

## 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   |                   |       |

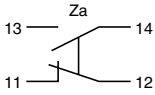
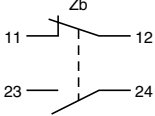
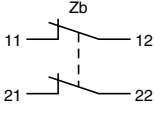
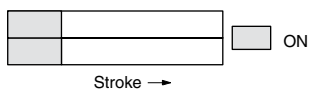
### Ratings

| 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<br>(Snap-action) |  |  | <p>Only NC contact 11-12 has a certified direct opening mechanism. (→)</p> <p>Terminal numbers 11-12 and 13-14 cannot be used as unlike poles.</p>          |
| D4B-□5□N | 1NC/1NO<br>(Slow-action) |  |  | <p>Only NC contact 11-12 has a certified direct opening mechanism. (→)</p> <p>Terminal numbers 11-12 or 23-24 can be used as unlike poles.</p>              |
| D4B-□A□N | 2NC<br>(Slow-action)     |  |  | <p>Both NC contacts 11-12 and 21-22 have a certified direct opening mechanism. (→)</p> <p>Terminal numbers 11-12 and 21-22 can be used as unlike poles.</p> |

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

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(mm)

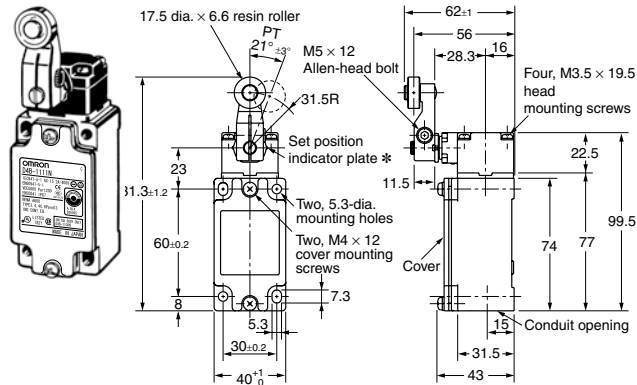
## Dimensions

### Switches

#### 1-conduit Models

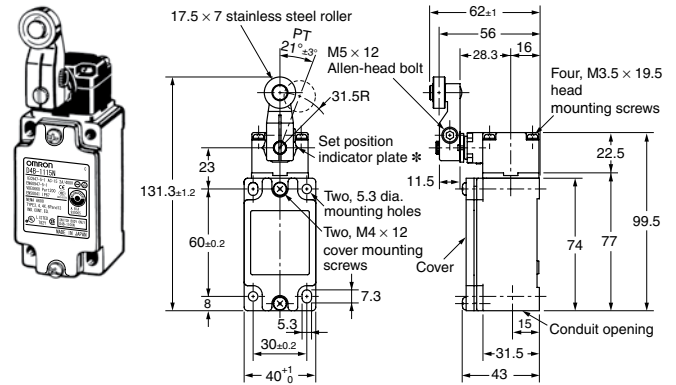
##### Roller Lever

D4B-□□11N



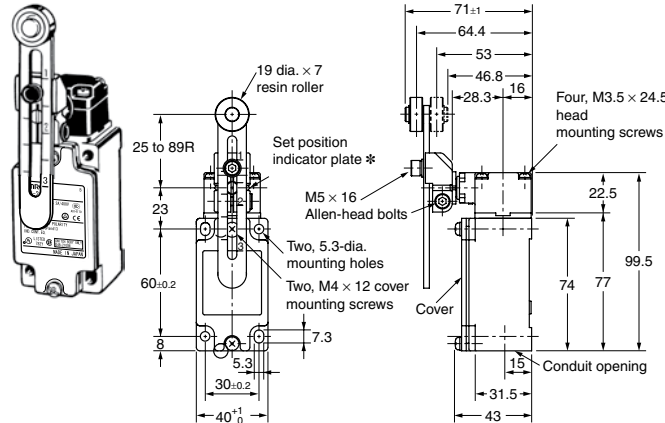
##### Roller Lever (Stainless Steel Roller)

