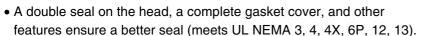
CSM_D4A-_N_DS_E_2_1

The Limit Switch with Better Seal, Shock Resistance, and Strength



- Wide standard operating temperature range: -40°C to +100°C (standard type).
- Models with fluoro-rubber available for greater resistance to chemicals.
- Block mounting method also reduces downtime for maintenance.
- DPDT, double-break models available for complex operations.
- Approved by UL, CSA, and CCC (Chinese standard). (Ask your OMRON representative for information on approved model.)



Be sure to read Safety Precautions on page 14 to 15 and Safety Precautions for All Limit Switches.



Model Number Structure

Model Number Legend (Not all combinations are possible. Ask your OMRON representative for details.)

D4A-(1)(2)(3)

(1) Receptacle box

1 : 1/2-14 NPT conduit (SPDT, double-break) : 1/2-14 NPT conduit (DPDT, double-break) : G 1/2 conduit (SPDT, double-break) 4 : G 1/2 conduit (DPDT, double-break)

(2) Switch Box

1 : SPDT, double-break, without indicator : SPDT, double-break, neon lamp

E : SPDT, double-break, LED (24 VDC, leakage current: 1.3 mA) 5 : DPDT, double-break, simultaneous operation, without indicator

: DPDT, double-break, sequential operation, without indicator *1

9 : DPDT, double-break, center neutral operation, without indicator *2

L : DPDT, double-break, simultaneous operation, neon lamp

P: DPDT, double-break, simultaneous operation, LED

(3) Head

01 : Roller lever, standard 02 : Roller lever, high-sensitivity

: Roller lever, low torque

: Roller lever, high-sensitivity, low torque

05 : Roller lever, maintained

17 : Roller lever, sequential operation 18 : Roller lever, center neutral operation

06 : Side plunger, standard 07-V : Side plunger, vertical roller 07-H: Side plunger, horizontal roller 08 : Side plunger, adjustable

09 : Top plunger, standard

10

: Top plunger, roller

11 : Top plunger, adjustable 12 : Flexible rod, spring wire

14 : Flexible rod, plastic rod

15 : Flexible rod, cat whisker

16 : Flexible rod, coil spring

Note: Fluoro-rubber sealed type is also available.

OMRON

^{*1.} Use the D4A-0017N Special Head. *2. Use the D4A-0018N Special Head.

Ordering Information

Set model number

SPDT, Double-break Switches

	Receptacle box	G 1/2 Conduit							
	Indicator	Without in	dicator	With neon lamp	With LED indicator (DC)				
Actuator		Model	Approved standards	Model	Approved standards	Model			
	Standard	D4A-3101N	UL, CSA	D4A-3301N	UL, CSA	D4A-3E01N			
	High-sensitivity	D4A-3102N	UL, CSA	D4A-3302N	UL, CSA	D4A-3E02N			
Roller lever *1	Low-torque	D4A-3103N	UL, CSA						
	High-sensitivity, Low-torque	D4A-3104N	UL, CSA	D4A-3304N	UL, CSA				
	Maintained *2	D4A-3105N	UL, CSA	D4A-3305N	UL, CSA	D4A-3E05N			
	Standard	D4A-3106N	UL, CSA						
Side plunger	Vertical roller	D4A-3107-VN	UL, CSA	D4A-3307-VN	UL, CSA	D4A-3E07-VN			
Side pluliger	Horizontal roller	D4A-3107-HN	UL, CSA	D4A-3307-HN	UL, CSA				
	Adjustable	D4A-3108N	UL, CSA	D4A-3308N	UL, CSA	D4A-3E08N			
	Standard	D4A-3109N	UL, CSA	D4A-3309N	UL, CSA				
Top plunger	Roller	D4A-3110N	UL, CSA	D4A-3310N	UL, CSA				
	Adjustable <u>A</u>	D4A-3111N	UL, CSA	D4A-3311N	UL, CSA				
	Spring wire	D4A-3112N	UL, CSA	D4A-3312N	UL, CSA	D4A-3E12N			
Flexible rod	Plastic rod	D4A-3114N	UL, CSA	D4A-3314N	UL, CSA	D4A-3E14N			
- ISAIDIO IVU	Cat whisker	D4A-3115N	UL, CSA	D4A-3315N	UL, CSA	D4A-3E15N			
	Coil spring	D4A-3116N	UL, CSA	D4A-3316N	UL, CSA	D4A-3E16N			

Note: 1. Switches are also available with \Box 1/2-14 NPT conduits. The model numbers correspond as follows:

(Examples) G 1/2 Conduits D4A-3 CN D4A-4 N

1/2-14 NPT Conduits D4A-1□□□N D4A-2□□□N

^{2.} Switches are also available with fluoro-rubber seals for higher resistance to chemicals. (The operating temperature range for these Switches, however, is -10 to +120°C.) Add "-F" to the model number. (Example: D4A-3101N becomes D4A-3101N-F.) Ask your nearest OMRON representative for details.

*1. The lever is not included with the Roller Level Models. Select the lever from those listed in this data sheet and order it separately (refer to Levers on page 12).

*2. The Maintained Switches have a lock mechanism for the switch operation and thus use a Fork Lever Lock.

