

## Environment-resistant Switches

### Standard Switches

|                 |                               | Actuator                          | Roller lever R38  | Adjustable roller lever  | Adjustable rod lever 25 to 140mm  |
|-----------------|-------------------------------|-----------------------------------|----------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------|
| Item            |                               | Pretravel (PT)                    | Model                                                                                              | Model                                                                                                      | Model                                                                                                                |
| Airtight seal   | Basic                         | 15±5°                             | WLCA2-55-N                                                                                         | WLCA12-55-N                                                                                                | WLCL-55-N                                                                                                            |
|                 |                               | 25±5°                             | WLCA2-255-N                                                                                        | —                                                                                                          | —                                                                                                                    |
|                 |                               | MAX20°                            | WLCA2-2N55-N                                                                                       | —                                                                                                          | —                                                                                                                    |
|                 | High-sensitivity              | 10° <sup>+2°</sup> <sub>-1°</sub> | WLG2-55-N                                                                                          | —                                                                                                          | —                                                                                                                    |
|                 | High-precision                | 5° <sup>+2°</sup> <sub>0°</sub>   | WLGCA2-55-N                                                                                        | —                                                                                                          | —                                                                                                                    |
| Hermetic seal   | Molded terminals, -139 models | 15±5°                             | WLCA2-139-N                                                                                        | WLCA12-139-N                                                                                               | WLCL-139-N                                                                                                           |
|                 |                               | 25±5°                             | WLCA2-2139-N                                                                                       | —                                                                                                          | —                                                                                                                    |
|                 |                               | MAX20°                            | WLCA2-2N139-N                                                                                      | —                                                                                                          | —                                                                                                                    |
|                 |                               | 10° <sup>+2°</sup> <sub>-1°</sub> | WLG2-139-N                                                                                         | —                                                                                                          | —                                                                                                                    |
|                 | Molded terminals, -140 models | 15±5°                             | WLCA2-140-N                                                                                        | WLCA12-140-N                                                                                               | WLCL-140-N                                                                                                           |
|                 |                               | 25±5°                             | —                                                                                                  | —                                                                                                          | —                                                                                                                    |
|                 |                               | MAX20°                            | WLCA2-2N140-N                                                                                      | —                                                                                                          | —                                                                                                                    |
|                 |                               | 10° <sup>+2°</sup> <sub>-1°</sub> | WLG2-140-N                                                                                         | —                                                                                                          | —                                                                                                                    |
|                 | Molded terminals, -141 models | 15±5°                             | WLCA2-141-N                                                                                        | WLCA12-141-N                                                                                               | —                                                                                                                    |
|                 |                               | 25±5°                             | —                                                                                                  | —                                                                                                          | —                                                                                                                    |
|                 |                               | MAX20°                            | —                                                                                                  | —                                                                                                          | —                                                                                                                    |
|                 |                               | 10° <sup>+2°</sup> <sub>-1°</sub> | WLG2-141-N                                                                                         | —                                                                                                          | —                                                                                                                    |
|                 | Anti-coolant                  | 15±5°                             | WLCA2-RP60-N                                                                                       | WLCA12-RP60-N                                                                                              | WLCL-RP60-N                                                                                                          |
|                 |                               | 25±5°                             | WLCA2-2RP60-N                                                                                      | —                                                                                                          | —                                                                                                                    |
|                 |                               | MAX20°                            | —                                                                                                  | —                                                                                                          | —                                                                                                                    |
|                 |                               | 10° <sup>+2°</sup> <sub>-1°</sub> | WLG2-RP60-N                                                                                        | —                                                                                                          | —                                                                                                                    |
|                 |                               | High-precision                    | 5° <sup>+2°</sup> <sub>0°</sub>                                                                    | WLGCA2-RP60-N                                                                                              | —                                                                                                                    |
| Heat-resistant  | Basic                         | 15±5°                             | WLCA2-TH-N                                                                                         | WLCA12-TH-N                                                                                                | WLCL-TH-N                                                                                                            |
|                 |                               | 25±5°                             | WLCA2-2TH-N                                                                                        | WLCA12-2TH-N                                                                                               | WLCL-2TH-N                                                                                                           |
|                 |                               | MAX20°                            | WLCA2-2NTH-N                                                                                       | WLCA12-2NTH-N                                                                                              | WLCL-2NTH-N                                                                                                          |
|                 | High-sensitivity              | 10° <sup>+2°</sup> <sub>-1°</sub> | WLG2-TH-N                                                                                          | WLG12-TH-N                                                                                                 | WLGL-TH-N                                                                                                            |
|                 | High-precision                | 5° <sup>+2°</sup> <sub>0°</sub>   | WLGCA2-TH-N                                                                                        | —                                                                                                          | —                                                                                                                    |
| Low-temperature | Basic                         | 15±5°                             | WLCA2-TC-N                                                                                         | WLCA12-TC-N                                                                                                | WLCL-TC-N                                                                                                            |
|                 |                               | 25±5°                             | WLCA2-2TC-N                                                                                        | WLCA12-2TC-N                                                                                               | WLCL-2TC-N                                                                                                           |
|                 |                               | MAX20°                            | WLCA2-2NTC-N                                                                                       | WLCA12-2NTC-N                                                                                              | WLCL-2NTC-N                                                                                                          |
|                 | High-sensitivity              | 10° <sup>+2°</sup> <sub>-1°</sub> | WLG2-TC-N                                                                                          | WLG12-TC-N                                                                                                 | WLGL-TC-N                                                                                                            |
|                 | High-precision                | 5° <sup>+2°</sup> <sub>0°</sub>   | WLGCA2-TC-N                                                                                        | —                                                                                                          | —                                                                                                                    |
| Corrosion-proof | Basic                         | 15±5°                             | WLCA2-RP-N                                                                                         | WLCA12-RP-N                                                                                                | WLCL-RP-N                                                                                                            |
|                 |                               | 25±5°                             | —                                                                                                  | —                                                                                                          | —                                                                                                                    |
|                 |                               | MAX20°                            | —                                                                                                  | —                                                                                                          | —                                                                                                                    |
|                 | High-sensitivity              | 10° <sup>+2°</sup> <sub>-1°</sub> | WLG2-RP-N                                                                                          | —                                                                                                          | —                                                                                                                    |
| Weather-proof   | Basic                         | 15±5°                             | WLCA2-P1-N                                                                                         | WLCA12-P1-N                                                                                                | WLCL-P1-N                                                                                                            |
|                 |                               | 25±5°                             | —                                                                                                  | —                                                                                                          | —                                                                                                                    |
|                 |                               | MAX20°                            | —                                                                                                  | —                                                                                                          | —                                                                                                                    |
|                 | High-sensitivity              | 10° <sup>+2°</sup> <sub>-1°</sub> | WLG2-P1-N                                                                                          | WLG12-P1-N                                                                                                 | WLGL-P1-N                                                                                                            |

**Note:** The maximum cable length for a Hermetic Switch is 5 m.

| Actuator        |                               | Sealed top-roller plunger  | Horizontal plunger  | Horizontal-roller plunger  | Coil spring (spring diameter: 6.5)  | Resin rod (rod diameter: 8)  |
|-----------------|-------------------------------|---------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|
|                 |                               | Model                                                                                                         | Model                                                                                                  | Model                                                                                                         | Model                                                                                                                    | Model                                                                                                             |
| Airtight        |                               | WLD28-55-N                                                                                                    | WLSD-55-N                                                                                              | WLSD2-55-N                                                                                                    | WLNJ-55-N                                                                                                                | WLNJ-255-N                                                                                                        |
| Hermetic        | Molded terminals, -139 models | WLD28-139-N                                                                                                   | WLSD-139-N                                                                                             | WLSD2-139-N                                                                                                   | WLNJ-139-N                                                                                                               | WLNJ-2139-N                                                                                                       |
|                 | Molded terminals, -140 models | WLD28-140-N                                                                                                   | —                                                                                                      | WLSD2-140-N                                                                                                   | WLNJ-140-N                                                                                                               | WLNJ-2140-N                                                                                                       |
|                 | Anti-coolant                  | WLD28-RP60-N                                                                                                  | WLSD-RP60-N                                                                                            | WLSD2-RP60-N                                                                                                  | WLNJ-RP60-N                                                                                                              | WLNJ-2RP60-N                                                                                                      |
| Heat-resistant  |                               | WLD28-TH-N                                                                                                    | WLSD-TH-N                                                                                              | WLSD2-TH-N                                                                                                    | WLNJ-TH-N                                                                                                                | —                                                                                                                 |
| Low-temperature |                               | —                                                                                                             | WLSD-TC-N                                                                                              | WLSD2-TC-N                                                                                                    | WLNJ-TC-N                                                                                                                | —                                                                                                                 |
| Corrosion-proof |                               | WLD28-RP-N                                                                                                    | WLSD-RP-N                                                                                              | WLSD2-RP-N                                                                                                    | WLNJ-RP-N                                                                                                                | WLNJ-2RP-N                                                                                                        |

**Note:** The maximum cable length for a Hermetic Switch is 5 m.

## Environment-resistant Switches

### Operation indicator Switches

#### Airtight Switches

| Actuator  |                  |                                                                  | Roller lever: R38  | Adjustable roller lever  | Adjustable rod lever: 25 to 140mm  |
|-----------|------------------|------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------|
| Indicator | Item             | Pretravel (PT)                                                   | Model                                                                                               | Model                                                                                                       | Model                                                                                                                 |
| Neon lamp | Basic            | 15±5°                                                            | WLCA2-55LE-N                                                                                        | WLCA12-55LE-N                                                                                               | —                                                                                                                     |
|           |                  | 25±5°                                                            | WLCA2-255LE-N                                                                                       | —                                                                                                           | —                                                                                                                     |
|           |                  | MAX20°                                                           | WLCA2-2N55LE-N                                                                                      | —                                                                                                           | —                                                                                                                     |
|           | High-sensitivity | 10° $\begin{smallmatrix} +2^\circ \\ -1^\circ \end{smallmatrix}$ | WLG2-55LE-N                                                                                         | —                                                                                                           | —                                                                                                                     |
|           | High-precision   | 5° $\begin{smallmatrix} +2^\circ \\ 0^\circ \end{smallmatrix}$   | WLGCA2-55LE-N                                                                                       | —                                                                                                           | —                                                                                                                     |
| LED       | Basic            | 15±5°                                                            | WLCA2-55LD-N                                                                                        | WLCA12-55LD-N                                                                                               | WLCL-55LD-N                                                                                                           |
|           |                  | 25±5°                                                            | WLCA2-255LD-N                                                                                       | —                                                                                                           | —                                                                                                                     |
|           |                  | MAX20°                                                           | WLCA2-2N55LD-N                                                                                      | —                                                                                                           | —                                                                                                                     |
|           | High-sensitivity | 10° $\begin{smallmatrix} +2^\circ \\ -1^\circ \end{smallmatrix}$ | WLG2-55LD-N                                                                                         | —                                                                                                           | —                                                                                                                     |
|           | High-precision   | 5° $\begin{smallmatrix} +2^\circ \\ 0^\circ \end{smallmatrix}$   | WLGCA2-55LD-N                                                                                       | —                                                                                                           | —                                                                                                                     |

| Actuator  |       | Sealed top-roller plunger  | Horizontal plunger  | Horizontal-roller plunger  | Coil spring (spring diameter: 6.5)  | Resin rod (rod diameter: 8)  |
|-----------|-------|-------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|
| Indicator | Item  | Model                                                                                                       | Model                                                                                                | Model                                                                                                        | Model                                                                                                                  | Model                                                                                                           |
| Neon lamp | Basic | WLD28-55LE-N                                                                                                | —                                                                                                    | —                                                                                                            | —                                                                                                                      | —                                                                                                               |
| LED       | Basic | WLD28-55LD-N                                                                                                | WLSD-55LD-N                                                                                          | WLSD2-55LD-N                                                                                                 | WLNJ-55LD-N                                                                                                            | WLNJ-255LD-N                                                                                                    |

#### Hermetic Switches

| Actuator                      |                  |                                                                  | Roller lever: R38  |                  |
|-------------------------------|------------------|------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|------------------|
|                               |                  | Wiring specification                                             | NC wiring                                                                                             | NO wiring        |
| Item                          |                  | Pretravel (PT)                                                   | Model                                                                                                 | Model            |
| Molded terminals, -139 models | Basic            | 15±5°                                                            | WLCA2-139LD2-N                                                                                        | WLCA2-139LD3-N   |
|                               |                  | 25±5°                                                            | WLCA2-2139LD2-N                                                                                       | WLCA2-2139LD3-N  |
|                               |                  | MAX20°                                                           | —                                                                                                     | —                |
|                               | High-sensitivity | 10° $\begin{smallmatrix} +2^\circ \\ -1^\circ \end{smallmatrix}$ | —                                                                                                     | WLG2-139LD3-N    |
|                               | High-precision   | 5° $\begin{smallmatrix} +2^\circ \\ 0^\circ \end{smallmatrix}$   | WLGCA2-139LD2-N                                                                                       | WLGCA2-139LD3-N  |
| Molded terminals, -141 models | Basic            | 15±5°                                                            | WLCA2-141LD2-N                                                                                        | WLCA2-141LD3-N   |
|                               |                  | 25±5°                                                            | —                                                                                                     | —                |
|                               |                  | MAX20°                                                           | —                                                                                                     | —                |
|                               | High-sensitivity | 10° $\begin{smallmatrix} +2^\circ \\ -1^\circ \end{smallmatrix}$ | WLG2-141LD2-N                                                                                         | WLG2-141LD3-N    |
|                               | High-precision   | 5° $\begin{smallmatrix} +2^\circ \\ 0^\circ \end{smallmatrix}$   | —                                                                                                     | —                |
| Anti-coolant                  | Basic            | 15±5°                                                            | WLCA2-RP60LD2-N                                                                                       | WLCA2-RP60LD3-N  |
|                               |                  | 25±5°                                                            | WLCA2-2RP60LD2-N                                                                                      | WLCA2-2RP60LD3-N |
|                               |                  | MAX20°                                                           | —                                                                                                     | —                |
|                               | High-sensitivity | 10° $\begin{smallmatrix} +2^\circ \\ -1^\circ \end{smallmatrix}$ | WLG2-RP60LD2-N                                                                                        | WLG2-RP60LD3-N   |
|                               | High-precision   | 5° $\begin{smallmatrix} +2^\circ \\ 0^\circ \end{smallmatrix}$   | WLGCA2-RP60LD2-N                                                                                      | WLGCA2-RP60LD3-N |

