

Single-axis  
robot controller

# SRCX

Usable with the motor output from 50W to 600W.  
Standard model which uses 100V / 200V AC  
input power.

## Features

### 1 Completely absolute

Compatible with absolute position detector resolvers. A function to backup the multi-rotation amount data is provided thereby realizing a completely absolute model.

### 2 Applicability to network

CC-Link, DeviceNet, Profibus, and Ethernet are available options for the SRCX controller for easy communication.

### 3 High-speed, high-accuracy servo

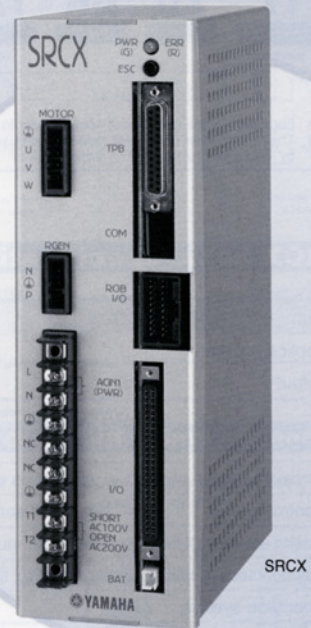
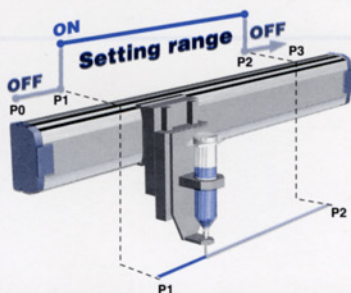
High speed, high-accuracy and detailed control is achieved by incorporating a 32-bit RISC CPU.

### 4 Two roles with one unit

As a BASIC-like programming language is used, even first-time users can easily program the data. A simple usage method, with no need for programming is possible, by carrying out only point teaching and using movement commands with I/O from the sequencer.

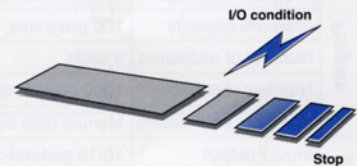
### 5 Multitask function

This function enables to execute up to 4 tasks of peripheral equipment of the robot at the same time. With the multitask function combined with the JMPP command, it is possible to have I/O output when the specified point is passed during movement.



### 6 Function to make conditional stop during movement

The arm can be decelerated and stopped, using I/O conditions of the MOVF command while it is moving. This function is useful when searching the target position with a sensor.

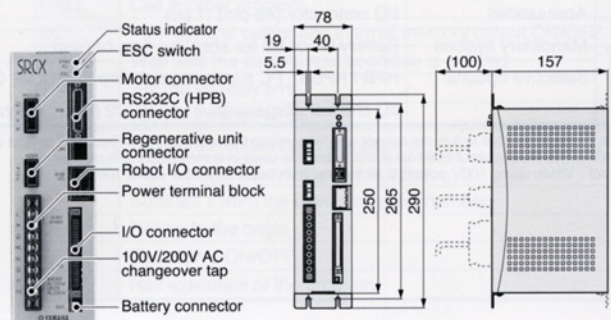


### 7 Limitless operation function

This function cancels restriction against multi-rotation in one direction. It is usable for the servo tact conveyor and index table.



## SRCX part names / dimensions



## SRCX ordering method

**F17 - 20 - BK - 1250 - 3L - SRCX - 20 - R - DN - B1**

Model	Lead designation	Brake	Stroke	Cable length	Applicable controller	Driver	Regenerative unit	Network	Battery
						05 : 100W or less 10 : 200W 20 : 400 to 600W	No entry : None R : Regenerative unit RGU2 <sup>Note 2</sup>	No entry : None CC : CC-Link DN : DeviceNet PB : Profibus EN : Ethernet	B1 : 700mAh B2 : 2000mAh

Note 1

Note 1 : For details of the mechanical section, refer to YAMAHA FLIP-X catalog.  
Note 2 : The regenerative unit RGU2 (option) is required when operating a model designated by YAMAHA or a load with a large inertia.

## SRCX basic specifications

Item	Model	SRCX
Applicable motor output	Driver model <sup>Note 1</sup>	
	05	10
	100W or less <sup>Note 2</sup>	200W
		400W to 600W
Number of controllable axes	single-axis	
Number of controllable robots	One single-axis robot	
Control system	AC full-digital servo	
Position detection method	Resolver with multi-rotation absolute function	
Position setting unit	Linear system : mm Rotational system : degree	
Operation system	PTP	
Speed setting	1% to 100% in 1% increments	
Acceleration setting	1) Automatically set according to robot type and transfer amount. 2) Setting with acceleration/deceleration parameter, 1% to 100% in 1% increments	
Program language	Yamaha robot language	
Program capacity	100 programs, 155 steps per program, 3000 steps in total	
Number of multitasks	4 tasks	
Number of points	1000 point in total	
Point-data input method	Manual data input (coordinates input), remote teaching, direct teaching, off-line programming with PC	
Input / output	16/13 general-use points, 8/3 dedicated points	
External communication	RS-232C : 1CH (for communication with HPB / HPB-D or PC)	
Built-in power supply for external drive	24VDC/600mA (horizontal specification)	
Brake output	One-point relay type	
Abnormality detection items	Over-current check, over-load check, case temperature check, motor open-circuit check, encoder open-circuit check, software limit over, system malfunction, communication error, battery malfunction	
Power	Single phase AC100 to 115V, 200 to 230V +/-10%, 50/60Hz <sup>Note 3</sup>	
Power consumption (Max.)	400VA	600VA
Dimensions	W78 x H250 x D157mm	
Weight	1.5kg	
Operating temperature	0°C to 40°C	
Storage temperature	-10°C to 65°C	
Operating humidity	35% to 85%RH (non-condensing)	
Noise resistance capacity	IEC61000-4-4 level 2	
Ni-Cd battery charging method	Trickle charging	
Accessories	I/O connector (48-pin) (1 pc)	
Mandatory options	Battery B1 or B2 for absolute data backup	
Selective options	HPB / HPB-D, PC supporting software POPCOM, Communication cable for PC supporting software (3.5m), I/O checker, Regenerative unit RGU2 (Basic weight : 1.1kg) <sup>Note 1</sup>	

