YASKAWA

SigmaLogic
Quick Start Guide

This Quick Start Guide is designed to quickly verify that a new SigmaLogic product is functional and ready for full configuration and operation. The process should only take a matter of minutes to:

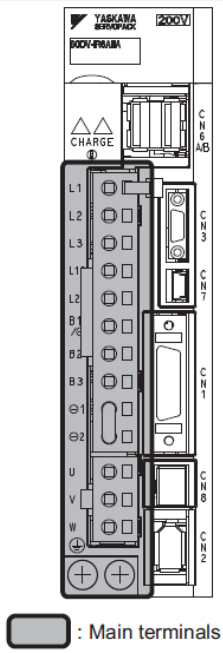
1) Supply power to the unit,
2) Establish communications with LogicWorks, and
3) Jog the motor using Test Mode.

Parts Needed

- ☐ SigmaLogic servopack
- ☐ ServoMotor
- ☐ Motor Cable
- ☐ Encoder Cable
- ☐ Ethernet cable to PC
- ☐ LogicWorks Configuration Utility zipped file
- ☐ Incoming Power Supply

Wiring and Connection

Please consult the Servopack User Manual for full wiring instructions. Table 1 shows the wiring connections for Sigma-5 servopacks extracted from section 3.1 of the manual. For 100v and 200v models, both the Main Power and Logic Power inputs require AC voltage. For 400v models, the Main Power is AC and the Logic Power requires 24vdc.



Terminal Symbols	Name	Model SGDV-□□□□	Specification
L1, L2	Main circuit power input terminals	□□□F	Single-phase 100 to 115 V, +10% to -15% (50/60 Hz)
L1, L2, L3		□□□A	Three-phase 200 to 230 V, +10% to -15% (50/60 Hz)
		□□□D	Three-phase 380 to 480 V, +10% to -15% (50/60 Hz)
L1C, L2C	Control power input terminals	□□□F	Single-phase 100 to 115 V, +10% to -15% (50/60 Hz)
		□□□A	Single-phase 200 to 230 V, +10% to -15% (50/60 Hz)
24V, 0V		□□□D	24 VDC, ±15%
B1/⊕, B2*1	External regenerative resistor connection terminals	R70F, R90F, 2R1F, 2R8F, R70A, R90A, 1R6A, 2R8A	If the regenerative capacity is insufficient, connect an external regenerative resistor between B1/⊕ and B2. Note: The external regenerative resistor is not included.
		3R8A, 5R5A, 7R6A, 120A, 180A, 200A, 330A, 1R9D, 3R5D, 5R4D, 8R4D, 120D, 170D	If the internal regenerative resistor is insufficient, remove the lead or shorting bar between B2 and B3 and connect an external regenerative resistor between B1/⊕ and B2. Note: The external regenerative resistor is not included.
		470A, 550A, 590A, 780A, 210D, 260D, 280D, 370D	Connect a regenerative resistor unit between B1/⊕ and B2. Note: The regenerative resistor unit is not included.

Table 1: Main circuit wiring connections

1) With the source deactivated:
   - wire the Main AC Power at inputs L1, L2 (1-phase) or L1, L2, L3 (3-phase)
   - wire the AC Logic Power at inputs L1C and L2C
   - for 400 volt units, wire the DC Logic Power at inputs 24v and 0v
2) Connect the motor cable to the motor and to the SigmaLogic amplifier at U,V,W and Earth Ground. The phase order is important for proper operation so be sure to match each connection to the label on the cable leads.
3) Connect the encoder cable to the motor and to the SigmaLogic amplifier at CN2.
4) Ensure the factory jumper plug is inserted at CN8 or that the E-Stop circuit has been fully wired.
5) Connect the Ethernet cable to the SigmaLogic controller and to a PC. Either connection point may be used:
   a. CN11A default IP address is 192.168.1.1
   b. CN11B default IP address is 192.168.2.1

   After initial connection is established, the IP addresses may be changed as desired.

6) Apply the Logic Power source.

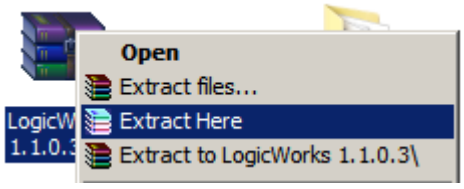
a. The boot up process will take about 30 seconds
b. After successful boot, the RDY and RUN LEDs will light Green. The ALM LED may be either off or lit Red.