DPDT, Double-break Switches

	Rece	ptacle box	G 1/2 Conduit						
		Indicator		t indicator	With neon lamp indicator (AC)	With LED indicator (DC)			
Actuator			Model	Approved standards	Model	Model			
	Standard		D4A-4501N	UL, CSA	D4A-4L01N	D4A-4P01N			
	High-sensitivity		D4A-4502N	UL, CSA					
	Low-torque		D4A-4503N	UL, CSA					
Roller lever *1	High-sensitivity, Low-torque		D4A-4504N	UL, CSA					
	Maintained *2		D4A-4505N	UL, CSA					
	Sequential operation	on 🔳	D4A-4717N	UL, CSA					
	Center neutral operation		D4A-4918N	UL, CSA					
	Standard	a	D4A-4506N	UL, CSA					
Side plunger	Vertical roller	B	D4A-4507-VN	UL, CSA					
Side pluliger	Horizontal roller		D4A-4507-HN	UL, CSA					
	Adjustable		D4A-4508N	UL, CSA					
	Standard	Д	D4A-4509N	UL, CSA					
Top plunger	Roller	 ∑	D4A-4510N	UL, CSA	D4A-4L10N	D4A-4P10N			
	Adjustable	Ä	D4A-4511N	UL, CSA					
	Spring wire		D4A-4512N	UL, CSA					
Flexible rod	Plastic rod		D4A-4514N	UL, CSA					
	Cat whisker		D4A-4515N	UL, CSA					
	Coil spring		D4A-4516N	UL, CSA					

Note: 1. Switches are also available with \Box 1/2-14 NPT conduits. The model numbers correspond as follows: (Examples) G 1/2 Conduits 1/2-14 NPT Conduits D4A-3 $\Box\Box$ N D4A-1 $\Box\Box$ N

D4A-4□□□N D4A-2□□□N

Individual Parts

Receptacle box

Туре		G1/2 co	nduit *1	1/2-14NPT conduit *2		
	Appearance	Model	Model Approved standards		Approved standards	
SPDT dou- ble-break		D4A-3000N	UL, CSA	D4A-1000N	UL, CSA	
DPDT dou- ble-break		D4A-4000N	UL, CSA	D4A-2000N	UL, CSA	

^{*1.} M6-screw mounting

^{2.} Switches are also available with fluoro-rubber seals for higher resistance to chemicals. (The operating temperature range for these Switches, however, is –10 to +120°C.) Add "-F" to the model number. (Example: D4A-4501N becomes D4A-4501N-F.) Ask your nearest OMRON representative about delivery

^{*1.} The lever is not included with the Roller Level Models. Select the lever from those listed in this data sheet and order it separately (refer to Levers on page 12).
*2. The Maintained Switches have a lock mechanism for the switch operation and thus use a Fork Lever Lock.

⁽standard mounting)
*2. 10-32UNF-screw mounting (standard mounting)

Switch Box

Indicator			Without indicator		With neon lamp indicator (AC)		With LED indicator (DC)
Appearance			Model	Approved standards	Model	Approved standards	Model
SPDT double- break		out indicator lamp)	D4A-0100N	UL, CSA	D4A-0300N	UL, CSA	D4A-0E00N
	S		D4A-0500N	UL, CSA	D4A-0L00N		D4A-0P00N
DPDT double- break		Sequential operation	D4A-0700N	UL, CSA			
	(Without indicator lamp) Center neutral operation		D4A-0900N	UL, CSA			

Heads

	Appearance		Model	Approved standards
1		Standard	D4A-0001N	UL, CSA
		High-sensitivity	D4A-0002N	UL, CSA
		Low-torque *2	D4A-0003N	UL, CSA
ever *		Sequential operation: *3	D4A-0017N	UL, CSA
Roller lever *1		Center neutral operation: *3	D4A-0018N	UL, CSA
Œ		Maintained	intained D4A-0005N	
		Standard	D4A-0006N	UL, CSA
lunger		Vertical roller D4A-0007-VN		UL, CSA
Side plunger		Horizontal roller	D4A-0007-HN	UL, CSA
		Side adjustable	D4A-0008N	UL, CSA

^{*1.} Levers for Roller Lever Switches are optionally available. Select the lever from those listed in this data sheet and order (refer to Levers on page 12).

*2. The D4A-C00 adjustable roller lever is too heavy and long for these heads and it should not be used or mechanical malfunction will result.

*3. These heads cannot be used for double break operations.

	Appearance	Туре	Model	Approved standards
	Appearance	Standard	D4A-0009N	UL, CSA
Top plunger		Roller	D4A-0010N	UL, CSA
		Adjustable	D4A-0011N	UL, CSA
		Spring wire	D4A-0012N	UL, CSA
Flexible rod		Plastic rod	D4A-0014N	UL, CSA
Flexib		Cat whisker	D4A-0015N	UL, CSA
		Coil spring	D4A-0016N	UL, CSA

Levers

Actuator	Model
	D4A-A00
	D4A-A10
Roller Lever	D4A-A20
	D4A-A30
	D4A-B06
Adjustable Roller Lever	D4A-C00
Adjustable Holler Level	D4A-D00
Resin Loop Lever	D4A-F00
	D4A-E30
Fork Lever Lock	D4A-E20
FOIR LEVEL LOCK	D4A-E10
	D4A-E00

Note: Refer to page 12 for Lever shapes and applicable models.

Specifications

Approved Standards

Ì	Agency	Standard	File No.
	UL	UL508	E76675
•	CSA	CSA C22.2 No.14	LR45746
•	CCC (CQC)	GB14048.5	2003010305077615

Note: Ask your OMRON representative for information on approved models.

Ratings

		Non-	Non-inductive load (A)			Inductive load (A)			
Туре	Rated voltage	Resistive load		Lamp load		Inductive load		Motor load	
		NC	NO	NC	NO	NC	NO	NC	NO
SPDT double-	125 VAC * 250 VAC * 480 VAC 600 VAC	10 10 10 3	10 10 10 1	3 2 1.5 1	1.5 1 0.8 0.5	3	0	5 3 1.5 1	2.5 1.5 0.8 0.5
break (with/ without indicator)	8 VDC 14 VDC 30 VDC 125 VDC * 250 VDC *	10 10 6 0.8 0.4		6 6 4 0.2 0.1	3 3 0.2 0.1	10 10 6 0.8 0.4		6 6 4 0.2 0.1	
DPDT double-	125 VAC 250 VAC 480 VAC 600 VAC	5 3 1 1	.5		.5 .4	4 2 1 0		0	.5 .8 .5
break (without indicator)	14 VDC 30 VDC 125 VDC 250 VAC	3 0	5 3 0.4 0.2		.1 .05	_		0	.5 .1 .05
DPDT double-	125 VAC 250 VAC		5 3	2		2		3 1	.5
break (with in- dicator)	12 VDC 24 VDC 48 VDC	5 3 1	5 3		_		_	-	-

^{*} For those with indicators, refer to the following rated voltages.

