

KEYENCE

NEW Ultra-High Speed, Sensing Ionizer

SJ-H Series



HIGH POWER HIGH QUALITY

*Suitable for high-speed static elimination in wide areas,
including clean room environments*



H Series

The highest static elimination capacity in the industry



LOW-VOLTAGE 24V WIRING

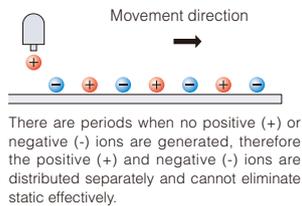
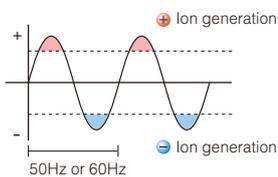
Low-voltage 24V wiring eliminates the adverse effect of discharge on cabling and surrounding equipment, allowing the construction of a highly reliable system.

High-speed static elimination and high-precision ion balance

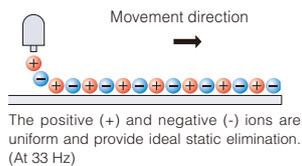
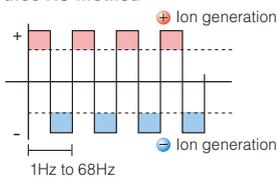
Pulse AC method

The SJ Series has adopted the pulse AC method that applies alternating high voltage to the electrode probe, producing ions of both polarities. Compared to the conventional AC method, the amount of ions generated is higher and the oscillating frequency can be changed. Therefore, the pulse AC method can be used in all conditions, from high-speed moving applications to static elimination of a work area.

AC method



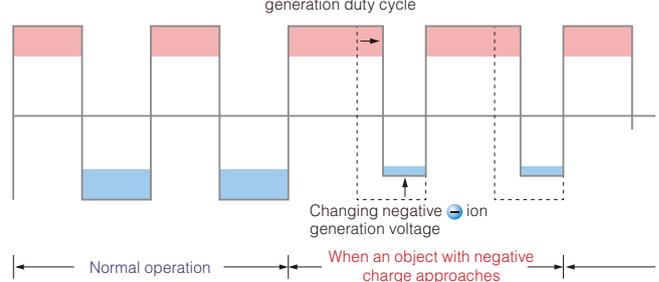
Pulse AC method



Dual I.C.C. (Dual Ion Current Control) system enables optimum static elimination Newly developed

The dual I.C.C. system is further advanced from the conventionally proven I.C.C. system found in other KEYENCE models. The SJ Series bar-type static eliminators adopt a dual I.C.C. system that can change the applied voltage in addition to the variable pulse width, thus providing more flexible control of ion generation level per unit time. This system enables optimum static elimination relative to a change in the ambient environment (temperature, humidity, etc.) and the electrode probe condition.

Dual I.C.C. method





SJ-H Series front view



INDICATORS & OUTPUTS

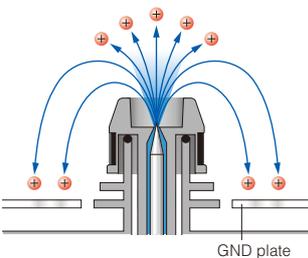
Safety functions, abnormal discharge detection output, electrostatic charge monitor, and ion level alarm are standard features.

The I.R.G. (Insert Ring Ground) structure provides the world's-highest static elimination speed.

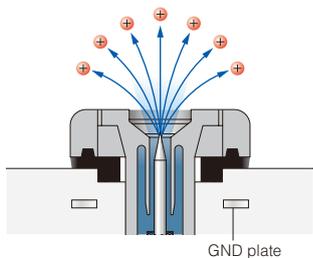
Newly developed [5 times faster than conventional models]

The SJ Series bar-type adopts the I.R.G. structure that incorporates the GND plate essential for ion generation into the ionizer body. This GND plate is externally mounted on conventional models. The I.R.G. structure directs the flow of generated ions toward the target object, instead of toward the GND plate. This structure increases the quantity of ions applied to the target, providing static elimination speed five times faster than conventional models.

