

INTRODUCTION

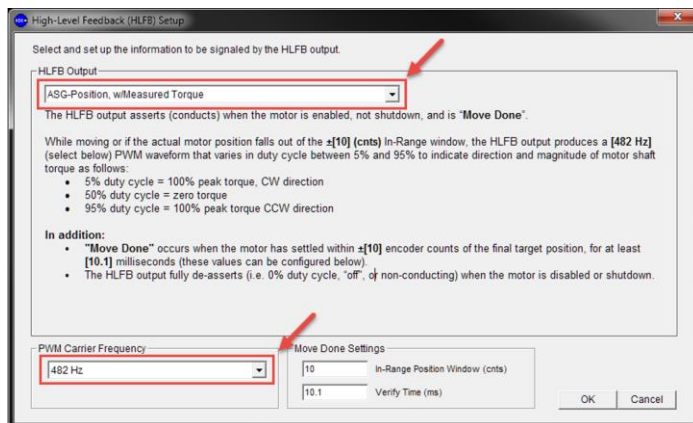
The CompactLogix SD Homing program is an example project designed for use with Teknic's ClearLink and a ClearPath-SD integrated servo motor. This example can be used to demonstrate either hardstop homing or sensor homing. This document provides detailed information about the configuration required for each type of homing.

Configuring a ClearPath-SD Servo

The ClearPath motor settings must be set using the MSP software to enable all features of ClearLink's Step and Direction control.

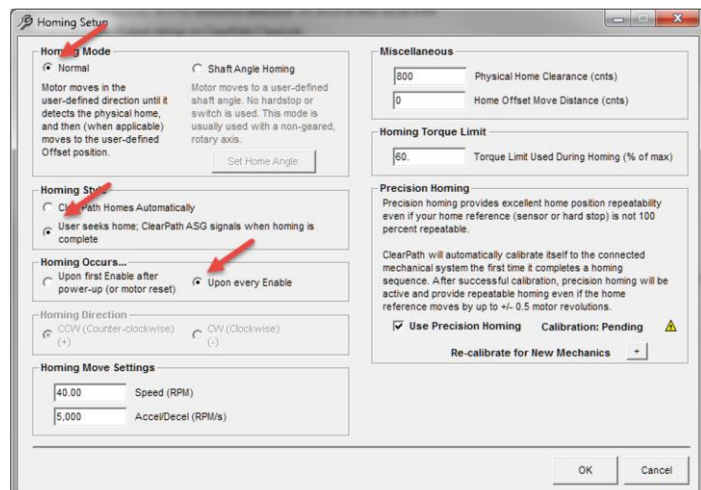
Note: this section is not intended to be a comprehensive setup guide for ClearPath. It will only cover the specific settings recommended for ClearLink to correctly interface with a ClearPath-SD servo. Refer to the user manual of your ClearPath series for additional configuration and setup information.

1. Configure ClearPath to use the correct High-Level Feedback (HLFB) mode
 - a. In MSP, click the "Advanced" tab, then "High-Level Feedback"
 - b. Select the HLFB mode "ASG-Position, w/Measured Torque"
 - c. Select the 482 Hz PWM Carrier Frequency

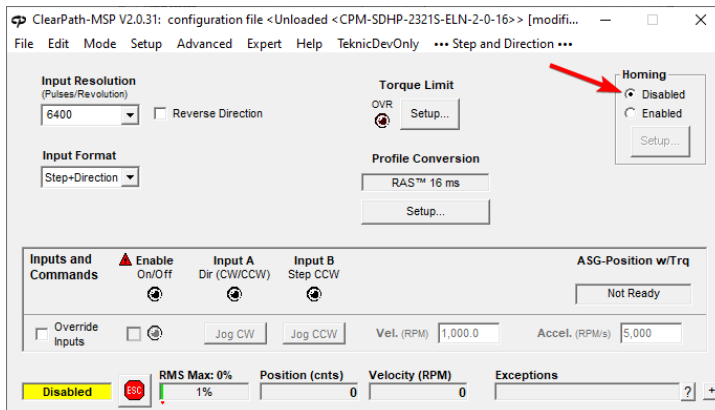


If you are using **Hard Stop Homing**, configure ClearPath with the following settings:

1. In the Homing section of MSP, enable homing and click "Setup..."
2. Select "Normal" homing mode
3. Select "User seeks home"
4. Select homing "Upon every Enable"



If you are using **Sensor Based Homing**, disable homing on ClearPath since ClearLink will handle homing to the sensor:



Configuring ClearLink (In Studio 5000)

An EtherNet/IP adapter's Configuration assembly is only set when the scanner first establishes a connection with the Adapter. As a result, Configuration tags edited by the PLC code will not update the intended data within ClearLink in real time. These tags should only be modified when the PLC is offline. This ensures the default tag value is the correct desired value for operation. This concept is important to understand because ClearLink's homing setup parameters are included within the Configuration assembly.