		SPDT, Do	uble-break	DPDT, Do	uble-break
Item	Туре	Without indicator	With indi- cator	Without indicator	With indi- cator
Inrush	Normally closed	30 A max.			
current	Normally open	20 A max.			

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.

Ratings for Models with Indicators and Indicator Replacement

Ratings for Indicators

Classi- fication	Indicator	Model	Rated voltage	Leakage current	Internal resistance
SPDT double- break	Neon lamp	D4A-0300N	125 VAC, 250 VAC	Approx. 0.47 mA	150 kΩ
	LED	D4A-0E00N	24 VDC	Approx. 1.3 mA	15 kΩ
DPDT double-	Neon lamp	D4A-0L00N	125 VAC, 250 VAC	Approx. 0.28 mA	240 kΩ
break	LED	D4A-0P00N	48 VDC	Approx. 1.4 mA	

Approved Standard Ratings UL/CSA

A600

D4A--1-N (SPDT, Double-break, Without Indicator)

Rated	Carry	Curre	nt (A)	Volt-amp	eres (VA)
voltage	current	Make	Break	Make	Break
120 VAC 240 VAC 480 VAC 600 VAC	10 A	60 30 15 12	6 3 1.5 1.2	7,200	720

A300

D4A-\(\subseteq 3 \) \(\subseteq \text{N} \) (SPDT, Double-break, With Neon Lamp)

Rated	Carry	Curre	nt (A)	Volt-amp	eres (VA)
voltage	current	Make	Break	Make	Break
120 VAC 240 VAC	10 A	60 30	6 3	7,200	720

B600

D4A
5

N (DPDT, Double-break, Simultaneous

D4A-\(\text{D7}\)\(\text{DPDT}\), Double-break, Sequential Operation) D4A-□9□□N (DPDT, Double-break, Center Neutral Operation)

Rated	Rated Carry		nt (A)	Volt-amperes (VA)		
voltage	current	Make	Break	Make	Break	
120 VAC		30	3			
240 VAC	5 A	15	1.5	3.600	360	
480 VAC		7.5	0.75	3,600		
600 VAC		6.0	0.6			

CCC (GB14048.5)

Applicable category and ratings					
AC-15 2 A/125 VAC					

Characteristics

Degree of p		IP67 and NEMA 1, 2, 3, 4X, 5, 6P, 12, and 13
Durability	Mechanical: *1	SPDT, double-break, roller lever: 50,000,000 operations min. DPDT, double-break, roller lever: 30,000,000 operations min.
*2	Electrical:	SPDT, double-break: for 125 VAC, 10 A resistive load: 1,000,000 opera- tions min. DPDT, double-break: for 125 VAC, 5 A resistive load: 750,000 operations min.
Operating s	peed	1 mm/s to 2 m/s (in case of D4A-3101N roller lever model)
Operating	Mechanical:	300 operations/minute
frequency Electrical:		30 operations/minute
Rated frequency		50/60 Hz
Insulation r	esistance	$100~M\Omega$ min. (at 500 VDC) between terminals of the same polarity, between current-carrying metal parts and ground, and between each terminal and non-current-carrying metal part
Contact res	istance	25 m $Ω$ max. (initial value)
Temperatur	e rise	50°C max.
	Between terminals of same polarity	1,000 VAC, 50/60 Hz for 1 min.
Dielectric strength	Between current-car- rying metal parts and ground	2,200 VAC, 50/60 Hz for 1 min. *3
	Between each termi- nal and non-current- carrying metal part	2,200 VAC, 50/60 Hz for 1 min. *3
Pollution de (operating e	egree environment)	3
Protection a	against electric shock	Class I (with grounding terminal)
Vibration resistance	Malfunction: *4	10 to 55 Hz, 1.5-mm double amplitude
	Destruction:	1,000 m/s² min.
Shock resistance	Malfunction: *4	SPDT, double-break, roller lever: 600 m/s² min. DPDT, double-break, roller lever: 300 m/s² min.
Ambient op	erating humidity	35% to 95%RH (with no icing)
Weight		Approx. 290 g (in case of D4A-3101N)

Note: The above figures are initial values.

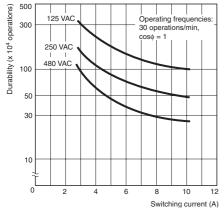
- *1. Excluding maintained models.
 *2. The values are calculated at an operating temperature of +5°C to +35°C, and an operating humidity of 40% to 70%RH. Contact your OMRON sales representative for more detailed information on other operating environments.
- *3. 1,500 VAC is applied to the indicator lamp type.
- *4. Not including Flexible rods (cat whisker, plastic rod, coil spring, and spring wire types).

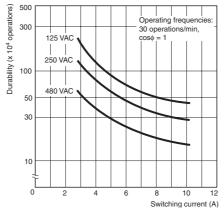
Item Type	Roller lever *1	Plunger, flexi- ble rod *2	With indicator
Ambient tempera- ture	-40°C to +100°C	-20°C to +100°C	-10°C to +80°C

- *1. Excluding low-torque and high-sensitivity models.
- *2. Including roller lever low-torque and high-sensitivity operating models.

