RS232C-Compatible Controller

SC8800/SC8800E for Stepping Motor Systems

The **SC8800** and **SC8800E** controllers can be programmed from a computer or ASCII terminal via a standard RS-232C port.

Features

Easy-to-Use

- The instruction set software is built into the controller. There is no need for set-up diskettes.
- Can be pre-programmed prior to installation.
- An easy-to-learn instruction set allows for complete system operation.
- End-of-travel and home positions can be easily determined by the three dedicated limit switch inputs.
- Operates on 10 to 28 VDC so the controller can be powered by a standard power supply.

Programming Options

- Can be controlled or programmed directly from a computer or ASCII terminal via a standard RS-232C port.
- Can be controlled by industry-standard programmable logic controllers so it can run off any already existing PLC.
- Linear, S-curve and parabolic acceleration/deceleration profiles are available.

Flexible I/O

- There are four programmable inputs and two programmable outputs to give the controller the ability to control other functions within the machine. All inputs and outputs are optically isolated.
- Step and direction signal outputs are industry standard TTL level signals in either 1-pulse or 2-pulse modes so the **SC8800** and the **SC8800E** can be used with any industry-standard stepping motor and driver package.
- All I/Os can be driven by an external DC power supply of 5 to 24 VDC.

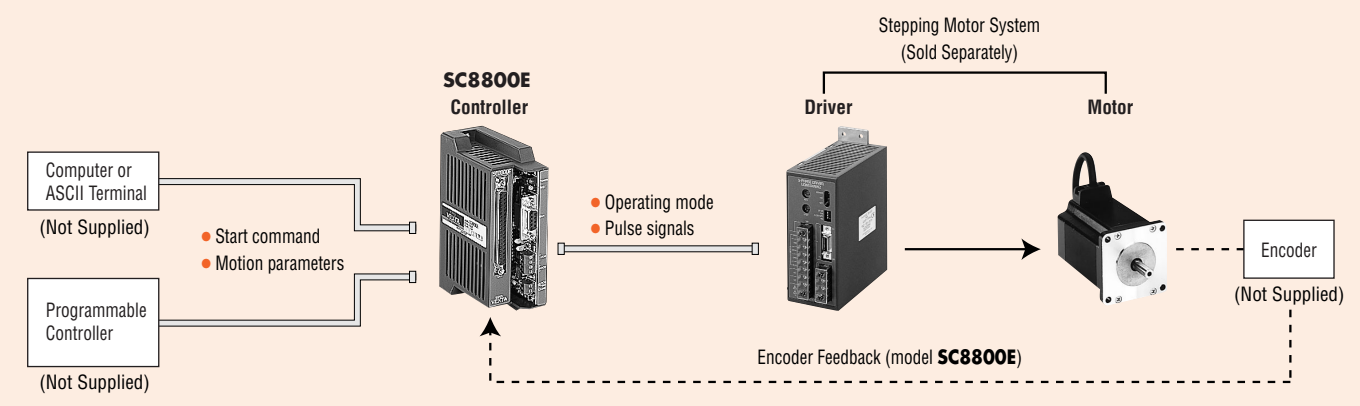
Encoder Feedback Capabilities (Model SC8800E)

- Nearly every known feedback device can be recognized since the controller can use two or three channels in either single-ended or differential modes.

Daisy-Chain Capabilities

- Up to 35 different axes can be controlled from one computer or ASCII terminal by daisy-chaining up to 35 **SC8800** or **SC8800E** controllers together.
- Available with an optional encoder input for position verification (model **SC8800E**).

