

# CS9H□, ZB430□



## Solid State Type Sensor Switch

### Applicable cylinders

● Jig cylinders J series ● TDA  $\phi$  10[0.394in.]~  $\phi$  32[1.260in.] (previous type) ● Slide Units ● SHM

### Specifications

Item	Model	CS9H□	ZB430□
Wiring type		3-lead wire	2-lead wire
Power supply voltage		DC4.5~28V	DC10~28V
Load voltage		DC4.5~28V	DC10~28V
Load current		100mA MAX. (Ta=45°C [113°F])	4~50mA
Consumption current		15mA MAX. (DC24V)	—
Internal voltage drop <sup>Note 1</sup>		0.8V MAX. (At 50mA load current)	4.5V MAX.
Leakage current		50 $\mu$ A MAX. (DC24V)	1mA MAX. (DC24V at 25°C [77°F])
Response time		1ms MAX.	
Insulation resistance		100M $\Omega$ MIN. (At DC500V Megger, between case and lead wire end)	
Dielectric strength		AC500V (50/60Hz) in 1 minute (Between case and lead wire end)	
Shock resistance <sup>Note 2</sup>		294.2m/s <sup>2</sup> [30G] (Non-repeated shock)	
Vibration resistance <sup>Note 2</sup>		88.3m/s <sup>2</sup> [9G] (Total amplitude 1.5mm [0.06in.], 10~55Hz)	
Environmental protection		IP67 (IEC standard), JIS C0920 (Water-proof type)	
Operation indicator		When ON: Red LED indicator lights up	
Lead wire <sup>Note 3</sup>		PVC 0.2SQ×3-lead× $\ell$	PVC 0.2SQ×2-lead× $\ell$
Ambient temperature		0~60°C [32~140°F]	
Storage temperature range		-10~70°C [14~158°F]	
Mass (The mounting bracket is included.)		40g [1.41oz.] (For lead wire length A: 1000mm)	

Notes: 1. The internal voltage drop depends on load current.

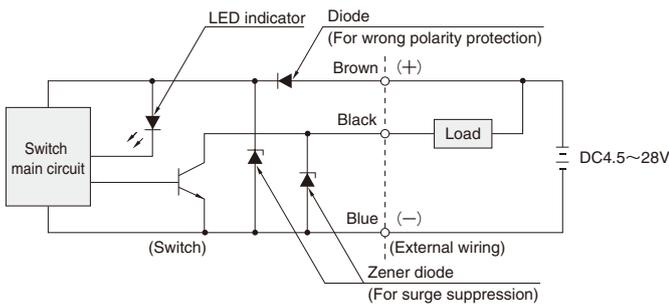
2. Measured by Koganei test standard.

3. Lead wire length  $\ell$  : A; 1000mm [39in.], B; 3000m [118in.]

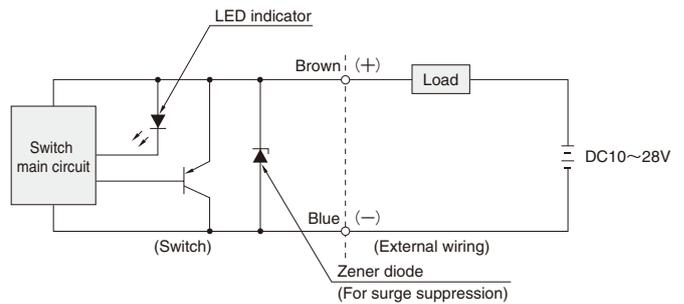
※ This product is not resistant to lightning surge of the EMC standard (EN61000-6-2 · EN60947-5-2). Prepare protection measures for lightning surge in the system.

### Internal Circuit

#### CS9H□

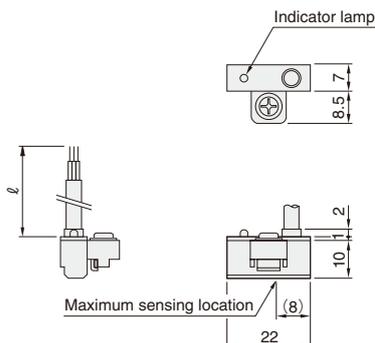


#### ZB430□

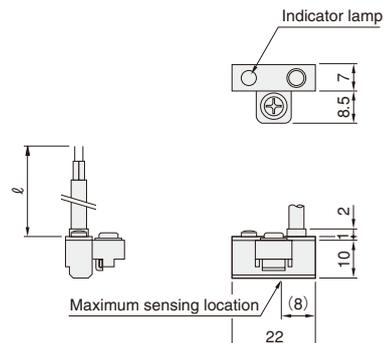


### Dimensions (mm)

#### CS9H□



#### ZB430□



# Points of Wiring Solid State Type Sensor Switches

ZC130□, ZC230□, ZC330□  
 ZC630□, ZE135□, ZE235□  
 ZG530□, ZD136C, ZB430□

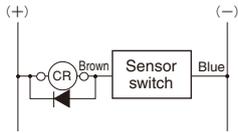
ZC153□, ZC253□, ZC353□, ZC653□  
 ZE155□, ZE255□, ZE175□, ZE275□, ZG553□, CS9H□