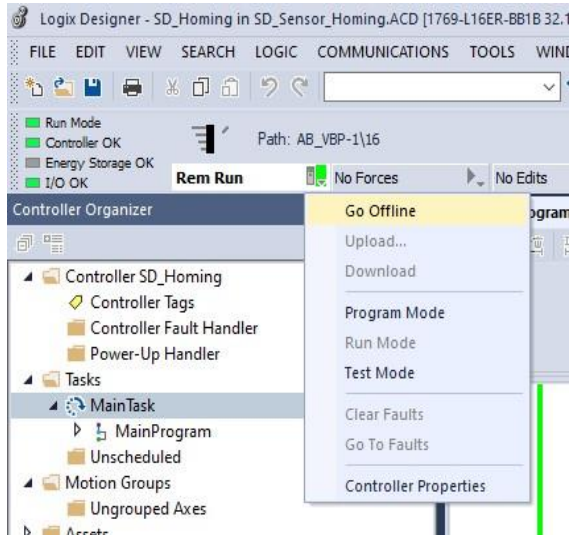
The following are step-by-step instructions for configuring a ClearLink for hard stop or sensor-based homing.

TROUBLESHOOTING TIP: If homing does not behave as expected after changing these parameters, verify the following:

1. The PLC was **offline** when configuration tags were modified.
2. The connection to ClearLink was re-established after making changes.

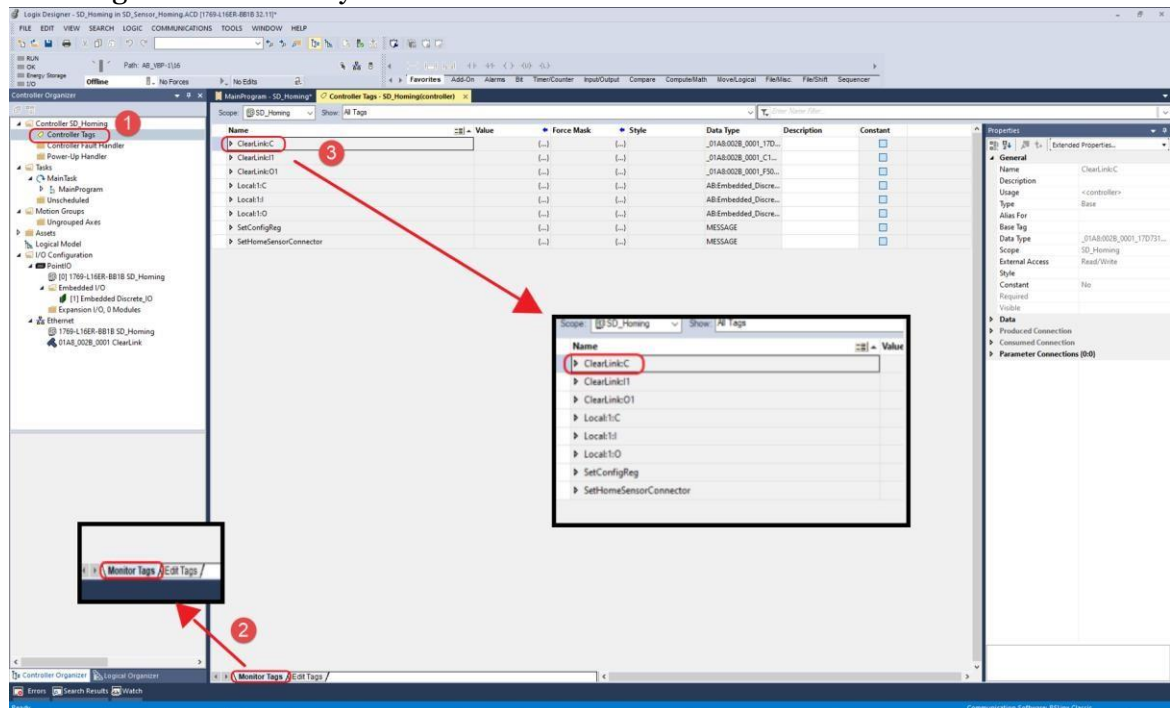
Step 1. (Go Offline): Select the Controller Status dropdown then select “Go Offline”.