System Configuration

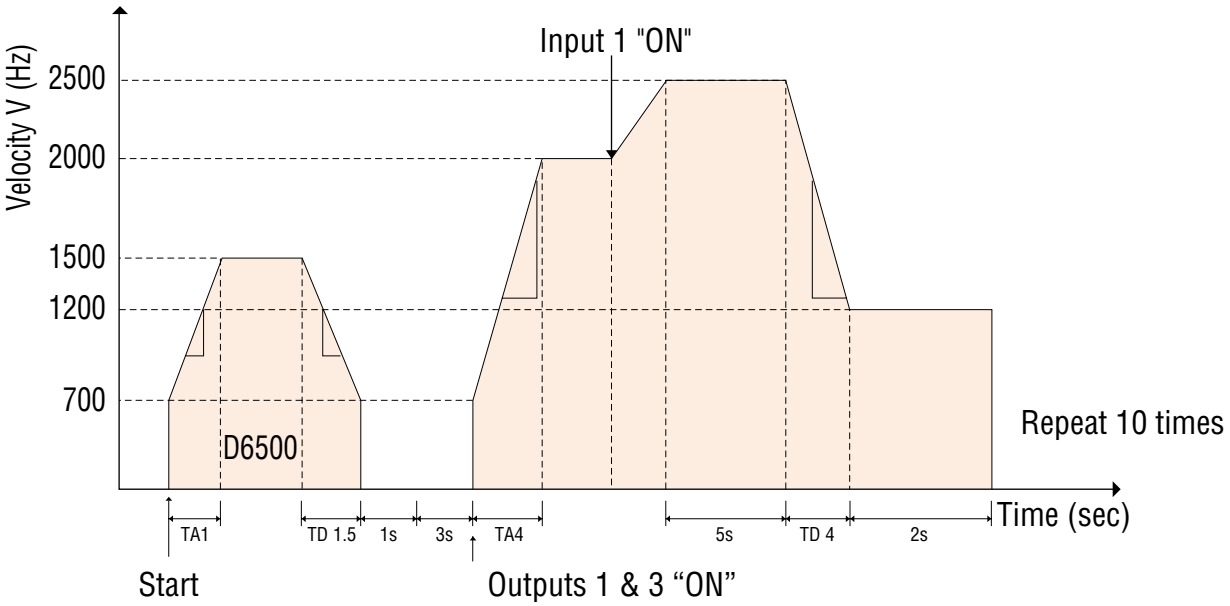


Features C-266 System Configuration C-266

Specifications

Parameter			Value
Input Power			10～28 VDC, 3.0 watts max.
Performance	Stepping Accuracy		±0 steps from preset total
	Velocity Accuracy		±0.05% of preset rate
	Velocity Repeatability		±0.01% of max. rate
	Position Range		0 to ±999,999,999 steps, when DSCALE is active
	Velocity Range		1 to 800,000 steps/sec
	Acceleration Rate		0.001 to 10 sec
Motion Types	Absolute		Move to specified internal counter position
	Index		Move specified distance
	Continuous		Move at specified speed until commanded to stop
	Go Home		Move to Home limit switch
	Move Time		Move specified distance in specified time
Sequence Execution	Via RS-232C		Sequence may be executed from RS-232C interface with the RUN command
	Via Power-up Auto Run		Execute any sequence, 0～15 upon power-up
	Via Programmable Input		Sequences may be selected using an external device
Programming Language			Simple, high-level programming language
Non-Volatile Memory	Sequence Length		8k or up to available remaining memory
	Number of Programs		50 max. or up to available memory
Inputs	Command Interface	Type	RS-232C serial type, 3-wire implementation (Tx, Rx, Gnd)
		Parameters	Baud rate fixed at 9600, 8 data bits, 1 stop bit, no parity
		Configuration	35 units max. can be controlled via a single port in the daisy-chain configuration
	CW, CCW and Home Limits		+5 to +30 VDC, Optically Isolated
	Programmable Inputs		Four to be used for machine interaction and/or sequence selection, +5 to +30 VDC, Optically Isolated
	TIM		Phase zero indicator, +5 to +30 VDC, Optically Isolated
	Encoder		Model **SC8800E** accepts 2 or 3 channel, 2-phase quadrature incremental encoders with differential or single ended outputs, 5 VDC TTL compatible, 400 kHz (quadrature), max.
Outputs	Step and Direction		TTL, High: 4～5 VDC, Low: 0~0.5 VDC, Pulse width: 0.5 ms min., Rise/Fall time: 0.2 ms max.
	Programmable		Two, Open collector, 1~24 VDC, 80 mA max.
	Status		Fault & Busy, Open collector, 1～24 VDC, 80 mA max.
Mechanical	Dimensions		L 3.35 in. (85 mm) × W 1.57 in. (40 mm) × H 4.72 in. (120 mm)
	I/O Connectors		Combination of fixed screw terminal and D-type
Environmental	Cooling Method		Natural Ventilation
	Ambient Temperature Range		32°F～122°F (0°C～+50°C)
	Humidity		20～ 85% (noncondensing)
Weight			0.68 lb. (0.31 kg)

Programming Example



The two moves shown above can be executed with the following program commands :

