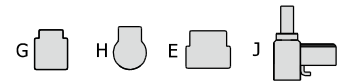
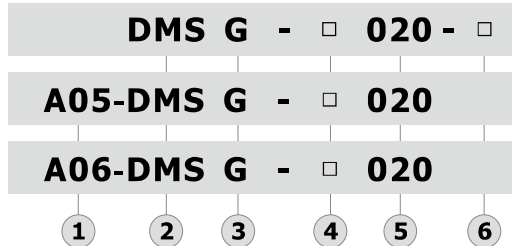




DMS Series Sensor



Ordering code for DMS



① Industry code	Blank: General type A05: Manipulator industry A06: Oil resistance and deflection resistance
② Model	DMS: Solid State Sensor
③ Specifications	G H E J [Noet1]
④ Output type	Blank: 2 wire N : NPN [Noet2] P : PNP
⑤ Lead wire	Direct lead wire
	Plug connector [Noet3]
⑥ Additional specification	Blank: General type W:Waterproof type IP68 [note4]

[Note1] Type J is not available for A06.

[Note2] A05 and A06 have no NPN and PNP option.

[Note3] A05 and A06 have no plug connector option.

[Note4] A05, J type and M08, M12 don't have a-w Waterproof option. Standard A06 model already has a waterproof function.

Add: The sockets of M08 and M12 need additional order. Please check on page 542.

DMS Specifications

Item	DMS	
	2-wire[Note]	NPN / PNP
Model	2-wire[Note]	NPN / PNP
Power supply voltage	10V ~ 28V DC	5V ~ 30V DC
Switching current	2.5mA ~ 100mA	30V/200mA Max.
Contact capacity	2.8W Max.	6.0W Max.
Current consumption	3mA Max.	5mA Max.
Internal voltage drop	3.5V Max.	0.7V Max.
Leakage current	0.05mA Max.	0.01mA Max.
Switching frequency	1000Hz	
Impact resistance	50G	
Circuit protection	Reverse polarity protection Surge protection	
Operating Temp.	-10°C ~ 70°C	
Enclosure	DMS, A05-DMS: IP64 / A06-DMS: IP68	
Standard	CE marking, RoHS	

[Note] A05 \ A06 type has only two-wire type.





DMS Series Sensor

Compendium of DMS Series

Three types of sensors

General type(DMS)	
General type(Aqua Blue)	Waterproof type(Yellow)
Manipulator industry (A05-DMS)	Oil resistance and deflection resistance (A06-DMS)
Product characteristics: 1. Flexure resistant curve material can be used in manipulator industry, such as multi joint manipulator and tank chain. 2. In case of high temperature, much dust, or water droplets and oil dust, the sensor shall take corresponding dust-proof measures.	Product characteristics: 1. Flexure resistant curve material can be used in manipulator industry, such as multi joint manipulator and tank chain. 2. In case of welding slag, corresponding protective measures shall be taken for the sensor.
High deflection wire The deflection is increased by about 20% compared with the general type	Oil resistant and flexural curve material The deflection is increased by about 20% compared with the general type. It can be used in oil dust environment.
	Waterproof design(IP68)

Two kinds of accessories

DMSG can be mounted with 2 accessories, applicable to multi-cylinders.

DMSG	F-MQ□
	F-SC□SH

Diagram Labels: Bending resistance, SR: bending resistance, Impact resistant materials

Note: the recommended minimum bending radius of A05-DMS,A06-DMS cables is 19mm.

Four types of cross section

G Type 	
H Type 	
E Type 	
J Type 	

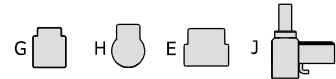
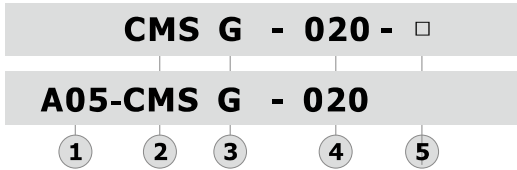




CMS Series Sensor



Ordering code for CMS



① Industry code	Blank: General type A05: Manipulator industry			
② Model	CMS: Reed Sensor			
③ Specifications	G	H	E	J
④ Lead wire	Direct lead wire	020: 2m 030: 3m 050: 5m 100: 10m		
	Plug connector [Noet1]	M08:0.5m with M8 plug connector M08010:1m with M8 plug connector M08020:2m with M8 plug connector M08030:3m with M8 plug connector	M12:0.5m with M12 plug connector M12010:1m with M12 plug connector M12020:2m with M12 plug connector M12030:3m with M12 plug connector	
⑤ Additional specification	Blank: General type		H:Heat resistant [note1]	

[Note1]A05 has no plug connector option.

