

# Key Selector Switch SG-D1 SERIES

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[panasonic.net/id/pidsx/global](http://panasonic.net/id/pidsx/global)

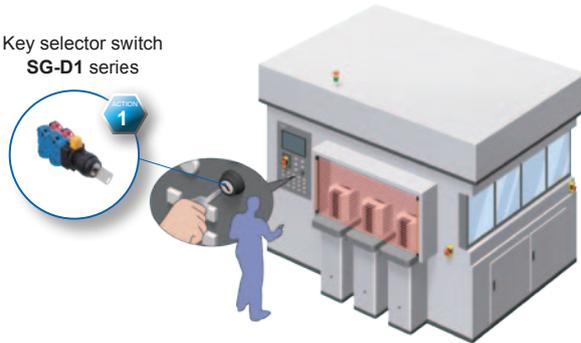


## Safety is assured during maintenance!

### Key selector switch with direct open operation function Pin tumbler design for high security

#### Mode change

Key selector switch  
SG-D1 series

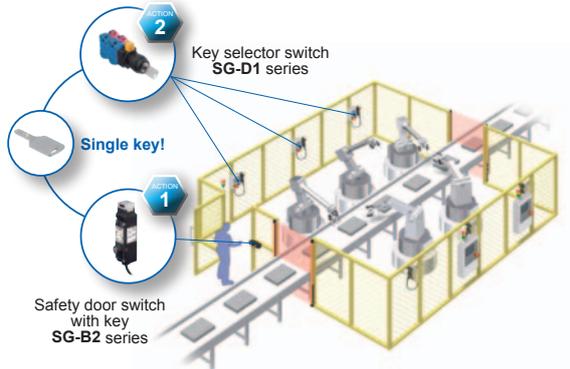


#### ACTION 1 Mode change

Workers can be limited by using a key selector switch to switch modes when performing maintenance and program overwrites. Additionally, since the NC contact (b-contact) use direct open operation, the circuit will be reliably shut off by forcibly separating the NC contact, even if they have melted together.

### Use in combination with the safety door switch with key SG-B2 series to enable hostage control.

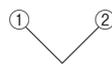
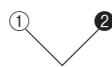
#### Partial mode change



#### ACTION 1 Door unlocked (safety output off) ACTION 2 Mode change

Hazards of the system and robot are isolated by the safety guard. When a worker needs to work inside the hazardous area for maintenance, the worker unlocks the safety guard using a key, disables the system from starting (1), removes the key and brings it into the hazardous area, and then changes the operation mode of each system to maintenance mode (2). While the worker is carrying out maintenance work in the hazardous area, the safety guard cannot be locked and the system cannot be turned on. This enables the worker to work safely in the hazardous area.

**ORDER GUIDE****Key selector switch**

Position	Contact configuration	Contact block		Operator position		Model No.	Key removal position
		Mounting position (Note)	Contact	1	2		
Maintained  (Manual) 90 degree, 2-position	1NO / 1NC (11)	①	NO		●	<b>SG-D1-2A11</b>	A: All positions 
		②	NC	●			
	2NO / 2NC (22)	①	NO		●	<b>SG-D1-2A22</b>	
		②	NC	●			
		③	NO		●		
		④	NC	●			
	1NO / 1NC (11)	①	NO		●	<b>SG-D1-2B11</b>	B: Left position (Not removable in right position) 
		②	NC	●			
	2NO / 2NC (22)	①	NO		●	<b>SG-D1-2B22</b>	
		②	NC	●			
		③	NO		●		
		④	NC	●			
1NO / 1NC (11)	①	NO		●	<b>SG-D1-2C11</b>	C: Right position (Not removable in left position) 	
	②	NC	●				
2NO / 2NC (22)	①	NO		●	<b>SG-D1-2C22</b>		
	②	NC	●				
	③	NO		●			
	④	NC	●				

Note: Contact blocks are attached as shown below:

**OPTIONS**

Type	Model No.	Description
Locking ring wrench	<b>SG-ET1</b>	Used to tighten the locking ring when installing the unit onto a panel. Material: Brass Weight: approx. 150 g * Tighten the locking ring to a torque of 2.0 N·m.

