

Heavy-Duty Switch Features Plug-In Construction

- Oiltight, watertight construction meets NEMA 3, 4, 4X, 6P and 13
- Convenient front mounting, easy installation and maintenance
- Wide temperature range: -40° to 100°C (-40° to 212°F)
- Choose operation status models with LED or neon lamp indicators
- Side rotary switches accept a wide selection of levers
- Increased mechanical durability



Ordering Information

■ SIDE ROTARY SWITCHES

When ordering side rotary switches, order the levers separately from the next page.

Description	SPDT double break			DPDT double break
	No indicator	Neon lamp	LED indicator	No indicator
Standard	D4A-1101N	D4A-1301N	D4A-1E01N	D4A-2501N
High-precision	D4A-1102N	D4A-1302N	D4A-1E02N	D4A-2502N
Low torque	D4A-1103N	D4A-1303N	D4A-1E03N	D4A-2503N
High precision/low torque	D4A-1104N	D4A-1304N	D4A-1E04N	D4A-2504N
Maintained contact	D4A-1105N	D4A-1305N	D4A-1E05N	D4A-2505N
Sequential operation	—	—	—	D4A-2717N
Center neutral operation	—	—	—	D4A-2918N

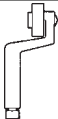
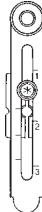
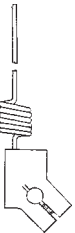
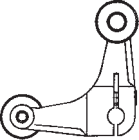
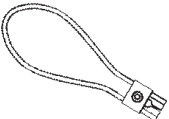
■ SWITCHES WITH BUILT-IN ACTUATORS

Description		SPDT double break			DPDT double break
		No indicator	Neon lamp	LED indicator	No indicator
Side plunger type	Plain	D4A-1106N	D4A-1306N	D4A-1E06N	D4A-2506N
	Vertical roller	D4A-1107-V-N	D4A-1307-V-N	D4A-1E07-V-N	D4A-2507-V-N
	Horizontal roller	D4A-1107-H-N	D4A-1307-H-N	D4A-1E07-H-N	D4A-2507-V-N
	Adjustable plunger	D4A-1108N	D4A-1308N	D4A-1E08N	D4A-2508N
Top plunger type	Plain	D4A-1109N	D4A-1309N	D4A-1E09N	D4A-2509N
	Roller	D4A-1110N	D4A-1310N	D4A-1E10N	D4A-2510N
	Adjustable plunger	D4A-1111N	D4A-1311N	D4A-1E11N	D4A-2511N
Wobble lever type	Spring wire	D4A-1112N	D4A-1312N	D4A-1E12N	D4A-2512N
	Piano wire rod	D4A-1114N	D4A-1314N	D4A-1E14N	D4A-2514N
	Stainless steel rod	D4A-1124N	D4A-1324N	D4A-1E24N	D4A-2524N
	Cat whisker	D4A-1115N	D4A-1315N	D4A-1E15N	D4A-2515N
	Coil spring	D4A-1116N	D4A-1316N	D4A-1E16N	D4A-2516N

■ OPTIONS

Add "-F" suffix for Viton® fluoroelastomer seals that withstand temperatures to 120°C (248°F). For example, **D4A-1101N-F**.

LEVERS FOR D4A-N SIDE ROTARY SWITCHES

Description		Lever radius	Material	Diameter	Width	Part number
Standard roller levers, front mount 		38.1 mm (1.5 in)	Stainless steel	19.1 mm (0.75 in)	7.9 mm (0.31 in)	D4A-A00
		33.7 mm (1.33 in)	Stainless steel	17.5 mm (0.69 in)	15 mm (0.59 in)	D4A-B06
		38.0 mm (1.5 in)	Ball bearing	17.0 mm (0.67 in)	6 mm (0.24 in)	WL-1A400
		38.0 mm (1.5 in)	Nylon	17.5 mm (0.69 in)	30 mm (1.18 in)	WL-1A104
		50.0 mm (1.97 in)	Stainless steel	17.5 mm (0.69 in)	15 mm (0.59 in)	WL-1A200
		63.0 mm (2.48 in)	Stainless steel	17.5 mm (0.69 in)	7.0 mm (0.28 in)	WL-1A300
Standard roller lever, back mount 		38.1 mm (1.5 in)	Stainless steel	19.1 mm (0.75 in)	7.9 mm (0.31 in)	D4A-A10
		38.1 mm (1.5 in)	Nylon	50 mm (1.97 in)	7.0 mm (0.28 in)	WL-1A106
Offset roller lever 	Front mount	38.1 mm (1.5 in)	Stainless steel	19.1 mm (0.75 in)	7.9 mm (0.31 in)	D4A-A20
	Back mount	38.1 mm (1.5 in)	Stainless steel	19.1 mm (0.75 in)	7.9 mm (0.31 in)	D4A-A30
Adjustable roller lever, front mount 		25 to 89 mm (0.98 to 3.5 in) L	Nylon	17.5 mm (0.69 in)	7.0 mm (0.28 in)	WL-2A111
		33 to 91 mm (1.3 to 3.6 in) L	Stainless steel	19.1 mm (0.75 in)	7.4 mm (0.29 in)	D4A-C00
Spring rod lever 		290 mm (11.5 in) L	Stainless steel	2 mm (0.08 in)	—	WL-4A201
Adjustable rod lever 		150 mm (5.91 in) L	Stainless steel	3 mm (0.12 in)	—	D4A-D00
		350 to 380 mm (13.8 to 15 in) L	Stainless steel	3.2 mm (0.13 in)	—	WL-3A100
Fork roller lever 	L.H. front/ R.H. back	38.1 mm (1.5 in)	Stainless steel	19.1 mm (0.75 in)	7.9 mm (0.31 in)	D4A-E00
		38.0 mm (1.5 in)	Nylon	17.5 mm (0.69 in)	7.0 mm (0.28 in)	WL-5A100
	L.H. back/ R.H. front	38.1 mm (1.5 in)	Stainless steel	19.1 mm (0.75 in)	7.9 mm (0.31 in)	D4A-E10
		38.0 mm (1.5 in)	Nylon	17.5 mm (0.69 in)	7.0 mm (0.28 in)	WL-5A102
	Both front	38.1 mm (1.5 in)	Stainless steel	19.1 mm (0.35 in)	7.9 mm (0.31 in)	D4A-E20
Looped rod 		150 mm (6 in) L	Nylon	4 mm (0.16 in)	60 mm (2.36 in)	D4A-F00

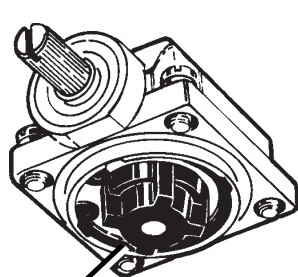
Construction

Head

Side rotary type and side plunger types may be positioned and locked at any of four 90° positions.

Operation Direction Selector

Side rotary heads convert to clockwise, counterclockwise or both ways operation in seconds.



Axis Bearing

Copper alloy material assures long life.

Double Sealed Rugged Shaft

Sealed with an oil seal and X-ring of nitrile butadiene rubber (NBR). Shaft withstands heavy loads, impacts to 180 kg (396 lbs)

Receptacle Box

Easy to wire with convenient plug-in construction. Made of rugged diecast aluminum.

Body Seal

Fully gasketed to seal body to receptacle.

Long-Life Built-In Switch

SPDT double break: 50 million operations
DPDT double break: 30 million operations

Switch Front Mounting Screws

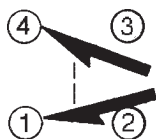
Captive screws are used to prevent screws from getting lost.

