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Slim Safety Door Switches with IP67 Rating

- Slim design with a width of only 17 mm (three-contact models).
- Reversible design allowing either front or rear mounting.
- Built-in Switches with two- or three-terminal contact construction are available.
- Operation Key with rubber mounting hole to absorb vibration and shock.
- IP67 degree of protection.
- A Rapid Delivery Product: Select models are available for shipment today or within 3 to 5 days.



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Specifications

Standards and EC Directives

Conforms to the following EC Directives:

- Machinery Directive
- Low Voltage Directive
- EN1088
- EN6024-1

Certified Standards

Certification body	Standard	File No.
TÜV Rheinland	EN 60947-5-1 (certified direct opening) GS-ET-15	J2051125
UL*	UL 508 CSA C22.2 No. 14	E76675
CQC (CCC)	GB14048.5	2003010305064262

* Certification for CSA C22.2 No. 14 is authorized by the UL mark.

Certified Standard Ratings

TÜV (EN 60947-5-1), CCC (GB14048.5)

Item	Utilization category	AC-15	DC-13
Rated operating current (Ie)		0.75 A	0.27 A
Rated operating voltage (Ue)		240 V	250 V

Note: Use a 10 A fuse type gI or gG that conforms to IEC 60269 as a short-circuit protection device.

UL/CSA (UL 508, CSA C22.2 No. 14)
C300

Rated voltage	Carry current	Current (A)		Volt-amperes (VA)	
		Make	Break	Make	Break
120 VAC	2.5 A	15	1.5	1,800	180
240 VAC		7.5	0.75		

Q300

Rated voltage	Carry current	Current (A)		Volt-amperes (VA)	
		Make	Break	Make	Break
125 VAC	2.5 A	0.55	0.55	69	69
250 VAC		0.27	0.27		



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Specifications (continued)

Characteristics

Degree of protection *1		IP67 (EN60947-5-1)
Durability *2	Mechanical	1,000,000 operations min.
	Electrical	100,000 operations min. (1 A resistive load at 125 VAC) *3
Operating speed		0.1 to 0.5 m/s
Operating frequency		30 operations/minute max.
Direct opening force *4		60 N min.
Direct opening travel *4		10 mm min.
Contact resistance		300 mΩ max. (with 1 m cable)
Minimum applicable load *5		Resistive load of 4 mA at 24 VDC (N-level reference value)
Rated insulation voltage (Ui)		250 V
Rated frequency		50/60 Hz
Protection against electric shock		Class II (double insulation) (IEC60536)
Pollution degree (operating environment)		3 (EN60947-5-1)
Impulse withstand voltage (EN60947-5-1)	Between terminals of same polarity	2.5 kV
	Between terminals of different polarity	4 kV
	Between each terminal and non-current carrying metallic parts	6 kV
Insulation resistance		100 MΩ min. (at 500 VDC) between terminals of the same polarities, between terminals of different polarities, and between each terminal and non-current carrying metal parts
Contact gap		2 × 2 mm min.
Vibration resistance	Malfunction	10 to 55 Hz, 0.35 mm single amplitude
Shock resistance	Destruction	1,000 m/s ² min.
	Malfunction	300 m/s ² 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		-30 to 70°C (with no icing)
Ambient operating humidity		95% max.
Cable		UL2464 No. 22 AWG, finishing O.D.: 7.2 mm
Weight		Approx. 120 g (D4GS-N1R, with 1 m cable)

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 shown above is based on the test method specified in EN60947-5-1. Be sure to confirm in advance the sealing performance under the actual operating environment and conditions. Although the switch box is protected from dust, oil, or water penetration, do not use the D4GS-N in places where dust, oil, water, or chemicals may enter through the key hole on the head, otherwise Switch damage or malfunctioning may occur.

*2. The durability conditions are an ambient temperature of 5 to 35°C and an ambient humidity of 40% to 70%. For more details, consult your OMRON representative.

*3. When the ambient temperature is 35°C or higher, do not apply 1 A at 125 VAC to more than one circuit.

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

*5. The value given for minimum applicable load is a reference value for microloads. The value will vary depending on factors such as the switching frequency, the ambient environment, and the reliability level. Be sure to confirm correct operation with the actual load before application.

