# **Universal Sensor Mounting Stand**

Related Information

General terms and conditions......F-3

■ LS-400 ..... P.213~

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MS-AJ

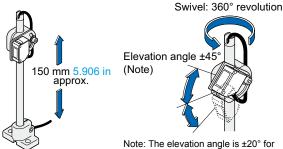


# Eight types of mounting stand enable installation of sensors, fibers, and reflectors at any desired position

# Easy adjustment of sensing position

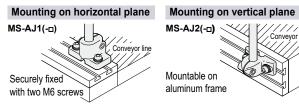
Even after mounting a sensor, you can adjust the sensor

Flexible height adjustment Flexible angle adjustment

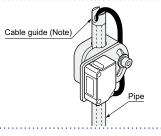


Note: The elevation angle is ±20° for MS-AJ□-F (assembly for fiber).

# Mountable on vertical or horizontal plane



# Cable can be neatly threaded into pipe



Note: Do not thread the fiber cable into the pipe in case of MS-AJ□-F (assembly for fiber).

# Eight models

### MS-AJ□ (Basic assembly)

It is used to mount CX-400/440, LS-400, EX-40 and EZ-10 series sensors, and the RF-210 reflector.



#### MS-AJ<sub>□</sub>-A (Lateral arm assembly)

A lateral arm is added to the MS-AJ□ basic assembly. Sensing is possible from above an assembly line.



# MS-AJ□-M (Assembly for reflector)

The MS-AJ□ basic assembly is modified to mount a reflector. It can be used for RF-220 and RF-230 reflector.



#### MS-AJ□-F (Assembly for fiber)

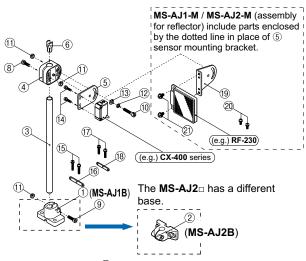
The sensor mounting bracket of MS-AJ□-A is replaced with a fiber mounting bracket. It can be used with FD-L51, FD-L52, FD-L53, FD-L54 and M3, M4 or M6 threaded head fiber.



MS-AJ1-F MS-AJ2-F

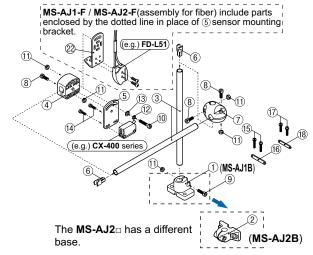
# **STRUCTURE**

# MS-AJ1, MS-AJ2, MS-AJ1-M, MS-AJ2-M



Note: The cable guide (⑥ in the figure) is not included in the assembly for reflector (MS-AJ□-M).

#### MS-AJ1-A, MS-AJ2-A, MS-AJ1-F, MS-AJ2-F



Note: Adjust the arm joint (① in the figure) by loosening the M4 (length 12 mm 0.472 in) hexagon-socket-head bolts (⑧ in the figure) in two places. This way you can adjust the arm joint more smoothly.

