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Home

Library SIMATIC Cartesian Portal

Changelog

<https://support.industry.siemens.com/cs/ww/en/view/109815631>

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1 Introduction

This document tracks the innovations of the current Library SIMATIC Cartesian Portal (former SIMATIC Kinematics Operate) version compared to its previous versions. Tracking starts with SIMATIC Kinematics Operate version 1.0.5.

2 Library SIMATIC Kinematics Operate V1.0

2.1 General Information

The library SIMATIC Kinematics Operate V1.0.x can be utilized with TIA Portal V15; earlier versions are not supported anymore.

2.2 Changelog V1.0.5

Changes:

- The number of failed login attempts is raised from 3 to 9. If this number is exceeded the user is moved into the “unauthorized” group and loses all access rights.
- The “Stop robot”-command now stops all axes with the maximum jerk of each axis instead of the default jerk.
- The dynamics factor of an sPTP command scales the velocity, acceleration, deceleration and jerk onefold instead of the velocity onefold and the acceleration and deceleration squared.

Fixes:

- Relative positioning of a single axis now takes the sign of the distance into account.
- Blending works correctly now when blending into a command with a different dynamics factor.
- The user access level is now correctly synchronized with the HMI upon restarting the PLC.
- If a brake is opened in the “Jog & Teach”-screen and the user switches the axis, the brake of that axes is no longer automatically opened.
- The “Stop robot”-command is now correctly called for all axes when stopping the program execution while the kinematics is in a blending part of a motion.
- Stopping the program execution and raising the override no longer leads to an unexpected kinematics motion with the next start of the program.
- Raising the override during a blending motion now adapts the dynamics of the previous command correctly.
- For the synchronization of the axes the jerk is now correctly converted for all available units.

3 Library SIMATIC Cartesian Portal V1.0

3.1 General Information

The library was renamed from SIMATIC Kinematics Operate to SIMATIC Cartesian Portal. The library SIMATIC Cartesian Portal V1.0.x can be utilized with TIA Portal V17; earlier versions are not supported anymore.

3.2 Changelog V1.0

Features:

- Multiple channels each with an optional kinematics and additional axes can be configured.
- The number of additional axes is now separated from the number of kinematics axes. Up to 25 additional axes in addition to up to 6 kinematics axes are possible per channel.
- The operation modes “Full operation”, “No operation”, “Automatic” and “Manual” have been added and are indicated in the headbar of the homescreen.
- A motion enable button can be used in combination with the “Manual” operation mode and optionally the “Full operation” mode when manually controlling the axes.
- The project size and the user levels can be configured via global constants.
- The “LSCP_Main” block offers an external acknowledge to acknowledge all errors.
- The user administration indicates an incorrect password or lost user rights.
- User “useradmin” added. This user can change the user administration and save it to the HMI or load a saved administration.
- The HMI language “Chinese” was added.
- The number of navigation levels can be configured with a global constant.
- The names of the tabs of the navigation can be configured with a textlist that is language dependent.
- The screen numbers of the tabs of the navigation bar can be configured via global constants.
- Zone collisions must be acknowledged before the kinematics can be moved again.
- The home screen offers up to 9 user-defined buttons. The events and the appearance can be configured in the interface of the faceplate.
- Pause, continue, and cycle stop are available as new default conditions and buttons in the home screen.
- Pause, stop, and cycle stop are available as new buttons in the headbar.
- The program execution can be controlled and monitored via the default conditions or the function keys of the HMI.
- When the program execution is paused the program can be edited.
- The start and stop routine can now be freely programmed.
- When the program is empty a default starting and stopping routine that is kinematics type dependent can be created automatically.

- New command “Stop kinematics” with deceleration “current”, “maximum” and “emergency”.
- The target position of the kinematics can be a combination of a point and variables.
- When referencing a point as the target position for the kinematics not all axes have to be moved.
- New command “Move single axis to target position specified by a variable”.
- New command “Stop single axis/all axes” with default or maximum dynamics.
- New command “Power On single axis/all axes” with position control setting.
- New command “Power Off single axis/all axes”.
- New command “Wait for output”.
- New command “Wait for time specified by a variable”.
- New command “Condition jump with output”.
- The position control setting of the “Move single axis” command can be changed.
- The command transition “Immediately” was added for “Set” commands to enable multiple sets in one PLC cycle.
- In the “Position single axis” with the absolute option the direction of modulo axes can be specified.
- The “keep, invert, set or reset” option was added to the “Wait for condition”, “Wait for output”, “Conditional jump with condition” and “Conditional jump with output” commands.
- A partial load of data is now possible with the program manager.
- Save and load of the program data is now possible with SIMATIC WinCC Runtime (for PC systems and WinCC Simulation).
- The “OR” logic was added to the condition and output logic configuration.
- The “Only set” logic was added to the condition and output logic configuration.
- In the kinematics type selection, the kinematics can be disabled, or a valid kinematics type can be selected.
- The general parameters tab was added. Axes can be enabled/disabled, the simulation mode can be changed, a motor holding brake can be configured and default values for jogging can be assigned.
- User-defined messages can be created that are connected to a condition.
- New error dashboard in the diagnostics tab that shows program, zone and kinematics errors and offers an acknowledge sequence for all errors.
- The error state of the zone can be viewed and acknowledged in the diagnostics.
- The error state and error messages of the program can be viewed and acknowledged in the diagnostics.
- The state of the program can be viewed in the diagnostics.
- The alarm messages and state of the system are shown in the diagnostics.

Changes:

- The program wizard to create a simple pick and place routine was removed.
- The user interface is updated to look and feel like the SKI V2.0.

- The “Kinematics type” and “Zones” are now in the tab “Kinematics” in the configuration.
- The language selection and the “Stop runtime” are now in the tab “HMI setting” in the configuration.
- The “Dynamics”, “Limits” and “General parameter” are now in the tab “Axes” in the configuration.
- “Inputs”, “Outputs”, “Variables” and “Conditions” are now in the tab “In-/outputs variables” in the diagnostics.
- The “ErrorWord” and “StatusWord” are now in the tab “Error” and “State” respectively tab in the diagnostics.
- Only used axis TOs must be created and assigned.
- The “faceplateNo” is renamed to “screenNumber”.
- A target position of the kinematics inside a blocked zone no longer results in a zone collision error in the program execution.
- The state of the motor holding brake is no longer shown.
- The point table, the manual control and the home screen share one override per channel.
- The “stopDeceleration” of the axis configuration in the “GlobalProjectData” was removed since the stop deceleration can be programmed at the new “Stop kinematics” command.
- The available user level constants were reworked.

Fixes:

- Improvements to the sPTP motion execution.

4 Appendix

4.1 Service and support

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4.2 Application support

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4.3 Links and literature

Table 4-1

| No. | Topic |
|-----|--|
| \1\ | Siemens Industry Online Support https://support.industry.siemens.com |
| \2\ | Link to this entry page of this application example https://support.industry.siemens.com/cs/ww/en/view/109815631 |
| \3\ | |

4.4 Change documentation

Table 4-2

| Version | Date | Modifications |
|---------|---------|-----------------------------|
| V1.0 | 03/2022 | First version |
| V2.0 | 05/2023 | Release of SCP version 1.0. |