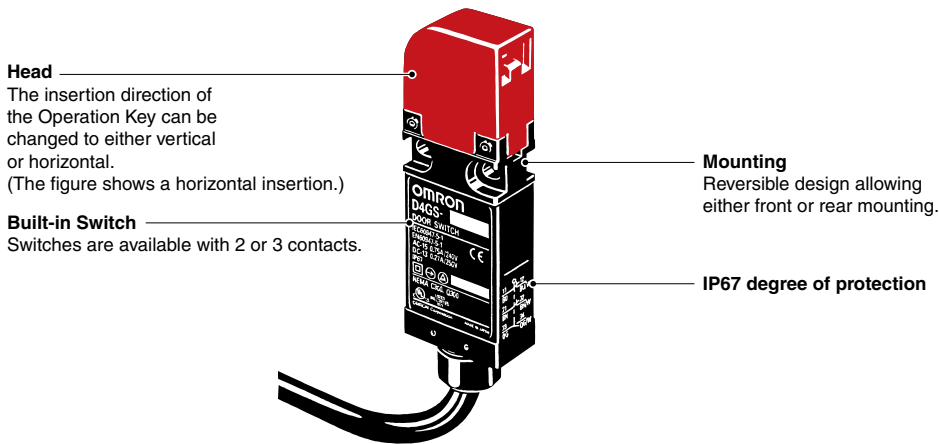


Select models are available for Rapid Delivery.

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Structure and Nomenclature

Structure



Contact Form

(Diagrams show state with key inserted)

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Model	Contact	Contact form	Operating pattern	Remarks
D4GS-N1□-□	1NC/1NO			<p>Only NC contact 11-12 has a certified direct opening mechanism. (→)</p> <p>The terminals 11-12 and 33-34 can be used as unlike poles.</p>
D4GS-N2□-□	2NC			<p>NC contacts 11-12 and 31-32 have a certified direct opening mechanism. (→)</p> <p>The terminals 11-12 and 31-32 can be used as unlike poles.</p>
D4GS-N3□-□	2NC/1NO			<p>Only NC contacts 11-12 and 21-22 have a certified direct opening mechanism. (→)</p> <p>The terminals 11-12, 21-22 and 33-34 can be used as unlike poles.</p>
D4GS-N4□-□	3NC			<p>NC contacts 11-12, 21-22 and 31-32 have a certified direct opening mechanism. (→)</p> <p>The terminals 11-12, 21-22 and 31-32 can be used as unlike poles.</p>

Note: The terminal numbers are according to EN50013, and the contact symbols are according to IEC 60947-5-1.

Select models are available for Rapid Delivery.

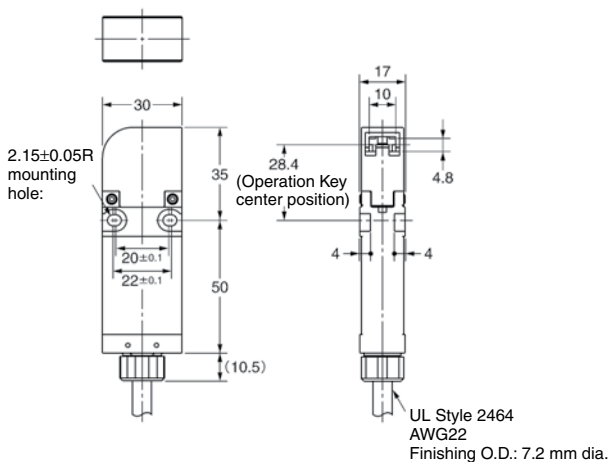
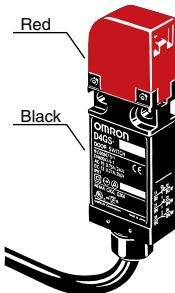
Visit this product on www.sti.com for details.