7) Apply the Main Power source
   a. The CHARGE LED will light Red

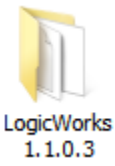
Install LogicWorks Configuration Utility

1) The LogicWorks Installation .zip file can be retrieved from www.yaskawa.com/SigmaLogic product page. Download and save this file to a convenient location.

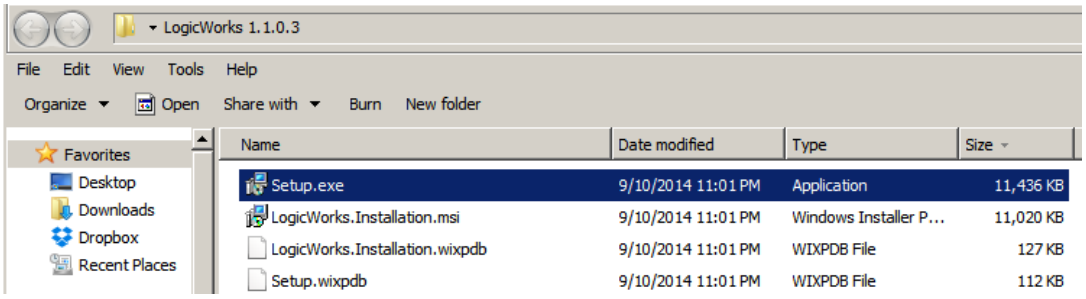
2) Right-click on the file icon to extract the contents to a convenient location.



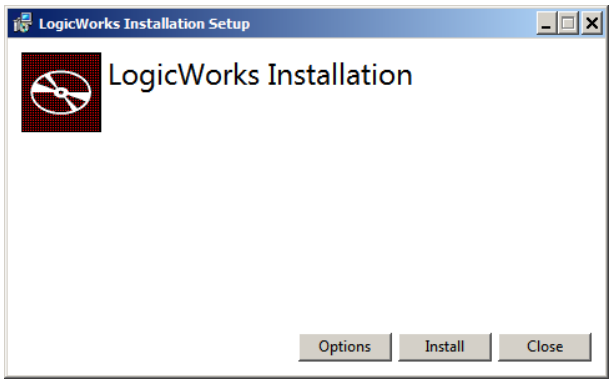
A new folder will be created at the specified location.



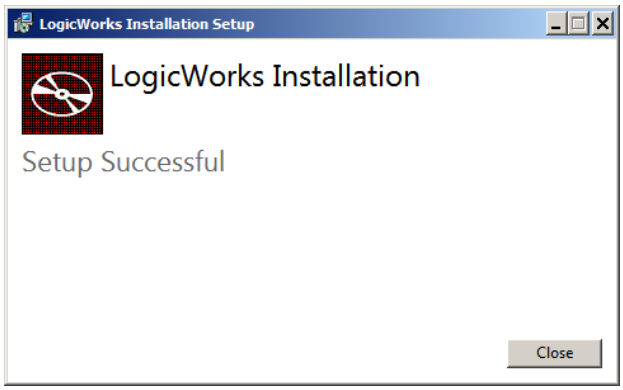
3) Open the folder and double-click on Setup.exe to begin installing LogicWorks to the PC.



