

# Safety Interlock Switches

# D4SL



Rev. 9.11

## Compact 6-Contact Guard Lock Safety-Door Switch

- Two types are available: a connector type that reduces wiring time and a detachable terminal block type.
- Robust and durable metal head.
- Key holding force of 1,300 N.
- The wider key slot is less susceptible to movement from doors, and can handle doors with a small radius.
- By rotating the mounting part, it is possible, both to change the key insertion point and to enable mounting on various devices.
- Easy view LED indicators can be checked from any direction.
- By utilizing the 6-contact type, both the door open/closed status and the solenoid ON/OFF status can be monitored independently.
- A cost-effective 5-contact model is also available.



Connector Type

Terminal Block Type



## Specifications

### Standards and EC Directives

Conforms to the following EC Directives:

- Machinery Directive
- Low Voltage Directive
- EMC Directive
- EN 1088
- EN 60204-1
- GS-ET-19

### Certified Standards

Certification body	Standard	File No.
TÜV SÜD	EN 60947-5-1 (certified direct opening)	Consult your representative for details.
UL *1	UL 508, CSA C22.2 No. 14	
CQC (CCC)	GB14048.5	
KOSHA *2	EN60947-5-1	

\*1. Certification for CSA C22.2 No. 14 is certified by the UL mark.

### Certified Standard Ratings

#### TÜV (EN 60947-5-1)

Item	Utilization category	AC-15	DC-13
Rated operating current (Ie)		1.5 A	0.22 A
Rated operating voltage (Ue)		120 V	125 V

Note: Use a 4 A fuse that conforms to IEC 60127 as a short-circuit protection device. This fuse is not included with the switch.

### UL/CSA (UL 508, CSA C22.2 No. 14) C150

Rated voltage	Carry current	Current (A)		Volt-amperes (VA)	
		Make	Break	Make	Break
120 VAC	2.5 A	15	1.5	1,800	180

### R150

Rated voltage	Carry current	Current (A)		Volt-amperes (VA)	
		Make	Break	Make	Break
125 VDC	1.0 A	0.22	0.22	28	28

### Solenoid Coil Characteristics

Item	Type	24 VDC
Rated operating voltage (100% ED)		24 VDC <sup>+10%</sup> <sub>-15%</sub>
Current consumption*		Power ON: Approx. 34 W at 1.4 A Constant: Approx. 2.6 W (average) at 0.4 A (max.)
Insulation Class		Class E (120°C max.)

\*A starting current is applied to the solenoid for a maximum of one second. After this, the internal circuit switches to constant current.

### Indicator Characteristics

Item	Type	LED
Rated voltage		24 VDC
Current consumption		Approx. 10 mA
Color (LED)		Orange

## Specifications (continued)

### Characteristics

Degree of protection *1		IP67 (EN60947-5-1)
Durability *2	Mechanical	1,000,000 operations min.
	Electrical	150,000 operations min. (1 A resistive load at 125 VAC) *3
Operating speed		0.05 to 1 m/s
Operating frequency		5 operations/minute max.
Direct opening force *4		60 N min. (EN60947-5-1)
Direct opening travel *4		15 mm min. (EN60947-5-1)
Holding force *5		1,300 N min.
Contact resistance		200 mΩ max.
Minimum applicable load *6		1 mA resistive load at 5 VDC (N-level reference value)
Rated insulation voltage (Ui)		150 V (EN60947-5-1)
Rated frequency		50/60 Hz
Protection against electric shock		Class II (double insulation)
Pollution degree (operating environment)		3 (EN60947-5-1)
Impulse withstand voltage (EN60947-5-1)	Between terminals of same polarity	1.5 kV
	Between terminals of different polarity	1.5 kV
	Between other terminals and non-current carrying metallic parts.	2.5 kV
Insulation resistance		100 MΩ min. (at 500 VDC)
Vibration resistance	Malfuction	10 to 55 Hz, 0.75 mm single amplitude
Shock resistance	Malfuction	100 m/s <sup>2</sup> min.
	Destruction	1,000 m/s <sup>2</sup> min.
Conditional short-circuit current		100 A (EN60947-5-1)
Conventional free air thermal current (Ith)		2.5 A (EN60947-5-1)
Ambient operating temperature		-10 to +55°C (with no icing)
Ambient operating humidity		95% max.
Weight		Approx. 360 g (Connector model) Approx. 390 g (Terminal Block model)

Notes: 1. The above values are initial values.  
 2. The Switch contacts can be used with either standard loads or microloads. Once the contacts have been used to switch a load, however, they cannot be used to switch smaller loads. The contact surfaces will become rough once they have been used and contact reliability for smaller loads may be reduced.

\*1. The degree of protection is tested using the method specified by the standard (EN60947-5-1). Confirm that sealing properties are sufficient for the operating conditions and environment beforehand. Although the switch box is protected from dust, oil or water penetration, do not use the D4SL in places where cutting chips, oil, water or chemicals may enter through the key hole on the head, otherwise Switch damage or malfunctioning may occur.

\*2. The durability is for an ambient temperature of 5 to 35°C and an ambient humidity of 40% to 70%. For further conditions, consult your sales representative.

\*3. Do not pass a 1 A, 125 VAC load through more than 3 circuits.

\*4. These figures are minimum requirements for safe operation.

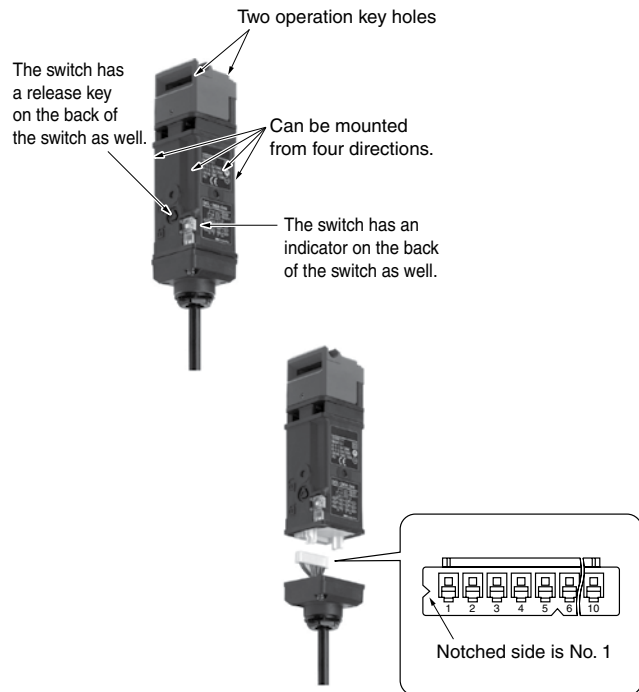
\*5. These figures are based on the GS-ET-19 evaluation method.

\*6. This value will vary with the switching frequency, environment, and reliability level. Confirm that correct operation is possible with the actual load beforehand.