Dimensions and Operating Characteristics

(mm)

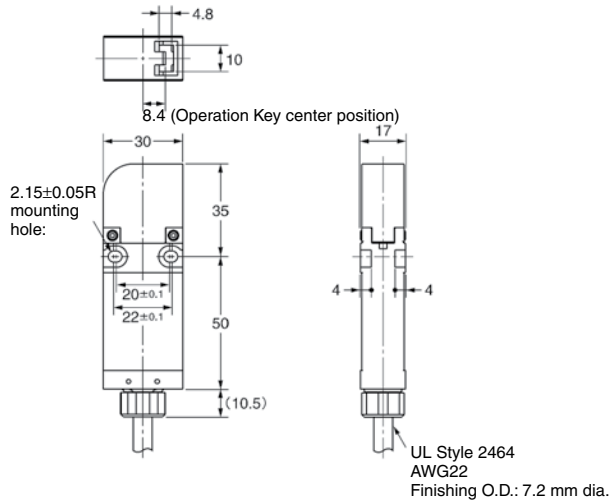
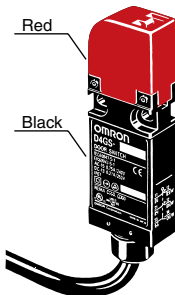
Switches

D4GS-N□R-□



Operating characteristics	D4GS-N
Key insertion force	15 N max.
Key extraction force	30 N max.
Pretravel (PT)	6.8±3 mm
Movement before being locked	(22 mm)
Direct opening force	60 N min.
Direct opening stroke	10 mm min.

D4GS-N□T-□



Notes: 1. Unless otherwise specified, a tolerance of ±0.4 mm applies to all dimensions. Dimensions in parentheses are reference values.
2. There are fluctuations in the contact ON/OFF timing for Switches with multiple poles (2NC, 2NC/1NO, or 3NC). Confirm performance before application.

 Select models are available for Rapid Delivery.

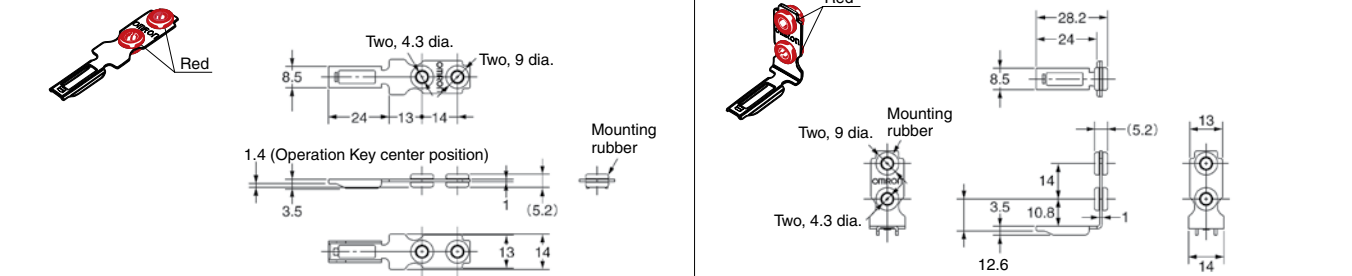
Visit this product on www.sti.com for details.

Dimensions and Operating Characteristics (continued) (mm)

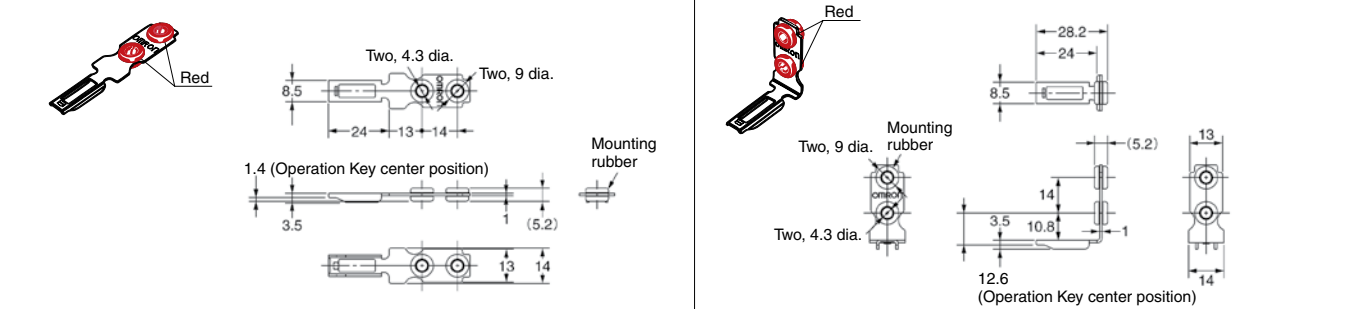
Dimensions and Operating Characteristics (continued) (mm)

