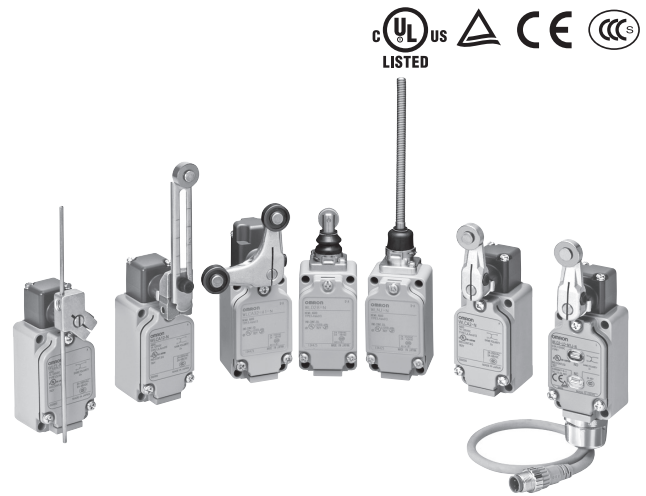


Two-circuit Limit Switches WL-N/WLG

Two-circuit limit switches that can be selected to match the operating environment and application

**WL-N/Basic models,
WLG/High-sensitivity and
High-precision models**

- Wide variety of head shapes, including Roller Lever, Plunger, Flexible Rod, and Fork Lock Lever Switches (General-purpose Switches).
- You can select the optimum actuator shape for the workpiece shape and movement from a variety of actuators.
- In addition to general detection, we also have environment resistant models for harsh environments, sputter resistant models for welding processes, and long-life models for high-frequency use.
- Degree of Protection; IP67



For the most recent information on models that have been certified for safety standards, refer to your OMRON website.

⚠ Be sure to read *Safety Precautions* on pages 83 to 88 and *Safety Precautions for All Limit Switches*.

Two-circuit Limit Switch

| | |
|---|---------|
| WL-N/WLG General-purpose Switches | page 5 |
| WL-N/WLG Environment-resistant Switches | page 33 |
| WL-N/WLG Spatter-prevention Switches..... | page 51 |
| WL-N/WLG Long-life Switches..... | page 62 |





Common Features

| | |
|--|---------|
| Common Specifications | page 73 |
| Common Accessories (Sold Separately) | page 75 |
| Safety Precautions | page 83 |

Model Number Structure





List of Models




Roller lever

| Type of Switches | Operating environment | | Indicator | | Actuator | | R38  | R50  | R63  | Adjustable Roller Lever (R25 to 89 mm)  | Page |
|--|---|---------------------|-----------------------------|-----------|-----------------------|-----|---|---|---|--|------|
| | | | | | Wiring Specifications | | | | | | |
| General-purpose Switches | Ambient operating temperature (-10 to 80°C) | | Without operation indicator | | Screw terminals | ○* | ○ | ○ | ○* | page 5 | |
| | | | With operation indicator | LED | | ○* | ○ | ○ | ○* | | |
| | | | | Neon lamp | ○* | ○ | ○ | ○* | | | |
| | | | With operation indicator | LED | Direct-wire connector | ○* | --- | --- | --- | | |
| With operation indicator | LED | Pre-wired Connector | ○* | --- | --- | --- | | | | | |
| Environment-resistant Switches | Ambient operating temperature (5 to 120°C) | TH | Without operation indicator | | Screw terminals | ○ | --- | --- | ○ | page 33 | |
| | Ambient operating temperature (-40 to 40°C) | TC | | | | ○ | --- | --- | ○ | | |
| | Chemicals and oil | RP | | | | ○ | --- | --- | ○ | | |
| | Outdoors | P1 | | | | ○ | --- | --- | ○ | | |
| | Coolant drops and mist | RP60 | | | ○ | --- | --- | ○ | | | |
| | Mist (Improved sealing for conduit opening and cover) | 139 RP40 | | | ○ | --- | --- | ○ | | | |
| | Constant water drops and mist (Molded conduit opening and cover.) | 140 | | | ○ | --- | --- | ○ | | | |
| Constant water drops or splattering cutting powder (Preventing intrusion of cutting powder through molded conduit opening, cover, and head seal, and a head cap) | 141 145 | ○ | --- | --- | ○ | | | | | | |
| Spatter-prevention Switches | Spattering from welding | | With operation indicator | LED | Screw terminals | ○ | --- | --- | --- | page 51 | |
| | | | | Neon lamp | | ○ | --- | --- | --- | | |
| | | | | LED | Pre-wired connectors | ○ | --- | --- | --- | | |
| Long-life Switches | High-durability | | With operation indicator | LED | Screw terminals | ○ | --- | --- | --- | page 62 | |
| | | | | LED | Pre-wired connectors | ○ | --- | --- | --- | | |

Note: 1. ○ indicates features included in the ordered model.
 2. Models with airtight built-in switch specifications suitable for use in water drop or mist atmospheres are also available. Ask your OMRON representative for details.