				r									
Туре				Components									
Model No.	MS-AJ2 /Basic	MS-AJ2-A /Lateral arm \	MS-AJ2-M (Assembly	MS-AJ2-F (Assembly)	Sensor mounting	Reflector mounting	Reflector mounting	Fiber mounting	Fiber mounting	(Arm joint)	MS-AJ2B	MS-AJG (Cable guide)	MS-AJP Arm (Pipe)
ise for horizontal mounting (Accessory for MS-AJ1	1	1	1	1	-	-	-	-	-	-	1	-	_
use for vertical mounting (Accessory for MS-AJ2  )	1	1	1	1	-	-	-	-	-	-	1	-	_
m (Pipe)	1	2	1	2	-	-	-	-	-	-	-	-	1
tachment	1	1	1	1	1	1	-	1	-	-	-	-	_
ensor mounting bracket	1	1	-	-	1	-	-	-	-	-	-	-	_
able guide	1	2	-	2	ı	ı	-	-	ı	-	_	1	_
m joint	-	1	-	1	-	-	-	-	-	1	-	-	_
4 (length 12 mm 0.472 in) hexagon- ocket-head bolt (Drilube applied product)	1	3	1	3	1	1	-	1	-	2	-	-	-
4 (length 15 mm 0.591in) hexagon-socket- ead bolt (Drilube applied product)	1	1	1	1	-	ı	-	-	ı	-	1	-	-
4 (length 22 mm 0.866 in) exagon-socket-head bolt	1	1	1	1	1	1	-	1	-	-	-	-	-
4 nut	3	5	3	5	2	2	-	2	-	2	1	-	-
4 spring washer	1	1	1	1	1	1	-	1	-	-	-	_	-
4 plain washer	1	1	1	1	1	1	-	1	-	-	-	-	-
3 (length 14 mm 0.551 in) screw with washers r CX-400/440, LS-400 and EZ-10 series	2	2	-	-	2	-	-	-	-	-	-	-	-
3 (length 18 mm 0.709 in) screw with ashers for <b>EQ-20</b> series (Note 2)	2	2	-	-	2	-	-	-	-	-	-	1	-
ixiliary mounting plate for EQ-20 series (Note 2)	1	1	-	-	1	-	-	-	-	-	-	-	_
(length 16 mm 0.630 in) screw with washers for EX-40 series	2	2	-	-	2	ı	-	-	-	-	-	-	
ixiliary mounting plate for EX-40 series	1	1	-	-	1	-	-	-	-	_	-	-	
eflector mounting bracket	-	-	1	-	-	1	1	-	-	-	-	-	_
(length 8 mm 0.315 in) screw with washers for RF-220	-	_	2	-	_	2	2	-	-	-	_	-	
(length 8 mm 0.315 in) screw with washers for RF-230	-	-	2	-	-	2	2	-	-	-	-	-	_
ber mounting bracket	-	_	-	1	-	-	-	1	1	-	-	-	-
1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	signation  e for horizontal mounting (Accessory for MS-AJ2D) e for vertical mounting (Accessory for MS-AJ2D) n (Pipe) achment nsor mounting bracket ble guide n joint (length 12 mm 0.472 in) hexagon- sket-head bolt (Drilube applied product) (length 15 mm 0.591in) hexagon-socket- ad bolt (Drilube applied product) (length 15 mm 0.591in) hexagon-socket- ad bolt (Drilube applied product) (length 16 mm 0.591in) screw with washers (length 17 mm 0.551 in) screw with washers (length 18 mm 0.709 in) screw with shers for EQ-20 series (Note 2) elength 16 mm 0.630 in) screw with washers for EX-40 series illiary mounting plate for EX-40 series illiary mounting plate for EX-40 series illiary mounting bracket length 8 mm 0.315 in) screw with washers for RF-220 length 8 mm 0.315 in) screw with washers for RF-220 length 8 mm 0.315 in) screw with washers for RF-220 length 8 mm 0.315 in) screw with washers for RF-220 length 8 mm 0.315 in) screw with washers for RF-220 length 8 mm 0.315 in) screw with washers for RF-220	Basic assembly  e for horizontal mounting (Accessory for MS-AJ1a) 1  e for vertical mounting (Accessory for MS-AJ1a) 1  n (Pipe) 1  achment 1  ble guide 1  n joint 1  (length 12 mm 0.472 in) hexagon-sket-head bolt (Drilube applied product) 1  (length 15 mm 0.591in) hexagon-scket-head bolt (Drilube applied product) 1  (length 22 mm 0.866 in) 1  (length 22 mm 0.866 in) 1  (length 22 mm 0.866 in) 1  (length 3 mm 0.709 in) screw with washers CX-400/440, LS-400 and EZ-10 series 2  (length 14 mm 0.551 in) screw with shers for EQ-20 series (Note 2) 1  length 16 mm 0.630 in) screw with washers for EQ-20 series (Note 2) 1  length 16 mm 0.630 in) screw with washers for EQ-20 series (Note 2) 1  length 16 mm 0.630 in) screw with washers for EQ-20 series (Note 2) 1  length 16 mm 0.630 in) screw with washers for EQ-20 series (Note 2) 1  length 16 mm 0.630 in) screw with washers for EQ-20 series (Note 2) 1  length 8 mm 0.315 in) screw with washers for RF-20 - length 8 mm 0.315 in) screw with washers for RF-20 - length 8 mm 0.315 in) screw with washers for RF-20 - length 8 mm 0.315 in) screw with washers for RF-20 - length 8 mm 0.315 in) screw with washers for RF-20 - length 8 mm 0.315 in) screw with washers for RF-20 - length 8 mm 0.315 in) screw with washers for RF-200 - length 8 mm 0.315 in) screw with washers for RF-200 - length 8 mm 0.315 in) screw with washers for RF-200 - length 8 mm 0.315 in) screw with washers for RF-200 - length 8 mm 0.315 in) screw with washers for RF-200 - length 8 mm 0.315 in) screw with washers for RF-200 - length 8 mm 0.315 in) screw with washers for RF-200 - length 8 mm 0.315 in) screw with washers for RF-200 - length 8 mm 0.315 in) screw with washers for RF-200 - length 8 mm 0.315 in) screw with washers for RF-200 - length 8 mm 0.315 in) screw with washers for RF-200 - length 8 mm 0.315 in) screw with washers for RF-200 - length 8 mm 0.315 in) screw with washers for RF-200 - length 8 mm 0.315 in) screw with washers for RF-200 - length 8 mm 0.315 in) screw with washers for RF-200 - length 8 mm	MS-AJ2   M	MS-AJ2-M   MS-AJ2-M   Lateral arm   MS-AJ2-M   MS-	MS-AJ2-M   MS-AJ2-M	MS-AJ2-A   MS-AJ2-A   MS-AJ2-B   Canada   C	MS-AJ2-M   MS-AJ2-M   MS-AJ2-F   Cateral arm   MS-AJ2-F   Cateral arm	Model No.   MS-AJ2-M   MS-AJ2-M   MS-AJ2-M   Assembly   MS-AJ2-M   Assembly   MS-AJ2-M   Assembly   MS-AJ2-M   MS-AJ2-M	Model No.   MS-AJ2   MS-AJ2-M   MS-AJ2-M   Cassembly   Cassembly	MS-A12   MS-A12-K   Sensor   Reflector   MS-A13-M   MS-A12-K   Sensor   Reflector   MS-A13-M   Resembly   Re	Model No   Model No   Result   Result	Model No.   MS-AJZ   MS-AJZ   MS-AJZ-   MS-AZ-   MS-AJZ-   MS-AJ	Model No.   MS-AJZ   MS-AJZ   MS-AJZ-M   M