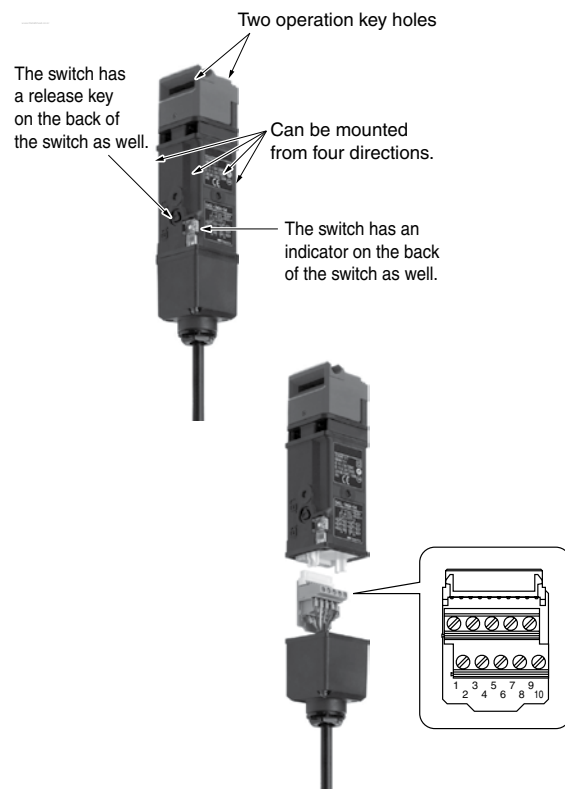
## Structure

### Structure

#### D4SL-□□D□-D4N Connector Model



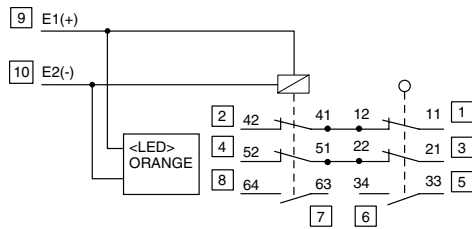
#### D4SL-□□D□-D4 Terminal Block Model



## Structure (continued)

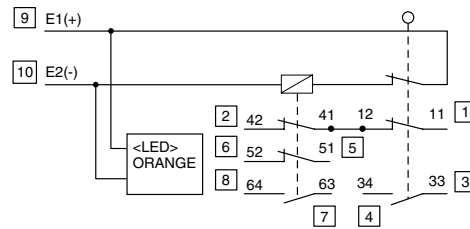
### Structure

#### D4SL-□NDA and D4SL-□NDG



Note: Numbers inside the boxes are terminal numbers printed on the product.

#### D4SL-□JDG



Note: Numbers inside the boxes are terminal numbers printed on the product.

### Operating Cycle Examples for Standard Models

#### D4SL-□□DA-D4□ (Mechanical Lock Models with Special Release Keys)

		Condition 1	Condition 2	Condition 3	Turning the special release key
		Door open. The door will lock when the door closes.	Door closed. The door is locked.	Door closed. The door can be opened.	Door closed. No power is supplied to the solenoid. The door is unlocked manually.
Terminal No. and Function					
E1-E2	Solenoid ON				
42-11 (NC) 52-21 (NC)	Door open/closed detection and lock monitor contacts				
31-32 (NC)	Door open/closed detection contact				
33-34 (NO)	Door open/closed detection contact				
51-52 (NC) 61-62 (NC)	Lock monitor contact				
63-64 (NO)	Lock monitor contact				

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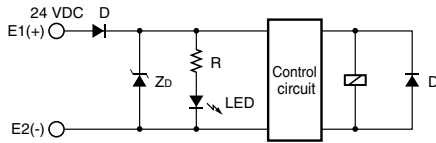
#### D4SL-□□DG-D4□ (Solenoid Lock Models with Special Release Keys)

		Even when the door is closed, it does not lock until power is supplied to the solenoid.			<p>The shaded areas indicate the contact is closed and power is supplied to the solenoid.</p> <p>Door open/closed detection and lock monitor contacts: Can be used in safety circuits because of the direct opening mechanisms.</p> <p>Door open/closed detection contact: Can be used to confirm whether the key is inserted and to monitor the open/closed status of a door.</p> <p>Lock monitor contact: Can be used to confirm whether power is supplied to the solenoid and to monitor whether or not a door can be opened or closed.</p>
Terminal No. and function			Door closed. The door is locked.	Door closed. The door can be opened.	
E1-E2	Solenoid ON				
42-11 (NC) 52-21 (NC)	Door open/closed detection and lock monitor contacts				
31-32 (NC)	Door open/closed detection contact				
33-34 (NO)	Door open/closed detection contact				
51-52 (NC) 61-62 (NC)	Lock monitor contact				
63-64 (NO)	Lock monitor contact				

- Notes: 1. The door open/closed detection and lock monitor contact configuration depends on the model.  
2. If a current is detected in the solenoid lock model (built-in switches; N,P,Q,R), before the door is closed, the door will remain unlocked. Be sure to supply power to the solenoid after the door is closed.

## Connections

### Internal Circuit Diagram

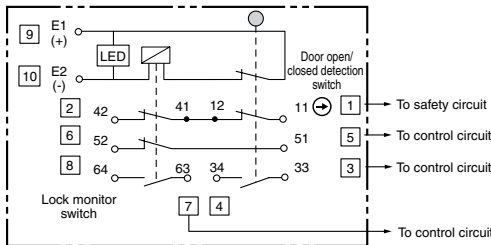


### Circuit Connection Example

- Direct opening contacts used as safety-circuit input are indicated with the  $\ominus$  mark.
- Do not switch circuits for three or more standard loads at the same time. Doing so may adversely affect insulation performance.
- DC solenoids have polarity. (E1: Positive, E2: Negative)  
Confirm terminal polarity before wiring.

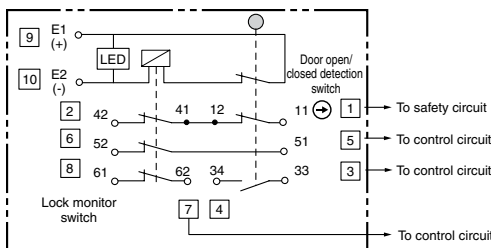
#### Connection Example for D4SL-□JDG

Terminals 12-41 are connected internally and so connect terminals 11-42 for safety-circuit input. (BIA GS-ET-19)



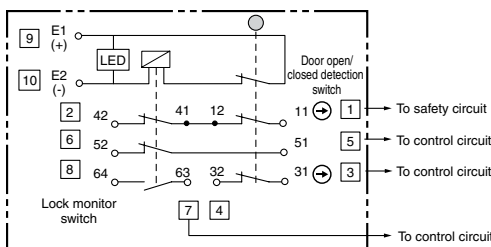
#### Connection Example for D4SL-□KDG

Terminals 12-41 are connected internally and so connect terminals 11-42 for safety-circuit input. (BIA GS-ET-19)



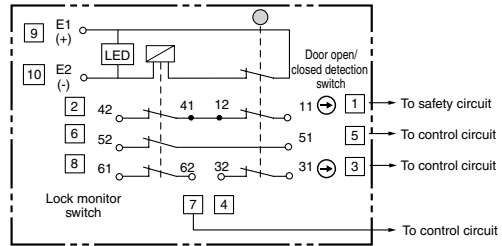
#### Connection Example for D4SL-□LDG

Terminals 12-41 are connected internally and so connect terminals 11-42 for safety-circuit input. (BIA GS-ET-19)



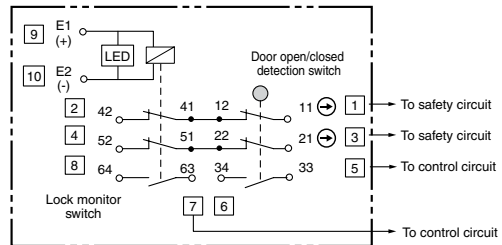
#### Connection Example for D4SL-□MDG

Terminals 12-41 are connected internally and so connect terminals 11-42 for safety-circuit input. (BIA GS-ET-19)



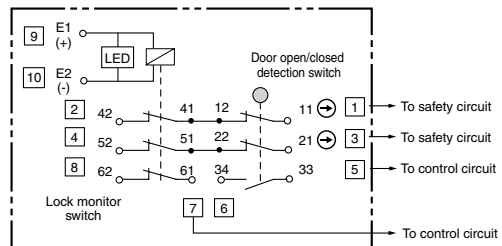
#### Connection Example for D4SL-□NDA and D4SL-□NDG

Terminals 12- 41, and 22- 51 are connected internally and so connect terminals 11-42, and 21-52 for safety-circuit input. (BIA GS-ET-19)



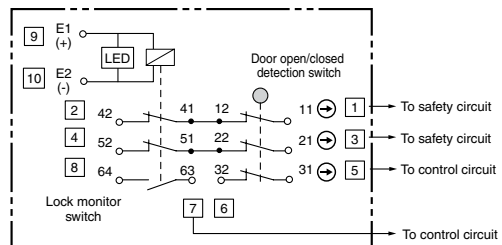
#### Connection Example for D4SL-□PDA and D4SL-□PDG

Terminals 12-41, and 22-51 are connected internally and so connect terminals 11-42, and 21-52 for safety-circuit input. (BIA GS-ET-19)



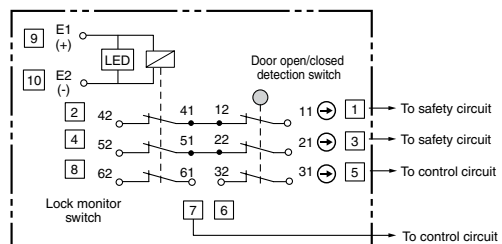
#### Connection Example for D4SL-□QDA and D4SL-□QDG

Terminals 12-41, and 22-51 are connected internally and so connect terminals 11-42, and 21-52 for safety-circuit input. (BIA GS-ET-19)



#### Connection Example for D4SL-□RDA and D4SL-□RDG

Terminals 12-41, and 22-51 are connected internally and so connect terminals 11-42, and 21-52 for safety-circuit input. (BIA GS-ET-19)



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## Connections (continued)

### Contact Form

Indicates conditions where the Key is inserted and the lock is applied. Terminals 12 and 41, 51 and 22 are connected internally (as per BIA GS-ET-19).