[Note2]A05 has no heat resistant option.

Add:The sockets of M08 and M12 need additional order. Please check on page 542.

CMS Specifications

Item	CMS	
	General	Heat resistant
Model	General	Heat resistant
Power supply voltage	5V ~ 240V AC/DC	
Switching current	100mA	
Contact capacity	10W Max.	
Current consumption	N/A	
Internal voltage drop	2.5V Max. @100mA DC	N/A
Leakage current	N/A	
Switching frequency	200Hz	
Impact resistance	50G	
Circuit protection	N/A	
Operating Temp.	-10°C ~ 70°C	-10°C ~ 125°C
Enclosure	IP64	
Standard	CE marking, RoHS	





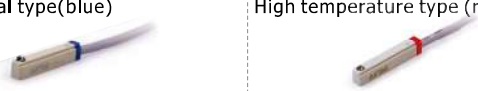
CMS Series Sensor

Compendium of CMS Series

Two types of sensors

General type(CMS)

General type(blue) High temperature type (red)




Manipulator industry(A05-CMS)

Product characteristics:

1. Flexure resistant curve material can be used in manipulator industry, such as multi joint manipulator and tank chain.
2. In case of high temperature, much dust, or water droplets and oil dust, the sensor shall take corresponding dust-proof measures.

High deflection wire

The deflection is increased by about 20% compared with the general type



Bending resistance







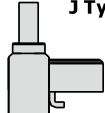

SR: bending resistance

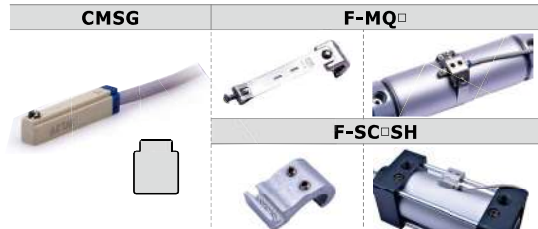
Impact resistant materials

Two kinds of accessories

CMSSG can be mounted with 2 accessories, applicable to multi-cylinders.

Four types of cross section

G Type		
H Type		
E Type		
J Type		

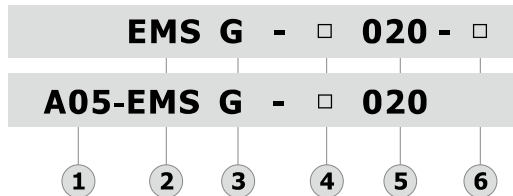




EMS Series Sensor



Ordering code for EMS



① Industry code	Blank: General type A05: Manipulator industry			
② Model	EMS: Solid State Sensor			
③ Specifications	G		H	
④ Output type	Blank: 2 wire			
⑤ Lead wire	Direct lead wire	020: 2m 030: 3m 050: 5m 100: 10m		
	Plug connector [Noet1]	M08:0.5m with M8 plug connector M08010:1m with M8 plug connector M08020:2m with M8 plug connector M08030:3m with M8 plug connector	M12:0.5m with M12 plug connector M12010:1m with M12 plug connector M12020:2m with M12 plug connector M12030:3m with M12 plug connector	
⑥ Additional specification	Blank: General type			

[Note1]A05 have no plug connector option.

Add:The sockets of M08 and M12 need additional order. Please check on page 542.

EMS Specifications

Item	EMS
Model	2-wire
Power supply voltage	10V ~ 28V DC
Switching current	2.5mA ~ 100mA
Contact capacity	2.8W Max.
Current consumption	3mA Max.
Internal voltage drop	3.5V Max.
Leakage current	0.06mA Max.
Switching frequency	1000Hz
Impact resistance	50G
Circuit protection	Reverse polarity protection Surge protection
Operating Temp.	-10°C ~ 70°C
Enclosure	EMS,A05-EMS: IP64
Standard	CE marking, RoHS
Note	Temperature overheat protection





EMS Series Sensor

Compendium of EMS Series

Three types of sensors

General type(EMS)

General type(Aqua Blue)



Manipulator industry(A05-EMS)

Product characteristics:

1. Flexure resistant curve material can be used in manipulator industry, such as multi joint manipulator and tank chain.
2. In case of high temperature, much dust, or water droplets and oil dust, the sensor shall take corresponding dust-proof measures.