Conduit Entrance
1/2-14 NPT

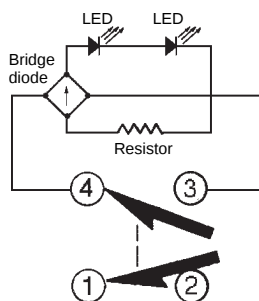
Specifications

CONTACT CONFIGURATION

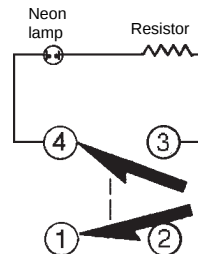
SPDT Double Break with same polarity



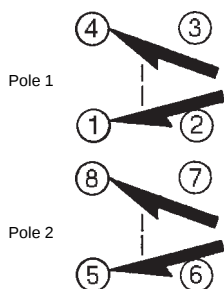
SPDT Double Break with LED Indicator



SPDT Double Break with Neon Lamp Indicator

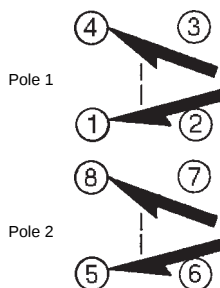


DPDT Double Break with same polarity each pole



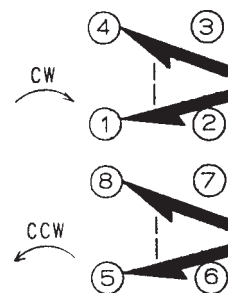
Sequential Operating Type

Pole 1 operates first
Pole 2 operates second
Either CW or CCW or both

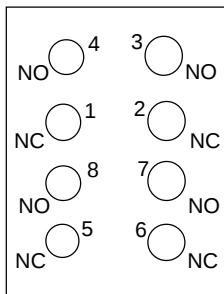


Center Neutral Operating Type

Pole 1 operates CW
Pole 2 operates CCW



■ TERMINAL ARRANGEMENT



■ ELECTRICAL SPECIFICATIONS

NEMA A600 Rating (UL/CSA)

Circuit	Rated voltage	Amperes		Continuous carrying current	Voltamperes	
		Make	Break		Make	Break
SPDT double break	120 VAC	60	6	10	7200	720
	240 VAC	30	3	10	7200	720
	480 VAC	15	1.5	10	7200	720
	600 VAC	12	1.2	10	7200	720

NEMA B600 Rating (UL/CSA)

Circuit	Rated voltage	Amperes		Continuous carrying current	Voltamperes	
		Make	Break		Make	Break
DPDT double break	120 VAC	30	3	5	3600	360
	240 VAC	15	1.5	5	3600	360
	480 VAC	7.5	0.75	5	3600	360
	600 VAC	6	0.6	5	3600	360

NEMA A300 Rating (UL/CSA) for SPDT switches with neon lamp indicators

Circuit	Rated voltage	Amperes		Continuous carrying current	Voltamperes	
		Make	Break		Make	Break
SPDT double break	120 VAC	60	6	10	7200	720
	240 VAC	30	3	10	7200	720

Note: All switches must be the same polarity.

SPDT switches with LED indicators

Circuit	Rated voltage	Load current
SPDT double break	24 VDC	6 A max. (resistive)

Contact Ratings

NEMA A600 for SPDT models
NEMA B600 for DPDT models
NEMA A300 for SPDT models with neon lamp status indicator

Contact Resistance

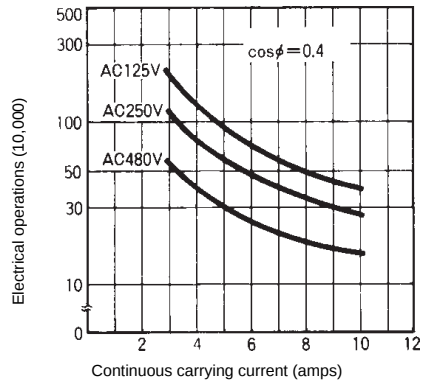
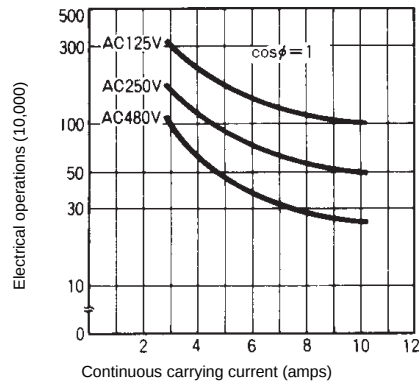
25 mΩ maximum (initial)

Electrical Approvals

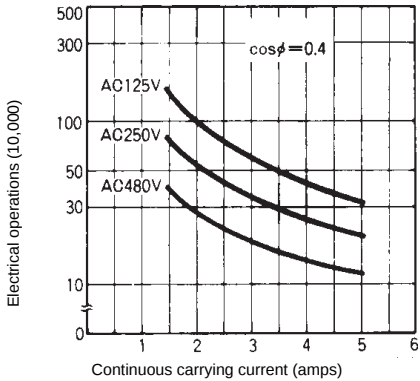
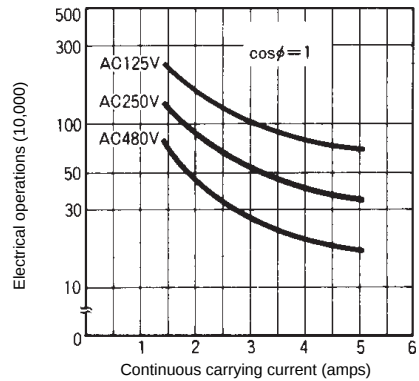
UL Recognized, File No. E76675
CSA Certified, File No. LR45746

Electrical Service Life

D4A-1□□□N SPDT Double Break



D4A-2□□□N DPDT Double Break



MECHANICAL CHARACTERISTICS

Enclosure rating	UL	Types 3, 4, 4X, 6P, 13
	NEMA	Types 1, 2, 3, 4, 4X, 5, 6, 6P, 12 and 13
	IEC 144	IP67
Mechanical life		50 million operations for SPDT; 30 million operations for DPDT
Ambient operating temperature		-40° to 100°C (-40° to 212°F) for side rotary types (except low torque types) -20° to 100°C (-4° to 212°F) for plunger and wobble lever types -10° to 80°C (14° to 176°F) for indicator equipped types -10° to 120°C (14° to 248°F) for Viton sealed type
Vibration	Malfunction durability	10 to 55 Hz, 1.5 mm (0.06 in) double amplitude
Shock	Malfunction durability	60 G for SPDT side rotary types; 30 G for all others
	Mechanical durability	100 G

■ OPERATING CHARACTERISTICS

Legend: OF = Operating Force (max.); RF = Reset Force (min.); OT = Overtravel (min.); PT = Pretravel;
MD = Movement Differential (max.); PO = Positively Open (max.); TT = Total Travel; OP = Operating Position

Side Rotary Switches

Part number	Description	OF max.	RF min.	PT max.	OT min.	MD max.		OP
						SPDT	DPDT	
D4A-□□01N	Standard	4 kg-cm (3.5 lb-in)	0.5 kg-cm (0.4 lb-in)	12° ±3°	70°	4° ±1°	5° ±2°	—
D4A-□□02N	High-precision	4 kg-cm (3.5 lb-in)	0.5 kg-cm (0.4 lb-in)	5° ±2°	75°	3° ±1°	4° ±1°	—
D4A-□□03N	Side rotary, low torque	2 kg-cm (1.7 lb-in)	—	12° ±3°	70°	4° ±1°	5° ±2°	—
D4A-□□04N	Side rotary, high-precision /low torque	2 kg-cm (1.7 lb-in)	—	5° ±2°	75°	3° ±2°	4° ±2°	—
D4A-□□05N	Side rotary, maintained contact	4 kg-cm (3.5 lb-in)	—	55° ±10°	20°	28° ±7°	28° ±7°	—
D4A-□□17N	Side rotary, sequential operation	4 kg-cm (3.5 lb-in)	0.5 kg-cm (0.4 lb-in)	1st pole 7° ±3° 2nd pole 15° ±3°	65°	Each pole 4° ±2°		—
D4A-□□18N	Side rotary, center neutral operation	4 kg-cm (3.5 lb-in)	0.2 kg-cm (0.2 lb-in)	15° ±3°	65°	4° ±1°		—

Note: The operating position depends on the level selected.