**Note:** The maximum cable length for a Hermetic Switch is 5 m.

## Spatter-prevention Switches

| Actuator  |                  |                                     | Roller lever: R38  |                                                                                                      | Sealed top-roller plunger  |
|-----------|------------------|-------------------------------------|-------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------|
|           |                  |                                     | Double Nut Lever     | Allen-head Lever  |                                                                                                               |
| Indicator | Item             | Pretravel (PT)                      | Model                                                                                                 | Model                                                                                                | Model                                                                                                         |
| Neon lamp | Basic            | 15±5°                               | WLCA2-LEAS-N                                                                                          | WLCA2-LES-N                                                                                          | WLD28-LES-N                                                                                                   |
|           | High-sensitivity | 10° <sup>+2°</sup> / <sub>-1°</sub> | WLG2-LEAS-N                                                                                           | WLG2-LES-N                                                                                           | —                                                                                                             |
|           | High-precision   | 5° <sup>+2°</sup> / <sub>-1°</sub>  | —                                                                                                     | WLGCA2-LES-N                                                                                         | —                                                                                                             |
| LED       | Basic            | 15±5°                               | WLCA2-LDAS-N                                                                                          | WLCA2-LDS-N                                                                                          | WLD28-LDS-N                                                                                                   |
|           | High-sensitivity | 10° <sup>+2°</sup> / <sub>-1°</sub> | WLG2-LDAS-N                                                                                           | WLG2-LDS-N                                                                                           | —                                                                                                             |
|           | High-precision   | 5° <sup>+2°</sup> / <sub>-1°</sub>  | —                                                                                                     | WLGCA2-LDS-N                                                                                         | —                                                                                                             |

## Long-life Switches

| Item                                                                                                                     |              |    | Operation indicator (LED) *1 |                                                      |                                                   |
|--------------------------------------------------------------------------------------------------------------------------|--------------|----|------------------------------|------------------------------------------------------|---------------------------------------------------|
|                                                                                                                          |              |    | Basic 15±5°                  | High-sensitivity 10° <sup>+2°</sup> / <sub>-1°</sub> | High-precision 5° <sup>+2°</sup> / <sub>-1°</sub> |
| Actuator                                                                                                                 |              |    | Model                        | Model                                                | Model                                             |
|  Roller lever: R38, screw terminals     |              |    | WLMCA2-LD-N                  | WLMG2-LD-N                                           | WLMGCA2-LD-N                                      |
|  Roller lever, direct-wired connector  | 2 conductors | AC | WLMCA2-LDK13A-N              | WLMG2-LDK13A-N                                       | WLMGCA2-LDK13A-N                                  |
|                                                                                                                          |              | DC | WLMCA2-LDK13-N               | WLMG2-LDK13-N                                        | WLMGCA2-LDK13-N                                   |
|                                                                                                                          | 4 conductors | AC | WLMCA2-LDK43A-N              | WLMG2-LDK43A-N                                       | —                                                 |
|                                                                                                                          |              | DC | WLMCA2-LDK43-N               | WLMG2-LDK43-N                                        | WLMGCA2-LDK43-N                                   |
|  Roller lever, pre-wired connector *2 | 2 conductors | DC | WLMCA2-LD-M1J-N              | WLMG2-LD-M1J-N                                       | WLMGCA2-LD-M1J-N                                  |
|                                                                                                                          | 4 conductors | DC | WLMCA2-LD-DGJ-N              | WLMG2-LD-DGJ-N                                       | —                                                 |

- \*1. The default setting is light-ON when not operating (NO wiring).  
Turn the lamp holder by 180° to change the setting to light-ON when operating (NC wiring).  
(Ask your OMRON representative for information on 2-conductor models.)
- \*2. With 0.3-m cable.

## Individual Parts

### Switches without Levers, Heads, and Actuators

#### General-purpose Parts

| Actuator                                                                                                     | Item             | Pretravel (PT)        | Set         | Switch without levers | Head *1<br>(with Actuators) | Actuator only *2 |
|--------------------------------------------------------------------------------------------------------------|------------------|-----------------------|-------------|-----------------------|-----------------------------|------------------|
|                                                                                                              |                  |                       |             | Model                 | Model                       | Model            |
| Roller lever<br>            | Basic            | 15±5°                 | WLCA2-N     | WLCA2-N               | WL-1H1100-N                 | WL-1A100         |
|                                                                                                              |                  | 25±5°                 | WLCA2-2-N   | WLCA2-2-N             | WL-3H1100-N                 |                  |
|                                                                                                              |                  | MAX20°                | WLCA2-2N-N  | WLCA2-2N-N            | WL-1H1100-N                 |                  |
|                                                                                                              | High-sensitivity | 10° $\pm \frac{2}{1}$ | WLG2-N      | WLG2-N                | WL-2H1100-N                 |                  |
| Adjustable roller lever<br> | Basic            | 15±5°                 | WLCA12-N    | WLCA12-N              | WL-1H2100-N                 | WL-2A100         |
|                                                                                                              |                  | 25±5°                 | WLCA12-2-N  | WLCA12-2-N            | WL-3H2100-N                 |                  |
|                                                                                                              |                  | MAX20°                | WLCA12-2N-N | WLCA12-2N-N           | WL-1H2100-N                 |                  |
|                                                                                                              | High-sensitivity | 10° $\pm \frac{2}{1}$ | WLG12-N     | WLG12-N               | WL-2H2100-N                 |                  |
| Variable rod lever<br>      | Basic            | 15±5°                 | WLCL-N      | WLCL-N                | WL-1H4100-N                 | WL-4A100         |
|                                                                                                              |                  | 25±5°                 | WLCL-2-N    | WLCL-2-N              | WL-3H4100-N                 |                  |
|                                                                                                              |                  | MAX20°                | WLCL-2N-N   | WLCL-2N-N             | WL-1H4100-N                 |                  |
|                                                                                                              | High-sensitivity | 10° $\pm \frac{2}{1}$ | WLGL-N      | WLGL-N                | WL-2H4100-N                 |                  |
| Fork lever lock<br>         | Basic            | MAX55°                | WLCA32-41-N | WLCA32-N              | WL-5H5100-N                 | WL-5A100         |
|                                                                                                              |                  |                       | WLCA32-42-N |                       | WL-5H5102-N                 | WL-5A102         |
|                                                                                                              |                  |                       | WLCA32-43-N |                       | WL-5H5104-N                 | WL-5A104         |
|                                                                                                              |                  |                       | WLCA32-44-N |                       | WL-5H5104-N                 | WL-5A104         |
| Top plunger<br>             | Basic            | MAX<br>1.7 mm         | WLD18-N     | —                     | WL-7H100-N                  | —                |
|                                                                                                              |                  |                       | WLD28-N     |                       | WL-7H400-N                  | —                |
|                                                                                                              |                  |                       | WLD38-N     |                       | WL-7H300-N                  | —                |
| Horizontal plunger<br>    | Basic            | MAX<br>2.8 mm         | WLS2-N      | —                     | WL-8H100-N                  | —                |
|                                                                                                              |                  |                       | WLS2-N      |                       | WL-8H200-N                  | —                |
|                                                                                                              |                  |                       | WLS3-N      |                       | WL-8H300-N                  | —                |
| Flexible rod<br>          | Basic            | 20±10 mm              | WLNJ-N      | —                     | WL-9H100-N                  | —                |
|                                                                                                              |                  |                       | WLNJ-30-N   |                       | WL-9H200-N                  | —                |
|                                                                                                              |                  | 40±20 mm              | WLNJ-2-N    |                       | WL-9H300-N                  | —                |
|                                                                                                              |                  |                       | WLNJ-S2-N   |                       | WL-9H400-N                  | —                |

\*1. The heads are not compatible with WL-series Switches.

\*2. The same Actuators can be used for both WL and WL-N Switches.

#### Spatter-prevention Parts

| Actuator                                                                                            | Lever Type            | Item             | Set         | Switch without levers | Head *1<br>(with Actuators) | Actuator only *2 |
|-----------------------------------------------------------------------------------------------------|-----------------------|------------------|-------------|-----------------------|-----------------------------|------------------|
|                                                                                                     |                       |                  |             | Model                 | Model                       | Model            |
| Roller lever<br> | Allen-head bolt lever | Basic            | WLCA2-LES-N | WLCA2-LES-N           | WL-1H1100S-N                | WL-1A103S        |
|                                                                                                     |                       | High-sensitivity | WLCA2-LDS-N | WLCA2-LDS-N           |                             |                  |
|                                                                                                     | Double nut lever      | Basic            | WLG2-LDS-N  | WLG2-LDS-N            | WL-2H1100S-N                | WL-1A105S        |
|                                                                                                     |                       | High-sensitivity | WLG2-LDAS-N | WLG2-LDAS-N           |                             |                  |

\*1. The heads are not compatible with WL-series Switches.

\*2. The same Actuators can be used for both WL and WL-N Switches.

#### Covers with Indicators (See Note.)

##### General-purpose Parts

| Item      | Cover | Cover only * |
|-----------|-------|--------------|
|           |       | Model        |
| Neon lamp |       | WL-LE-N      |
| LED       |       | WL-LD-N      |

\* The Covers are not compatible with WL-series Switches.

**Note:** The default setting is for light-ON when not operating.  
Turn the lamp holder by 180° to change the setting to light-ON when operating.

##### Spatter-prevention Parts

| Item      | Cover | Cover only * |
|-----------|-------|--------------|
|           |       | Model        |
| Neon lamp |       | WL-LES-N     |
| LED       |       | WL-LDS-N     |

# WL-N/WLM-N

## Specifications

### General-purpose/ Environment-resistant Switches

#### Ratings

##### Screw Terminals

| Item                      | Rated voltage (V)              | Non-inductive load (A) |     |           |    | Inductive load (A) |     |            |    |
|---------------------------|--------------------------------|------------------------|-----|-----------|----|--------------------|-----|------------|----|
|                           |                                | Resistive load         |     | Lamp load |    | Inductive load     |     | Motor load |    |
|                           |                                | NC                     | NO  | NC        | NO | NC                 | NO  | NC         | NO |
| Basic or high-precision   | AC 125<br>250<br>500           | 10                     | 3   | 1.5       |    | 10                 | 5   | 2.5        |    |
|                           |                                | 10                     | 2   | 1         |    | 10                 | 3   | 1.5        |    |
|                           |                                | 10                     | 1.5 | 0.8       |    | 3                  | 1.5 | 0.8        |    |
|                           | DC 8<br>14<br>30<br>125<br>250 | 10                     | 6   | 3         |    | 10                 | 6   |            |    |
|                           |                                | 10                     | 6   | 3         |    | 10                 | 6   |            |    |
|                           |                                | 6                      | 4   | 3         |    | 6                  | 4   |            |    |
| High-sensitivity Switches | AC 125<br>250                  | 0.8                    | 0.2 | 0.2       |    | 0.8                | 0.2 |            |    |
|                           |                                | 0.4                    | 0.1 | 0.1       |    | 0.4                | 0.1 |            |    |
|                           |                                |                        |     |           |    |                    |     |            |    |
|                           | DC 125<br>250                  | 5                      |     |           |    | —                  |     |            |    |
|                           |                                | 5                      |     |           |    | —                  |     |            |    |
|                           |                                |                        |     |           |    |                    |     |            |    |

- Note:** 1. The above figures are for steady-state currents.  
2. Inductive loads have a power factor of 0.4 min. (AC) and a time constant of 7 ms max. (DC).  
3. A lamp load has an inrush current of 10 times the steady-state current.  
4. A motor load has an inrush current of 6 times the steady-state current.  
5. For PC loads, use the microload models.

|                |    |                        |
|----------------|----|------------------------|
| Inrush current | NC | 30 A max.(15 A max. *) |
|                | NO | 20 A max.(10 A max. *) |

\* For high-sensitivity switches.

|                         |                                     |
|-------------------------|-------------------------------------|
| Minimum applicable load | 5 VDC 1 mA, resistive load, P level |
|-------------------------|-------------------------------------|

#### Operation indicator Switches

| Model   | Item      | Max. rated voltage | Leakage current (mA) |
|---------|-----------|--------------------|----------------------|
| WL-LE-N | Neon lamp | 125 AC             | Approx. 0.6          |
|         |           | 250 AC             | Approx. 1.9          |
| WL-LD-N | LED       | 10 to 24 VAC/DC    | Approx. 0.4          |
|         |           | 115 VAC/DC         | Approx. 0.5          |

#### Characteristics

|                               |                                                          |                                                                      |
|-------------------------------|----------------------------------------------------------|----------------------------------------------------------------------|
| Degree of protection          |                                                          | IP67                                                                 |
| Durability *1                 | Mechanical                                               | 15,000,000 operations min. *2                                        |
|                               | Electrical                                               | 750,000 operations min. *3                                           |
| Operating speed               |                                                          | 1 mm/s to 1 m/s (in case of WLCA2-N)                                 |
| Operating frequency           | Mechanical                                               | 120 operations/minute min.                                           |
|                               | Electrical                                               | 30 operations/minute min.                                            |
| Rated frequency               |                                                          | 50/60 Hz                                                             |
| Insulation resistance         |                                                          | 100 MΩ min. (at 500 VDC)                                             |
| Contact resistance            |                                                          | 25 mΩ max. (initial value for the built-in switch when tested alone) |
| Dielectric strength           | Between terminals of the same polarity                   | 1,000 VAC (600 VAC), 50/60 Hz for 1 min                              |
|                               | Between currentcarrying metal part and ground            | 2,200 VAC (1,500 VAC), 50/60 Hz for 1 min *4                         |
|                               | Between each terminal and non-currentcarrying metal part | 2,200 VAC (1,500 VAC), 50/60 Hz for 1 min *4                         |
| Vibration resistance          | Malfunction                                              | 10 to 55 Hz, 1.5-mm double amplitude *5                              |
| Shock resistance              | Destruction                                              | 1,000 m/s <sup>2</sup> max.                                          |
|                               | Malfunction                                              | 300 m/s <sup>2</sup> *5                                              |
| Ambient operating temperature |                                                          | -10 to +80°C (with no icing) *6                                      |
| Ambient operating humidity    |                                                          | 35% to 95% RH                                                        |
| Weight                        |                                                          | Approx. 255 g (in case of WLCA2-N)                                   |

- Note:** 1. The above figures are initial values.  
2. The figures in parentheses for dielectric strength are those for the high-sensitivity switches models.  
\*1. The values are calculated at an operating temperature of +5°C to +35°C and an operating humidity of 40% to 70% RH. Contact your OMRON sales representative for more detailed information on other operating environments.  
\*2. High-sensitivity Switches and Switches with Flexible Rod Actuators: 10 million operations min.  
500,000 operations min. for weather-proof models.  
\*3. Durability is 500,000 operations min. for high-sensitivity models.  
500,000 operations min. for weather-proof models.  
Contact your OMRON representative for information on Environment-resistant Switches.  
\*4. Switches with Connectors: 1,500 V.  
\*5. Except Switches with Flexible Rod Actuators.  
\*6. For low-temperature models this is -40°C to +40°C (with no icing). For heatresistant models the range is +5°C to +120°C.