High deflection wire

The deflection is increased by about 20% compared with the general type



Note: the recommended minimum bending radius of A05-EMS cables is 19mm.

Two types of cross section

G Type General type(Aqua Blue)



H Type General type(Aqua Blue)



Bending resistance

SR: bending resistance

Impact resistant materials

High cylinder installation flexibility

EMSG is the mini type corresponding to DMSG, which can be used for long and short strokes. EMSH is the mini type corresponding to DMSH, which can be used for long and short strokes.



Sensor



DMS, CMS, EMS Series

Ordering code for Cylinder accessory



F - MQ □

① ② ③

① Category	F:Accessory								
② Model	MQ:Cylinder Accessory								
③ Cylinder	Aluminum alloy			Aluminum alloy (Thick type)			Stainless steel		
	Code	For series	For bore size	Code	For series	For bore size	Code	For series	For bore size
	A20: Φ20mm		Φ20	A32T: Φ32mm		Φ32	S06: Φ6mm		Φ6
	A25: Φ25mm		Φ25	A40T: Φ40mm	TWG	Φ40	S08: Φ8mm		Φ8
	A32: Φ32mm	MCK	Φ32	A50T: Φ50mm		Φ50	S10: Φ10mm		Φ10
	A40: Φ40mm	MBL	Φ40				S12: Φ12mm		Φ12
	A50: Φ50mm		Φ50				S16: Φ16mm	PB/PBR	Φ16
	A63: Φ63mm		Φ63				S20: Φ20mm	MI	Φ20
	A80: Φ80mm		Φ80				S25: Φ25mm	MF	Φ25
							S32: Φ32mm	MG	Φ32
						S40: Φ40mm	MA/MAC	Φ40	
						S50: Φ50mm		Φ50	
						S63: Φ63mm		Φ63	

Ordering code for NPB series Cylinder accessory



F - MQN S5/16

① ② ③

① Category	F:Accessory
② Model	MQN:NPB Series Cylinder Accessory
③ Bore size	S5/16: Φ5/16 inch
	S7/16: Φ7/16 inch
	S9/16: Φ9/16 inch
	S3/4: Φ3/4 inch
	S7/8: Φ7/8 inch
	S1-1/16: Φ1-1/16 inch
	S1-1/4: Φ1-1/4 inch
	S1-1/2: Φ1-1/2 inch
	S1-3/4: Φ1-3/4 inch
	S2: Φ2 inch
S2-1/2: Φ2-1/2 inch	

Ordering code for Tie Rod Cylinder accessory



F - SC □ **SH**

① ② ③ ④

① Category	F : Accessory		
② Model	SC:Tie Rod Cylinder Accessory		
③ Cylinder	Code	For series	For bore size
	32		Φ32, Φ40
	50		Φ50
	63		Φ63
	80	SC	Φ80, Φ100
	125	SGC	Φ125
④ Attached	160		Φ160, Φ200
	250		Φ250

Sensor



DMS, CMS, EMS Series

Ordering code for Socket



F - EC M08 B 020 - □

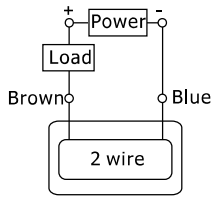
① ② ③ ④ ⑤ ⑥

① Category code	F: Accessory			
② Specification code	EC: Connecting Wire			
③ Socket type	M08:M8 socket	M12:M12 socket		
④ Wire type	B: 2-wire type		C: 3-wire type	
⑤ Wire length	020: 2 meters	030: 3meters	050: 5meters	100: 10meters
⑥ Additional specification	Blank: General type			

