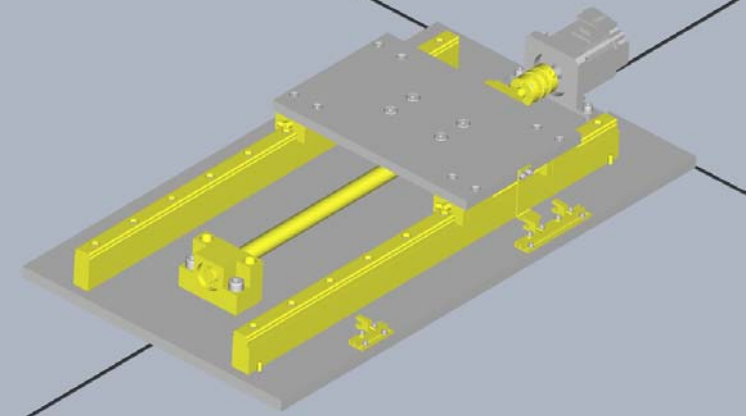
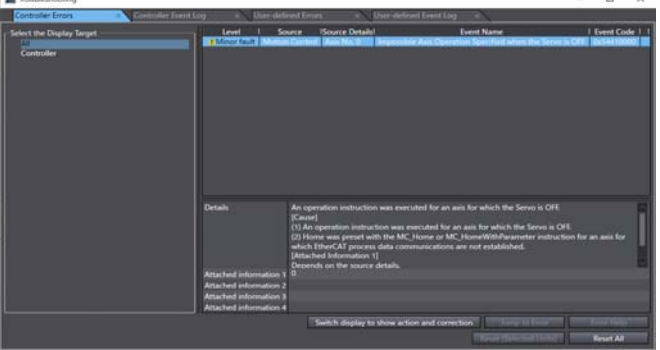


|  |  |                                  |
|--|--|----------------------------------|
| 3D Simulation<br>Sample Program<br>No.04                 | Single axis linear guide   |                                  |
| Basic function   | Makes the device to be ready for operation, and performs homing, jog, and demonstration.   |                                  |
| 3D image   |  <p>CAD data: MISUMI Corporation inCAD Library No.000825 (*)<br/>The CAD data was edited by OMRON. Refer to the Sysmac Studio 3D Simulation Function Operation Manual (W618-E1) for the editing procedures.<br/>(*The component name is not listed in the English website of MISUMI Corporation.)</p>  |                                  |
| File name  | 3DSimulationSample_04_Single_axis_linear_guide_V1_00.smc2  |                                  |
| Applicable model   | Sysmac Studio (64-bit version)   | SYSMAC-SE2xxx Ver.1.40 or higher |
|  | Sysmac Studio 3D Simulation Option   | SYSMAC-SA4xxL-64                 |
| Used language  | Ladder programming   |                                  |
| Used materials and equipment                             | OMRON 1S-series Servo System is used as the motor component in this simulation.  |                                  |
| Function description                                     | <ul style="list-style-type: none"> <li>• When the Execute_Ready variable (Boolean) changes to TRUE, the Servo Drive becomes ready to operate.</li> <li>• When the Execute_Home variable (Boolean) changes to TRUE, the MC_Home instruction is executed to move each axis to its home.</li> <li>• While the following variable (Boolean) is TRUE, the jog operation is performed to move the axis in the specified direction.<br/>Y_Jog_Pos (Boolean): Jogs the Axis Y in the positive direction.<br/>Y_Jog_Neg (Boolean): Jogs the Axis Y in the negative direction.</li> <li>• When the Execute_Demo variable (Boolean) changes to TRUE, a demonstration is performed.</li> </ul> |                                  |
| Mechanical component types provided on the Sysmac Studio | Single Axis Position Control   |                                  |
| Precaution for use                                       | <ul style="list-style-type: none"> <li>• This sample program is specifically prepared for 3D simulation. Do not use this program in actual machine operation.</li> <li>• MISUMI Corporation may not offer all parts in each application design. Available parts can only be purchased separately not as a unit shown in each application design. MISUMI Corporation does not guarantee quality, accuracy, functionality, safety or reliability for the combination of the parts in each application example.</li> </ul>  |                                  |
| Restrictions and others                                  | <ul style="list-style-type: none"> <li>• Error processing is not included in the sample program.<br/>To reset errors, select <b>Troubleshooting</b> from the Tools Menu, then click the <b>Reset All</b> button.</li> </ul>  |                                  |
|  |    |                                  |