Plunger Actuators

| Type | Operating environment | | Indicator | | Actuator Wiring Specifications | Sealed top-roller plunger | Top-roller plunger | Sealed top plunger | Sealed top-ball plunger | Page |
|--|---|-------------------------|-----------------------------|--------------------------|-----------------------------------|---|---|---|---|---------|
| | | | | | |  |  |  |  | |
| General-purpose Switches | Ambient operating temperature (-10 to 80°C) | | Without operation indicator | | Screw terminals | ○* | ○* | ○ | ○ | page 5 |
| | | | With operation indicator | LED | | ○* | ○ | ○ | ○ | |
| | | | | Neon lamp | | ○* | ○ | ○ | ○ | |
| | | | With operation indicator | LED | | Direct-wire connector | ○* | --- | --- | |
| With operation indicator | LED | Pre-wired connectors | ○* | --- | --- | --- | | | | |
| Environment-resistant Switches | Ambient operating temperature (5 to 120°C) | TH | Without operation indicator | | Screw terminals | ○ | ○ | --- | --- | page 33 |
| | Ambient operating temperature (-40 to 40°C) | TC | | | | ○ | --- | --- | --- | |
| | Chemicals and oil | RP | | | | ○ | --- | --- | --- | |
| | Outdoors | P1 | | | | --- | --- | --- | --- | |
| | Coolant drops and mist | RP60 | | | | ○ | --- | --- | --- | |
| | Mist (Improved sealing for conduit opening and cover) | 139 RP40 | | | | ○ | ○ | --- | --- | |
| | Constant water drops and mist (Molded conduit opening and cover.) | 140 | | | | ○ | --- | --- | --- | |
| Constant water drops or splattering cutting powder (Preventing intrusion of cutting powder through molded conduit opening, cover, and head seal, and a head cap) | 141 145 | ○ | ○ | --- | --- | | | | | |
| | Spatter-prevention Switches | Spattering from welding | | With operation indicator | LED | ○ | --- | --- | --- | page 51 |
| Neon lamp | | | | | ○ | --- | --- | --- | | |
| LED | | | | | Pre-wired connectors | ○ | --- | --- | --- | |

| Type | Operating environment | | Indicator | | Actuator Wiring Specifications | Horizontal plunger | Horizontal-roller plunger | Horizontal-ball plunger | Page |
|--|---|-------------------------|-----------------------------|--------------------------|-----------------------------------|---|---|---|---------|
| | | | | | |  |  |  | |
| General-purpose Switches | Ambient operating temperature (-10 to 80°C) | | Without operation indicator | | Screw terminals | ○* | ○* | ○ | page 5 |
| | | | With operation indicator | LED | | ○ | ○ | ○ | |
| | | | | Neon lamp | | ○ | ○ | ○ | |
| | | | With operation indicator | LED | | Direct-wire connector | --- | --- | |
| With operation indicator | LED | Pre-wired connectors | --- | --- | --- | | | | |
| Environment-resistant Switches | Ambient operating temperature (5 to 120°C) | TH | Without operation indicator | | Screw terminals | ○ | ○ | --- | page 33 |
| | Ambient operating temperature (-40 to 40°C) | TC | | | | ○ | ○ | --- | |
| | Chemicals and oil | RP | | | | ○ | ○ | --- | |
| | Outdoors | P1 | | | | --- | --- | --- | |
| | Coolant drops and mist | RP60 | | | | ○ | ○ | --- | |
| | Mist (Improved sealing for conduit opening and cover) | 139 RP40 | | | | ○ | --- | --- | |
| | Constant water drops and mist (Molded conduit opening and cover.) | 140 | | | | --- | ○ | --- | |
| Constant water drops or splattering cutting powder (Preventing intrusion of cutting powder through molded conduit opening, cover, and head seal, and a head cap) | 141 145 | ○ | ○ | --- | | | | | |
| | Spatter-prevention Switches | Spattering from welding | | With operation indicator | LED | --- | --- | --- | page 51 |
| Neon lamp | | | | | --- | --- | --- | | |
| LED | | | | | Pre-wired connectors | --- | --- | --- | |

Note: 1. ○ indicates features included in the ordered model.
 2. Models with airtight built-in switch specifications suitable for use in water drop or mist atmospheres are also available. Ask your OMRON representative for details.

General-purpose Switches

Environment-resistant Switches




Spatter-prevention Switches





Long-life Switches

Accessories

Safety Precautions





Flexible Rod Actuators

| Type | Operating environment | | Indicator | | Actuator Wiring Specifications | Adjustable rod lever (25 to 140 mm) | Adjustable rod lever (350 to 380 mm) | Rod spring lever | Page |
|--------------------------------|---|----------|-----------------------------|-----|-----------------------------------|---|---|---|---------|
| | | | | | |  |  |  | |
| General-purpose Switches | Ambient operating temperature (-10 to 80°C) | | Without operation indicator | LED | Screw terminals | ○* | ○ | ○ | page 5 |
| | | | With operation indicator | | | Neon lamp | --- | --- | |
| | | | With operation indicator | LED | Direct-wire connector | ○ | ○ | ○ | |
| | | | With operation indicator | LED | Pre-wired connectors | ○ | ○ | ○ | |
| Environment-resistant Switches | Ambient operating temperature (5 to 120°C) | TH | Without operation indicator | | Screw terminals | ○ | --- | --- | page 33 |
| | Ambient operating temperature (-40 to 40°C) | TC | | | | ○ | --- | --- | |
| | Chemicals and oil | RP | | | | ○ | --- | --- | |
| | Outdoors | P1 | | | | ○ | --- | --- | |
| | Coolant drops and mist | RP60 | | | | ○ | --- | --- | |
| | Mist (Improved sealing for conduit opening and cover) | 139 RP40 | | | | ○ | --- | --- | |
| | Constant water drops and mist (Molded conduit opening and cover.) | 140 | | | | ○ | --- | --- | |