Switches with Built-in Actuators

Part number	Description	OF max.	RF min.	OT min.	PT max.	MD max.		OP
						SPDT	DPDT	
D4A-□□06N	Plain side plunger	2 kg (70.5 oz.)	500 g (17.6 oz.)	5.1 mm (0.201 in)	2.4 mm (0.094 in)	0.6 mm (0.024 in)	1.0 mm (0.039 in)	34 ±0.8 mm (1.34 ±0.03 in)
D4A-□□07N	Roller side plunger	2 kg (70.5 oz.)	500 g (17.6 oz.)	5.1 mm (0.201 in)	2.4 mm (0.094 in)	0.6 mm (0.024 in)	1.0 mm (0.039 in)	44 ±0.8 mm (1.73 ±0.03 in)
D4A-□□08N	Adjustable side plunger	2 kg (70.5 oz.)	500 g (17.6 oz.)	5.1 mm (0.201 in)	2.4 mm (0.094 in)	0.6 mm (0.024 in)	1.0 mm (0.039 in)	41 to 47.5 mm (1.61 to 1.87 in)
D4A-□□09N	Plain top plunger	1.8 kg (63.5 oz.)	500 g (17.6 oz.)	5.1 mm (0.201 in)	1.6 mm (0.063 in)	0.4 mm (0.016 in)	1.0 mm (0.039 in)	46 ±0.8 mm (1.81 ±0.03 in)
D4A-□□10N	Roller top plunger	1.8 kg (63.5 oz.)	500 g (17.6 oz.)	5.1 mm (0.201 in)	1.6 (0.063 in)	0.4 mm (0.016 in)	1.0 mm (0.039 in)	56 ±0.8 mm (2.20 ±0.03 in)

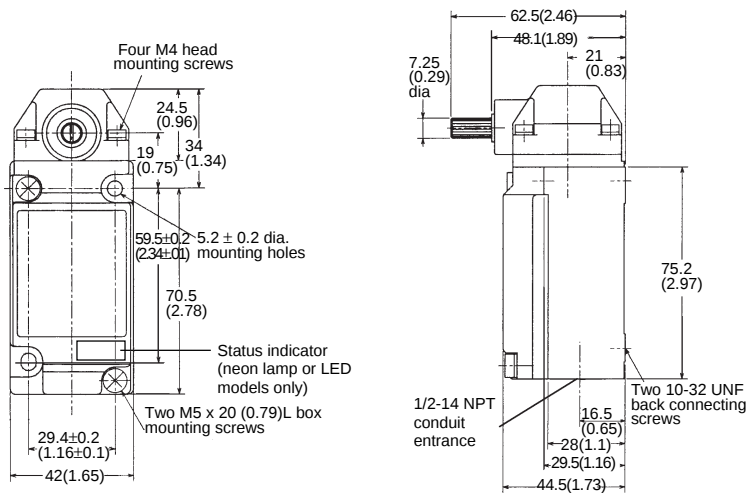
Part number	Description	OF max.	RF min.	OT min.	PT max.	MD max.		OP
						SPDT	DPDT	
D4A-□□11N	Adjustable top plunger	1.8 kg (63.5 oz.)	500 g (17.6 oz.)	5.1 mm (0.201 in)	1.6 mm (0.063 in)	0.4 mm (0.016 in)	1.0 mm (0.039 in)	55.5 to 62 mm (2.19 to 2.44 in)
D4A-□□12N	Spring wire wobble lever	100 g (3.5 oz.)	—	—	5° ±3°, 3.94 in radius	—	—	—
D4A-□□14N	Plastic rod wobble lever	150 g (5.3 oz.)	—	—	5° ±3°, 1.38 in radius	—	—	—
D4A-□□15N	Cat whisker wobble lever	150 g (5.3 oz.)	—	—	5° ±3°, 1.97 in radius	—	—	—
D4A-□□16N	Coil spring wobble lever	150 g (5.3 oz.)	—	—	5° ±3°, 1.97 in radius	—	—	—

Dimensions

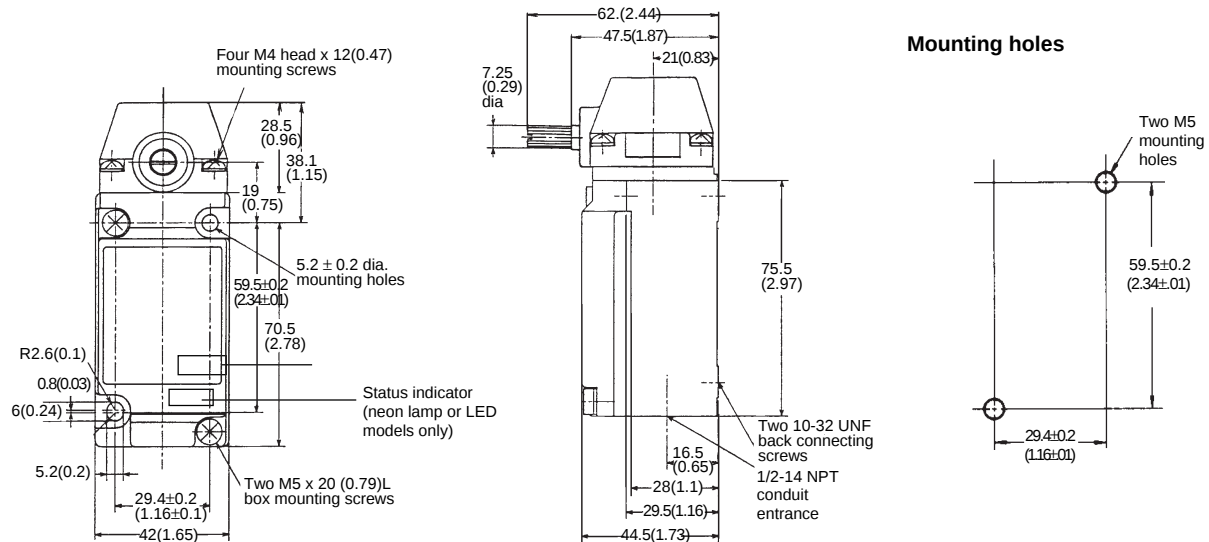
Unit: mm (inch)