Application example

1. Enable Operation: Makes a Servo Drive ready to operate.

[ENG] Enable Operation: Makes a Servo Drive ready to operate.  
[JPN]運転準備：サーボドライバを運転可能状態に切り替えます。

Variable: Execute\_Ready  
[ENG]The Servo Drive becomes ready to operate when the value of this variable changes to TRUE. The ready state is reset when the variable changes to FALSE.  
[JPN]TRUEになると運転可能状態となり、FALSEになると運転可能状態を解除します。

2. Home: Operates the motor to determine home.

[ENG]Home: Operates the motor to determine home.  
[JPN]原点復帰：機械原点をセットします。

Variable: Execute\_Home  
[ENG]The MC\_Home instruction is executed when the value of this variable changes to TRUE.  
[JPN]立ち上がり時に原点復帰命令を開始します。

3. Manual Operation: Jogs an axis according to the specified target velocity.

[JPN]手動運転：指定した目標速度にしたがって、ジョグ送りを行います。

Variable: Y\_Jog\_Pos/Y\_Jog\_Nega  
[ENG]When the value of this variable changes to TRUE, the Axis Y starts moving in the positive/negative direction. When it changes to FALSE, the Axis Y stops moving.  
[JPN]TRUEになると正方向/負方向へ移動を開始します。FALSEになると移動を終了します。

4. Demonstration: Performs demonstration.

[ENG]Demonstration: Performs demonstration  
[JPN]デモ動作：デモ動作を実行します。

Variable: Execute\_Demo  
[ENG]A demonstration is performed when the value of this variable changes to TRUE.  
[JPN]立ち上がり時にデモ動作を開始します。

(Additional information)

To confirm 3D operation, select **3D Visualizer** from the View menu. You can confirm the operation on the 3D Visualizer.

Related manuals

Sysmac Studio Version 1 Operation Manual (W504-E1)  
Sysmac Studio 3D Simulation Function Operation Manual (W618-E1)

## ■ Variable Tables

### Input Variables

| Meaning                          | Name          | Data type | Default | Range         | Description   |
|----------------------------------|---------------|-----------|---------|---------------|---|
| Enable Operation                 | Execute_Ready | BOOL      |         | TRUE or FALSE | The Servo Drive becomes ready to operate when the value of this variable changes to TRUE. The ready state is reset when the variable changes to FALSE.  |
| Home                             | Execute_Home  | BOOL      |         | TRUE or FALSE | The MC_Home instruction is executed when the value of this variable changes to TRUE.  |
| Jog Axis Y in Positive Direction | Y_Jog_Pos     | BOOL      |         | TRUE or FALSE | When the value of this variable changes to TRUE, the Axis Y starts moving in the positive direction. When it changes to FALSE, the Axis Y stops moving. |
| Jog Axis Y in Negative Direction | Y_Jog_Nega    | BOOL      |         | TRUE or FALSE | When the value of this variable changes to TRUE, the Axis Y starts moving in the negative direction. When it changes to FALSE, the Axis Y stops moving. |
| Demonstration                    | Execute_Demo  | BOOL      |         | TRUE or FALSE | A demonstration is performed when the value of this variable changes to TRUE.   |

### Output Variables

| Meaning | Name | Data type | Range | Description |
|---------|------|-----------|-------|-------------|
|         |      |           |       |             |

## ■ Version History

| Version | Date      | Contents             |
|---------|-----------|----------------------|
| 1.00    | July 2020 | Original production. |

## ■ Note

This document explains the function of the sample programs specifically prepared for 3D simulation.

It does not provide information of restrictions on the use of Units and Components or combination of them. For actual applications, make sure to read the operation manuals of the applicable product

## ■ Copyright and Trademark

All rights reserved. No part of this publication may be reproduced, stored in a retrieval system, or transmitted, in any form, or by any means, mechanical, electronic, photocopying, recording, or otherwise, without the prior written permission of OMRON. No patent liability is assumed with respect to the use of the information contained herein. Moreover, because OMRON is constantly striving to improve its high-quality products, the information contained in this manual is subject to change without notice.

Microsoft product screen shot(s) reprinted with permission from Microsoft Corporation.

The CAD data in inCAD Library is used with permission from MISUMI Corporation.

Copyright of any of information in CAD data belongs to MISUMI Corporation or its respective manufacturer.