Conventional model



I.R.G. structure



SJ-H Models

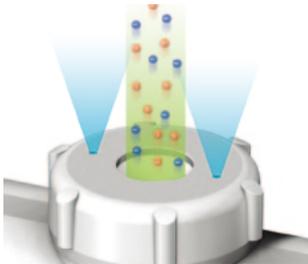
* Elective length indicates the static elimination range at 50 mm operating distance.

Static elimination length (Effective length)		Model
380 mm (360 mm)		SJ-H036A
600 mm (600 mm)		SJ-H060A
840 mm (840 mm)		SJ-H084A
1080 mm (1080 mm)		SJ-H108A
1320 mm (1320 mm)		SJ-H132A
1560 mm (1560 mm)		SJ-H156A
1800 mm (1800 mm)		SJ-H180A
2040 mm (2040 mm)		SJ-H204A
2280 mm (2280 mm)		SJ-H228A
2520 mm (2520 mm)		SJ-H252A
3000 mm (3000 mm)		SJ-H300A

Double Port Electrode Probe

[Double Port Electrode Probe] **Newly developed**

In addition to the sheath air guide structure that minimizes dust adhesion, the double port electrode probe cap is used to ensure high-speed static elimination while maintaining laminar flow.





The best maintenance-saving performance in the industry

The sheath air guide structure reduces maintenance downtime

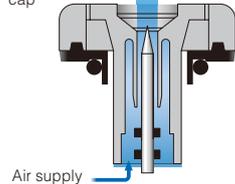
Newly developed

[5 times less maintenance than conventional models]

The supplied air is conveyed through a three-stage port in the probe cap, fully contained within the air chamber. The air contained in the chamber passes through the channel around the probe to generate a laminar flow. The concave structure at the air outlet blocks external disturbance, resulting in an excellent protective effect. This structure can remarkably reduce adhesion of foreign objects on the electrode probe tip. This results in five times less maintenance than conventional models.

Sheath air guide structure

Cross-sectional view of the electrode probe cap



3-way alarm output

The SJ Series provides the self-diagnosis function that monitors three types of abnormalities. If an abnormality is detected, the LED indicators identify the error condition and an external output is activated. Centralized control of ionizers is enabled by monitoring the external output.

I Cleaning warning

Monitors reduction in ion generation level due to dirt or wear of the electrode probe.

I Condition warning

Monitors a high charge level that cannot provide a sufficient static elimination effect.

I Alarm warning

Monitors abnormal discharge or damage to the ionizer.



Maintenance indicators

The SJ Series bar-type static eliminator includes a self-diagnosis function that monitors the ion generation level. With the bar LED indicators and alarm outputs, the ionizer alerts you of the need for maintenance.



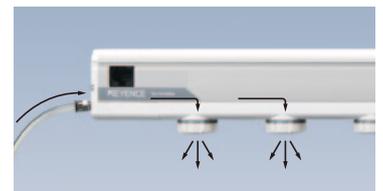
Easy electrode probe replacement

Since the electrode probe is attached with a PIN connector or cassette, users can easily replace the electrode probe.



Air purge function

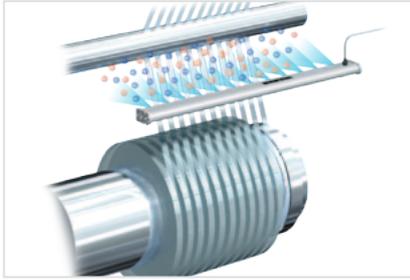
The clean air supply function blows air from the area surrounding the electrode probe. This function helps to prevent dust adhesion to the electrode.



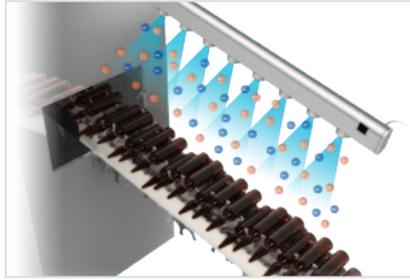
N₂ (nitrogen) purging static elimination

As a standard feature, N₂ purge systems used in semiconductor and liquid crystal manufacturing processes are compatible with the SJ-H Series static eliminators.

