

# 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.

**IMPORTANT NOTE:** The MSP software must be used to configure specific settings within the servo for proper integration with ClearLink. Ensure you have followed the setup instructions in the following document before running the SD Homing example:

[https://teknico.com/files/downloads/clearlink\\_ethernet-ip\\_object\\_reference.pdf](https://teknico.com/files/downloads/clearlink_ethernet-ip_object_reference.pdf).

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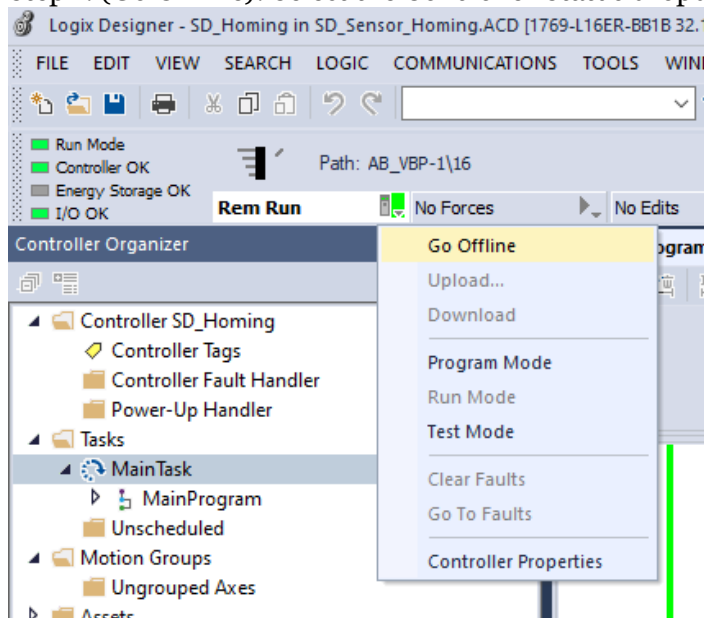
## CONFIGURATION BASICS

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.

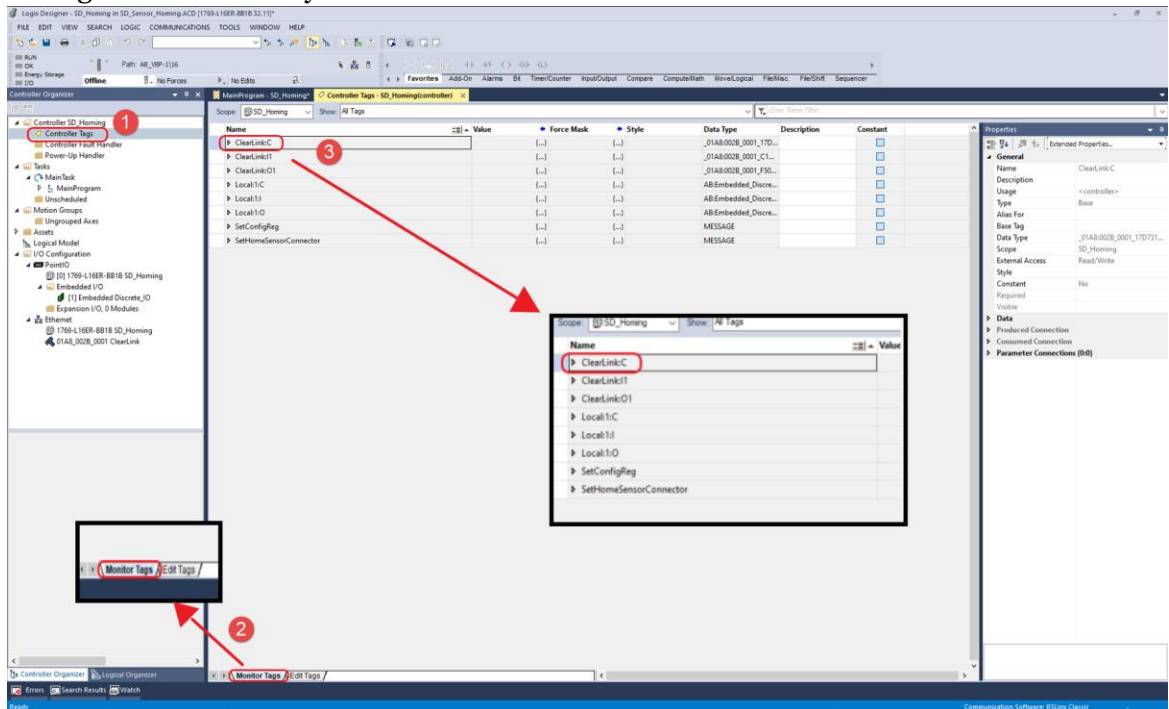
The following are step-by-step instructions for configuring a ClearLink for hard stop or sensor-based homing.

