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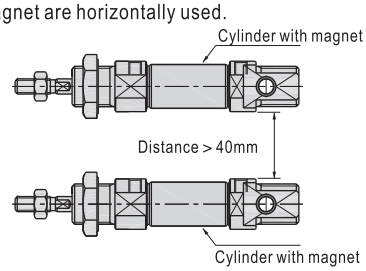
How to correctly select sensor switch

A. Confirmation of specification

Load current, voltage, temperature and impact performance beyond the scope of specification in product sample are not allowed to be used to avoid poor action or damage of magnetic switch.

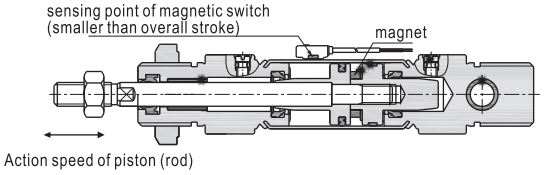
B. Confirmation of distance

The distance between two cylinders shall be longer than 40mm to prevent wrong action caused by magnetic interfere between two magnetic switches when the cylinders with magnet are horizontally used.



C. Confirmation of action speed of the cylinder

Magnetic switch is set in the middle position of the stroke. What shall be noticed is that maybe no drive load action exists if the speed of piston is too fast and the action duration of magnetic switch becomes shorter under the situation that load is driven by electrical signal sent by magnetic switch when piston passes through. If the speed of piston is higher than the maximum allowable speed, magnetic switch with time-extending function shall be selected.



D. Confirmation of the length of wiring

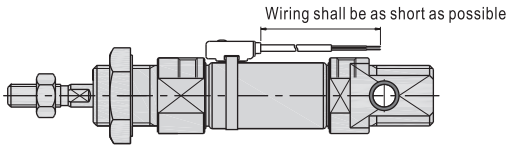
◆ Magnetic switch with contact

If the wiring that ends in load is too long, the service life will be shortened when the suddenly added current is increased as the switch is supplied with power.

1) Contact protection box shall be adopted when the wiring is longer than 5m if the magnetic switch has no contact protection circuit.
2) For the switch with contact protection circuit, the suddenly added current can not be fully absorbed and the service life will be shortened if the wiring is longer than 30m. To extend its service life, it is necessary to connect to contact protection box.

◆ Magnetic switch with no contact

The wiring which has no effect on the function shall be within 100m.



E. Confirmation of internal voltage drop of magnetic switch

◆ Magnetic switch with contact

1) Switch with indicator

When switches are connected in series, as there is internal resistance in LED, pay attention to the raising of the voltage drop (when n switches are connected in series, the voltage drop is n times of the voltage of one switch). If the switch is used under the specified voltage, all magnetic switches can work normally, but load may not act. What must be affirmed is that the load voltage shall be above the lowest operating voltage, which shall meet the following formula: internal voltage drop of power voltage switch > loaded lowest operating voltage.

2. Switches with no indicator lights can be chosen when the internal resistance in LED causes no action of the load

◆ Magnetic switch with no contact

The internal voltage drop of linear magnetic switch with no contact is generally larger than that of magnetic switch with contact. The attentions are the same with 1. In addition: DC12V relay is not used, please notice that.

Attention

F. Notice of the leaked current

◆ Magnetic switch with no contact

When all linear magnetic switches with no contact are disconnected, if the leaked current of internal circuit action passes through load, the requests are: load action current (cut current inputted into controller)> leaked current. If the request is not met, the switch will always stay in power supply situation and can not be cut off. In this situation, three-line switch shall be used. When N switches parallel, the leaked current that passes through load is n times of the leaked current of single switch.

G. Never directly use the load produced by overvoltage

◆Magnetic switch with contact

Switch with contact protection circuit or contact protection box shall be used in the situation that drive relay occurs overvoltage load

◆Magnetic switch with no contact

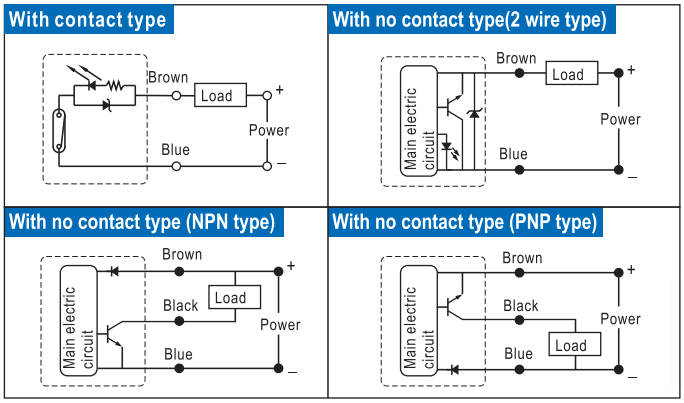
Though there is zener diode that is used for protection of overvoltage in the output part of magnetic switch with no contact, the repeated effect of pulse voltage may damage components. Overvoltage absorbing components shall be inserted in the situation that direct drive relay and electromagnetic valve occurs overvoltage load.

H. Situation that uses interlock circuit

Machinery type protection function is set to prevent faults. Machinery signal is turned into switch signal through sensor, which is used together with magnetic switch signal and forms dual interlock mode, whose credibility is higher. Maintenance and examination shall be carried out termly to make sure the action of interlock circuit is normal.

I. Ensure maintenance space

Wiring diagram of sensor switch



Back Sensor switch

additional and adjustment of sensor switch

Attention

1. To avoid machinery damage

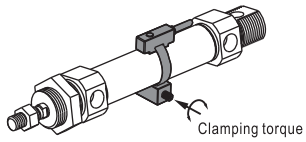
Switch shall not fall down or impact or bear over great impact (switch with contact shall be smaller than 300m/s^2) when it is installed. Though the noumenon of the switch is not damaged, its inside may be damaged and occur wrong action.

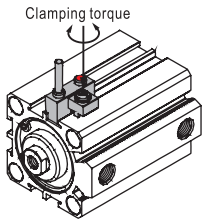
2. The wire of the switch shall not move with the action of cylinder

The wire is easy to break, and if the force is added to the inside of the switch, the internal components of the switch may be damaged; therefore, the wire of the switch is absolutely not allowed to move with the action of cylinder.

3. Clamping torque shall be within the allowable scope when the switch is installed

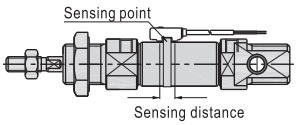
If the clamping torque is excessively high, the installed screw, accessories and switches may be damaged. If the clamping torque is insufficient, the additional position of the switch may shift.





4. Switch shall be installed in the middle position of the action scope

Action scope refers to the scope of the switch connection. Adjust the additional position of the magnetic switch as the piston is stopped in the center of the action scope. If the switch is installed near the two terminals of the action scope, Which is the limit of the on-off of the switch, the action of the switch is not steady.



Wiring of sensor switch

Warnings

1. Wire can not bear the repeated bend force and stretching force to prevent breakage.
2. Make sure that the power is supplied after connecting the load: for two-line type switch, the current will burn the switch instantly when the power is supplied if the load is not connected.
3. No poor insulation (joint with other circuits, poor earthing and terminal connection) in wire is allowed to prevent the damage to switch caused by the current passing through the switch.
4. It is no allowed to make a wiring with a parallel power line and high voltage line or use one wiring pipe to prevent wrong action of the magnetic switch caused by interfere of control circuit.
5. Short circuit is not allowed in the load of the switch
6. Please notice that never make a wrong wiring

◆ Magnetic switch with contact

DC24V switch with indicator has polarity. Brown line or No. 1 terminal is "+", and blue line or No. 2 terminal is "-".

① Once they are connected reversely, the switch acts, but the LED will not be on. In addition, once the current above stipulated number passes, the LED will be burned and the switch can not act.

② However, the magnetic switch indicated by two colors will turn to normally opened state once it is reversely connected.

◆ Magnetic switch with no contact

For three-line switch, there is protection for circuit once the power is reversely connected (that is the “+” and “-” of the power is mutually replaced). When “+” is connected with blue line and “-” is connected with black line, the switch will be damaged.

Application environment of sensor switch

Danger

1. Magnetic switch is absolutely not allowed to be used in the atmosphere with explosive gas as it has no anti-explosion structure.
2. Magnetic switch shall not be used in the situation with magnetism, otherwise it will cause wrong action of the switch or reduce the magnetism of the magnet ring in side of the cylinder
3. Magnetic switch shall not be used in the environment that is always eroded by water. Otherwise, the sealed resin inside the switch will expand due to poor insulation, which may cause wrong action.
4. Magnetic switch shall not be used in the environment that has coolant, detergent, oil or chemicals. Please contact the company if the switch is used in the environment that has oil or chemicals or in the situation that it will be badly influenced in a short time (such as poor insulation, wrong action caused by expanded seaed resin and induration of the wire).
5. Never use in the environment that the temperature changes in circle. Or it will has bad influence on the inner part of the switch.Common temperature change is exceptional.
6. Never use in the environment with excessively great impact.

◆Magnetic switch with contact

When magnetic switch with contact meets excessively great impact (over 300m/s^2), contact will wrongly act to send an instant (under 1ms) signal or may scrap.

7. Never use in the situation that has the source of electrical pulse

◆Magnetic switch with no contact

If the equipment produces higher electrical pulse (magnetic booster, high-frequency inductive furnace and motor) near the cylinder with magnetic switch with no contact, the internal circuit components of the switch may be degraded and damaged.

8. Notice the accumulation of iron powder and denseness of the magnetic object. The accumulation of iron powder such as chip powder and welding flame or the situation with the denseness of magnetic object around the cylinder with magnetic switch will weaken the magnetism in the cylinder and magnetic switch may not act.

Maintenance and service of sensor switch

Hint

Regularly maintain and examine the following points to prevent wrong action of the switch

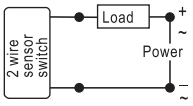
1. The switch shall be adjusted to the right additional position to fasten the small screw when the installed small screw for tightening the switch is loose or the additional position shifts.
2. To examine whether the wire has damage. The damage to wire will cause poor insulation. If there is damage, the switch shall be changed or the wire shall be repaired.
3. To examine whether the green light in the switch indicated by two colors is on when the piston stops at the set position. If the red light is on in this position, which means that the position is not right and shall be rectified to make the switch shine in the set position.

Back
Sensor switch

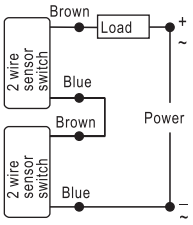
Connection method

A. 2 wire reed switch type connection

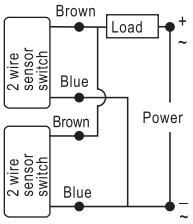
1. General connection：
When connecting 2 wire switches, load must be connected in series with the sensor to prevent damaged. Connect the brown wire in series load with positive (+) and the blue wire to negative(-) of DC power source, otherwise the LED will not light.



2. Series connection(And)
When 2 wire switches in series(AND) use,the voltage drop will be added up.(Typical V drop about 2.5V per switch)
When series too many switches, excessive voltage drop will cause non-operation of the load.
The quantity of switches in series due to the voltage of power source.

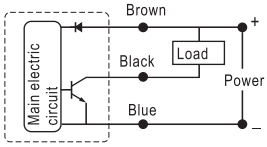


3. Parallel connection(OR)
When 2 wire switches in parallel(OR) use, the current flow to the switch will be shared when switches all in active.
When connection too many switches in parallel use, possible concurrent operation will caues dim or off LED due to lower current distribution.
The quantity of switches in parallel due to the current of load.