Model	Contact (door open/closed detection and lock monitor)	Contact form		Operating pattern	Remarks
		Lock monitor	Door open/closed detection		
D4SL- □JD□-D□□	1NC/1NO + 2NC/1NO				Only NC contact 11-12 has a certified direct opening mechanism. (→)  The terminals 42-11, 33-34, 51-52, and 64-63 can be used as unlike poles.
D4SL- □KD□-D□□	1NC/1NO + 3NC				Only NC contact 11-12 has a certified direct opening mechanism. (→)  The terminals 42-11, 33-34, 51-52, and 62-61 can be used as unlike poles.
D4SL- □LD□-D□□	2NC + 2NC/1NO				Only NC contact 11-12 and 31-32 have a certified direct opening mechanism. (→)  The terminals 42-11, 33-34, 51-52, and 64-63 can be used as unlike poles.
D4SL- □MD□-D□□	2NC + 3NC				Only NC contact 11-12 and 31-32 have a certified direct opening mechanism. (→)  The terminals 42-11, 33-34, 51-52, and 62-61 can be used as unlike poles.
D4SL- □ND□-D□□	2NC/1NO + 2NC/1NO				Only NC contact 11-12 and 21-22 have a certified direct opening mechanism. (→)  The terminals 42-11, 52-21, 34-33, and 64-63 can be used as unlike poles.
D4SL- □PD□-D□□	2NC/1NO + 3NC				Only NC contact 11-12 and 21-22 have a certified direct opening mechanism. (→)  The terminals 42-11, 52-21, 34-33, and 62-61 can be used as unlike poles.
D4SL- □QD□-D□□	3NC + 2NC/1NO				Only NC contact 11-12, 21-22, and 31-32 have a certified direct opening mechanism. (→)  The terminals 42-11, 52-21, 32-31, and 64-63 can be used as unlike poles.
D4SL- □RD□-D□□	3NC + 3NC				Only NC contact 11-12, 21-22, and 31-32 have a certified direct opening mechanism. (→)  The terminals 42-11, 52-21, 32-31, and 62-61 can be used as unlike poles.

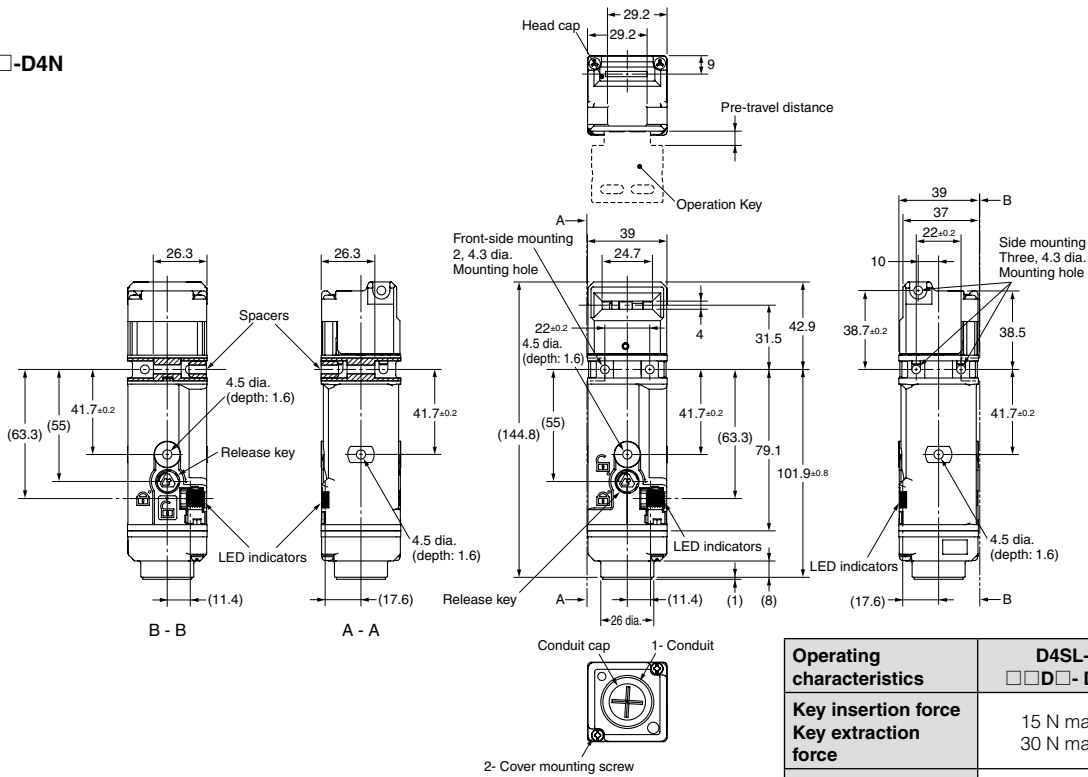
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# Dimensions and Operating Characteristics

(mm)

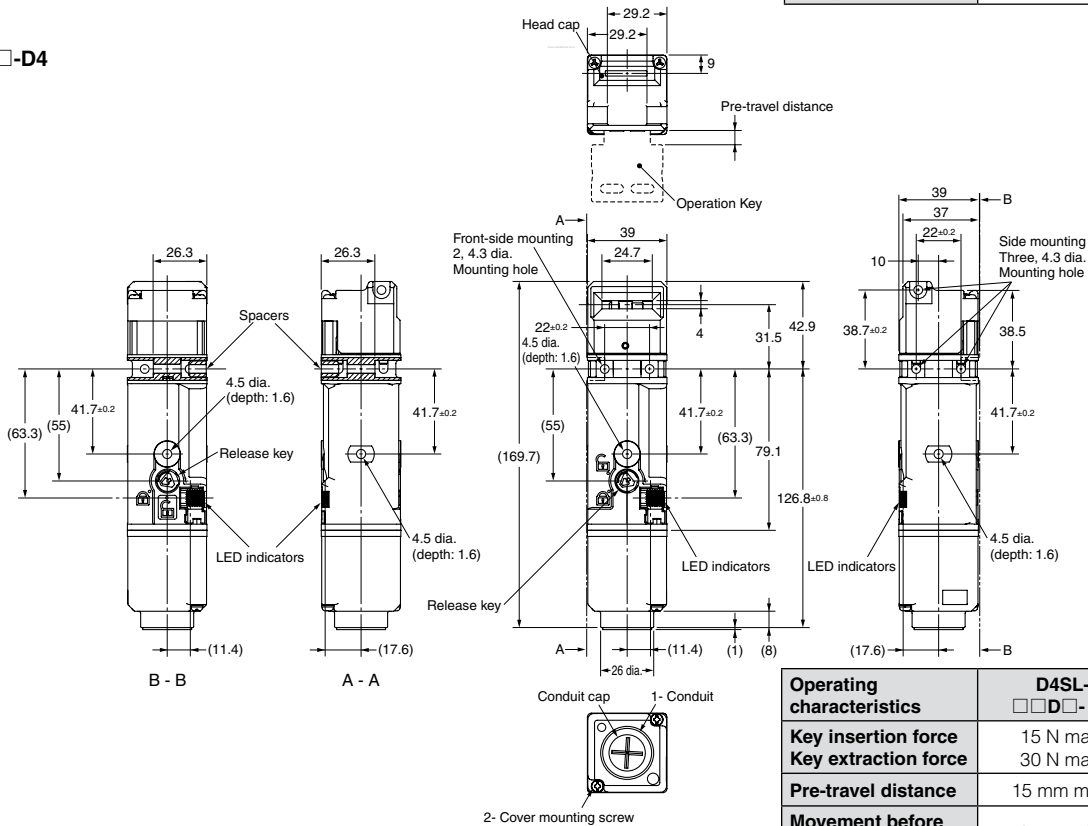
## Switches

D4SL-□□D□-D4N



Operating characteristics	D4SL-□□D□-D4N
Key insertion force	15 N max.
Key extraction force	30 N max.
Pre-travel distance	15 mm max.
Movement before being locked	3 mm min.