■ SIDE ROTARY SWITCHES

D4A-□□01N, D4A-□□02N, D4A-□□03N, D4A-□□04N, D4A-□□17N, D4A-□□18N

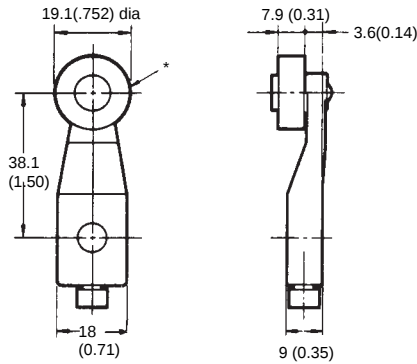


D4A-□□05N



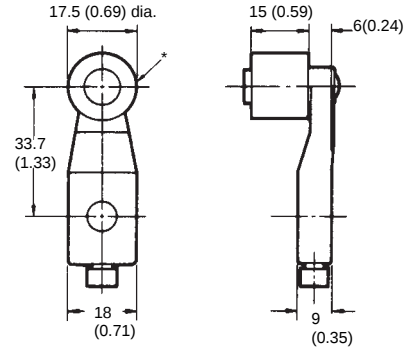
LEVERS FOR SIDE ROTARY SWITCHES

D4A-A00 Standard Roller



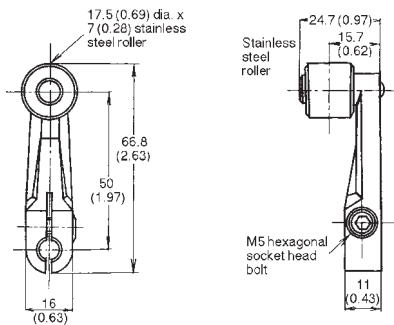
*Sintered roller

D4A-B06 Standard Roller

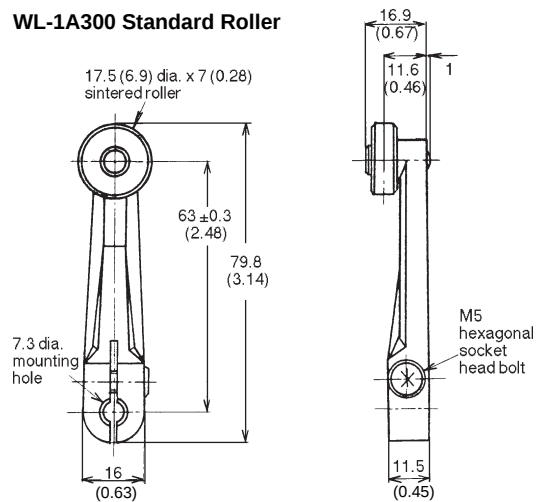


*Sintered roller

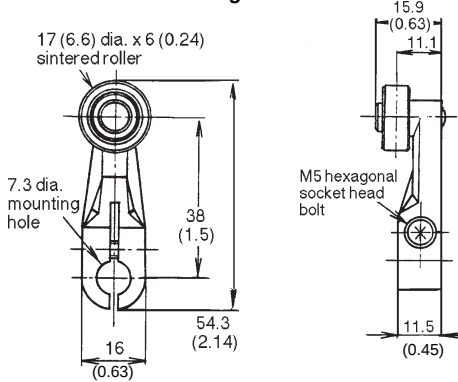
WL-1A200 Standard Roller



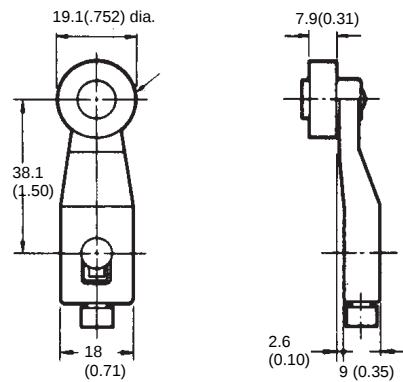
WL-1A300 Standard Roller



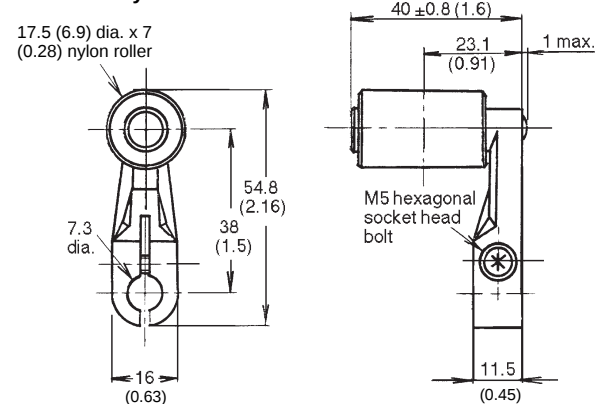
WL-1A400 Ball Bearing Roller



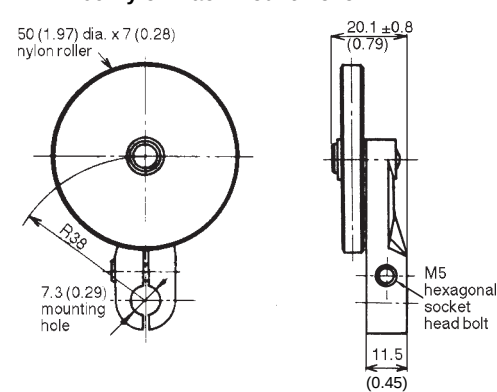
D4A-A10 Back Mount Standard Roller



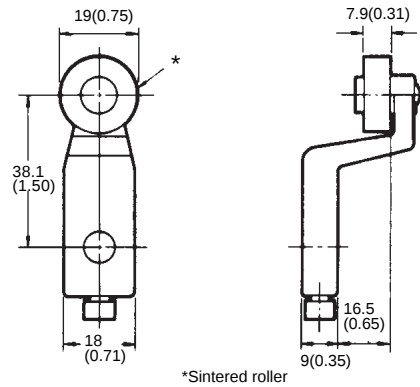
WL-1A104 Nylon Roller



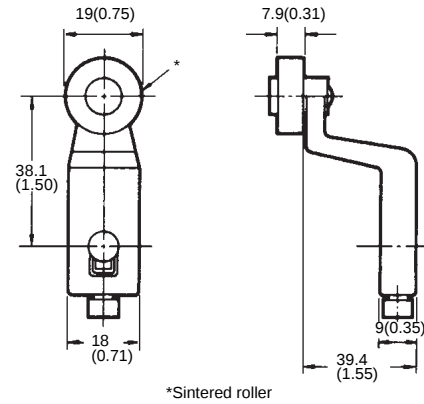
WL-1A106 Nylon Back Mount Roller



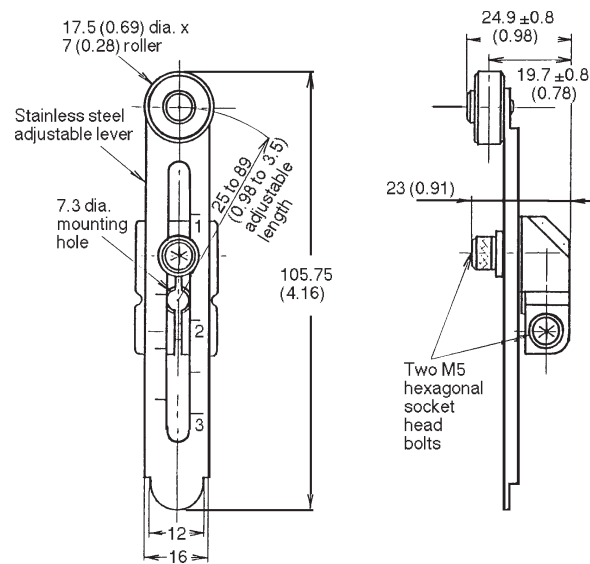
D4A-A20 Front Mounted Offset Roller



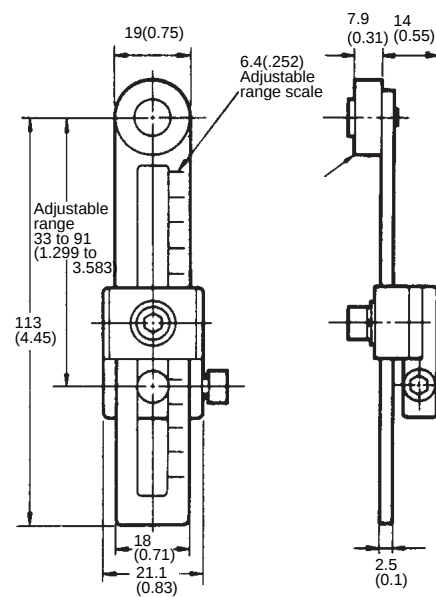
D4A-A30 Back Mounted Offset Roller



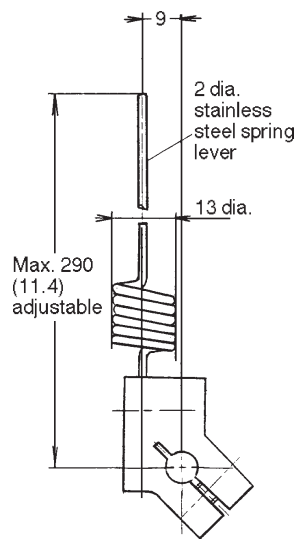
WL-2A111 Adjustable Nylon Roller



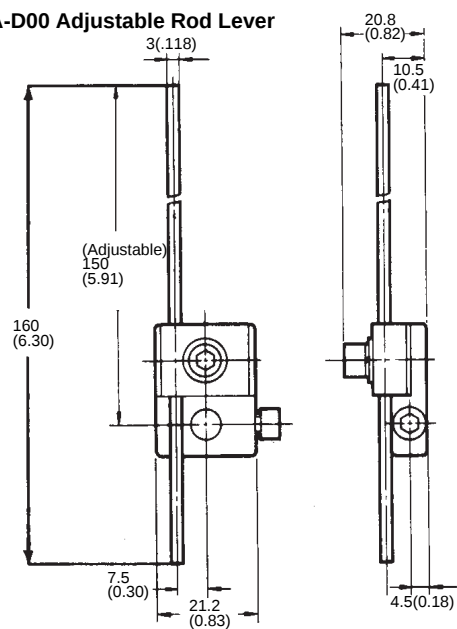
D4A-C00 Adjustable Stainless Steel Roller