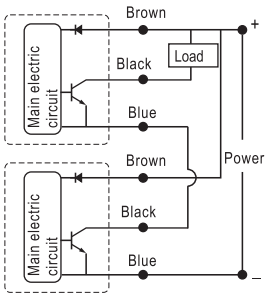


B. 3 wire solid state NPN type connection

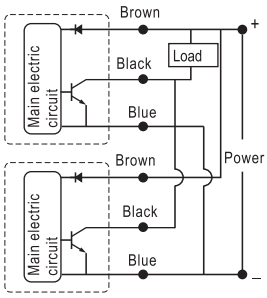
1. General connection
When connecting 3 wire switches, it must connect to DC Power source. pay attention to the wiring of black wire. wrong connect will damage the switch.
Connect brown wire to the positive(+) and the blue to the negative(-). the black wire must series load and to positive(+) only.



2. Series connection(And)
When 3 wire solid switches in series (AND) use. Voltage drop will be added up. (Typical V drop about 1.5V per switch)
When series too many switches, excessive voltage drop will cause non-operation of the load.
The quantity of switches in series due to the voltage of power source.

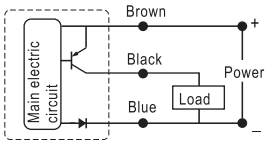


3. Parallel connection(OR)
When 3 wire solid state switches in parallel (OR) use. Leakage current will be added up.
When parallel too many switches in use, possibly cause wrong operation due to lower load current.
The quantity of switches in parallel due to the current of load.

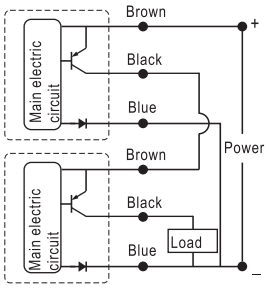


C. 3 wire solid state PNP type connection

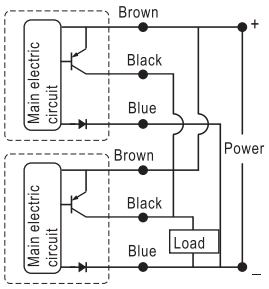
1. General connection
When connecting 3 wire switches, it must connect to DC power source. pay attention to the wiring of black wire. Wrong connect will damage the switch.
Connect brown wire to the positive(+) and the blue to the negative(-). The black wire must series load and to negative(-) only.



2. Series connection(And)
When 3 wire solid state switches inseries(AND) use. Voltage drop will be added up. (Typical V drop about 1.5V per switch)
When series too many switches, excessive voltage drop will cause non-operation of the load.
The quantity of switches in series due to the voltage of power source.



3. Parallel connection(OR)
When 3 wire solid state switches inparallel (OR) use. Leakage current will be added up.
When parallel too many switches in use, possibly cause wrong operation due to lower load current.
The quantity of switches in parallel due to the current of load.



Back Sensor switch

The selection of sensor switch

Sensor switch\Cylinder series		SI									SU						SGC				JSI							SC									
Type	Photo	32	40	50	63	80	100	125	160	200	32	40	50	63	80	100	125	160	200	250	32	40	50	63	80	100	125	32	40	50	63	80	100	125	160	200	250
DS1-B1/CS1-B1		●	●								●	●	●				●				●	●												●			
DS1-B2/CS1-B2				●	●									●									●	●													
DS1-B3/CS1-B3						●									●										●												
DS1-B4/CS1-B4							●									●										●											
DS1-B5/CS1-B5								●												●							●										●
DS1-B6/CS1-B6									●																												
DS1-B7/CS1-B7										●																											
DS1-B8/CS1-B8																		●	●																●	●	
DS1-F CS1-F		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●					●	●	●	●	●	●	●	●	●	●	●	●	●				
DS1-U CS1-U		●	●	●	●	●	●				●	●	●	●	●	●					●	●	●	●	●	●	●	●	●	●	●	●	●				
DS1-A CS1-A																												●	●	●	●	●	●				

Sensor switch\Cylinder series		MA/MAC							MI								PB/PBR					MF				MAL			
Type	Photo	16	20	25	32	40	50	63	8	10	12	16	20	25	32	40	6	8	10	12	16	20	25	32	40	20	25	32	40
DS1-M CS1-M		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●
DS1-F CS1-F							●	●	●	●	●	●	●	●	●	●													
DS1-U CS1-U							●	●	●	●	●	●	●	●	●	●													

Sensor switch\Cylinder series		ACQ/TACQ													SDA										TWQ				
Type	Photo	12	16	20	25	32	40	50	63	80	100	125	140	160	12	16	20	25	32	40	50	63	80	100	20	25	32	40	50
DS1-G CS1-G		●	●	●	●	●	●	●	●	●	●	●	●	●			●	●	●	●	●	●	●	●	●	●	●	●	●
DS1-J CS1-J						●	●	●	●	●	●				●	●	●	●	●	●	●	●	●	●			●	●	●
DS1-H												●	●	●															

Sensor switch\Cylinder series		TWH/TWM							TWG			MD/MK						TR						TN					TCL/TCM							
Type	Photo	20	25	32	40	50	63	80	32	40	50	6	12	16	20	25	32	6	10	16	20	25	32	10	16	20	25	32	12	16	20	25	32	40	50	63
DS1-J CS1-J		●	●	●	●	●	●	●																●	●	●	●	●								
DS1-G CS1-G		●	●	●	●	●	●	●				●	●	●	●	●	●	●	●	●	●	●	●						●	●	●	●	●	●	●	●
DS1-T CS1-T									●	●	●																									

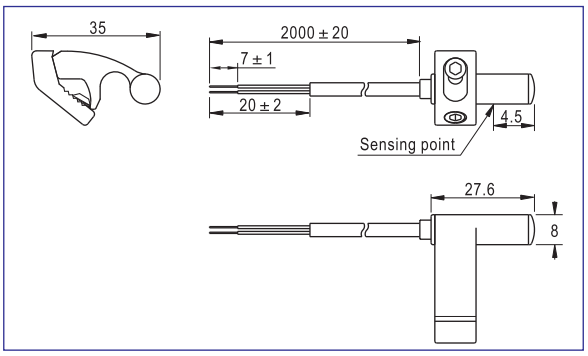
Sensor switch\Cylinder series		STW					QCK								HFZ							HFY						HFP						HFR				
Type	Photo	10	16	20	25	32	12	16	20	25	32	40	50	63	6	10	16	20	25	32	40	6	10	16	20	25	32	6	10	16	20	25	32	10	16	20	25	32
DS1-G CS1-G		●	●	●	●	●	●	●	●	●	●	●	●	●		●	●	●	●	●	●		●	●	●	●	●		●	●	●	●	●					
DS1-J CS1-J											●	●	●	●																								
DS1-H															●		●	●	●	●	●	●						●					●	●	●	●	●	●

Sensor switch\Cylinder series		SE							ACE										HLQ、HLS						MU			HLH				MPG					HRQ
Type	Photo	32	40	50	63	80	100	125	12	16	20	25	32	40	50	63	80	100	6	8	12	16	20	25	6	8	10	6	10	16	20	6	8	10	12	16	
DS1-E CS1-E		●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●																			
DS1-H																			●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●	●

Note: DS1－□□ is solid state output type and only adapt to DC 5~30V;CS1－□□ is reed switch type .

Back Sensor switch

Dimensions



Specification

Item\Type	DS1-A	DS1-AN	DS1-AP
Switch logic	Transistor without contact, Normally opened type		
Switch type	Two lines type	NPN type	PNP type
Operating voltage(V)	10~28V DC	5~30V DC	
Max.Switching current(mA)	50	200	
Switching rating(W)	Max. 1.4	Max. 6	
Current consumption	12(40)uA Max. @24V	15mA Max. @24V	
Voltage drop	2.65V Max. @50mA DC	0.5V Max. @200mA DC	
Cable	Φ3.3,2C Black oil resistant PVC	Φ3.3,3C Black oil resistant PVC	
Indicator	Red LED		
Leakage current	20(90)uA Max. @28V	0.01mA Max.	
Sensitivity(Gauss)	25~700	60~75	
Max. Frequency(Hz)	1000		
Shock(m/s^2)	500		
Vibration(m/s^2)	90		
Temperature range(℃)	-10~70		
Enclosure classification	IP67(NEMA6)		
Protection circuit	Power reverse polarity, surge suppression		

Ordering code

DS1 A N 020

Number of sensor switch

DS1: Sensor switch

Specification of sensor switch

Specification	Product Series
A: A type	Use for SC series

Connecting way ①

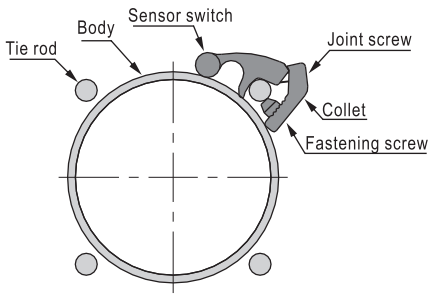
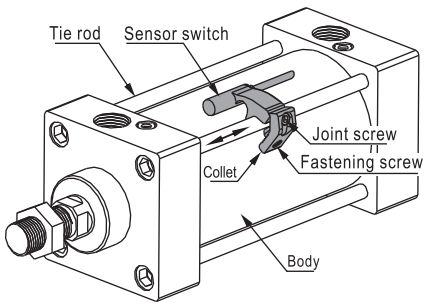
C08: M8 quick joint, length of wire is 150mm
C12: M12 quick joint, length of wire is 150mm
020: length of wire is 2m
030: length of wire is 3m
050: length of wire is 5m
100: length of wire is10m

Model of sensor switch

Blank: two-line /normally opened
N: three-line NPN with no contact (current flows in)/ normally opened
P: three-line PNP with no contact (current flows out)/ normally opened

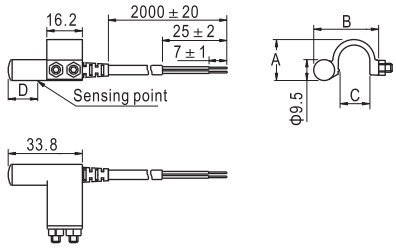
① Note: The quick joint that is attached at the end of wire is three-needle-male joint-linear-rotary screw thread type. The female joint plug has to be ordered additionally. Please refer to P420 for the specific data.

Mounting

Installation example	Installation method
	No additional accessories are necessary for the sensor switch of DS1-A (N, P)series. It can be directly fixed onto the cylinder, which is convenient and fast. 1. Loosen the connecting screw and clamping screw and adjust the open angle of the collet. 2. Push the button of sensor switch to the bar and adjust it to the proper position. Finally properly tighten the clamping screw to fix.
	