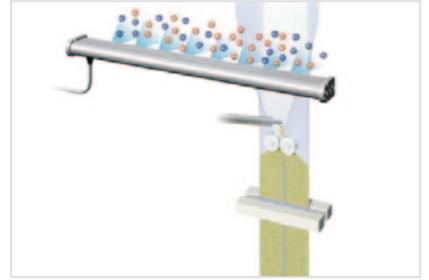
APPLICATIONS



Static elimination of slitters



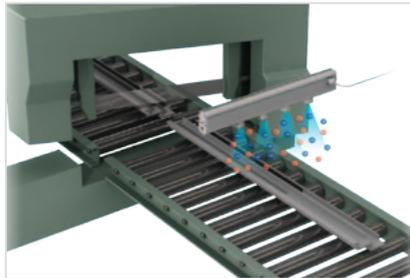
Prevent dust adhesion to ampoules after heat treatment



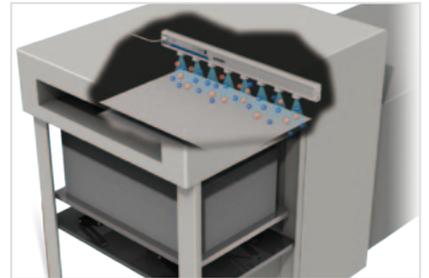
Prevent foreign material adhesion between heat seal layers



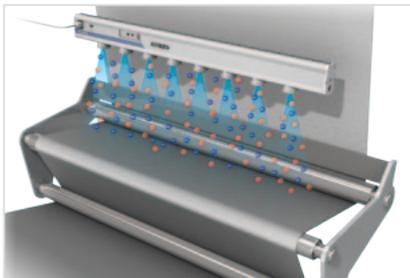
Static elimination in the coating process of bumpers



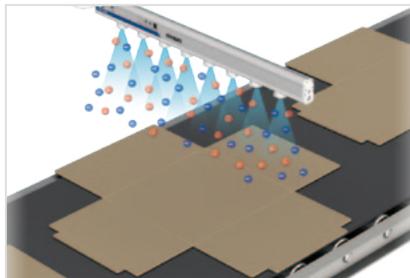
Chip removal during cutting sashes



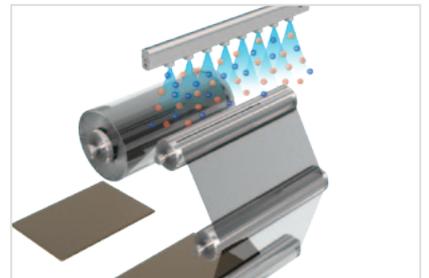
Defect prevention in the offset printing process



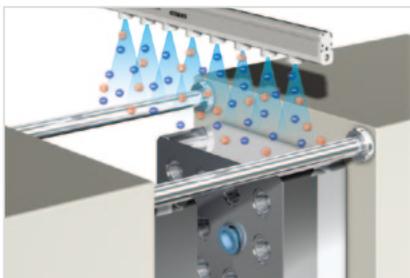
Static elimination of unwoven cloth



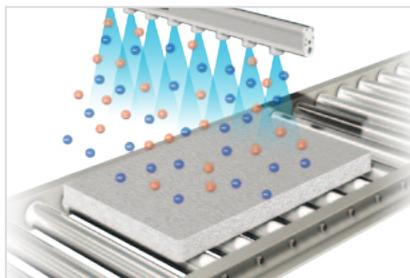
Defect prevention of adhesive painting on cardboard