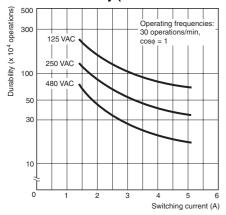
Engineering Data

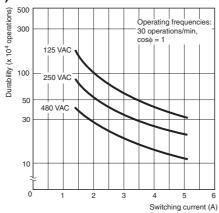
Electrical Durability (SPDT Double-break) (Ambient temperature: +5°C to +35°C; ambient humidity: 40% to 70%RH)





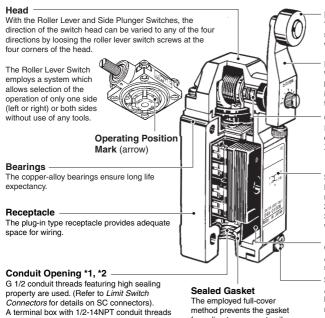
Electrical Durability (DPDT Double-break)





Structure and Nomenclature

Structure (DPDT Double-break)



Roller

The roller actuator is made of hardened stainless steel and excels in resistance to

With the Roller Lever Switch, the lever can be installed anywhere in a 360° range (180° if the lever is reversed and attached to the shaft).

Oil Seal

Improved sealing property is ensured with a double-seal construction (a oil seal plus an X-ring seal).

Switch Box

Boasts long life expectancy (50 million mechanical operations or more with the 2-pole Double-break Switches and 30 million mechanical operations or more with the DPDT Double-break Switches).

Ground Terminal Screw

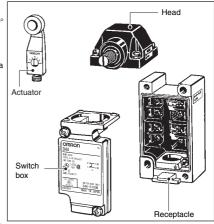
A ground terminal is provided to enhance safety.

Switch Box Screw

A Phillips screw is used to secure the switch housing for ease of use, and features a measure to prevent the screw from coming off.

Easy-maintenance Block Mounting

Block mounting makes it possible to easily assemble or disassemble the head, switch body, and receptacle of the D4A-\(\subseteq N\) by tightening or loosening the attached screws.



Note: 1. NBR is used in rubber components.

Fluoro-rubber sealed types use fluoro-rubber.

- 2. For Roller Levers, there is some lever play in the free position (about 2 mm), but this is due to the structure of the head and does not interfere with performance.
- *1. A Receptacle and Terminal Box with 1/2-14NPT conduit threads are also available for the North America market.
- *2. The conduit thread indication has been changed from "PF1/2" to "G1/2" accompanying the JIS B 0202 revision.

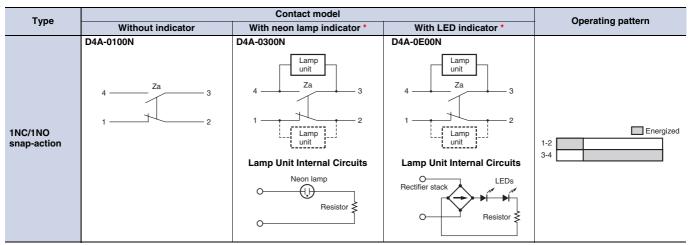
method prevents the gasket from direct exposure to oil

This changes applies only to the indication; thread sizes and pitches have not been affected.

or water spray

is also available on request.

Contact Forms (Switch Boxes) STDP Double-break Switches



^{*} Switches with indicators are factory-set to light when the switch is not operated.

DTDP Double-break Switches

Each of these Switches can be used to replace two limit switches in applications, such as high-speed control in machine tools and switching motors between forward and reverse, that previously required 2 limit switches. This simplifies wiring, saves space, and reduces costs.

		Contact model			
Туре	Without indicator	With neon lamp indicator *	With LED indicator *	Operating pattern	Remarks
2NC/2NO snap-action, simultaneous operation	D4A-0500N	D4A-0L00N	D4A-0P00N	1-2 Energized 1-2 3-4 5-6 7-8 Stroke	Head is compatible with double-break head. Can be switched for operation on both sides of actuator.
2NC/2NO snap-action, sequential operation (2-step operation)	D4A-0700N			1-2 Energized 1-2 3-4 5-6 7-8 Stroke	Use the D4A-0017N Special Head.
2NC/2NO snap-action, central neutral opera- tion	D4A-0900N			1-2 3-4 5-6 7-8 Left Free Right operation position operation	Use the D4A-0018N Special Head.

Ite	m Without indicator	With neon lamp indicator *	With LED indicator *
	D4A-0500N D4A-0700N D4A-0900N	D4A-0L00N	D4A-0P00N
Contact form	2 Za 3	Lamp Lamp unit Za 3 8 Za 7	Lamp Lamp unit Za 3 8 Za 7
	5 6	1 2 5 Lamp on the lamp of the lamp of the lamp on the	1 2 5 Lamp unit unit
Lamp interna circuit	al	Neon lamp O Resistor	Rectifier stack current diode

^{*} Switches with indicators are factory-set to light when the switch is not operated, but the setting can be changed to light for operation (dotted lines).

Dimensions and Operating Characteristics

(Unit: mm)

Set Model Numbers

(The box in a model number indicates the switch box type.)

Roller Lever Switches Note: Levers of the side rotary type are optionally available.

