AC Servo System Software

*Sure*Servo2 Pro configuration software

SureServo2 Pro is an optional free downloadable configuration software package for the SureServo2 drives. With SureServo2 Pro installed, a PC may be directly connected to the servo drive via a USB programming cable (part# SV2-PGM-USB15 or SV2-PGM-USB30).

Features

- Easy-to-use Parameter Wizards to guide you through the most common setup functions.
- Digital IO/Jog Control allows the user to operate the servo system from the PC. This is a great aid during start-up to allow the servo to perform some basic motion and to check the I/O.
- Parameter Editor - The complete setup for all the drive parameters
- Tune and check the servo response live using the scope feature.
- Upload and download the drive setup. Save the drive setup as a file for backup or future use.
- Edit the drive setup
- View all drive faults
- View drive variable trends in real time
- Create a custom EtherNet/IP EDS file for data transfer to a PLC using pull-down menus
- Motion Programming ability - the PR Window lets you cofigure the 99 "Paths" that store the motion and sequencing commands in the drive

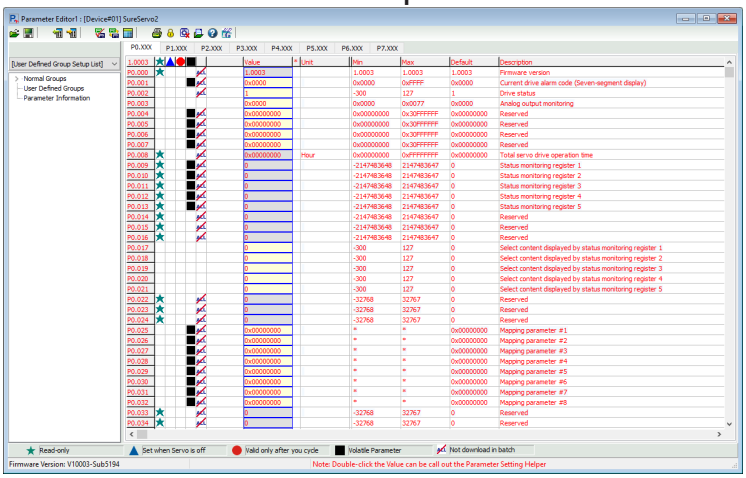
Parameter editor

The SureServo2 Pro configuration tool logically organizes all servo drive parameters for viewing and editing using the Parameter Editor screen. Each parameter has a factory default that usually allows the servo to run “out-of-the-box”.

The parameters can be easily changed with available setting ranges displayed. Tuning modes and parameters can also be changed using SureServo2 Pro. After the parameters have been defined, the complete setup can be stored and archived. Drive configurations can be uploaded, edited, saved, and downloaded as often as necessary.

SS2 Pro software even has an "Offline Mode" so you can configure your drive and program your motion without having to be connected to the drive.

Parameter Editor Example Screen



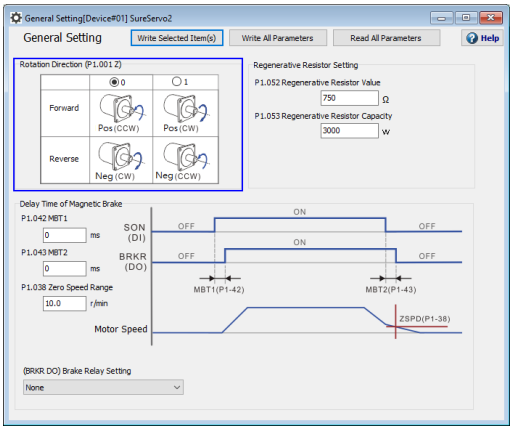
USB Programming Cables

Part Number	Price	Description	Length	Drawing	Compatible Drives
SV2-PGM-USB15	$32.00	Programming cable, USB A to miniB-USB	1.5 m	PDF	All SureServo2 drives
SV2-PGM-USB30	$34.50		3m	PDF	