Static elimination when attaching copper plates/films



Prevention of adhesion in metal moulds



Static elimination of building material boards



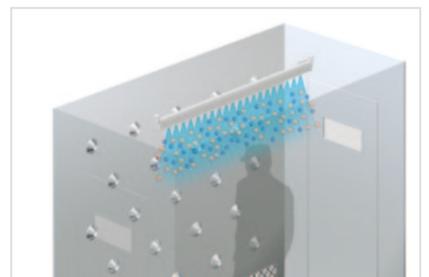
Static elimination of films



Static elimination during assembling car navigation systems



Static elimination of ECU substrates on conveyor lines



Static elimination in the air shower

SPECIFICATIONS

Model	SJ-H036A	SJ-H060A	SJ-H084A	SJ-H108A	SJ-H132A	SJ-H156A	SJ-H180A	SJ-H204A	SJ-H228A	SJ-H252A	SJ-H300A
Ion generation method	Corona discharge method										
Structure	Shock-proof, resistance-coupled type										
Voltage application method/applied voltage	Pulse AC method/±7000 V										
Ion balance control method	Dual I.C.C. method										
Ion balance ¹	±30 V										
Operating distance	50 to 2000 mm										
Control input	NPN open collector or non-voltage contact signal										
Control output	NPN type photo-relay, 100 mA max. (40 V max.)										
Ratings	Power supply voltage	24 VDC-36 V±10%									
	Current consumption	500 mA (at 24 VDC)/350 mA (at 36 VDC)									
	Overvoltage category	1									
	Pollution degree	2									
Primary features	Condition alarm, ion level alarm, alarm output										
Air purge connection port	Rc 1/8										
Air purge air supply pressure	0.5 MPa or less										
Materials	Electrode probe	Tungsten									
	Body	ABS resin/PC									
Environmental resistance	Ambient temperature	0 to +40°C									
	Relative humidity	35 to 85%RH (No condensation)									
Effective length ²	360 mm	600 mm	840 mm	1080 mm	1320 mm	1560 mm	1800 mm	2040 mm	2280 mm	2520 mm	3000 mm
Total length (A) ³	380 mm	620 mm	860 mm	1100 mm	1340 mm	1580 mm	1820 mm	2060 mm	2300 mm	2540 mm	3020 mm
Weight	Controller	150 g	—	—	—	—	—	—	—	—	—
	Static elimination bar	500 g	780 g	980 g	1200 g	1400 g	1550 g	1750 g	2000 g	2350 g	3150 g

1. The value is measured under the following condition.

Operating distance	300 mm (22 Hz)	600 mm (10 Hz)	1500 mm (1 Hz)
Operating ambient temperature	0 to +40°C		
Operating ambient humidity	35 to 65%RH		

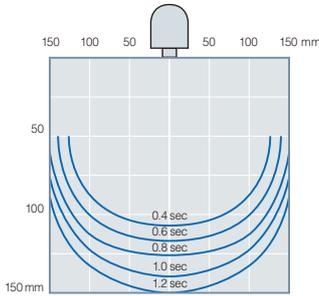
Under a 0.3 m/s downflow

2. The effective length is determined based on the static elimination range at a distance of 50 mm.

3. The total length includes the end units.

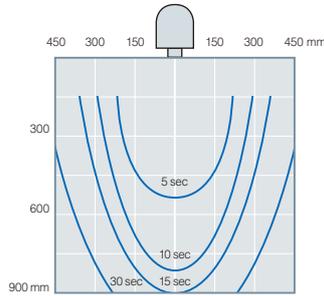
CHARACTERISTICS

Static elimination range vs. static elimination time (33 Hz)



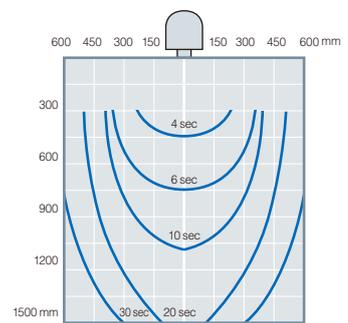
Measurement conditions:
 Static elimination time from ±1000 V to ±100 V
 Using a 150 x 150 mm plate monitor (20 pF).
 Model: SJ-H108A, No downflow

Static elimination range vs. static elimination time (10 Hz)