Standard

D4A-3□01N, D4A-4□01N

High-sensitivity

D4A-3□02N, D4A-4□02N

Low-torque

D4A-3□03N, D4A-4□03N

High-sensitivity/Low-torque

D4A-3□04N, D4A-4□04N

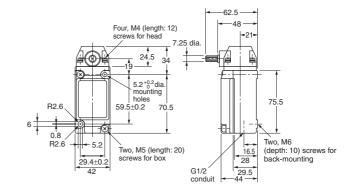
Sequential Operation

D4A-4□17N

Center Neutral Operating

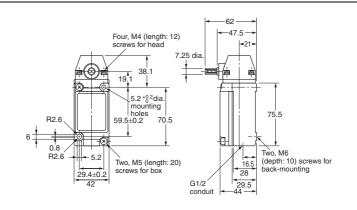
D4A-4□18N





Maintained D4A-3□05N, D4A-4□05N



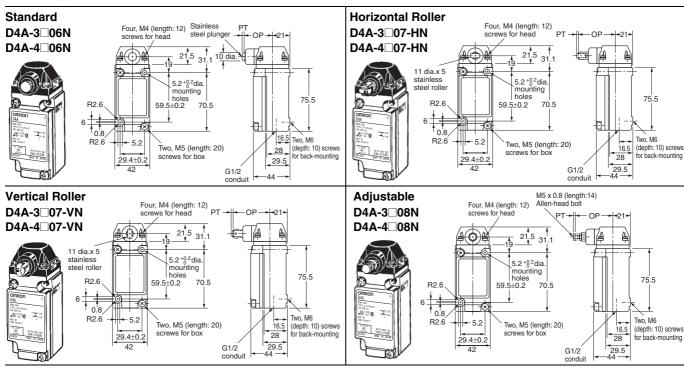


Note: Unless otherwise specified, a tolerance of ± 0.4 mm applies to all dimensions.

	Model SPDT Double-break					DPDT Double-break							
Operating chara	acteristics	D4A- 3□01N	D4A- 3□02N	D4A- 3□03N	D4A- 3□04N	D4A- 3□05N	D4A- 4□01N	D4A- 4□02N	D4A- 4□03N	D4A- 4□04N	D4A- 4□05N	D4A- 4□17N	D4A- 4□18N
Operating force	OF max.	0.39 N·m	0.39 N·m	0.2 N·m	0.2 N⋅m	0.39 N·m	0.39 N·m	0.39 N⋅m	0.2 N⋅m	0.2 N·m	0.39 N⋅m	0.39 N⋅m	0.39 N·m
Release force	RF min.	0.05 N·m	0.05 N⋅m				0.05 N·m	0.05 N·m				0.05 N·m	0.02 N·m
Pretravel	PT max.	15° (12°)	7° (6°)	15° (12°)	7° (6°)	65° (60°)	15° (12°)	7° (6°)	15° (12°)	7° (6°)	65° (60°)	1-stage: 12° (10°) 2-stage: 20° (17°)	19° (15°)
Overtravel	OT min.	70°	75°	70°	75°	20°	70°	75°	70°	75°	20°	65°	65°
Movement Diffe	rential MD max.	5° (4°)	4° (3°)	5° (4°)	4° (3°)	35° (30°)	7° (6°)	5° (4°)	7° (6°)	5° (4°)	35° (30°)	6° (5°)	5° (4°)

Note: The figures in the parentheses are average values.

Side Plunger Switches



	Model SPDT Double-break						DPDT Double-break				
Operating charac	teristics	D4A-3□06N	D4A-3□07-HN	D4A-3□07-VN	D4A-3□08N	D4A-4□06N	D4A-4□07-HN	D4A-4□07-VN	D4A-4□08N		
Operating force	OF max.	19.61 N	19.61 N	19.61 N	19.61 N	19.61 N	19.61 N	19.61 N	19.61 N		
Release force	RF min.	4.90 N	4.90 N	4.90 N	4.90 N	4.90 N	4.90 N	4.90 N	4.90 N		
Pretravel	PT max.	2.4 mm	2.4 mm	2.4 mm	2.4 mm	2.4 mm	2.4 mm	2.4 mm	2.4 mm		
Overtravel	OT min.	5.1 mm	5.1 mm	5.1 mm	5.1 mm	5.1 mm	5.1 mm	5.1 mm	5.1 mm		
Movement Differe	ential MD max.	0.6 mm	0.6 mm	0.6 mm	0.6 mm	1.0 mm	1.0 mm	1.0 mm	1.0 mm		
OP *		34±0.8 mm	44±0.8 mm	44±0.8 mm	41 to 47.5 mm	34±0.8mm	44±0.8 mm	44±0.8 mm	41 to 47.5 mm		

^{*} Operating position

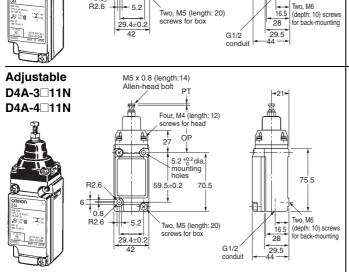
Standard

D4A-3□09N

D4A-4□09N

Top Plunger Switches

R2.6



10 dia. Stainless steel plunger

59.5±0.2

Four, M4 (length: 12) screws for head

7 OP 5.2 +0.2 dia. mounting holes

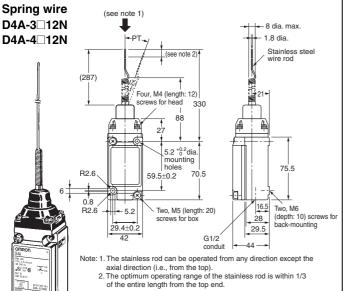
Roller Plunger D4A-3 10N D4A-4 10N	11 dia.x 5 stainless steel roller Four, M4 (length: 12) screws for head 5.2 *0.2* dia. mounting holes 59.5±0.2 70.5	75.5
		Two, M6 16.5 (depth: 10) screws for back-mounting 29.5