Operation Keys

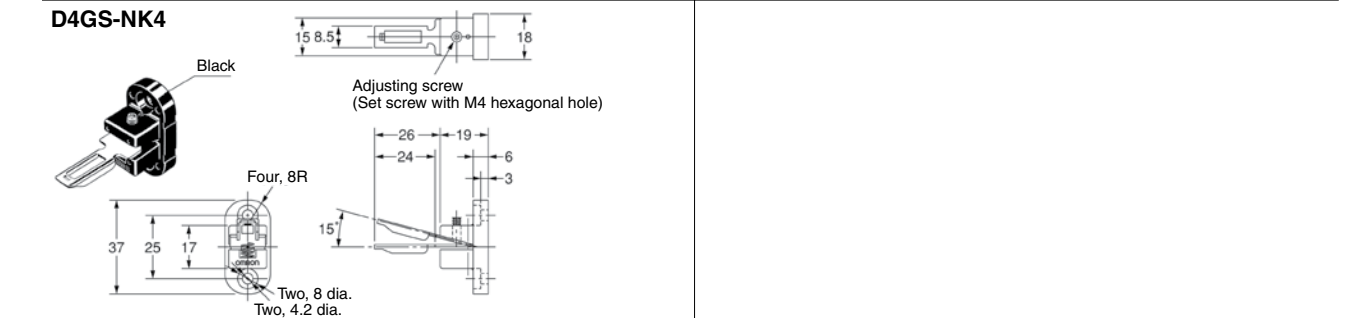
D4GS-NK1	D4GS-NK2
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D4GS-NK1	D4GS-NK2
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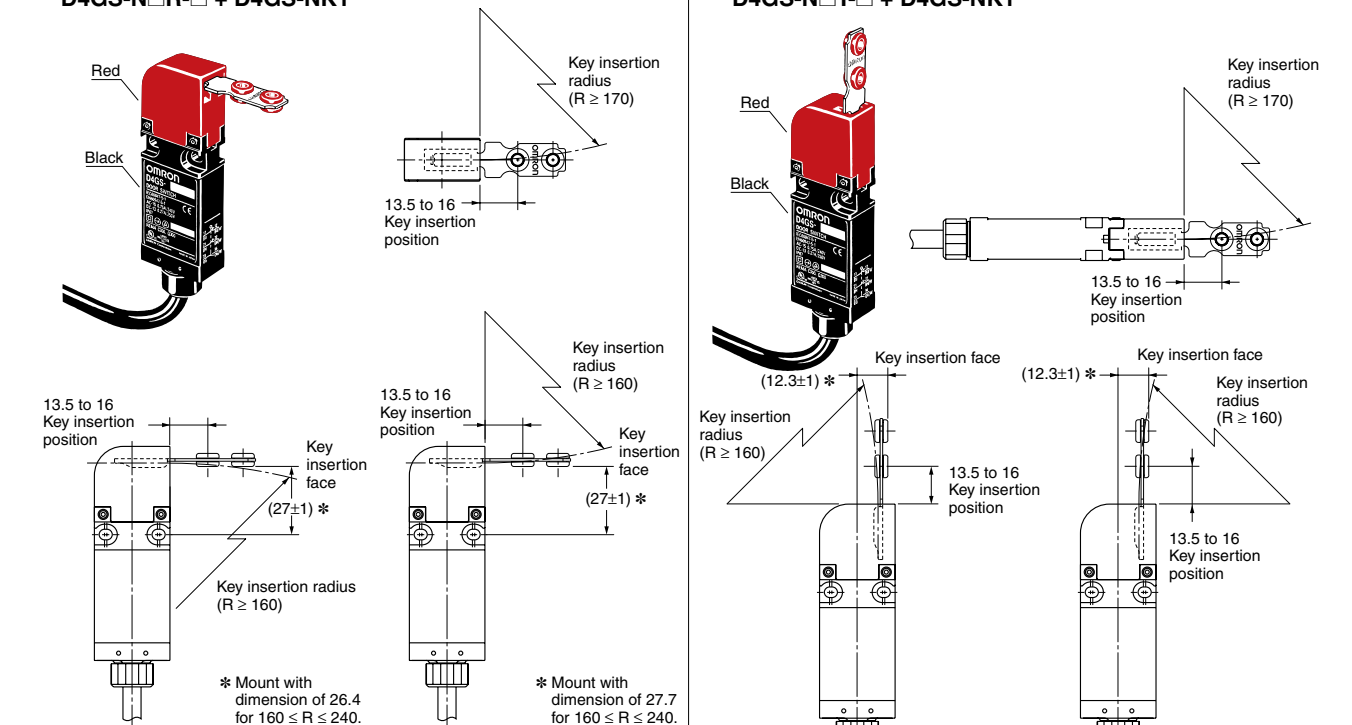