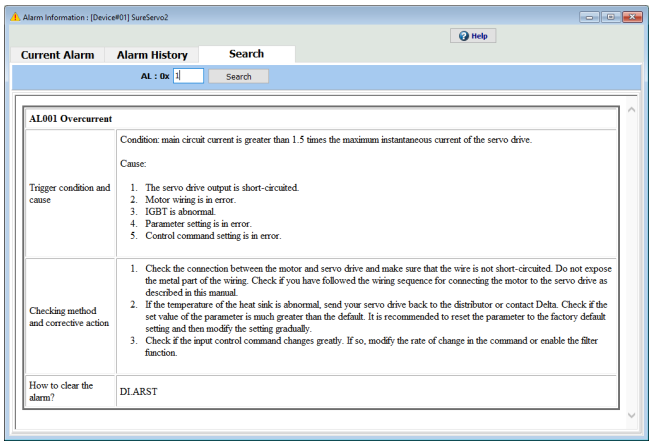
SV2-PGM-USB15

*Sure*Servo2 Pro configuration software - (continued)

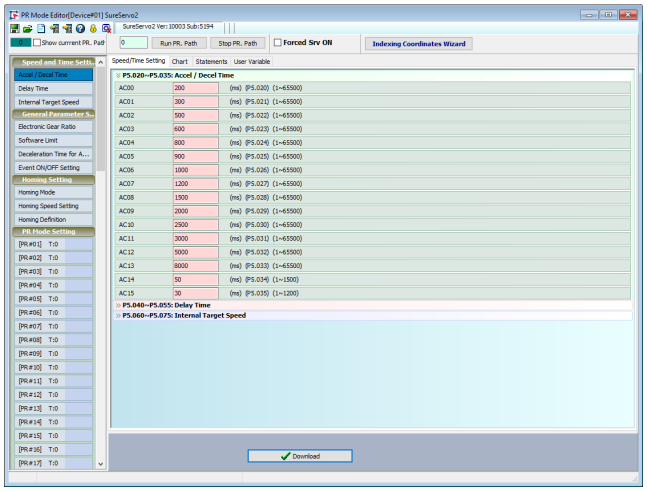
General Setting Example Screen



Alarm Information Example Screen

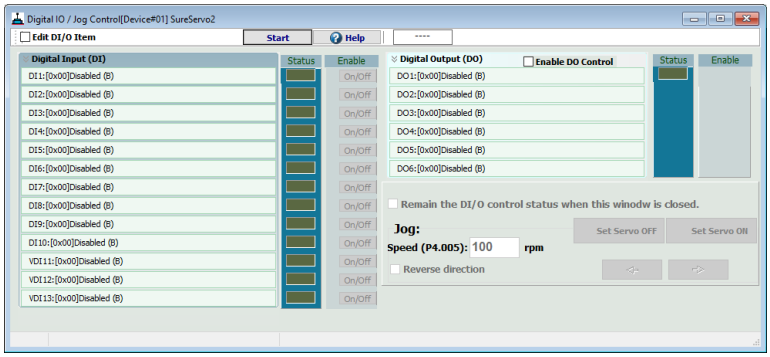


PR Mode Setting Example Screen



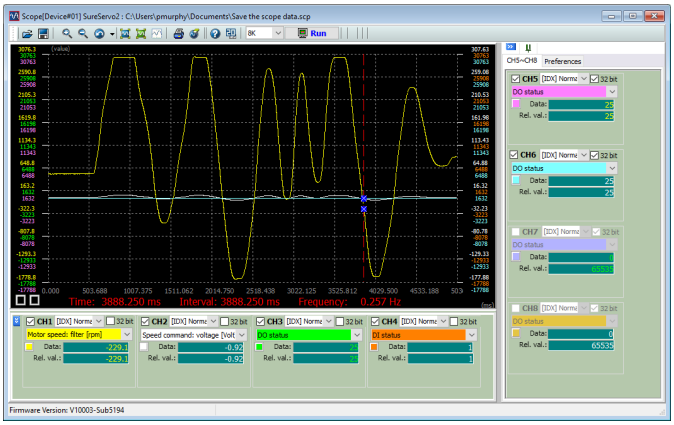
Digital IO/Jog Control screen

The Digital IO/Jog Control screen allows the user to operate the servo system from the PC. This is a great aid during start-up to allow the servo to perform some basic motion and to check the I/O.