D4SL-□□D□-D4



Operating characteristics	D4SL-□□D□-D4
Key insertion force	15 N max.
Key extraction force	30 N max.
Pre-travel distance	15 mm max.
Movement before being locked	3 mm min.

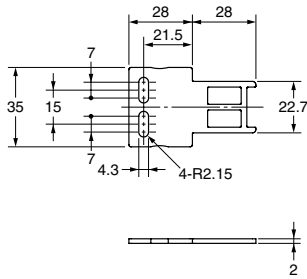
Unless otherwise specified, a tolerance of ±0.4 mm applies to all dimensions.

Dimensions and Operating Characteristics (continued)

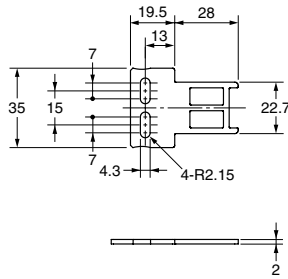
(mm)

Operation Keys

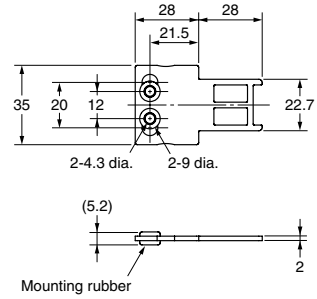
D4SL-K1



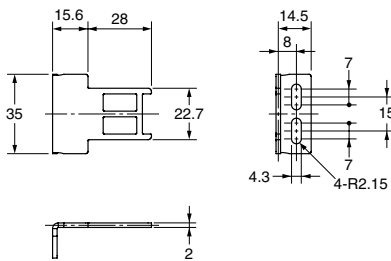
D4SL-K1S



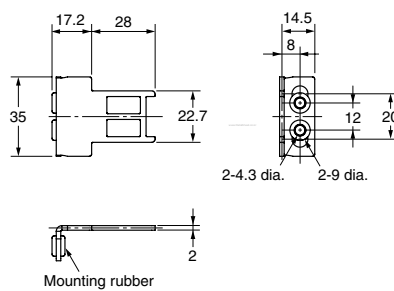
D4SL-K1G



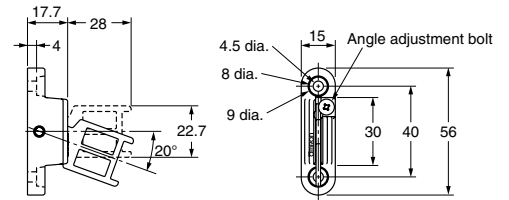
D4SL-K2



D4SL-K2G



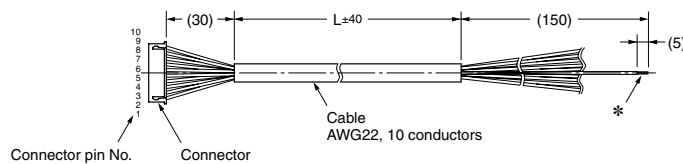
D4SL-K3



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Connector Cable

D4SL-CN□



Model	L size
D4SL-CN1	1 m
D4SL-CN3	3 m
D4SL-CN5	5 m

Connector No.	Lead wire color
1	Black
2	Black/White
3	Red
4	Red/White
6	Green

Connector No.	Lead wire color
6	Green/White
7	Yellow
8	Yellow/White
9	Brown
10	Brown White

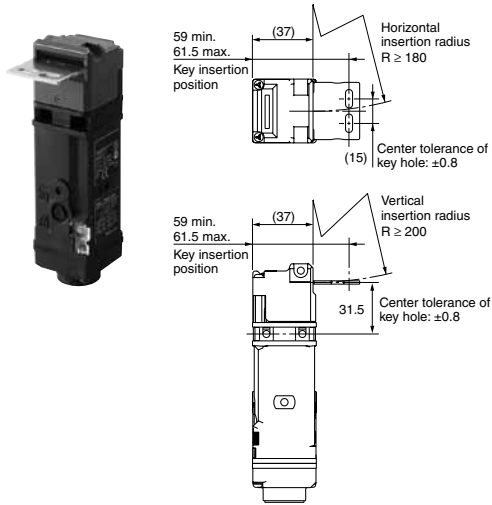
Unless otherwise specified, a tolerance of ±0.4 mm applies to all dimensions.

Dimensions and Operating Characteristics (continued)

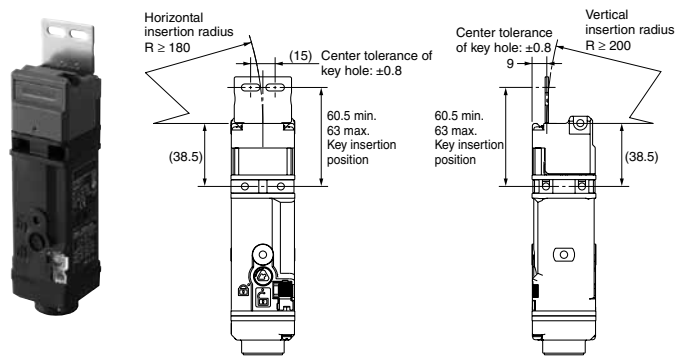
(mm)

Operating Key Mounting

D4SL-D4SL-K1  
(with Front-inserted Operation Key)

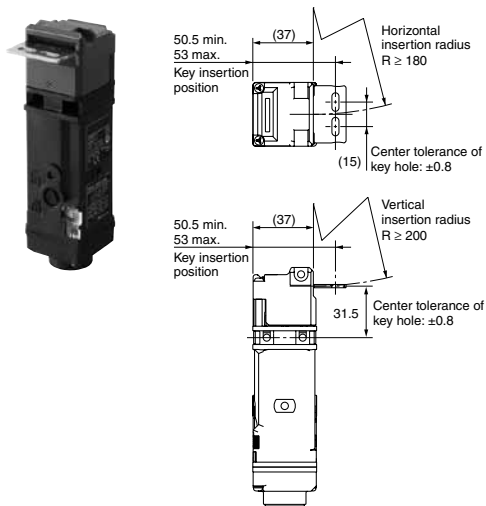


D4SL-D4SL-K1  
(with Top-inserted Operation Key)

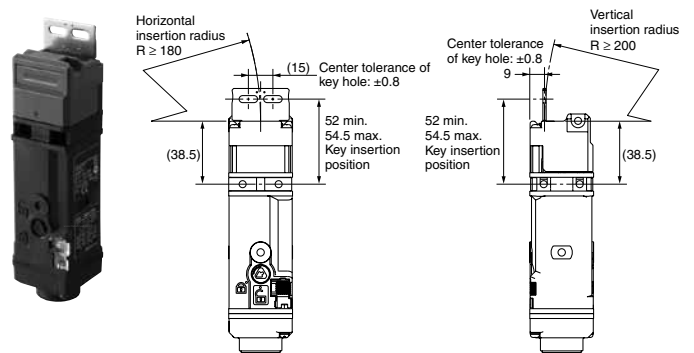


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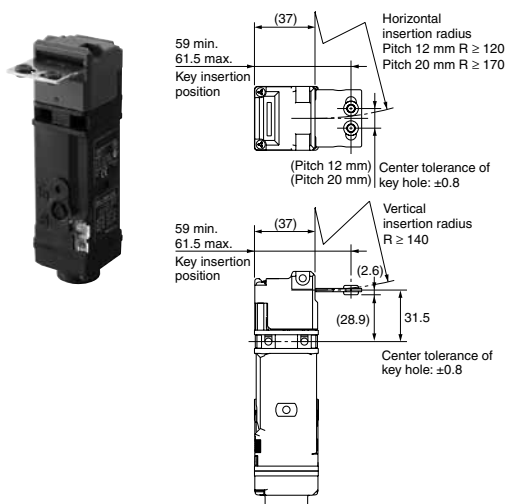
D4SL-D4SL-K1S  
(with Front-inserted Operation Key)



