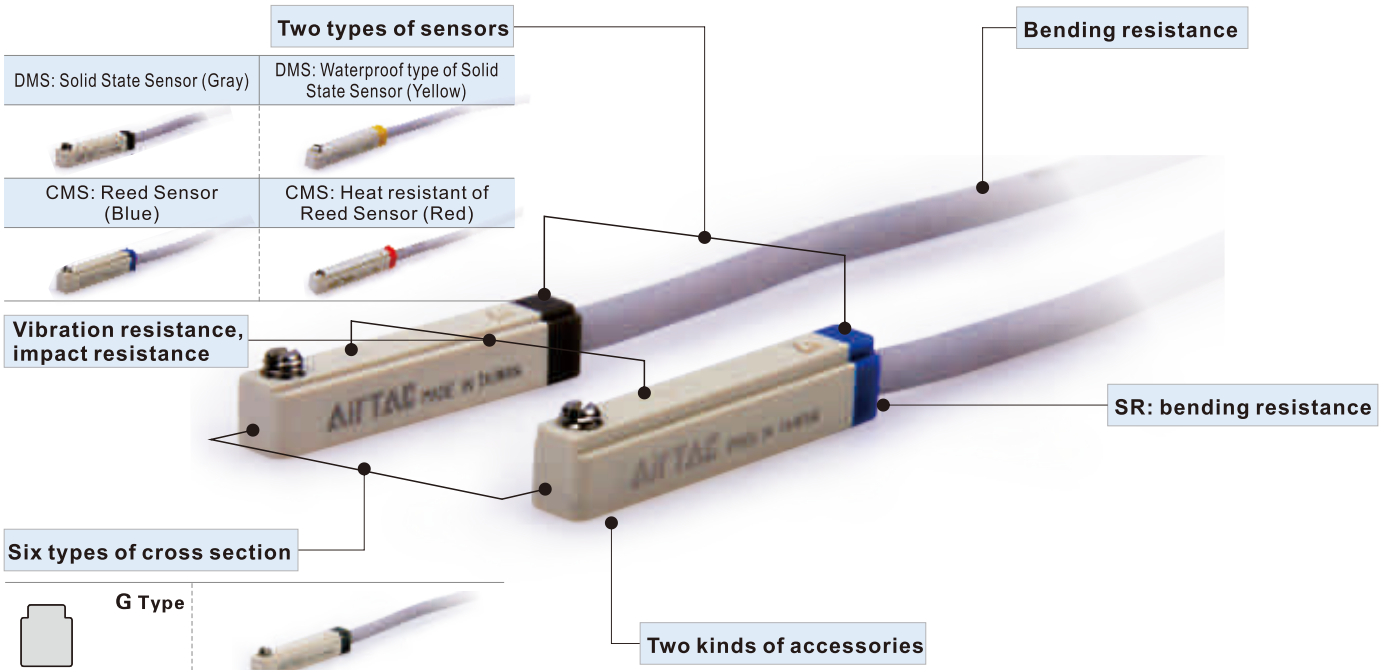
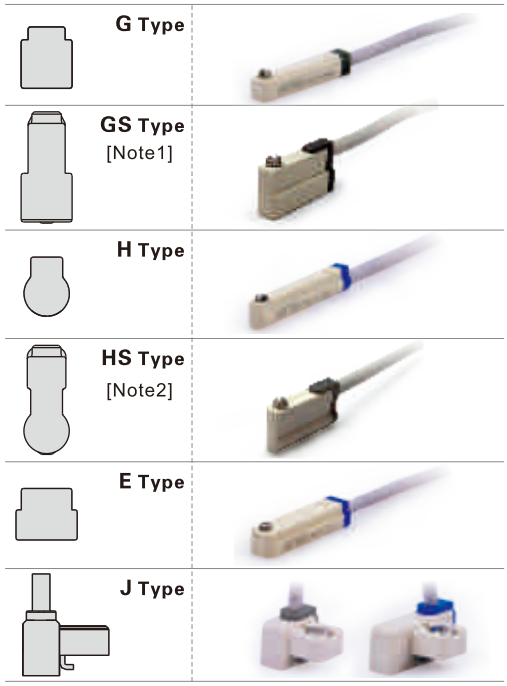
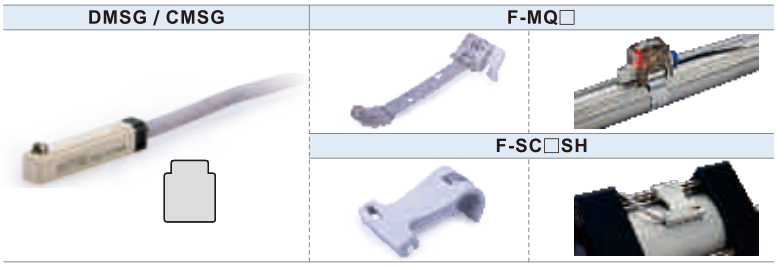
Compendium of DMS\CMS Series





DMSG/CMSG,Each size of the cylinder has its corresponding accessory.