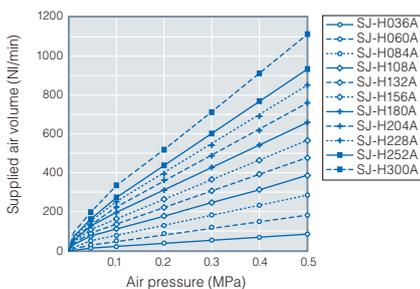
Measurement conditions:
 Static elimination time from ±1000 V to ±100 V
 Using 150 x 150 mm plate monitor (20 pF).
 Model: SJ-H108A, under a 0.3 m/s (0.98 ft/s) downflow

Static elimination range vs. static elimination time (1 Hz)

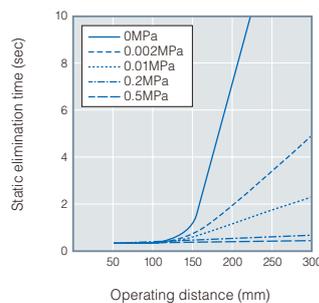


Measurement conditions:
 Static elimination time from ±1000 V to ±100 V
 Using 150 x 150 mm plate monitor (20 pF).
 Model: SJ-H108A, under a 0.3 m/s (0.98 ft/s) downflow

Relationship between air pressure and air volume according to static elimination bar length (with air supply at both sides)

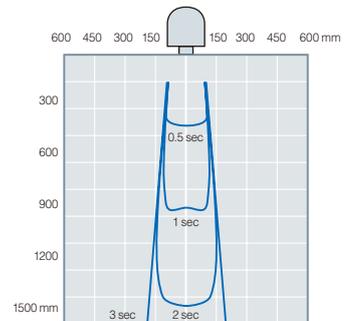


Relationship between static elimination speed and operating distance according to air pressure



Measurement conditions:
 Static elimination time from ±1000 V to ±100 V
 Using 150 x 150 mm plate monitor (20 pF).
 Model: SJ-H108A, No downflow

Static elimination range vs. static elimination time (Maximum air supply)



Measurement conditions:
 Static elimination time from ±1000 V to ±100 V
 Using 150 x 150 mm plate monitor (20 pF).
 Model: SJ-H108A, No downflow

Table of dimensions by model

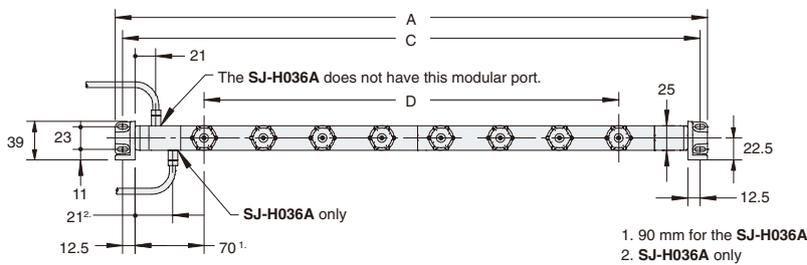
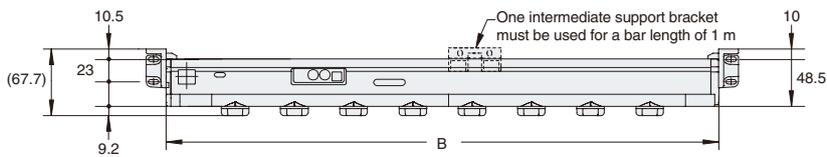
Unit: mm

Model	SJ-H036A	SJ-H060A	SJ-H084A	SJ-H108A	SJ-H132A	SJ-H156A	SJ-H180A	SJ-H204A	SJ-H228A	SJ-H252A	SJ-H300A
A Total length	380	600	840	1080	1320	1560	1800	2040	2280	2520	3000
B Static elimination bar length	340	560	800	1040	1280	1520	1760	2000	2240	2480	2960
C Mounting pitch	365	585	825	1065	1305	1545	1785	2025	2265	2505	2985
D Electrode pitch and length	P60 x 3=180	P60 x 7=420	P60 x 11=660	P60 x 15=900	P60 x 19=1140	P60 x 23=1380	P60 x 27=1620	P60 x 31=1860	P60 x 35=2100	P60 x 39=2340	P60 x 47=2820