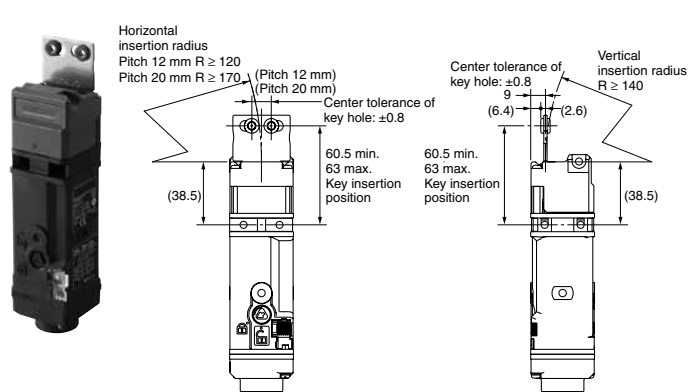
D4SL-D4SL-K1S  
(with Top-inserted Operation Key)



D4SL-D4SL-K1G  
(with Front-inserted Operation Key)



D4SL-D4SL-K1G  
(with Top-inserted Operation Key)



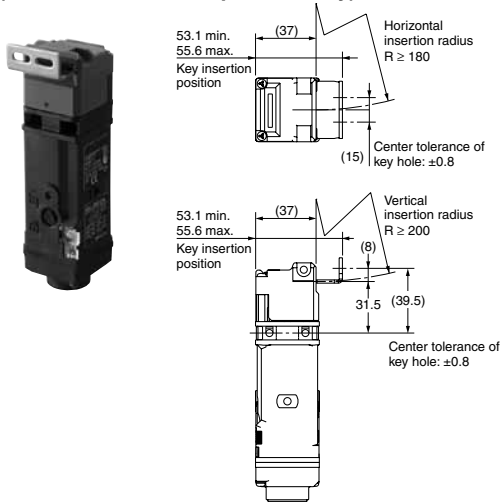


Dimensions and Operating Characteristics (continued)

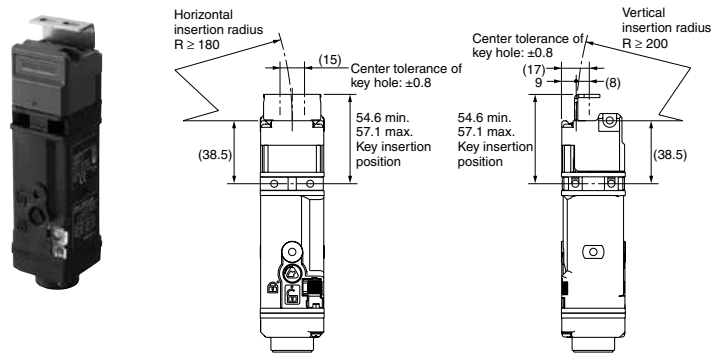
(mm)

Operating Key Mounting (continued)

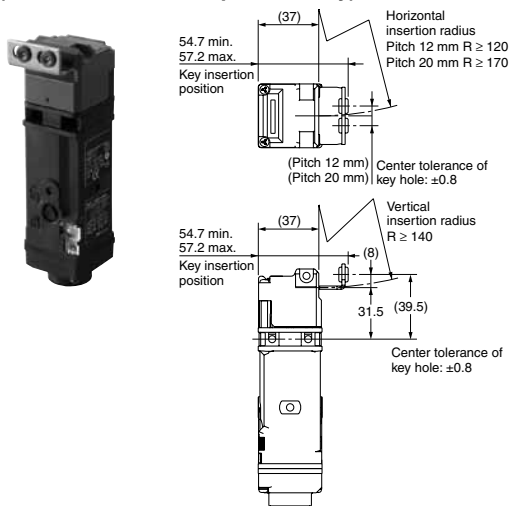
D4SL-D4SL-K2  
(with Front-inserted Operation Key)



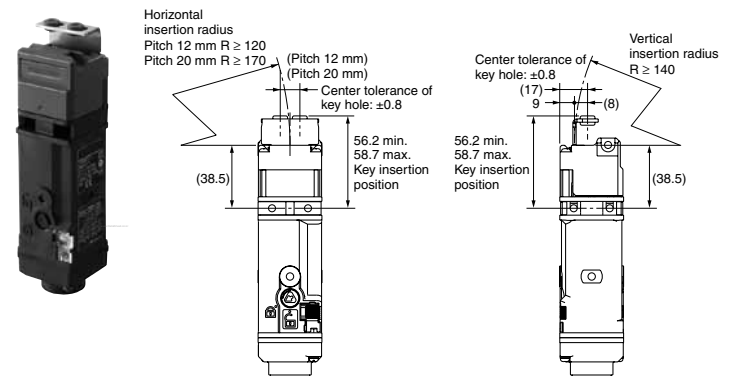
D4SL-D4SL-K2  
(with Top-inserted Operation Key)



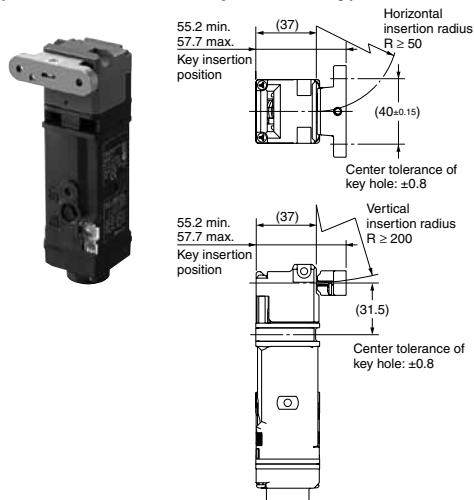
D4SL-D4SL-K2G  
(with Front-inserted Operation Key)



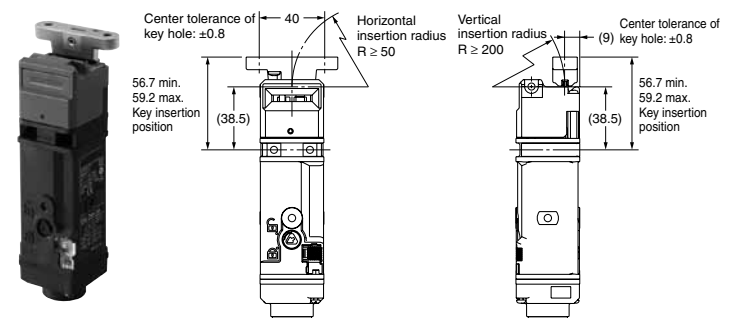
D4SL-D4SL-K2G  
(with Top-inserted Operation Key)



D4SL-D4SL-K3  
(with Front-inserted Operation Key)