[Note1] GS type is the mini type of G type, and it can be used for short stroke cylinder.
[Note2] HS type is the mini type of H type, and it can be used for short stroke cylinder.

DMS Specifications

Item	DMS		
Model	2-wire	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	2.7V 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℃ ~ 70℃		
Enclosure	IP64/IP68		
Standard	CE marking, RoHS		

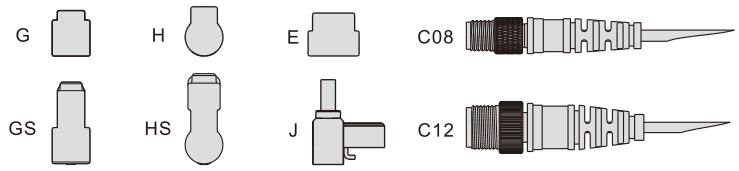
CMS Specifications

Item	CMS	
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℃ ~ 70℃	-10℃ ~ 125℃
Enclosure	IP64	
Standard	CE marking, RoHS	

Ordering code for DMS

DMS G – □ 020– □

1 2 3 4 5



①Model	DMS：Solid State Sensor
②Specifications	G GS H HS E J
③Output type	Blank: 2 wire / N：NPN / P：PNP
④Lead wire length	020: 2m 030: 3m 050: 5m 100: 10m C08:150mm with M8 plug connector C12:150mm with M12 plug connector
⑤Additional specification	Blank: General type W:Waterproof type IP68 [note1]

[Note 1]There is no waterproof type for C08 / C12 &J/GS/HS.
The sockets of C08 and C12 need additional order. Please check on page362.

Ordering code for CMS

CMS G – 020– □

1 2 3 4

①Model	CMS：Reed Sensor
②Specifications	G H E J
③Lead wire length	020: 2m 030: 3m 050: 5m 100: 10m C08:150mm with M8 plug connector C12:150mm with M12 plug connector
④Additional specification	Blank: General type H:Heat resistant [note2]

[Note 2]There is no heat resistant type for C08 & C12.
The sockets of C08 and C12 need additional order. Please check on page362.

Ordering code for accessories

F – MQ □ Cylinder Accessory

1 2 3

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

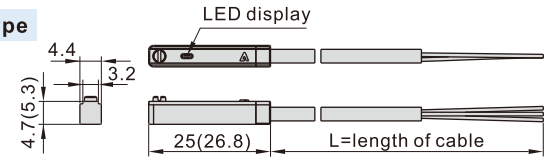
F – SC □ SH Tie Rod Cylinder Accessory

1 2 3 4

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

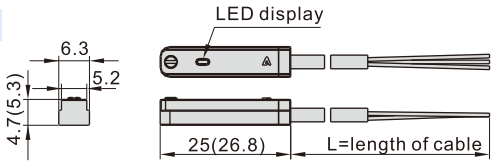
Dimensions

G Type



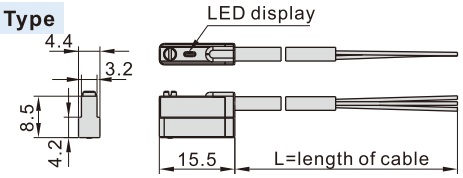
Note:a number in the bracket is the dimension of CMSG.

E Type

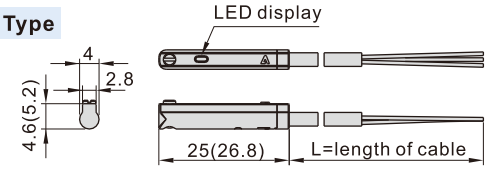


Note:a number in the bracket is the dimension of CMSE.

GS Type

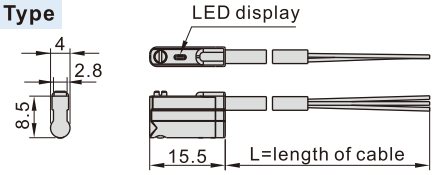


H Type

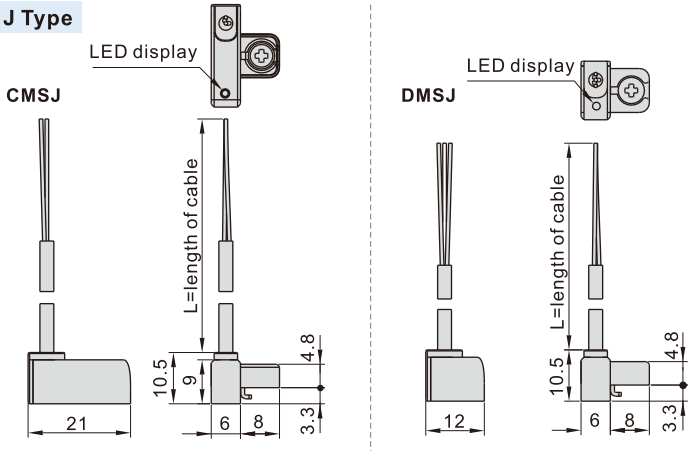


Note:a number in the bracket is the dimension of CMSH.

