

Safety Interlock Switches

D4B-□N



Rev. 9.11

Safety Limit Switch

- Snap-action contact with certified direct opening operation.
- Direct opening mechanism (NC contacts only) added to enable opening contacts when faults occur, such as fused contacts.
- Safety of lever settings ensured using a mechanism that engages a gear between the operating position indicator plate and the lever.
- Equipped with a mechanism that indicates the applicable operating zone, as well as push-button switching to control left and right motion.
- Head seal structure strengthened to improve seal properties (TÜV: IEC IP67, UL: NEMA 3, 4, 4X, 6P, and 13).
- Wide standard operating temperature range: -40 to 80°C.
- Models with gold-plated contacts to enable handling microloads.
- Certified standards: UL, CSA, EN (TÜV), and CCC.



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Specifications

Standards and EC Directives

Conforms to the following EC Directives:

- Machinery Directive
- Low Voltage Directive
- EN1088
- EN50041

Certified Standards

Certification body	Standard	File No.
TÜV Rheinland	EN60947-5-1 (certified direct opening mechanism) GS-ET-15	J9851083 ⊕
	EN60947-5-1 (uncertified direct opening mechanism)	J50005477 *
UL	UL508	E76675
CSA	C22.2 No. 14	LR45746
CQC (CCC)	GB14048.5	2003010305077612

*Adjustable roller lever, adjustable rod lever, coil spring, and plastic rod models only.

Certified Standard Ratings

TÜV (EN 60947-5-1), CCC (GB14048.5)

Item	Utilization category	AC-15
Rated operating current (Ie)		2 A
Rated operating voltage (Ue)		400 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) A600

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

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	10	3	1.5		10	5	2.5	
250	10	2	1		10	3	1.5	
400	10	1.5	0.8		3	1.5	0.8	
8 VDC	10	6	3		10	6		
14	10	6	3		10	6		
30	6	4	3		6	4		
125	0.8	0.2	0.2		0.8	0.2		
250	0.4	0.1	0.1		0.4	0.1		

- Notes:
1. The above values are continuous currents.
 2. Inductive loads have a power factor of 0.4 or higher (AC) or a time constant of 7 ms or lower (DC).
 3. Lamp loads have a inrush current of 10 times the normal current.
 4. Motor loads have a inrush current of 6 times the normal current.

Connections

Contact Form

Model	Contact	Contact form	Operating pattern	Remarks
D4B-□1□N	1NC/1NO (Snap-action)		11-12 13-14 	Only NC contact 11-12 has a certified direct opening mechanism. (⊖) Terminal numbers 11-12 and 13-14 cannot be used as unlike poles.
D4B-□5□N	1NC/1NO (Slow-action)		11-12 23-24 	Only NC contact 11-12 has a certified direct opening mechanism. (⊖) Terminal numbers 11-12 or 23-24 can be used as unlike poles.
D4B-□A□N	2NC (Slow-action)		11-12 21-22 	Both NC contacts 11-12 and 21-22 have a certified direct opening mechanism. (⊖) Terminal numbers 11-12 and 21-22 can be used as unlike poles.

Note: Terminal numbers are according to EN50013; contact symbols are according to IEC60947-5-1.

Dimensions

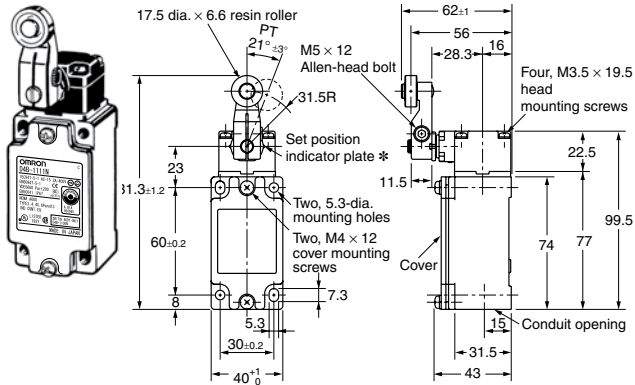
(mm)

