Miniature Limit Switch

D4CC

Many Models Including Roller Lever Switches are Only 16-mm Thick with Connector

- New center roller lever models that enable ganged mounting of up to 6 Switches.
- Cable connectors for easy Switch replacement.
- Triple-seal construction for plungers to provide IEC IP67 degree of protection.
- Operation indicators available for easy monitoring (standard indicator is lit when Switch is not operating).
- Approved by UL and CSA.
  (Ask your OMRON representative for Information on approved models.)

Model Number Structure

Model Number Legend

D4CC-□0□□
(1) (2)

(1) Rated Current

1 : 1 A at 125 VAC
2 : 1 A at 125 VAC (with LED indicator)
3 : 1 A at 30 VDC
4 : 1 A at 30 VDC (with LED indicator)

(2) Actuator

01 : Pin plunger
02 : Roller plunger
03 : Crossroller plunger
24 : Roller lever
31 : Sealed pin plunger
32 : Sealed roller plunger
33 : Sealed crossroller plunger
50 : Plastic rod
60 : Center roller lever

Ordering Information

Switches

Limit Switches

Ratings	1 A at 125 VAC		1 A at 30 VDC	
LED indicator	Without indicator	With indicator	Without indicator	With indicator
Actuator	Model	Model	Model	Model
Pin plunger	D4CC-1001	D4CC-2001	D4CC-3001	D4CC-4001
Roller plunger	D4CC-1002	D4CC-2002	D4CC-3002	D4CC-4002
Crossroller plunger	D4CC-1003	D4CC-2003	D4CC-3003	D4CC-4003
High-sensitivity roller lever	D4CC-1024	D4CC-2024	D4CC-3024	D4CC-4024
Sealed pin plunger	D4CC-1031	D4CC-2031	D4CC-3031	D4CC-4031
Sealed roller plunger	D4CC-1032	D4CC-2032	D4CC-3032	D4CC-4032
Sealed crossroller plunger	D4CC-1033	D4CC-2033	D4CC-3033	D4CC-4033
Plastic rod	D4CC-1050	D4CC-2050	D4CC-3050	D4CC-4050
Center roller lever	D4CC-1060	D4CC-2060	D4CC-3060	D4CC-4060

Note: 1. Ask your OMRON representative for Information on approved models.
2. The meaning of suffix codes in the D4CC model numbers is different from that in the D4C model numbers.
3. Refer to the following table for cable plugs.

Applicable Cables

Appearance	No. of conductors	Type: Cable length	For AC: Model	For DC: Model
Straight 	4	1 m	XS2F-A421-C90-A	XS2F-D421-C80-A
		2 m	XS2F-A421-D90-A	XS2F-D421-D80-A
		5 m	XS2F-A421-G90-A	XS2F-D421-G80-A
		10 m	XS2F-A421-J90-A	XS2F-D421-J80-A

Special Mounting Plate (Order Separately)

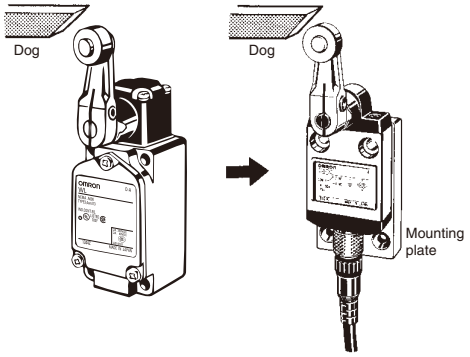
It is possible to replace an WL Limit Switch with a D4CC Limit Switch mounted on this plate without changing the position of the dog or cam.

List of Replaceable Models

WL model (Actuator)	D4CC model (Actuator)	Plate
WLD (Top plunger)	→ D4CC-□001 (Plunger)	D4C-P001
WLD2 (Top roller plunger)	→ D4CC-□002 (Roller plunger)	D4C-P002
WLG2 (Roller lever)	→ D4CC-□024 (Roller lever)	D4C-P020

Example of Replacement

Note: The position of the dog remains unchanged.