Scope

SureServo2 Pro includes a powerful scope function that allows the user to have as many as eight channels of data displayed simultaneously. Each channel has a drop-down table to select the data to be displayed. The scope has the ability to save traces to a file and load those traces for offline review/analysis. This function is a valuable tool for tuning SureServo2 drives.



AC Servo System Accessories

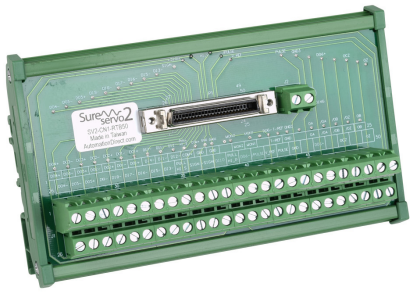
Accessories

CN1 Accessories

The terminal block module and direct mount feedthrough module allow for I/O connections to a SureServo2 drive.

Option 1:
Select an SV2-CN1-CBL50 cable (3 lengths available) and the DIN rail mount SV2-CN1-RTB50 Remote Terminal Block for access to all 50 of the drive's digital and analog I/O signals.

Option 2:
Select the SV2-CN1-LTB20 Local Terminal Block. The LTB20 can be used in many applications and allows connection to the most frequently-used I/O: High speed line driver pulse inputs (Pulse and Direction, AB Quad, etc.), (5) Digital Inputs, (4) Digital Outputs, and the Z-pulse open collector output.



SV2-CN1-RTB50

Part Number	Price	Description	Cable Length	Drawing	Compatible Drives
SV2-CN1-RTB50	$58.00	SureServo2 feedthrough module, 50-pole, DIN rail mount	–	PDF	All
SV2-CN1-CBL50	$71.00	SureServo2 CN1 I/O control cable with mating connectors	0.5 m	–	
SV2-CN1-CBL50-1	$75.00		1m		
SV2-CN1-CBL50-2	$79.00		2m		
SV2-CN1-LTB20	$43.00	SureServo2 feedthrough module, 20-pole, direct mount	–	PDF	

SV2-CN1-LTB20

Communication Modules

SureServo2 drives can also make use of optional communication cards. Both EtherNet/IP and Modbus TCP cards are available. Field upgradeable firmware ensures that the cards can always be kept current.

ModBus TCP
The SV2-CM-MODTCP Modbus TCP card allows the same access to all the drive parameters as the native serial Modbus (RS485).

EtherNet/IP
The SV2-CM-ENETIP Ethernet/IP card allows both Explicit and Implicit (I/O) Messaging. The SureServo2 Pro software allows you to easily generate (with pull-down menus) an EDS file for import into your PLC that contains exactly what you want in your Implicit Message.

SV2-CM-ENETIP or SV2-CM-MODTCP

Part Number	Price	Description	Drawing	Compatible Drives
SV2-CM-ENETIP	$107.00	SureServo2 communication module, EtherNet/IP, 1 port, (1) Ethernet (RJ45) port.	PDF	All SureServo2 drives
SV2-CM-MODTCP	$97.00	SureServo2 communication module, Modbus TCP, 1 port, (1) Ethernet (RJ45) port.	PDF	

AC Servo System Accessories

Accessories, *continued*

External Encoder CN5 Cables
CN5 secondary encoder cables can be used to connect an external secondary encoder to a SureServo2 drive. The CN5 uses a wire not present in standard VGA cables - you must use one of these cables, standard HD15 VGA cables will not work.