HS Type



J Type

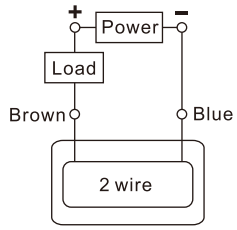


length of cable specification	length of cable(L)
020 Type	2000mm
030 Type	3000mm
050 Type	5000mm

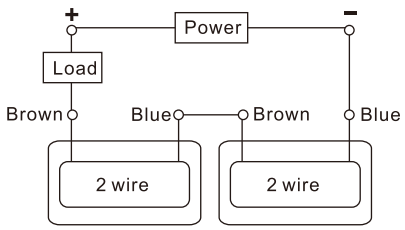
Connection method

2 wire, reed sensor connection

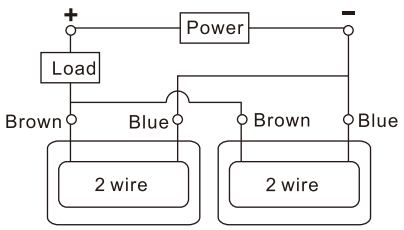
1.General connection



2.Series connection(And)



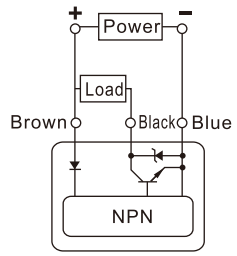
3.Parallel connection(OR)



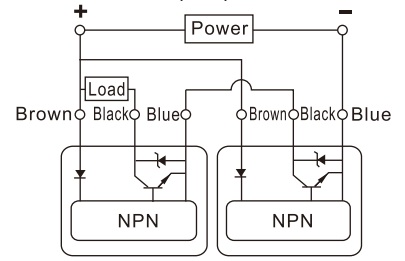
3 wire, solid state NPN connection

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

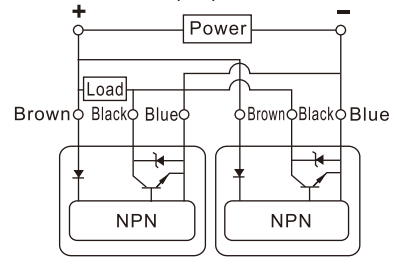
1.General connection



2.Series connection(And)



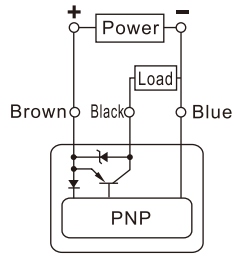
3.Parallel connection(OR)



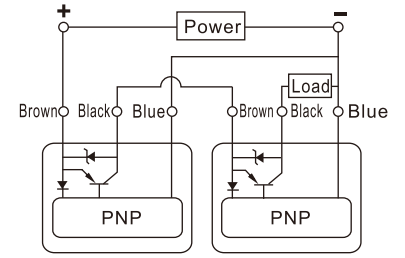
3 wire, solid state PNP connection

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

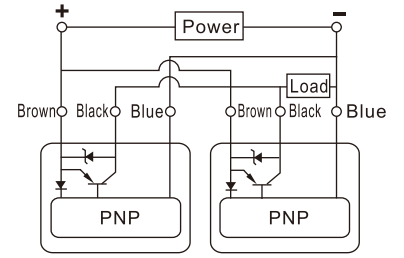
1.General connection



2.Series connection(And)



3.Parallel connection(OR)

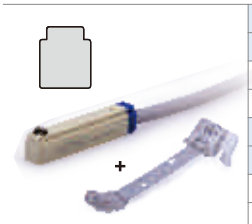


The selection of sensor

DMSG(S)	CMSG	HFKL				HFKP						ACQ/TACQ													SDA								
		10	16	20	25	10	16	20	25	32	40	12	16	20	25	32	40	50	63	80	100	125	140	160	12	16	20	25	32	40	50	63	80	100
			●	●	●		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			●	●	●	●	●	●	●	●

HFK							TCL/TCM											QCK								TR						
10	16	20	25	32	40	6	10	12	16	20	25	32	40	50	63	80	100	12	16	20	25	32	40	50	63	6	10	16	20	25	32	
	●	●	●	●	●			●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	

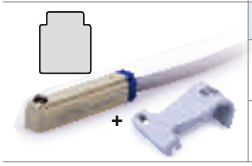
SAU						HFZ							HFY						HFP				MD/MK							AQK/BAQK
32	40	50	63	80	100	6	10	16	20	25	32	40	6	10	16	20	25	32	10	16	20	25	32	6	10	16	20	25	32			
●	●	●	●	●	●			●	●	●	●	●		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●			