Back
Sensor switch

Dimensions



Type\Item	A	B	C	D
DS1−B1□	16.2	27.6	11	15.5
DS1−B2□	18.2	29.7	14	15.7
DS1−B3□	21.9	31.7	16.6	15.5
DS1−B4□	25.8	34.7	18	15.5
DS1−B5□	31.7	37.5	19	13
DS1−B6□	39.4	44.5	26	13
DS1−B7□	46.4	44.5	26	13
DS1−B8□	25	38.6	15	15.5

Specification

Item\Type	DS1-B□	DS1-B□N	DS1-B□P
Switch logic	Transistor without contact, Normally opened type		
Switch type	Two lines type	NPN type	PNP type
Operating voltage(V)	10~28V DC	5~30V DC	
Max. Switching current(mA)	50	200	
Switching rating(W)	Max. 1.4	Max. 6	
Current consumption	12(40)uA Max. @24V	15mA Max. @24V	
Voltage drop	2.65V Max. @50mA DC	0.5V Max. @200mA DC	
Cable	Φ4.0,2C Black oil resistant PVC	Φ4.0,3C Black oil resistant PVC	
Indicator	Red LED		
Leakage current	20(90)uA Max. @28V	0.01mA Max.	
Sensitivity(Gauss)	25~700	60~75	
Max. Frequency(Hz)	1000		
Shock(m/s^2)	500		
Vibration(m/s^2)	90		
Temperature range(℃)	-10~70		
Enclosure classification	IP67(NEMA6)		
Protection circuit	Power reverse polarity, surge suppression, output short circuit		

Ordering code

DS1 B1 N 020

Number of sensor switch

DS1: Sensor switch

Specification of sensor switch

Specification	Product Series
B1: B1 type	Use for SI32(40), JSI32(40), SGC125
B2: B2 type	Use for SI50(63), JSI50(63)
B3: B3type	Use for SI80, JSI80
B4: B4 type	Use for SI100, JSI100
B5: B5 type	Use for SI125, JSI125, SGC250
B6: B6 type	Use for SI160
B7: B7 type	Use for SI200
B8: B8 type	Use for SGC160(200)

Model of sensor switch

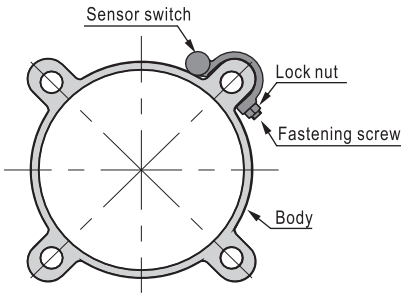
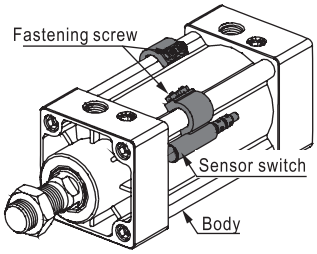
Blank: two-line /normally opened
N: three-line NPN with no contact (current flows in)/ normally opened
P: three-line PNP with no contact (current flows out)/ normally opened

Connecting way ①

C08: M8 quick joint, length of wire is 150mm
C12: M12 quick joint, length of wire is 150mm
020: length of wire is 2m
030: length of wire is 3m
050: length of wire is 5m
100: length of wire is10m

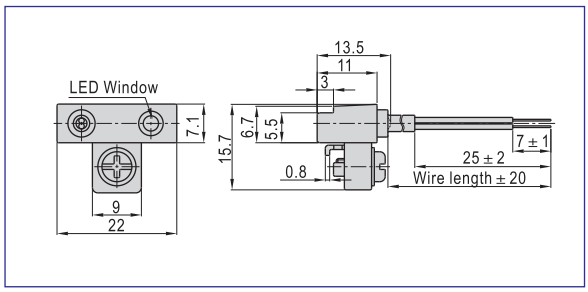
① Note: The quick joint that is attached at the end of wire is three-needle-male joint-linear-rotary screw thread type. The female joint plug has to be ordered additionally. Please refer to P420 for the specific data.

Mounting

Installation example	Installation method
	No additional accessories are necessary for the sensor switch of DS1-B (N, P) series. It can be directly fixed onto the cylinder, which is convenient and fast. 1. Loosen the clamping screw, snap the sensor switch on the outer surface of the cylinder, and adjust it to the proper position. Tighten the clamping screw and then tighten the anti-loose screw cap to fix.
	

Back
Sensor switch

Dimensions



Specification

Item\Type	DS1-J	DS1-JN	DS1-JP
Switch logic	Transistor without contact, Normally opened type		
Switch type	Two lines type	NPN type	PNP type
Operating voltage(V)	10~28V DC	5~30V DC	
Max. Switching current(mA)	50	200	
Switching rating(W)	Max. 1.4	Max. 6	
Current consumption	12(40)uA Max. @24V	15mA Max. @24V	
Voltage drop	2.65V Max. @50mA DC	0.5V Max. @200mA DC	
Cable	Φ3.3,2C Black oil resistant PVC	Φ3.3,3C Black oil resistant PVC	
Indicator	Red LED		
Leakage current	20(90)uA Max. @28V	0.01mA Max.	
Sensitivity(Gauss)	25~700	60~75	
Max. Frequency(Hz)	1000		
Shock(m/s^2)	500		
Vibration(m/s^2)	90		
Temperature range(℃)	-10~70		
Enclosure classification	IP67(NEMA6)		
Protection circuit	Power reverse polarity, surge suppression		

Ordering code

DS1 J N 020

Number of sensor switch

DS1: Sensor switch

Specification of sensor switch

Specification	Product Series
J: J type	SDA, TN, TWH, TWM, ACQ32~100 TWQ32~50, QCK32~63

Connecting way ①

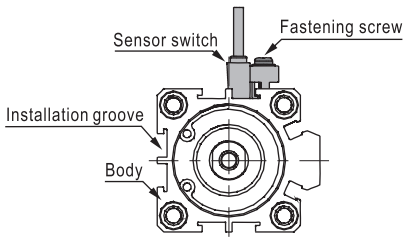
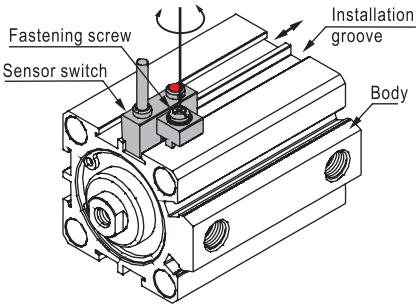
C08: M8 quick joint, length of wire is 150mm
C12: M12 quick joint, length of wire is 150mm
020: length of wire is 2m
030: length of wire is 3m
050: length of wire is 5m
100: length of wire is10m

Model of sensor switch

Blank: two-line /normally opened
N: three-line NPN with no contact (current flows in)/ normally opened
P: three-line PNP with no contact (current flows out)/ normally opened

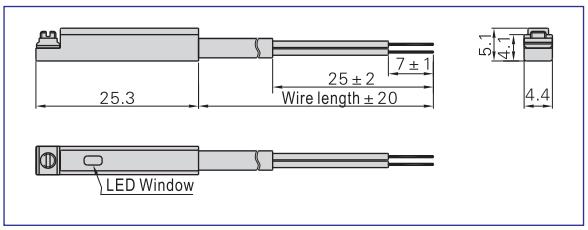
① Note: The quick joint that is attached at the end of wire is three-needle-male joint-linear-rotary screw thread type. The female joint plug has to be ordered additionally. Please refer to P420 for the specific data.

Mounting

Installation example	Installation method
	No additional accessories are necessary for the sensor switch of DS1-J (N, P)series. It can be directly fixed onto the cylinder, which is convenient and fast. 1. Loosen the clamping screw, slide the inductive switch to the slot and adjust it to the proper position. Tighten the clamping screw and then tighten the anti-loose screw cap to fix.
	

Back Sensor switch

Dimensions



Specification

Item\Type	DS1-G	DS1-GN	DS1-GP
Switch logic	Transistor without contact, Normally opened type		
Switch type	Two lines type	NPN type	PNP type
Operating voltage(V)	10~28V DC	5~30V DC	
Max. Switching current(mA)	50	200	
Switching rating(W)	Max. 1.4	Max. 6	
Current consumption	12(40)uA Max. @24V	15mA Max. @24V	
Voltage drop	2.65V Max. @50mA DC	0.5V Max. @200mA DC	
Cable	Φ2.8,2C Black oil resistant PVC	Φ3.3,3C Black oil resistant PVC	
Indicator	Red LED		
Leakage current	20(90)uA Max. @28V	0.01mA Max.	
Sensitivity(Gauss)	25~700	60~75	
Max. Frequency(Hz)	1000		
Shock(m/s^2)	500		
Vibration(m/s^2)	90		
Temperature range(℃)	-10~70		
Enclosure classification	IP67(NEMA6)		
Protection circuit	Power reverse polarity, surge suppression		

Ordering code

DS1 G N 020

Number of sensor switch
DS1: Sensor switch

Specification of sensor switch

Specification	Product Series
G: G type	MD, MK, TR, TC, ACQ, STW TWH, TWM, TWQ, SDA20~100 QCK, HFZ10~40, HFY10~32 HFP10~32

Connecting way ①

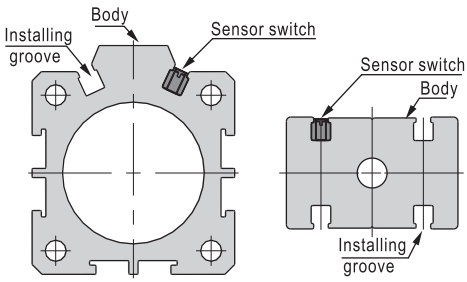
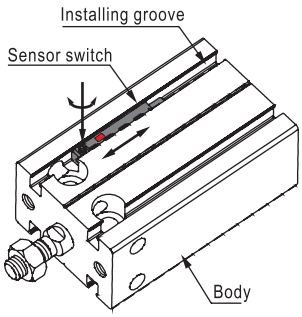
C08: M8 quick joint, length of wire is 150mm
C12: M12 quick joint, length of wire is 150mm
020: length of wire is 2m
030: length of wire is 3m
050: length of wire is 5m
100: length of wire is10m

Model of sensor switch

Blank: two-line /normally opened
N: three-line NPN with no contact (current flows in)/ normally opened
P: three-line PNP with no contact (current flows out)/ normally opened

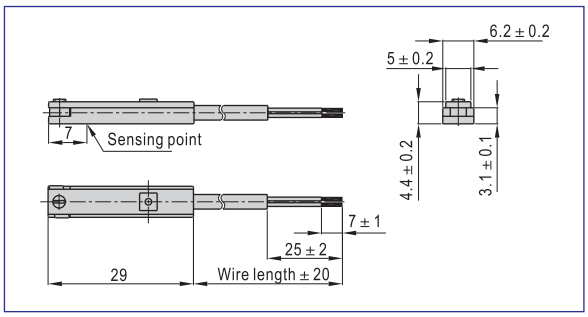
① Note: The quick joint that is attached at the end of wire is three-needle-male joint-linear-rotary screw thread type. The female joint plug has to be ordered additionally. Please refer to P420 for the specific data.

Mounting

Installation example	Installation method
	No additional accessories are necessary for the sensor switch of DS1-G (N, P) series.It can be directly fixed onto the groove alone the cylinder, which is convenient and fast. 1. Loosen the clamping screw on sensor switch, lead the sensor switch to the additional slot and adjust it to the proper position. Tighten the clamping screw to fix.
	

Back
Sensor switch

Dimensions



Specification

Item\Type	DS1-E	DS1-EN	DS1-EP
Switch logic	Transistor without contact, Normally opened type		
Switch type	Two lines type	NPN type	PNP type
Operating voltage(V)	10~28V DC	5~30V DC	
Max. Switching current(mA)	50	200	
Switching rating(W)	Max. 1.4	Max. 6	
Current consumption	12(40)uA Max. @24V	15mA Max. @24V	
Voltage drop	2.65V Max. @50mA DC	0.5V Max. @200mA DC	
Cable	Φ2.8,2C Black oil resistant PVC	Φ3.3,3C Black oil resistant PVC	
Indicator	Red LED		
Leakage current	20(90)uA Max. @28V	0.01mA Max.	
Sensitivity(Gauss)	25~700	45~55	
Max. Frequency(Hz)	1000		
Shock(m/s^2)	500		
Vibration(m/s^2)	90		
Temperature range(℃)	-10~70		
Enclosure classification	IP67(NEMA6)		
Protection circuit	Power reverse polarity, surge suppression		

Ordering code

DS1 E N 020

Number of sensor switch

DS1: Sensor switch

Specification of sensor switch

Specification	Product Series
E: E type	Use for SE,ACE series

Model of sensor switch

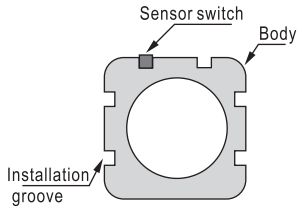
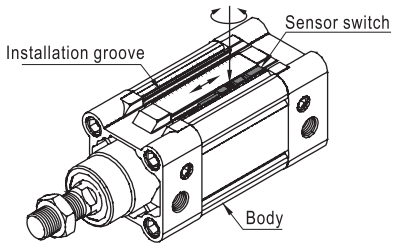
Blank: two-line /normally opened
N: three-line NPN with no contact (current flows in)/ normally opened
P: three-line PNP with no contact (current flows out)/ normally opened

Connecting way ①

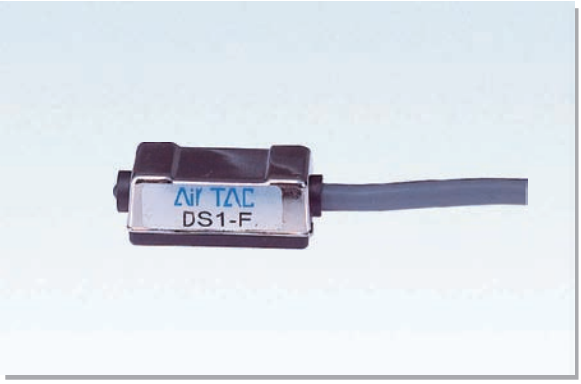
C08: M8 quick joint, length of wire is 150mm
C12: M12 quick joint, length of wire is 150mm
020: length of wire is 2m
030: length of wire is 3m
050: length of wire is 5m
100: length of wire is10m

① Note: The quick joint that is attached at the end of wire is three-needle-male joint-linear-rotary screw thread type. The female joint plug has to be ordered additionally. Please refer to P420 for the specific data.