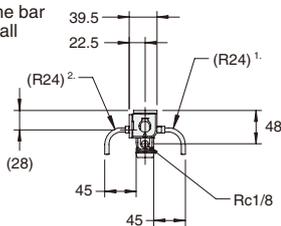
DIMENSIONS

Unit: mm

When the end units are attached

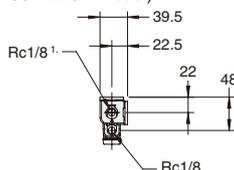


Left side of the bar (Common to all models)



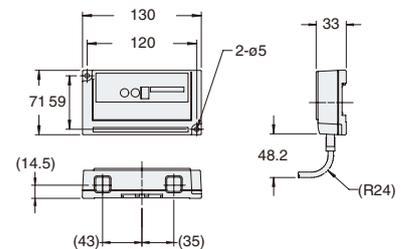
1. The SJ-H036A does not have this modular part.
2. SJ-H036A only

Right side of the bar (Common to all models longer than and including the SJ-H228A model)



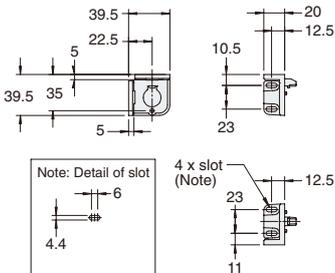
1. Not provided for the SJ-H204A or shorter models.

SJ-H036A (Controller)

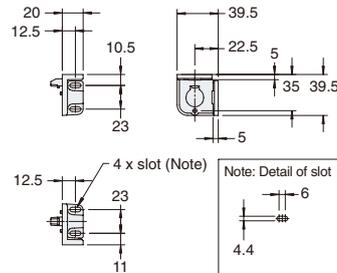


End unit (OP-84301)

End unit L

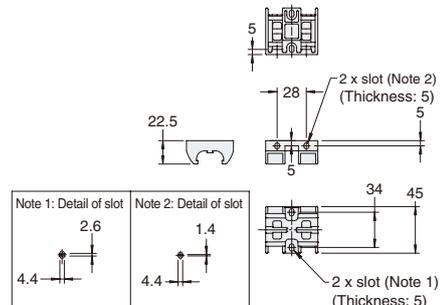


End unit R



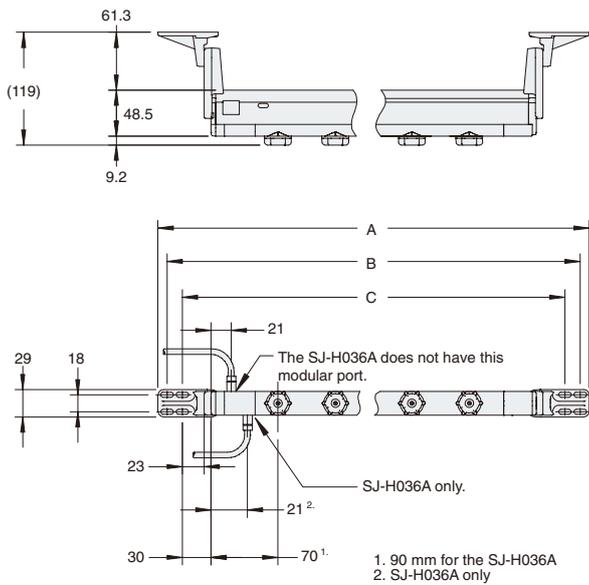
Intermediate support bracket (OP-84300)

(Rear view)



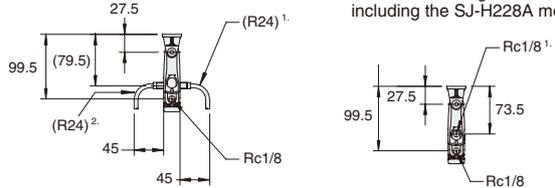
When a rotating mounting bracket is attached