## Spatter-prevention Switches

### Ratings

#### Screw Terminals

| Item                                                      | Rated voltage (V) | Non-inductive load (A) |     |           |    | Inductive load (A) |    |            |    |
|-----------------------------------------------------------|-------------------|------------------------|-----|-----------|----|--------------------|----|------------|----|
|                                                           |                   | Resistive load         |     | Lamp load |    | Inductive load     |    | Motor load |    |
|                                                           |                   | NC                     | NO  | NC        | NO | NC                 | NO | NC         | NO |
| WL□-LES-N<br>(Without high-sensitivity overtravel models) | AC 125            | 10                     | 3   | 1.5       |    | 10                 | 5  | 2.5        |    |
|                                                           | 250               | 10                     | 2   | 1         |    | 10                 | 3  | 1.5        |    |
| WL□-LDS-N<br>(Without high-sensitivity overtravel models) | AC 115            | 10                     | 3   | 1.5       |    | 10                 | 5  | 2.5        |    |
|                                                           | DC 12             | 10                     | 6   | 3         |    | 10                 |    | 6          |    |
|                                                           | 24                | 6                      | 4   | 3         |    | 6                  |    | 4          |    |
|                                                           | 115               | 0.8                    | 0.2 | 0.2       |    | 0.8                |    | 0.2        |    |

**Note:** 1. The above figures are for steady-state currents.

2. Inductive loads have a power factor of 0.4 min. (AC) and a time constant of 7 ms max. (DC).

3. A lamp load has an inrush current of 10 times the steady-state current.

4. A motor load has an inrush current of 6 times the steady-state current.

\* Refer to the rating of a General-purpose / Weather-proof Switches type for the rating of a high-sensitivity overtravel type.

|                |    |                        |
|----------------|----|------------------------|
| Inrush current | NC | 30 A max.(15 A max. *) |
|                | NO | 20 A max.(10 A max. *) |

\* For high-sensitivity switches.

|                         |                                     |
|-------------------------|-------------------------------------|
| Minimum applicable load | 5 VDC 1 mA, resistive load, P level |
|-------------------------|-------------------------------------|

### Characteristics

|                               |                                                          |                                                                      |
|-------------------------------|----------------------------------------------------------|----------------------------------------------------------------------|
| Degree of protection          |                                                          | IP67                                                                 |
| Durability *1                 | Mechanical                                               | 15,000,000 operations min. *2                                        |
|                               | Electrical                                               | 750,000 operations min. (3 A at 250 VAC, resistive load) *3          |
| Operating speed               |                                                          | 1 mm/s to 1 m/s (in case of WLCA2-LDS-N)                             |
| Operating frequency           | Mechanical                                               | 120 operations/minute min.                                           |
|                               | Electrical                                               | 30 operations/minute min.                                            |
| Rated frequency               |                                                          | 50/60 Hz                                                             |
| Insulation resistance         |                                                          | 100 MΩ min. (at 500 VDC)                                             |
| Contact resistance            |                                                          | 25 mΩ max. (initial value for the built-in switch when tested alone) |
| Dielectric strength           | Between terminals of the same polarity                   | 1,000 VAC (600 VAC), 50/60 Hz for 1 min                              |
|                               | Between currentcarrying metal part and ground            | 2,200 VAC (1,500 VAC), 50/60 Hz for 1 min *4                         |
|                               | Between each terminal and non-currentcarrying metal part | 2,200 VAC (1,500 VAC), 50/60 Hz for 1 min *4                         |
| Vibration resistance          | Malfunction                                              | 10 to 55 Hz, 1.5-mm double amplitude                                 |
| Shock resistance              | Destruction                                              | 1,000 m/s² max.                                                      |
|                               | Malfunction                                              | 300 m/s²                                                             |
| Ambient operating temperature |                                                          | -10 to +80°C (with no icing)                                         |
| Ambient operating humidity    |                                                          | 35% to 95% RH                                                        |
| Weight                        |                                                          | Approx. 255 g (in case of WLCA2-LDS-N)                               |

**Note:** 1. The above figures are initial values.

2. The figures in parentheses for dielectric strength are those for the high-sensitivity overtravel models.

\*1. The values are calculated at an operating temperature of +5°C to +35°C and an operating humidity of 40% to 70% RH. Contact your OMRON sales representative for more detailed information on other operating environments.

\*2. Durability is 10,000,000 operations min. for high-sensitivity models.

\*3. Durability is 500,000 operations min. for high-sensitivity models.

500,000 operations min. for weather-proof models.

Contact your OMRON representative for information on Airtight Switches.

\*4. Switches with Connectors: 1,500 V.

## Long-life Switches

### Ratings

#### Screw Terminal Switches

| Item                    | Rated voltage (V) | Non-inductive load (A) |    |                         |     | Inductive load (A) |    |            |     |
|-------------------------|-------------------|------------------------|----|-------------------------|-----|--------------------|----|------------|-----|
|                         |                   | Resistive load         |    | Lamp load               |     | Inductive load     |    | Motor load |     |
|                         |                   | NC                     | NO | NC                      | NO  | NC                 | NO | NC         | NO  |
| Basic or high-precision | 115 AC            | 10                     |    | 3                       | 1.5 | 10                 |    | 5          | 2.5 |
|                         | 12 DC             | 10                     |    | 6                       | 3   | 10                 |    | 6          |     |
|                         | 24 DC             | 6                      |    | 4                       | 3   | 6                  |    | 4          |     |
|                         | 115 DC            | 0.8                    |    | 0.2                     | 0.2 | 0.8                |    | 0.2        |     |
| High-sensitivity        | 115 AC            | 5                      |    | —                       |     | —                  |    | —          |     |
|                         | 115 DC            | 0.4                    |    | —                       |     | —                  |    | —          |     |
| Inrush current          |                   | NC                     |    | 30 A max. (15 A max. *) |     |                    |    |            |     |
|                         |                   | NO                     |    | 20 A max. (10 A max. *) |     |                    |    |            |     |

\* For high-sensitivity overtravel models.

|                         |                                     |
|-------------------------|-------------------------------------|
| Minimum applicable load | 5 VDC 1 mA, resistive load, P level |
|-------------------------|-------------------------------------|

#### Direct-wired Connector and Pre-wired Connector Switches

| Model                   | Rated voltage (V) | Non-inductive load (A) |    |           |     | Inductive load (A) |    |            |     |
|-------------------------|-------------------|------------------------|----|-----------|-----|--------------------|----|------------|-----|
|                         |                   | Resistive load         |    | Lamp load |     | Inductive load     |    | Motor load |     |
|                         |                   | NC                     | NO | NC        | NO  | NC                 | NO | NC         | NO  |
| Basic or high-precision | 115 AC            | 3                      |    | 3         | 1.5 | 3                  |    | 3          | 2.5 |
|                         | 12 DC             | 3                      |    | 3         |     | 3                  |    | 3          |     |
|                         | 24 DC             | 3                      |    | 3         |     | 3                  |    | 3          |     |
|                         | 115 DC            | 0.8                    |    | 0.2       |     | 0.8                |    | 0.2        |     |
| High-sensitivity        | 115 AC            | 3                      |    | —         |     | —                  |    | —          |     |
|                         | 115 DC            | 0.4                    |    | —         |     | —                  |    | —          |     |

- Note:**
1. The above figures are for steady-state currents.
  2. Inductive loads have a power factor of 0.4 min. (AC) and a time constant of 7 ms max. (DC).
  3. A lamp load has an inrush current of 10 times the steady-state current.
  4. A motor load has an inrush current of 6 times the steady-state current.

### Characteristics

|                                          |                                                           |                                                                                                                                                                                                                 |
|------------------------------------------|-----------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Degree of protection                     |                                                           | IP67                                                                                                                                                                                                            |
| Durability *1                            | Mechanical                                                | 30,000,000 operations min.                                                                                                                                                                                      |
|                                          | Electrical                                                | 30,000,000 operations min. (10 mA at 24 VDC, resistive load)<br>750,000 operations min. (3 A at 115 VAC, resistive load)<br>High-sensitivity Switches: 500,000 operations min. (3 A at 115 VAC, resistive load) |
| Operating speed                          |                                                           | 1 mm/s to 1 m/s (for WLMCA2-LD-N)                                                                                                                                                                               |
| Operating frequency                      | Mechanical                                                | 120 operations/minute                                                                                                                                                                                           |
|                                          | Electrical                                                | 30 operations/minute                                                                                                                                                                                            |
| Rated frequency                          |                                                           | 50/60 Hz                                                                                                                                                                                                        |
| Insulation resistance                    |                                                           | 100 MΩ min. (at 500 VDC)                                                                                                                                                                                        |
| Contact resistance                       |                                                           | 25 mΩ max. (initial value for the built-in switch when tested alone)                                                                                                                                            |
| Dielectric strength (50/60 Hz for 1 min) | Between terminals of the same polarity                    | 1,000 VAC (600 VAC), 50/60 Hz for 1 min                                                                                                                                                                         |
|                                          | Between current-carrying metal part and ground            | 2,200 VAC (1,500 VAC), 50/60 Hz for 1 min *2                                                                                                                                                                    |
|                                          | Between each terminal and non-current-carrying metal part | 2,200 VAC (1,500 VAC), 50/60 Hz for 1 min *2                                                                                                                                                                    |
| Vibration resistance                     | Malfunction                                               | 10 to 55 Hz, 1.5-mm double amplitude                                                                                                                                                                            |
| Shock resistance                         | Destruction                                               | 1,000 m/s <sup>2</sup> max.                                                                                                                                                                                     |
|                                          | Malfunction                                               | 300 m/s <sup>2</sup> max.                                                                                                                                                                                       |
| Ambient operating temperature            |                                                           | −10°C to +80°C (with no icing)                                                                                                                                                                                  |
| Ambient operating humidity               |                                                           | 35% to 95%RH                                                                                                                                                                                                    |
| Weight                                   |                                                           | Approx. 255 g (for WLMCA2-LD-N)                                                                                                                                                                                 |

- Note:**
1. The above figures are initial values.
  2. The figures in parentheses for dielectric strength are for the High-sensitivity Switches.

\*1. The values are calculated at an operating temperature of +5°C to +35°C, and an operating humidity of 40% to 70%RH. Contact your OMRON sales representative for more detailed information on other operating environments.

\*2. Switches with Connectors: 1,500 V.

## General-purpose/ Environment-resistant/ Spatter-prevention Switches

## Approved Standards

| Agency        | Standard        | File No.                                          | Approved models                                   |
|---------------|-----------------|---------------------------------------------------|---------------------------------------------------|
| UL            | UL508           | Contact your OMRON representative for information | Contact your OMRON representative for information |
|               | CSA C22.2 No.14 |                                                   |                                                   |
| TÜV Rheinland | EN60947-5-1     |                                                   |                                                   |
| CCC (CQC)     | GB14048.5       |                                                   |                                                   |

## Approved Standard Ratings

## UL/cUL (UL508, CSA C22.2 No.14)

| Specifications |                                                         |                                            | Approved Standards                     |
|----------------|---------------------------------------------------------|--------------------------------------------|----------------------------------------|
| Indicator      | Sensor I/O connectors                                   | Item                                       |                                        |
| No indicator   | No Connector                                            | Basic Switches                             | A600<br>1 A, 125 VDC                   |
|                |                                                         | High-sensitivity or high-precision         | B600<br>0.5 A, 125 VDC                 |
|                | Pre-wired Connector (AC)                                | Basic, high-sensitivity, or high-precision | C300<br>3 A, 250 VAC                   |
|                | Pre-wired Connector (DC)<br>Direct-wired Connector (DC) | Basic Switches                             | 1 A, 125 VDC                           |
|                |                                                         | High-sensitivity or high-precision         | 0.5 A, 125 VDC                         |
| Neon lamp      | No Connector                                            | Basic Switches                             | A300<br>10 A, 250 VAC                  |
|                |                                                         | High-sensitivity or high-precision         | B300<br>5 A, 250 VAC                   |
|                | Pre-wired Connector (AC)                                | Basic, high-sensitivity, or high-precision | C300<br>3 A, 250 VAC                   |
| LED            | No Connector                                            | Basic Switches                             | A150<br>10 A, 115 VAC<br>1 A, 115 VDC  |
|                |                                                         | High-sensitivity or high-precision         | B150<br>5 A, 115 VAC<br>0.5 A, 115 VDC |
|                | Pre-wired Connector (AC)                                | Basic, high-sensitivity, or high-precision | C150<br>3 A, 115 VAC                   |
|                | Pre-wired Connector (DC)<br>Direct-wired Connector (DC) | Basic Switches                             | 1 A, 115 VDC                           |
|                |                                                         | High-sensitivity or high-precision         | 0.5 A, 115 VDC                         |