4) When the LogicWorks installation dialog box appears, choose Install

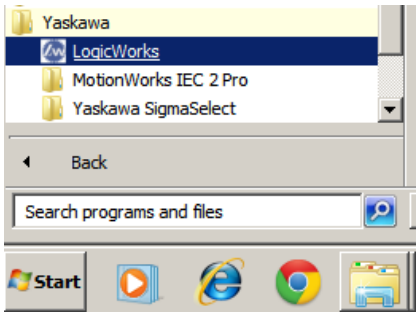


5) When setup is complete, click on Close



6) To launch LogicWorks, double-click on the program icon

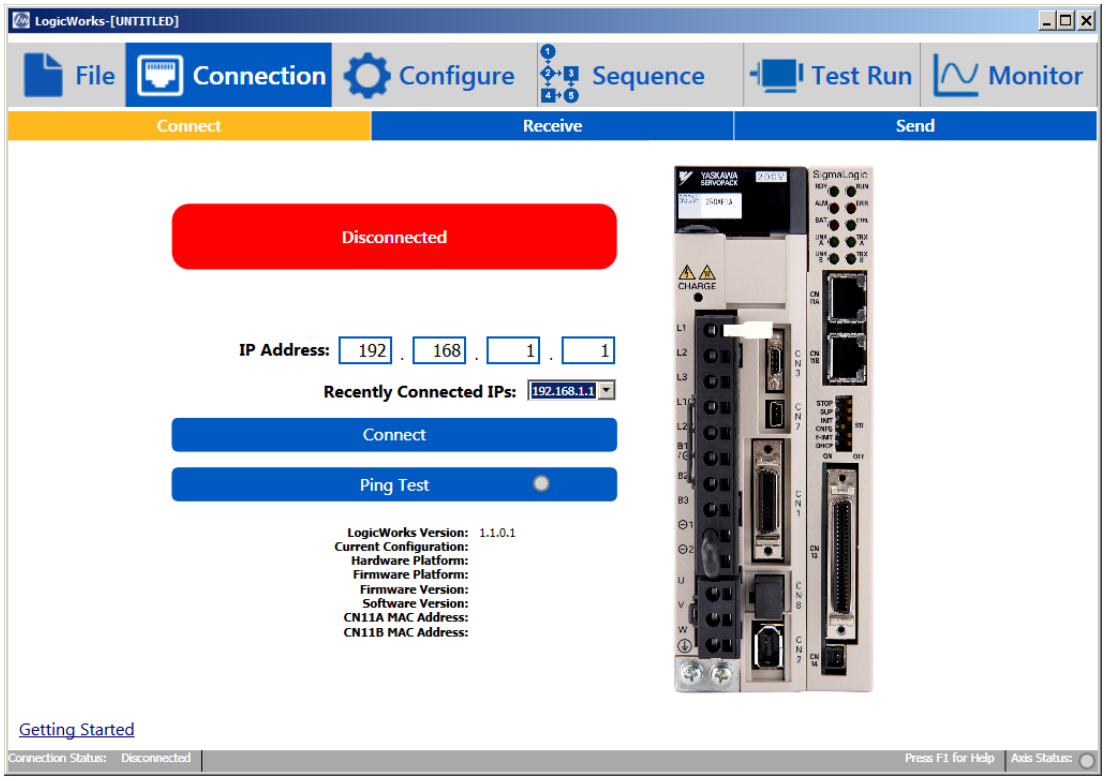
, or navigate to Start, All Programs, Yaskawa, LogicWorks



7) The program Start Page will appear

Establish Communications

1) Configure the PC with a static IP address on either subnet x.x.1.x or x.x.2.x depending on which port is chosen on the SigmaLogic controller. Set the last digit of the PC address (x.x.x.#) to a value other than 1.
2) Launch LogicWorks, start a New Project and navigate to the Connection – Connect page



3) The default IP address is 192.168.1.1 (expecting the SigmaLogic to be connected at CN11A)

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4) Click on 'Ping Test' to verify that the controller is reachable on the network.
    a. A successful Ping Test returns a Green Light on the button indicator.

    b. If unsuccessful, please check the cable connections and the PC network settings. For further assistance please consult with IT personnel
5) Click on 'Connect'.
    a. If successful, the Indicator will change from 'Disconnected' with Red background, to 'Connected' with Green background.