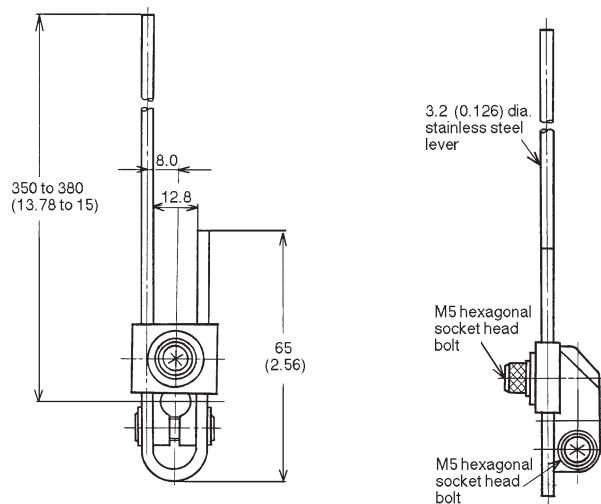
WL-4A201 Spring Rod Lever



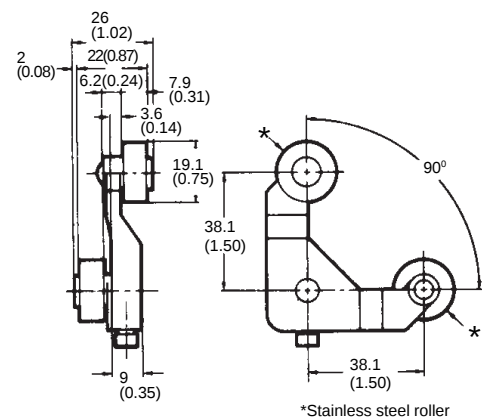
D4A-D00 Adjustable Rod Lever



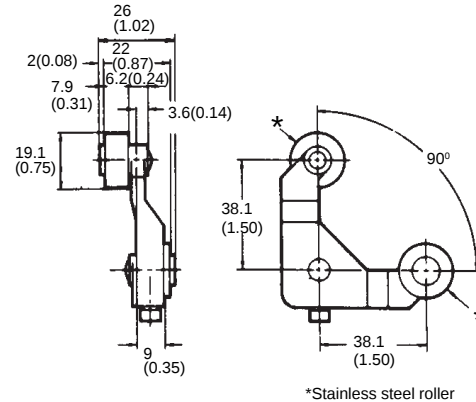
WL-3A100 Adjustable Rod Lever



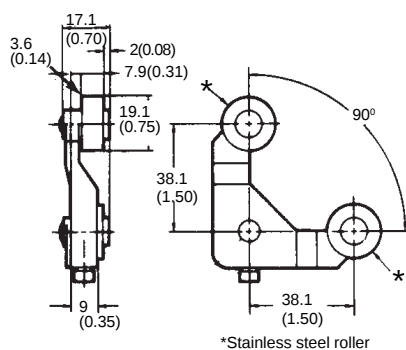
D4A-E00 Fork Roller Lever
(Left roller front/Right roller back)

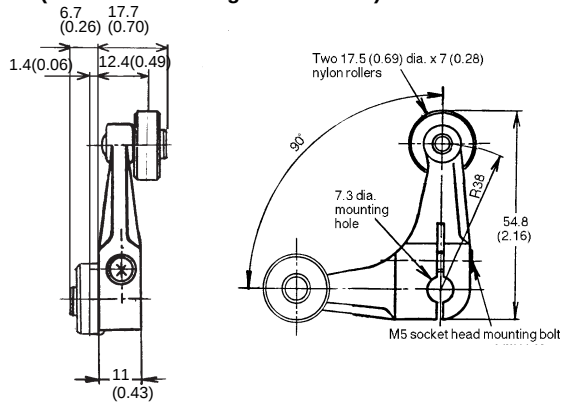
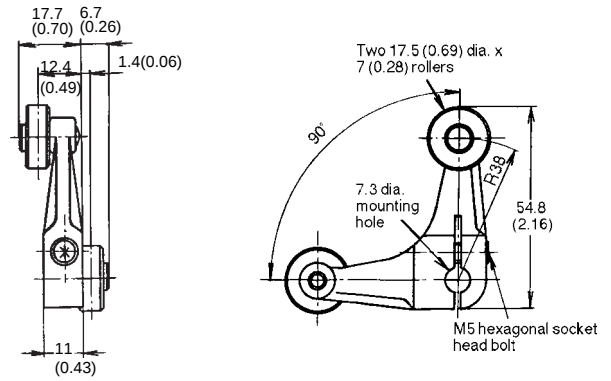
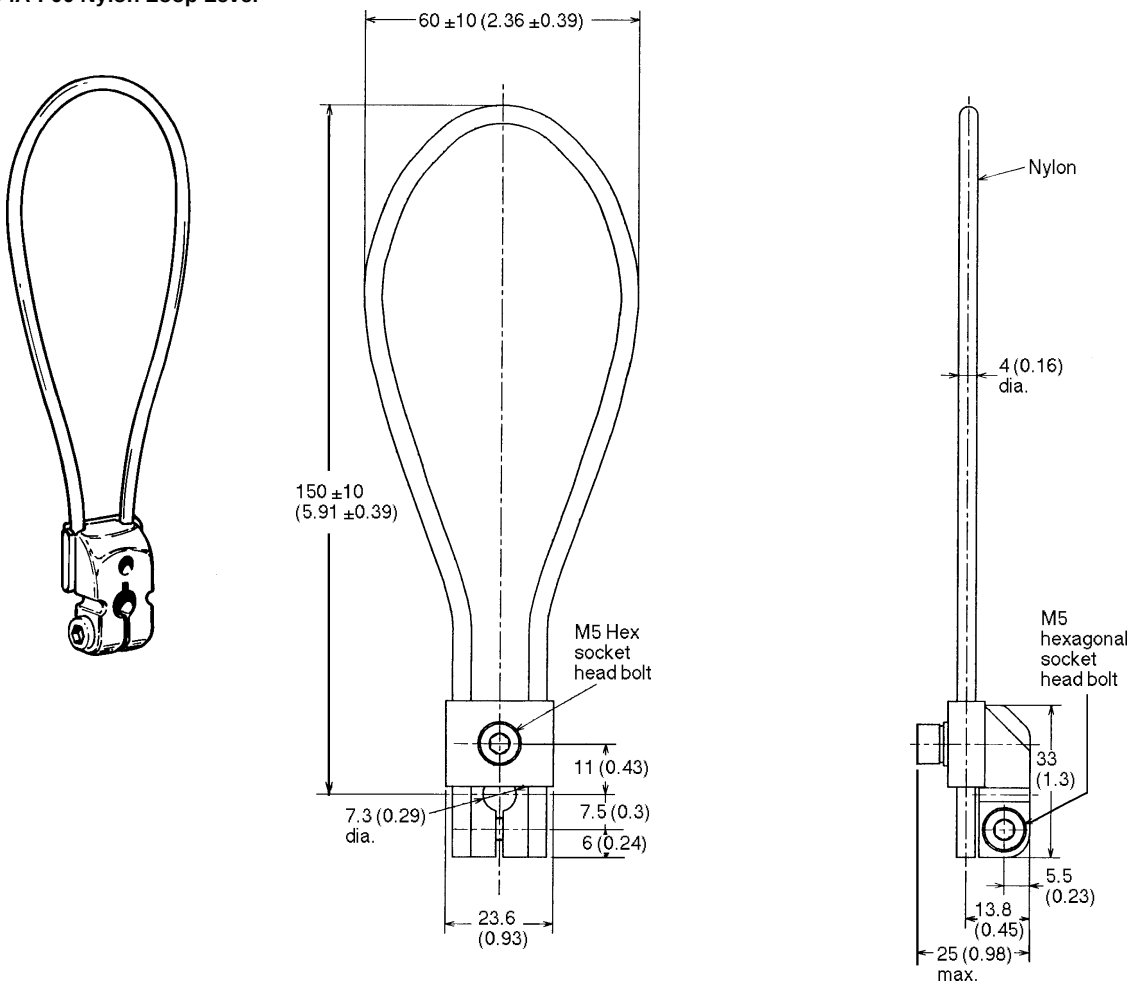