Switches

1-conduit Models

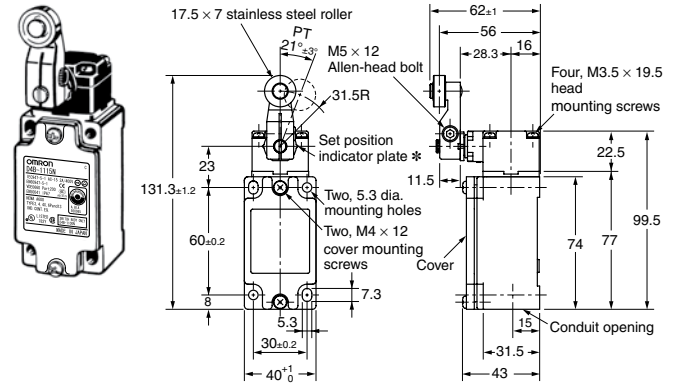
Roller Lever

D4B-□□11N



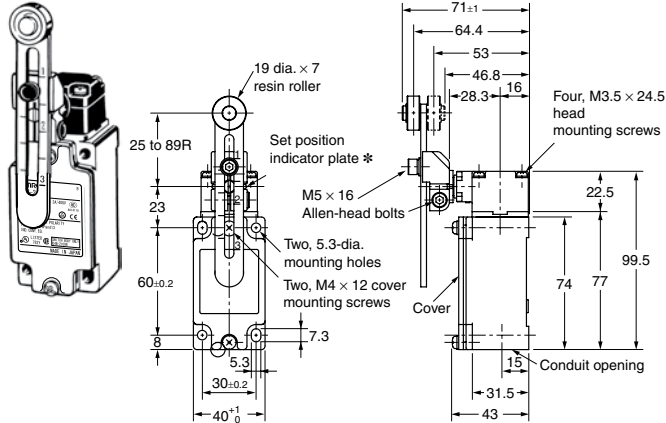
Roller Lever (Stainless Steel Roller)

