# SIEMENS

# "Travel to fixed stop" function in EPos mode

## SINAMICS V90

This entry is from the Siemens Industry Online Support. The general terms of use (http://www.siemens.com/terms_of_use) apply.

**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 only form one element of such a concept.
Customer is responsible to prevent unauthorized access to its plants, systems, machines and networks. Systems, machines and components should only be connected to the enterprise network or the internet if and to the extent necessary and with appropriate security measures (e.g. use of firewalls and network segmentation) in place.
Additionally, Siemens' guidance on appropriate security measures should be taken into account. For more information about industrial security, please visit http://www.siemens.com/industrialsecurity.

Siemens' products and solutions undergo continuous development to make them more secure. Siemens strongly recommends to apply product updates as soon as available and to always use the latest product versions. Use of product versions that are no longer supported, and failure to apply 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 http://www.siemens.com/industrialsecurity.

# Table of content

# 1 Introduction

## 1.1 Preliminary remark

This frequently asked question (FAQ) shows how to use the function of "travel to fixed stop" when SINAMICS V90 PN is working in EPos traversing block mode.

## 1.2 Function description

The function of "Travel to fixed stop" can be used to move a motor to a fixed stop at a specified torque without a fault being signaled. When the stop is reached, the specified torque is built up and remains applied.

The desired torque de-rating is brought about by scaling the upper torque limit and the lower torque limit.

Figure 1-1 Travel to fixed stop
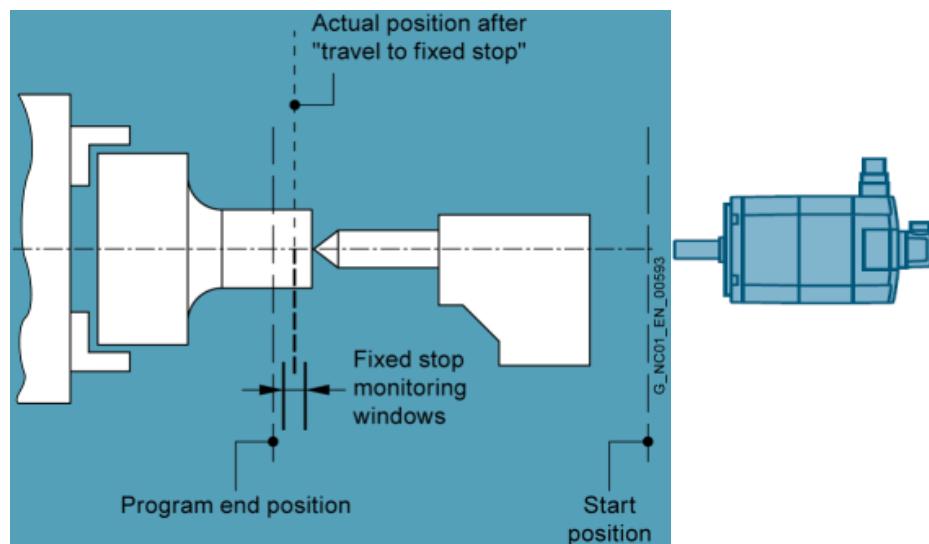
Figure 1-2 Signal chart of "travel to fixed stop"
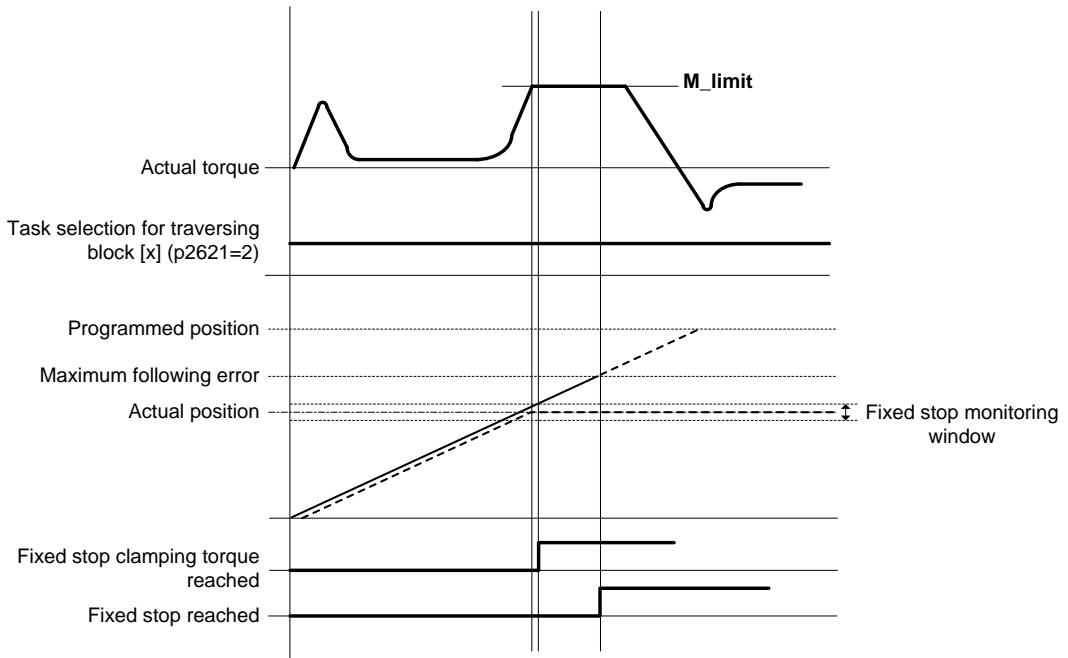
## 1.3 The "travel to fixed stop" function in EPos traversing block mode