Stainless steel																														
PB/PBR						MI								MF				MG						MA/MAC						
6	8	10	12	16	8	10	12	16	20	25	32	40	20	25	32	40	20	25	32	40	50	63	16	20	25	32	40	50	63	
●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	

Aluminum alloy												
MBL						MCK						
20	25	32	40	50	63	25	32	40	50	63	80	
●	●	●	●	●	●	●	●	●	●	●	●	

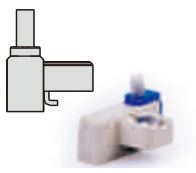
It needs an accessory to mount a sense on a cylinder



SC										SGC			
32	40	50	63	80	100	125	160	200	250	125	160	200	250
●	●	●	●	●	●	●	●	●	●	●	●	●	●

It needs an accessory to mount a sense on a cylinder

DMSJ	CMSJ	ACQ/TACQ						SDA										QCK				QDK				TN				
		32	40	50	63	80	100	12	16	20	25	32	40	50	63	80	100	32	40	50	63	20	25	32	40	10	16	20	25	32
		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●



DMSH(S)	CMSH	ACQ/TACQ			TC		HFZ							HFY	HFP	HFR					HFC						HFT				
		125	140	160	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
		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

QDK				HLQ/HLQL						HLS/HLSL						MU						HLH				MPG					
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	16		
●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		

HRQ										HFK						HLF				HGS				RMH				HFD				
2	3	7	10	20	30	50	70	100	200	10	16	20	25	32	40	8	12	16	20	6	8	10	12	10	16	20	25	8	12	16	20	25
●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●		●	●	●	●	●	●	●	●	●	●	●	●

HFKL				HFKP						HFCQ						
10	16	20	25	10	16	20	25	32	40	16	20	25	32	40	50	63
●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

DMSE	CMSE	SE/BSE							SAI								ACE										
		32	40	50	63	80	100	125	32	40	50	63	80	100	125	160	200	12	16	20	25	32	40	50	63	80	100	125
		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

Replacement

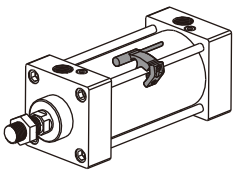
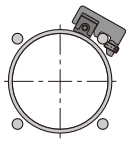
	New	Previous
	DMSG / DMSGS / CMSG 	DS1-G / CS1-G 
Ordering code	DMSG(S)-020	DS1G020
	DMSG(S)-030	DS1G030
	DMSG(S)-050	DS1G050
	DMSG(S)-C08	DS1GC08
	DMSG(S)-C12	DS1GC12
	DMSG(S)-020-W	–
	DMSG(S)-030-W	–
	DMSG(S)-050-W	–
	DMSG(S)-N020(-W)	DS1GN020(No Waterproof type)
	DMSG(S)-N030(-W)	DS1GN030(No Waterproof type)
	DMSG(S)-N050(-W)	DS1GN050(No Waterproof type)
	DMSG(S)-NC08	DS1GNC08
	DMSG(S)-NC12	DS1GNC12
	DMSG(S)-P020(-W)	DS1GP020(No Waterproof type)
	DMSG(S)-P030(-W)	DS1GP030(No Waterproof type)
	DMSG(S)-P050(-W)	DS1GP050(No Waterproof type)
	DMSG(S)-PC08	DS1GPC08
	DMSG(S)-PC12	DS1GPC12
	CMSG-020	CS1G020
	CMSG-030	CS1G030
	CMSG-050	CS1G050
	CMSG-C08	CS1GC08
	CMSG-C12	CS1GC12
	CMSG-020-H	CS1G020HT
	CMSG-030-H	CS1G030HT
	CMSG-050-H	CS1G050HT
	–	CS1GC08HT
	–	CS1GC12HT

	New	Previous
	DMSJ / CMSJ 	DS1-J / CS1-J 
	DMSJ-020	DS1J020
	DMSJ-030	DS1J030
	DMSJ-050	DS1J050
	DMSJ-C08	DS1JC08
	DMSJ-C12	DS1JC12
	DMSJ-020-W	–
	DMSJ-030-W	–
	DMSJ-050-W	–
	DMSJ-N020(-W)	DS1JN020(No Waterproof type)
	DMSJ-N030(-W)	DS1JN030(No Waterproof type)
	DMSJ-N050(-W)	DS1JN050(No Waterproof type)
	DMSJ-NC08	DS1JNC08
	DMSJ-NC12	DS1JNC12
	DMSJ-P020(-W)	DS1JP020(No Waterproof type)
	DMSJ-P030(-W)	DS1JP030(No Waterproof type)
	DMSJ-P050(-W)	DS1JP050(No Waterproof type)
	DMSJ-PC08	DS1JPC08
	DMSJ-PC12	DS1JPC12
	CMSJ-020	CS1J020
	CMSJ-030	CS1J030
	CMSJ-050	CS1J050
	CMSJ-C08	CS1JC08
	CMSJ-C12	CS1JC12
	CMSJ-020-H	CS1J020HT
	CMSJ-030-H	CS1J030HT
	CMSJ-050-H	CS1J050HT
	–	CS1JC08HT
	–	CS1JC12HT