Specifications

Approved Standards

Agency	Standard	File No.
UL	UL508	E76675
CSA	CSA C22.2 No. 14	LR45746

Ratings

Rated voltage	Non-inductive load (A)				Inductive load (A)			
	Resistive load		Lamp load		Inductive load		Motor load	
	NC	NO	NC	NO	NC	NO	NC	NO
125 VAC	1	1	1	0.7	1	1	1	1
30 VDC	1	1	1	1	1	1	1	1

Note: 1. The above current ratings are for steady-state current.
2. Inductive loads have a power factor of 0.4 min. (AC) and a time constant of 7 ms max. (DC).
3. Lamp loads have an inrush current of 10 times the steady-state current.
4. Motor loads have an inrush current of 6 times the steady-state current.

D4CC-3, D4CC-4, 1 A at 30 VDC

Inrush current	NC	5 A max.
	NO	2.5 A max.

Approved Standard Ratings

UL/CSA

D4CC-1, D4CC-2

D150

Rated voltage	Carry current	Current (A)		Volt-amperes (VA)	
		Make	Break	Make	Break
120 VAC	1.0 A	3.6	0.6	432	72

Characteristics

Degree of protection		IP67
Durability *1	Mechanical	10,000,000 operations min.
	Electrical	200,000 operations min. (1 A at 125 VAC, resistive load)
Operating speed		0.1 mm/s to 0.5 m/s (in case of plunger) 1 mm/s to 1 m/s (in case of roller lever)
Operating frequency	Mechanical	120 operations/min
	Electrical	30 operations/min
Rated frequency		50/60 Hz
Insulation resistance		100 MΩ min. (at 500 VDC)
Contact resistance (initial)		100 mΩ max.
Dielectric strength	Between terminals of same polarity	1,000 VAC, 50/60 Hz for 1 min
	Between current-carrying metal parts and ground	1,500 VAC, 50/60 Hz for 1 min
	Between each terminal and non-current-carrying metal part	1,500 VAC, 50/60 Hz for 1 min
Vibration resistance	Malfunction	10 to 55 Hz, 1.5-mm double amplitude *2
Shock resistance	Destruction	1,000 m/s² min.
	Malfunction	500 m/s² min. *2
Ambient operating temperature		−10°C to +70°C (with no icing)
Ambient operating humidity		35% to 95%RH
Weight		Approx. 120 g (in the case of D4CC-1002)

Note: The above figures are initial values.
*1. The values are calculated at an operating temperature of +5°C to +35°C, and an operating humidity of 40% to 70%RH. Contact your OMRON sales representative for more detailed information on other operating environments.
*2. Excluding plastic rod models.

Leakage Current for Switches with Indicators

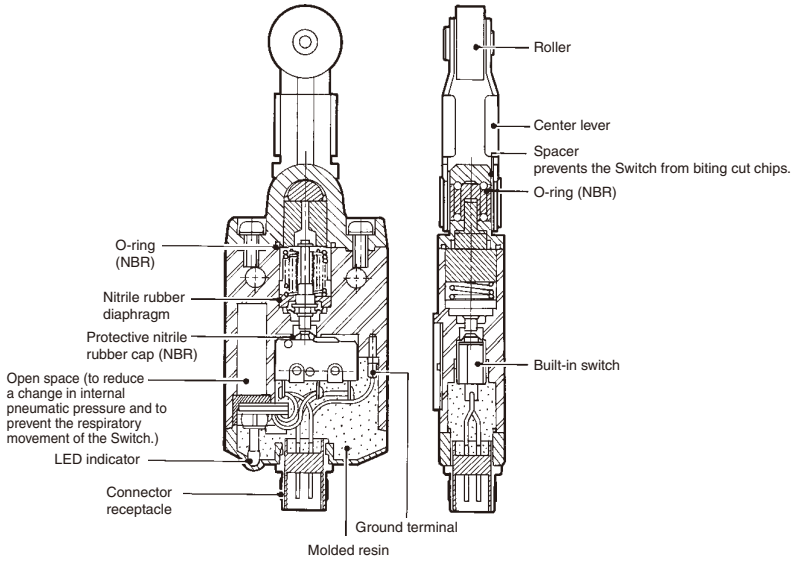
The leakage current and resistance of Switches with indicators are as follows:

Item / Model	D4CC-2□□□	D4CC-4□□□
Voltage	125 VAC	30 VDC
Leakage current	1.0 mA	1.0 mA
Resistive value	150 kΩ	30 kΩ

Structure and Nomenclature

Structure

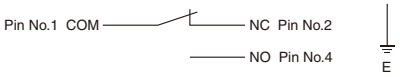
Center Roller Lever Models with Indicator



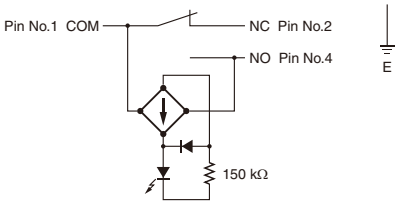
Contact Form

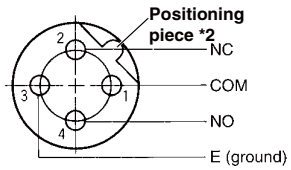
AC Switches (D4CC-10□□, 20□□)

Without Operation Indicator



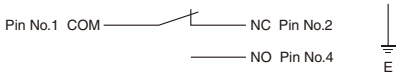
With Operation Indicator (Lit when Not Actuated) *1



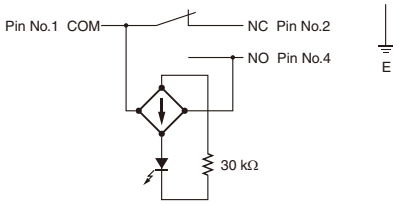


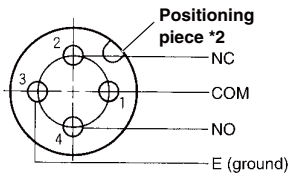
DC Switches (D4CC-30□□, 40□□)

Without Operation Indicator



With Operation Indicator (Lit when Not Actuated) *1



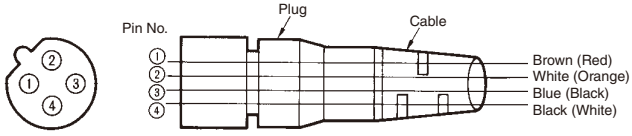


*1. "Lit when not actuated" means that when the actuator is in the free position, the indicator is lit, and when the actuator is turned or pushed and the contact comes into contact with the NO side, the indicator turns OFF.
*2. The position of the positioning piece is not always the same. If using an L-shaped connector causes problems in application, use a straight connector.

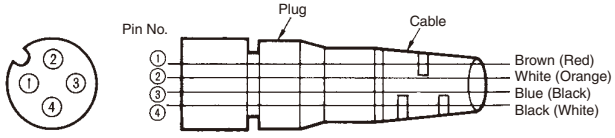
Connections

Note: Colors in parentheses are the previous wire colors. Wire colors have been changed accompanying changes in standards.

For AC



For DC



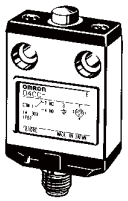
Dimensions and Operating Characteristics

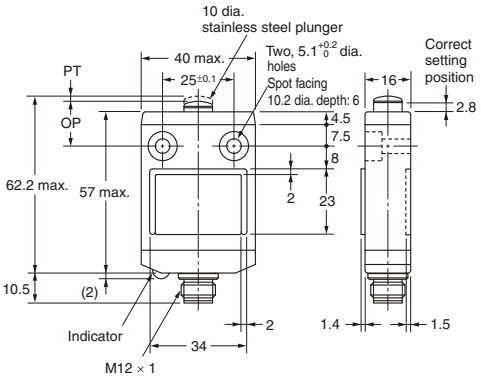
(Unit: mm)

Switches

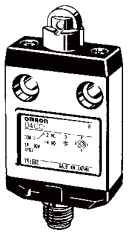
Limit Switches The □ in each model number is replaced with the code expressing the rated load of the model. Refer to *Model Number Legend*.