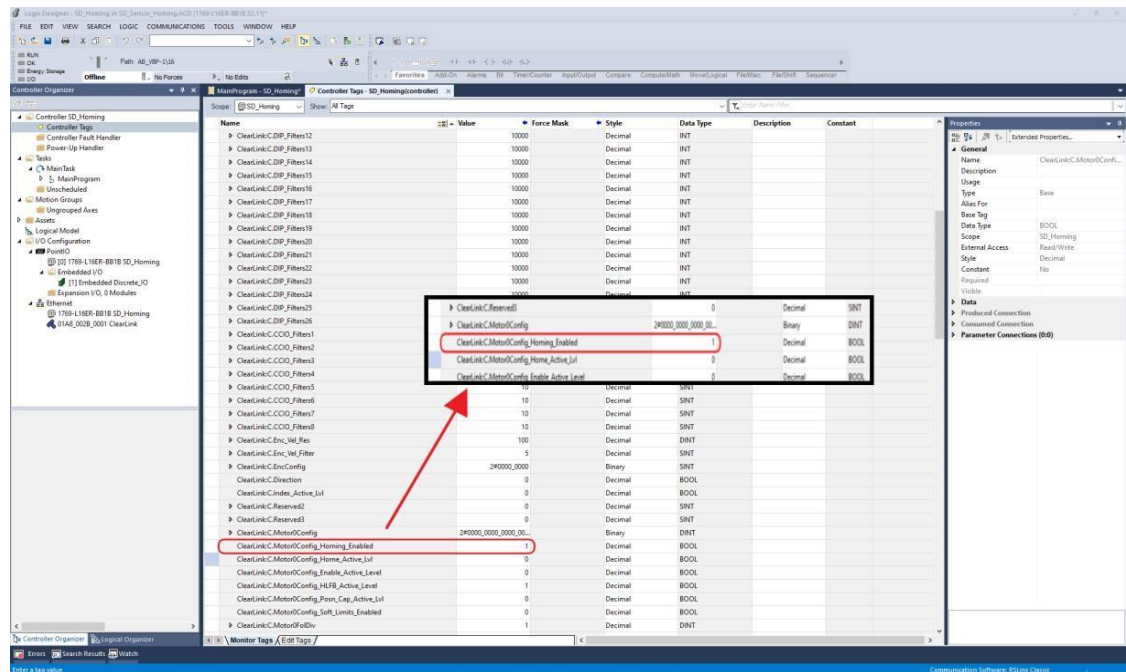
IMPORTANT: Configuration changes are applied only when your PLC first establishes a connection with an EtherNet/IP device.



Step 2. (Navigate to ClearLink Configuration Tags):

Select “Controller SD_Homing”->”Controller Tags” from the Controller Organizer. Once in the Controller Tags window, ensure you are Monitoring Tags and expand ClearLink:C. This is the ClearLink Configuration Assembly.





Step 4. (Only required for sensor-based homing): At this point ClearLink is now configured to hard stop home. If you are homing to a sensor, you must now specify which I/O point that sensor is connected to. To do this, navigate to “ClearLink:C.Motoro_Home_Sensor” and enter the I/O connector number that correlates with the home sensor (0-12).

For example, you should set `Motoro_Home_Sensor` to 6 if your home sensor is connected to DI-6 (shown in the screenshot below). If you ever want to change back to hard stop homing, set the Home Sensor tag to -1.

If you have multiple motors, this step must be completed for every motor in the system that will home to a sensor.

Note: By default, ClearLink expects all home sensors to be normally closed / normally on. The Home Sensor digital input should be “on” during normal operation, and turn “off” when the axis reaches its home position. This polarity can be inverted by setting “ClearLink:C.MotoroConfig_Home_Active_Lvl” to 1.