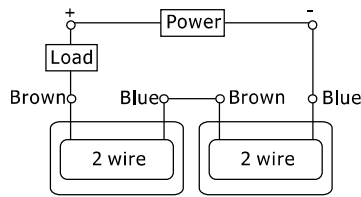
Connection method

2 wire, reed sensor connection

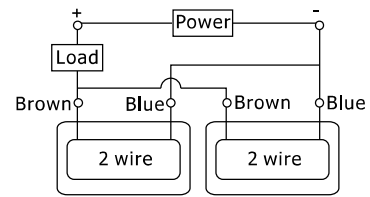
1. General connection



2. Series connection(And)



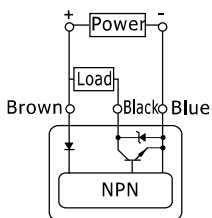
3. Parallel connection(OR)



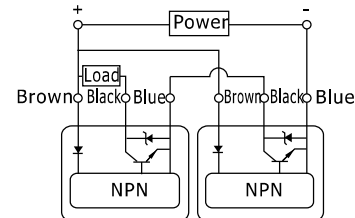
3 wire, solid state NPN connection

Note: The indicator lights will light up when both auto switches are turned NO.

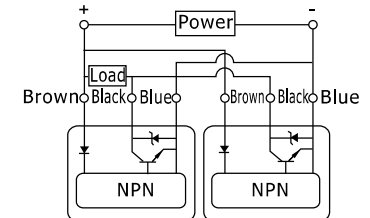
1. General connection



2. Series connection(And)



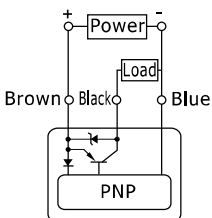
3. Parallel connection(OR)



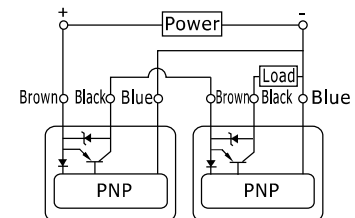
3 wire, solid state PNP connection

Note: The indicator lights will light up when both auto switches are turned NO.

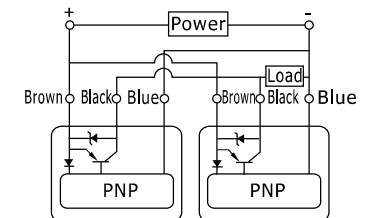
1. General connection



2. Series connection(And)



3. Parallel connection(OR)



Sensor

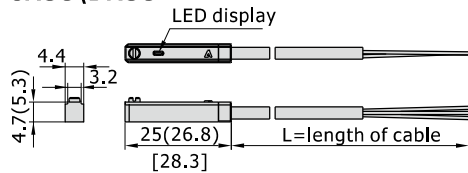
DMS, CMS, EMS Series



Dimensions

G Type

CMSG \ DMSG

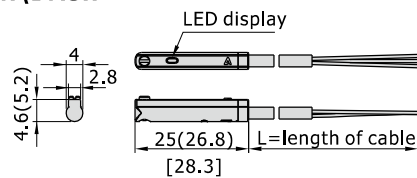


Note: a number in the '()' is the dimension of CMSG.
a number in the '[]' is the dimension of CMSG(Heat resistant).

H Type

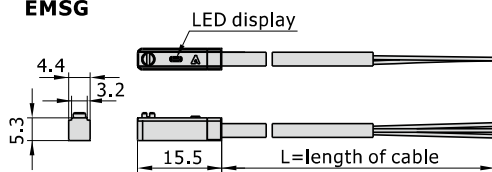
[Unit: mm]

CMSH \ DMSH

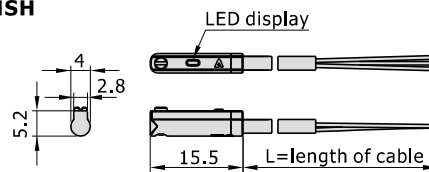


Note: a number in the '()' is the dimension of CMSH.
a number in the '[]' is the dimension of CMSH(Heat resistant).