## A600 Authentication conditions

| Rated voltage                            | Energizing current | Current (A)          |                      | Volt-ampere (VA) |       |
|------------------------------------------|--------------------|----------------------|----------------------|------------------|-------|
|                                          |                    | Make                 | Break                | Make             | Break |
| 120 VAC<br>240 VAC<br>480 VAC<br>600 VAC | 10 A               | 60<br>30<br>15<br>12 | 6<br>3<br>1.5<br>1.2 | 7,200            | 720   |

## B600 Authentication conditions

| Rated voltage                            | Energizing current | Current (A)          |                         | Volt-ampere (VA) |       |
|------------------------------------------|--------------------|----------------------|-------------------------|------------------|-------|
|                                          |                    | Make                 | Break                   | Make             | Break |
| 120 VAC<br>240 VAC<br>480 VAC<br>600 VAC | 5 A                | 30<br>15<br>7.5<br>6 | 3<br>1.5<br>0.75<br>0.6 | 3,600            | 360   |

## C300 Authentication conditions

| Rated voltage      | Energizing current | Current (A) |             | Volt-ampere (VA) |       |
|--------------------|--------------------|-------------|-------------|------------------|-------|
|                    |                    | Make        | Break       | Make             | Break |
| 120 VAC<br>240 VAC | 2.5 A              | 15<br>7.5   | 1.5<br>0.75 | 1,800            | 180   |

## A300 Authentication conditions

| Rated voltage      | Energizing current | Current (A) |        | Volt-ampere (VA) |       |
|--------------------|--------------------|-------------|--------|------------------|-------|
|                    |                    | Make        | Break  | Make             | Break |
| 120 VAC<br>240 VAC | 10 A               | 60<br>30    | 6<br>3 | 7,200            | 720   |

## B300 Authentication conditions

| Rated voltage      | Energizing current | Current (A) |          | Volt-ampere (VA) |       |
|--------------------|--------------------|-------------|----------|------------------|-------|
|                    |                    | Make        | Break    | Make             | Break |
| 120 VAC<br>240 VAC | 5 A                | 30<br>15    | 3<br>1.5 | 3,600            | 360   |

## A150 Authentication conditions

| Rated voltage | Energizing current | Current (A) |       | Volt-ampere (VA) |       |
|---------------|--------------------|-------------|-------|------------------|-------|
|               |                    | Make        | Break | Make             | Break |
| 120 VAC       | 10 A               | 60          | 6     | 7,200            | 720   |

## B150 Authentication conditions

| Rated voltage | Energizing current | Current (A) |       | Volt-ampere (VA) |       |
|---------------|--------------------|-------------|-------|------------------|-------|
|               |                    | Make        | Break | Make             | Break |
| 120 VAC       | 5 A                | 30          | 3     | 3,600            | 360   |

## C150 Authentication conditions

| Rated voltage | Energizing current | Current (A) |       | Volt-ampere (VA) |       |
|---------------|--------------------|-------------|-------|------------------|-------|
|               |                    | Make        | Break | Make             | Break |
| 120 VAC       | 2.5 A              | 15          | 1.5   | 1,800            | 180   |

## TÜV (EN 60947-5-1)

(Certification Only for Switches with Ground Terminals and DC Switches with Connectors)

| Authentication conditions                | Specification         |       |           |       |       |                   |
|------------------------------------------|-----------------------|-------|-----------|-------|-------|-------------------|
|                                          | With ground terminals |       |           |       |       | With DC Connector |
|                                          | No indicator          |       | Neon lamp | LED   |       |                   |
| Working load category                    | AC-15                 | DC-12 | AC-15     | AC-15 | DC-12 | DC-12             |
| Rated working voltage (Ue)               | 250 V                 | 48 V  | 250 V     | 115 V | 48 V  | 48 V              |
| Rated working current (Ie)               | 2 A                   |       |           |       |       |                   |
| Conditional short-circuit current        | 100 A                 |       |           |       |       |                   |
| Short-circuit protective device (SCPD)   | 10 A, fuse type gG    |       |           |       |       |                   |
| Rated insulation voltage (Ui)            | 250 V                 |       |           |       |       | 48 V              |
| Rated impulse dielectric strength (Uimp) | 4 kV                  |       |           |       |       | 800 V             |
| Pollution degree                         | 3                     |       |           |       |       |                   |
| Electric shock protection class          | Class I               |       |           |       |       | Class III         |

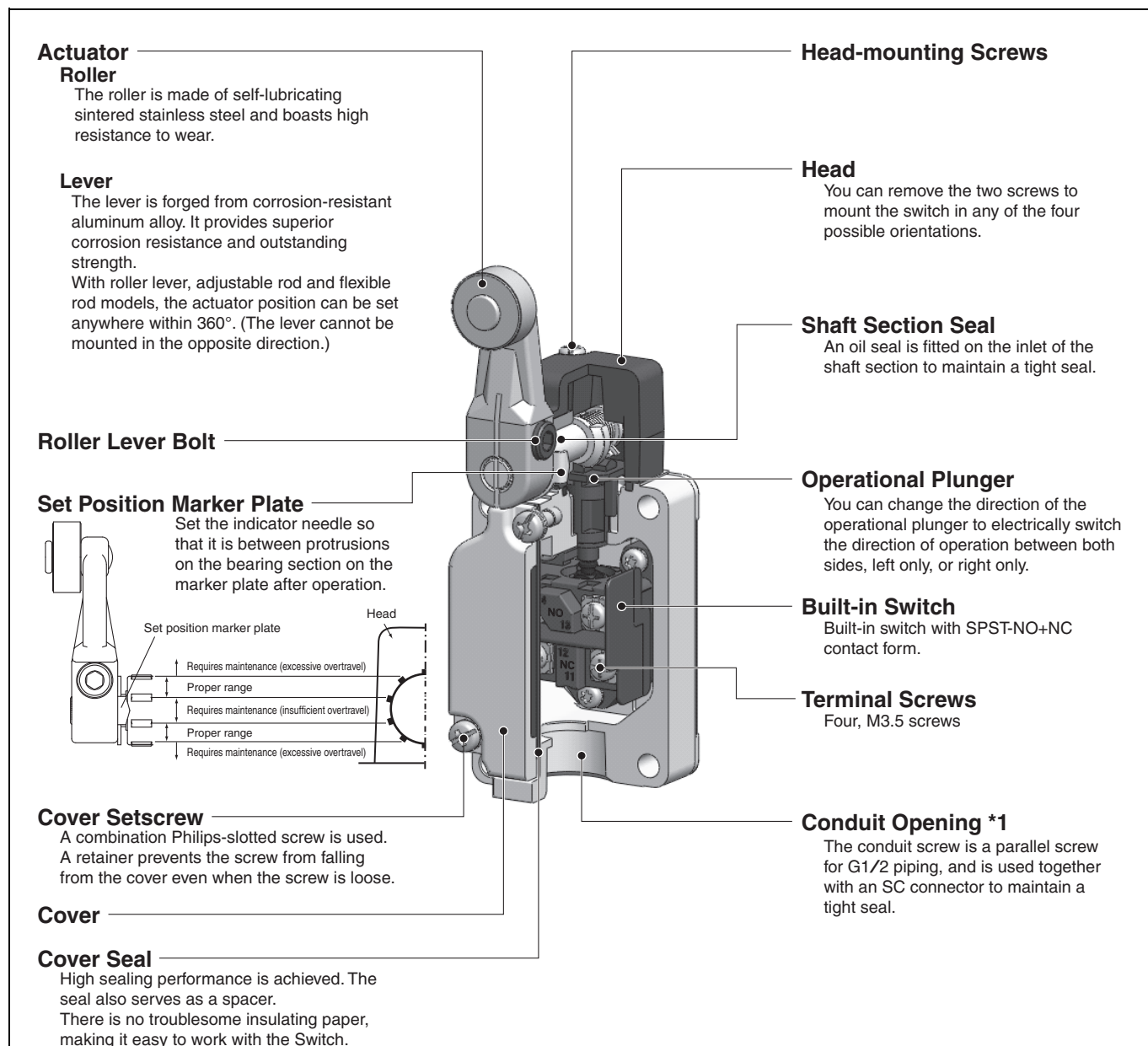
## CCC (GB14048.5)

| Authentication conditions              | Specification      |       |           |       |       |                   |
|----------------------------------------|--------------------|-------|-----------|-------|-------|-------------------|
|                                        | No indicator       |       | Neon lamp | LED   |       | With AC Connector |
| Working load category                  | AC-15              | DC-13 | AC-15     | AC-15 | DC-13 | AC-15             |
| Rated working voltage (Ue)             | 250 V              | 48 V  | 250 V     | 250 V | 48 V  | 250 V             |
| Rated working current (Ie)             | 2 A                |       |           |       |       |                   |
| Conditional short-circuit current      | 1000 A             |       |           |       |       |                   |
| Short-circuit protective device (SCPD) | 10 A, fuse type gG |       |           |       |       |                   |
| Rated insulation voltage (Ui)          | 250 V              |       |           |       |       |                   |

## Structure and Nomenclature

### Structure

#### General-purpose Switches: WLCA2-N



\*1. The available conduit screws are Pg 13.5, M20 and 1/2-14 NPT.

Indicators

Indicator Covers

The indicator covered if outsert molded from diecast aluminum and has outstanding sealing properties.

Indicator Windows

Operating status (i.e., light-ON when operating or light-ON when not operating) depends on whether a neon lamp or an LED is used.

Light-ON when Operating/Not Operating

Indicators can be switched from light-ON when operating and light-ON when not operating, by simply rotating the indicator holder by 180°.

Indicator

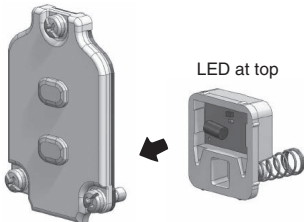
The indicator is either a neon lamp or an LED. Switches with LED indicators have a built-in rectifier stack, so there is no connection polarity.

Contact Spring

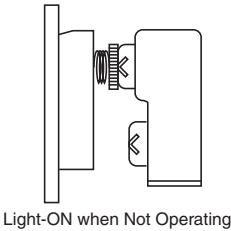
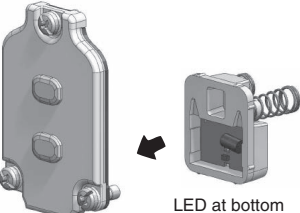
Use the terminal screws on the built-in switch to connect to the lamp terminals. A coil spring is used to make contact, so connecting to the lamp terminals is not necessary.

Lamp Holder

Light-ON when Operating



Light-ON when Not Operating



Operation

|                    |                                |  |
|--------------------|--------------------------------|--|
| WL-LE-N<br>WL-LD-N | Light-ON when operating *1     |  |
|                    | Light-ON when not operating *2 |  |

Internal Circuits

|         |  |
|---------|--|
| WL-LE-N |  |
| WL-LD-N |  |

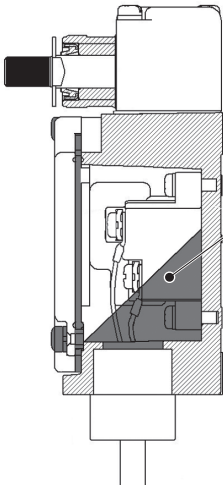
**Note:** 1. Leakage current from indicator circuit may cause load malfunction (i.e., the load may remain ON). Make sure that the load operating current is higher than the leakage current.  
For countermeasures, refer to technical support on your OMRON website.

- \*1. Light-ON when operating means that the lamp lights when the Limit Switch contacts (NC) release, or when the actuator rotates or is pushed down.  
\*2. Light-ON when not operating means the lamp remains lit when the actuator is free, or when the Limit Switch contacts (NO) close when the actuator rotates or is pushed down.

Environment-resistant Switches

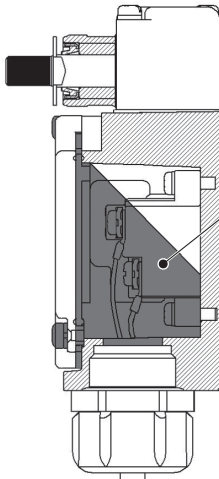
Molding Specifications for Hermetic Switches  : Molded parts

WL□-139-N



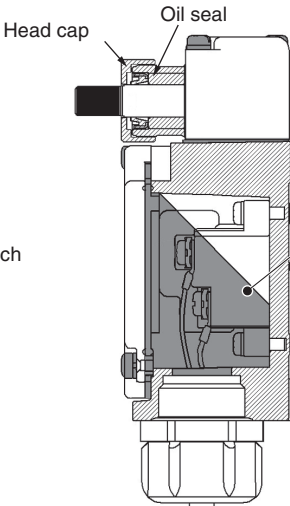
Standard  
built-in switch

WL□-140-N



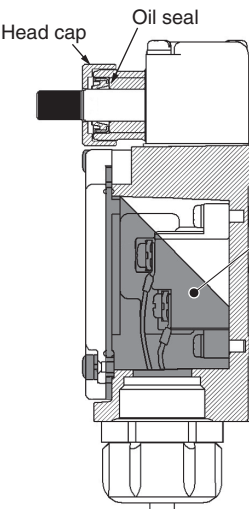
Airtight  
built-in switch

WL□-141-N



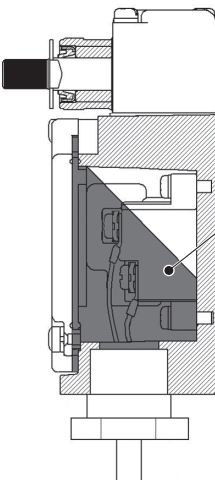
Airtight  
built-in switch

WL□-145-N



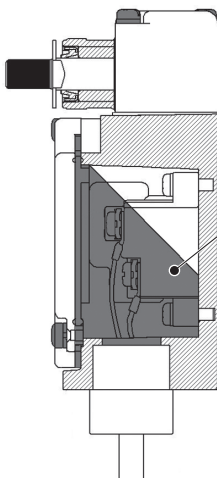
Airtight  
built-in switch

WL□-RP40-N



Airtight  
built-in switch

WL□-RP60-N



Airtight  
built-in switch  
\* Fluorine rubber  
is used for all  
rubber parts.

| Model      | Cable specifications                                                                                                                 | Connector type    |
|------------|--------------------------------------------------------------------------------------------------------------------------------------|-------------------|
| WL□-139-N  | Standard 5-m VCT cable, with high flexibility and good anti-oil properties attached. Finished outer diameter: 11.5 mm, 4 conductors. | Resin cap         |
| WL□-140-N  |                                                                                                                                      | Metal connector   |
| WL□-141-N  |                                                                                                                                      |                   |
| WL□-145-N  |                                                                                                                                      | Resin connector * |
| WL□-RP40-N |                                                                                                                                      |                   |
| WL□-RP60-N |                                                                                                                                      | Resin cap         |

\* The connector can be removed, so it is possible to use flexible conduit for the cable.