## ● 2-lead wire type

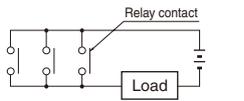
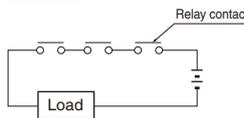
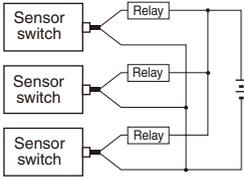
### ● Basic connection



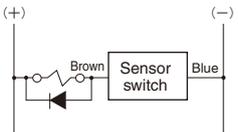
### ● Connecting with relays



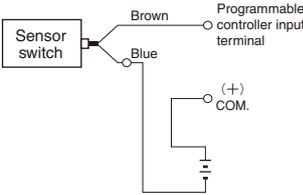
AND (series) connection and OR (parallel) connection



### ● Connecting with a solenoid valve

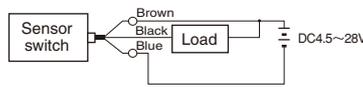


### ● Connecting with a programmable controller

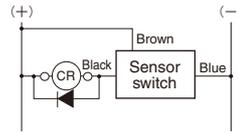


## ● 3-lead wire with NPN output

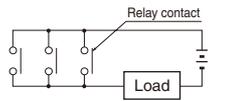
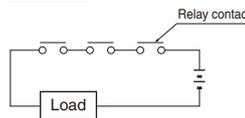
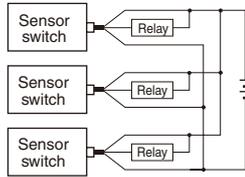
### ● Basic connection



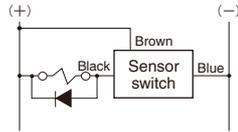
### ● Connecting with relays



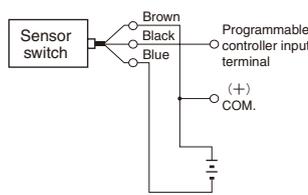
AND (series) connection and OR (parallel) connection



### ● Connecting with a solenoid valve

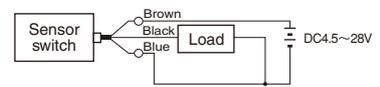


### ● Connecting with a programmable controller

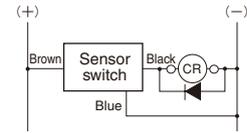


## ● 3-lead wire with PNP output

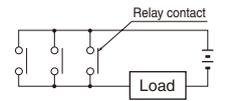
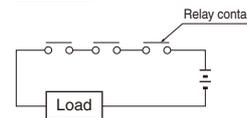
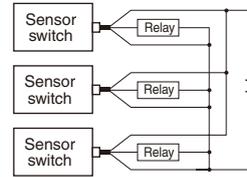
### ● Basic connection



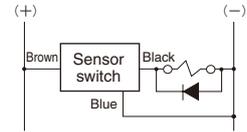
### ● Connecting with relays



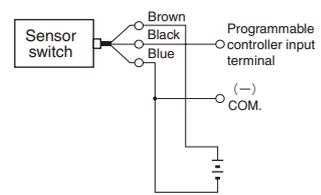
AND (series) connection and OR (parallel) connection



### ● Connecting with a solenoid valve



### ● Connecting with a programmable controller



- Cautions:**
1. Connect the lead wires according to their color. Incorrect wiring will cause damage to the sensor switch since there is no overcurrent protection.
  2. With the inductive load of an electromagnetic relay, etc., the use of a surge protection diode is recommended.
  3. Avoid the use of AND (series) connections because the circuit voltage will drop in proportion to the number of sensor switches.
  4. When using an OR (parallel) connection, it is possible to connect sensor switch outputs directly (ex: using corresponding black lead wires). Be aware of load return errors since current leakage increases with the number of switches.

5. Because the sensor switches are magnetically sensitive, avoid using them in locations subject to strong external magnetic fields or bringing them in close proximity to power lines and areas where large electric currents are present. In addition, do not use magnetized materials for the mounting bracket, since this may cause erratic operation.
6. Do not excessively pull on or bend the lead wires.
7. Avoid using the sensor switches in environments where chemicals or gas are present.
8. Consult us for use in environments subject to water or oil.