Oriental motor

NEW PRODUCTS

RoHS RoHS-Compliant

Universal Controller

SCX10

Equipped with program editing and execution functions, the highly-functional and sophisticated **SCX10** controller is now available. Use the **SCX10** as a stored program controller to connect 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 CANopen.

Features

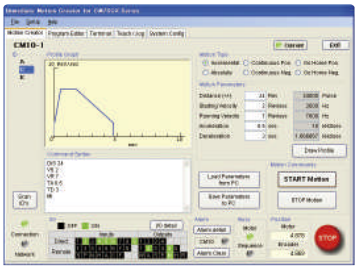
100 Sequence Programs can be Stored

The **SCX10** can store up to 100 programs and execute various operations, from simple movements like "repeated 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**. Easily start an operation with the click of a button or start key by setting the travel amount and speed. The GUI allows for easy program creation by selecting commands from the commands list. Other functions available include; real time monitor for the teaching position, current position and I/O status, system parameter setting and I/O assignment.

PC software
"Immediate Motion Creator for **CM/SCX** Series" (Included)

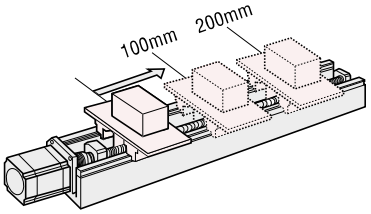


USB Port as Standard Equipment

The **SCX10** has a mini USB port on the front panel which can directly connect to a PC through a commercially available mini USB cable. No special cable or converter is required.

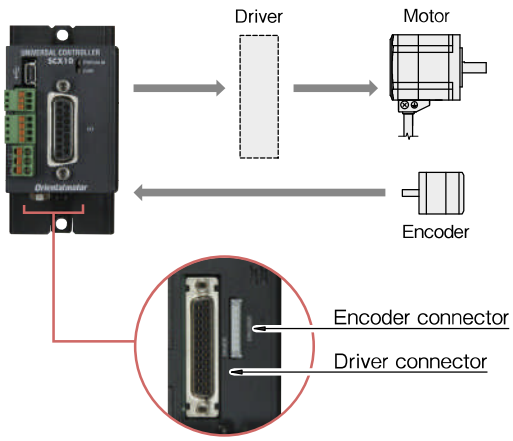
Intelligent Setting

Program data for speed and travel amounts by setting the "User Unit" parameter. Data can be programmed in units such as "mm", "inch" and "revolution".

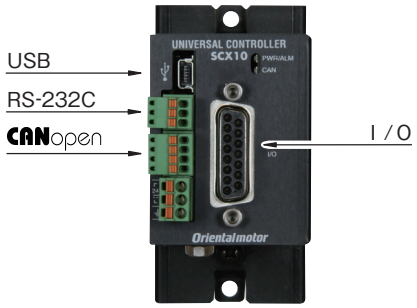


External Encoder Input

The **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.

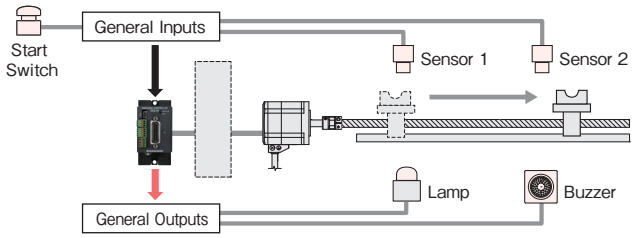


Various Interfaces for Operation



◇Stand-Alone Operation Using Sensors and Switches

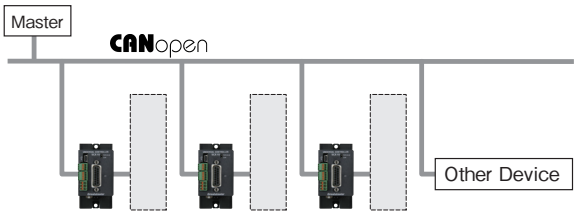
The **SCX10** can operate as a stand-alone controller, without a PC or programmable controller by utilizing 9 general inputs and 4 general outputs to select the desired sequences.