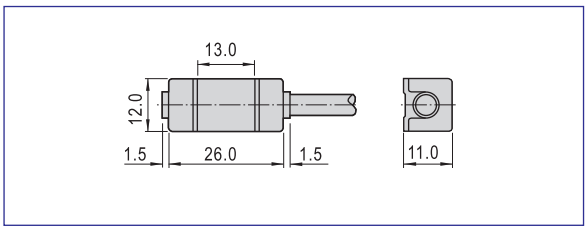
Mounting

Installation example	Installation method
	No additional accessories are necessary for the sensor switch of DS1-E (N, P)series. It can be directly fixed onto the groove of the cylinder, which is convenient and fast. 1. Adjust the clamping screw on sensor switch . Then slide the sensor switch to the additional slot and adjust it to the proper position and tighten the clamping screw to fix.
	

Back Sensor switch



Dimensions



The ordering code of mounting accessories

Bore size\Series	SC,SCL	SU,SUL	SI,SIL	JSI
32	F-SC32H	F-SU32H	F-SI32H	F-SI32H
40	F-SC32H	F-SU40H	F-SI40H	F-SI40H
50	F-SC32H	F-SU50H	F-SI50H	F-SI50H
63	F-SC63H	F-SU63H	F-SI63H	F-SI63H
80	F-SC80H	F-SU80H	F-SI80H	F-SI80H
100	F-SC80H	F-SU100H	F-SI100H	F-SI100H
125	-	-	F-SI125H	F-SI125H
160	-	-	F-SI160H	-
200	-	-	F-SI200H	-

Specification

Item\Type	DS1-F	DS1-FN	DS1-FP
Switch logic	Transistor without contact, Normally opened type		
Switch type	Two lines type	NPN type	PNP type
Operating voltage(V)	10~28V DC	5~30V DC	
Max. Switching current(mA)	50	200	
Switching rating(W)	Max. 1.4	Max. 6	
Current consumption	12(40)uA Max. @24V	15mA Max. @24V	17mA Max. @24V
Voltage drop	2.65V Max. @50mA DC	1.0V Max. @200mA DC	
Cable	Φ4.0,2C Black oil resistant PVC	Φ4.0,3C Black oil resistant PVC	
Indicator	Red LED		
Leakage current	20(90)uA Max. @28V	0.01mA Max.	
Sensitivity(Gauss)	25~700	60~75	
Max. Frequency(Hz)	1000		
Shock(m/s^2)	500		
Vibration(m/s^2)	90		
Temperature range(℃)	-10~70		
Enclosure classification	IP67(NEMA6)		
Protection circuit	Power reverse polarity, surge suppression		

Ordering code

DS1 F N 020

Number of sensor switch
DS1: Sensor switch

Specification of sensor switch

Specification	Product Series
F: F type	SI, SU, SC, JSI, MI, MA50(63)

Connecting way ①

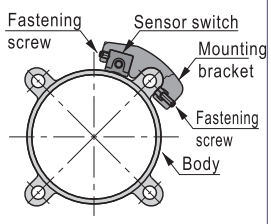
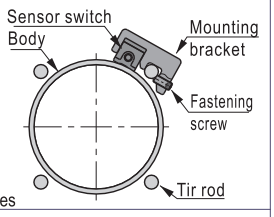
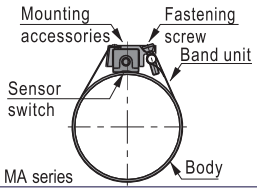
C08: M8 quick joint, length of wire is 150mm
C12: M12 quick joint, length of wire is 150mm
020: length of wire is 2m
030: length of wire is 3m
050: length of wire is 5m
100: length of wire is10m

Model of sensor switch

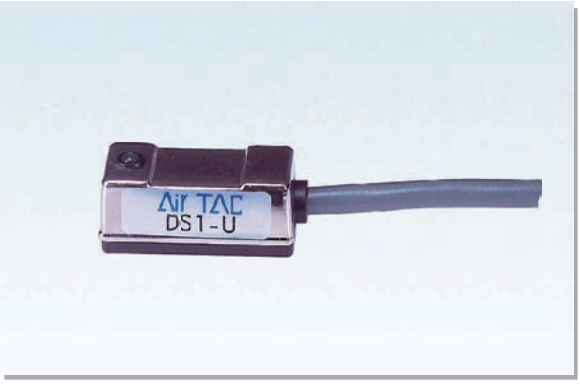
Blank: two-line /normally opened
N: three-line NPN with no contact (current flows in)/ normally opened
P: three-line PNP with no contact (current flows out)/ normally opened

① Note: The quick joint that is attached at the end of wire is three-needle-male joint-linear-rotary screw thread type. The female joint plug has to be ordered additionally. Please refer to P420 for the specific data.

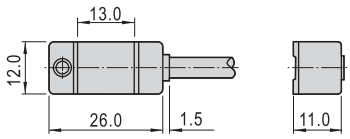
Mounting

Installation example	Installation method
 Outline 1: Used with SU, SI, JSI series	When the DS1–F, DS1–FN, DS1–FP series sensor switch used with different cylinders, different mounting accessories must be ordered. the details are below. 1. When it used with MI, MA50, 63 series cylinders, you must order the band unit(the ordering code is GXPAB–01), then depend on the below outline 3, fixed the sensor switch on the proper position of the cylinder's body with the band unit. 2. When it used with SC series cylinders, you must order the Mounting bracket (the ordering code is below table) , then depend on the below outline 2, fixed the sensor switch on the proper position of the cylinder's body with the mounting bracket. 3. When it used with SU, SI, JSI cylinders, you must order the mounting bracket(the ordering code is below table), then depend on the below outline 1, fixed the sensor switch on the proper position of the cylinder's body with the mounting bracket.
 Outline 2: Used with SC series	
 Outline 3: Used with MI, MA series	

Back
Sensor switch



Dimensions



The ordering code of mounting accessories

Bore size\Series	SC,SCL	SU,SUL	SI,SIL	JSI
32	F-SC32H	F-SU32H	F-SI32H	F-SI32H
40	F-SC32H	F-SU40H	F-SI40H	F-SI40H
50	F-SC32H	F-SU50H	F-SI50H	F-SI50H
63	F-SC63H	F-SU63H	F-SI63H	F-SI63H
80	F-SC80H	F-SU80H	F-SI80H	F-SI80H
100	F-SC80H	F-SU100H	F-SI100H	F-SI100H
125	-	-	F-SI125H	F-SI125H
160	-	-	F-SI160H	-
200	-	-	F-SI200H	-

Specification

Item\Type	DS1-U	DS1-UN	DS1-UP
Switch logic	Transistor without contact, Normally opened type		
Switch type	Two lines type	NPN type	PNP type
Operating voltage(V)	10~28V DC	5~30V DC	
Max. Switching current(mA)	50	200	
Switching rating(W)	Max. 1.4	Max. 6	
Current consumption	12(40)uA Max. @24V	15mA Max. @24V	17mA Max. @24V
Voltage drop	2.65V Max. @50mA DC	1.0V Max. @200mA DC	
Cable	Φ4.0,2C Black oil resistant PVC	Φ4.0,3C Black oil resistant PVC	
Indicator	Red LED		
Leakage current	20(90)uA Max. @28V	0.01mA Max.	
Sensitivity(Gauss)	25~700	60~75	
Max. Frequency(Hz)	1000		
Shock(m/s^2)	500		
Vibration(m/s^2)	90		
Temperature range(℃)	-10~70		
Enclosure classification	IP67(NEMA6)		
Protection circuit	Power reverse polarity, surge suppression		

Ordering code

DS1 U N 020

Number of sensor switch

DS1: Sensor switch

Specification of sensor switch

Specification	Product Series
U: U type	SI, SU, SC, JSI, MI, MA50(63)

Connecting way ①

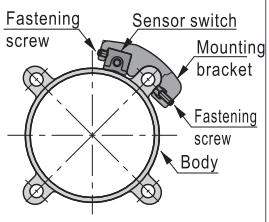
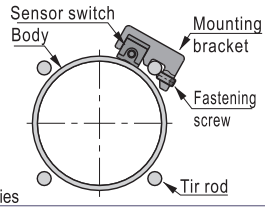
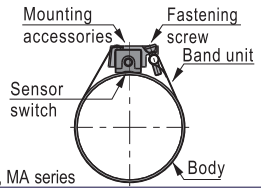
C08: M8 quick joint, length of wire is 150mm
C12: M12 quick joint, length of wire is 150mm
020: length of wire is 2m
030: length of wire is 3m
050: length of wire is 5m
100: length of wire is10m

Model of sensor switch

Blank: two-line /normally opened
N: three-line NPN with no contact (current flows in)/ normally opened
P: three-line PNP with no contact (current flows out)/ normally opened

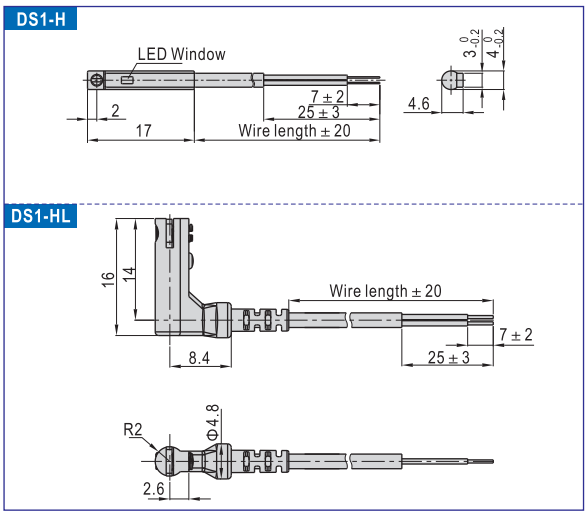
① Note: The quick joint that is attached at the end of wire is three-needle-male joint-linear-rotary screw thread type. The female joint plug has to be ordered additionally. Please refer to P420 for the specific data.