| Type | Operating environment | | Indicator | | Actuator Wiring Specifications | Coil spring (6.5 dia.) | Coil spring (4.8 dia.) | Resin rod (8 dia.) | Steel wire (1 dia.) | Page |
|--------------------------------|---|----------|-----------------------------|-----|-----------------------------------|---|---|---|---|---------|
| | | | | | |  |  |  |  | |
| General-purpose Switches | Ambient operating temperature (-10 to 80°C) | | Without operation indicator | LED | Screw terminals | ○* | ○ | ○* | ○ | page 5 |
| | | | With operation indicator | | | Neon lamp | ○* | ○ | ○* | |
| | | | With operation indicator | LED | Direct-wire connector | --- | --- | --- | --- | |
| | | | With operation indicator | LED | Pre-wired Connector | --- | --- | --- | --- | |
| Environment-resistant Switches | Ambient operating temperature (5 to 120°C) | TH | Without operation indicator | | Screw terminals | ○ | --- | --- | --- | page 33 |
| | Ambient operating temperature (-40 to 40°C) | TC | | | | ○ | --- | --- | --- | |
| | Chemicals and oil | RP | | | | ○ | --- | --- | --- | |
| | Outdoors | P1 | | | | --- | --- | ○ | --- | |
| | Coolant drops and mist | RP60 | | | | ○ | --- | ○ | --- | |
| | Mist (Improved sealing for conduit opening and cover) | 139 RP40 | | | | ○ | --- | ○ | --- | |
| | Constant water drops and mist (Molded conduit opening and cover.) | 140 | | | | ○ | --- | ○ | --- | |

Note: 1. ○ indicates features included in the ordered model.
 2. Models with airtight built-in switch specifications suitable for use in water drop or mist atmospheres are also available. Ask your OMRON representative for details.

Fork Lock Lever Actuators

| Type | Operating environment | | Indicator | | Actuator Wiring Specifications | Fork Lock Lever A | Fork Lock Lever B | Fork Lock Lever C | Fork Lock Lever D | Page |
|--------------------------|---|--|-----------------------------|-----|-----------------------------------|---|--|---|---|--------|
| | | | | | |  |  |  |  | |
| General-purpose Switches | Ambient operating temperature (-10 to 80°C) | | Without operation indicator | LED | Screw terminals | ○ | ○ | ○ | ○ | page 5 |
| | | | With operation indicator | | | Neon lamp | ○ | --- | ○ | |
| | | | With operation indicator | LED | Direct-wire connector | --- | --- | --- | --- | |
| | | | With operation indicator | LED | Pre-wired connectors | --- | --- | --- | --- | |

Note: ○ indicates features included in the ordered model.


General-purpose Switches WL-N/WLG

Wide variety of head shapes to match the operating environment and application

- Wide variety of head shapes, including Roller Lever, Plunger, Flexible Rod, and Fork Lock Lever Switches. Wide variety of head shapes for fork lock lever
- You can select the optimum actuator shape for the workpiece shape and movement from a variety of actuators. Enables selection of optimum shape
- Degree of Protection; IP67
- Operation indicators (LED/neon lamps) for enabling simple daily inspection are available
- In addition to regular screw terminals, direct-wire and pre-wired connectors are also available based on the wiring specifications



For the most recent information on models that have been certified for safety standards, refer to the OMRON website.

 Be sure to read *Safety Precautions* on pages 83 to 88 and *Safety Precautions for All Limit Switches*.

Features

A type with operation indicators for easily confirming operation is available

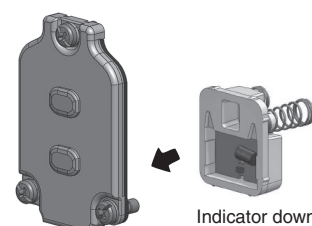
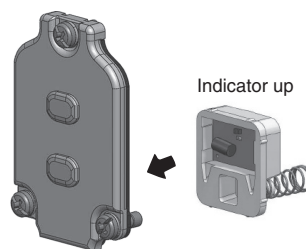
Indicates the operation status of the switches using LEDs and neon lamps.



The light-ON when operating status and the light-ON when not operating status can be easily switched by turning the lamp holder 180°.

Light-ON when Operating

Light-ON when Not Operating



Selectable based on wiring specifications



Screw terminals



Direct-wire connector



Pre-wired connector

Pre-wired connectors include Smartclick products that turn by only 1/8-turn when attaching and removing. This reduces the labor required for connections and maintenance.



 Smartclick

Model Number Structure

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

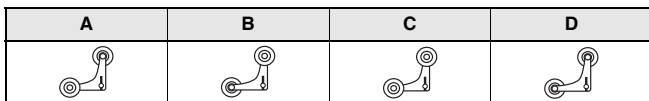
Basic models

WL□ - □□□□ -N
 (1) (2) (3) (4) (5)