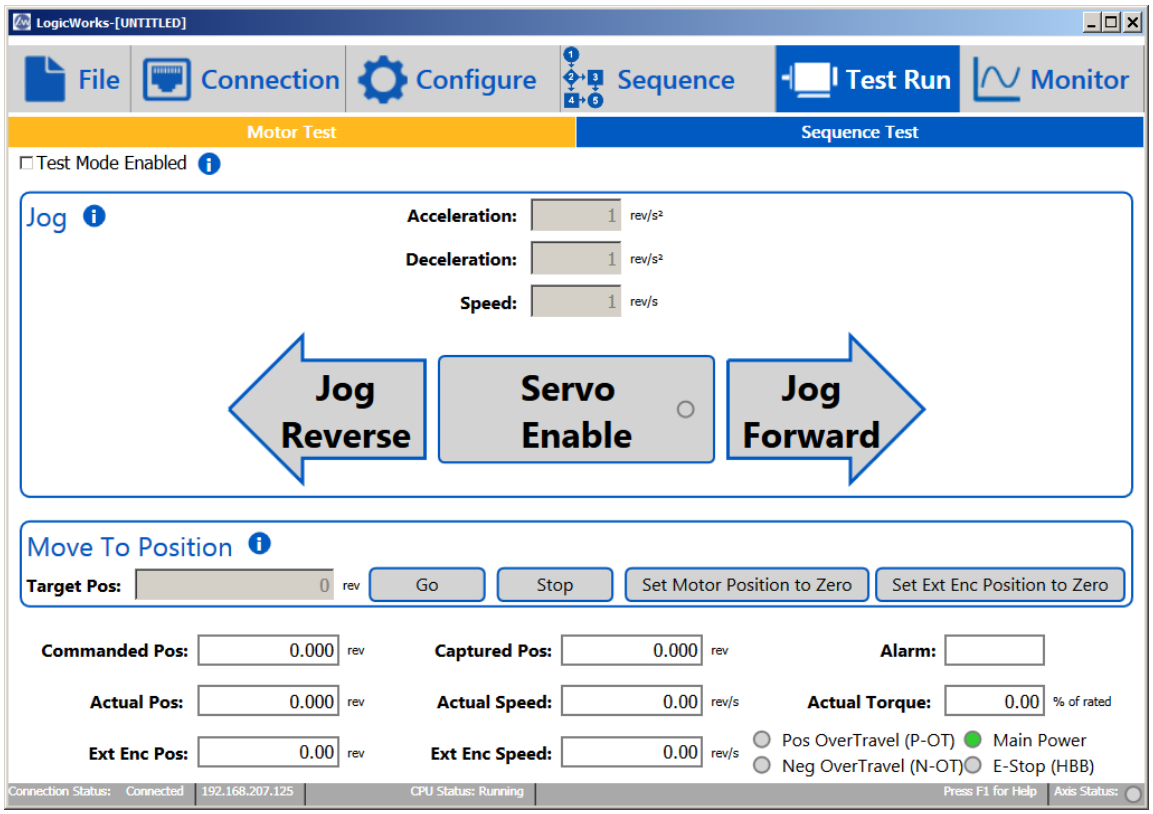
    b. If successful, the lower status bar will change status from 'Disconnected' to 'Connected and the SigmaLogic IP address will appear.

Test Run

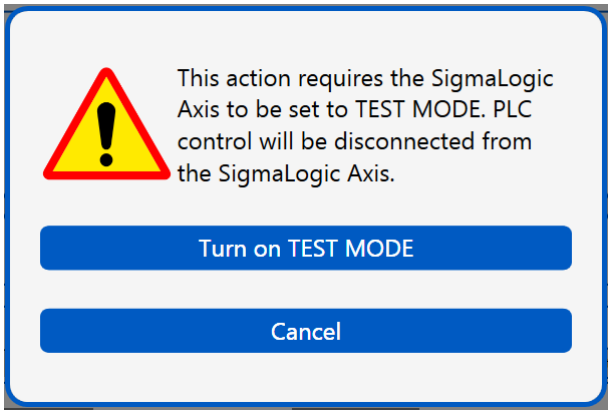
The Test Run page is designed to quickly check motion operation.

CAUTION: Be sure all personnel are clear of any moving mechanisms before entering Test Mode or serious injury may result.