## Spatter-prevention Switches: WLCA2-LES-N

### Actuator

#### Roller, Roller Axis

Using stainless steel prevents spatter from adhering.

#### Operating Lever

A baking finish is applied to the surface so that any adhering spatter is easily removed.

### Roller Lever Bolt

Stainless steel construction to prevent spatter adherence.  
Double nut models are also available.

### Screws

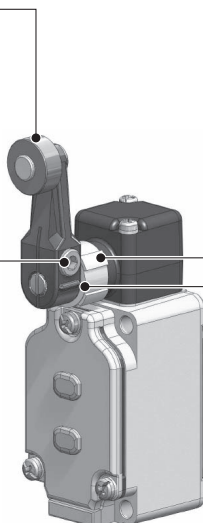
Externally visible screws on the head and cover are made of stainless steel to prevent spatter adherence.

### Head Cap

Using fluororesin prevents spatter from adhering.

\* Spatter means the zinc powder produced when welding.  
Adhering spatter to the Limit Switch may cause malfunction of lever or lamp cover.

The lack of gap prevents spatter powder from clogging.



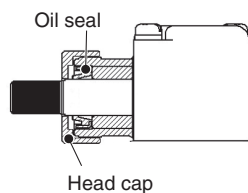
## Long-life Switches

### Head

You can remove the two screws to mount the head in any of the four possible directions.

### Shield Structure

A head cap and oil seal form a double-seal structure. Excellent durability and reliability are ensured.



### Head Cap

The head cap helps prevent the entry of cutting chips. You can use the protrusion on the cap to confirm the set position.

### Actuator

#### Roller

The roller is made of self-lubricating sintered stainless steel. It provides superior resistance to wear.

#### Lever

The lever is forged from anti-corrosive aluminum alloy. It provides superior corrosion resistance and outstanding strength. With a roller lever actuator, the actuator position can be set anywhere within 360°. (The lever cannot be mounted in the opposite direction.)

### Operating Plunger

PEEK resin is used. It provides superior resistance to wear. You can change the mounting direction to use any one of the three operating directions (both sides, left side, or right side).

### Built-in Switch

Built-in switch with an SPST-NO+NC contact form.

### Terminal Screws

Four, M3.5 screws.

### Cover Seal

High sealing performance is achieved. The seal also serves as a spacer. There is no troublesome insulating paper, making it easy to work with the Switch.

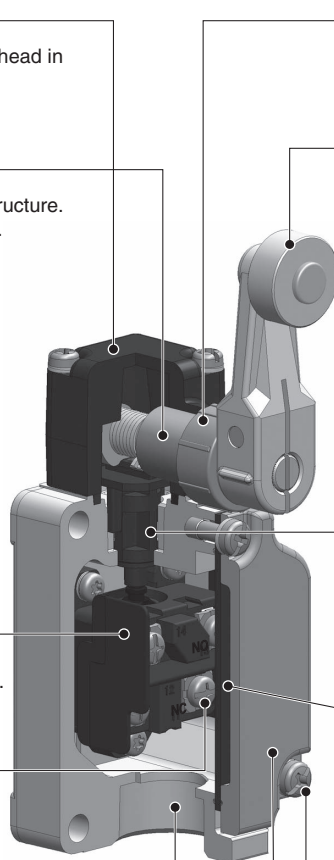
### Cover Setscrew

A combination Phillips-slotted screw is used. A retainer prevents the screw from falling from the cover even when the screw is loose.

### Conduit Opening

In addition to parallel threads for G1/2 tubing, direct-wired and pre-wired connectors have been added to the series.

### Cover



### General-purpose Switches

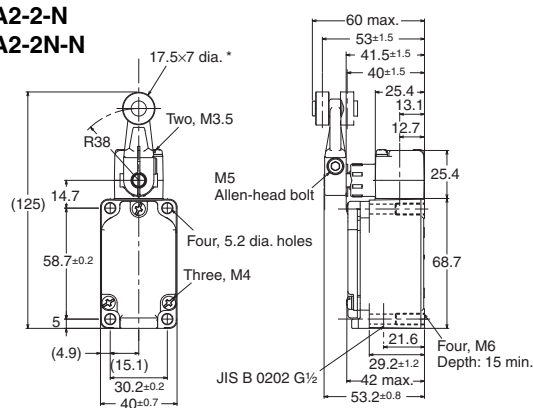
#### Standard Switches

#### Switches with Roller Lever Actuators

#### Basic, High-sensitivity, and High-precision Switches

##### Roller lever R38

Basic  
WLCA2-N  
WLCA2-2-N  
WLCA2-2N-N

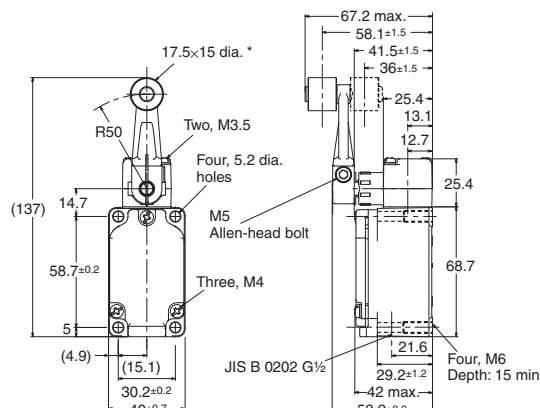


\* Stainless sintered roller

The only difference in the shape for High-sensitivity and High-precision Switches is the set position marker plate.

##### Roller lever R50

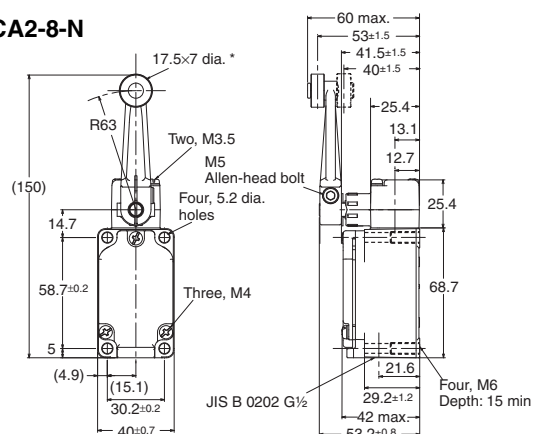
Basic  
WLCA2-7-N



\* Stainless sintered roller

##### Roller lever R63

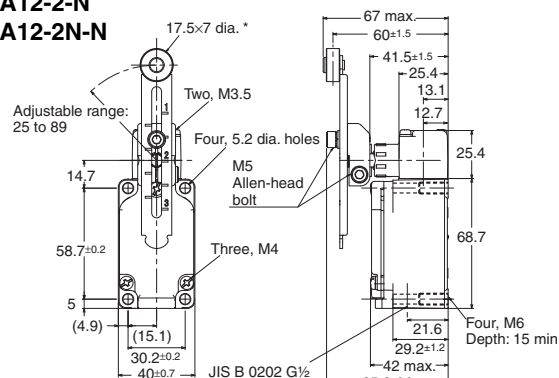
Basic  
WLCA2-8-N



\* Stainless sintered roller

##### Adjustable roller lever

Basic  
WLCA12-N  
WLCA12-2-N  
WLCA12-2N-N



\* Stainless sintered roller

Only the external appearance of the set position indicator plate varies on high-sensitivity models.

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

| Model                 |         | WLCA2-N | WLCA2-2-N | WLCA2-2N-N | WLG2-N                            | WLCA2-7-N | WLCA2-8-N | WLGCA2-N                        |
|-----------------------|---------|---------|-----------|------------|-----------------------------------|-----------|-----------|---------------------------------|
| Operating force       | OF max. | 13.34 N | 13.34 N   | 13.34 N    | 13.34 N                           | 10.2 N    | 8.04 N    | 13.34 N                         |
| Release force         | RF min. | 1.18 N  | 1.18 N    | 1.18 N     | 1.18 N                            | 0.9 N     | 0.71 N    | 1.18 N                          |
| Pretravel             | PT      | 15±5°   | 25±5°     | 20° max.   | 10° <sup>+2°</sup> <sub>-1°</sub> | 15±5°     | 15±5°     | 5° <sup>+2°</sup> <sub>0°</sub> |
| Overtravel            | OT min. | 70°     | 60°       | 70°        | 80°                               | 70°       | 70°       | 80°                             |
| Movement Differential | MD max. | 12°     | 16°       | 10°        | 7°                                | 12°       | 12°       | 3°                              |

| Model                 |         | WLCA12-N *1 | WLCA12-2-N *1 | WLG12-2N-N *1 | WLG12-N *1                        |
|-----------------------|---------|-------------|---------------|---------------|-----------------------------------|
| Operating force       | OF max. | 13.34 N     | 13.34 N       | 13.34 N       | 13.34 N                           |
| Release force         | RF min. | 1.18 N      | 1.18 N        | 1.18 N        | 1.18 N                            |
| Pretravel             | PT      | 15±5°       | 25±5°         | 20° max.      | 10° <sup>+2°</sup> <sub>-1°</sub> |
| Overtravel            | OT min. | 70°         | 60°           | 70°           | 80°                               |
| Movement Differential | MD max. | 12°         | 16°           | 10°           | 7°                                |

\*1. The operating characteristics for WLCA12-N, WLCA12-2-N, WLCA12-2N-N, and WLG12-N are measured at the lever length of 38 mm.

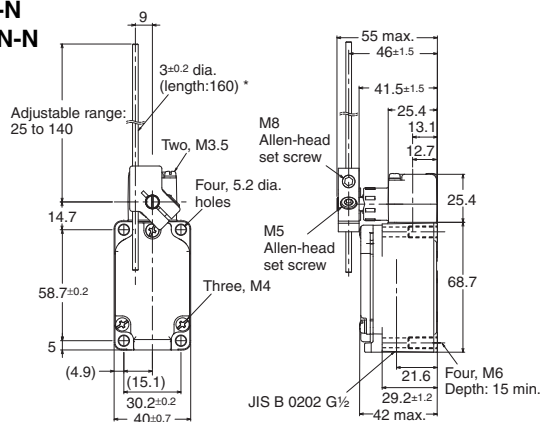
# Switches with Roller Lever Actuators

## Basic, High-sensitivity, and Protective Switches

### Adjustable rod lever 25 to 140 mm

#### Basic

WLCL-N  
WLCL-2-N  
WLCL-2N-N



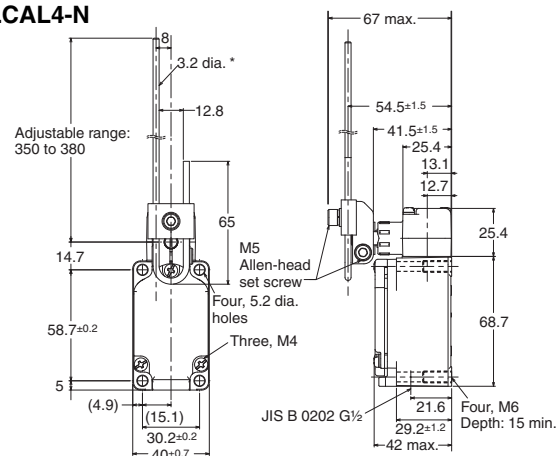
\* Stainless steel rod

Only the external appearance of the set position indicator plate varies on high-sensitivity models.

### Adjustable rod lever

#### Basic

WLCAL4-N

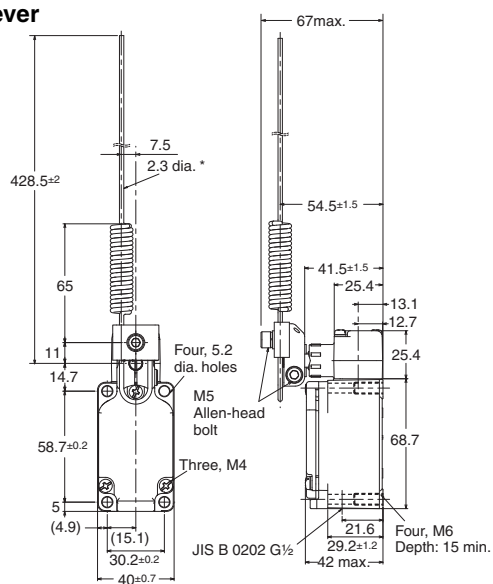


\* Stainless steel rod

### Rod spring lever

#### Basic

WLCAL5-N



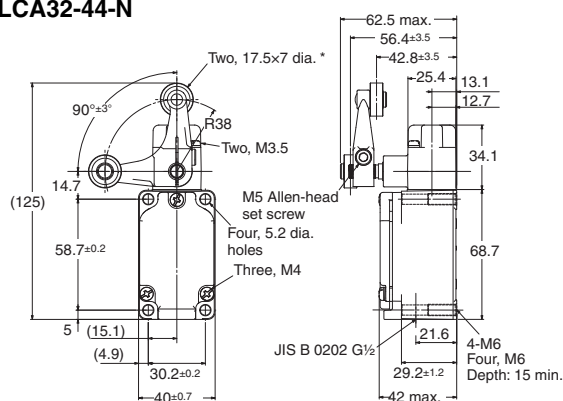
\* Piano wire

### Fork lever lock

#### Protective Switches

WLCA32-41-N  
WLCA32-42-N  
WLCA32-43-N  
WLCA32-44-N

The WLCA32-41-N is shown in the following diagram.



