[Motorized] X-Axis - Linear Ball, CAVE-X POSITIONER

Compact

Spec.Change Printed in Purple

For CAD data, see the MISUMI website.

Features: Are excellent in rigidity and are compact in width. The overall length is also designed for space-saving.

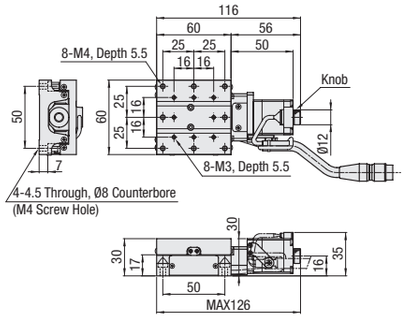
X-Axis

M Material: SUS440C Equivalent
S Surface Treatment: Electroless Nickel Plating
A Accessory: SCB4-12 (4 pcs.)

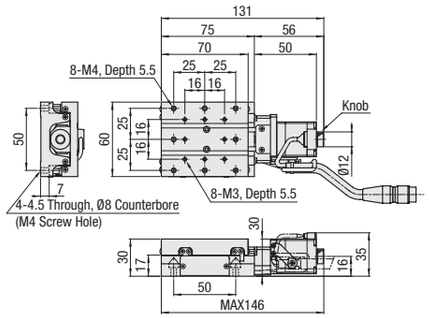
RoHS10

For Controllers, Handset Terminals, see P.1-2014-1~P.1-2014-2

XCV620-C-N



XCV630-C-N



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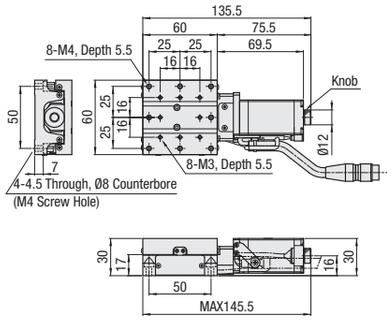

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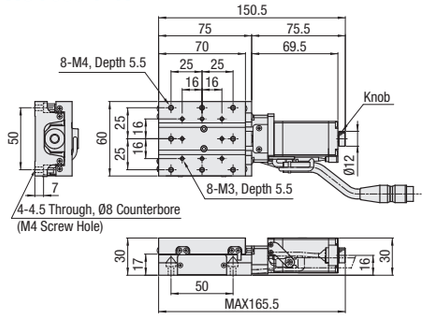
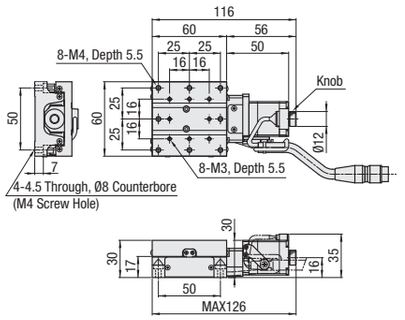
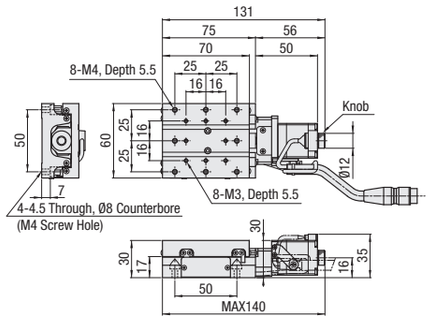


XCV620-G-N



XCV630-G-N



For the detailed dimensions of CAVE-X Positioner with the Motor MA or PA installed, see the applicable CAD data.

Part Number	Motor	Cable	Mechanical Standards			Accuracy Standards					
			Stage Surface (mm)	Travel Distance (mm)	Weight (kg)	Unidirectional Positioning Accuracy	Moment Rigidity (“/N•cm) Pitching	Yawing	Rolling	Pitching	Yawing
XCV620	C (Standard) F (High Torque) G (High Resolution) MA (With Electromagnetic Brake) PA (α-Step)	N (Cable not included (separately sold)) M (For Motor with Electromagnetic Brake) P (For α-Step) For combination of motors and cables, see the table below.	60×60	20	0.78 (0.87)	5µm or less	0.08	0.05	0.05	20" or less	15" or less
XCV630			60×70	30	0.9 (0.99)	5µm or less	0.08	0.05	0.05	20" or less	15" or less

For motor options MA and PA, the driver is included in the set. With motor options MA and PA, the selectable cable options are M and P, respectively and exclusively. Note that the cable option N is not selectable.
*1 The value differs depending on the type of motor. The above raw values are for stages incorporating Motor C (Standard) and the values in ( ) for stages incorporating Motor F (High Torque).

Ordering Example: Part Number XCV620 - Motor C - Cable N

Days to Ship

Configure Online

Motor/Cable Application Table

The available cable differs depending on the type of motor.