D4B-□□15N



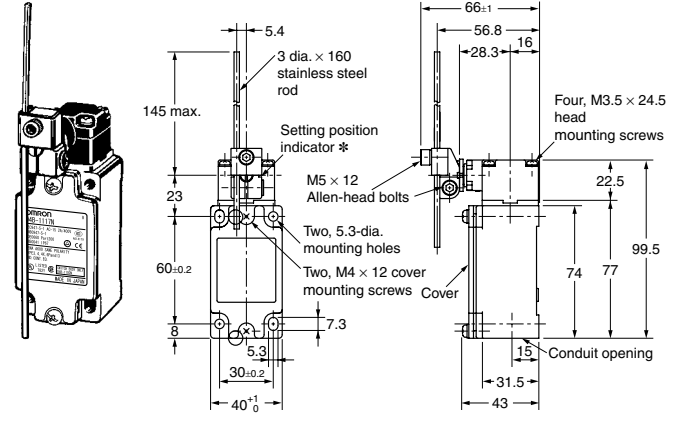
Adjustable Roller Lever

D4B-□□16N



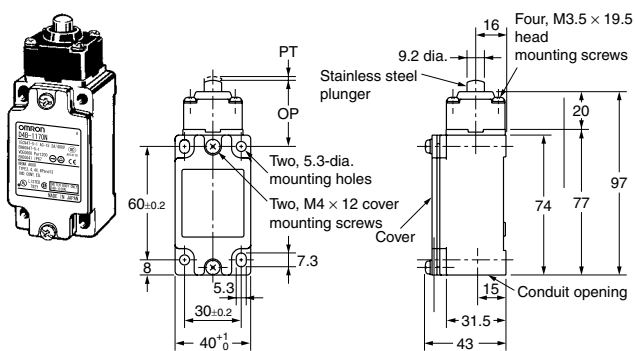
Adjustable Rod Lever

D4B-□□17N



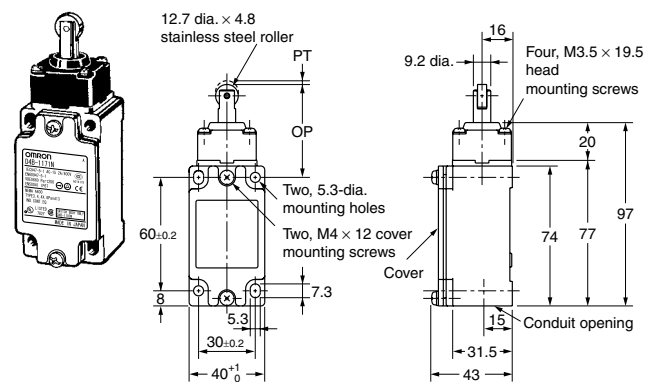
Top Plunger

D4B-□□70N



Top Roller Plunger

D4B-□□71N



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

*The lever can be set to any desired position by turning the operating position indicator.

Note: Omitted dimensions are the same as those for the Roller Lever Type Models. D4B-1□□□N and D4B-5□□□N have a PG13.5 conduit opening.

D4B-2□□□N and D4B-6□□□N have a G1/2 conduit opening. D4B-3□□□N and D4B-7□□□N have a 1/2-14NPT conduit opening.

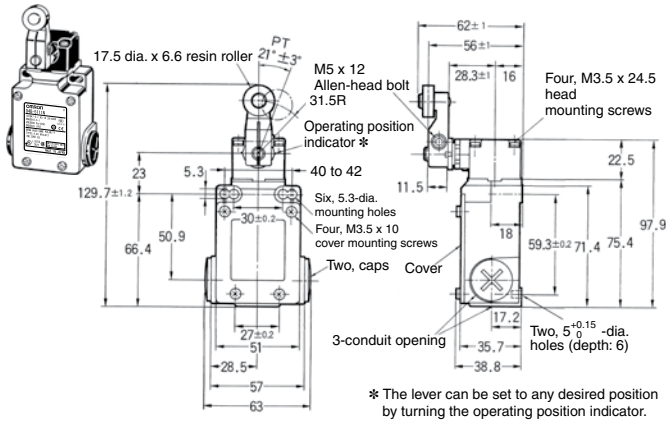
Dimensions (continued)