**Task selection of the "travel to fixed stop"**

When SINAMICS V90 PN is working in the EPos traversing block mode, the function of "travel to fixed stop" is selected by setting drive parameter p2621:

Table 1-1 Description of parameter p2621

| Parameter number | Value | Decription |
|---|---|---|
| p2621[0…15] | 1 (default) | POSITIONING |
| | 2 | FIXED STOP |
| | 3 | ENDLESS_POS |
| | 4 | ENDLESS_NEG |
| | 5 | WAITING |
| | 6 | GOTO |
| | 7 | SET_O |
| | 8 | RESET_O |
| | 9 | JERK |

When V-ASSISTANT is used, you can configure the function of "travel to fixed stop" as follows:

Figure 1-3 Configuration of parameter p2621 via SINAMICS V-ASSISTANT
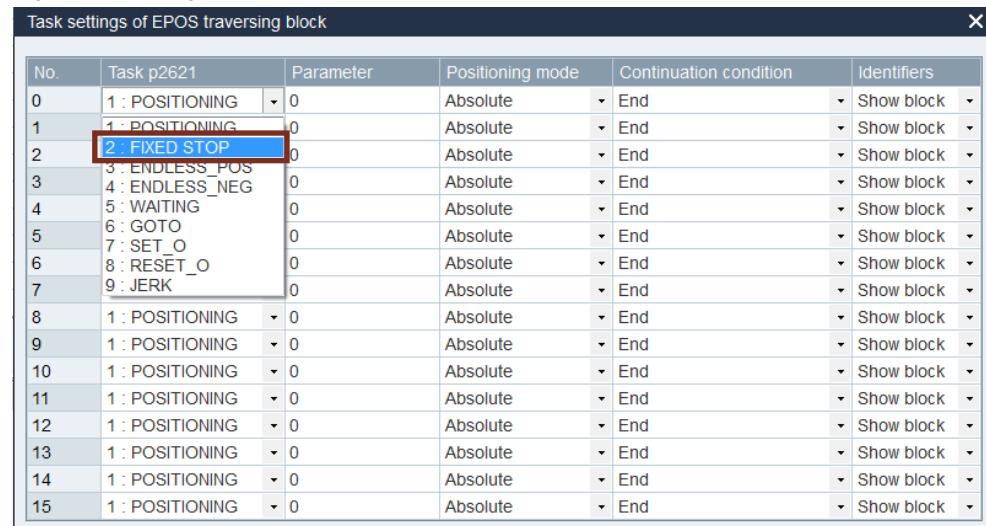
**Configuration of torque limit**

The torque limit of the "travel to fixed stop" function is configured by setting drive parameter p2622:

Table 1-2 Description of parameter p2622

| Parameter number | Decription |
|---|---|
| p2622[0…15] | **FIXED STOP:** Clamping torque and clamping force (rotary 0...65536 [0.01 Nm]) |
| | **WAIT:** Delay time [ms] |
| | **GOTO:** Block number |
| | **SET_O:** 1, 2 or 3 - set direct output 1, 2 or 3 (both) |
| | **RESET_O:** 1, 2 or 3 - set direct output 1, 2 or 3 (both) |
| | **JERK:** 0 - de-activate, 1 - activate |

When SINAMICS V-ASSISTANT is used, you can configure parameter p2622 as follows:

Figure 1-4 Configuration of parameter p2622 via SINAMICS V-ASSISTANT
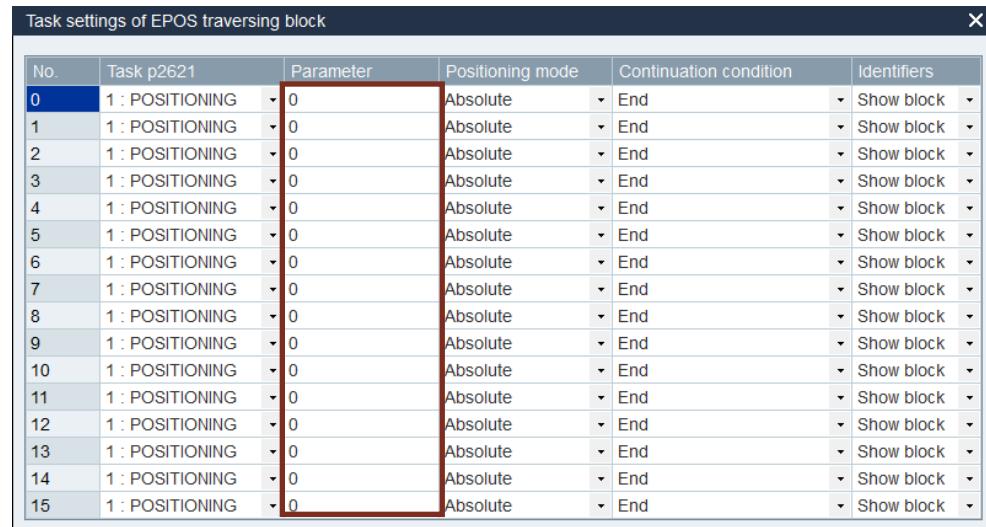
# 2 Function Test