Mounting

Installation example	Installation method
 Outline 1: Used with SU, SI, JSI series	When the DS1–U, DS1–UN, DS1–UP series sensor switch used with different cylinders, different mounting accessories must be ordered. the details are below. 1. When it used with MI, MA50, 63 series cylinders, you must order the band unit(the ordering code is GXPAB–01), then depend on the below outline 3, fixed the sensor switch on the proper position of the cylinder's body with the band unit. 2. When it used with SC series cylinders, you must order the Mounting bracket (the ordering code is below table) , then depend on the below outline 2, fixed the sensor switch on the proper position of the cylinder's body with the mounting bracket. 3. When it used with SU, SI, JSI cylinders, you must order the mounting bracket(the ordering code is below table), then depend on the below outline 1, fixed the sensor switch on the proper position of the cylinder's body with the mounting bracket.
 Outline 2: Used with SC series	
 Outline 3: Used with MI, MA series	

Back Sensor switch

Dimensions



Specification

Item\Type	DS1-H, DS1-HL	DS1-HN, DS1-HLN	DS1-HP, DS1-HLP
Switch logic	Transistor without contact, Normally opened type		
Switch type	Two lines type	NPN type	PNP type
Operating voltage(V)	10~28V DC	5~30V DC	
Max. Switching current(mA)	50	200	
Switching rating(W)	Max. 1.4	Max. 6	
Current consumption	12(40)uA Max. @24V	15mA Max. @24V	
Voltage drop	2.65V Max. @50mA DC	0.5V Max. @200mA DC	
Cable	Φ2.8,2C Black oil resistant PVC	Φ3.3,3C Black oil resistant PVC	
Indicator	Red LED		
Leakage current	20(90)uA Max. @28V	0.01mA Max.	
Sensitivity(Gauss)	25~700	60~75	
Max. Frequency(Hz)	1000		
Shock(m/s^2)	500		
Vibration(m/s^2)	90		
Temperature range(℃)	-10~70		
Enclosure classification	IP67(NEMA6)		
Protection circuit	Power reverse polarity, surge suppression		

Ordering code

DS1 H N 020

Number of sensor switch

DS1: Sensor switch

Specification of sensor switch

Specification	Product Series
H: H type	HLH, HRQ, HFZ6(16~40), HFY6
HL: HL type	HFR10~25, HLQ/HLS

Connecting way ①

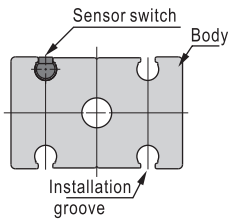
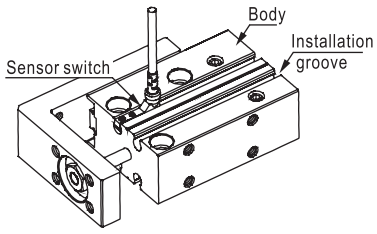
C08: M8 quick joint, length of wire is 150mm
C12: M12 quick joint, length of wire is 150mm
020: length of wire is 2m
030: length of wire is 3m
050: length of wire is 5m
100: length of wire is10m

Model of sensor switch

Blank: two-line /normally opened
N: three-line NPN with no contact (current flows in)/ normally opened
P: three-line PNP with no contact (current flows out)/ normally opened

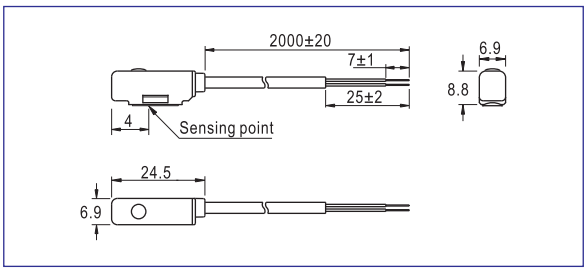
① Note: The quick joint that is attached at the end of wire is three-needle-male joint-linear-rotary screw thread type. The female joint plug has to be ordered additionally. Please refer to P420 for the specific data.

Mounting

Installation example	Installation method
	No additional accessories are necessary for the sensor switch of DS1-H (N, P)\DS1-HL(N,P) series. It can be directly fixed along the groove of the cylinder, which is convenient and fast.
	1. Adjust the clamping screw on sensor switch, slide the sensor switch into the installation slot and adjust it to the proper position and tighten the clamping screw to fix.

Back
Sensor switch

Dimensions



Specification

Item\Type		DS1-M	DS1-MN	DS1-MP
Switch logic		Transistor without contact, Normally opened type		
Switch type		Two lines type	NPN type	PNP type
Operating voltage(V)		10~28V DC	5~30V DC	
Max. Switching current(mA)		50	200	
Switching rating(W)		Max. 1.4	Max. 6	
Current consumption		12(40)uA Max. @24V	15mA Max. @24V	
Voltage drop		2.65V Max. @50mA DC	0.5V Max. @200mA DC	
Cable		Φ3.3,2C Black oil resistant PVC	Φ3.3,3C Black oil resistant PVC	
Indicator		Red LED		
Leakage current		20(90)uA Max. @28V	0.01mA Max.	
Sensitivity (Gauss)	S06~S10	25~700	45~55	
	S12~S16	25~700	55~65	
	S20~S63	25~700	65~75	
	A20~A40	25~700	65~75	
Max. Frequency(Hz)		1000		
Shock(m/s^2)		500		
Vibration(m/s^2)		90		
Temperature range(℃)		-10~70		
Enclosure classification		IP67(NEMA6)		
Protection circuit		Power reverse polarity, surge suppression		

Ordering code

DS1 M N 020 S 06

Number of sensor switch

DS1: Sensor switch

Specification of sensor switch

Specification	Product Series
M: M type	PB, MA, MAL, MI, MF

Model of sensor switch

Blank: two-line /normally opened
N: three-line NPN with no contact (current flows in)/ normally opened
P: three-line PNP with no contact (current flows out)/ normally opened

① **Connecting way**

C08: M8 quick joint, length of wire is 150mm
C12: M12 quick joint, length of wire is 150mm
020: length of wire is 2m
030: length of wire is 3m
050: length of wire is 5m
100: length of wire is10m

Bore size

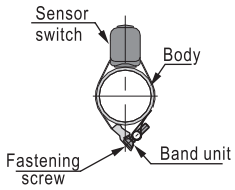
Cylinder barrel material	Bore size
Aluminum alloy	20: Φ20mm
	25: Φ25mm
	32: Φ32mm
	40: Φ40mm
Stainless steel	06: Φ6mm
	08: Φ8mm
	10: Φ10mm
	12: Φ12mm
	16: Φ16mm
	20: Φ20mm
	25: Φ25mm
	32: Φ32mm
	40: Φ40mm
	50: Φ50mm
	63: Φ63mm

Cylinder Barrel material

S: Stainless steel
A: Aluminum alloy

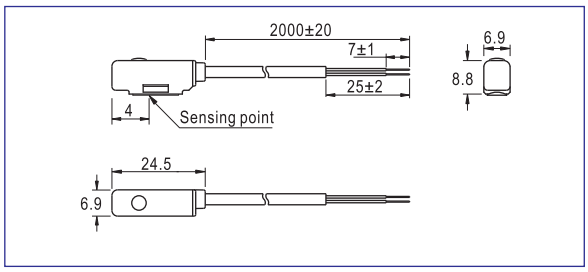
① Note: The quick joint that is attached at the end of wire is three-needle-male joint-linear-rotary screw thread type. The female joint plug has to be ordered additionally. Please refer to P420for the specific data.

Mounting

Installation example	Installation method
	No additional accessories are necessary for the sensor switch of DS1-M, DS1-MN, DS1-MP series. It can be directly fixed onto the cylinder, which is convenient and fast. 1. Strap band round the cylinder barrel. Snap the clamping screw into button orifice and adjust it to the proper position. Properly tighten the clamping screw to fix.

Back Sensor switch

Dimensions



Specification

Item\Type	DS1-T	DS1-TN	DS1-TP
Switch logic	Transistor without contact, Normally opened type		
Switch type	Two lines type	NPN type	PNP type
Operating voltage(V)	10~28V DC	5~30V DC	
Max. Switching current(mA)	50	200	
Switching rating(W)	Max. 1.4	Max. 6	
Current consumption	12(40)uA Max. @24V	15mA Max. @24V	
Voltage drop	2.65V Max. @50mA DC	0.5V Max. @200mA DC	
Cable	Φ3.3,2C Black oil resistant PVC	Φ3.3,3C Black oil resistant PVC	
Indicator	Red LED		
Leakage current	20(90)uA Max. @28V	0.01mA Max.	
Sensitivity(Gauss)	25~700	55~65	
Max. Frequency(Hz)	1000		
Shock(m/s^2)	500		
Vibration(m/s^2)	90		
Temperature range(℃)	-10~70		
Enclosure classification	IP67(NEMA6)		
Protection circuit	Power reverse polarity, surge suppression		

Ordering code

DS1 T N 020 A 32

Number of sensor switch
- DS1: Sensor switch

Specification of sensor switch

Specification	Product Series
T: T type	TWG

Model of sensor switch
- Blank: two-line /normally opened
- N: three-line NPN with no contact (current flows in)/ normally opened
- P: three-line PNP with no contact (current flows out)/ normally opened

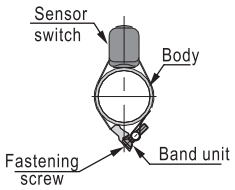
Bore size
- 32: Φ32mm
- 40: Φ40mm
- 50: Φ50mm

Cylinder Barrel material
- A: Aluminum alloy

Connecting way ①
- C08: M8 quick joint, length of wire is 150mm
- C12: M12 quick joint, length of wire is 150mm
- 020: length of wire is 2m
- 030: length of wire is 3m
- 050: length of wire is 5m
- 100: length of wire is10m

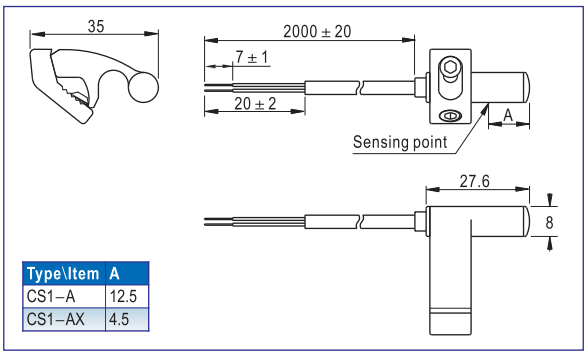
① Note: The quick joint that is attached at the end of wire is three-needle-male joint-linear-rotary screw thread type. The female joint plug has to be ordered additionally. Please refer to P420 for the specific data.

Mounting

Installation example	Installation method
	No additional accessories are necessary for the sensor switch of DS1-T. DS1-TN, DS1-TP series. It can be directly fixed onto the cylinder, which is convenient and fast. 1. Strap band round the cylinder barrel. Snap the clamping screw into button orifice and adjust it to the proper position. Properly tighten the clamping screw to fix.

Back
Sensor switch

Dimensions



Type\Item	A
CS1–A	12.5
CS1–AX	4.5

Specification

Item\Type	CS1-A	CS1-AX
Switch logic	STSP Normally opened type	
Switch type	Reed switch with contact	
Operating voltage(V)	5~240V AC/DC	
Max. Switching current(mA)	100	
Switching rating(W)	Max. 10	
Current consumption	No	
Voltage drop	2.5V Max. @100mA DC	
Cable	Φ3.3,2C Gray oil resistant PVC (Flame retarded)	
Indicator	Red LED	No
Leakage current	No	
Sensitivity(Gauss)	60~75	
Max. Frequency(Hz)	200	
Shock(m/s^2)	300	
Vibration(m/s^2)	90	
Temperature range(℃) ①	-10~70	
Enclosure classification	IP67(NEMA6)	
Protection circuit	No	

①Note: Please contact us for high remperature resistant(125℃),low remperature resistant(–40~–25℃) and explosion-proof sensor switch.