EMSJ

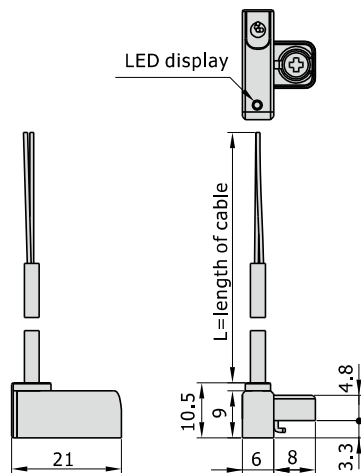


EMSH

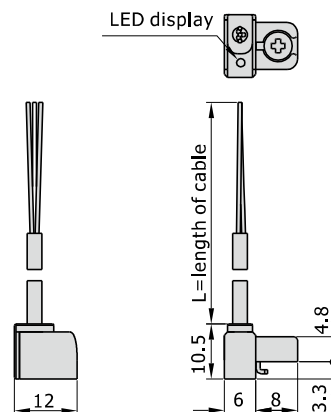


J Type

CMSJ

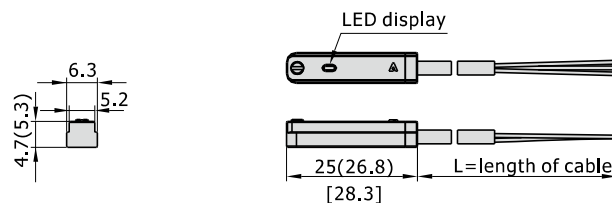


DMSJ



length of cable specification	length of cable(L)
020 Type	2000mm
030 Type	3000mm
050 Type	5000mm

E Type



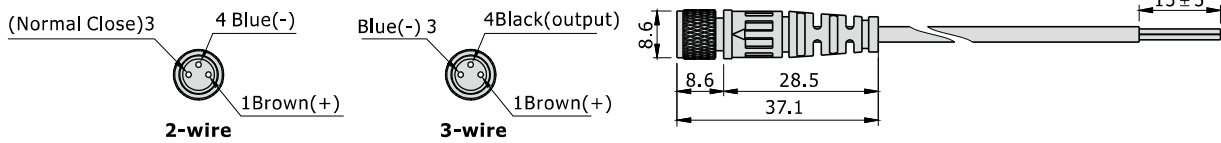
Note: a number in the '()' is the dimension of CMSE.
a number in the '[]' is the dimension of CMSE(Heat resistant).



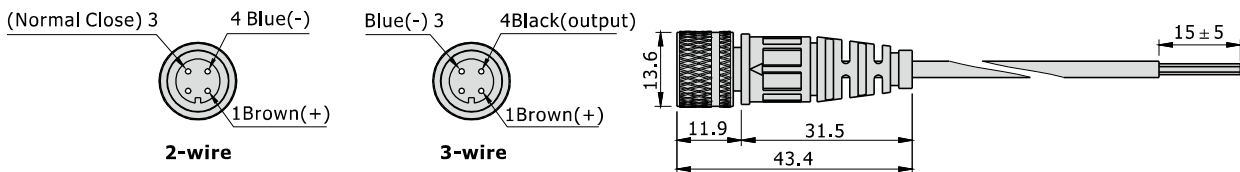
DMS, CMS, EMS Series

Socket

M8 socket



M12 socket



Instruction



1. Sensor shall not fall down or bear great impact when it is installed.
2. The wire of the Sensor shall not move with the action of cylinder.
3. Clamping torque shall be within the allowable scope when the Sensor is installed(0.15~0.2Nm).
4. Sensor shall be installed in the middle position of the action scope.
5. Sensor wiring:
 - A. The wire is unable to bear repetitive torsion and tension. Please wire an external load before switch the power on.
 - B. No poor insulation in wire.
 - C. Do not wire with power line, high voltage line or use one wiring pipe.
 - D. Pleas wire the circuit correctly base on the circuit diagram.
6. Execute scheduled maintenance by the following guidelines:
 - A. Make sure the sensor is firmly fixed.
 - B. Make sure the wire is intact.
 - C. Make sure that LED indicate the movement of cylinder correctly.
7. Application of environment:
 - A. It is Not allow to use the sensor in the environment with explosive gas.
 - B. Magnetic sensor shall not be used in the environment with external magnetism.
 - C. Magnetic sensor shall not be used in the environment that is always eroded by water.
 - D. Magnetic sensor shall not be used in the environment with oil moisture or chemical substance.
 - E. Magnetic sensor shall not be used in the environment with periodically changing temperature.
 - F. Magnetic sensor shall not be used in the environment with excessively great impact.
 - G. Magnetic sensor shall not be used in the environment with sources of electrical pulse.
 - H. Avoid the environment with accumulated iron power and dense magnetic objects.