**Prerequisite**

Hardware:

- 0.4kW SINAMICS V90 PN: 6SL3210-5FB10-4UF1
- 0.4kW Low inertia motor: 1FL6034-2AF21-1AG1
- SIMATIC S7-1217C: 6ES7217-1AG40-0XB0

**Operating sequence**

Table 2-1 Function test

| Step No. | Description |
|---|---|
| 1. | Configure the PLC and SINAMICS V90 PN drive. Select the telegram 111. |
| 2. | Set the target position of traversing block 0 to be 100000.  |
| 3. | Configure traversing task to be "FIXED STOP":  |
| 4. | Set the torque limit to be 0.1Nm:  |
| 5. | When SINAMICS V90 PN is working in EPos traversing block mode, referencing must be performed before moving the axis.<br>Configure referencing mode to be "**Signal REF**" and perform referencing with SINA_POS (FB284):  |
| 6. | After performing referencing successfully, trigger traversing block 0. |
| 7. | Brake the motor with an external brake. |
| 8. | Trace the torque output and actual speed |
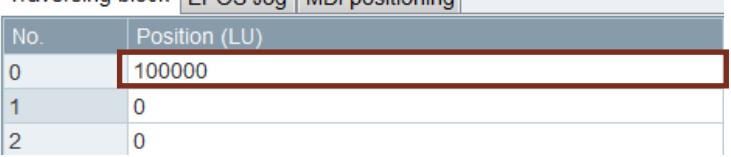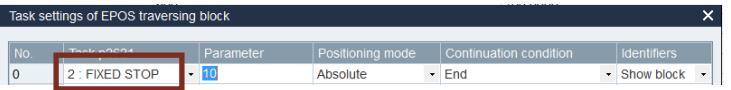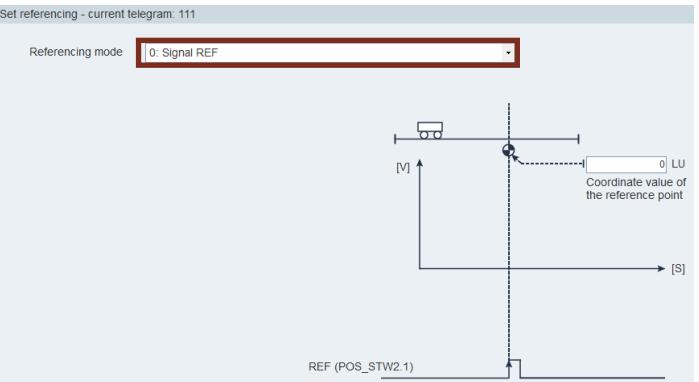
The record of the actual torque output after a fixed stop is shown as follows, which is 0.1Nm (**r80**):

Figure 2-1 Actual torque at a fixed stop
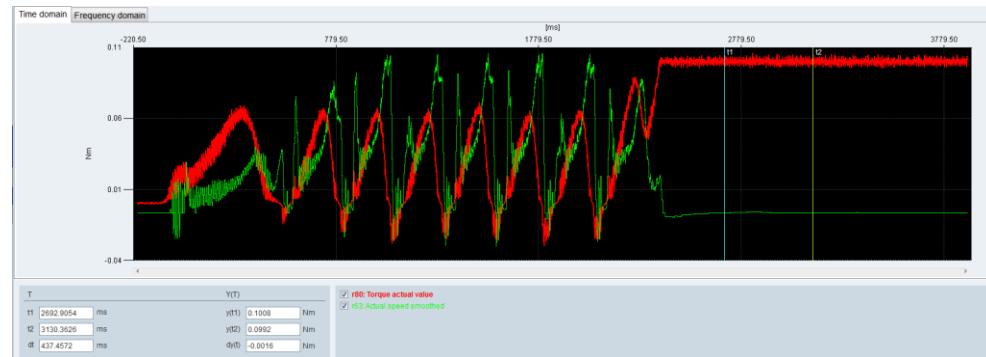


# 3 Contact

Siemens Ltd., China

DF M3-BF GMC

No. 18 Siemens Road
Jiangning Development Zone

Nanjing, 211100
China
mailto: mc_gmc_mp_asia.cn@siemens.com

# 4 History

Table 7-1

| Version | Date | Modifications |
|---------|---------|----------------|
| V1.0 | 01/2017 | First version |
| V2.0 | 02/2017 | Second version |
| | | |