Ordering code

CS1 A X 020

Number of sensor switch

CS1: Sensor switch

Specification of sensor switch

Specification	Product Series
A: A type	Use for SC series

Model of sensor switch

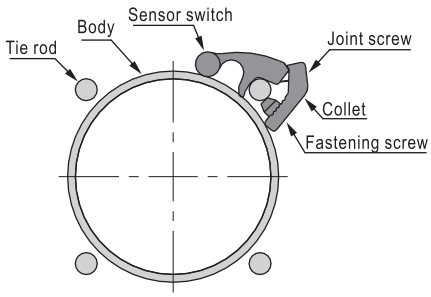
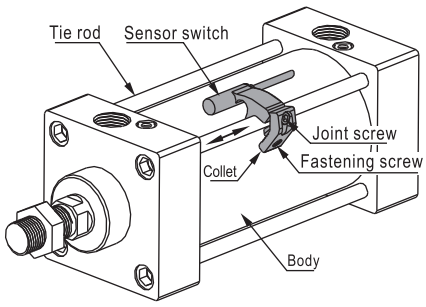
Blank: two-line magnetic spring pipe with contact/normally opened
X: two-line magnetic spring pipe with contact, without indicator light/normally opened

Connecting way ①

C08: M8 quick joint, length of wire is 150mm
C12: M12 quick joint, length of wire is 150mm
020: length of wire is 2m
030: length of wire is 3m
050: length of wire is 5m
100: length of wire is10m

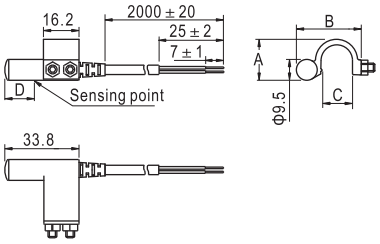
① Note: The quick joint that is attached at the end of wire is three-needle-male joint-linear-rotary screw thread type. The female joint plug has to be ordered additionally. Please refer to P420 for the specific data.

Mounting

Installation example	Installation method
	No additional accessories are necessary for the sensor switch of CS1-A, CS1-AX series. It can be directly fixed onto the cylinder, which is convenient and fast. 1. Loosen the connecting screw and clamping screw and adjust the open angle of the collet. 2. Push the button of sensor switch to the bar and adjust it to the proper position. Finally properly tighten the clamping screw to fix.
	

Back
Sensor switch

Dimensions



Type\Item	A	B	C	D
CS1−B1□	16.2	27.6	11	15.5
CS1−B2□	18.2	29.7	14	15.7
CS1−B3□	21.9	31.7	16.6	15.5
CS1−B4□	25.8	34.7	18	15.5
CS1−B5□	31.7	37.5	19	13
CS1−B6□	39.4	44.5	26	13
CS1−B7□	46.4	44.5	26	13
CS1−B8□	25	38.6	15	15.5

Specification

Item\Type	CS1-B□	CS1-B□X
Switch logic	STSP Normally opened type	
Switch type	Reed switch with contact	
Operating voltage(V)	5~240V AC/DC	
Max. Switching current(mA)	100	
Switching rating(W)	Max. 10	
Current consumption	No	
Voltage drop	2.5V Max. @100mA DC	
Cable	Φ4.0,2C Gray oil resistant PVC (Flame retarded)	
Indicator	Red LED	No
Leakage current	No	
Sensitivity(Gauss)	60~75	
Max. Frequency(Hz)	200	
Shock(m/s^2)	300	
Vibration(m/s^2)	90	
Temperature range(℃) ①	-10~70	
Enclosure classification	IP67(NEMA6)	
Protection circuit	No	

①Note: Please contact us for high remperature resistant(125℃),low remperature resistant(−40~−25℃) and explosion-proof sensor switch.

Ordering code

CS1 B1 X 020

Number of sensor switch
CS1: Sensor switch

Specification of sensor switch

Specification	Product Series
B1: B1 type	Use for SU32~50, SI32(40), JSI32(40), SGC125
B2: B2 type	Use for SU63, SI50(63), JSI50(63)
B3: B3type	Use for SU80, SI80, JSI80
B4: B4 type	Use for SU100, SI100, JSI100
B5: B5 type	Use for SI125, JSI125, SGC250
B6: B6 type	Use for SI160
B7: B7 type	Use for SI200
B8: B8 type	Use for SGC160(200)

Connecting way ①

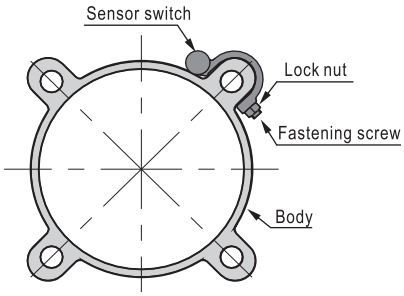
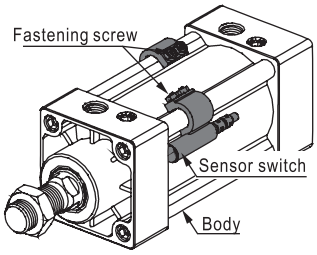
C08: M8 quick joint, length of wire is 150mm
C12: M12 quick joint, length of wire is 150mm
020: length of wire is 2m
030: length of wire is 3m
050: length of wire is 5m
100: length of wire is10m

Model of sensor switch

Blank: two-line magnetic spring pipe with contact/normally opened
X: two-line magnetic spring pipe with contact, without indicator light/normally opened

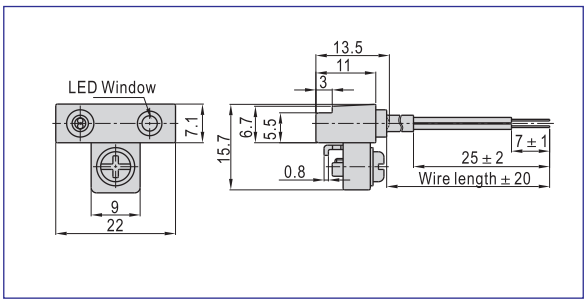
① Note: The quick joint that is attached at the end of wire is three-needle-male joint-linear-rotary screw thread type. The female joint plug has to be ordered additionally. Please refer to P420 for the specific data.

Mounting

Installation example	Installation method
	No additional accessories are necessary for the sensor switch of CS1-B□, CS1-B□Xseries. It can be directly fixed onto the cylinder, which is convenient and fast. 1. Loosen the clamping screw, snap the sensor switch on the outer surface of the cylinder, and adjust it to the proper position. Tighten the clamping screw and then tighten the lock nut to fix.
	

Back
Sensor switch

Dimensions



Specification

Item\Type	CS1-J	CS1-JX
Switch logic	STSP Normally opened type	
Switch type	Reed switch with contact	
Operating voltage(V)	5~240V AC/DC	
Max. Switching current(mA)	100	
Switching rating(W)	Max. 10	
Current consumption	No	
Voltage drop	2.5V Max. @100mA DC	
Cable	Φ3.3,2C Gray oil resistant PVC (Flame retarded)	
Indicator	Red LED	No
Leakage current	No	
Sensitivity(Gauss)	60~75	
Max. Frequency(Hz)	200	
Shock(m/s^2)	300	
Vibration(m/s^2)	90	
Temperature range(℃) ①	-10~70	
Enclosure classification	IP67(NEMA6)	
Protection circuit	No	

①Note: Please contact us for high remperature resistant(125℃),low remperature resistant(−40~−25℃) and explosion-proof sensor switch.

Ordering code

CS1 J X 020

Number of sensor switch

CS1: Sensor switch

Specification of sensor switch

Specification	Product Series
J: J type	SDA/TN/TWH/TWM/ACQ32~100 TWQ32~50/QCK32~63

Model of sensor switch

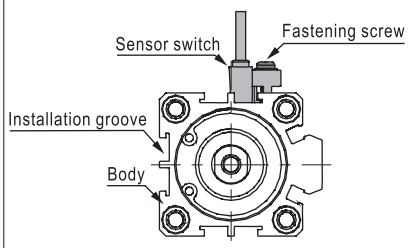
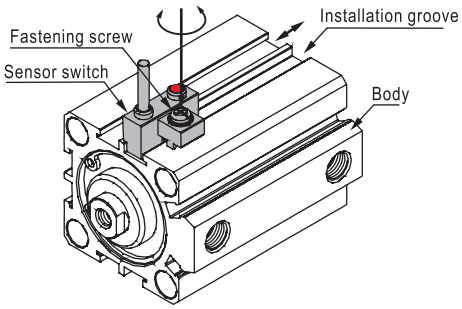
Blank: two-line magnetic spring pipe with contact/normally opened
X: two-line magnetic spring pipe with contact, without indicator light/normally opened

Connecting way ①

C08: M8 quick joint, length of wire is 150mm
C12: M12 quick joint, length of wire is 150mm
020: length of wire is 2m
030: length of wire is 3m
050: length of wire is 5m
100: length of wire is10m

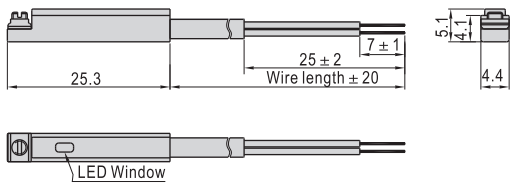
① Note: The quick joint that is attached at the end of wire is three-needle-male joint-linear-rotary screw thread type. The female joint plug has to be ordered additionally. Please refer to P420 for the specific data.

Mounting

Installation example	Installation method
	No additional accessories are necessary for the sensor switch of CS1-J, CS1-JX series. It can be directly fixed onto the cylinder, which is convenient and fast. 1. Loosen the clamping screw, slide the inductive switch to the slot and adjust it to the proper position. Tighten the clamping screw to fix.
	

Back Sensor switch

Dimensions



Specification

Item\Type	CS1-G	CS1-GX
Switch logic	STSP Normally opened type	
Switch type	Reed switch with contact	
Operating voltage(V)	5~240V AC/DC	
Max. Switching current(mA)	100	
Switching rating(W)	Max. 10	
Current consumption	No	
Voltage drop	2.5V Max. @100mA DC	
Cable	Φ2.8,2C Gray oil resistant PVC (Flame retarded)	
Indicator	Red LED	No
Leakage current	No	
Sensitivity(Gauss)	60~75	
Max. Frequency(Hz)	200	
Shock(m/s^2)	300	
Vibration(m/s^2)	90	
Temperature range(℃) ①	-10~70	
Enclosure classification	IP67(NEMA6)	
Protection circuit	No	

①Note: Please contact us for high remperature resistant(125℃),low remperature resistant(−40~−25℃) and explosion-proof sensor switch.

Ordering code

CS1 G X 020

Number of sensor switch

CS1: Sensor switch

Specification of sensor switch

Specification	Product Series
G: G type	MD, MK, TR, TC, ACQ, STW TWH, TWM, TWQ, SDA20~100 QCK, HFZ10~40, HFY10~32 HFP10~32

Connecting way ①

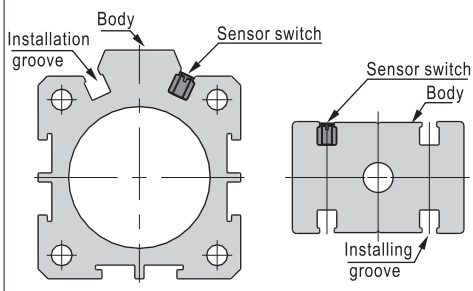
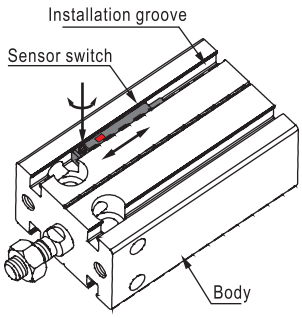
C08: M8 quick joint, length of wire is 150mm
C12: M12 quick joint, length of wire is 150mm
020: length of wire is 2m
030: length of wire is 3m
050: length of wire is 5m
100: length of wire is10m

Model of sensor switch

Blank: two-line magnetic spring pipe with contact/normally opened
X: two-line magnetic spring pipe with contact, without indicator light/normally opened

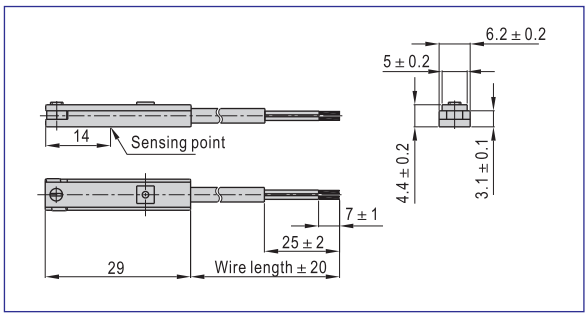
① Note: The quick joint that is attached at the end of wire is three-needle-male joint-linear-rotary screw thread type. The female joint plug has to be ordered additionally. Please refer to P420 for the specific data.