Sensor







DMSG, CMS, EMS Series



How to selection

DMSG	CMSG	EMSG	NSU					HFKP					HFKL			
			1-1/2	2	2-1/2	3-1/4	4	5	16	20	25	32	40	16	20	25
			●	●	●	●	●	●	●	●	●	●	●	●	●	●

DMSG	CMSG	EMSG	NPB														
			5/16	7/16	9/16	3/4	7/8	1-1/16	1-1/4	1-1/2	1-3/4	2	2-1/2				
			●	●	●	●	●	●	●	●	●	●	●	●			
			It needs an accessory to mount a sensor on a cylinder														

DMSG	CMSG	EMSG	HFK				TCL\TCM								HFZ				HFY															
			10	16	20	25	32	40	6	10	12	16	20	25	32	40	50	63	80	100	6	10	16	20	25	32	40	6	10	16	20	25	32	
			●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
			TR				RMT				RMTL				HFP																			
			6	10	16	20	25	32	16	20	25	32	40	10	16	20	25	32	40	10	16	20	25	32										
			●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●									

DMSH	CMSH	EMSH	TC		HFZ				HFY		HFP		HFR				HFC				HFT											
			6	10	6	10	16	20	25	32	40	6	32	10	16	20	25	32	16	20	25	32	40	50	63	10	16	20	25	32		
			●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
			HLQ\HLQL				HLS\HLSL				HLH																					
			20	25	32	40	6	8	12	16	20	25	6	8	12	16	20	25	6	8	10	12	16	20	6	10	16	20	6	8	10	12
			●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
HRQ				HFK				RMH		HRS																						
			2	3	7	10	20	30	50	70	100	200	10	16	20	25	32	40	10	16	20	25	10	15	20	30	40					
			●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●					


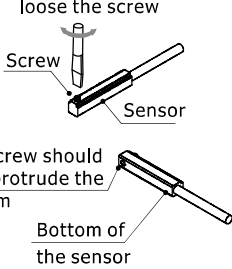
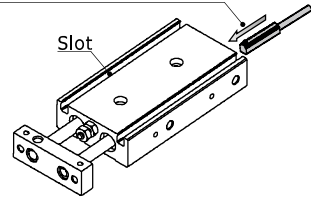
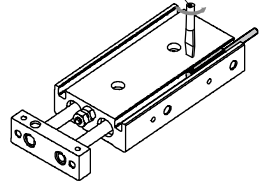
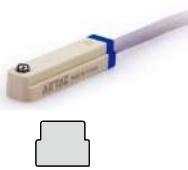
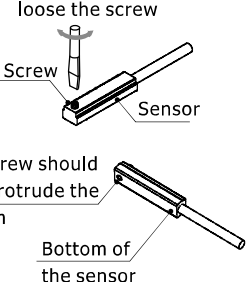
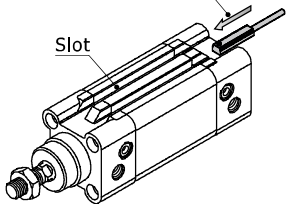
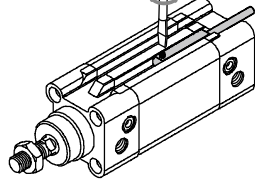

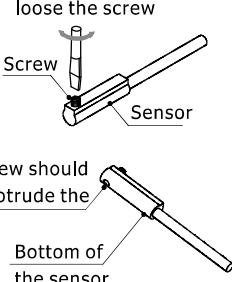
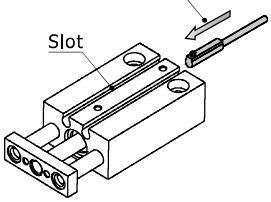
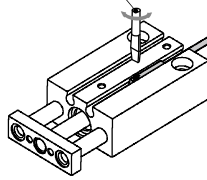

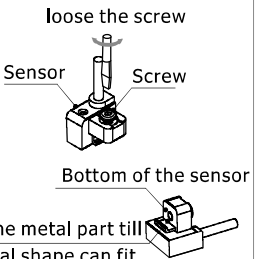
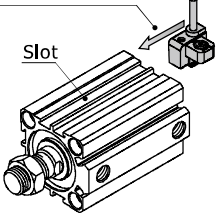
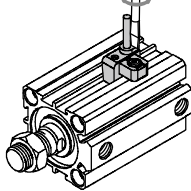
DMSH	CMSH	EMSH	NACF							NACQ											
			9/16	3/4	1-1/16	1-1/2	2	2-1/2	3	4	12	16	20	25	32	40	50	63	80	100	
			●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
			HFD				HFKP				HFCQ										
			8	12	16	20	25	10	16	20	25	32	40	16	20	25	32	40	50	63	
			●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	
HFKL				HGS																	
			10	16	20	25	6	8	10	12											
			●	●	●	●	●	●	●												