Notes: 1) The numbers shown in the table above indicate the quantities of the respective parts. 2) The EQ-20 series were discontinued in December 2005.

## ORDER GUIDE

Туре		Appea	arance	Model No.	Applicable sensor, reflector and fiber	
Basic	Horizontal mounting type	P	W W WS-AJ1		CX-400/440 series	
assembly	Vertical mounting type	MS-AJ1	MS-AJ2	MS-AJ2	LS series EQ-20 series (Note)	
Lateral arm	Horizontal mounting type			MS-AJ1-A	EX-40 series EZ-10 series	
assembly	Vertical mounting type	MS-AJ1-A	MS-AJ2-A	MS-AJ2-A	RF-210 (Reflector)	
Assembly	Horizontal mounting type	ß	ß	MS-AJ1-M	RF-220 (Reflector)	
for reflector	Vertical mounting type	MS-AJ1-M	MS-AJ2-M	MS-AJ2-M	RF-230 (Reflector)	
Assembly	Horizontal mounting type			MS-AJ1-F	FD-L51 (Fiber) FD-L52 (Fiber) FD-L53 (Fiber)	
for fiber	Vertical mounting type	MS-AJ1-F	MS-AJ2-F	MS-AJ2-F	FD-L54 (Fiber) M3, M4 and M6 threaded head fibers	

Note: The **EQ-20** series were discontinued in December 2005.

Individual components are also available as follows

Designation	Appearance	Model No.
Sensor mounting unit		MS-AJS
Reflector mounting unit		MS-AJR
Reflector mounting bracket	P	MS-AJ-R1
Fiber mounting unit		MS-AJD
Fiber mounting bracket		MS-FD-1
Arm joint unit		MS-AJL
Base unit (Horizontal mounting type)		MS-AJ1B
Base unit (Vertical mounting type)		MS-AJ2B
Cable guide		MS-AJG
Arm (Pipe)		MS-AJP

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## PRECAUTIONS FOR PROPER USE

#### **Mounting**

· To mount the universal sensor mounting stand on your equipment, use M6 screws. The tightening torque should be 2.0 Nm or less.