Part Number	Price	Description	Length	Drawing	Compatible Drives
ZL-HD15M-CBL-2P	$19.00	ZIPLink communication cable, 15-pin D-sub HD15 male to pigtail, shielded, twisted pair.	2m	PDF	All SV2 drives
ZL-HD15M-CBL-DB15F*	$20.50	ZIPLink communication cable, 15-pin female D-sub to 15-pin D-sub HD15 male, shielded, twisted pair.	2m	PDF	

*** ZL-RTB-DB15 is required to use the ZL-HD15M-CBL-DB15F cable**

Pin Number	Color	Signal	Function
1	Black/White	Opt_/Z	/Z phase input
2	Blue/White	Opt_/B	/B phase input
3	Blue	Opt_B	B phase input
4	Green	Opt_A	A phase input
5	Green/White	Opt_/A	/A phase input
6	Yellow Yellow/Black	GND	Encoder grounding
7	Red/White	GND	Encoder grounding
8	Red	+5V	Encoder power
9	Black	Opt_Z	Z phase input
10	Orange	Reserved	Reserved
11	Orange/White	Reserved	Reserved
12	Brown	Reserved	Reserved
13	Brown/White	Reserved	Reserved
14	Purple	Reserved	Reserved
15	Purple/White	Reserved	Reserved

ZL-HD15M-CBL-2P

ZL-RTB-DB15

ZL-HD15M-CBL-DB15F

Battery Box
An optional external battery can be used to power SureServo2 encoders. The battery allows the use of Absolute Encoder Mode. This mode will keep track of the motor actual position (regardless of number of turns) even if control power is removed from the drive.

SV2-BBOX-1 attaches to the encoder cable. There is a small connector protruding from each encoder cable several inches from the drive-end connector. This connector plugs into the SV2-BBOX-1.

SV2-BBOX-CBL is not required for most applications. Use this cable to extend the length from the encoder cable's connector to the BBOX. This is used if you do not want the BBOX clamped onto the encoder cable right under the drive.

SV2-BBOX-CBL

Part Number	Price	Description	Length	Drawing	Compatible Drives
SV2-BBOX-1	$22.50	SureServo2 encoder single battery box, for use with all SureServo2 drives. (1) AA ER14505 lithium battery included.	–	PDF	All SV2 drives
SV2-BBOX-CBL	$3.00	SureServo2 battery box cable, mating connectors, 7.8 in/200mm cable length. For use with SureServo2 encoder battery box.	200mm	PDF	

SV2-BBOX-1

AC Servo System Accessories

Accessories, *continued*

SV2-CN3-CON-2

SV2-CN3-TR2

Serial Comms Connectors
Available serial comms connectors consist of an RS-485 splitter and an RS-485 terminating resistor. These connectors (and the drive's CN3) all use RJ45 connectors.

With these two connectors, you can easily create a multi-drop RS485 connection with minimal manual wiring. For multi-drop systems, use one SV2-CN3-CON-2 per drive. Connect each drive with a standard RJ45 (Ethernet patch) cable. On the last drive in the daisy-chain, plug in an SV2-CN3-TR2 to terminate the network. On the first drive, either strip one end of a patch cable to wire into your controller/PLC or plug into a ZL-RTB-RJ45 breakout board for easy wiring to your controller/PLC.

Part Number	Price	Description	Drawing	Compatible Drives
SV2-CN3-CON-2	$11.50	SureServo2 splitter, (2) RS-485 (RJ45) to (1) RS-485 (RJ45)	PDF	All SureServo2 Drives
SV2-CN3-TR2	$5.25	Terminating resistor, 120 ohm, RJ45 8P8C male.	PDF	

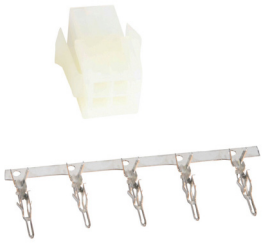
Toroid
A toroid (ferrite ring) is available for use with all SureServo2 drives to reduce radiated noise. See the user manual for application information for the SV2-TOR1.

SV2-TOR1

Part Number	Price	Description	Drawing	Compatible Drives
SV2-TOR1	$13.50	Toroid ring for EMI/RFI filtering (2 per pack)	PDF	All SureServo2 Drives

Cable Connectors
Use the cable connectors below to build your own motor power, brake, or encoder cable.