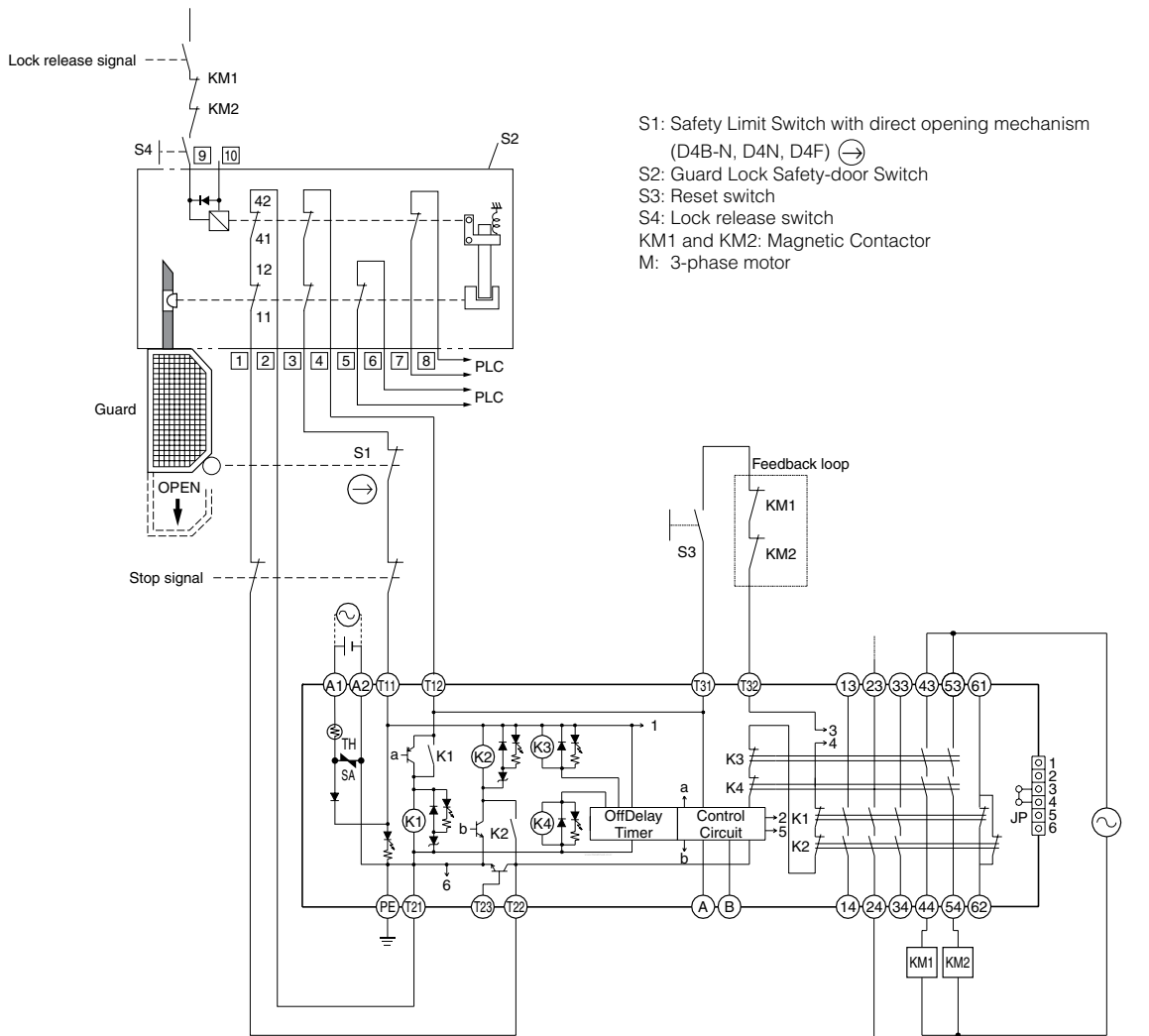


D4SL-D4SL-K3  
(with Top-inserted Operation Key)



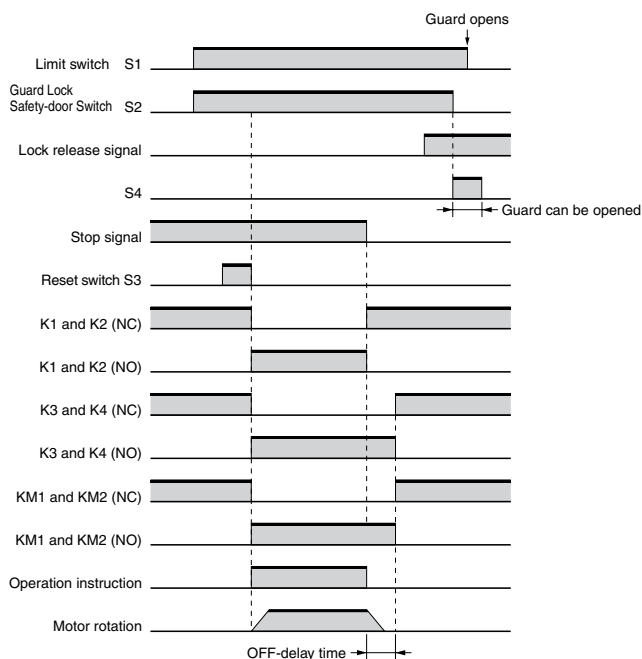
# Application Examples

## G9SA-321-T□ (24 VAC/VDC) + D4SL-□□□ DA-D4□ (Mechanical Lock Type) Circuit Diagram (Manual Reset)



- S1: Safety Limit Switch with direct opening mechanism (D4B-N, D4N, D4F) (⊖)
- S2: Guard Lock Safety-door Switch
- S3: Reset switch
- S4: Lock release switch
- KM1 and KM2: Magnetic Contactor
- M: 3-phase motor

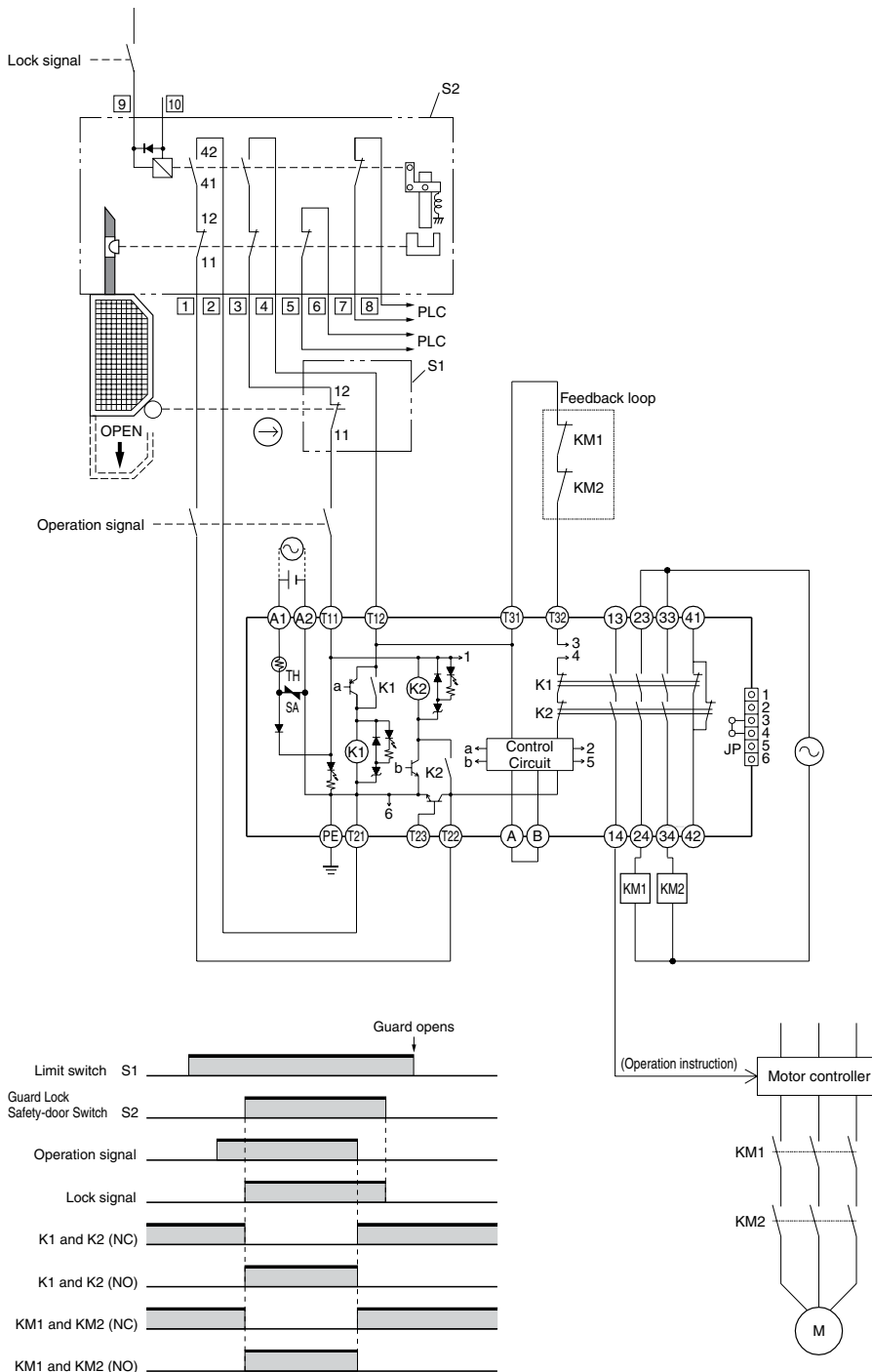
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- Notes: 1. The above example circuit is for Category 3.
2. Numbers inside the boxes are terminal numbers printed on the product.