Motor/Cable Application Table	Motor	Cable
	C,F,G	N (Not Provided)
	MA	M
	PA	P

For the cable for C, F or G, see MSCB_ on P.1-2014-3

Max. Speed

Motor	(mm/sec)
C	30
F	35
G	25
MA	25
PA	40

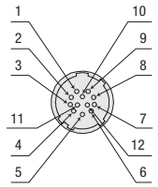
Note that the speed and positioning time will vary depending on the usage conditions. The values shown here are MISUMI's reference values. Operation at these values is not guaranteed.

Common Specifications

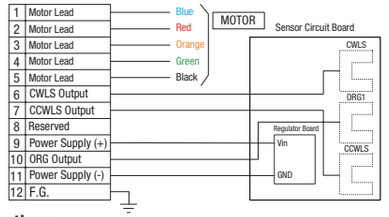
Feed Screw		Ball Screw Ø8, Lead 1
Guide		Linear Ball Guide
Resolution*2	Full	2µm/Pulse (1µm/Pulse) *3
	Half	1µm/Pulse (0.5µm/Pulse) *3
	Fine (Upon 1/20 partitioned)	0.1µm(0.05µm)
Max. Speed*4		20mm/sec(30mm/sec)*5 (Pulse Rate: 5kHz)
Positioning repeatability		±0.5µm or less
Load Capacity		49N
Lost Motion		1µm or less
Backlash		1µm or less
Straightness		3µm or less
Parallelism		15µm or less
Motion Parallelism		10µm or less

*2 This represents the travel distance of stage per one pulse signal.
*3 The values in ( ) are for Motor Option G (High Resolution).
*4 This represents the max. speed that can be driven by the recommended controller switched to Full Step mode, with the max. load applied. (The value differs depending on the current driving controller and the current load.)
*5 The values in ( ) are for Motor Option F (High Torque).
The value differs depending on the motor option.

Connector Pin Configuration



Wiring Diagram



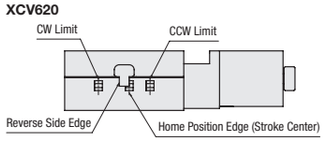
Electrical Specifications

Motor		C Standard	F High Torque	G High Resolution	MA With brake	PA Tuningless
Motor	Type	5-Phase Stepping Motor 0.75A/Phase (Oriental Motor Co., Ltd.)				α- Step Motor
	Step Angle	0.72°	0.72°	0.36°	0.72°	0.36° (When set to 1000 P/R)
Connector	Applicable Receptacle Connector	HR10A-10P-12S(73)(Hirose Electric Co., LTD.)			motor side:5557-06P-210 electromagnetic brake side: 5557-02P-210(MOLEX)	43020-1000 (MOLEX)
Sensor	Limit Sensor	Provided				
	Home Sensor	Photomicrosensor: EE-SX4320 (OMRON Corp.)				
	Near Home Sensor	-				
	Power Supply Voltage	DC5~24V ±10%				
	Current Consumption	60mA or less in Total				
	Control Output	NPN Open Collector Output DC5~24V, 8mA or less Residual Voltage 0.3V or less (when load current is 2mA)				
	Output Logic	Detecting (Dark): Output Transistor OFF (Non-Conducting)				

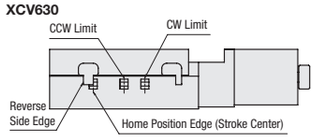
Sensors with Part Number EE-SX4134 will be discontinued and replaced by next-generation products with Part Number EE-SX4320 from November 2018.

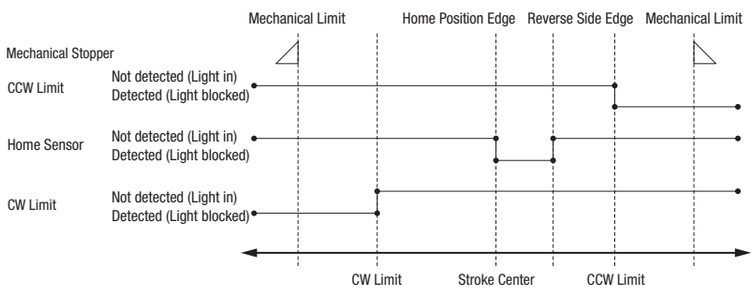
Timing Chart

XCV620



XCV630





(Unit: mm) CW Direction ◄ ► CCW Direction

	Reference Position	Mechanical Limit	CW Limit	Home Position Edge Stroke Center	Other Signal Edge	CCW Limit	Mechanical Limit
XCV620	Homing	11	10.5	0	5	10.5	13
XCV630	Homing	16	15.5	0	5	15.5	18

• Homing mentioned here means that Homing Routine Type 4 is executed by using the MSCTL102 Series controller.
• The coordinates shown are design values. There may be approx. ±0.5mm misalignment on the physical dimensions.

Recommended Homing Method

Type3	After detection is executed in the CCW direction, the process of detecting in the CCW direction is begun based on the ORG signal.
Type4	After detection is executed in the CW direction, the process of detecting in the CW direction is begun based on the ORG signal.
Type9	After Type 3 is executed, the process of detecting in the CCW direction is begun based on the TIMING signal.
Type10	After Type 4 is executed, the process of detecting in the CW direction is begun based on the TIMING signal.