**Locking ring wrench**• **SG-ET1**FIBER  
SENSORSLASER  
SENSORSPHOTO-  
ELECTRIC  
SENSORSMICRO  
PHOTO-  
ELECTRIC  
SENSORSAREA  
SENSORSLIGHT  
CURTAINS/  
SAFETY  
COMPONENTSPRESSURE /  
FLOW  
SENSORSINDUCTIVE  
PROXIMITY  
SENSORSPARTICULAR  
USE  
SENSORSSENSOR  
OPTIONSSIMPLE  
WIRE-SAVING  
UNITSWIRE-SAVING  
SYSTEMSMEASURE-  
MENT  
SENSORSSTATIC  
ELECTRICITY  
PREVENTION  
DEVICESLASER  
MARKERS

PLC

HUMAN  
MACHINE  
INTERFACESENERGY  
CONSUMPTION  
VISUALIZATION  
COMPONENTSFA  
COMPONENTSMACHINE  
VISION  
SYSTEMSUV  
CURING  
SYSTEMSSelection  
GuideLight  
CurtainsSafety  
ComponentsOptical Touch  
SwitchControl  
UnitsDefinition of  
Sensing  
Heights**SG-B1/SG-A1****SG-B2****SG-C1****SG-D1****SG-E1****SD3-A1****ST4**

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**SPECIFICATIONS**

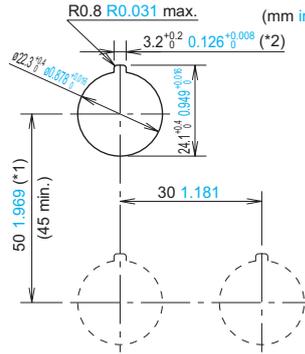
Designation	Key selector switch							
Item Series	<b>SG-D1 series</b>							
Applicable standards	JIS C 8201-5-1, IEC 60947-5-1, EN 60947-5-1, UL 508 (UL listed Certification), CSA 22.2 No.14 (c-UL listed Certification)							
Operating condition	Ambient temperature	-25 to +60 °C <b>-13 to +140 °F</b> (No dew condensation or icing allowed) Storage: -40 to +80 °C <b>-40 to +176 °F</b>						
	Ambient humidity	45 to 85 % RH						
	Pollution degree	3						
	Altitude	2,000 m <b>6,561.68 ft</b> max.						
Impulse withstand voltage (Uimp)	4 kV							
Rated insulation voltage (Ui)	600 V							
Thermal current (Ith)	10 A							
Rated operational voltage (Ue) / Rated operational current (Ie)	le	Ue	24 V	48 V	50 V	110 V	220 V	440 V
		AC	Resistive load (AC-12)	10 A	-	10 A	10 A	6 A
	DC	Inductive load (AC-15) (A600)	10 A	-	7 A	5 A	3 A	1 A
		Resistive load (DC-12)	8 A	4 A	-	2.2 A	1.1 A	-
		Inductive load (DC-13) (P600)	4 A	2 A	-	1.1 A	0.6 A	-
		AC	Resistive load (AC-12)	10 A	-	10 A	10 A	6 A
Inductive load (AC-15) (A600)	10 A	-	7 A	5 A	3 A	1 A		
DC	Resistive load (DC-12)	8 A	4 A	-	2.2 A	1.1 A	-	
Inductive load (DC-13) (P600)	4 A	2 A	-	1.1 A	0.6 A	-		
Contact resistance	50 mΩ max. (initial value)							
Insulation resistance	100 MΩ min. (500 V DC megger)							
Electric shock protection class	Class II (IEC 61140)							
Overtoltage category	II (IEC60664-1)							
Protection	Front of the panel: IP65							
Shock resistance	Malfunction: 100 m/s <sup>2</sup> , Destruction: 1,000 m/s <sup>2</sup>							
Vibration resistance	Malfunction: 5 to 55 Hz, half amplitude 0.5 mm <b>0.020 in</b> Destruction: 30 Hz, half amplitude 1.5 mm <b>0.059 in</b>							
B <sub>10d</sub>	100,000 (ISO 13849-1 Annex C Table C.1)							
Mechanical durability	100,000 operations min.							
Electrical durability	100,000 operations min. (1,200 operations/hour)							
Material	Actuator: PA6, Contact block: PA66							
Connecting method	Terminal screw (M3.5 philips & flathead)							
Applicable wire size	Max. 2 mm <sup>2</sup> (Single core $\phi$ 1.6 <b><math>\phi</math>0.063</b> max.) 2 wires max.							
Tightening torque of the terminal screws	1.0 to 1.3 N·m							
Tightening torque of the locking ring	2.0 N·m							
Selector behavior	2 positions							
Minimum direct opening operating angle	90°							
Minimum direct opening torque	0.4 N·m							
Maximum operation angle	90°							
Weight	<b>SG-D1-2□11</b> : Approx. 75 g, <b>SG-D1-2□22</b> : Approx. 95 g							
Accessories	Key: 2pcs., Lever lock: 1 pc.							

**PRECAUTIONS FOR PROPER USE**



- In order to avoid electric shock or fire, turn the power off before installation, removal, wire connection, maintenance, or inspection of the safety switch.
- Use wiring that is appropriate for the applied voltage and energized current, and tighten terminal screws (M3.5) to the recommended tightening torque (1.0 to 1.3 N·m). Using the switch when the screws are loose will cause it to become extremely hot, posing the risk of fire.