Part Number	Price	Description	Drawing	Compatible With
SV2C-PA-CON	$11.50	SureServo2 motor power connector	PDF	750W or smaller SureServo2 motors w/o brake
SV2C-PB-CON	$13.50		PDF	750W or smaller SureServo2 motors w/brake
SV2C-PC-CON	$40.00		PDF	All 1 and 1.5 kW and 460V series 2kW SureServo2 motors
SV2C-PD-CON	$47.00		PDF	230V series 2 to 4.5 kW and 460V series 3 to 7.5 kW SureServo2 motors
SV2C-PF-CON	$69.00		PDF	230V series 5.5 to 15kW and 460V series 11 and 15kW SureServo2 motors
SV2C-E1-CON	$10.00	SureServo2 motor encoder connector	PDF	750W or smaller SureServo2 motors
SV2C-E2-CON	$37.00		PDF	1kW and larger SureServo2 motors
SV2C-E3-CON	$10.00	CN2 encoder cable (connection to drive)	PDF	All SureServo2 drives
SV2C-B1-CON	$32.00	SureServo2 motor brake connector	PDF	230V series 5.5 to 15kW and 460V series 11 and 15kW SureServo2 motors with brake



SV2C-PA-CON

SV2C-PF-CON

SV2C-E1-CON

Accessories, *continued*

Replacement Connectors
The following replacement connectors can be purchased for use with SureServo2 drives. SV2-CN1-CON and SV2-CN10-STO are standalone connectors, while SV2-CON-KIT is a set of connectors.

Part Number	Price	Description	Drawing	Compatible With
SV2-CN1-CON	$17.50	Optional 50-pin CN1 I/O connector (solder)	–	All SureServo2 drives
SV2-CON-KIT	$21.50	SureServo2 replacement connector kit, contains: (1) SV2-CN10-STO connector (2) AC power connectors (1) Power resistor connector (1) Motor power connector (2) Wire insert tools	–	Up to 1.5 kW 230V SureServo2 drives (460V drives use integrated terminals)
SV2-CN10-STO	$10.00	Replacement SureServo2 STO connector	PDF	All SureServo2 drives

SV2-CON-KIT

SV2-CN10-STO

SV2-CN1-CON

Replacement Drive Fans
The following replacement fans can be purchased for use with SureServo2 drives. Each fan can be used to replace the fan on a specific 230 and 460 V drive. Please see the table below to find the correct part.

Part Number	Price	Description
SV2-FAN-1	$15.00	SureServo2 main cooling fan, replacement, 40 x 40 x 15mm, 12 VDC. For use with SureServo2 SV2A-2075 and SV2A-2150 drives. Electrical connector included.
SV2-FAN-2	$14.00	SureServo2 main cooling fan, replacement, 50 x 50 x 20mm, 12 VDC. For use with SureServo2 SV2A-2200 and SV2A-2300 drives. Electrical connector included.
SV2-FAN-3	$23.00	SureServo2 main cooling fan, replacement, 50 x 50 x 20mm, 12 VDC. For use with SureServo2 SV2A-4040, SV2A-4075 and SV2A-4150 drives. Electrical connector included.
SV2-FAN-4	$24.00	SureServo2 main cooling fan, replacement, 60 x 60 x 25mm, 12 VDC. For use with SureServo2 SV2A-2550, SV2A-4300 and SV2A-4550 drives. Electrical connector included.
SV2-FAN-5	$19.00	SureServo2 main cooling fan, replacement, 60 x 60 x 20mm, 12 VDC. For use with SureServo2 SV2A-2550, SV2A-4200 and SV2A-4550 drives. Electrical connector included.
SV2-FAN-6	$27.00	SureServo2 main cooling fan, replacement, 70 x 70 x 25mm, 12 VDC. For use with SureServo2 SV2A-2750 and SV2A-4750 drives. Electrical connector included.
SV2-FAN-7	$49.00	SureServo2 main cooling fan, replacement, 92 x 92 x 38mm, 24 VDC. For use with SureServo2 SV2A-2F00 drive. Electrical connector included.
SV2-FAN-8	$38.00	SureServo2 main cooling fan, replacement, 92 x 92 x 38mm, 12 VDC. For use with SureServo2 SV2A-4F00 drive. Electrical connector included.

SV2-FAN-1

SV2-FAN-8