**D4A-E10 Fork Roller Lever
(Left roller back/Right roller front)**



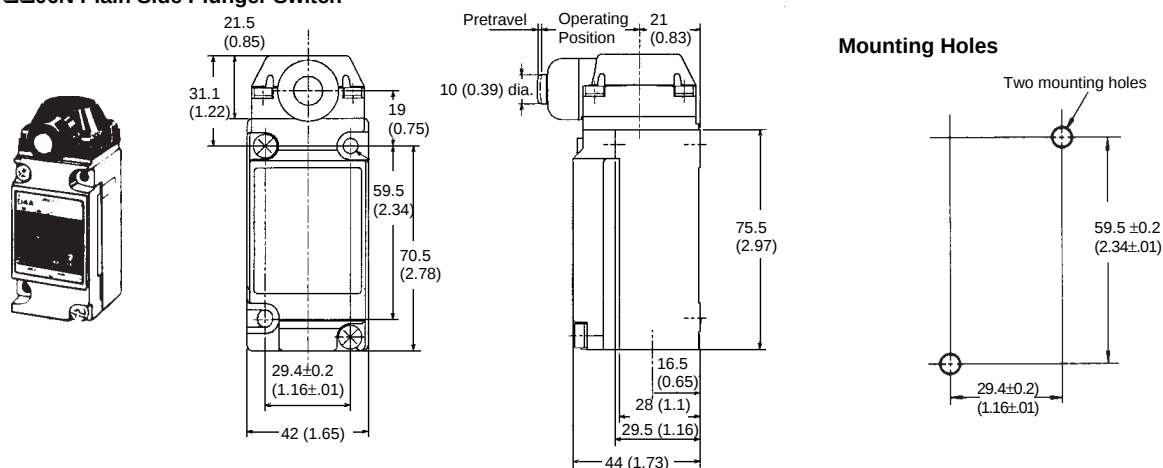
D4A-E20 Fork Roller Lever (Both rollers on front)



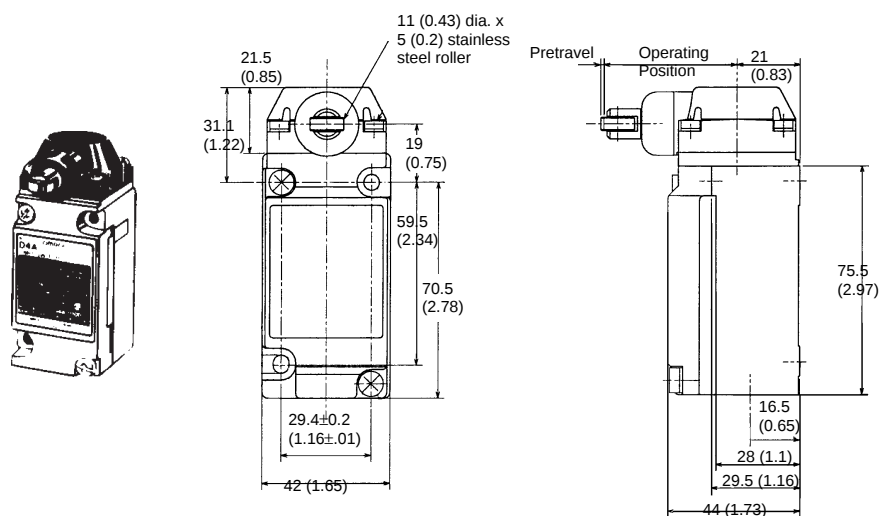
WL-5A100 Nylon Fork Roller Lever
 (Left roller front/Right roller back)

WL-5A102 Nylon Fork Roller Lever
 (Left roller back/Right roller front)

D4A-F00 Nylon Loop Lever


SWITCHES WITH BUILT-IN ACTUATORS

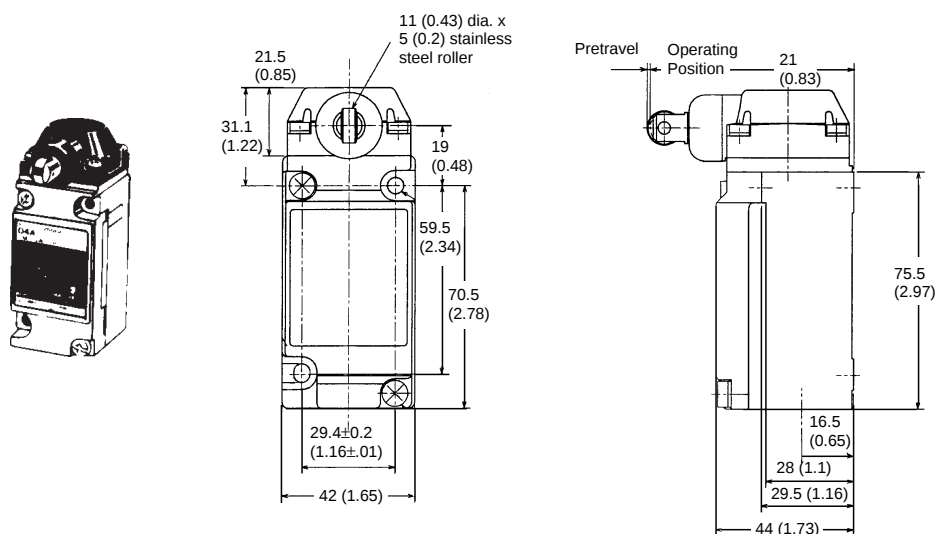
D4A-□□06N Plain Side Plunger Switch



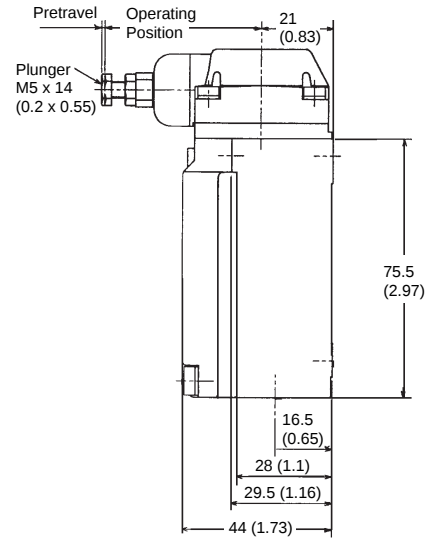
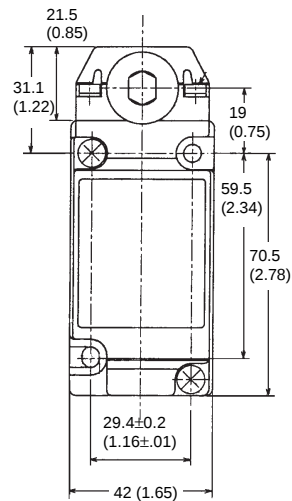
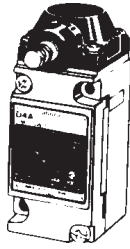
D4A-□□07-HN Horizontal Roller Side Plunger Switch



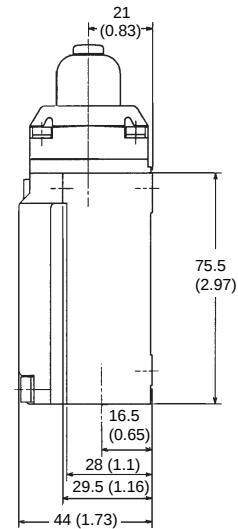
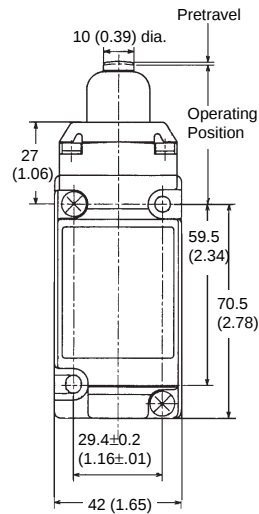
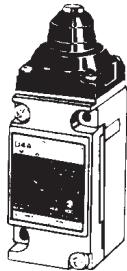
D4A-□□07-VN Vertical Roller Side Plunger Switch



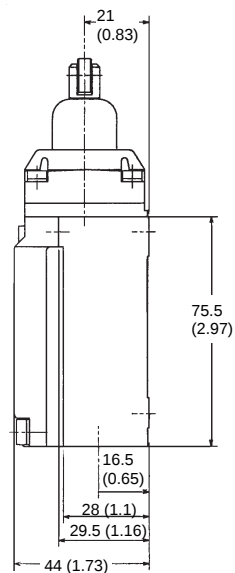
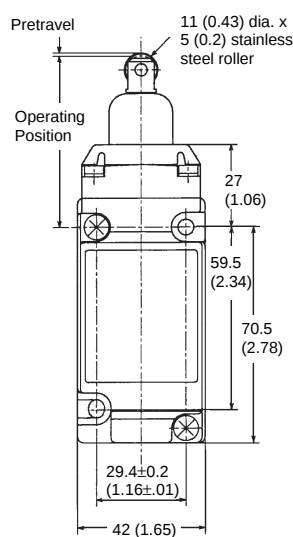
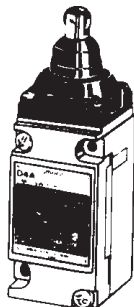
D4A-□□08N Adjustable Side Plunger Switch