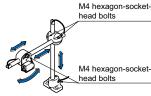
# Mounting on horizontal plane Mounting on vertical plane

Conveyor



## **Adjustment**

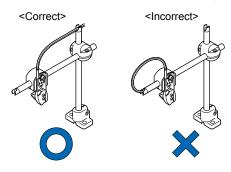
· Arm, attachment, base and arm joint can be adjusted as shown by the arrows in the right figure by loosening the M4 hexagonsocket-head bolts.



· After the adjustment, the tightening torque of the M4 hexagon-socket-head bolts should be 1.2 Nm or less.

#### Threading cable into pipe

• When the sensor is mounted on MS-AJ□ (basic assembly) or on MS-AJ<sub>□</sub>-A (lateral arm assembly), the sensor cable can be threaded through the pipe. However, do not thread the fiber cable through the pipe when a fiber head is mounted on MS-AJ -F (assembly for fiber).



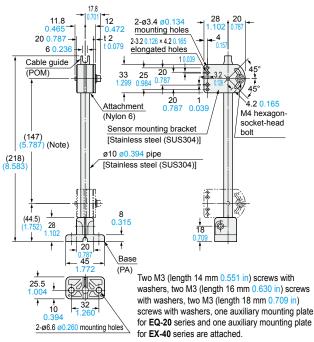
#### **Others**

- Do not apply excessive force on any part of the universal sensor mounting stand.
- · When using this stand, take care that excessive vibration is not applied to the sensor.

The CAD data can be downloaded from our website.

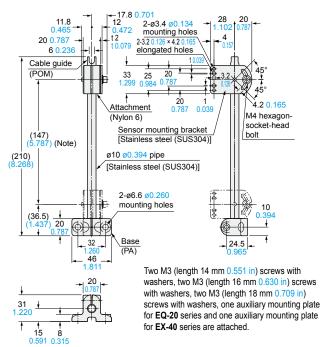
# **DIMENSIONS (Unit: mm in)**

MS-AJ1



Note: The dimensions in the brackets indicate the adjustable range of the movable part.

MS-AJ2



Note: The dimensions in the brackets indicate the adjustable range of the movable part.

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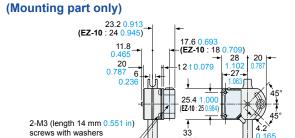
Mounting Stand
Sensor Checker
Sensor Controller

MS-A.J

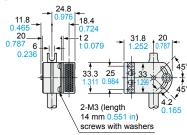
DIMENSIONS (UIIII. IIIII III)

MS-AJ1 MS-AJ2

Assembly dimensions with CX-400/440 series, LS-400 series, EZ-10 series

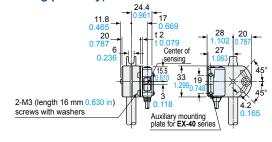


Assembly dimensions with RF-210 (Reflector) (Mounting part only)

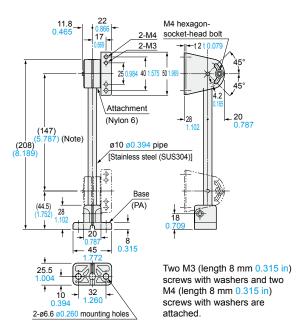


Assembly dimensions with EX-40 series (Mounting part only)

Center of sensing

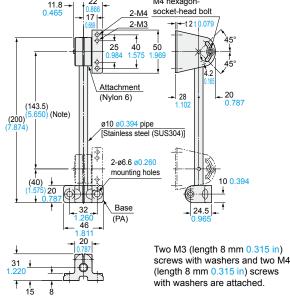


MS-AJ1-M Assembly for reflector



Note: The dimensions in the brackets indicate the adjustable range of the movable part.

MS-AJ2-M



Note: The dimensions in the brackets indicate the adjustable range of the movable part.

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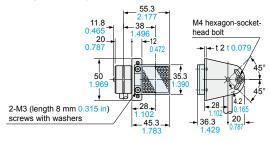
DIMENSIONS (Unit: mm in)

The CAD data can be downloaded from our website.