(1) Actuator and Property Specifications

| Code | Actuator | | Pretravel (PT) |
|---------|--------------------------------------|--|-------------------------------------|
| CA2 | Roller Lever | Roller lever: R38 mm | 15±5° |
| CA2-2 | | | 25±5° |
| CA2-2N | | | 20° max. |
| CA2-7 | | Roller lever: R50 mm | 15±5° |
| CA2-8 | | Roller lever: R63 mm | 15±5° |
| CA12 | | Adjustable roller lever (R25 to 89 mm) | 15±5° |
| CA12-2 | | | 25±5° |
| CA12-2N | | | 20° max. |
| D28 | Plunger Actuators | Sealed top-roller plunger | 1.7 mm max. |
| D2 | | Top-roller plunger | 1.7 mm max. |
| D18 | | Sealed top plunger | 1.7 mm max. |
| D38 | | Sealed top-ball plunger | 1.7 mm max. |
| SD | | Horizontal plunger | 2.8 mm max. |
| SD2 | | Horizontal-roller plunger | 2.8 mm max. |
| SD3 | | Horizontal-ball plunger | 2.8 mm max. |
| CL | | Flexible Rod Actuators | Adjustable Rod Lever (25 to 140 mm) |
| CL-2 | 25±5° | | |
| CL-2N | 20° max. | | |
| CAL4 | Adjustable Rod Lever (350 to 380 mm) | | 15±5° |
| CAL5 | Rod spring lever | | 15±5° |
| NJ | Coil spring (6.5 dia.) | | 20±10 mm |
| NJ-30 | Coil spring (4.8 dia.) | | 20±10 mm |
| NJ-2 | Flexible rod: Resin rod (8 dia.) | | 40±20 mm |
| NJ-S2 | Flexible rod: Steel wire (1 dia.) | 40±20 mm | |
| CA32-41 | Fork Lock Lever * | A | 55° max. |
| CA32-42 | | B | 55° max. |
| CA32-43 | | C | 55° max. |
| CA32-44 | | D | 55° max. |

* The lever attachment method varies in A to D.



(2) Built-in Switch Specifications

| Code | Specifications |
|------|--------------------------|
| None | Standard |
| 55 | Airtight built-in switch |

(3) Conduit Size, Ground Terminal Specifications

| Code | Specifications |
|------|----------------------------------|
| - | G1/2 without ground terminal |
| G1 | G1/2 with ground terminal * |
| G | Pg13.5 with ground terminal * |
| Y | M20 with ground terminal * |
| TS | 1/2-14NPT with ground terminal * |

* Models with ground terminals are approved by EN/IEC (CE marking).

(4) Indicator Specifications

| Code | Specifications |
|------|----------------------------|
| None | No indicator |
| LD | LED (10 to 115 VAC/DC) |
| LE | Neon lamp (125 to 250 VAC) |

(5) Wiring Specifications

| Code | Terminal shape | Connector shape | Voltage | Wiring locations | Connector pin No. |
|---------|------------------------------------|-----------------|---------|------------------|--------------------|
| None | Screw terminals (Conduit size: G½) | --- | --- | --- | --- |
| K13A | Direct-wire connector type | Threaded (M12) | AC | NO only | NO: ③ ④ |
| K13 | | | | DC | NO only |
| K43A | | | AC | NC+NO | NO: ③ ④ NC: ① ② |
| K43 | | | DC | NC+NO | NO: ③ ④ NC: ① ② |
| -M1J | Pre-wired connector * | Threaded (M12) | DC | NO only | NO: ③ ④ |
| -M1GJ | | | | NO only | NO: ① ④ |
| -M1JB | | | | NC only | NC: ③ ② |
| -DGJ | | | | NC+NO | NO: ③ ④ NC: ① ② |
| -DK1EJ | Pre-wired connector * | Smartclick | DC | NO only | NO: ③ ④ NC: ② |
| -DTGJ | | | | NC+NO | NO: ③ ④ NC: ① ② |
| -DTK1EJ | | | | NO only | NO: ③ ④ NC: ② |

* The standard cable length for a pre-wired connector is 0.3 m. Contact your OMRON representative for information on other cable lengths.

High-sensitivity and High-precision Models

WLG□ - □□□□
 (1) (2) (3) (4) (5)

(1) Actuator and Property Specifications

| Code | Actuator | | Pretravel (PT) |
|------|--------------|--|-----------------------------------|
| 2 | Roller lever | Roller lever: R38 mm High-sensitivity Models | 10 ^{0+2°} _{-1°} |
| CA2 | Roller lever | Roller lever: R38 mm High-precision Models | 5 ^{0+2°} _{0°} |
| 12 | Roller lever | Adjustable roller lever (R25 to 89 mm) High-sensitivity Models | 10 ^{0+2°} _{-1°} |
| L | Flexible rod | Adjustable Rod Lever (25 to 140 mm) High-sensitivity Models | 10 ^{0+2°} _{-1°} |

(2) Built-in Switch Specifications

| Code | Specifications |
|------|--------------------------|
| None | Standard built-in switch |
| 55 | Airtight built-in switch |

(3) Conduit Size, Ground Terminal Specifications

| Code | Specifications |
|------|----------------------------------|
| - | G1/2 without ground terminal |
| G1 | G1/2 with ground terminal * |
| G | Pg13.5 with ground terminal * |
| Y | M20 with ground terminal * |
| TS | 1/2-14NPT with ground terminal * |

* Models with ground terminals are approved by EN/IEC (CE marking).