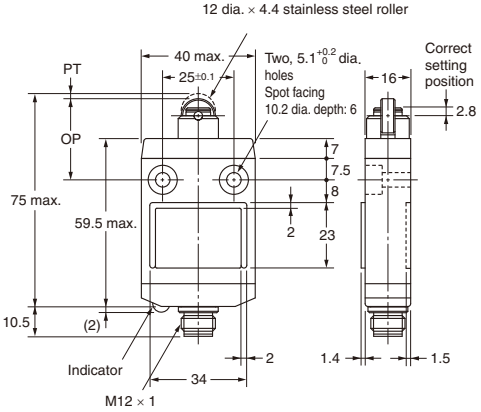
Pin Plunger
D4CC-□001



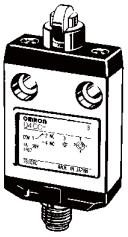


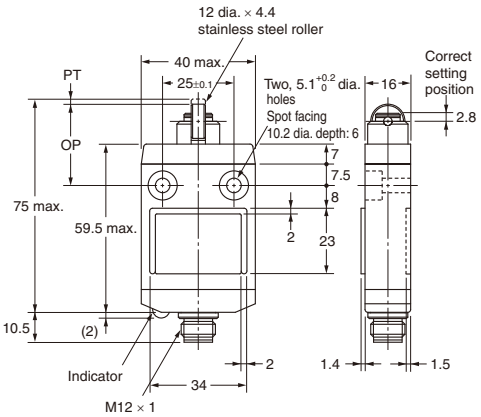
Roller Plunger
D4CC-□002



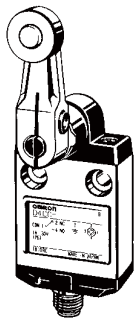


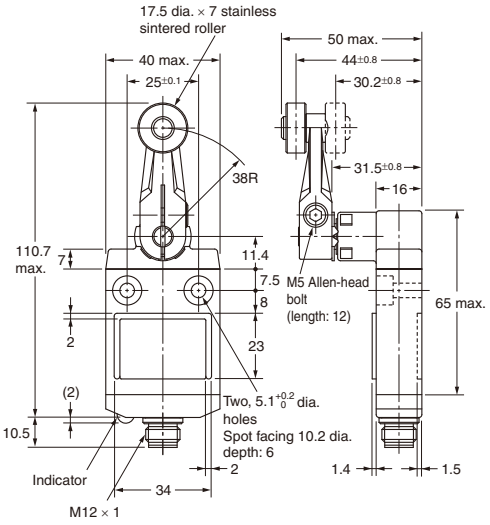
Crossroller Plunger
D4CC-□003



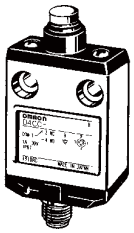


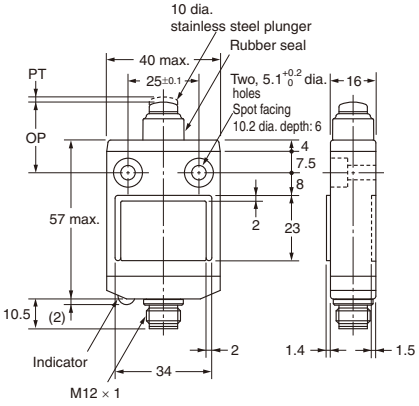
Roller Lever
D4CC-□024





Sealed Pin Plunger
D4CC-□031





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

Operating Characteristics		Model	D4CC-□001	D4CC-□002	D4CC-□003	D4CC-□024	D4CC-□031
Operating force	**OF**	**max.**	11.77 N	11.77 N	11.77 N	5.69 N	17.65 N
Release force	**RF**	**min.**	4.41 N	4.41 N	4.41 N	1.47 N	4.41 N
Pretravel	**PT**	**max.**	1.8 mm	1.8 mm	1.8 mm	10°±3°	1.8 mm
Overtravel	**OT**	**min.**	3 mm	3 mm	3 mm	50°	3 mm
Movement Differential	**MD**	**max.**	0.2 mm	0.2 mm	0.2 mm	3°	0.2 mm
Operating Position	**OP**		15.7±1 mm	28.5±1 mm	28.5±1 mm	---	24.9±1 mm
Total travel	**TT**	*	---	---	---		(5) mm

* The TT is a reference value.