**Mounting hole layout / minimum mounting center**



Note:  
When using the safety lever lock, determine the vertical spacing (\*1) in consideration of convenience for installing and removing the safety lever lock. (Recommended vertical spacing: 100 mm **3.937 in** or more)

The 3.2<sup>+0.2</sup> 0.126<sup>+0.008</sup> recess (\*2) is for preventing rotation and not necessary when anti-rotation is not used.

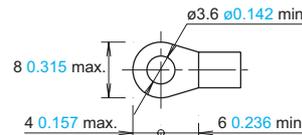
- The minimum mounting centers are applicable to switches with one layer of contact blocks (two contact blocks). When two layers of contact blocks are mounted, determine the minimum mounting centers in consideration of convenience for wiring.

**Applicable wiring**

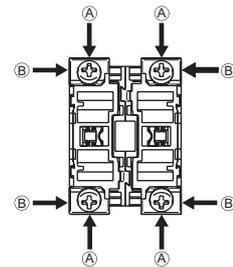
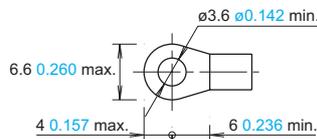
(1) The applicable wire size is 2 mm<sup>2</sup> maximum. (single wire  $\phi$ 1.6 mm  **$\phi$ 0.063 in** maximum) One or two wires can be connected.

**Applicable crimping terminal (Unit: mm in)**

When using direction (A)

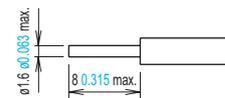


When using direction (B)



Be sure to use an insulation tube or cover on the crimping part of the crimping terminal to prevent electrical shocks.

**Single wire (Unit: mm in)**



Note: When connecting wires to contact blocks or transformers in the direction (B), keep the insulation stripping length 6.6 mm **0.260 in** at the maximum.

(2) Tighten the M3.5 terminal screws to a torque of 1.0 to 1.3 N·m.

**Using the lever lock (accessory)**

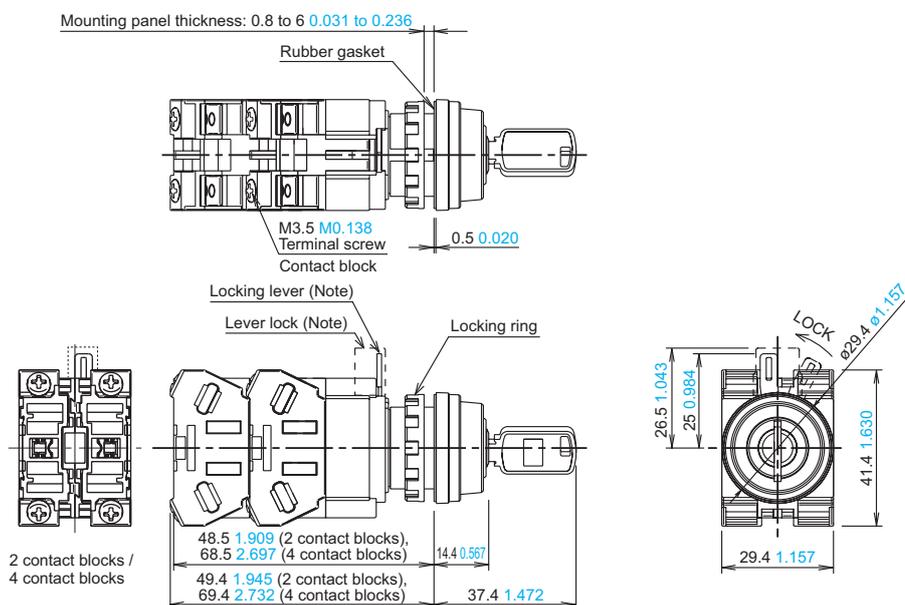
- Please attach the lever lock (yellow) after locking to prevent personnel from forgetting to lock the lock lever.

**DIMENSIONS (Unit: mm in)**

The CAD data in the dimensions can be downloaded from our website.

**SG-D1-□**

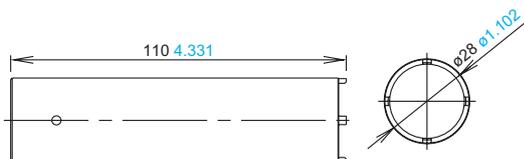
**Key selector switch**



Note: Please attach the lever lock (yellow) after locking to prevent personnel from forgetting to lock the lock lever.

**SG-ET1**

**Locking ring wrench (Optional)**



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