D4GS-NK4	
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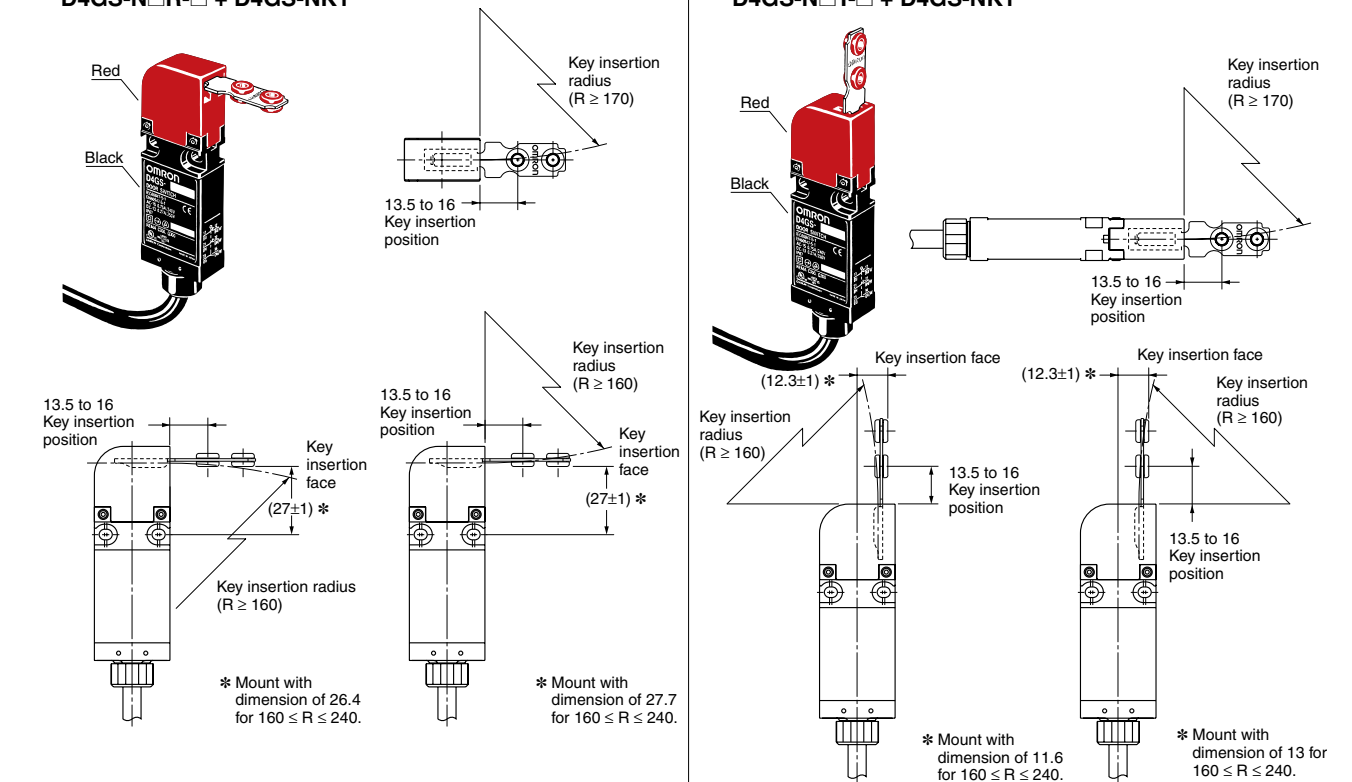
Note: Unless otherwise specified, a tolerance of ± 0.4 mm applies to all dimensions. Dimensions in parentheses are reference values.