	New	Previous
	DMSE / CMSE 	DS1-E / CS1-E 
Ordering code	DMSE-020	DS1E020
	DMSE-030	DS1E030
	DMSE-050	DS1E050
	DMSE-C08	DS1EC08
	DMSE-C12	DS1EC12
	DMSE-020-W	–
	DMSE-030-W	–
	DMSE-050-W	–
	DMSE-N020(-W)	DS1EN020(No Waterproof type)
	DMSE-N030(-W)	DS1EN030(No Waterproof type)
	DMSE-N050(-W)	DS1EN050(No Waterproof type)
	DMSE-NC08	DS1ENC08
	DMSE-NC12	DS1ENC12
	DMSE-P020(-W)	DS1EP020(No Waterproof type)
	DMSE-P030(-W)	DS1EP030(No Waterproof type)
	DMSE-P050(-W)	DS1EP050(No Waterproof type)
	DMSE-PC08	DS1EPC08
	DMSE-PC12	DS1EPC12
	CMSE-020	CS1E020
	CMSE-030	CS1E030
	CMSE-050	CS1E050
	CMSE-C08	CS1EC08
	CMSE-C12	CS1EC12
	CMSE-020-H	CS1E020HT
	CMSE-030-H	CS1E030HT
	CMSE-050-H	CS1E050HT
	–	CS1EC08HT
	–	CS1EC12HT

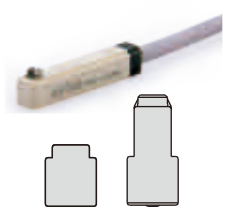
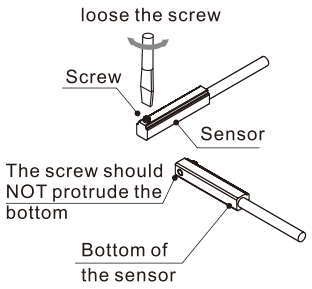
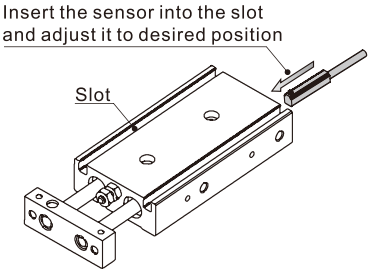
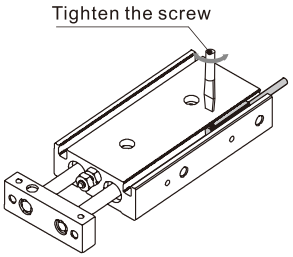
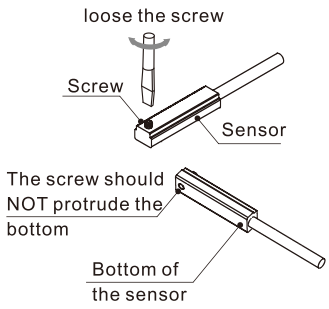
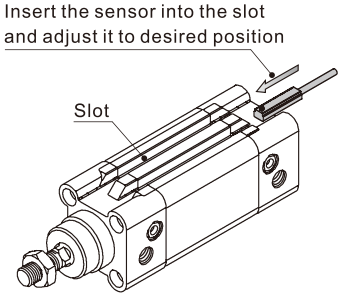
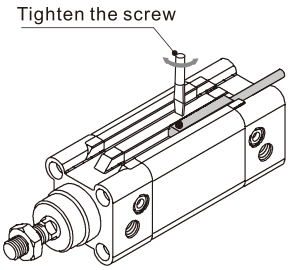
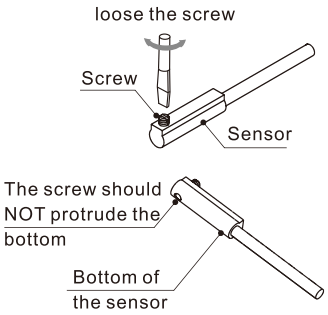
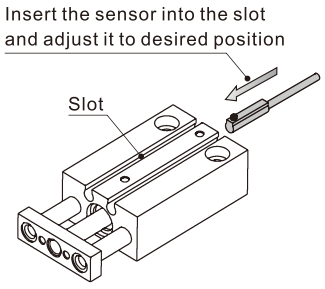
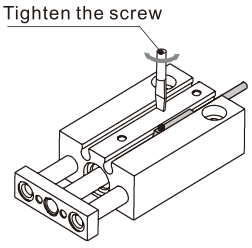
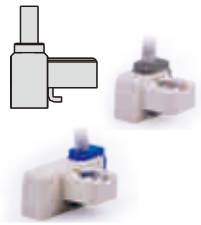
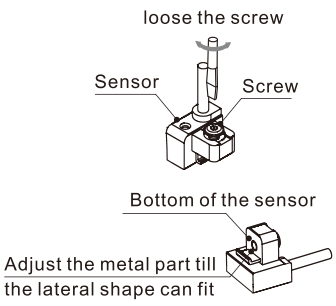
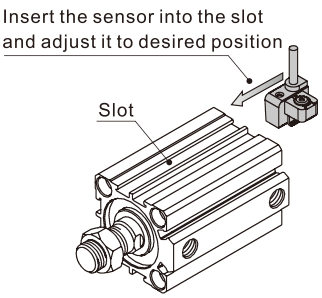
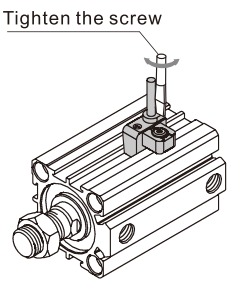
	New	Previous
	DMSH / DMSHS / CMSH 	DS1-H / CS1-H 
	DMSH(S)-020	DS1H020
	DMSH(S)-030	DS1H030
	DMSH(S)-050	DS1H050
	DMSH(S)-C08	DS1HC08
	DMSH(S)-C12	DS1HC12
	DMSH(S)-020-W	–
	DMSH(S)-030-W	–
	DMSH(S)-050-W	–
	DMSH(S)-N020(-W)	DS1HN020(No Waterproof type)
	DMSH(S)-N030(-W)	DS1HN030(No Waterproof type)
	DMSH(S)-N050(-W)	DS1HN050(No Waterproof type)
	DMSH(S)-NC08	DS1HNC08
	DMSH(S)-NC12	DS1HNC12
	DMSH(S)-P020(-W)	DS1HP020(No Waterproof type)
	DMSH(S)-P030(-W)	DS1HP030(No Waterproof type)
	DMSH(S)-P050(-W)	DS1HP050(No Waterproof type)
	DMSH(S)-PC08	DS1HPC08
	DMSH(S)-PC12	DS1HPC12
	CMSH-020	CS1H020
	CMSH-030	CS1H030
	CMSH-050	CS1H050
	CMSH-C08	CS1HC08
	CMSH-C12	CS1HC12
	CMSH-020-H	CS1H020HT
	CMSH-030-H	CS1H030HT
	CMSH-050-H	CS1H050HT
	–	CS1HC08HT
	–	CS1HC12HT