Switches

3-conduit Models

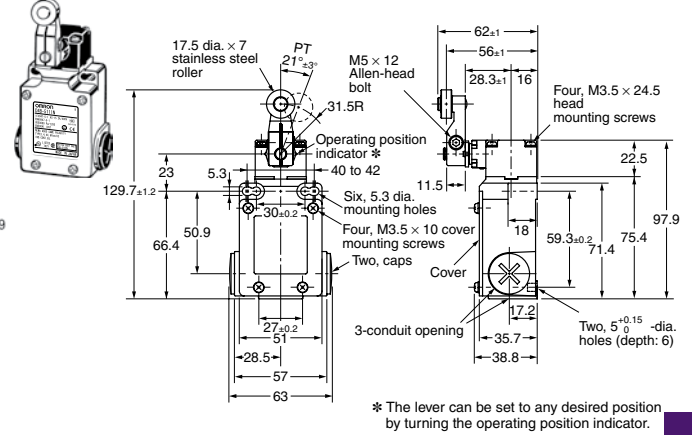
Roller Lever

D4B-□□11N



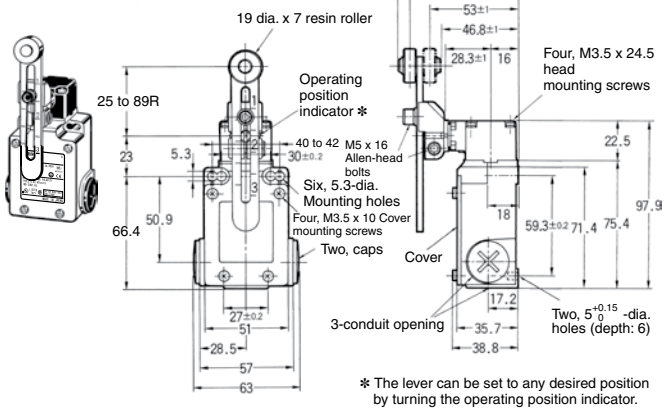
Roller Lever

D4B-□□15N



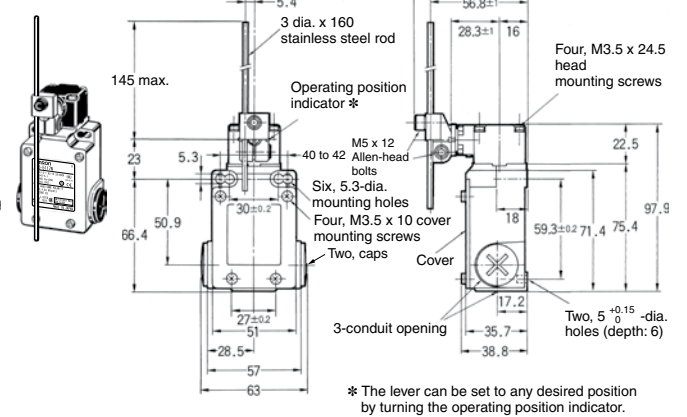
Adjustable Roller Lever

D4B-□□16N



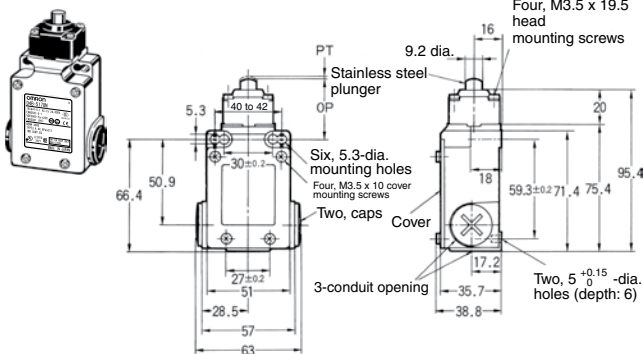
Adjustable Rod Lever

D4B-□□17N



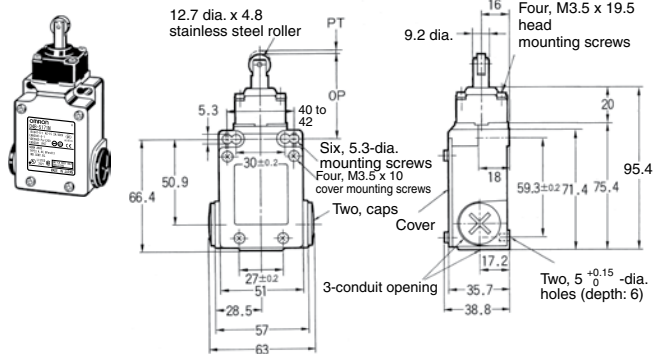
Top Plunger

D4B-□□70N



Top Roller Plunger

D4B-□□71N

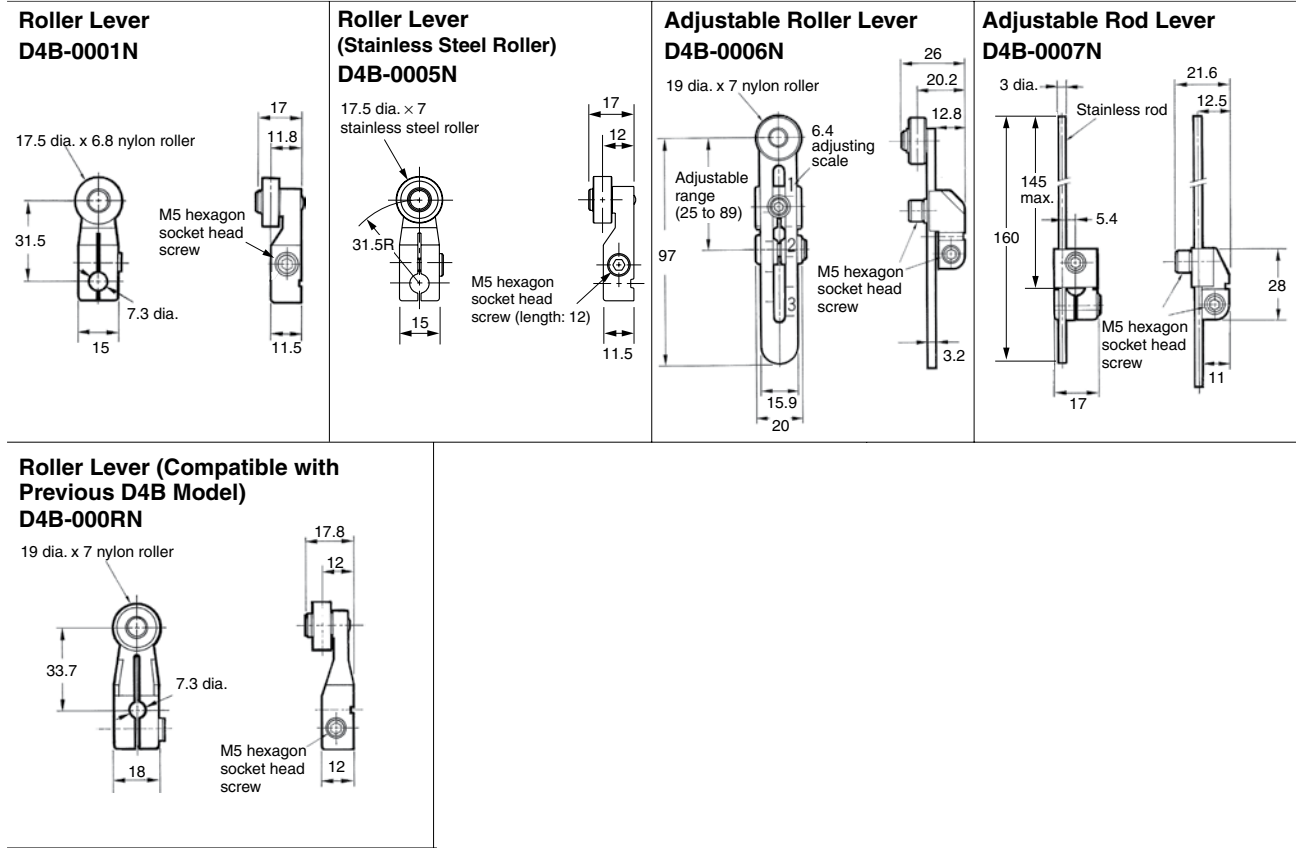


Note: Unless otherwise specified, a tolerance of ±0.4 mm applies to all dimensions.
 *The lever can be set to any desired position by turning the operating position indicator.

Dimensions (continued)

(mm)

Levers (Applicable for roller lever models only.)



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Notes:

1. Unless otherwise specified, a tolerance of ± 0.4 mm applies to all dimensions.
2. Safety Limit Switch specifications are satisfied with D4B-□□□□N Levers only (example: D4B-0001N). The D4B-0006N Adjustable Roller Lever and D4B-0007N Adjustable Rod Lever, however, cannot be used. Do not order them for a Side Rotary Operating Head.

Ordering

Model Number Structure

D4B - □ □ □ N

① ② ③

① Conduit size

- 1: Pg13.5 (1-conduit)
- 2: G1/2 (PF1/2) (1-conduit)
- 3: 1/2-14NPT (1-conduit)
- 4: M20 (1-conduit)
- 5: Pg13.5 (3-conduit)
- 6: G1/2 (PF1/2) (3-conduit)
- 7: 1/2-14NPT (3-conduit)
- 8: M20 (3-conduit)

② Built-in Switch

- 1: 1NC/1NO (snap-action)
- 3: 1NC/1NO (snap-action) gold-plated contacts
- 5: 1NC/1NO (slow-action)*
- 6: 1NC/1NO (slow-action) gold-plated contacts*
- A: 2NC (slow-action)
- B: 2NC (slow-action) gold-plated contacts


*Excluding D4B-□□81N and D4B-□□87N models.