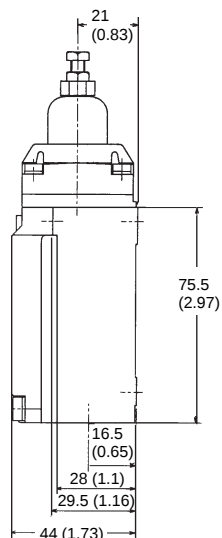
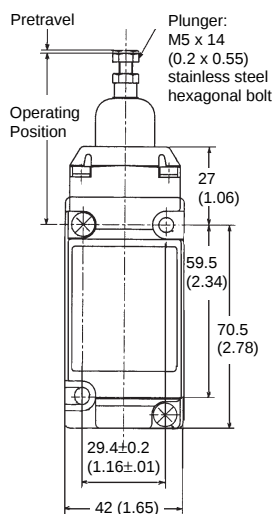
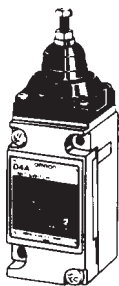
D4A-□□09N Plain Top Plunger Switch



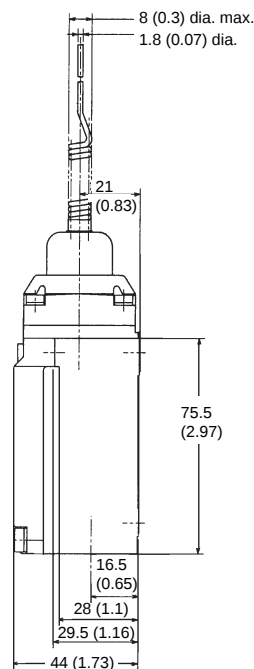
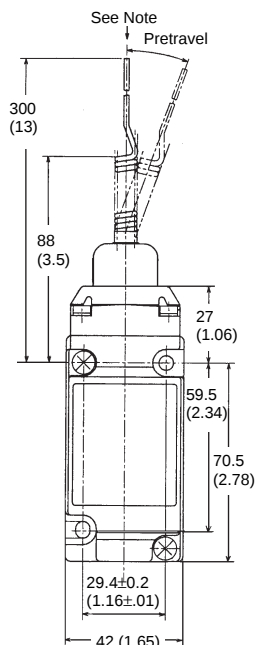
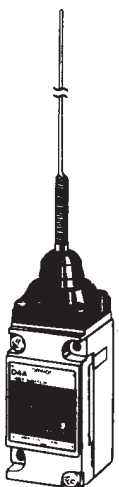
D4A-□□10N Roller Top Plunger Switch



D4A-□□11N Adjustable Top Plunger Switch

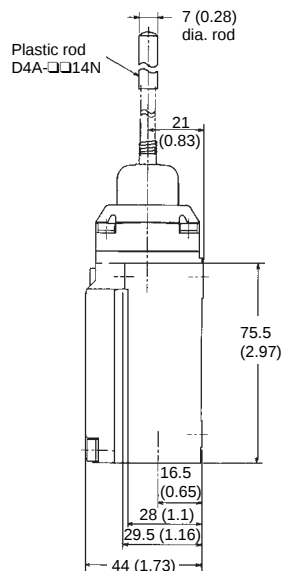
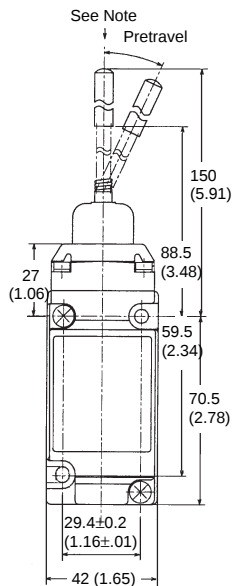
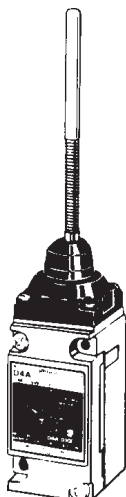


D4A-□□12N Spring Wire Wobble Lever Switch



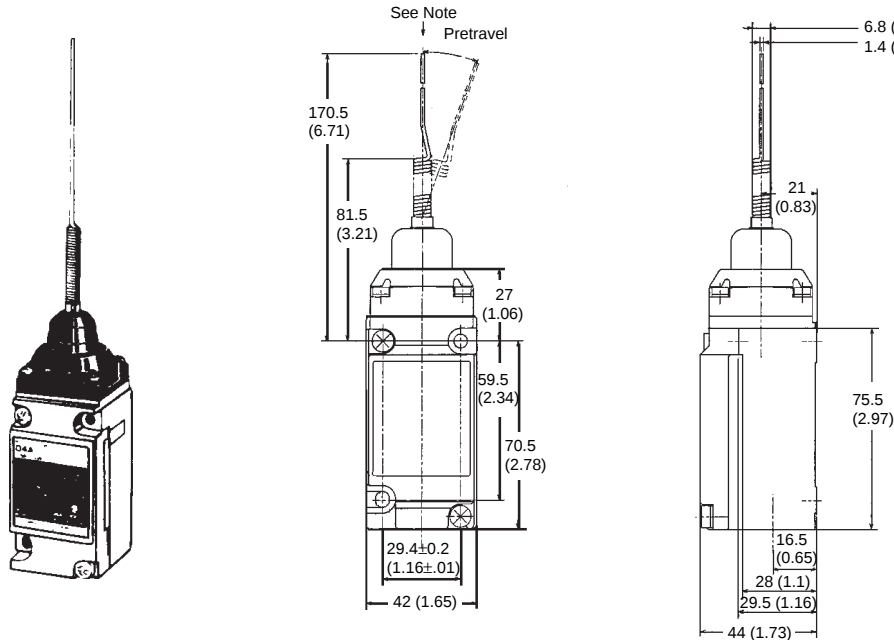
Note:
The coil spring may be operated from any direction except axial direction (↓).

D4A-□□14N Plastic Rod, D4A-□□24N Stainless Steel Spring, Plastic Rod Wobble Lever Switch



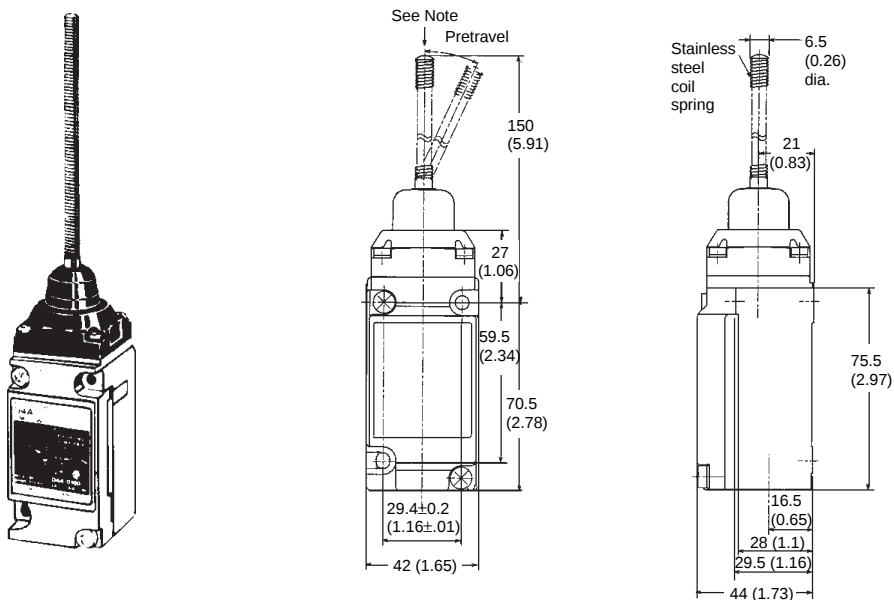
Note:
The coil spring may be operated from any direction except axial direction (↓).

D4A-□□15N Cat Whisker Wobble Lever Switch



Note:
The coil spring may
be operated from any
direction except
axial direction (↓).

D4A-□□16N Coil Spring Wobble Lever Switch



Note:
The coil spring may
be operated from any
direction except
axial direction (↓).

