Computer unit
PLC	Programmable Logic Control: Programmable Logic Controller
SE	Service engineer
SI	SINUMERIK Integrate
SK	Softkey
SW	Software
TPM	Trusted Plattform Module: Chips for safety functions
URL	Uniform Resource Locator, einheitlicher Ressourcenzeiger

## Appendix

### A.1 List of abbreviations

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UTC	Universal Time Coordinated, coordinated global time
VNC	Virtual Network Computing

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