D4B-□□15N



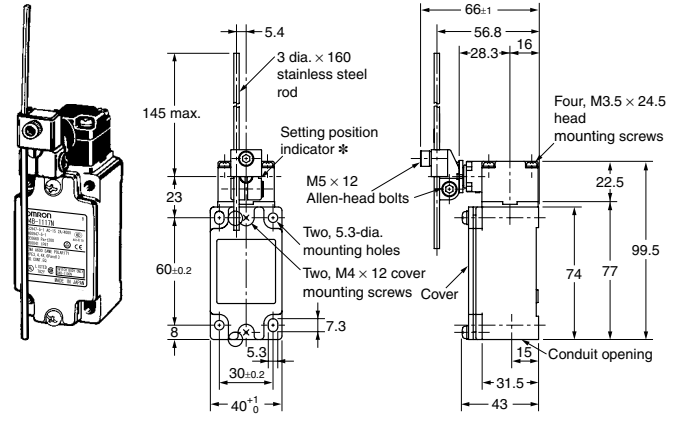
##### Adjustable Roller Lever

D4B-□□16N



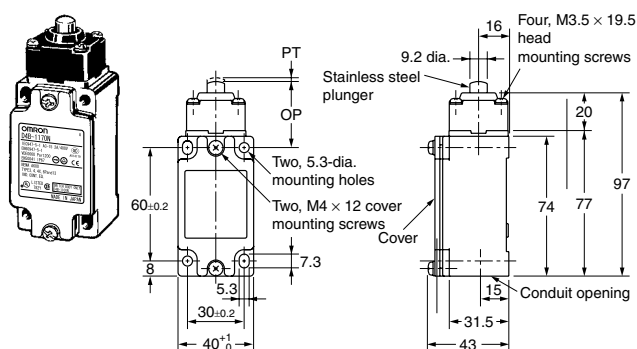
##### Adjustable Rod Lever

D4B-□□17N



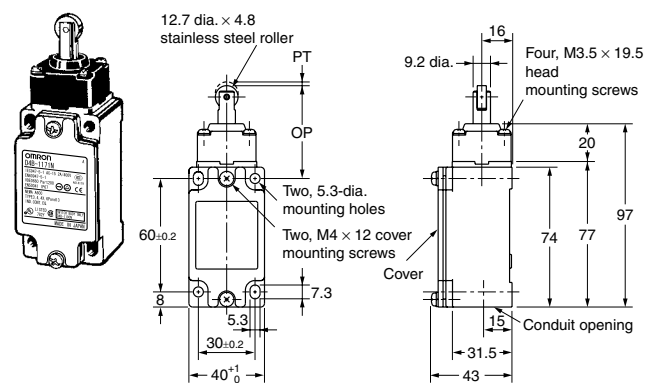
##### Top Plunger

D4B-□□70N



##### Top Roller Plunger

D4B-□□71N



Note: Unless otherwise specified, a tolerance of  $\pm 0.4$  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)

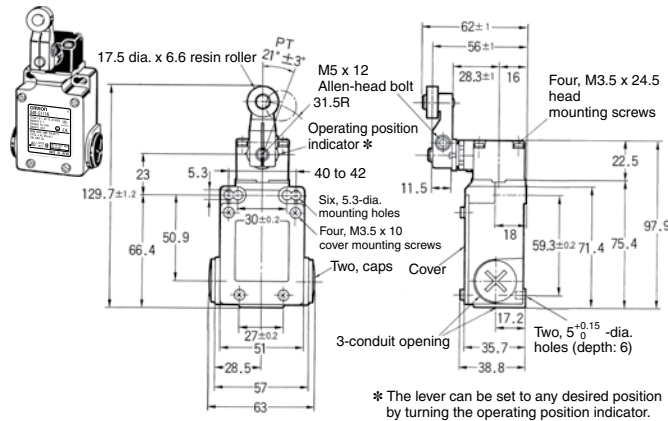
(mm)

