Oriental motor

NEW

(RoHS) RoHS-Compliant Universal Controller



Equipped with program editing and execution functions, the highly-functional and sophisticated **SCX10** controller is now available.

You can use the **SCX10** as a stored program controller connecting to any of Oriental Motor's standard pulse input drivers.

The **SCX10** is also able to control the motor via various serial ports such as USB, RS-232C and **CRN**ODGO.



Features

100 sequence programs can be stored

SCX10 can store up to 100 programs and execute various operations, from simple movements like "repeating positioning operation" to complicated controls like "operation by calculating the value based on external inputs".

Easy Operation

The convenient and easy-to-use PC software, "Immediate Motion Creator for **CM/SCX** Series", is provided with the **SCX10**. Setting the travel amount and speed, you can easily start an operation with clicking the start key. Also, you can easily create a program by selecting the commands. Other functions, such as real time monitor for the teaching position, current position and I/O status, system parameter setting and I/O assignment are available.



USB Port as Standard Equipment

SCX10 has a mini USB port on the front panel and you can directly connect to your PC using a commercially available mini USB cable. This is advantageous for maintenance since a special cable or converter is not required.

Intelligent Setting

Setting the "User Unit" parameter initially, you can program data for the speed and travel amount as the unit of your actual motion such as "mm", "inch" and "revolution".



External Encoder Input

SCX10 has a function for external encoder inputs which enables continuous monitoring of the feedback position and position error. Line driver, open collector and TTL inputs are compatible.



Various Interfaces for Operation



♦ Stand-Alone Operation Using Sensors and Switches SCX10 can operate as a stand-alone controller by selecting the desired sequence. Utilizing 9 general inputs and 4 general outputs, you can configure a simple system without a PC or programmable controller.



Oirect Command Operation via CANopen

SCX10 has a standard built-in interface for CANopen.

*CANopen for the SCX10 is certified by CiA (CAN in Automation).



◇Operation Using a PC

SCX10 can connect to a PC via RS-232C or USB. The SCX10 can also be connected via an RS-232C daisy chain connection for multi-axis control with another SCX10 or other products such as the ASX Series all-in-one closed loop *Qstep* motor.



*Multi-axis control via USB is configured with multiple USB ports.

◇Operation Using a Programmable Controller

SCX10 can communicate a wide variety of signals via I/O to a programmable controller. Moreover, serial communication is available, if the programmable controller has a USB or RS-232C interface built-in.



Two Types of Operations

♦ Executing Sequence Operation [Stored Program Function] This function is available for conditional branching using generalpurpose I/Os, wait processes using internal timers, and other operations based on sequence control as well as setting the positioning and speed data. The **SCX10** can store up to 100 different programs. You can select and execute via USB, RS-232C, CANopen and I/O port.



[Example program]

Seq [1] [2] [3] [4] [5] [6] [7] [8] [9] [10] [11] [12]	1 VS 1 VR 9 TA 1 TD 2 DIS 2 LOOP 3 MI MEND WAIT 1 ENDL MA 0 MEND	: Starting Velocity * : Running Velocity * : Acceleration Time : Deceleration Time : Incremental Motion Distance * : Begin Counted LOOP Block : Move Incremental Distance : Wait for Motion End : Wait for Specified Time : End of LOOP Block : Move to Absolute Position : Wait for Motion End
[13]	END	; Wait for Motion End ; End Sequence

* You can set the speed and travel amount as the unit of your actual motion such as "mm", "inch" and "revolution".

♦ Direct Command Operation

You can operate a motor directly by sending commands via the serial port (USB, RS-232C, CANopen) from your PC or programmable controller. This function is suitable for applications where positioning data is updated frequently or managed all at once by the PC or programmable controller.



[Example Commands]

DIS	; Incremental Motion Distance
VR	; Running Velocity
VS	; Starting Velocity
ТА	; Acceleration Time
ТD	; Deceleration Time
MI	; Move Incremental Distance
MA	; Move to Absolute Position
MCP	; Move Continuously, Positive
MCN	; Move Continuously, Negative
MGHP	; Seek Mechanical Home Position
ALMCLR	; Clear Alarm Condition

Specifications

Model		SCX10
Operation Mode		Immediate command / Stored program
	Number of sequence programs	Max.100
	Program size	2kB Maxmum for total compiled sequences
Coquence Dregrame		4kB Maximum for 1 sequence (text+compiled data)
Sequence Programs	Brogramming Mathed	Immediate Motion Creator for CM/SCX Series [supplied software]
	Programming method	or General terminal software
	Function Example	Subroutines, Math/Logical operators, User variables
	Number of Control axis	Single axis
	Control Modes	Positioning operation (INDEX operation)
		Return to mechanical home operation (HOME operation)
		Continuous operation (SCAN operation)
		1-pulse Operation (JOG operation)
	Operating mode	Incremental / Absolute
Control	Starting Velocity	0~1.24MHz (1Hz increments)
Control	Speed range	1Hz~1.24MHz (1Hz increments)
	Acceleration time	0.001~500sec (0.001 sec increments)
	Position range	-2.147.483.648 to +2.147.483.647 pulses maximum
		3 sensor mode. 2 sensor mode. 1 sensor mode
	Mode for mechanical home seeking	(+LS, -LS, Home, Sensor, Timing)
	Foaturoe	User Unit, Teaching Positions, Linked Motion, Multi Axis Operation,
	Features	External encoder input, Protective Functions
	Pulse Output	1 Pulse Mode/2 Pulse Mode
		Line Driver Output (Line receiver input /Photo-coupler input compatible)
	Input	5 Signals Photo-coupler input
Duiven Interface		Input voltage 4.25-26.4V Input resistance 3KL
Driver Internace	Output	Built-In 5V/24VDC power supply Sink logic/Source logic compatible
		DC20V 20mA or less
		Built-in 5V/24VDC power supply Sink logic/Source logic compatible
	Encoder Input	A-phase. B-phase. Index Max. Frequency 1MHz
		A-phase, B-phase, Index Max. Frequency 1MHz
External Encoder Input		Line-driver, Open collector and TTL compatible
		Built-in 5VDC power supply
	Innut	9 signals (configurable) Photo-coupler inputs
1/0		Input voltage 4.25-26.4V Input resistance 5.4k Ω
	Output	4 signals (Configurable) Photo-coupler open-collector outputs
		UC3UV 20MA OF IESS
	USB	0600 10200 38/00 57600 115200 bps (0600 is default)
	RS-232C	Start-stop synchronous method, NRZ (Non-Beturn Zero) full-duplex
		8 bits. 1 stop bit. no parity
Serial Commication		9600, 19200, 38400, 57600, 115200 bps (9600 is default.)
		Daisy-Chain compatible (up to 36 axis)
	CANopen	CiA Draft Standard 301 Ver4.02 compliant
		10kbps, 20kbps, 50kbps, 125kbps, 250kbps, 500kbps, 800kbps, 1Mbps
Power Innut	Voltage	24VDC ± 10%
i ower input	Current	0.26A
Mass		0.33kg
	Ambient Temperature	0-50°C (non-freezing)
Environmental Condition	Ambient Humidity	20-85% (non-condensing)

Dimensions (Unit = mm)



For more information, please read the "Operating Manual" for the use of this product, or please contact the nearest Oriental Motor sales office.

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