(4) Indicator Specifications

| Code | Specifications |
|------|------------------------------|
| None | No indicator |
| LE | Neon lamp (125 to 250 VAC) * |
| LD | LED (10 to 115 VAC/DC) |

* (5)Wiring Specifications: Screw terminals only

(5) Wiring Specifications





| Code | Terminal shape | Connector shape | Voltage | Wiring locations | Connector pin No. |
|-----------|---------------------------------------|-------------------|---------|------------------|--------------------|
| None | Screw terminals (Conduit size: G½) | --- | --- | --- | --- |
| K13 | Direct-wire connector type | Threaded (M12) | DC | NO only | NO: ③ ④ |
| K43 | | | | NC+NO | NO: ③ ④ NC: ① ② |
| -M1J | Pre-wired connector type * | Threaded (M12) | DC | NO only | NO: ③ ④ |
| -M1GJ | | | | NO only | NO: ① ④ |
| -M1JB | | | | NC only | NC: ③ ② |
| -DGJ03 | | | | NC+NO | NO: ③ ④ NC: ① ② |
| -DK1EJ03 | | | | NO only | NO: ③ ④ NC: ② |
| -M1TJ | | | | NO only | NO: ③ ④ |
| -M1TGJ | Pre-wired connectors type * | Smartclick | DC | NO only | NO: ① ④ |
| -M1TJB | | | | NC only | NC: ③ ② |
| -DTGJ03 | | | | NC+NO | NO: ③ ④ NC: ① ② |
| -DTK1EJ03 | | | | NO only | NO: ③ ④ NC: ② |

* The standard cable length for a pre-wired connector is 0.3 m. Contact your OMRON representative for information on other cable lengths.



Ordering Information

Roller Lever

Standard built-in switch



| Appearance | Actuator | Terminal shape | Pretravel (PT) | Without operation indicator | With operation indicator * | |
|---|---|---------------------------------------|-----------------------------------|-----------------------------|----------------------------|--------------|
| | | | | Model | LED | Neon lamp |
| | | | | | Model | Model |
|  | Roller lever: R38 mm | Screw terminals (Conduit size: G½) | 15±5° | WLCA2-N | WLCA2-LD-N | WLCA2-LE-N |
| | | | 25±5° | WLCA2-2-N | WLCA2-2LD-N | WLCA2-2LE-N |
| | | | 20° max. | WLCA2-2N-N | WLCA2-2NLD-N | WLCA2-2NLE-N |
| | | | 10° ^{+2°} _{-1°} | WLG2 | WLG2-LD | WLG2-LE |
|  | Roller lever: R50 mm | | 15±5° | WLCA2-7-N | WLCA2-7LD-N | WLCA2-7LE-N |
| | | | 25±5° | --- | --- | --- |
| | | | 20° max. | --- | --- | --- |
|  | Roller lever: R63 mm | | 15±5° | WLCA2-8-N | WLCA2-8LD-N | WLCA2-8LE-N |
| | | | 25±5° | --- | --- | --- |
| | | | 20° max. | --- | --- | --- |
|  | Adjustable roller lever (R25 to 89 mm) | | 15±5° | WLCA12-N | WLCA12-LD-N | WLCA12-LE-N |
| | | | 25±5° | WLCA12-2-N | WLCA12-2LD-N | WLCA12-2LE-N |
| | | 20° max. | WLCA12-2N-N | WLCA12-2NLD-N | WLCA12-2NLE-N | |
| | | 10° ^{+2°} _{-1°} | WLG12 | WLG12-LD | WLG12-LE | |

* 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).



| Appearance | Actuator | Terminal shape | Pretravel (PT) | Connector shape | Voltage | Wiring locations | Connector pin No. | Model |
|--|----------------------|-----------------------|-----------------------------------|--------------------|---|----------------------|----------------------|----------------|
|  | Roller lever: R38 mm | Direct-wire connector | 15±5° | Threaded (M12) | AC | NO only | NO: ③ ④ | WLCA2-LDK13A-N |
| | | | | | DC | NO only | NO: ③ ④ | WLCA2-LDK13-N |
| | | | | | AC | NC+NO | NO: ③ ④ NC: ① ② | WLCA2-LDK43A-N |
| | | | 10° ^{+2°} _{-1°} | | DC | NC+NO | NO: ③ ④ NC: ① ② | WLCA2-LDK43-N |
| | | | | | DC | NO only | NO: ③ ④ | WLG2-LDK13 |
| | | | | | DC | NC+NO | NO: ③ ④ NC: ① ② | WLG2-LDK43 |
| | | | | | DC | NO only | NO: ③ ④ | WLGCA2-LDK13 |
| | | | | | DC | NC+NO | NO: ③ ④ NC: ① ② | WLGCA2-LDK43 |
| | | | | |  | Roller lever: R38 mm | Pre-wired connectors | 15±5° |
| NO only | NO: ③ ④ | WLCA2-LD-M1GJ-N | | | | | | |
| NC only | NC: ③ ② | WLCA2-LD-M1JB-N | | | | | | |
| NC+NO | NO: ③ ④ NC: ① ② | WLCA2-LD-DGJ-N | | | | | | |
| NO only | NO: ③ ④ NC: ② | WLCA2-LD-DK1EJ-N | | | | | | |
| NC+NO | NO: ③ ④ NC: ① ② | WLCA2-LD-DTGJ-N | | | | | | |
| 10° ^{+2°} _{-1°} | Threaded (M12) | NO only | NO: ③ ④ | WLCA2-LD-DTK1EJ-N | | | | |
| | | NO only | NO: ③ ④ | WLG2-LD-M1J | | | | |
| | | NO only | NO: ① ④ | WLG2-LD-M1GJ | | | | |
| | | NC only | NC: ③ ② | WLG2-LD-M1JB | | | | |
| | | NC+NO | NO: ③ ④ NC: ① ② | WLG2-LD-DGJ03 | | | | |
| | | NO only | NO: ③ ④ NC: ② | WLG2-LD-DK1EJ03 | | | | |
| 5° ^{+2°} _{0°} | Threaded (M12) | NO only | NO: ③ ④ | WLG2-LD-M1TJ | | | | |
| | | NO only | NO: ① ④ | WLG2-LD-M1TGJ | | | | |
| | | NC only | NC: ③ ② | WLG2-LD-M1TJB | | | | |
| | | NC+NO | NO: ③ ④ NC: ① ② | WLG2-LD-DTGJ03 | | | | |
| | | NO only | NO: ③ ④ NC: ② | WLG2-LD-DTK1EJ03 | | | | |
| | | NO only | NO: ③ ④ | WLGCA2-LD-M1J | | | | |
| 5° ^{+2°} _{0°} | Smartclick | NO only | NO: ① ④ | WLGCA2-LD-M1GJ | | | | |
| | | NC only | NC: ③ ② | WLGCA2-LD-M1JB | | | | |
| | | NC+NO | NO: ③ ④ NC: ① ② | WLGCA2-LD-DGJ03 | | | | |
| | | NC+NO | NO: ③ ④ NC: ① ② | WLGCA2-LD-DTGJ03 | | | | |
| | | NO only | NO: ③ ④ NC: ② | WLGCA2-LD-DTK1EJ03 | | | | |
| | | NO only | NO: ③ ④ | WLGCA2-LD-M1GJ | | | | |