## Switches

### 3-conduit Models

## Roller Lever

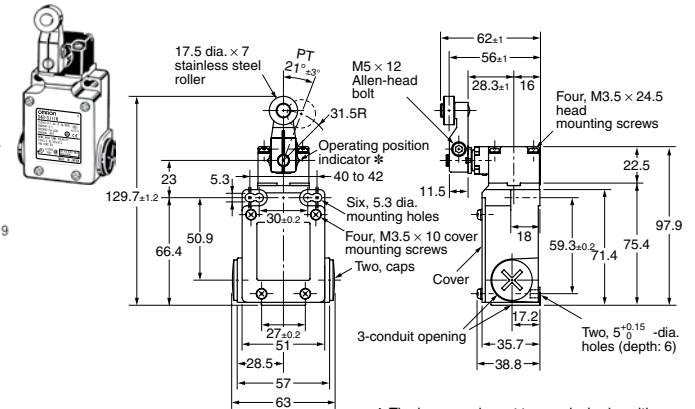
**D4B-□□11N**



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

## Roller Lever

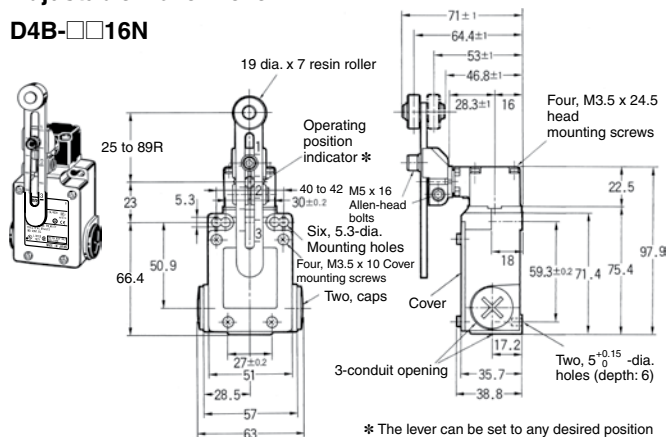
D4B-□□15N



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

### Adjustable Roller Lever

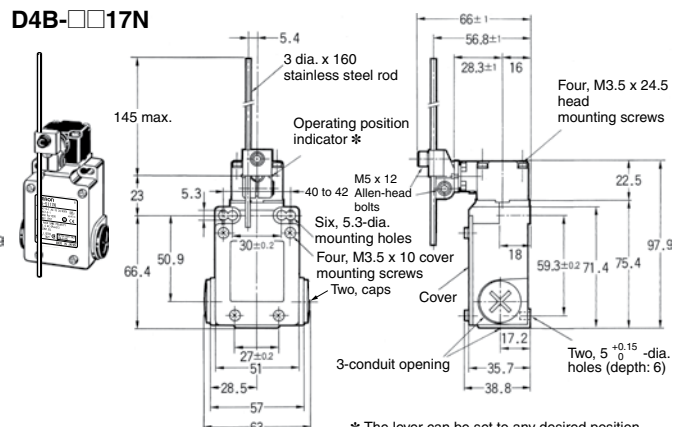
**D4B-□□16N**



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

### Adjustable Rod Lever

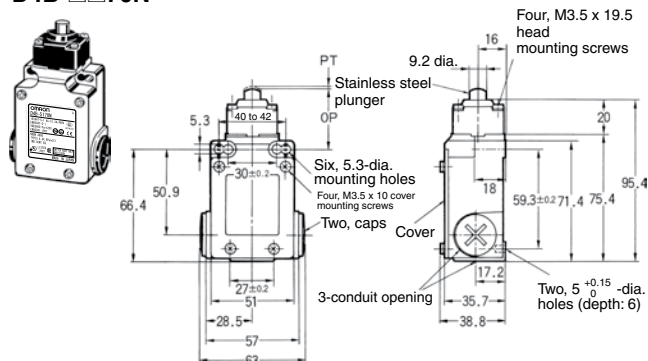
D4B-□□17N



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

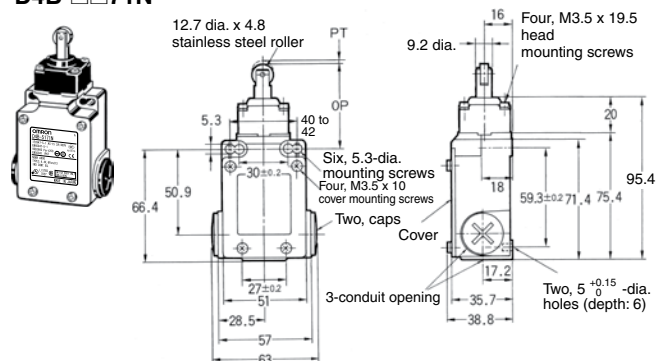
## Top Plunger

**D4B-□□70N**



## Top Roller Plunger

D4B-□□71N



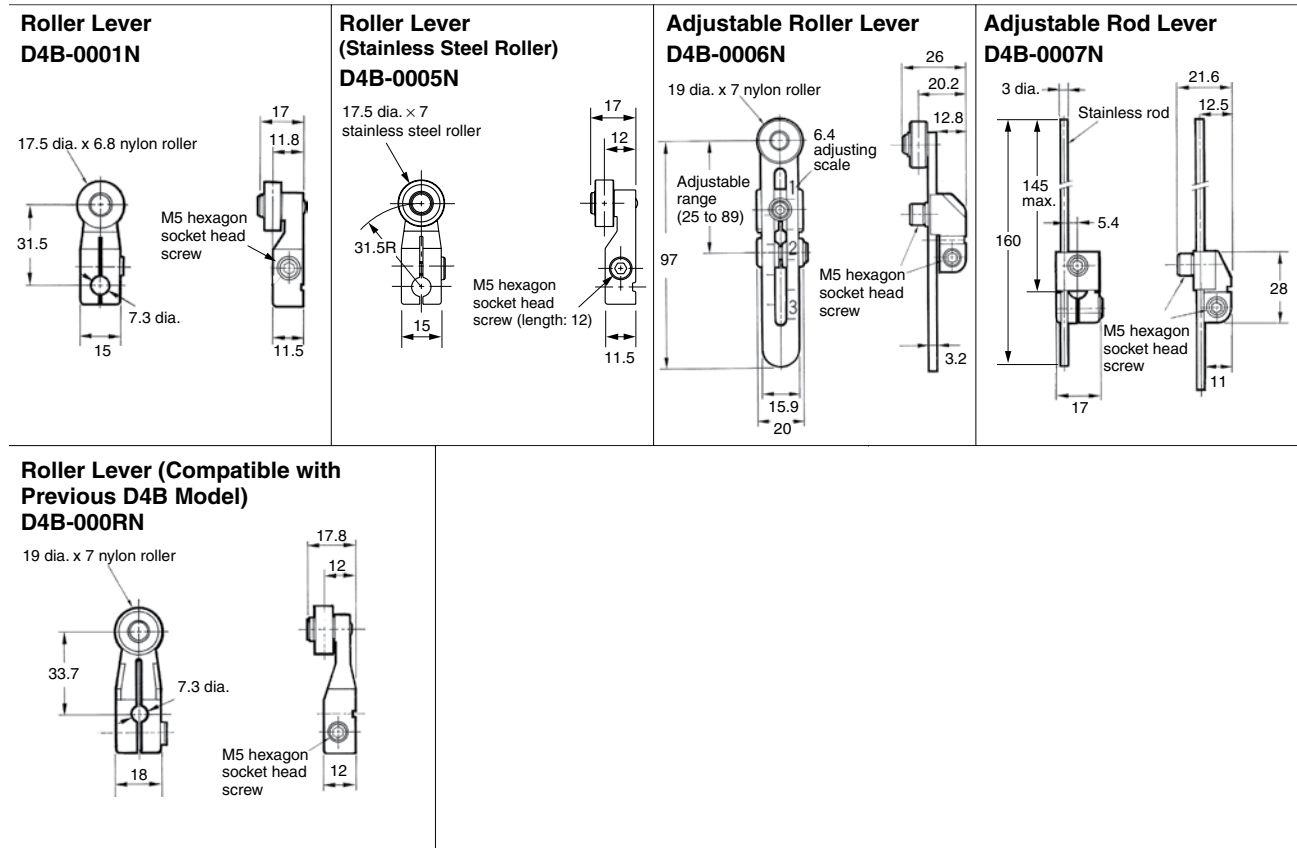
Note: Unless otherwise specified, a tolerance of  $\pm 0.4$  mm applies to all dimensions.

\*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.)



## Notes:

1. Unless otherwise specified, a tolerance of  $\pm 0.4$  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

- |                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                         |                                                                                                                                                                                                                                                                                                                                    |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>① Conduit size</b><br>1: Pg13.5 (1-conduit)<br>2: G1/2 (PF1/2) (1-conduit)<br>3: 1/2-14NPT (1-conduit)<br>4: M20 (1-conduit)<br>5: Pg13.5 (3-conduit)<br>6: G1/2 (PF1/2) (3-conduit)<br>7: 1/2-14NPT (3-conduit)<br>8: M20 (3-conduit) | <b>② Built-in Switch</b><br>1: 1NC/1NO (snap-action)<br>3: 1NC/1NO (snap-action) gold-plated contacts<br>5: 1NC/1NO (slow-action)*<br>6: 1NC/1NO (slow-action) gold-plated contacts*<br>A: 2NC (slow-action)<br>B: 2NC (slow-action) gold-plated contacts<br>*Excluding D4B-□□81N and D4B-□□87N models. | <b>③ Actuator</b><br>00: Switch box (without head)<br>11: Roller lever (resin roller)<br>15: Roller lever (stainless steel roller)<br>1R: Roller lever (conventional D4B-compatible)<br>16: Adjustable roller lever<br>17: Adjustable rod lever<br>70: Top plunger<br>71: Top roller plunger<br>81: Coil spring<br>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<br>(resin roller)<br>           | 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<br>(stainless steel roller)<br> | 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<br>                              | 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<br>                       | 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<br>         | 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<br>            | 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)<br>   | 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)<br> | 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 |
| <b>1NC/1NO (Snap-action)</b> |  | D4B-1100N      | D4B-2100N | D4B-3100N | D4B-5100N      | D4B-6100N | D4B-7100N |
| <b>1NC/1NO (Slow-action)</b> |  | D4B-1500N      | D4B-2500N | D4B-3500N | D4B-5500N      | D4B-6500N | D4B-7500N |
| <b>2NC (Slow-action)</b>     |  | D4B-1A00N      | D4B-2A00N | D4B-3A00N | D4B-5A00N      | D4B-6A00N | D4B-7A00N |

#### Operating Heads

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