◇Direct Command Operation via CANopen

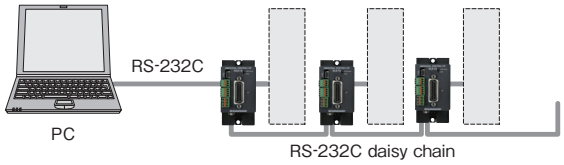
The **SCX10** has a standard built-in interface for CANopen.

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



◇Operation Using a PC

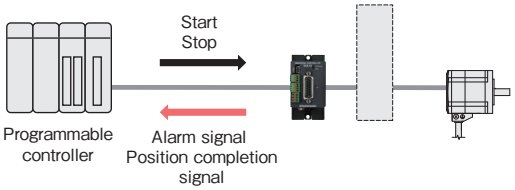
The **SCX10** can connect to a PC via RS-232C or USB∗. The **SCX10** can also be connected via an RS-232C daisy chain connection for multi-axis control with another **SCX10** or other products such as the ASX Series all-in-one closed loop α_{STEP} motor.



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

◇Operation Using a Programmable Controller

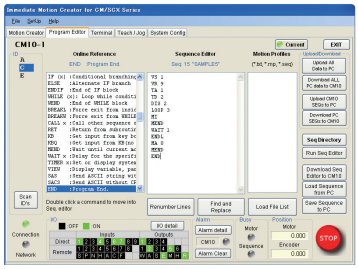
The **SCX10** can communicate a wide variety of signals via I/O to a programmable controller. Serial communications is also available, if the programmable controller has a USB or RS-232C interface built-in.



Two Types of Operations

◇Executing Sequence Operation [Stored Program Function]

This function is available for conditional branching using general-purpose I/O, wait processes using internal timers and other operations based on sequence control including setting the positioning and speed data. The **SCX10** can store up to 100 different programs that can be selected and executed via USB, RS-232C, CANopen and I/O port.



[Example program]

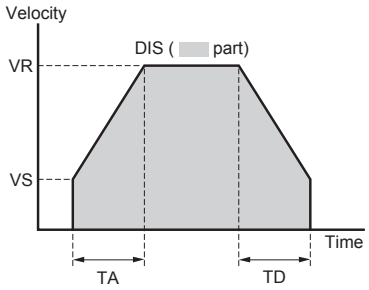
```
Seq  1
[1]     VS  1              ; Starting Velocity ∗
[2]     VR  9              ; Running Velocity ∗
[3]     TA  1              ; Acceleration Time
[4]     TD  2              ; Deceleration Time
[5]     DIS  2             ; Incremental Motion Distance ∗
[6]     LOOP  3            ; Begin Counted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

∗ Set the speed and travel amount as the unit of your actual motion such as "mm", "inch" and "revolution".

◇Direct Command Operation

Operate a motor directly by sending commands via the serial port (USB, RS-232C, CANopen) from a 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.

```
>DIS=60
 DIS=60 mm
>VR=5
 VR=5 mm/sec.
>VS=1
 VS=1 mm/sec.
>TA=0.5
 TA=0.5
>TD=0.5
 TD=0.5
>MI
>
```



[Example Commands]

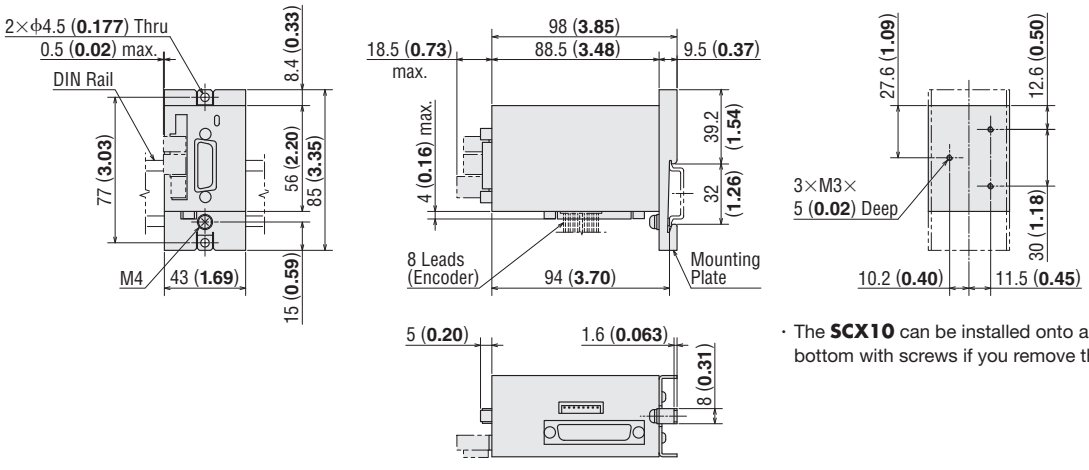
```
DIS     ; Incremental Motion Distance
VR      ; Running Velocity
VS      ; Starting Velocity
TA      ; Acceleration Time
TD      ; Deceleration Time
MI      ; Move Incremental Distance
MA      ; Move to Absolute Position
MCP     ; Move Continuously, Positive
MCN     ; Move Continuously, Negative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