- Note:**
- The photo shows a typical model.
 - 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). (However, Three-core and Four-core Switches cannot be switched to light-ON when operating (NC wiring))

Airtight Built-in Switch

| Appearance | Actuator | Terminal shape | Pretravel (PT) | Without operation indicator | With operation indicator * | |
|---|--|------------------------------------|-----------------------------------|-----------------------------|----------------------------|----------------|
| | | | | Model | LED | Neon lamp |
| | | | | | Model | Model |
|  | Roller lever: R38 mm | Screw terminals (Conduit size: G½) | 15±5° | WLCA2-55-N | WLCA2-55LD-N | WLCA2-55LE-N |
| | | | 25±5° | WLCA2-255-N | WLCA2-255LD-N | WLCA2-255LE-N |
| | | | 20° max. | WLCA2-2N55-N | WLCA2-2N55LD-N | WLCA2-2N55LE-N |
| | | | 10° ^{+2°} _{-1°} | WLG2-55 | WLG2-55LD | WLG2-55LE |
| | | | 5° ^{+2°} _{0°} | WLGCA2-55 | WLGCA2-55LD | WLGCA2-55LE |
|  | Adjustable roller lever (R25 to 89 mm) | Screw terminals (Conduit size: G½) | 15±5° | WLCA12-55-N | WLCA12-55LD-N | WLCA12-55LE-N |
| | | | 25±5° | --- | --- | --- |
| | | | 20° max. | --- | --- | --- |
| | | | 10° ^{+2°} _{-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).

| Appearance | Actuator | Terminal shape | Pretravel (PT) | Connector shape | Voltage | Wiring locations | Connector pin No. | Model |
|---|----------------------|-----------------------|-----------------------------------|-----------------|---------|------------------|-------------------|--------------------|
|  | Roller lever: R38 mm | Direct-wire connector | 15±5° | Threaded (M12) | DC | NO only | NO: ③ ④ | WLCA2-55LDK13-N |
| | | | 10° ^{+2°} _{-1°} | | | NC+NO | NO: ③ ④ NC: ① ② | WLCA2-55LDK43-N |
| | | | 5° ^{+2°} _{0°} | | | NO only | NO: ③ ④ | WLG2-55LDK13 |
| | | | | | | NC+NO | NO: ③ ④ NC: ① ② | WLG2-55LDK43 |
| | | | | | | NO only | NO: ③ ④ | WLGCA2-55LDK13 |
| | | | | | | NC+NO | NO: ③ ④ NC: ① ② | WLGCA2-55LDK43 |
|  | Roller lever: R38 mm | Pre-wired connectors | 15±5° | Threaded (M12) | DC | NO only | NO: ③ ④ | WLCA2-55LD-M1J-N |
| | | | | | | NO only | NO: ① ④ | WLCA2-55LD-M1GJ-N |
| | | | | | | NC only | NC: ③ ② | WLCA2-55LD-M1JB-N |
| | | | | | | NC+NO | NO: ③ ④ NC: ① ② | WLCA2-55LD-DGJ-N |
| | | | | | | NO only | NO: ③ ④ NC: ② | WLCA2-55LD-DK1EJ-N |
| | | | | | | NC+NO | NO: ③ ④ NC: ① ② | WLCA2-55LD-DTGJ-N |
| | | | 10° ^{+2°} _{-1°} | Threaded (M12) | | NO only | NO: ③ ④ | WLD2-55LD-M1J |
| | | | | | | NO only | NO: ① ④ | WLG2-55LD-M1GJ |
| | | | | | | NC only | NC: ③ ② | WLG2-55LD-M1JB |
| | | | | | | NC+NO | NO: ③ ④ NC: ① ② | WLG2-55LD-DGJ03 |
| | | | | | | NO only | NO: ③ ④ NC: ② | WLG2-55LD-DK1EJ03 |
| | | | | | | NO only | NO: ③ ④ | WLG2-55LD-M1TJ |
| | | | Smartclick | Smartclick | | NO only | NO: ① ④ | WLG2-55LD-M1TGJ |
| | | | | | | NC only | NC: ③ ② | WLG2-55LD-M1TJB |
| | | | | | | NC+NO | NO: ③ ④ NC: ① ② | WLG2-55LD-DTGJ03 |
| | | | | | | NO only | NO: ③ ④ NC: ② | WLG2-55LD-DTK1EJ03 |
| | | | | | | NO only | NO: ③ ④ | WLG2-55LD-DTK1EJ03 |
| | | | | | | NO only | NO: ③ ④ NC: ② | WLG2-55LD-DTK1EJ03 |