Note 1 : Regenerative unit is necessary when operating those models specified by Yamaha or a load whose inertia is large.

Note 2 : The motor output of B14H is 200W but it is used in combination with a 05 driver.

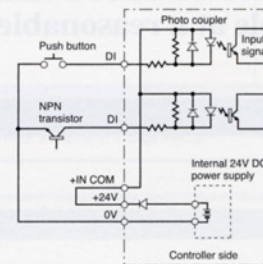
Note 3 : When using 100V power, a jumper cable is required for the power terminal.

## SRCX connector I/O signals

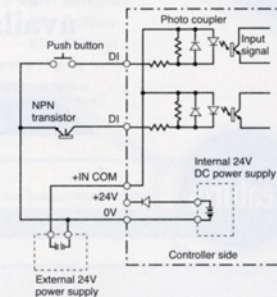
Terminal number	Signal name	Function
A-1	ABS-PT	Move the point from the origin position
B-1	INC-PT	Move the point from the current position
A-2	AUTO-R	Start automatic operation
B-2	STEP-R	Start step operation
A-3	ORG-S	Return to the origin
B-3	RESET	Reset
A-4	SERVO	Return to servo on
B-4	LOCK	Interlock
A-5	DI 0	General input 0
B-5	DI 1	General input 1
A-6	DI 2	General input 2
B-6	DI 3	General input 3
A-7	DI 4	General input 4
B-7	DI 5	General input 5
A-8	DI 6	General input 6
B-8	DI 7	General input 7
A-9	DI 8	General input 8
B-9	DI 9	General input 9
A-10	DI 10	General input 10
B-10	DI 11	General input 11
A-11	DI 12	General input 12
B-11	DI 13	General input 13
A-12	DI 14	General input 14
B-12	DI 15	General input 15
A-13	+ IN COM	Controller external + 24V power input
B-13	+ IN COM	Controller external + 24V power input
A-14	+ 24V	Controller internal + 24V power output
B-14	+ 24V	Controller internal + 24V power output
A-15	0V	Input/output standard 0V
B-15	0V	Input/output standard 0V
A-16	DO 0	General output 0
B-16	DO 1	General output 1
A-17	DO 2	General output 2
B-17	DO 3	General output 3
A-18	DO 4	General output 4
B-18	END	End normal execution
A-19	BUSY	Executing the command
B-19	READY	Ready for operation
A-20	DO 5	General output 5
B-20	DO 6	General output 6
A-21	DO 7	General output 7
B-21	DO 8	General output 8
A-22	DO 9	General output 9
B-22	DO 10	General output 10
A-23	DO 11	General output 11
B-23	DO 12	General output 12
A-24	ENG 1	Emergency stop input 1, used with EMG2 as a pair.
B-24	ENG 2	Emergency stop input 2, used with EMG1 as a pair.

## SRCX example of input signal connection

### ● When using internal 24V power supply

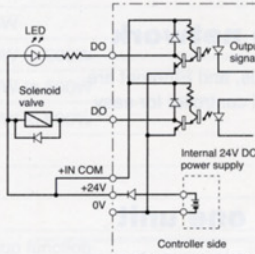


### ● When using external 24V power supply

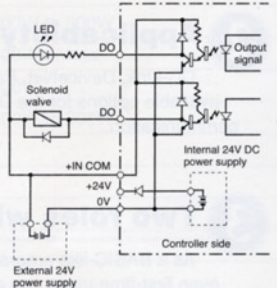


## SRCX example of output signal connection

### ● When using internal 24V power supply



### ● When using external 24V power supply



## SRCX command list

Command	Function
TON	Start a specified task
TOFF	End a specified task
MOVA	Move to a specified point (absolute position movement)
MOVI	Move to a specified point (relative position movement)
MOVF	Move until the specified DI number is entered
JMP	Jump to a specified label of the program
JMPF	Jump to a specified label of the program when conditional jump input matches the set value
JMPB	Jump to a specified label of the program when a DI number input matches the condition
JMPP	Jump to a label designated by axis positioning
CALL	Call another program
DO	Turn general output and internal memory output ON/OFF
WAIT	Wait until the input/output condition is entered
TIMR	Set the standby time
L	Set the location label
P	Set the execution point number
P +	Add 1 to the execution point number
P -	Subtract 1 from the execution point number
ORGN	Return to the origin
SRVO	Turn servo ON/OFF
STOP	Halt execution of the program