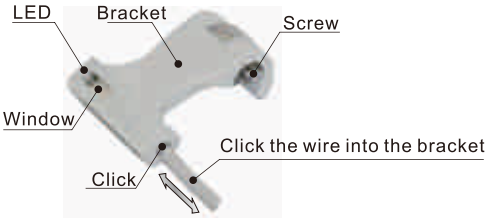
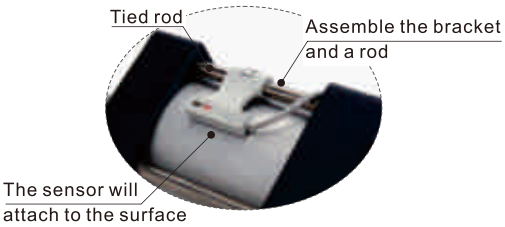
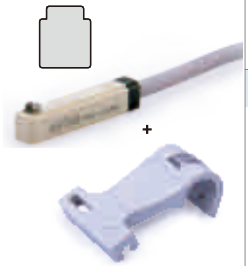
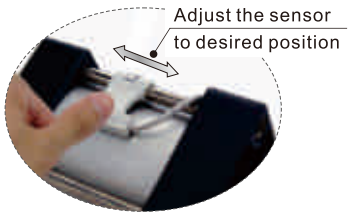
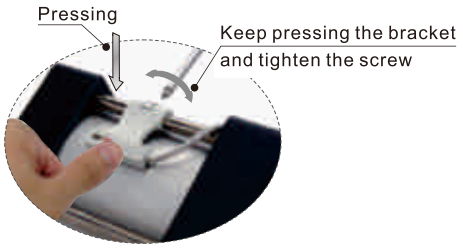
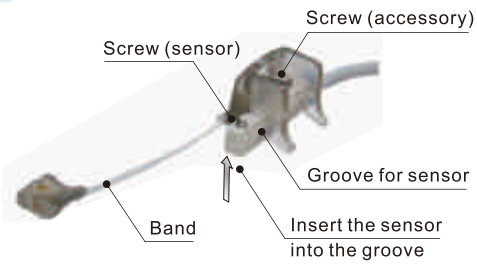
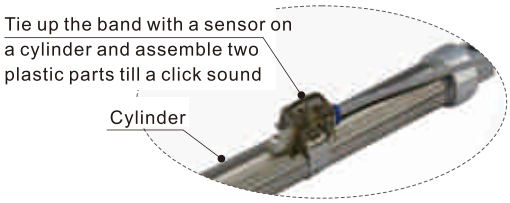
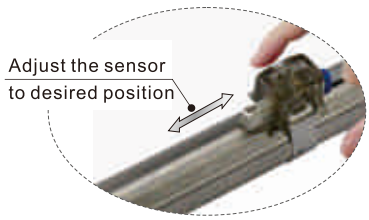
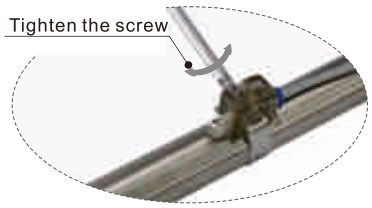
Replacement of previous sensor