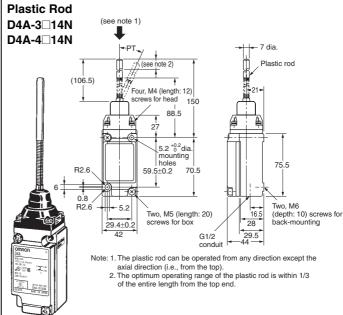
Mode	I SPD	i aoubie-r	oreak	טפט	i double-p	reak
Operating character-istics		D4A -3□10N	D4A -3□11N	D4A -4□09N	D4A -4□10N	D4A -4□11N
OF max.	17.65 N	17.65 N	17.65 N	17.65 N	17.65 N	17.65 N
RF min.	4.90 N	4.90 N	4.90 N	4.90 N	4.90 N	4.90 N
PT max.	1.6 mm	1.6 mm	1.6 mm	1.6 mm	1.6 mm	1.6 mm
OT min.	5.1 mm	5.1 mm	5.1 mm	5.1 mm	5.1 mm	5.1 mm
MD max.	0.4 mm	0.4 mm	0.4 mm	1.0 mm	1.0 mm	1.0 mm
OP *	46±0.8 mm	56±0.8 mm	55.5 to 62 mm	46±0.8 mm	56±0.8 mm	55.5 to 62 mm

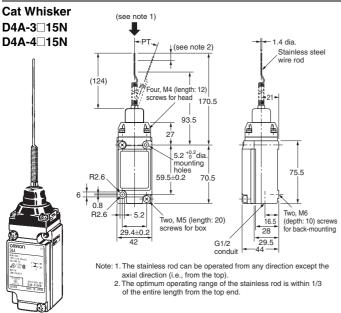
^{*} Operating position

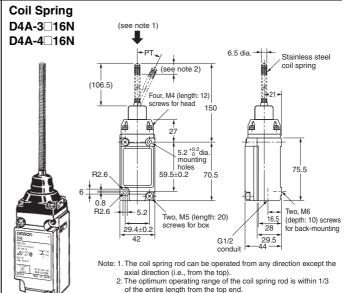
Note: A Fork Lever Lock can be used with D4A-□□05N models only.

Flexible Rod









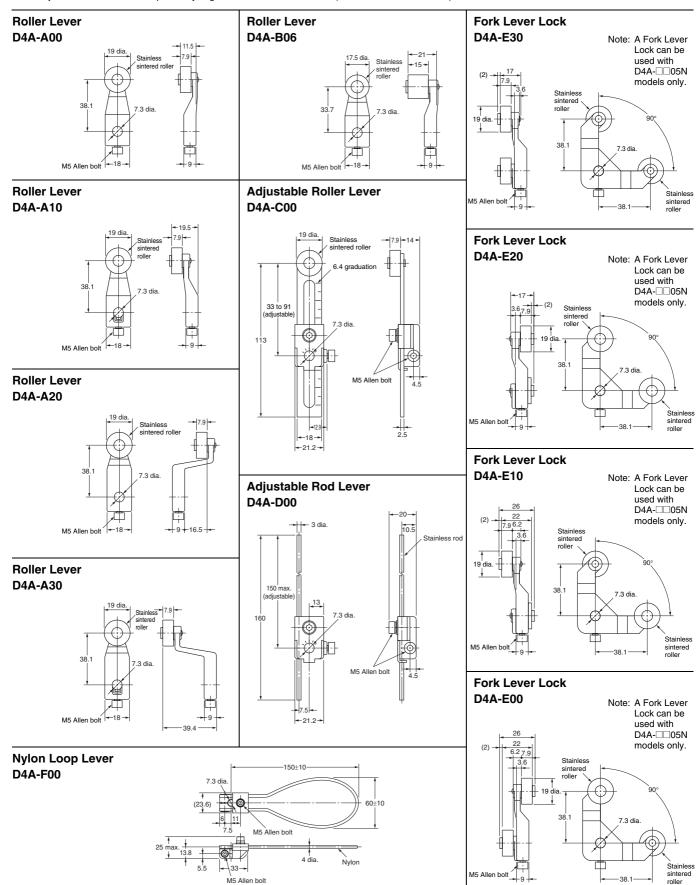
Note: Unless otherwise specified, a tolerance of ± 0.4 mm applies to all dimensions.

Model SPDT Double-break				DPDT Double-break					
Operating characteristics D4A-3□12N D4A-3□14N D4A-3□15N D4				D4A-3□16N	D4A-4□12N	D4A-4□14N	D4A-4□15N	D4A-4□16N	
Operating force OF max.	0.98 N		1.47 N			1.47 N			
Pretravel PT max.	15° (5°)		15° (5°)			15° (5°)			

Note: The figures in the parentheses are average values.

Levers (for Roller Lever Switches)

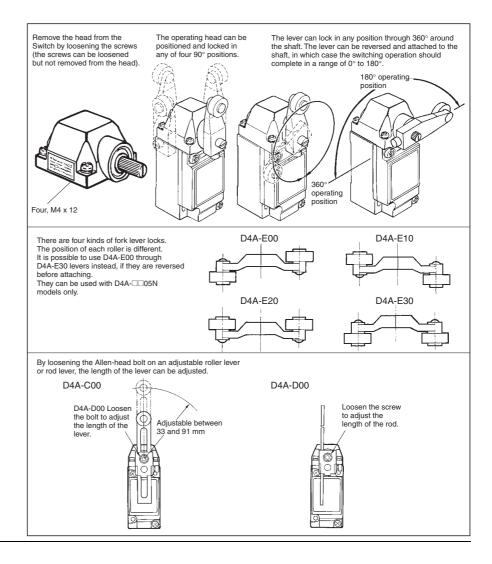
Note: No D4A-0003N or D4A-0004N head should be used with the adjustable roller lever or mechanical malfunctioning could result because the total weight of the adjustable roller lever is comparatively large. Use a standard-load head (D4A-0001N or D4A-0002N) instead.



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

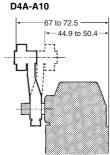
Head and Lever Positions

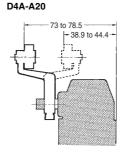
- The operating head can be positioned and locked in any of four 90° positions and a lever can lock in any position through 360° around the shaft of the Limit Switch. Furthermore, the lever can be reversed and attached to the shaft (refer to the figures below on the right hand side). Therefore the roller is compatible with a wide movement range of a dog.
- A Fork Lever Lock can be used with maintained models (D4A-0005N) only.