## Application Examples (continued)

G9SA-301 (24 VAC/VDC) + D4SL-□□DG-D4□ (Solenoid Lock Type) Circuit Diagram (Auto-reset)



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## Ordering

### Model Number Structure

#### Switch

D4SL -     -     
           **1 2 3 4 5 6 7**

- 1** Conduit Size
  - 2: G1/2 (conduit)
  - 3: 1/2-14 NPT (1 conduit) \*1
  - 4: M20 (1 conduit)
- 2** Built-in Switch \*2
  - 5-contact Model**
  - J: 1NC/1NO + 2NC/1NO
  - K: 1NC/1NO + 3NC
  - L: 2NC + 2NC/1NO
  - M: 2NC + 3NC
  - 6-contact Model**
  - N: 2NC/1NO + 2NC/1NO
  - P: 2NC/1NO + 3NC
  - Q: 3NC + 2NC/1NO
  - R: 3NC + 3NC
- 3** Head Material
  - D: Metal
- 4** Door Lock and Release
  - A: Mechanical lock/24 VDC solenoid release
  - G: 24 VDC solenoid lock/mechanical release
- 5** Indicator
  - D: 24 VDC (orange LED indicator)
- 6** Release Key Type
  - Blank: Standard
  - 4: Special release key  
(Note: Release keys are provided)
- 7** Connection Method
  - Blank: Terminal block
  - N: Connector \*3

\*1. M20, includes M20-to-1/2-14NPT conversion adapter (to be released)

\*2. If a current is detected in the solenoid lock model (built-in switches; N, P, Q, R), before the door is closed, the door will remain unlocked. Be sure to close the door before turning ON the solenoid.

\*3 Connector cables are not included with the connector type and are to be purchased separately.

#### Operation Key

D4SL-K    
           **1 2**

- 1** Operation Key Type
  - 1: Horizontal mounting
  - 2: Vertical mounting
  - 3: Adjustable mounting (horizontal)
- 1** Key Type
  - Blank: No cushion rubber
  - G: Cushion rubber
  - S: No cushion rubber, short type

G

## Ordering (continued)

### List of Models

Mechanical lock/24 VDC solenoid release (G1/2, M20 conduit types)  
(Operation Keys are sold separately)

Release key type	Wiring method	Solenoid voltage/ Indicator	Lock and release type	Contact configuration (door open/closed detection switch and lock monitor switch contacts)	Conduit size	Model
Standard	Connector	24 VDC Orange	Mechanical lock/ Solenoid release	2NC/1NO + 2NC/1NO	G1/2	D4SL-2NDA-DN
					M20	D4SL-4NDA-DN
				2NC/1NO + 3NC	G1/2	D4SL-2PDA-DN
					M20	D4SL-4PDA-DN
				3NC + 2NC/1NO	G1/2	D4SL-2QDA-DN
	M20				D4SL-4QDA-DN	
	Terminal block			3NC + 3NC	G1/2	D4SL-2RDA-DN
					M20	D4SL-4RDA-DN
				2NC/1NO + 2NC/1NO	G1/2	D4SL-2NDA-D
					M20	D4SL-4NDA-D
2NC/1NO + 3NC		G1/2	D4SL-2PDA-D			
	M20	D4SL-4PDA-D				
3NC + 2NC/1NO	G1/2	D4SL-2QDA-D				
	M20	D4SL-4QDA-D				
3NC + 3NC	G1/2	D4SL-2RDA-D				
	M20	D4SL-4RDA-D				
Special release key	Connector	24 VDC Orange	Mechanical lock/ Solenoid release	2NC/1NO + 2NC/1NO	G1/2	D4SL-2NDA-D4N *
					M20	D4SL-4NDA-D4N *
				2NC/1NO + 3NC	G1/2	D4SL-2PDA-D4N *
					M20	D4SL-4PDA-D4N *
				3NC + 2NC/1NO	G1/2	D4SL-2QDA-D4N *
					M20	D4SL-4QDA-D4N *
				3NC + 3NC	G1/2	D4SL-2RDA-D4N *
					M20	D4SL-4RDA-D4N *
	Terminal block			2NC/1NO + 2NC/1NO	G1/2	D4SL-2NDA-D4 *
					M20	D4SL-4NDA-D4 *
				2NC/1NO + 3NC	G1/2	D4SL-2PDA-D4 *
					M20	D4SL-4PDA-D4 *
				3NC + 2NC/1NO	G1/2	D4SL-2QDA-D4 *
					M20	D4SL-4QDA-D4 *
3NC + 3NC	G1/2	D4SL-2RDA-D4 *				
	M20	D4SL-4RDA-D4 *				

Note: The recommended models for equipment and machinery being exported to Europe are those with an M20 conduit sizes, and for North America, the recommended models are those with a 1/2-14NPT conduit sizes.

\* These models received Korean S-mark certification

## Ordering (continued)

### List of Models (continued)

24 VDC solenoid lock/Mechanical release (G1/2, M20 conduit types)  
(Operation Keys are sold separately)

Release key type	Wiring method	Solenoid voltage/ Indicator	Lock and release type	Contact configuration (door open/closed detection switch and lock monitor switch contacts)	Conduit size	Model
Standard	Connector	24 VDC Orange	Solenoid lock/ Mechanical release	1NC/1NO + 2NC/1NO	G1/2	D4SL-2JDG-DN
					M20	D4SL-4JDG-DN
				1NC/1NO + 3NC	G1/2	D4SL-2KDG-DN
					M20	D4SL-4KDG-DN
				2NC + 2NC/1NO	G1/2	D4SL-2LDG-DN
					M20	D4SL-4LDG-DN
				2NC + 3NC	G1/2	D4SL-2MDG-DN
					M20	D4SL-4MDG-DN
				2NC/1NO + 2NC/1NO	G1/2	D4SL-2NDG-DN
					M20	D4SL-4NDG-DN
				2NC/1NO + 3NC	G1/2	D4SL-2PDG-DN
					M20	D4SL-4PDG-DN
	3NC + 2NC/1NO			G1/2	D4SL-2QDG-DN	
				M20	D4SL-4QDG-DN	
	3NC + 3NC			G1/2	D4SL-2RDG-DN	
				M20	D4SL-4RDG-DN	
	Terminal block			1NC/1NO + 2NC/1NO	G1/2	D4SL-2JDG-D
					M20	D4SL-4JDG-D
				1NC/1NO + 3NC	G1/2	D4SL-2KDG-D
					M20	D4SL-4KDG-D
				2NC + 2NC/1NO	G1/2	D4SL-2LDG-D
					M20	D4SL-4LDG-D
				2NC + 3NC	G1/2	D4SL-2MDG-D
					M20	D4SL-4MDG-D
2NC/1NO + 2NC/1NO		G1/2	D4SL-2NDG-D			
		M20	D4SL-4NDG-D			
2NC/1NO + 3NC		G1/2	D4SL-2PDG-D			
		M20	D4SL-4PDG-D			
3NC + 2NC/1NO	G1/2	D4SL-2QDG-D				
	M20	D4SL-4QDG-D				
3NC + 3NC	G1/2	D4SL-2RDG-D				
	M20	D4SL-4RDG-D				

Note: The recommended models for equipment and machinery being exported to Europe are those with an M20 conduit sizes, and for North America, the recommended models are those with a 1/2-14NPT conduit sizes.