New sensor + Tie Rod Cylinder Accessory		Previous sensor + Accessory			
DMSG/CMSG + F-SC□SH		previous sensor	previous sensor + Accessory		
		DS1-A / CS1-A	DS1-F / CS1-F + DS1-U / CS1-U		F-SC□H
Example					
Ordering code	Ordering code	Ordering code	Ordering code		Ordering code
	F-SC32SH	DS1A CS1A	DS1F CS1F DS1U CS1U	+	F-SC32H
DMSG + CMSG +	F-SC63SH				F-SC63H
	F-SC80SH				F-SC80H
	F-SC125SH				–
	F-SC160SH				–
	F-SC250SH				–

new sensor + band		previous sensor + band			
DMSG/CMSG + F-MQ□		previous sensor		previous sensor + band	
		DS1-M / CS1-M	DS1-T / CS1-T	DS1-F / CS1-F + DS1-U / CS1-U	GXPAB-01
Example					
Ordering code	Ordering code	Ordering code	Ordering code	Ordering code	Ordering code
	F-MQA20	D(C)S1M□A20	–	DS1F CS1F DS1U CS1U	–
	F-MQA25	D(C)S1M□A25			
	F-MQA32	D(C)S1M□A32			
	F-MQA40	D(C)S1M□A40			
	F-MQA50	D(C)S1M□A50			
	F-MQA63	D(C)S1M□A63			GXPAB-01
	F-MQA80	–			–
	F-MQ32T	–	D(C)S1T□A32		–
	F-MQ40T		D(C)S1T□A40		
	F-MQ50T		D(C)S1T□A50		
DMSG + CMSG +	F-MQS06	D(C)S1M□S06	–	+	GXPAB-01
	F-MQS08	D(C)S1M□S08			
	F-MQS10	D(C)S1M□S10			
	F-MQS12	D(C)S1M□S12			
	F-MQS16	D(C)S1M□S16			
	F-MQS20	D(C)S1M□S20			
	F-MQS25	D(C)S1M□S25			
	F-MQS32	D(C)S1M□S32			
	F-MQS40	D(C)S1M□S40			
	F-MQS50	D(C)S1M□S50			
	F-MQS63	D(C)S1M□S63			

Installation

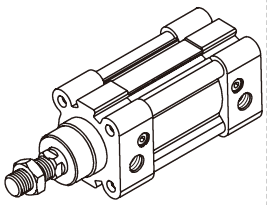
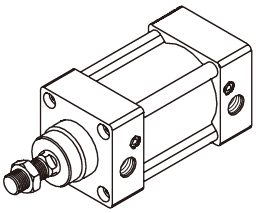
Sensor model	Procedure		
DMSG(S)/CMSG	1	2	3
			
DMSE/CMSE	1	2	3
			
DMSH(S)/CMSH	1	2	3
			
DMSJ/CMSJ	1	2	3
			

Sensor model	Procedure	
DMSG+(F-SC□SH) CMSG+(F-SC□SH)	1	2
		
	3	4
		
DMSG+(F-MQ□) CMSG+(F-MQ□)	1	2
		
	3	4
		

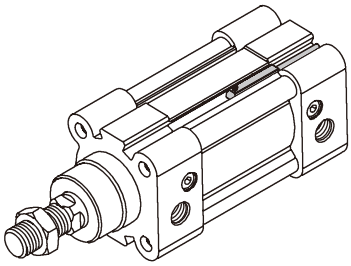
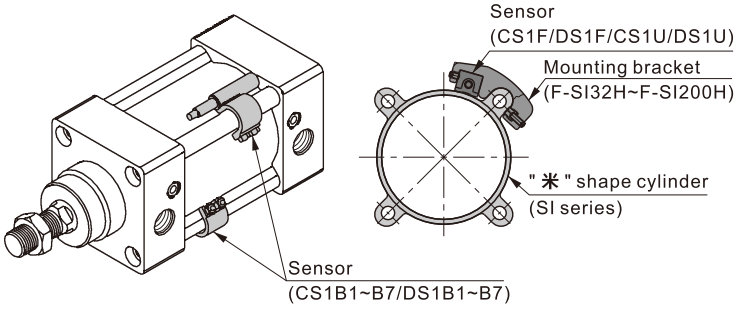
Sensor for " 米 " shape cylinder

SAI, SAU series will substitute for SI, SU series. And the corresponding sensors have some adjustments as the chart below.