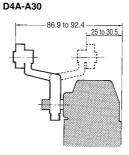


D4A-A00 59 to 64.5 52.9 to 58.4

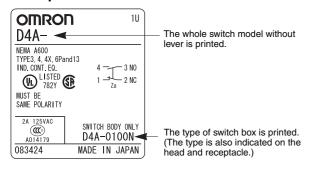
Lever Position







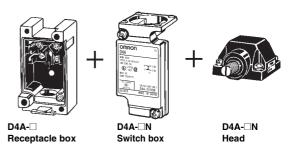
Nameplate



When ordering, do not confuse set model numbers and model numbers for individual blocks.

Compatibility with D4A-□

The D4A- \square N is compatible with the D4A- \square when the following accessories are attached to the D4A- \square N.



The D4A- \square N without the above accessories is not compatible with the D4A- \square .

Safety Precautions

Refer to Safety Precautions for All Limit Switches.

Precautions for Correct Use

Operating Environment

- Seal material may deteriorate if a Switch is used outdoor or where subject to special cutting oils, solvents, or chemicals. Always appraise performance under actual application conditions and set suitable maintenance and replacement periods.
- Install Switches where they will not be directly subject to cutting chips, dust, or dirt. The Actuator and Switch must also be protected from the accumulation of cutting chips or sludge.



- Constantly subjecting a Switch to vibration or shock can result in wear, which can lead to contact interference with contacts. operation failure, reduced durability, and other problems. Excessive vibration or shock can lead to false contact operation or damage.
- Install Switches in locations not subject to shock and vibration and in orientations that will not produce resonance.
- The Switches have physical contacts. Using them in environments containing silicon gas will result in the formation of silicon oxide (SiO₂) due to arc energy. If silicon oxide accumulates on the contacts, contact interference can occur. If silicon oil, silicon filling agents, silicon cables, or other silicon products are present near the Switch, suppress arcing with contact protective circuits (surge killers) or remove the source of silicon gas.

Changing the Operating Direction

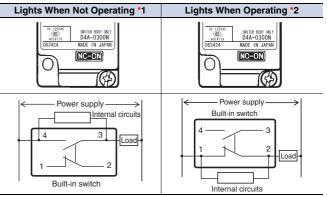
Roller Lever Switch

The head of the side rotary type can be converted in seconds to CW, CCW, or both-way operation. Follow the procedures on the right hand side for conversion (not applicable to the Maintained, Sequential Operating, Center Neutral Operating Switches).

Operating Part (Rear of Head)	Procedures
Operating position arrow marks	Dismount the head by loosening the four screws that secure it.
	Turn over the head to set the desired operation (CW, CCW, or both). The desired side can be selected by setting the mode selector knob shown in the figure. This knob is factory set to the "CW+CCW" (both-way operation) position.
	When set to the CW position, the head rotates in clockwise direction. When set to the CCW position, the head rotates in counterclockwise direction. In either case, be sure to accurately align the arrow mark to the setting position.

Lighting Mode Selection of Indicators (SPDT only)

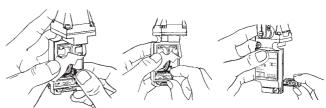
The lighting mode of the operation indicator can be changed easily between two modes: lighting when the Switch is operating and lighting when the Switch is not operating.



- *1. The lamp is lit when the actuator is at the free position. The lamp will be off when the contacts of the Limit Switch have been actuated and snapped to each other at the operating position.
- *2. The lamp is lit when the contacts have been released and snapped only from the operating position.

Change the lighting mode as follows:

- 1. Push the claw securing the lamp section to the right (do not push strongly).
- 2. Remove the lamp section.
- 3. Mount the lamp section so that legend "NC-ON" or "NO-ON" will appear in the display window.



In either case, the lamp will not light when the load is ON.

Mounting

Model	G1/2 Conduit D4A-3□□□N D4A-4□□□N	Mounting lo- cations
Front Mounting	Two, 5.2 **.02 dia. holes or M5 tapped holes 59.5±0.15	• : Mounting locations
Rear Mounting	Two, 6.2 *0.2 dia. holes (Recommended mounting screws: M6. Switch Box depth: 10.) 59.5±0.15	omron Mounting locations

Screw Tightening Torques for Heads and Switch Boxes

To maintain the high sealing capability of the Limit Switch, tighten the screws for the head and switch box with the following torques:

Head (four 12-mm M4 screws): 1.2 to 1.4 N·m Switch box (two 20-mm M5 screws): 2.4 to 2.7 N·m

Solderless Terminals

The D4A- \square N with DPDT double-break incorporates solderless terminals.

Operation

- The operating methods, cam and dog shapes, operating frequency, and overtravel (OT) have a significant effect on the service life and accuracy of the Limit Switch. The shape of the cam should be as smooth as possible.
- A marginal overtravel (OT) value should be set. The ideal value is the rated OT value x 0.7.
- The actuator should not be remodeled to change the operating position.

Connectors

To satisfy IP67, apply sealing tape to the connector conduit. Appropriate external diameter of cables is 5.5 to 14 dia. Use OMRON's SC- \square M Series.

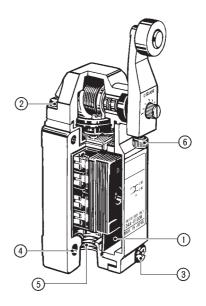
Tighten the Connectors to a torque of 1.8 to 2.2 N·m.

Maintenance and Repair

The user must not maintain or repair equipment incorporating any D4A-N model. Contact the manufacturer of the equipment for any maintenance or repairs required.

Appropriate Tightening Torque

A loose screw may cause malfunctions. Be sure to tighten each screw to the proper tightening torque as shown in the table.