Mounting

Installation example	Installation method
	No additional accessories are necessary for the sensor switch of CS1-G, CS1-GX series.It can be directly fixed onto the groove of the cylinder, which is convenient and fast. 1. Loosen the clamping screw on sensor switch, lead the sensor switch to the additional slot and adjust it to the proper position. Tighten the clamping screw to fix.
	

Back
Sensor switch

Dimensions



Specification

Item\Type	CS1-E	CS1-EX
Switch logic	STSP Normally opened type	
Switch type	Reed switch with contact	
Operating voltage(V)	5~240V AC/DC	
Max. Switching current(mA)	100	
Switching rating(W)	Max. 10	
Current consumption	No	
Voltage drop	2.5V Max. @100mA DC	
Cable	Φ2.8,2C Gray oil resistant PVC (Flame retarded)	
Indicator	Red LED	No
Leakage current	No	
Sensitivity(Gauss)	45~55	
Max. Frequency(Hz)	200	
Shock(m/s^2)	300	
Vibration(m/s^2)	90	
Temperature range(℃) ①	-10~70	
Enclosure classification	IP67(NEMA6)	
Protection circuit	No	

①Note: Please contact us for high remperature resistant(125℃),low remperature resistant(−40~−25℃) and explosion-proof sensor switch.

Ordering code

CS1 E X 020

Number of sensor switch

CS1: Sensor switch

Specification of sensor switch

Specification	Product Series
E: E type	Use for SE,ACE series

Model of sensor switch

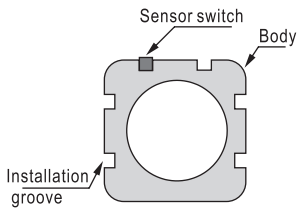
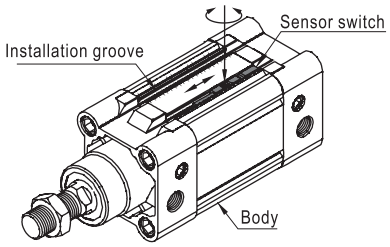
Blank: two-line magnetic spring pipe with contact/normally opened
X: two-line magnetic spring pipe with contact, without indicator light/normally opened

Connecting way ①

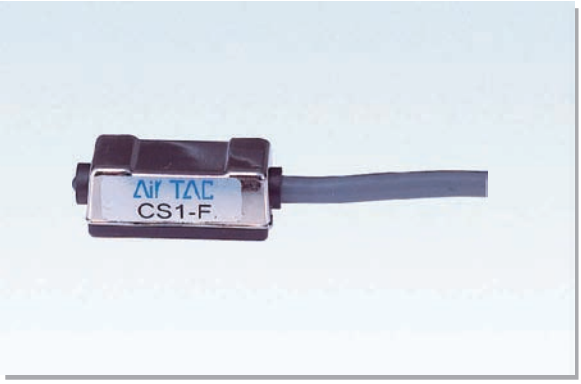
C08: M8 quick joint, length of wire is 150mm
C12: M12 quick joint, length of wire is 150mm
020: length of wire is 2m
030: length of wire is 3m
050: length of wire is 5m
100: length of wire is10m

① Note: The quick joint that is attached at the end of wire is three-needle-male joint-linear-rotary screw thread type. The female joint plug has to be ordered additionally. Please refer to P420 for the specific data.

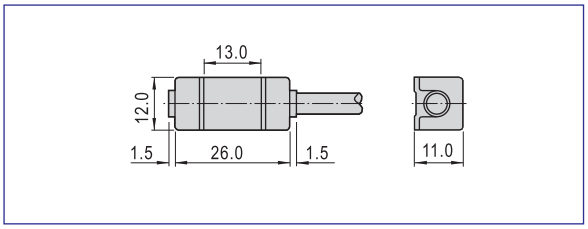
Mounting

Installation example	Installation method
	No additional accessories are necessary for the sensor switch of CS1-E, CS1-EX series. It can be directly fixed onto the groove of the cylinder, which is convenient and fast. 1. Adjust the clamping screw on sensor switch slide the sensor switch into the installation slot and adjust it to the proper position and tighten the clamping screw to fix.
	

Back Sensor switch



Dimensions



The ordering code of mounting accessories

Bore size\Series	SC,SCL	SU,SUL	SI,SIL	JSI
32	F-SC32H	F-SU32H	F-SI32H	F-SI32H
40	F-SC32H	F-SU40H	F-SI40H	F-SI40H
50	F-SC32H	F-SU50H	F-SI50H	F-SI50H
63	F-SC63H	F-SU63H	F-SI63H	F-SI63H
80	F-SC80H	F-SU80H	F-SI80H	F-SI80H
100	F-SC80H	F-SU100H	F-SI100H	F-SI100H
125	-	-	F-SI125H	F-SI125H
160	-	-	F-SI160H	-
200	-	-	F-SI200H	-

Specification

Item\Type	CS1-F	CS1-FX
Switch logic	STSP Normally opened type	
Switch type	Reed switch with contact	
Operating voltage(V)	5~240V AC/DC	
Max. Switching current(mA)	100	
Switching rating(W)	Max. 10	
Current consumption	No	
Voltage drop	2.5V Max. @100mA DC	
Cable	Φ4.0,2C Gray oil resistant PVC (Flame retarded)	
Indicator	Red LED	No
Leakage current	No	
Sensitivity(Gauss)	60~75	
Max. Frequency(Hz)	200	
Shock(m/s^2)	300	
Vibration(m/s^2)	90	
Temperature range(℃) ①	-10~70	
Enclosure classification	IP67(NEMA6)	
Protection circuit	No	

①Note: Please contact us for high remperature resistant(125℃),low remperature resistant(−40~−25℃) and explosion-proof sensor switch.

Ordering code

CS1 F X 020

Number of sensor switch
CS1: Sensor switch

Specification of sensor switch

Specification	Product Series
F: F type	SI, SU, SC, JSI/MI/MA50(63)

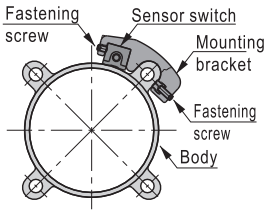
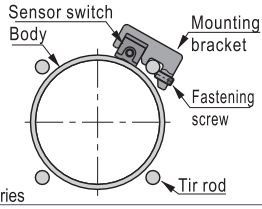
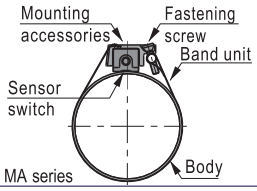
Model of sensor switch
Blank: two-line magnetic spring pipe with contact/normally opened
X: two-line magnetic spring pipe with contact, without indicator light/normally opened

Connecting way ①

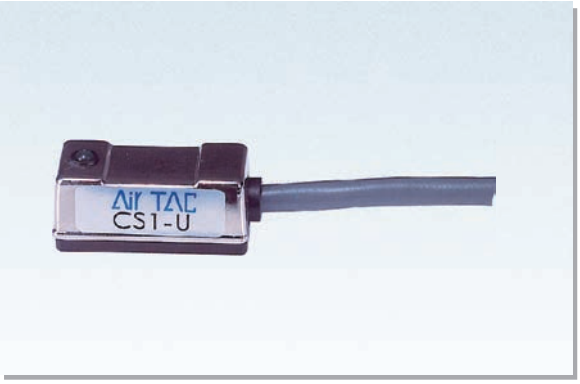
C08: M8 quick joint, length of wire is 150mm
C12: M12 quick joint, length of wire is 150mm
020: length of wire is 2m
030: length of wire is 3m
050: length of wire is 5m
100: length of wire is10m

① Note: The quick joint that is attached at the end of wire is three-needle-male joint-linear-rotary screw thread type. The female joint plug has to be ordered additionally. Please refer to P420 for the specific data.

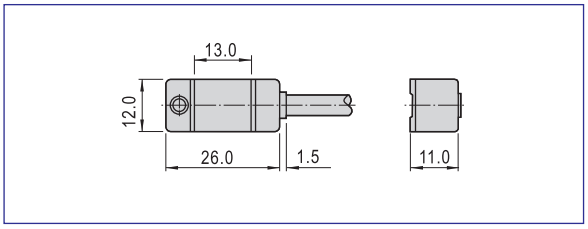
Mounting

Installation example	Installation method
 Outline 1: Used with SU, SI, JSI series	When the CS1-F, CS1-FX series sensor switch used with different cylinders, different mounting accessories must be ordered. the details are below. 1. When it used with MI, MA50, 63 series cylinders, you must order the band unit(the ordering code is GXPAB–01), then depend on the below outline 3, fixed the sensor switch on the proper position of the cylinder's body with the band unit. 2. When it used with SC series cylinders, you must order the Mounting bracket (the ordering code is below table) , then depend on the below outline 2, fixed the sensor switch on the proper position of the cylinder's body with the mounting bracket. 3. When it used with SU, SI, JSI cylinders, you must order the mounting bracket(the ordering code is below table), then depend on the below outline 1, fixed the sensor switch on the proper position of the cylinder's body with the mounting bracket.
 Outline 2: Used with SC series	
 Outline 3: Used with MI, MA series	

Back
Sensor switch



Dimensions



The ordering code of mounting accessories

Bore size\Series	SC,SCL	SU,SUL	SI,SIL	JSI
32	F-SC32H	F-SU32H	F-SI32H	F-SI32H
40	F-SC32H	F-SU40H	F-SI40H	F-SI40H
50	F-SC32H	F-SU50H	F-SI50H	F-SI50H
63	F-SC63H	F-SU63H	F-SI63H	F-SI63H
80	F-SC80H	F-SU80H	F-SI80H	F-SI80H
100	F-SC80H	F-SU100H	F-SI100H	F-SI100H
125	-	-	F-SI125H	F-SI125H
160	-	-	F-SI160H	-
200	-	-	F-SI200H	-

Specification

Item\Type	CS1-U	CS1-UX
Switch logic	STSP Normally opened type	
Switch type	Reed switch with contact	
Operating voltage(V)	5~240V AC/DC	
Max. Switching current(mA)	100	
Switching rating(W)	Max. 10	
Current consumption	No	
Voltage drop	2.5V Max. @100mA DC	
Cable	Φ4.0,2C Gray oil resistant PVC (Flame retarded)	
Indicator	Red LED	No
Leakage current	No	
Sensitivity(Gauss)	60~75	
Max. Frequency(Hz)	200	
Shock(m/s^2)	300	
Vibration(m/s^2)	90	
Temperature range(℃) ①	-10~70	
Enclosure classification	IP67(NEMA6)	
Protection circuit	No	

①Note: Please contact us for high remperature resistant(125℃),low remperature resistant(−40~−25℃) and explosion-proof sensor switch.