Unit: mm



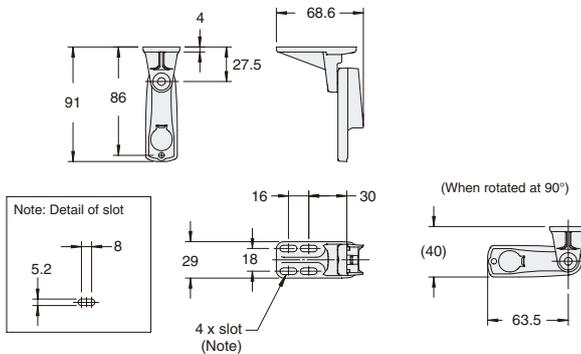
	Total length (A)	Mounting pitch (B)	Mounting pitch (C)
SJ-H036A	451	432	400
SJ-H060A	671	652	620
SJ-H084A	911	892	860
SJ-H108A	1151	1132	1100
SJ-H132A	1391	1372	1340
SJ-H156A	1631	1612	1580
SJ-H180A	1871	1852	1820
SJ-H204A	2111	2092	2060
SJ-H228A	2351	2332	2300
SJ-H252A	2591	2572	2540
SJ-H300A	3071	3052	3020

Left side of the bar (Common to all models) Right side of the bar (Common to all models longer than and including the SJ-H228A model)

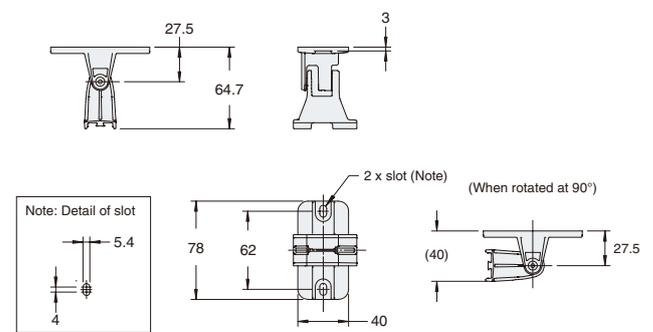


1. The SJ-H036A does not have this modular port.
2. SJ-H036A only.
1. Not provided for the SJ-H204A or shorter models.

Rotating mounting bracket (side) OP-84297



Rotating mounting bracket (intermediate) OP-84298



OPTIONS

<p>SJ-C2U/C5U/C10U</p> <p>10-pin I/O cable (2 m, 5 m, 10 m)</p>	<p>OP-42210/OP-42211/ OP-42212</p> <p>10-pin/10-pin cable (For OP-84296) (2 m, 5 m, 10 m)</p>	<p>SJ-C2H/C5H/C10H</p> <p>10-pin/10-pin cable (for SJ-H036A) (2 m, 5 m, 10 m)</p>	<p>OP-84299</p> <p>Electrode tip cleaning kit for SJ-H Series</p>	<p>OP-42218</p> <p>Replacement filter for electrode cleaning kit (10 pieces)</p>	<p>OP-84454</p> <p>Electrode port cleaning kit 2 for SJ-H Series</p>	<p>OP-84455</p> <p>Replacement filter for electrode cleaning kit 2 (10 pieces)</p>
<p>OP-84363 (Spare)</p> <p>Electrode probe replacement kit for SJ-H Series</p>	<p>OP-84293</p> <p>Tungsten electrode probe for SJ-HA (4 pieces)</p>	<p>OP-84296</p> <p>Junction relay box for SJ-H Series</p>	<p>OP-84300 (Spare)</p> <p>Intermediate support bracket for SJ-H Series</p>	<p>OP-84301 (Spare)</p> <p>End unit for SJ-H Series</p>	<p>OP-84297</p> <p>Rotating mounting bracket pair (right and left sides)</p>	<p>OP-84298</p> <p>Rotating mounting bracket (intermediate)</p>



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SAFETY INFORMATION
Please read the instruction manual carefully in order to safely operate any KEYENCE product.

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