Options

■ VITON® SEALS

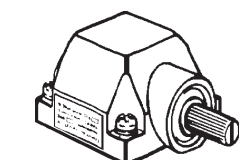
Model D4A-N switches are supplied with nitrile butadiene rubber (NBR) seals as standard. Optional Viton® fluoroelastomer seals are available for applications where the environment has ambient temperatures to 120°C (248°F) or requires increased chemical resistance. Viton seals resist such industrial fluids as Cellulube, Fyrquell, Houghto-Safe, Pydraul and other special cutting and hydraulic oils.

Viton—Reg. TM E.I. DuPont de Nemours & Co.

Installation

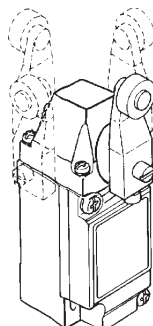
■ CHANGING ACTUATOR AND LEVER ORIENTATION

Operating heads of rotary actuator switches may be positioned and secured in any of four 90° positions to meet applications needs. Loosen the four screws on the switch head using a flat-blade or Phillips screwdriver. Lift the head, then turn it to the desired 90° position. Tighten the screws when done.

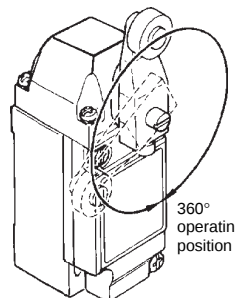


Four M4 x 12

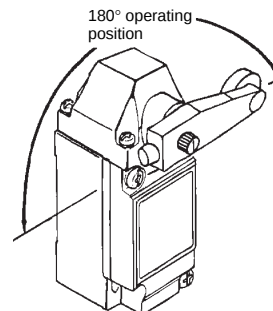
The lever for rotary actuator switches may be positioned anywhere in 360° around the shaft.



Head rotates to any of four 90° positions



360° operating position

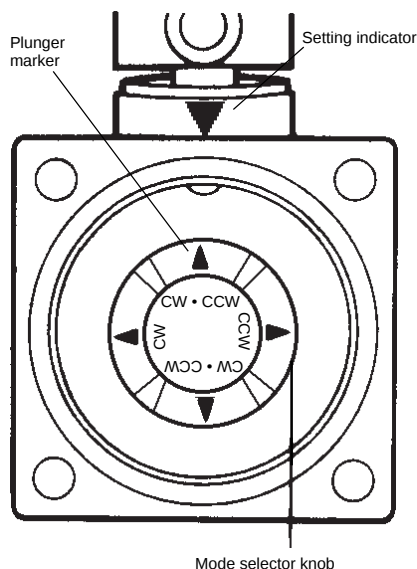


180° operating position

■ SELECTING OPERATING DIRECTION

Rotary actuator switches can be set for clockwise 90° operation (CW) on the right side, counterclockwise 90° operation (CCW) on the left side, or both ways for 90° operation on either the left or right side (CW+CCW).

To change the operating direction, loosen the four screws on the switch head using a flat-blade or Phillips screwdriver. Lift off the head. The mode selector knob is inside the head as shown at right. The plunger marker inside is set for both ways operation (CW+CCW). Turn the knob to the desired operation setting. Replace the head in the direction suitable for the installation, then tighten the four screws.



Mode selector knob

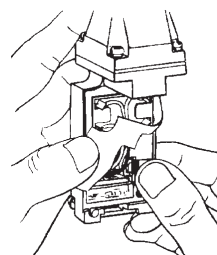
■ CHANGING STATUS INDICATOR TO MATCH SWITCH CONTACTS

Switches with LED or neon lamp status indicators are set to Normally Open at the factory. The indication can be changed to Normally Closed following these simple instructions.

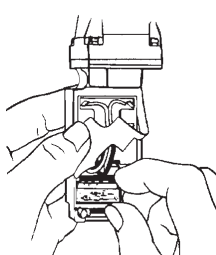
1. Loosen the front panel screws then remove the switch body from the receptacle.
2. Lift the rubber sealing material to reveal the indicator unit.
3. Remove the indicator unit.
4. Turn the indicator unit over and replace it so the desired message appears in the window.
5. Reassemble the switch body and receptacle.

Neon lamp indicator messages		LED indicator messages	
Normally Closed	Normally Open	Normally Closed	Normally Open

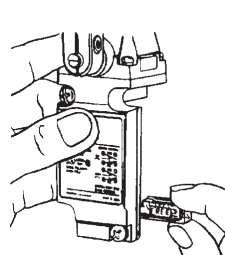
Switch Status Indicator Access



Lift seal



Pull indicator unit



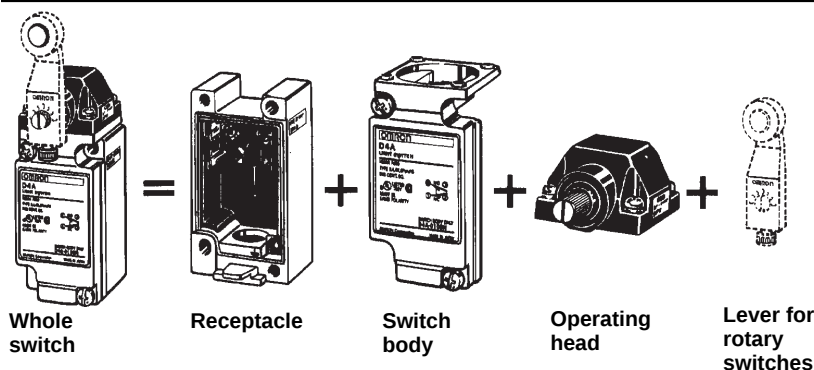
Invert indicator then reinstall

Replacement Parts

■ BUILDING A PART NUMBER

The D4A-N family of switches features plug-in construction with interchangeable parts for simplified long-term maintenance. The illustration at right shows the parts that make up a whole switch, as well as how to read a part number as the sum of its parts.

Note: Compatibility of D4A-N parts with Omron's former D4A series is limited to interchangeable **receptacles** only. D4A switch bodies and operating heads cannot be used to replace similar D4A-N parts.



$$D4A-1101N = D4A-1000N + D4A-0100N + D4A-0001N + D4A-A00 \text{ or } WL-1A200 \text{ (ordered separately)}$$

■ RECEPTACLES

Description	Part number
SPDT double break	D4A-1000N
DPDT double break, also used for sequential operation and center neutral operation switches	D4A-2000N

■ SWITCH BODIES

Omron offers two economical solutions for long-term maintenance of D4A-N limit switches. Choose a complete switch body

with a built-in switch, or just replace the internal switch by removing two screws holding it in place.

Description	Indicator type	Body with built-in switch	Internal switch only
SPDT double break	No indicator	D4A-0100N	D4A-S10N
	Neon lamp indicator	D4A-0300N	—
	LED indicator, 6 A, 24 VDC	D4A-0E00N	—
DPDT double break	No indicator	D4A-0500N	D4A-S50N
Sequential operating type, DPDT	No indicator	D4A-0700N	D4A-S70N
Center neutral operating type, DPDT	No indicator	D4A-0900N	D4A-S90N

■ OPERATING HEADS

For side rotary operating heads listed below, be sure to order an actuator lever from the large selection of D4A and WL parts listed on the second page of this data sheet.

Description	Part number
Standard side rotary	D4A-0001N
High precision side rotary	D4A-0002N
Low torque side rotary	D4A-0003N
High precision/low torque side rotary	D4A-0004N
Maintained contact side rotary	D4A-0005N
Sequential operating side rotary	D4A-0017N
Center neutral operating side rotary	D4A-0018N

Description	Part number
Plain side plunger	D4A-0006N
Vertical side roller plunger	D4A-0007-VN
Horizontal side roller plunger	D4A-0007-HN
Adjustable side plunger	D4A-0008N
Plain top plunger	D4A-0009N
Top roller plunger	D4A-0010N
Adjustable top plunger	D4A-0011N

Description	Part number
Spring wire wobble lever	D4A-0012N
Plastic rod wobble lever	D4A-0014N
Stainless steel rod wobble lever	D4A-0024N
Cat whisker wobble lever	D4A-0015N
Coil spring wobble lever	D4A-0016N

NOTE: ALL DIMENSIONS ARE IN MILLIMETERS. To convert millimeters into inches divide by 25.4.



OMRON ELECTRONICS, INC.
One East Commerce Drive
Schaumburg, IL 60173
1-800-55-OMRON

OMRON CANADA, INC.
885 Milner Avenue
Scarborough, Ontario M1B 5V8
416-286-6465