\* These models received Korean S-mark certification

## Ordering (continued)

### List of Models (continued)

24 VDC solenoid lock/Mechanical release (G1/2, M20 conduit types)  
(Operation Keys are sold separately)

Release key type	Wiring method	Solenoid voltage/Indicator	Lock and release type	Contact configuration (door open/closed detection switch and lock monitor switch contacts)	Conduit size	Model
Special release key	Connector	24 VDC Orange	Solenoid lock/ Mechanical release	1NC/1NO + 2NC/1NO	G1/2	D4SL-2JDG-D4N
					M20	D4SL-4JDG-D4N
				1NC/1NO + 3NC	G1/2	D4SL-2KDG-D4N
					M20	D4SL-4KDG-D4N
				2NC + 2NC/1NO	G1/2	D4SL-2LDG-D4N
					M20	D4SL-4LDG-D4N
				2NC + 3NC	G1/2	D4SL-2MDG-D4N
					M20	D4SL-4MDG-D4N
				2NC/1NO + 2NC/1NO	G1/2	D4SL-2NDG-D4N *
					M20	D4SL-4NDG-D4N *
				2NC/1NO + 3NC	G1/2	D4SL-2PDG-D4N *
					M20	D4SL-4PDG-D4N *
	3NC + 2NC/1NO			G1/2	D4SL-2QDG-D4N *	
				M20	D4SL-4QDG-D4N *	
	3NC + 3NC			G1/2	D4SL-2RDG-D4N *	
				M20	D4SL-4RDG-D4N *	
	Terminal block			1NC/1NO + 2NC/1NO	G1/2	D4SL-2JDG-D4
					M20	D4SL-4JDG-D4
				1NC/1NO + 3NC	G1/2	D4SL-2KDG-D4
					M20	D4SL-4KDG-D4
				2NC + 2NC/1NO	G1/2	D4SL-2LDG-D4
					M20	D4SL-4LDG-D4
				2NC + 3NC	G1/2	D4SL-2MDG-D4
					M20	D4SL-4MDG-D4
2NC/1NO + 2NC/1NO		G1/2	D4SL-2NDG-D4 *			
		M20	D4SL-4NDG-D4 *			
2NC/1NO + 3NC		G1/2	D4SL-2PDG-D4 *			
		M20	D4SL-4PDG-D4 *			
3NC + 2NC/1NO	G1/2	D4SL-2QDG-D4 *				
	M20	D4SL-4QDG-D4 *				
3NC + 3NC	G1/2	D4SL-2RDG-D4 *				
	M20	D4SL-4RDG-D4 *				

Note: The recommended models for equipment and machinery being exported to Europe are those with an M20 conduit sizes, and for North America, the recommended models are those with a 1/2-14NPT conduit sizes.

\* These models received Korean S-mark certification



## Ordering (continued)

### List of Models (continued)

Mechanical lock/24 VDC solenoid release (1/2-14NPT conduit type)  
(Operation Keys are sold separately)

Release key type	Wiring method	Solenoid voltage/Indicator	Lock and release type	Contact configuration (door open/closed detection switch and lock monitor switch contacts)	Conduit size	Model
Standard	Connector	24 VDC Orange	Mechanical lock/ Solenoid release	2NC/1NO + 2NC/1NO	1/2-14NPT	D4SL-3NDA-DN
				2NC/1NO + 3NC		D4SL-3PDA-DN
				3NC + 2NC/1NO		D4SL-3QDA-DN
	3NC + 3NC			D4SL-3RDA-DN		
	Terminal block			2NC/1NO + 2NC/1NO		D4SL-3NDA-D
				2NC/1NO + 3NC		D4SL-3PDA-D
3NC + 2NC/1NO				D4SL-3QDA-D		
Special release key	Connector			3NC + 3NC		D4SL-3RDA-D
				2NC/1NO + 2NC/1NO		D4SL-3NDA-D4N *
				2NC/1NO + 3NC		D4SL-3PDA-D4N *
				3NC + 2NC/1NO		D4SL-3QDA-D4N *
				3NC + 3NC		D4SL-3RDA-D4N *
	Terminal block	2NC/1NO + 2NC/1NO	D4SL-3NDA-D4 *			
		2NC/1NO + 3NC	D4SL-3PDA-D4 *			
		3NC + 2NC/1NO	D4SL-3QDA-D4 *			
		3NC + 3NC	D4SL-3RDA-D4 *			
		3NC + 3NC	D4SL-3RDA-D4 *			

24 VDC solenoid lock/Mechanical release (1/2-14NPT conduit type)  
(Operation Keys are sold separately)

Release key type	Wiring method	Solenoid voltage/Indicator	Lock and release type	Contact configuration (door open/closed detection switch and lock monitor switch contacts)	Conduit size	Model
Standard	Connector	24 VDC Orange	Solenoid lock/ Mechanical release	1NC/1NO + 2NC/1NO	1/2-14NPT	D4SL-3JDG-DN
				1NC/1NO + 3NC		D4SL-3KDG-DN
				2NC + 2NC/1NO		D4SL-3LDG-DN
				2NC + 3NC		D4SL-3MDG-DN
				2NC/1NO + 2NC/1NO		D4SL-3NDG-DN
				2NC/1NO + 3NC		D4SL-3PDG-DN
				3NC + 2NC/1NO		D4SL-3QDG-DN
	Terminal block			3NC + 3NC		D4SL-3RDG-DN
				1NC/1NO + 2NC/1NO		D4SL-3JDG-D
				1NC/1NO + 3NC		D4SL-3KDG-D
				2NC + 2NC/1NO		D4SL-3LDG-D
				2NC + 3NC		D4SL-3MDG-D
				2NC/1NO + 2NC/1NO		D4SL-3NDG-D
				2NC/1NO + 3NC		D4SL-3PDG-D
Special release key	Connector	3NC + 2NC/1NO	D4SL-3QDG-D			
		3NC + 3NC	D4SL-3RDG-D			
		1NC/1NO + 2NC/1NO	D4SL-3JDG-D4N			
		1NC/1NO + 3NC	D4SL-3KDG-D4N			
		2NC + 2NC/1NO	D4SL-3LDG-D4N			
		2NC + 3NC	D4SL-3MDG-D4N			
		2NC/1NO + 2NC/1NO	D4SL-3NDG-D4N *			
	Terminal block	2NC/1NO + 3NC	D4SL-3PDG-D4N *			
		3NC + 2NC/1NO	D4SL-3QDG-D4N *			
		3NC + 3NC	D4SL-3RDG-D4N *			
		1NC/1NO + 2NC/1NO	D4SL-3JDG-D4			
		1NC/1NO + 3NC	D4SL-3KDG-D4			
		2NC + 2NC/1NO	D4SL-3LDG-D4			
		2NC + 3NC	D4SL-3MDG-D4			
Special release key	Terminal block	2NC/1NO + 2NC/1NO	D4SL-3NDG-D4 *			
		2NC/1NO + 3NC	D4SL-3PDG-D4 *			
		3NC + 2NC/1NO	D4SL-3QDG-D4 *			
		3NC + 3NC	D4SL-3RDG-D4 *			
		1NC/1NO + 2NC/1NO	D4SL-3JDG-D4			
		1NC/1NO + 3NC	D4SL-3KDG-D4			
		2NC + 2NC/1NO	D4SL-3LDG-D4			







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Note: The recommended models for equipment and machinery being exported to North America are those with a 1/2-14NPT conduit sizes.  
\* These models received Korean S-mark certification



## Ordering (continued)

### Operation Keys

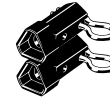
Type		Model
Horizontal mounting		D4SL-K1
Horizontal mounting (Short)		D4SL-K1S
Horizontal mounting (Cushion rubber)		D4SL-K1G
Vertical mounting		D4SL-K2
Vertical mounting (Cushion rubber)		D4SL-K2G
Adjustable (Horizontal)		D4SL-K3

### Connector Cables

Type	Model
1 m	D4SL-CN1
3 m	D4SL-CN3
5 m	D4SL-CN5


### Special Release Key

Type	Model
Special Release Key for D4GL, D4JL, D4NL, and D4SL Switches	D4NL-RK



G

### Slide Key

Type	Model
	D4SL-SK10-LK

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