	Commands	Description
1	LOOP 10	*Loop this program 10 times*
2	SAS Push START to begin	*Echo message to screen*
3	VS700; V1500	*Set start and run velocities for the first move*
4	TA1; TD1.5	*Set Accel time to 1 sec & Decel time to 1.5 sec*
	When start signal is input, program begins	
5	PC0; EC0	*Set position and encoder counters to zero*
6	H+	*Set direction to CW*
7	D6500	*Set distance to 6500 steps*
8	MI	*Execute the Index move*
9	DELAY1	*Delay 1 second*
10	IF (CP!=0)	*If encoder position is incorrect,*
11	THEN JMP1	*Then, restart program*
12	ELSE DELAY3	*Else Delay 3 seconds.*
13	OUT=101	*Turn on Outputs 1 and 3*
14	V2000	*Set velocity to 2000 steps/sec*
15	T4	*Set Accel & Decel time to 4 sec. for second move*
16	WHILE (IN1=0)	*While Input #1 is off,*
17	MC	*Move continuously*
18	ENDW	*End the while loop*
19	V2500; MC	*Change speed to 2500 steps/sec*
20	DELAY5	*Delay 5 seconds*
21	V1200	*Change speed to 1200 step/sec*
22	DELAY2	*Delay 2 seconds*
23	STOP	*Stop moving*
24	ENDL	*Return to beginning of loop*

Dimensions Scale 1/4, Unit = **inch** (mm)

SC8800
SC8800E

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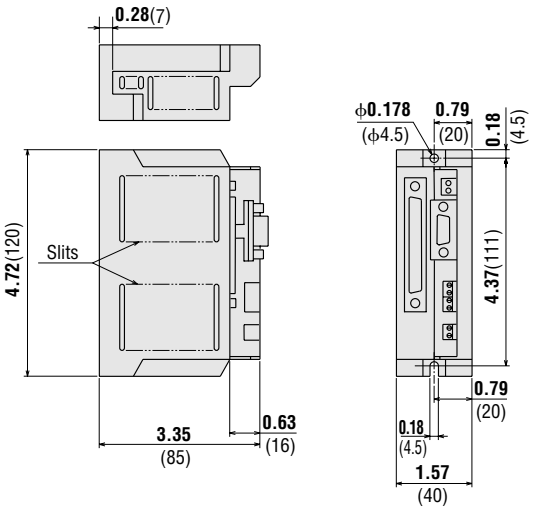
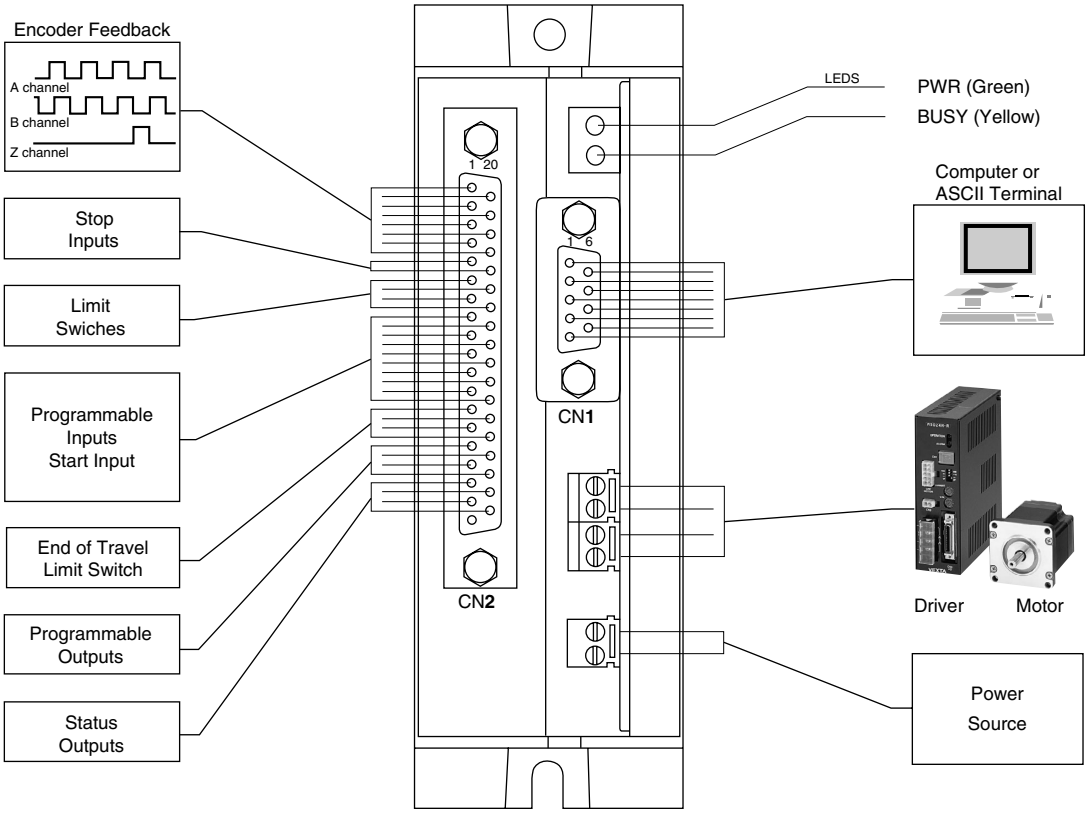
System Layout