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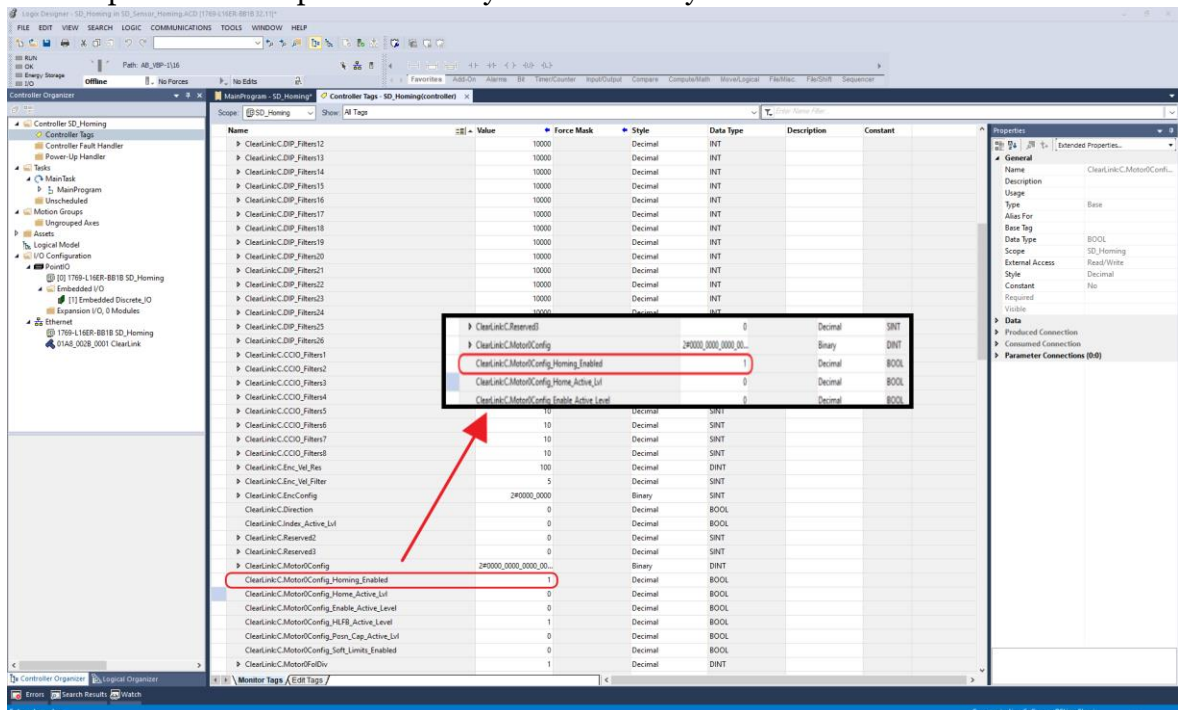
- Step 1. (Go Offline): Select the Controller Status dropdown then select "Go Offline".



- 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 3. (Enable Homing): Scroll down until you find “ClearLink:C.MotorConfig\_Homing\_Enabled” and turn that bit on (set its value to 1). This step must be completed for every motor in the system that will home.



- Step 4. (Set Home Sensor): At this point the motor will use hardstop homing. To use sensor-based homing instead, a Home Sensor connector must be specified. To do this, navigate to “ClearLink:C.Motor0\_Home\_Sensor” and enter the I/O number that correlates with the home sensor (0-12). If you want to change back to hard stop homing, set the Home Sensor tag to -1. This step must be completed for every motor in the system that will home to a sensor. For this example, the homing sensor below is connected to DI-6 on ClearLink.

*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.Motor0Config\_Home\_Active\_Lvl” to 1.

Name	Value	Force Mask	Style	Data Type	Description	Constant
ClearLink:C.CC00_Filters1	10		Decimal	SINT		
ClearLink:C.CC00_Filters2	10		Decimal	SINT		
ClearLink:C.CC00_Filters3	10		Decimal	SINT		
ClearLink:C.CC00_Filters4	10		Decimal	SINT		
ClearLink:C.CC00_Filters5	10		Decimal	SINT		
ClearLink:C.CC00_Filters6	10		Decimal	SINT		
ClearLink:C.CC00_Filters7	10		Decimal	SINT		
ClearLink:C.CC00_Filters8	10		Decimal	SINT		
ClearLink:C.Enc_Val_Filter	100		Decimal	DINT		
ClearLink:C.Enc_Val_Filter	5		Decimal	SINT		
ClearLink:C.EncConfig	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.Motor0Config						
ClearLink:C.Motor0Config_Homing_Enabled						
ClearLink:C.Motor0Config_Home_Active_Lvl						
ClearLink:C.Motor0Config_Enable_Active_Level						
ClearLink:C.Motor0Config_HFEB_Active_Level						
ClearLink:C.Motor0Config_Posn_Cap_Active_Lvl						
ClearLink:C.Motor0Config_Soft_Limits_Enabled	0		Decimal	BOOL		
ClearLink:C.Motor0FullVel	1		Decimal	DINT		
ClearLink:C.Motor0FullMult	1		Decimal	DINT		
ClearLink:C.Motor0MaxDecel	10000000		Decimal	DINT		
ClearLink:C.Motor0Soft_Limit1	0		Decimal	DINT		
ClearLink:C.Motor0Soft_Limit2	0		Decimal	DINT		
ClearLink:C.Motor0PosLim	-1		Decimal	SINT		
ClearLink:C.Motor0NegLim	-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.Motor0PosnCapSens	-1		Decimal	SINT		
ClearLink:C.Motor0FollowAxis	-1		Decimal	SINT		
ClearLink:C.Reserved4	0		Decimal	SINT		
ClearLink:C.Motor0Config	240000_0000_0000_00...		Binary	DINT		
ClearLink:C.Motor0Config_Homing_Enabled			Decimal	BOOL		
ClearLink:C.Motor0Config_Home_Active_Lvl	0		Decimal	BOOL		