③ Actuator

- 00: Switch box (without head)
- 11: Roller lever (resin roller)
- 15: Roller lever (stainless steel roller)
- 1R: Roller lever (conventional D4B-compatible)
- 16: Adjustable roller lever
- 17: Adjustable rod lever
- 70: Top plunger
- 71: Top roller plunger
- 81: Coil spring
- 87: Plastic rod

List of Models

Safety Limit Switches (with Direct Opening Mechanism)





Actuator	Conduit openings	1NC/1NO (Snap-action)		1NC/1NO (Slow-action)		2NC (Slow-action)	
		Model	Direct opening	Model	Direct opening	Model	Direct opening
Roller lever (resin roller) 	Pg13.5	D4B-1111N	⊙	D4B-1511N	⊙	D4B-1A11N	⊙
	G1/2 (PF1/2)	D4B-2111N		D4B-2511N		D4B-2A11N	
	1/2-14NPT	D4B-3111N		D4B-3511N		D4B-3A11N	
	M20	D4B-4111N		D4B-4511N		D4B-4A11N	
	Pg13.5 (3-conduit)	D4B-5111N		D4B-5511N		D4B-5A11N	
	G1/2 (3-conduit)	D4B-6111N		D4B-6511N		D4B-6A11N	
	1/2-14NPT (3-conduit)	D4B-7111N		D4B-7511N		D4B-7A11N	
	M20 (3-conduit)	D4B-8111N		D4B-8511N		D4B-8A11N	
Roller lever (stainless steel roller) 	Pg13.5	D4B-1115N	⊙	D4B-1515N	⊙	D4B-1A15N	⊙
	G1/2 (PF1/2)	D4B-2115N		D4B-2515N		D4B-2A15N	
	1/2-14NPT	D4B-3115N		D4B-3515N		D4B-3A15N	
	M20	D4B-4115N		D4B-4515N		D4B-4A15N	
	Pg13.5 (3-conduit)	D4B-5115N		D4B-5515N		D4B-5A15N	
Top plunger 	Pg13.5	D4B-1170N	⊙	D4B-1570N	⊙	D4B-1A70N	⊙
	G1/2 (PF1/2)	D4B-2170N		D4B-2570N		D4B-2A70N	
	1/2-14NPT	D4B-3170N		D4B-3570N		D4B-3A70N	
	M20	D4B-4170N		D4B-4570N		D4B-4A70N	
	Pg13.5 (3-conduit)	D4B-5170N		D4B-5570N		D4B-5A70N	
	G1/2 (3-conduit)	D4B-6170N		D4B-6570N		D4B-6A70N	
	1/2-14NPT (3-conduit)	D4B-7170N		D4B-7570N		D4B-7A70N	
	M20 (3-conduit)	D4B-8170N		D4B-8570N		D4B-8A70N	
Top roller plunger 	Pg13.5	D4B-1171N	⊙	D4B-1571N	⊙	D4B-1A71N	⊙
	G1/2 (PF1/2)	D4B-2171N		D4B-2571N		D4B-2A71N	
	1/2-14NPT	D4B-3171N		D4B-3571N		D4B-3A71N	
	M20	D4B-4171N		D4B-4571N		D4B-4A71N	
	Pg13.5 (3-conduit)	D4B-5171N		D4B-5571N		D4B-5A71N	
	G1/2 (3-conduit)	D4B-6171N		D4B-6571N		D4B-6A71N	
	1/2-14NPT (3-conduit)	D4B-7171N		D4B-7571N		D4B-7A71N	
	M20 (3-conduit)	D4B-8171N		D4B-8571N		D4B-8A71N	

(Continued on next page)

Ordering (continued)