- Note:** 1. The photo shows a typical model.
 2. 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). (However, Three-core and Four-core Switches cannot be switched to light-ON when operating (NC wiring))

General-purpose Switches

Environment-resistant Switches

Spatter-prevention Switches








Long-life Switches

Accessories


Safety Precautions

Plunger Actuators

Standard built-in switch





| Appearance | Actuator | Terminal shape | Pretravel (PT) | Without operation indicator | With operation indicator * | |
|---|---------------------------|---------------------------------------|----------------|-----------------------------|----------------------------|------------|
| | | | | Model | LED | Neon lamp |
| | | | | | Model | Model |
|  | Sealed top-roller plunger | Screw terminals (Conduit size: G½) | 1.7 mm max. | WLD28-N | WLD28-LD-N | WLD28-LE-N |
|  | Top-roller plunger | | | WLD2-N | WLD2-LD-N | WLD2-LE-N |
|  | Sealed top plunger | | | WLD18-N | WLD18-LD-N | WLD18-LE-N |
|  | Sealed top-ball plunger | | 2.8 mm max. | WLD38-N | WLD38-LD-N | WLD38-LE-N |
|  | Horizontal plunger | | | WLSN-N | WLSN-LD-N | WLSN-LE-N |
|  | Horizontal-roller plunger | | | WLSN2-N | WLSN2-LD-N | WLSN2-LE-N |
|  | Horizontal-ball plunger | | WLSN3-N | WLSN3-LD-N | WLSN3-LE-N | |

* 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).


| Appearance | Actuator | Terminal shape | Pretravel (PT) | Connector shape | Voltage | Wiring locations | Connector pin No. | Model |
|---|---------------------------|----------------------------|----------------|-----------------|---------|------------------|-------------------|------------------|
|  | Sealed top-roller plunger | Direct-wire connector type | 1.7 mm max. | Threaded (M12) | DC | NO only | NO: ③ ④ | WLD28-LDK13-N |
| | | | | | | NC+NO | NO: ③ ④ NC: ① ② | WLD28-LDK43-N |
| | | Pre-wired connector type | | | | NO only | NO: ③ ④ | WLD28-LD-M1J-N |
| | | | | | | NO only | NO: ① ④ | WLD28-LD-M1GJ-N |
| | | | | | | NC+NO | NO: ③ ④ NC: ① ② | WLD28-LD-DGJ-N |
| | | | | | | NO only | NO: ③ ④ NC: ② | WLD28-LD-DK1EJ-N |

Note: 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). (However, Three-core and Four-core Switches cannot be switched to light-ON when operating (NC wiring))

Airtight Built-in Switch

| Appearance | Actuator | Terminal shape | Pretravel (PT) | Without operation indicator | With operation indicator * | |
|---|---------------------------|---------------------------------------|----------------|-----------------------------|----------------------------|--------------|
| | | | | Model | LED | Neon lamp |
| | | | | | Model | Model |
|  | Sealed top-roller plunger | Screw terminals (Conduit size: G½) | 1.7 mm max. | WLD28-55-N | WLD28-55LD-N | WLD28-55LE-N |
|  | Top-roller plunger | | 1.7 mm max. | WLD2-55-N | WLD2-55LD-N | WLD2-55LE-N |
|  | Horizontal plunger | | 2.8 mm max. | WLSN-55-N | WLSN-55LD-N | --- |
|  | Horizontal-roller plunger | | 2.8 mm max. | WLSN2-55-N | WLSN2-55LD-N | --- |

* 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).

| Appearance | Actuator | Terminal shape | Pretravel (PT) | Connector shape | Voltage | Wiring locations | Connector pin No. | Model |
|---|---------------------------|----------------------------|----------------|-----------------|---------|------------------|-------------------|--------------------|
|  | Sealed top-roller plunger | Direct-wire connector type | 1.7 mm max. | Threaded (M12) | DC | NO only | NO: ③ ④ | WLD28-55LDK13-N |
| | | | | | | NC+NO | NO: ③ ④ NC: ① ② | WLD28-55LDK43-N |
| | | Pre-wired connectors type | | | | NO only | NO: ③ ④ | WLD28-55LD-M1J-N |
| | | | | | | NO only | NO: ① ④ | WLD28-55LD-M1GJ-N |
| | | | | | | NC+NO | NO: ③ ④ NC: ① ② | WLD28-55LD-DGJ-N |
| | | | | | | NO only | NO: ③ ④ NC: ② | WLD28-55LD-DK1EJ-N |

Note: 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). (However, Three-core and Four-core Switches cannot be switched to light-ON when operating (NC wiring)).