With Operation Key Inserted

D4GS-N□R-□ + D4GS-NK1 **D4GS-N□T-□ + D4GS-NK1**



D4GS-N□R-□ + D4GS-NK1 **D4GS-N□T-□ + D4GS-NK1**



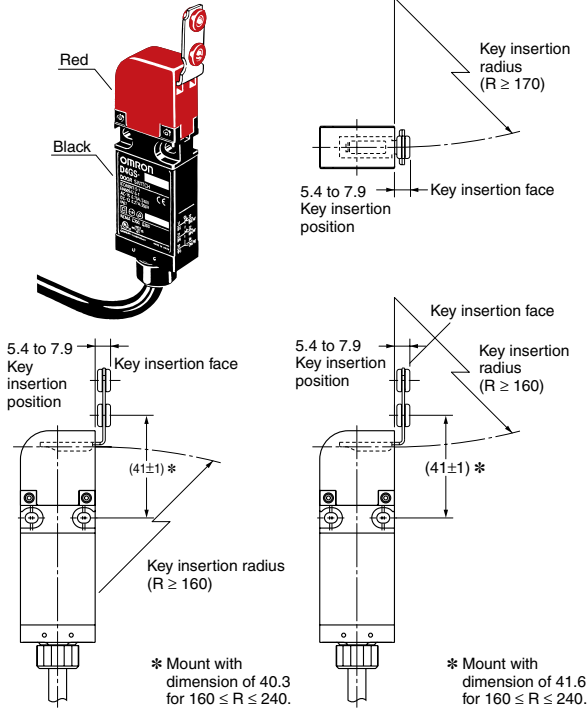
Note: Unless otherwise specified, a tolerance of ± 0.4 mm applies to all dimensions. Dimensions in parentheses are reference values.

Dimensions and Operating Characteristics (continued)

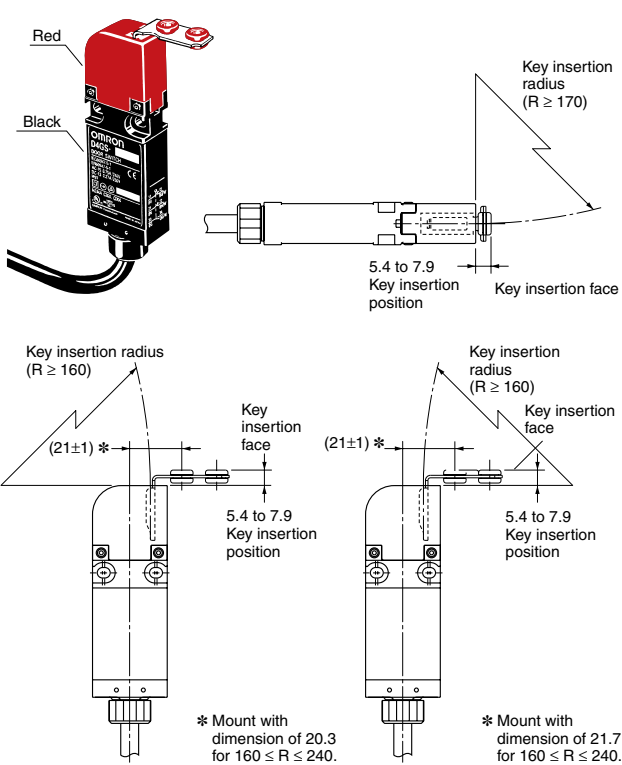
(mm)

With Operation Key Inserted (continued)