Sensor

DMS, CMS, EMS Series




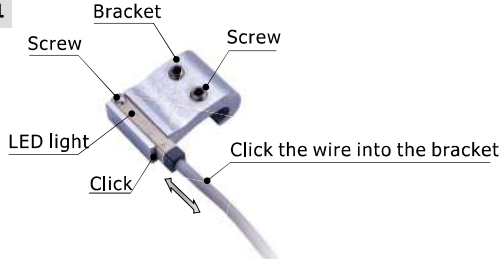
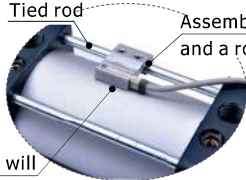
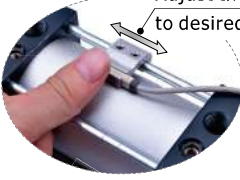
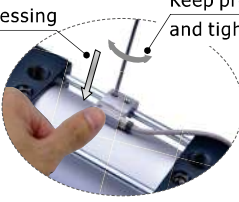

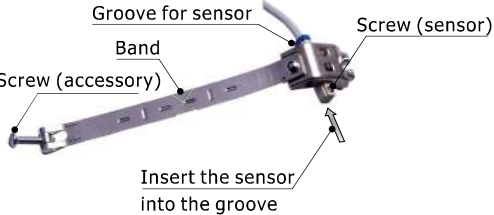
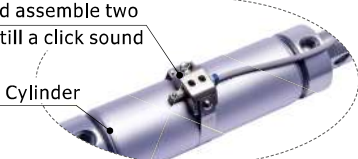
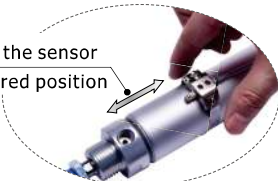

How to mounting

Sensor model	Procedure		
DMSG/CMMSG 	1  <p>loose the screw</p> <p>Screw</p> <p>Sensor</p> <p>The screw should NOT protrude the bottom</p> <p>Bottom of the sensor</p>	2  <p>Insert the sensor into the slot and adjust it to desired position</p> <p>Slot</p>	3  <p>Tighten the screw</p>
DMSE/CMSE 	1  <p>loose the screw</p> <p>Screw</p> <p>Sensor</p> <p>The screw should NOT protrude the bottom</p> <p>Bottom of the sensor</p>	2  <p>Insert the sensor into the slot and adjust it to desired position</p> <p>Slot</p>	3  <p>Tighten the screw</p>
DMSH/CMSH 	1  <p>loose the screw</p> <p>Screw</p> <p>Sensor</p> <p>The screw should NOT protrude the bottom</p> <p>Bottom of the sensor</p>	2  <p>Insert the sensor into the slot and adjust it to desired position</p> <p>Slot</p>	3  <p>Tighten the screw</p>
DMSJ/CM SJ 	1  <p>loose the screw</p> <p>Sensor</p> <p>Screw</p> <p>Bottom of the sensor</p> <p>Adjust the metal part till the lateral shape can fit the slot of the cylinder</p>	2  <p>Insert the sensor into the slot and adjust it to desired position</p> <p>Slot</p>	3  <p>Tighten the screw</p>



DMS, CMS Series

How to mounting

Sensor model	Procedure		
DMSG+(F-SC□SH) CMSG+(F-SC□SH) 	1  <p>Bracket Screw Screw LED light Click Click the wire into the bracket</p>	2  <p>Tied rod Assemble the bracket and a rod The sensor will attach to the surface</p>	
	3  <p>Adjust the sensor to desired position</p>	4  <p>Pressing Keep pressing the bracket and tighten the screw</p>	
	1 	1  <p>Groove for sensor Screw (sensor) Band Screw (accessory) Insert the sensor into the groove</p>	2  <p>Tie up the band with a sensor on a cylinder and assemble two plastic parts till a click sound Cylinder</p>
	3  <p>Adjust the sensor to desired position</p>	4  <p>Tighten the screw</p>	