Ordering code

CS1 U X 020

Number of sensor switch
CS1: Sensor switch

Specification of sensor switch

Specification	Product Series
U: U type	SI/SU/SC/JSI/MI/MA50(63)

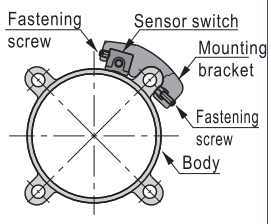
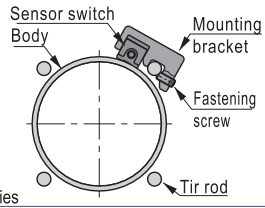
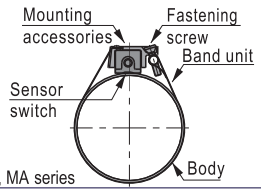
Model of sensor switch
Blank: two-line magnetic spring pipe with contact/normally opened
X: two-line magnetic spring pipe with contact, without indicator light/normally opened

Connecting way ①

C08: M8 quick joint, length of wire is 150mm
C12: M12 quick joint, length of wire is 150mm
020: length of wire is 2m
030: length of wire is 3m
050: length of wire is 5m
100: length of wire is10m

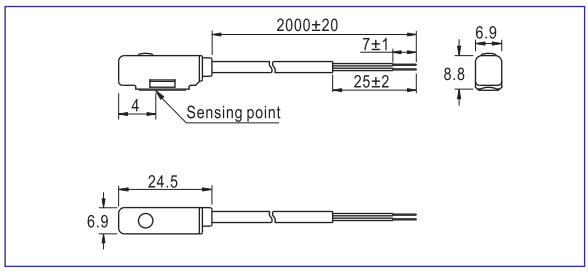
① Note: The quick joint that is attached at the end of wire is three-needle-male joint-linear-rotary screw thread type. The female joint plug has to be ordered additionally. Please refer to P420 for the specific data.

Mounting

Installation example	Installation method
 Outline 1: Used with SU, SI, JSI series	When the CS1-U, CS1-UX series sensor switch used with different cylinders, different mounting accessories must be ordered. the details are below. 1. When it used with MI, MA50, 63 series cylinders, you must order the band unit(the ordering code is GXPAB−01), then depend on the below outline 3, fixed the sensor switch on the proper position of the cylinder's body with the band unit. 2. When it used with SC series cylinders, you must order the Mounting bracket (the ordering code is below table) , then depend on the below outline 2, fixed the sensor switch on the proper position of the cylinder's body with the mounting bracket. 3. When it used with SU, SI, JSI cylinders, you must order the mounting bracket(the ordering code is below table), then depend on the below outline 1, fixed the sensor switch on the proper position of the cylinder's body with the mounting bracket.
 Outline 2: Used with SC series	
 Outline 3: Used with MI, MA series	

Back Sensor switch

Dimensions



Specification

Item\Type		CS1-M	CS1-MX
Switch logic		STSP Normally opened type	
Switch type		Reed switch with contact	
Operating voltage(V)		5~240V AC/DC	
Max. Switching current(mA)		100	
Switching rating(W)		Max. 10	
Current consumption		No	
Voltage drop		2.5V Max. @100mA DC	
Cable		Φ3.3,2C Gray oil resistant PVC (Flame retarded)	
Indicator		Red LED	No
Leakage current		No	
Sensitivity(Gauss)	S06~S10	45~55	
	S12~S16	55~65	
	S20~S63	65~75	
	A20~A40	65~75	
Max. Frequency(Hz)		200	
Shock(m/s^2)		300	
Vibration(m/s^2)		90	
Temperature range(℃) ①		-10~70	
Enclosure classification		IP67(NEMA6)	
Protection circuit		No	

①Note: Please contact us for high remperature resistant(125℃),low remperature resistant(−40～−25℃) and explosion-proof sensor switch.

Ordering code

CS1 M X 020 S 06

Number of sensor switch

CS1: Sensor switch

Specification of sensor switch

Specification	Product Series
M: M type	PB, MA, MAL, MI, MF

Model of sensor switch

Blank: two-line magnetic spring pipe with contact/normally opened
X: two-line magnetic spring pipe with contact, without indicator light/normally opened

① **Connecting way**

C08: M8 quick joint, length of wire is 150mm
C12: M12 quick joint, length of wire is 150mm
020: length of wire is 2m
030: length of wire is 3m
050: length of wire is 5m
100: length of wire is10m

Bore size

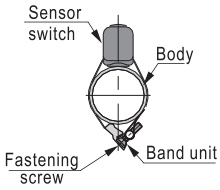
Cylinder barrel material	Bore size
Aluminum alloy	20: Φ20mm
	25: Φ25mm
	32: Φ32mm
	40: Φ40mm
Stainless steel	06: Φ6mm
	08: Φ8mm
	10: Φ10mm
	12: Φ12mm
	16: Φ16mm
	20: Φ20mm
	25: Φ25mm
	32: Φ32mm
	40: Φ40mm
	50: Φ50mm
	63: Φ63mm

Cylinder Barrel material

S: Stainless steel
A: Aluminum alloy

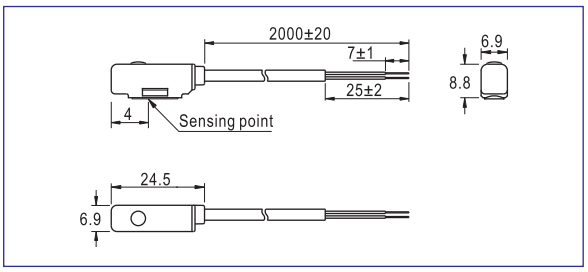
① Note: The quick joint that is attached at the end of wire is three-needle-male joint-linear-rotary screw thread type. The female joint plug has to be ordered additionally. Please refer to P420 for the specific data.

Mounting

Installation example	Installation method
	No additional accessories are necessary for the sensor switch of CS1-M, CS1-MX series. It can be directly fixed onto the cylinder, which is convenient and fast. 1. Strap band round the cylinder barrel. Snap the clamping screw into button orifice and adjust it to the proper position. Properly tighten the clamping screw to fix.

Back
Sensor switch

Dimensions



Specification

Item\Type	CS1-T	CS1-TX
Switch logic	STSP Normally opened type	
Switch type	Reed switch with contact	
Operating voltage(V)	5~240V AC/DC	
Max. Switching current(mA)	100	
Switching rating(W)	Max. 10	
Current consumption	No	
Voltage drop	2.5V Max. @100mA DC	
Cable	Φ3.3,2C Gray oil resistant PVC (Flame retarded)	
Indicator	Red LED	No
Leakage current	No	
Sensitivity(Gauss)	55~65	
Max. Frequency(Hz)	200	
Shock(m/s^2)	300	
Vibration(m/s^2)	90	
Temperature range(℃) ①	-10~70	
Enclosure classification	IP67(NEMA6)	
Protection circuit	No	

①Note: Please contact us for high remperature resistant(125℃),low remperature resistant(−40~−25℃) and explosion-proof sensor switch.

Ordering code

CS1 T X 020 A 32

Number of sensor switch

CS1: Sensor switch

Specification of sensor switch

Specification	Product Series
T: T type	TWG

Model of sensor switch

Blank: two-line magnetic spring pipe with contact/normally opened
X: two-line magnetic spring pipe with contact, without indicator light/normally opened

Bore size

32: Φ32mm
40: Φ40mm
50: Φ50mm

Cylinder Barrel material

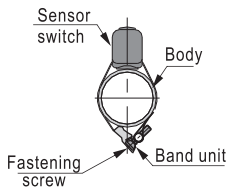
A: Aluminum alloy

Connecting way ①

C08: M8 quick joint, length of wire is 150mm
C12: M12 quick joint, length of wire is 150mm
020: length of wire is 2m
030: length of wire is 3m
050: length of wire is 5m
100: length of wire is10m

① Note: The quick joint that is attached at the end of wire is three-needle-male joint-linear-rotary screw thread type. The female joint plug has to be ordered additionally. Please refer to P420 for the specific data.

Mounting

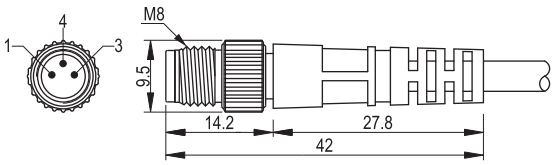
Installation example	Installation method
	No additional accessories are necessary for the sensor switch of CS1-T, CS1-TX series. It can be directly fixed onto the cylinder, which is convenient and fast. 1. Strap band round the cylinder barrel. Snap the clamping screw into button orifice and adjust it to the proper position. Properly tighten the clamping screw to fix.

Back
Sensor switch

M8 & M12 Quick joint cables

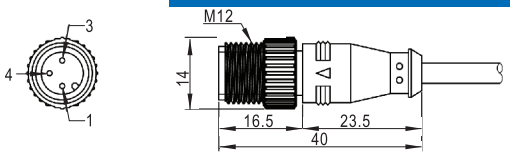
Male Straight Connector

Three Pin–male joint-linear-rotary thread



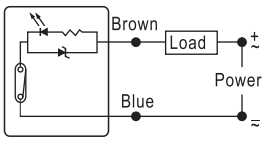
Note: There is no need to order it individually. What only needs to do is to choose the sensor switch with quick joint.

Three Pin-male joint-linear-rotary thread

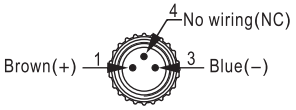


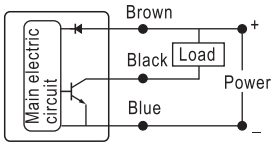
Note: There is no need to order it individually. What only needs to do is to choose the sensor switch with quick joint.

Wiring diagram

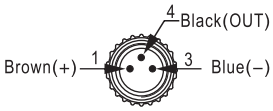


Two needle-male joint





Three needle-male joint



Female Connector

M83F 4 B 02 PVC

Joint type

M83F: M8 × 1.0 three need-female joint (linear)
M83FL: M8 × 1.0three need-female joint (right angle)
M123F: M12 × 1.0three need-female joint (linear)
M123FL: M12 × 1.0three need-female joint (right angle)

Cable material

PVC: PVC tegument
PUR: PUR tegument

Wire length

02: Wire length is 2 m
03: Wire length is 3 m
05: Wire length is 5 m
10: Wire length is 10 m

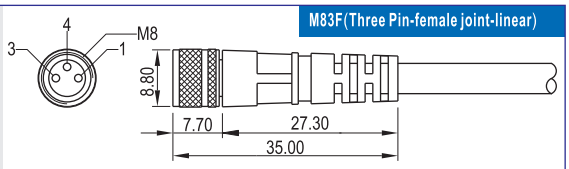
Cable OD

2.9: OD 2.9mm
3.3: OD 3.3mm
4.0: OD 4.0mm
4.5: OD 4.5mm
5.2: OD 5.2mm

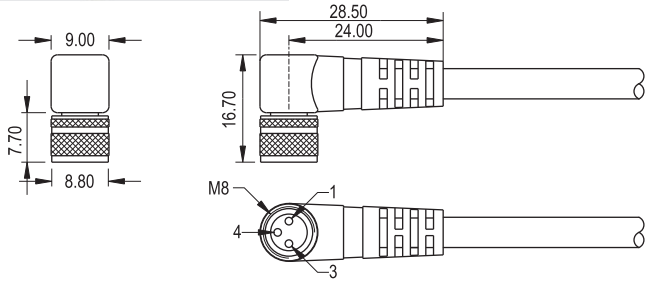
Cable color

B: Black (three core)
G: Grey (two core)

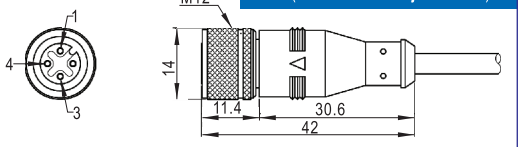
M83F(Three Pin-female joint-linear)



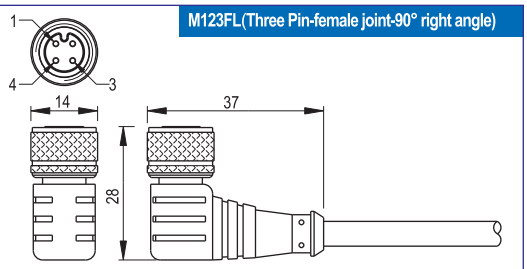
M83FL(three Pin-female joint-90° right angle)



M123F(Three Pin-female joint-linear)



M123FL(Three Pin-female joint-90° right angle)



Back
Sensor switch