\* Plastic Roller  
(The WLCA32-041-N to WLCA32-044-N have stainless steel rollers.)

**Note:** 1. Unless otherwise indicated, a tolerance of  $\pm 0.4$  mm applies to all dimensions.

| Operating characteristics |    | Model | WLCL-N *1 | WLCL-2-N *1 | WLCL-2N-N *1 | WLGL-N *1      | WLCAL4-N *2 | WLCAL5-N |
|---------------------------|----|-------|-----------|-------------|--------------|----------------|-------------|----------|
| Operating force           | OF | max.  | 1.39 N    | 1.39 N      | 1.39 N       | 2.84 N         | 0.98 N      | 0.9 N    |
| Release force             | RF | min.  | 0.27 N    | 0.27 N      | 0.27 N       | 0.25 N         | 0.15 N      | 0.09 N   |
| Pretravel                 | PT |       | 15±5°     | 25±5°       | 20° max.     | 10° -2°<br>-1° | 15±5°       | 15±5°    |
| Overtravel                | OT | min.  | 70°       | 60°         | 70°          | 80°            | 70°         | 70°      |
| Movement Differential     | MD | max.  | 12°       | 16°         | 10°          | 7°             | 12°         | 12°      |

**Note:** The actuator on the WLCAL4-N and WLCAL5-N is heavy, which may result in resetting problems depending on the direction the Switch is mounted. Mount the Switch so that the actuator is facing downwards to prevent this problem from occurring.

\*1. The operating characteristics for WLCL-N, WLCL-2-N, WLCL-2N-N, and WLGL-N are measured at the lever length of 140 mm.

\*2. The operating characteristics of WLCAL4-N are measured at a rod length of 380 mm.

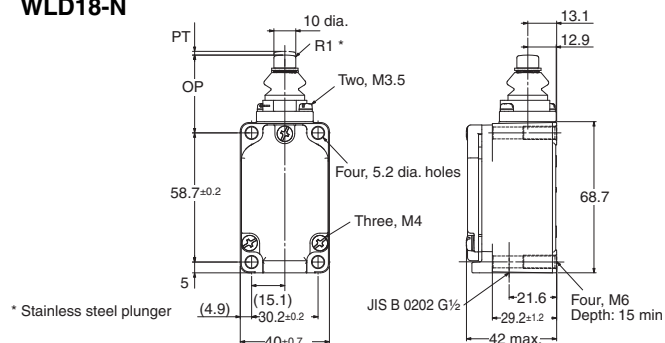
| Operating characteristics                             |      | Model | WLCA32-41 to 44-N |
|-------------------------------------------------------|------|-------|-------------------|
| Force necessary to reverse the direction of the lever | max. |       | 11.77 N           |
| Movement until the lever reverses                     |      |       | 50±5°             |
| Movement until switch operation                       | max. |       | 55°               |
| Movement after switch operation                       | min. |       | 35°               |

## Switches with Plunger Actuators

### Basic Switches

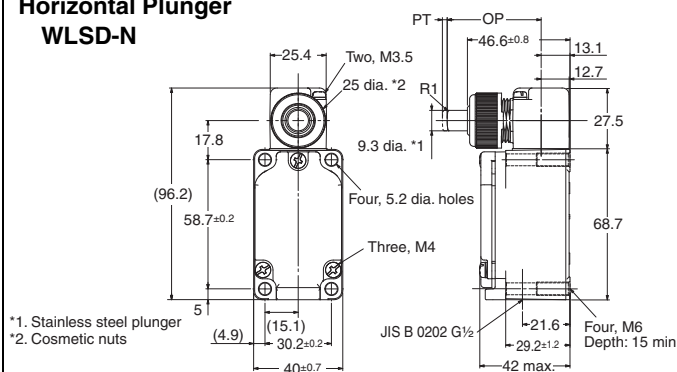
#### Sealed Top Plunger

##### WLD18-N



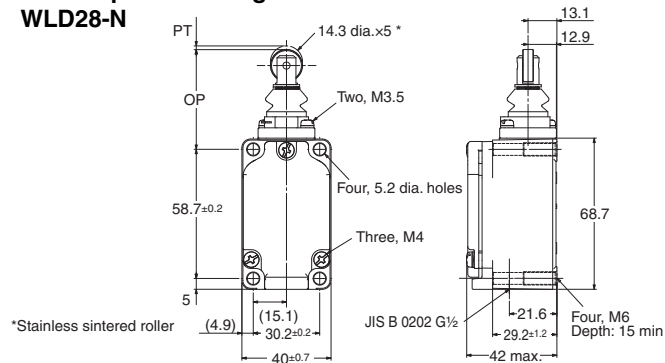
#### Horizontal Plunger

##### WLSD-N



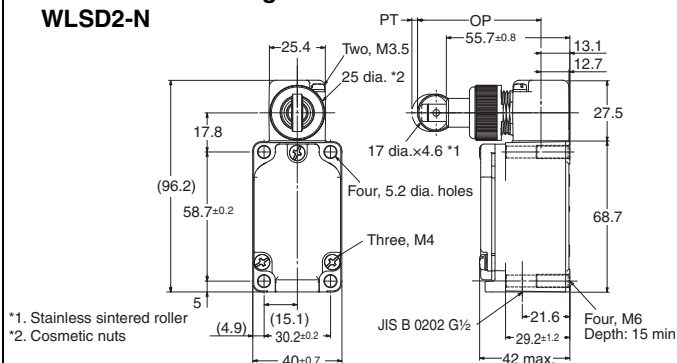
#### Sealed Top-roller Plunger

##### WLD28-N



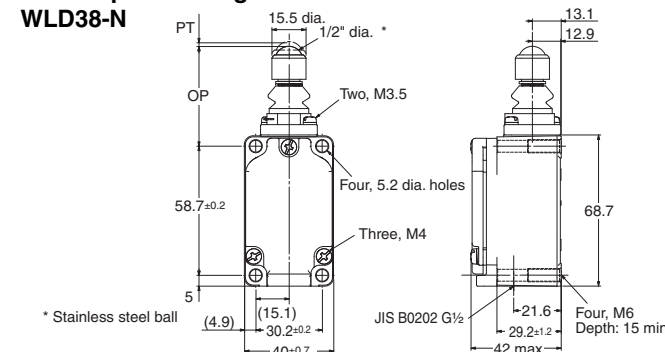
#### Horizontal-roller Plunger

##### WLSD2-N



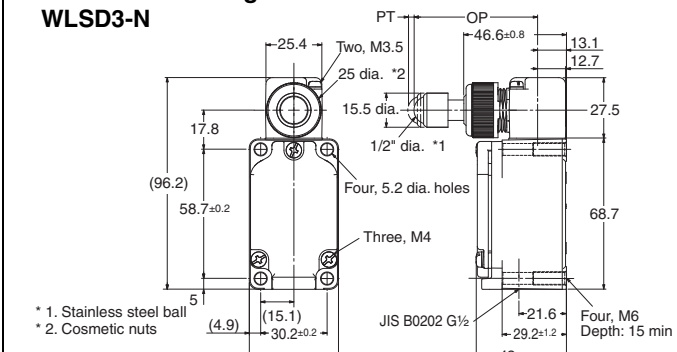
#### Sealed Top-ball Plunger

##### WLD38-N



#### Horizontal-ball Plunger

##### WLSD3-N



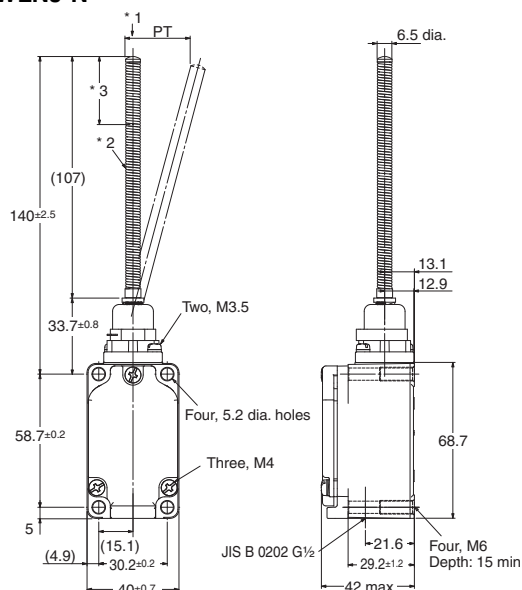
**Note:** Unless otherwise indicated, a tolerance of  $\pm 0.4$  mm applies to all dimensions.

| Operating characteristics |     | Model | WLD18-N   | WLD28-N   | WLD38-N     | WLSD-N      | WLSD2-N     | WLSD3-N     |
|---------------------------|-----|-------|-----------|-----------|-------------|-------------|-------------|-------------|
| Operating force           | OF  | max.  | 26.67 N   | 16.67 N   | 16.67 N     | 40.03 N     | 40.03 N     | 40.03 N     |
|                           | RF  | min.  | 8.92 N    | 4.41 N    | 4.41 N      | 8.89 N      | 8.89 N      | 8.89 N      |
| Pretravel                 | PT  | max.  | 1.7 mm    | 1.7 mm    | 1.7 mm      | 2.8 mm      | 2.8 mm      | 2.8 mm      |
| Overtravel                | OT  | min.  | 6.4 mm    | 5.6 mm    | 5.6 mm      | 6.4 mm      | 5.6 mm      | 4 mm        |
| Movement Differential     | MD  | max.  | 1 mm      | 1 mm      | 1 mm        | 1 mm        | 1 mm        | 1 mm        |
| Operating position        | OP  |       | 34±0.8 mm | 44±0.8 mm | 44.5±0.8 mm | 40.6±0.8 mm | 54.2±0.8 mm | 54.1±0.8 mm |
| Total travel position     | TTP | max.  | 29.5 mm   | 39.5 mm   | 41 mm       | —           | —           | —           |

# Switches with Flexible Rod Actuators

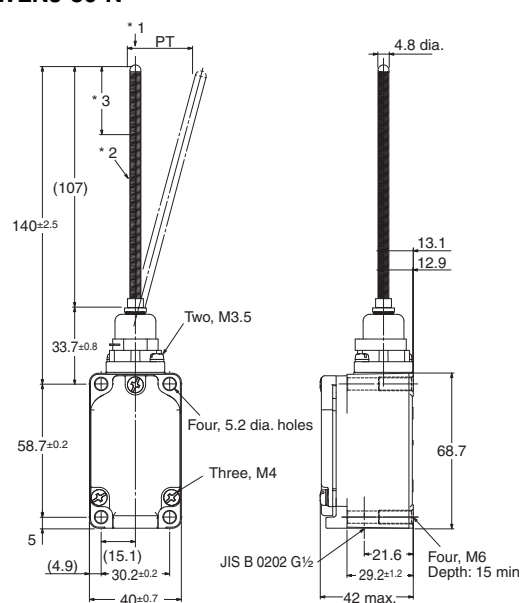
## Basic Switches

### Coil Spring WLNJ-N



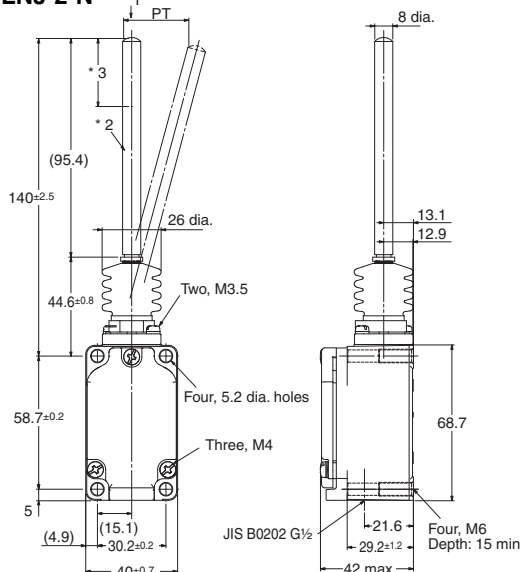
- \*1. Do not operate the Switch in the direction of the axial center.
- \*2. Stainless steel coil spring.
- \*3. The range for operation is 1/3rd of the overall spring length from the end of the spring.

### Coil Spring (Multi-wire) WLNJ-30-N



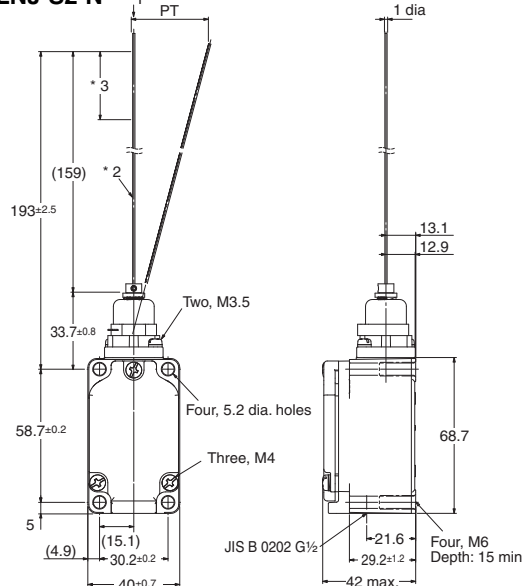
- \*1. Do not operate the Switch in the direction of the axial center.
- \*2. Piano wire coil spring.
- \*3. The range for operation is 1/3rd of the overall spring length from the end of the spring.

### Resin Rod WLNJ-2-N



- \*1. Do not operate the Switch in the direction of the axial center.
- \*2. Polyamide Resin Rod
- \*3. The range for operation is 1/3rd of the overall rod length from the end of the rod.

### Steel Wire WLNJ-S2-N



- \*1. Do not operate the Switch in the direction of the axial center.
- \*2. Stainless steel wire.
- \*3. The range for operation is 1/3rd of the overall wire length from the end of the wire.