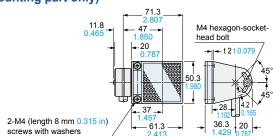
Assembly for reflector

#### MS-AJ1-M MS-AJ2-M

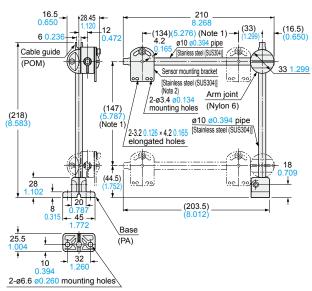
### Assembly dimensions with RF-220 (Reflector) (Mounting part only)



### Assembly dimensions with RF-230 (Reflector) (Mounting part only)



MS-AJ1-A Lateral arm assembly

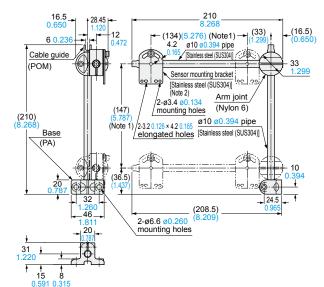


Two M3 (length 14 mm 0.551 in) screws with washers, two M3 (length 16 mm 0.630 in) screws with washers, two M3 (length 18 mm 0.709 in) screws with washers, one auxiliary mounting plate for **EQ-20** series and one auxiliary mounting plate for EX-40 series are attached.

Notes: 1) The dimensions in the brackets indicate the adjustable range of the movable part.

2) Refer to MS-AJ1 / MS-AJ2 (basic assembly) for the assembly diagram with the sensor mounting bracket, sensor or reflector.

MS-AJ2-A Lateral arm assembly



Two M3 (length 14 mm 0.551 in) screws with washers, two M3 (length 16 mm 0.630 in) screws with washers, two M3 (length 18 mm 0.709 in) screws with washers, one auxiliary mounting plate for **EQ-20** series and one auxiliary mounting plate for EX-40 series are attached

Notes: 1) The dimensions in the brackets indicate the adjustable range of the movable part.

2) Refer to MS-AJ1 / MS-AJ2 (basic assembly) for the assembly diagram with the sensor mounting bracket, sensor or reflector.

Sensor Controller

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MS-AJ1-F Assembly for fiber (134)(5.276) (Note) ø10 ø0.394 pipe Cable guide (POM) Fiber mounting bracket [Stainless steel (SUS304)] 4-M3 × 0.5 0.020 Arm joint mounting holes (Nylon 6) (218) (8.583) (Note) ø<u>10 ø0.394</u> pipe [Stainless steel (SUS304)] (44.5)(203.5) (8.012) Base (PA) 10

Note: The dimensions in the brackets indicate the adjustable range of the movable part.

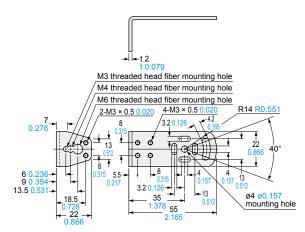
2-ø6.6 ø0.260 mounting holes

#### MS-AJ2-F Assembly for fiber (134)(5.276) (Note) ø10 ø0.394 pipe (Stainless steel (SUS304) Cable guide (POM) Fiber mounting bracket less steel (SUS304)] Arm joint 4-M3 × 0.5 0.020 (Nylon 6) mounting holes (210) (8.268 (Note) ø10 ø0.394 pipe Base [Stainless steel (SUS304)] (PA) (36.5) (208.5)2-ø6.6 ø0.260 mounting holes

Note: The dimensions in the brackets indicate the adjustable range of the movable part.

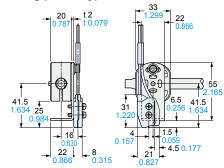
### MS-AJ1-F MS-AJ2-F

Fiber mounting bracket / MS-FD-1

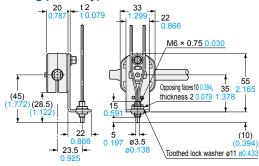


Material: Stainless steel (SUS304)

# Assembly dimensions with FD-L51 (Mounting part only)



# Assembly dimensions with FD-FM2 (Mounting part only)



Note: The above diagram is in case of M6 threaded head fiber.