1) Navigate to the Test Run – Motor Test page

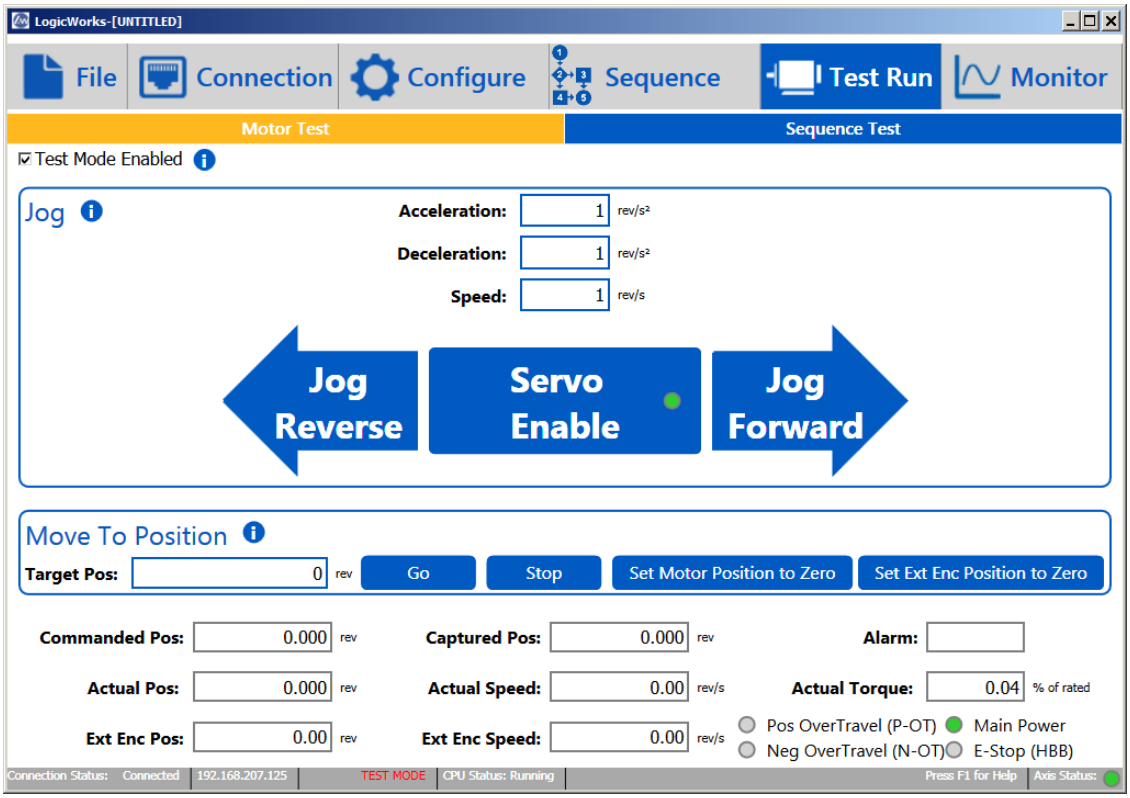


2) Click on the 'Test Mode Enabled' box to Enable Test Mode. A warning pop-up message will appear to confirm that it is OK to enter test Mode and take control away from any existing PLC.

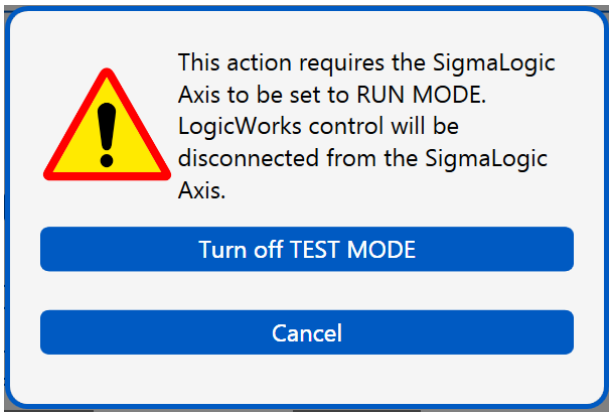


3) If successful, the Enable button should turn from grey to blue.

4) Check to be sure that all personnel are clear of any moving mechanism and click on 'Enable'.
    a. The motor should be energized and stationary.
    b. The Jog and Move buttons should change from grey to blue.
    c. The Enabled Status indicator inside the Servo Enable Button and in the lower right of the status bar should turn Green



5) Enter appropriate values for Acceleration, Deceleration and Speed. The default units are in revolutions of the motor.
6) Click and hold the Jog Forward button.
    a. The motor should move in the positive direction as shown in the Actual Position field
    b. Release the button to stop the motor
7) Click and hold the Jog reverse button
    a. The motor should move in the negative direction as shown in the Actual Position field
    b. Release the button to stop the motor
8) Click on the 'Test Mode Enabled' box again to disable Test Mode. After confirming it is ok to transfer control back to any existing PLC, all buttons should return to grey and the motor will be disabled.



FINISHED! The initial Getting Started tests are complete.

For more assistance on fully configuring the SigmaLogic controller for actual applications and controlling motion from a PLC, please see the LogicWorks Help File and/or other instructional videos available from Yaskawa's eLearning Curriculum.