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

| Model                     |         | WLNJ-N   | WLNJ-30-N | WLNJ-2-N | WLNJ-S2-N |
|---------------------------|---------|----------|-----------|----------|-----------|
| Operating characteristics |         |          |           |          |           |
| Operating force           | OF      | 1.47 N   | 1.47 N    | 1.47 N   | 0.28 N    |
| Pretravel                 | Max. PT | 20±10 mm | 20±10 mm  | 40±20 mm | 40±20 mm  |

\* These values are for the top end of the spring, rod, or wire.

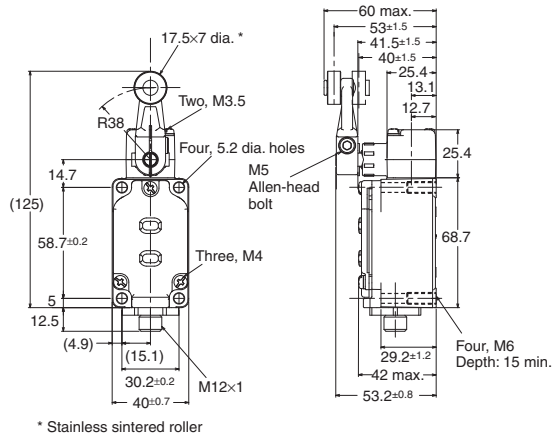
Sensor I/O connector Switches

(For details about applicable cables, refer to *Connecting Sensor I/O Connectors Cable and Socket* on page 16.)

Switches with Roller Lever Actuators

Switches with Direct-wired Connectors

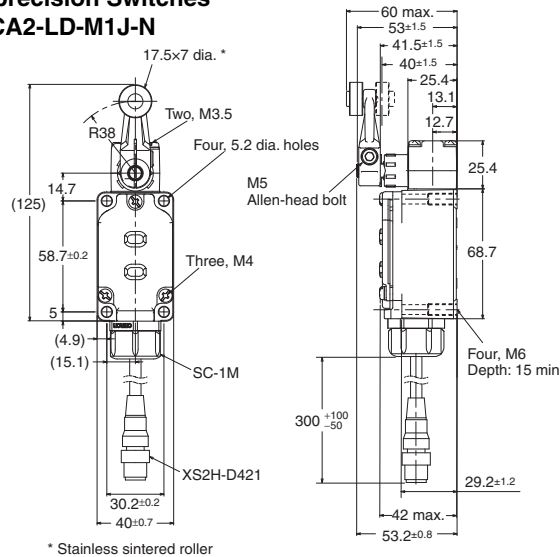
Basic Switches  
WLCA2-LDK13-N  
High-sensitivity Switches  
WLG2-LDK13-N  
High-precision Switches  
WLGCA2-LDK13-N



The only difference in the shape for High-sensitivity and High-precision Switches is the set position marker plate.

Switches with Pre-wired Connectors

Basic Switches  
WLCA2-LD-M1J-N  
High-sensitivity Switches  
WLG2-LD-M1J-N  
High-precision Switches  
WLGCA2-LD-M1J-N



The only difference in the shape for High-sensitivity and High-precision Switches is the set position marker plate.

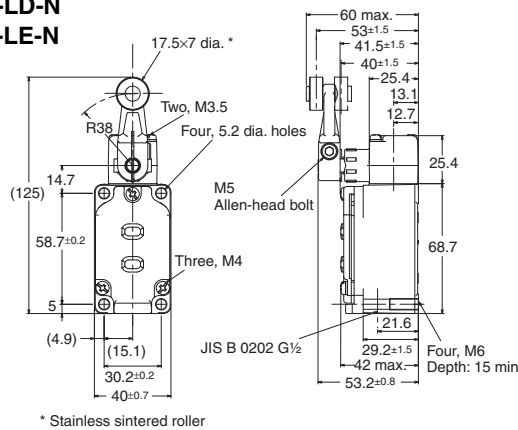
**Note:** 1. Unless otherwise indicated, a tolerance of  $\pm 0.4$  mm applies to all dimensions.  
2. The following diagrams are for a indicator-equipped models.

| Operating characteristics |    | Model | Basic Switches   | High-sensitivity Switches                                             | High-precision Switches                                              |
|---------------------------|----|-------|------------------|-----------------------------------------------------------------------|----------------------------------------------------------------------|
| Operating force           | OF | max.  | 13.34 N          | 13.34 N                                                               | 13.34 N                                                              |
| Release force             | RF | min.  | 1.18 N           | 1.18 N                                                                | 1.18 N                                                               |
| Pretravel                 | PT |       | $15 \pm 5^\circ$ | $10^\circ \begin{smallmatrix} +2^\circ \\ -1^\circ \end{smallmatrix}$ | $5^\circ \begin{smallmatrix} +2^\circ \\ -0^\circ \end{smallmatrix}$ |
| Overtravel                | OT | min.  | $70^\circ$       | $80^\circ$                                                            | $80^\circ$                                                           |
| Movement Differential     | MD | max.  | $12^\circ$       | $7^\circ$                                                             | $3^\circ$                                                            |

Operation indicator Switches

Roller lever

WLCA2-LD-N  
WLCA2-LE-N



| Operating characteristics |    | Model | WLCA2-LD-N<br>WLCA2-LE-N |
|---------------------------|----|-------|--------------------------|
| Operating force           | OF | max.  | 13.34 N                  |
| Release force             | RF | min.  | 1.18 N                   |
| Pretravel                 | PT |       | $15 \pm 5^\circ$         |
| Overtravel                | OT | min.  | $70^\circ$               |
| Movement Differential     | MD | max.  | $12^\circ$               |

**Note:** 1. Unless otherwise indicated, a tolerance of  $\pm 0.4$  mm applies to all dimensions.

## Spatter-prevention Switches

### Switches with Roller Lever Actuators

#### Switches with Screw Terminals

##### Basic Switches

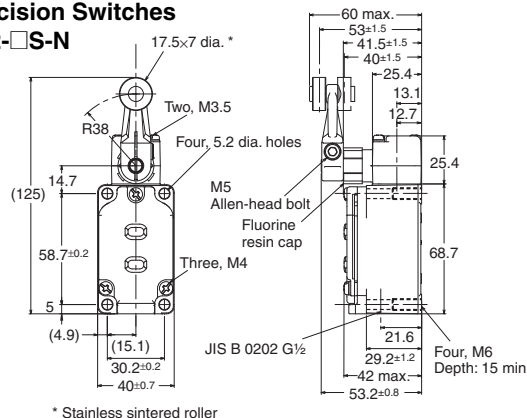
##### WLCA2-□S-N

##### High-sensitivity Switches

##### WLG2-□S-N

##### High-precision Switches

##### WLGA2-□S-N

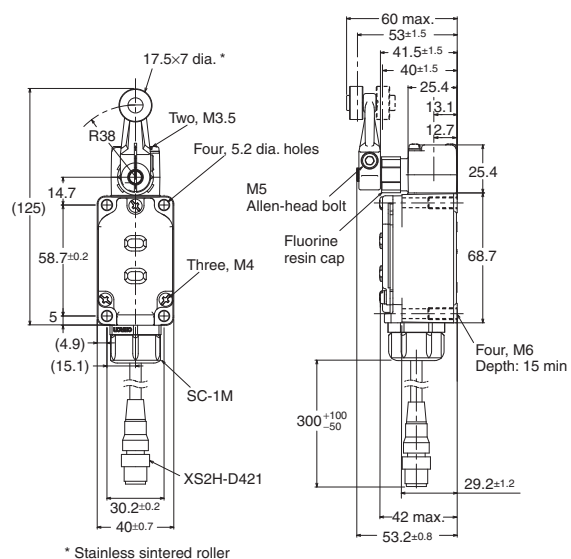


\* Stainless sintered roller

The only difference in the shape for High-sensitivity and High-precision Switches is the set position marker plate.

#### Switches with Pre-wired Connectors

##### WLCA2-□S-M1J-N

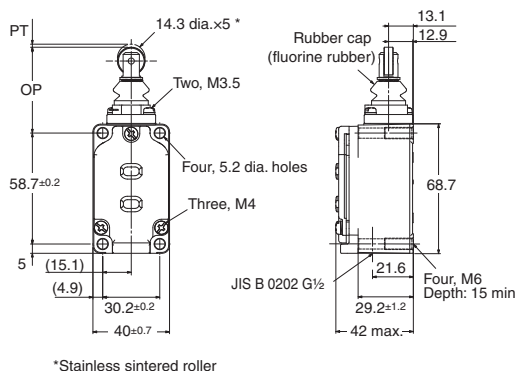


\* Stainless sintered roller

### Switches with Sealed Top-roller Plungers

#### Switches with Screw Terminals

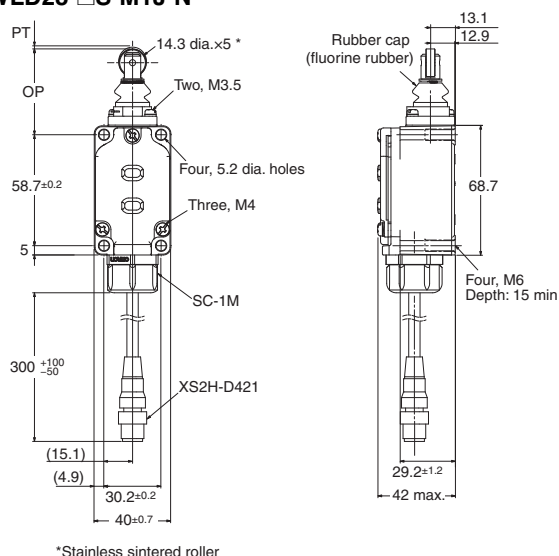
##### WLD28-□S-N



\*Stainless sintered roller

#### Switches with Pre-wired Connectors

##### WLD28-□S-M1J-N



\*Stainless sintered roller

**Note:** 1. Unless otherwise indicated, a tolerance of  $\pm 0.4$  mm applies to all dimensions.  
2. The above diagrams are for Indicator-equipped Switches.

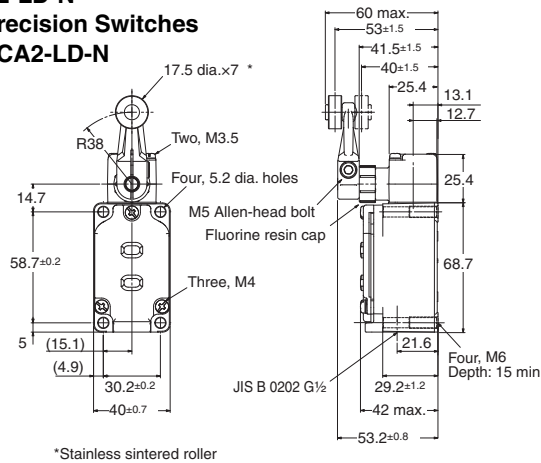
| Actuator                  |          | Switches with Roller Lever Actuators |                           |                         | Switches with Sealed Top-roller Plungers |
|---------------------------|----------|--------------------------------------|---------------------------|-------------------------|------------------------------------------|
| Operating characteristics |          | Basic Switches                       | High-sensitivity Switches | High-precision Switches |                                          |
| Operating force           | OF max.  | 13.34 N                              | 13.34 N                   | 13.34 N                 | 16.67 N                                  |
| Release force             | RF min.  | 1.18 N                               | 1.18 N                    | 1.18 N                  | 4.41 N                                   |
| Pretravel                 | PT       | 15±5°                                | 10° <sup>±2°</sup>        | 5° <sup>±2°</sup>       | Max.1.7 mm                               |
| Overtravel                | OT min.  | 70°                                  | 80°                       | 80°                     | 5.6 mm                                   |
| Movement Differential     | MD max.  | 12°                                  | 7°                        | 3°                      | 1 mm                                     |
| Operating position        | OT       | —                                    | —                         | —                       | 44±0.8 mm                                |
| Total travel position     | TTP max. | —                                    | —                         | —                       | 39.5 mm                                  |

Long-life Switches

Switches with Roller Lever Actuators

Switches with Screw Terminals

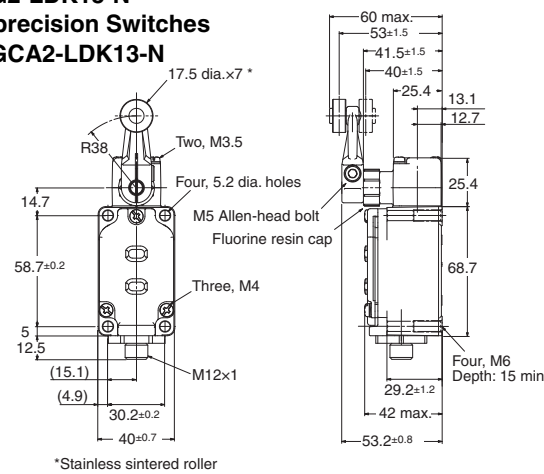
- Basic Switches  
WLMCA2-LD-N
- High-sensitivity Switches  
WLMG2-LD-N
- High-precision Switches  
WLMGCA2-LD-N



The only difference in the shape for High-sensitivity and High-precision Switches is the set position marker plate.

Switches with Direct-wired Connectors

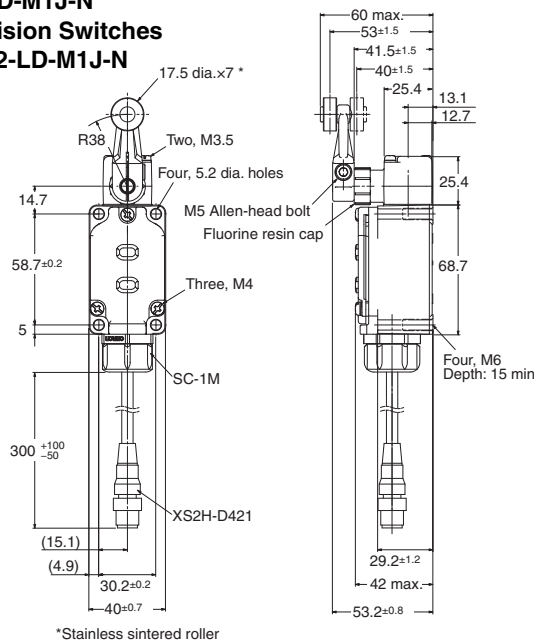
- Basic Switches  
WLMCA2-LDK13-N
- High-sensitivity Switches  
WLMG2-LDK13-N
- High-precision Switches  
WLMGCA2-LDK13-N



The only difference in the shape for High-sensitivity and High-precision Switches is the set position marker plate.