List of Models




General Purpose Limit Switches

Actuator	Conduit openings	1NC/1NO (Snap-action)		1NC/1NO (Slow-action)		2NC (Slow-action)	
		Model	Direct opening	Model	Direct opening	Model	Direct opening
Adjustable roller lever 	Pg13.5	D4B-1116N	---	D4B-1516N	---	D4B-1A16N	---
	G1/2 (PF1/2)	D4B-2116N		D4B-2516N		D4B-2A16N	
	1/2-14NPT	D4B-3116N		D4B-3516N		D4B-3A16N	
	Pg13.5 (3-conduit)	D4B-5116N		D4B-5516N		D4B-5A16N	
	G1/2 (3-conduit)	D4B-6116N		D4B-6516N		D4B-6A16N	
	1/2-14NPT (3-conduit)	D4B-7116N		D4B-7516N		D4B-7A16N	
Adjustable rod lever 	Pg13.5	D4B-1117N	---	D4B-1517N	---	D4B-1A17N	---
	G1/2 (PF1/2)	D4B-2117N		D4B-2517N		D4B-2A17N	
	1/2-14NPT	D4B-3117N		D4B-3517N		D4B-3A17N	
	Pg13.5 (3-conduit)	D4B-5117N		D4B-5517N		D4B-5A17N	
	G1/2 (3-conduit)	D4B-6117N		D4B-6517N		D4B-6A17N	
	1/2-14NPT (3-conduit)	D4B-7117N		D4B-7517N		D4B-7A17N	
Coil spring (non-directional) 	Pg13.5	D4B-1181N	---	---	---	D4B-1A81N	---
	G1/2 (PF1/2)	D4B-2181N				D4B-2A81N	
	1/2-14NPT	D4B-3181N				D4B-3A81N	
	Pg13.5 (3-conduit)	D4B-5181N				D4B-5A81N	
	G1/2 (3-conduit)	D4B-6181N				D4B-6A81N	
	1/2-14NPT (3-conduit)	D4B-7181N				D4B-7A81N	
Plastic rod (non-directional) 	Pg13.5	D4B-1187N	---	---	---	D4B-1A87N	---
	G1/2 (PF1/2)	D4B-2187N				D4B-2A87N	
	1/2-14NPT	D4B-3187N				D4B-3A87N	
	Pg13.5 (3-conduit)	D4B-5187N				D4B-5A87N	
	G1/2 (3-conduit)	D4B-6187N				D4B-6A87N	
	1/2-14NPT (3-conduit)	D4B-7187N				D4B-7A87N	

Notes: 1. In addition to the above models, models compatible with the previous D4B Switches (with standard rotary levers) are available. Model number examples: D4B-1□1RN(Pg13.5) or D4B-2□1RN(PF1/2)
2. Consult your Omron STI representative for products.

Replacement Parts

Switch Boxes

Built-in switch	1-conduit type			3-conduit type		
	PG13.5	G1/2	1/2-14NPT	PG13.5	G1/2	1/2-14NPT
1NC/1NO (Snap-action) 	D4B-1100N	D4B-2100N	D4B-3100N	D4B-5100N	D4B-6100N	D4B-7100N
1NC/1NO (Slow-action) 	D4B-1500N	D4B-2500N	D4B-3500N	D4B-5500N	D4B-6500N	D4B-7500N
2NC (Slow-action) 	D4B-1A00N	D4B-2A00N	D4B-3A00N	D4B-5A00N	D4B-6A00N	D4B-7A00N

Operating Heads

Actuator	Type	Model
Side rotary *	Standard	D4B-0010N
	Plain	D4B-0070N
Top plunger	Top roller plunger	D4B-0071N
	Coil spring	D4B-0081N
Flexible-rod	Plastic rod	D4B-0087N

*The Lever is not included with the Side Rotary Operating Head.

Levers

Actuator	Length (mm)	Diameter of roller	Model
Standard	31.5	17.5 dia.	D4B-0001N
Stainless steel roller lever	31.5	17.5 dia.	D4B-0005N
Adjustable roller lever	25 to 89	19 dia.	D4B-0006N
Adjustable rod lever	145 max.	---	D4B-0007N
Interchangeable with D4B-0001	33.7	19 dia.	D4B-000RN

Note: Other types of lever are also available.