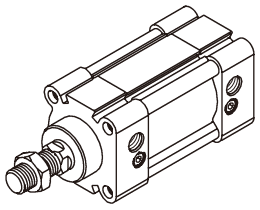
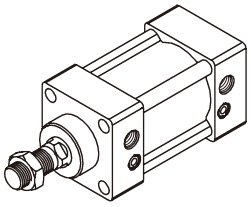
Cylinder and accessory

New type(SAI)		Previous type(SI)		
Cylinder	Sensor	Cylinder	Sensor	
	 CMSE \ DMSE		 CS1B1 / DS1B1 CS1B2 / DS1B2 CS1B3 / DS1B3 CS1B4 / DS1B4 CS1B5 / DS1B5 CS1B6 / DS1B6 CS1B7 / DS1B7	 CS1F/DS1F/CS1U/DS1U + F-SI32H/F-SI40H F-SI50H/F-SI63H F-SI80H/F-SI100H F-SI125H/F-SI160H F-SI200H

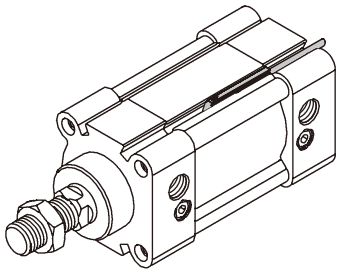
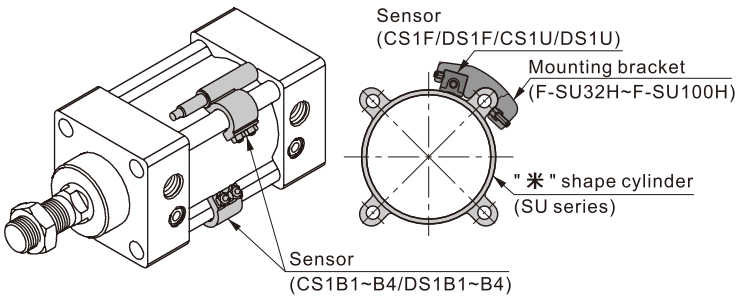
Installation

New type(SAI)	Previous type(SI)
	

Cylinder and accessory

New type(SAU)		Previous type(SU)		
Cylinder	Sensor	Cylinder	Sensor	
	 CMSG \ DMSG		 CS1B1 / DS1B1 CS1B2 / DS1B2 CS1B3 / DS1B3 CS1B4 / DS1B4	 CS1F/DS1F/CS1U/DS1U + F-SU32H/F-SU40H F-SU50H/F-SU63H F-SU80H/F-SU100H

Installation

New type(SAU)	Previous type(SU)
	

Socket

Ordering code

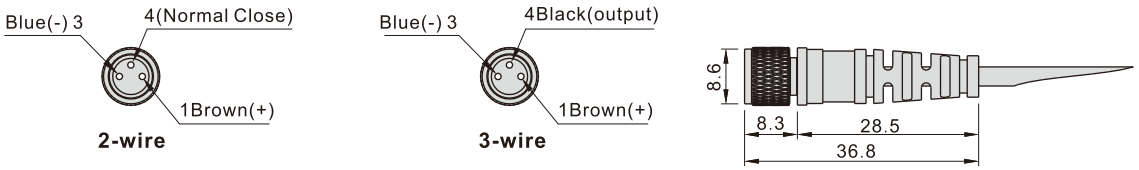
F – DMS C08 2 020

1 2 3 4 5

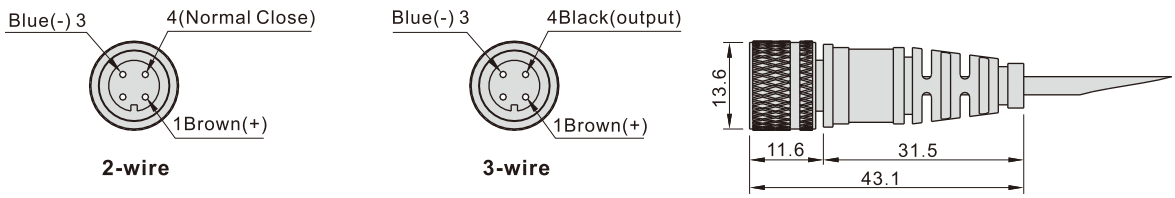
①Catagory code	F：Accessory			
②Specification code	DMS：Digital Magnetic Sensor			
③Socket type	C08:M8 socket	C12:M12 socket		
④Wire type	2: 2-wire type	3:3-wire type		
⑤Wire length	020: 2 meters	030:3meters	050:5meters	100:10meters

Appearance

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.