Specifications

Model		SCX10
Operation Mode		Immediate command / Stored program
Sequence Programs	Number of sequence programs	Max.100
	Program size	2 kB Maximum for total compiled sequences 4 kB Maximum for 1 sequence (text+compiled data)
	Programming Method	Immediate Motion Creator for **CM/SCX** Series [supplied software] or General terminal software
	Function Example	Subroutines, Math/Logical operators, User variables
Control	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
	Starting Velocity	0～1.24 MHz (1 Hz increments)
	Speed range	1 Hz～1.24 MHz (1 Hz increments)
	Acceleration time	0.001～500 sec (0.001 sec increments)
	Position range	-2,147,483,648 to +2,147,483,647 pulses maximum
	Mode for mechanical home seeking	3 sensor mode, 2 sensor mode, 1 sensor mode (+LS, -LS, Home, Sensor, Timing)
	Features	User Unit, Teaching Positions, Linked Motion, Multi Axis Operation, External encoder input, Protective Functions
Driver Interface	Pulse Output	1 Pulse Mode/2 Pulse Mode Line Driver Output (Line receiver input /Photo-coupler input compatible)
	Input	5 Signals Photo-coupler input Input voltage 4.25-26.4 VDC Input resistance 3 kΩ Built-in 5/24 VDC power supply Sink logic/Source logic compatible
	Output	8 signals Photo-coupler open-collector outputs 30 VDC 20 mA or less Built-in 5/24 VDC power supply Sink logic/Source logic compatible
	Encoder Input	A-phase, B-phase, Index Max. Frequency 1 MHz
External Encoder Input		A-phase, B-phase, Index Max. Frequency 1 MHz Line-driver, Open collector and TTL compatible Built-in 5 VDC power supply
I/O	Input	9 signals (configurable) Photo-coupler inputs Input voltage 4.25-26.4 VDC Input resistance 5.4 kΩ
	Output	4 signals (Configurable) Photo-coupler open-collector outputs 30 VDC 20 mA or less
Serial Communications	USB	USB2.0 compatible (Virtual COM port) Mini USB terminal 9600, 19200, 38400, 57600, 115200 bps (9600 is default.)
	RS-232C	Start-stop synchronous method, NRZ (Non-Return Zero), full-duplex 8 bits, 1 stop bit, no parity 9600, 19200, 38400, 57600, 115200 bps (9600 is default.) Daisy-Chain compatible (up to 36 axis)
	CANopen	CiA Draft Standard 301 Ver4.02 compliant 10 kbps, 20 kbps, 50 kbps, 125 kbps, 250 kbps, 500 kbps, 800 kbps, 1 Mbps
Power Input	Voltage	24 VDC ± 10%
	Current	0.26 A
Mass		0.33 kg (0.73 lb.)
Environmental Condition	Ambient Temperature	0～+50˚C (+32～+122˚F) (non-freezing)
	Ambient Humidity	20～85% (non-condensing)

- When using the **SCX10** with either the **CSK** Series or **UMK** Series 2-phase motor driver packages, the **SCX10** and the driver need to be set to "2-Pulse input mode", CW and CCW pulse input.

Dimensions Unit = mm (in.)



- The **SCX10** can be installed onto a metal plate from the bottom with screws if you remove the mounting plate.

This product is manufactured at a plant certified with the international standards **ISO 9001** (for quality assurance) and **ISO 14001** (for systems of environmental management).

Specifications are subject to change without notice.
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