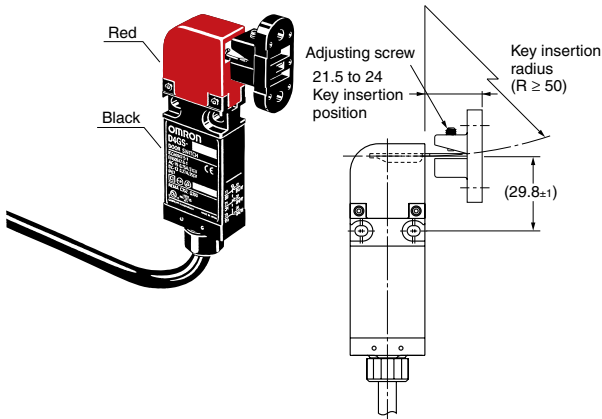
D4GS-N□R-□ + D4GS-NK2



D4GS-N□T-□ + D4GS-NK2



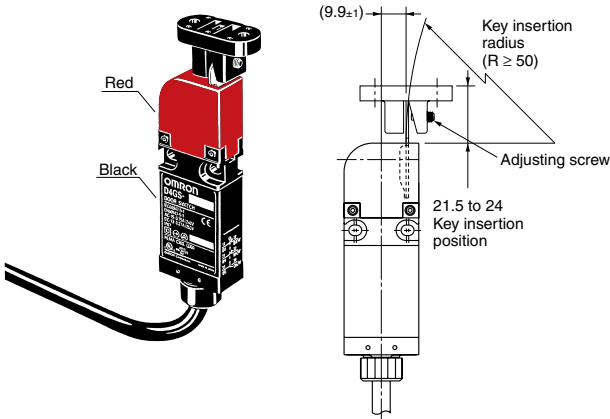
D4GS-N□R-□ + D4GS-NK4



Note 1: When determining the operation key insertion radius, adjust the adjusting screw so that the tip of the operation key is positioned to the center of the key insertion hole of the Switch.

Note 2: The operation key cannot be inserted or adjusted in a direction different from the one shown above. Use the D4GS-NK1 or D4GS-NK2 if necessary.

D4GS-N□T-□ + D4GS-NK4



Note 1: When determining the operation key insertion radius, adjust the adjusting screw so that the tip of the operation key is positioned to the center of the key insertion hole of the Switch.

Note 2: The operation key cannot be inserted or adjusted in a direction different from the one shown above. Use the D4GS-NK1 or D4GS-NK2 if necessary.

Note: Unless otherwise specified, a tolerance of ± 0.4 mm applies to all dimensions. Dimensions in parentheses are reference values.

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Ordering

Model Structure

Switch

D4GS – N ☐ ☐ – ☐
1 2 3

- 1 Built-in Switch
1: 1NC/1NO (slow action)
2: 2NC (slow-action)
3: 2NC/1NO (slow-action)
4: 3NC (slow-action)
- 2 Direction of Operation
Key Insertion
R: Horizontal
T: Vertical
- 3 Cable Length
Blank: 1 m
3: 3 m
5: 5 m



Operation Key

D4GS – NK ☐
1

- 1 Operation Key Type
1: Horizontal mounting
2: Vertical mounting
3: Adjustable mounting
(horizontal)




List of Models

Switches, Models with certified direct opening mechanisms
(Operation Keys are sold separately)

Appearance	Direction of Operation Key insertion	Cable length	1NC/1NO (Slow-action)	2NC (Slow-action)	2NC/1NO (Slow-action)	3NC (Slow-action)
	Horizontal	1 m	D4GS-N1R	D4GS-N2R	D4GS-N3R	D4GS-N4R
		3 m	D4GS-N1R-3	D4GS-N2R-3	D4GS-N3R-3	D4GS-N4R-3
		5 m	D4GS-N1R-5	D4GS-N2R-5	D4GS-N3R-5	D4GS-N4R-5
	Vertical	1 m	D4GS-N1T	D4GS-N2T	D4GS-N3T	D4GS-N4T
		3 m	D4GS-N1T-3	D4GS-N2T-3	D4GS-N3T-3	D4GS-N4T-3
		5 m	D4GS-N1T-5	D4GS-N2T-5	D4GS-N3T-5	D4GS-N4T-5

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Operation Keys

Type	Model
Horizontal mounting 	D4GS-NK1
Vertical mounting 	D4GS-NK2
Adjustable mounting (vertical) 	D4GS-NK4

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