Logic Designer - SD_Homing in SD_Sensor_Homing ACD (1769-1168-8818 32.11°)

FILE EDIT VIEW SEARCH LOGIC COMMUNICATIONS TOOLS WINDOW HELP

Path: A5_16P-1168 No Forces No Edit

Controller Organizer

- Controller SD_Homing
 - Controller Tags
 - Controller Fault Handler
 - Power-Up Handler
 - Tasks
 - 3. MainTask
 - 5. MainProgram
 - Unscheduled
 - Motion Groups
 - Unassigned Axes
 - Assets
 - Logical Model
 - I/O Configuration
 - PointIO
 - 1769-1168-8818 SD_Homing
 - Embedded I/O
 - Expansion I/O, 0 Modules
 - Ethernet
 - 1769-1168-8818 SD_Homing
 - 01A2_0028_0001 ClearLink

Monitor Tags / Edit Tags

Name	Value	Force Mask	Style	Data Type	Description	Constant
ClearLink.C.CCO0_Fibers1	10		Decimal	SINT		
ClearLink.C.CCO0_Fibers2	10		Decimal	SINT		
ClearLink.C.CCO0_Fibers3	10		Decimal	SINT		
ClearLink.C.CCO0_Fibers4	10		Decimal	SINT		
ClearLink.C.CCO0_Fibers5	10		Decimal	SINT		
ClearLink.C.CCO0_Fibers6	10		Decimal	SINT		
ClearLink.C.CCO0_Fibers7	10		Decimal	SINT		
ClearLink.C.CCO0_Fibers8	10		Decimal	SINT		
ClearLink.C.Enc_Incl_Rot	100		Decimal	DINT		
ClearLink.C.Enc_Incl_Filter	5		Decimal	SINT		
ClearLink.C.Enc_Config	240000_0000		Binary	SINT		
ClearLink.C.Direction	0		Decimal	BOOL		
ClearLink.C.Index_Active_Lvl	0		Decimal	BOOL		
ClearLink.C.Reserved2	0		Decimal	SINT		
ClearLink.C.Reserved3	0		Decimal	SINT		
ClearLink.C.Motor0_Config						
ClearLink.C.Motor0_Config_Homing_Enabled						
ClearLink.C.Motor0_Config_Home_Active_Lvl						
ClearLink.C.Motor0_Config_Enable_Active_Level						
ClearLink.C.Motor0_Config_H_LFE_Active_Level						
ClearLink.C.Motor0_Config_Posn_Cap_Active_Lvl						
ClearLink.C.Motor0_Config_Soft_Limits_Enabled						
ClearLink.C.Motor0_FullDiv	0		Decimal	BOOL		
ClearLink.C.Motor0_FullMult	1		Decimal	DINT		
ClearLink.C.Motor0_FullMult	1		Decimal	DINT		
ClearLink.C.Motor0_MaxDecel	10000000		Decimal	DINT		
ClearLink.C.Motor0_Soft_Limit1	0		Decimal	DINT		
ClearLink.C.Motor0_Soft_Limit2	0		Decimal	DINT		
ClearLink.C.Motor0_PosLim	-1		Decimal	SINT		
ClearLink.C.Motor0_NegLim	-1		Decimal	SINT		
ClearLink.C.Motor0_Home_Sensor	6		Decimal	SINT		
ClearLink.C.Motor0_Brake	-1		Decimal	SINT		
ClearLink.C.Motor0_Stop_Sensor	-1		Decimal	SINT		
ClearLink.C.Motor0_PosnCapSens	-1		Decimal	SINT		
ClearLink.C.Motor0_FollowAxis	-1		Decimal	SINT		
ClearLink.C.Reserved4	0		Decimal	SINT		
ClearLink.C.Motor1_Config	240000_0000_00_00		Binary	DINT		
ClearLink.C.Motor1_Config_Homing_Enabled	0		Decimal	BOOL		
ClearLink.C.Motor1_Config_Home_Active_Lvl	0		Decimal	BOOL		

Properties

General

Name: ClearLink.C.Motor0_Hom...

Description: Usage

Type: Base

Base Tag: SINT

Data Type: SD_Homing

External Access: Read/Write

Style: Decimal

Constant: No

Required: Visible

Data

Producer Connection

Consumed Connection

Parameter Connections (0/0)