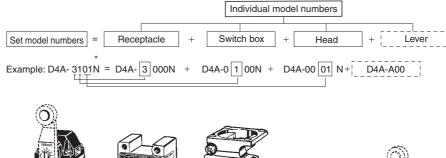


No.	Туре	Appropriate tightening torque
1	Terminal screws (M3.5 screws) (including grounding terminals)	0.78 to 0.88 N⋅m
2	Head mounting screws	1.18 to 1.37 N·m
3	Switch box mounting screws	2.35 to 2.75 N·m
4*	Body mounting screws	4.90 to 5.88 N·m
5	Connectors	1.77 to 2.16 N·m
6	Actuator mounting screws	2.45 to 2.65 N·m

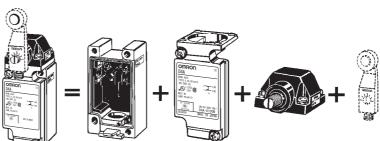
^{*} When using M5 Allen-head bolts, particularly when the head direction has been changed, check the torque of each screw and make sure that the screws are free of foreign substances, and that each screw is tightened to the proper torque

How to Order

The D4A- \square N is compatible with the D4A- \square when the following accessories are attached to the D4A- \square N.



* The D4A-□N without the above accessories is not compatible with the D4A-□.



Read and Understand This Catalog

Please read and understand this catalog before purchasing the products. Please consult your OMRON representative if you have any questions or comments.

Warranty and Limitations of Liability

WARRANTY

OMRON's exclusive warranty is that the products are free from defects in materials and workmanship for a period of one year (or other period if specified) from date of sale by OMRON.

OMRON MAKES NO WARRANTY OR REPRESENTATION, EXPRESS OR IMPLIED, REGARDING NON-INFRINGEMENT, MERCHANTABILITY, OR FITNESS FOR PARTICULAR PURPOSE OF THE PRODUCTS. ANY BUYER OR USER ACKNOWLEDGES THAT THE BUYER OR USER ALONE HAS DETERMINED THAT THE PRODUCTS WILL SUITABLY MEET THE REQUIREMENTS OF THEIR INTENDED USE. OMRON DISCLAIMS ALL OTHER WARRANTIES, EXPRESS OR IMPLIED.

LIMITATIONS OF LIABILITY

OMRON SHALL NOT BE RESPONSIBLE FOR SPECIAL, INDIRECT, OR CONSEQUENTIAL DAMAGES, LOSS OF PROFITS OR COMMERCIAL LOSS IN ANY WAY CONNECTED WITH THE PRODUCTS, WHETHER SUCH CLAIM IS BASED ON CONTRACT, WARRANTY, NEGLIGENCE, OR STRICT LIABILITY

In no event shall the responsibility of OMRON for any act exceed the individual price of the product on which liability is asserted.

IN NO EVENT SHALL OMRON BE RESPONSIBLE FOR WARRANTY, REPAIR, OR OTHER CLAIMS REGARDING THE PRODUCTS UNLESS OMRON'S ANALYSIS CONFIRMS THAT THE PRODUCTS WERE PROPERLY HANDLED, STORED, INSTALLED, AND MAINTAINED AND NOT SUBJECT TO CONTAMINATION, ABUSE, MISUSE, OR INAPPROPRIATE MODIFICATION OR REPAIR.

Application Considerations

SUITABILITY FOR USE

OMRON shall not be responsible for conformity with any standards, codes, or regulations that apply to the combination of products in the customer's application or use of the products.

At the customer's request, OMRON will provide applicable third party certification documents identifying ratings and limitations of use that apply to the products. This information by itself is not sufficient for a complete determination of the suitability of the products in combination with the end product, machine, system, or other application or use.

The following are some examples of applications for which particular attention must be given. This is not intended to be an exhaustive list of all possible uses of the products, nor is it intended to imply that the uses listed may be suitable for the products:

- Outdoor use, uses involving potential chemical contamination or electrical interference, or conditions or uses not described in this catalog.
- Nuclear energy control systems, combustion systems, railroad systems, aviation systems, medical equipment, amusement machines, vehicles, safety equipment, and installations subject to separate industry or government regulations.
- Systems, machines, and equipment that could present a risk to life or property.

Please know and observe all prohibitions of use applicable to the products.

NEVER USE THE PRODUCTS FOR AN APPLICATION INVOLVING SERIOUS RISK TO LIFE OR PROPERTY WITHOUT ENSURING THAT THE SYSTEM AS A WHOLE HAS BEEN DESIGNED TO ADDRESS THE RISKS, AND THAT THE OMRON PRODUCTS ARE PROPERLY RATED AND INSTALLED FOR THE INTENDED USE WITHIN THE OVERALL EQUIPMENT OR SYSTEM.

PROGRAMMABLE PRODUCTS

OMRON shall not be responsible for the user's programming of a programmable product, or any consequence thereof.

Disclaimers

CHANGE IN SPECIFICATIONS

Product specifications and accessories may be changed at any time based on improvements and other reasons.

It is our practice to change model numbers when published ratings or features are changed, or when significant construction changes are made. However, some specifications of the products may be changed without any notice. When in doubt, special model numbers may be assigned to fix or establish key specifications for your application on your request. Please consult with your OMRON representative at any time to confirm actual specifications of purchased products.

DIMENSIONS AND WEIGHTS

Dimensions and weights are nominal and are not to be used for manufacturing purposes, even when tolerances are shown.

PERFORMANCE DATA

Performance data given in this catalog is provided as a guide for the user in determining suitability and does not constitute a warranty. It may represent the result of OMRON's test conditions, and the users must correlate it to actual application requirements. Actual performance is subject to the OMRON Warranty and Limitations of Liability.

ERRORS AND OMISSIONS

The information in this document has been carefully checked and is believed to be accurate; however, no responsibility is assumed for clerical, typographical, or proofreading errors, or omissions.

2008.11

In the interest of product improvement, specifications are subject to change without notice.