Switches with Pre-wired Connectors

- Basic Switches  
WLMCA2-LD-M1J-N
- High-sensitivity Switches  
WLMG2-LD-M1J-N
- High-precision Switches  
WLMGCA2-LD-M1J-N



The only difference in the shape for High-sensitivity and High-precision Switches is the set position marker plate.

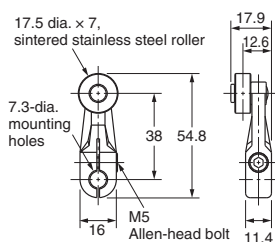
**Note:** 1. Unless otherwise indicated, a tolerance of  $\pm 0.4$  mm applies to all dimensions.  
2. The above diagrams are for Indicator-equipped Switches.

| Actuator                  |    |      | Switches with Roller Lever Actuators |                            |                          |
|---------------------------|----|------|--------------------------------------|----------------------------|--------------------------|
| Operating characteristics |    |      | Basic Switches                       | High-sensitivity Switches  | High-precision Switches  |
| Operating force           | OF | max. | 13.34 N                              | 13.34 N                    | 13.34 N                  |
| Release force             | RF | min. | 1.18 N                               | 1.18 N                     | 1.18 N                   |
| Pretravel                 | PT |      | 15±5°                                | 10° <sup>+2°<br/>-1°</sup> | 5° <sup>+2°<br/>0°</sup> |
| Overtravel                | OT | min. | 70°                                  | 80°                        | 80°                      |
| Movement Differential     | MD | max. | 12°                                  | 7°                         | 3°                       |

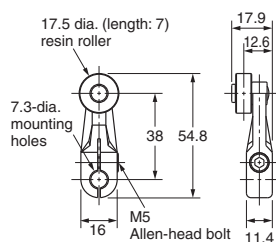
# Actuators (Levers Only)

Lever: Only rotating lever models are illustrated.

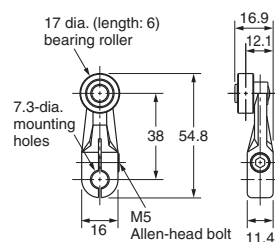
**WL-1A100**  
Standard Lever



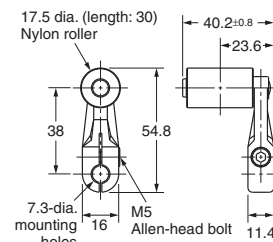
**WL-1A115**  
Resin Roller



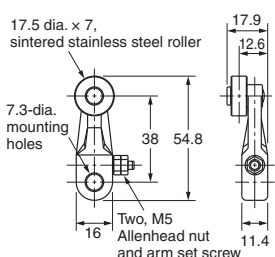
**WL-1A400**  
Bearing Roller



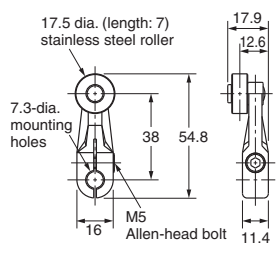
**WL-1A118**  
Nylon Roller:  
Roller Width: 30 mm



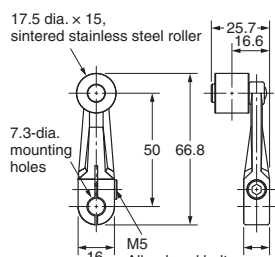
**WL-1A105**  
Double Nuts



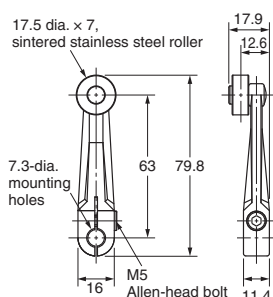
**WL-1A103S**  
Spatter



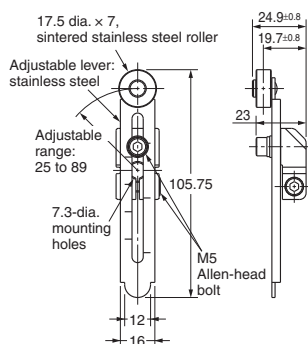
**WL-1A200**  
Lever Length: 50  
Roller Width: 15



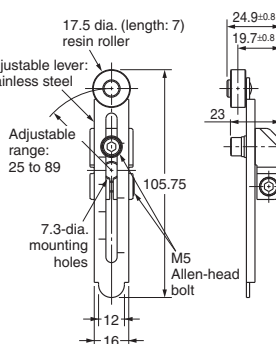
**WL-1A300**  
Lever Length: 63



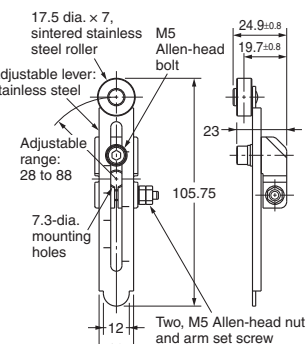
**WL-2A100**



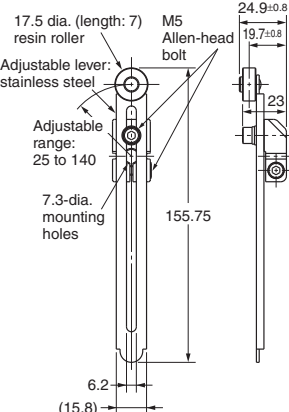
**WL-2A111**  
Resin Roller



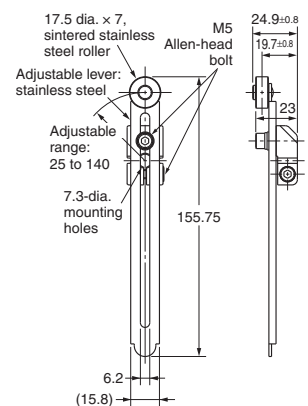
**WL-2A107**  
Double Nuts



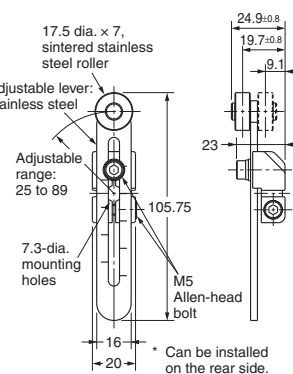
**WL-2A108**  
Resin Roller



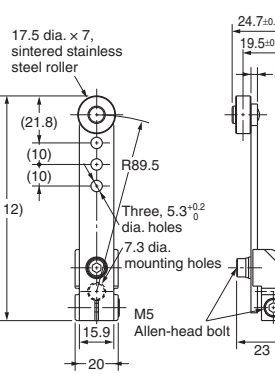
**WL-2A122**



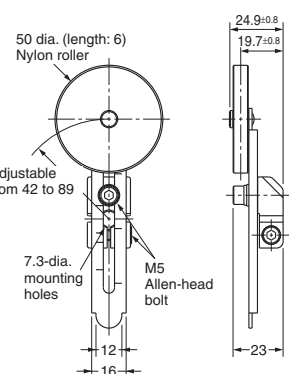
**WL-2A106**



**WL-2A130**



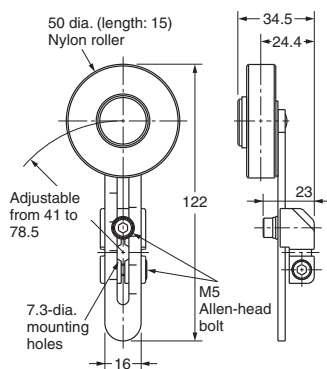
**WL-2A104**



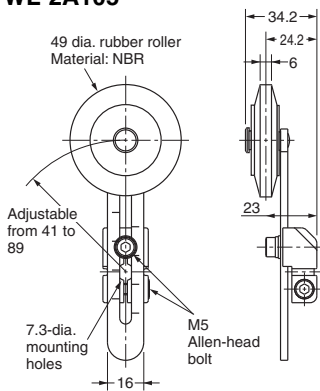
**Note: 1.** Unless otherwise indicated, a tolerance of  $\pm 0.4$  mm applies to all dimensions.

**Lever: Only rotating lever models are illustrated.**

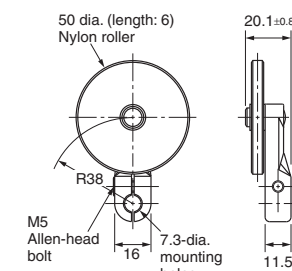
## WL-2A110



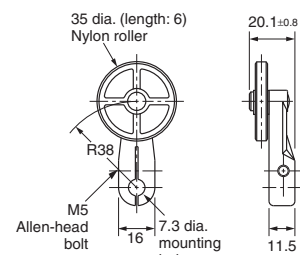
## WL-2A105



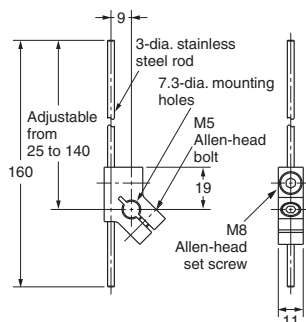
## WL-1A106



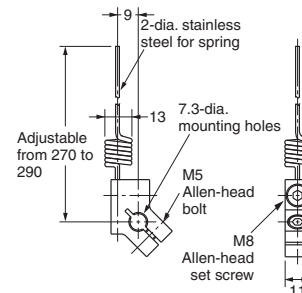
## WL-1A110



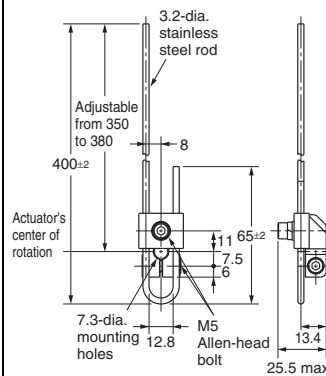
## WL-4A100



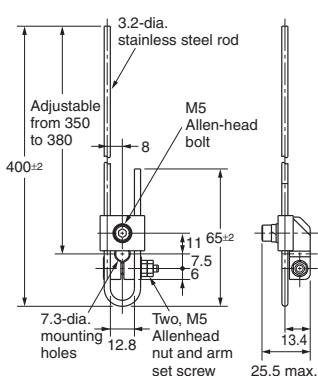
## WL-4A201



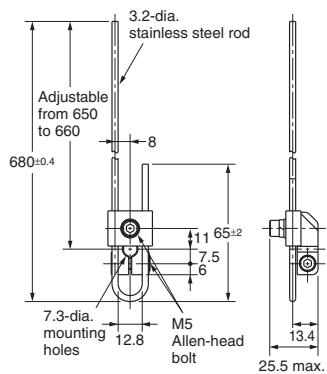
## WL-3A100



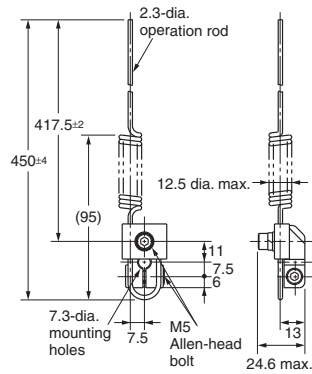
## WL-3A106 Double Nut



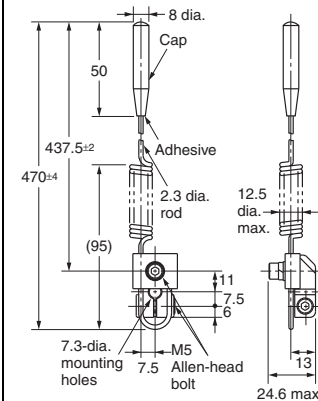
## WL-3A108



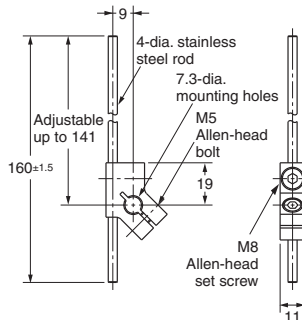
## WL-3A200



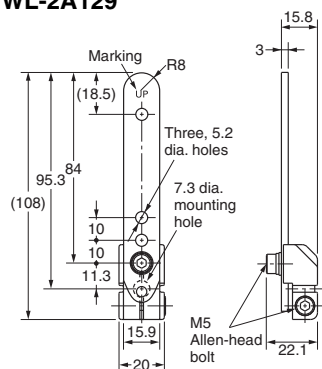
## WL-3A203



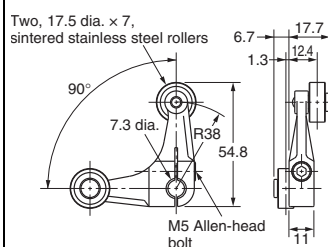
## WL-4A112



## WL-2A129

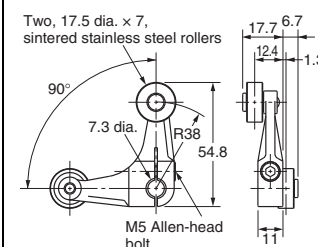


## WL-5A101



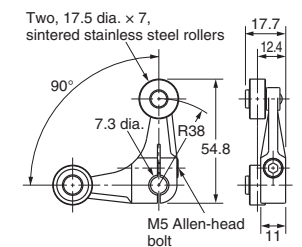
WL-5A100 has a plastic roller

## WL-5A103



WL-5A102 has a plastic roller

## WL-5A105



WL-5A104 has a plastic roller

- Note:** 1. Unless otherwise indicated, a tolerance of  $\pm 0.4$  mm applies to all dimensions.  
2. When using the adjustable roller (rod) lever, make sure that the lever is facing downwards.  
Use caution, as telegraphing (the Switch turns ON and OFF repeatedly due to inertia) may occur.