Flexible Rod

Standard built-in switch

| Appearance | Actuator | Terminal shape | Pretravel (PT) | Without operation indicator | With operation indicator * | |
|------------|---------------------------------------|------------------------------------|-----------------------------------|-----------------------------|----------------------------|-------------|
| | | | | | LED | Neon lamp |
| | | | | | Model | Model |
| | Adjustable rod lever: (25 to 140 mm) | Screw terminals (Conduit size: G½) | 15±5° | WLCL-N | WLCL-LD-N | WLCL-LE-N |
| | | | 25±5° | WLCL-2-N | WLCL-2LD-N | WLCL-2LE-N |
| | | | 20° max. | WLCL-2N-N | WLCL-2NLD-N | WLCL-2NLE-N |
| | | | 10° ^{+2°} _{-1°} | WLGL | WLGL-LD | WLGL-LE |
| | Adjustable rod lever: (350 to 380 mm) | | 15±5° | WLCAL4-N | WLCAL4-LD-N | WLCAL4-LE-N |
| | | | 25±5° | --- | --- | --- |
| | | | 20° max. | --- | --- | --- |
| | Rod spring lever | | 15±5° | WLCAL5-N | WLCAL5-LD-N | WLCAL5-LE-N |
| | | | 25±5° | --- | --- | --- |
| | | | 20° max. | --- | --- | --- |
| | Coil spring (6.5 dia.) | 20±10 mm | WLNJ-N | WLNJ-LD-N | WLNJ-LE-N | |
| | Coil spring (4.8 dia.) | 20±10 mm | WLNJ-30-N | WLNJ-30LD-N | WLNJ-30LE-N | |
| | Flexible rod | 40±20 mm | WLNJ-2-N | WLNJ-2LD-N | WLNJ-2LE-N | |
| | Flexible rod: Steel wire (1 dia.) | 40±20 mm | WLNJ-S2-N | WLNJ-S2LD-N | WLNJ-S2LE-N | |

* 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).

Airtight Built-in Switch Specifications

| Appearance | Actuator | Terminal shape | Pretravel (PT) | Without operation indicator | With operation indicator * | |
|------------|------------------------------------|------------------------------------|----------------|----------------------------------|----------------------------|------------|
| | | | | | LED | Neon lamp |
| | | | | | Model | Model |
| | Adjustable rod lever: 25 to 140 mm | Screw terminals (Conduit size: G½) | 15±5° | WLCL-55-N | WLCL-55LD-N | --- |
| | | | 25±5° | --- | --- | --- |
| | | | 20° max. | --- | --- | --- |
| | Coil spring (6.5 dia.) | | 20±10 mm | WLNJ-55-N | WLNJ-55LD-N | --- |
| | | | | Flexible rod: Resin rod (8 dia.) | 40±20 mm | WLNJ-255-N |

* 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).

Fork Lock Lever

| Appearance | Actuator | Terminal shape | Pretravel (PT) | Without operation indicator | With operation indicator * | |
|------------|-------------------|------------------------------------|----------------|-----------------------------|----------------------------|---------------|
| | | | | | LED | Neon lamp |
| | | | | | Model | Model |
| | Fork Lock Lever A | Screw terminals (Conduit size: G½) | 55° max. | WLCA32-41-N | WLCA32-41LD-N | WLCA32-41LE-N |
| | Fork Lock Lever B | | 55° max. | WLCA32-42-N | --- | WLCA32-42LE-N |
| | Fork Lock Lever C | | 55° max. | WLCA32-43-N | WLCA32-43LD-N | WLCA32-43LE-N |
| | Fork Lock Lever D | | 55° max. | WLCA32-44-N | --- | --- |

* 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).

Specifications

Ratings

Screw terminals

Without Operation Indicator

Basic models (WL-N)

| Ratings | | Non-inductive load (A) | | | | Inductive load (A) | | | |
|-------------|-----|------------------------|-----|-----------|-----|---------------------|-----|------------|----|
| | | Basic models (WL-N) | | | | Basic models (WL-N) | | | |
| | | Resistive load | | Lamp load | | Inductive load | | Motor load | |
| Voltage (V) | | NC | NO | NC | NO | NC | NO | NC | NO |
| AC | 125 | 10 | 3 | 1.5 | 10 | 5 | 2.5 | | |
| | 250 | 10 | 2 | 1 | 10 | 3 | 1.5 | | |
| | 500 | 10 | 1.5 | 0.8 | 3 | 1.5 | 0.8 | | |
| DC | 8 | 10 | 6 | 3 | 10 | 6 | | | |
| | 14 | 10 | 6 | 3 | 10 | 6 | | | |
| | 30 | 6 | 4 | 3 | 6 | 4 | | | |
| | 125 | 0.8 | 0.2 | 0.2 | 0.8 | 0.2 | | | |
| | 250 | 0.4 | 0.1 | 0.1 | 0.4 | 0.1 | | | |

High-sensitivity and High-precision models (WLG)

| Ratings | | Non-inductive load (A) | |
|-------------|-----|--|----|
| | | High-sensitivity and High-precision models (WLG) | |
| | | Resistive load | |
| Voltage (V) | | NC | NO |
| AC | 125 | 5 | |
| | 250 | 5 | |
| DC | 125 | 0.4 | |
| | 250 | 0.2 | |

With Operation Indicator (LED)

Basic models (WL-N)

| Ratings | | Non-inductive load (A) | | | | Inductive load (A) | | | |
|-------------|-----|------------------------|-----|-----------|-----|---------------------|-----|------------|----|
| | | Basic models (WL-N) | | | | Basic models (WL-N) | | | |
| | | Resistive load | | Lamp load | | Inductive load | | Motor load | |
| Voltage (V) | | NC | NO | NC | NO | NC | NO | NC | NO |
| AC | 115 | 10 | 3 | 1.5 | 10 | 5 | 2.5 | | |
| DC | 12 | 10 | 6 | 3 | 10 | 6 | | | |
| | 24 | 6 | 4 | 3 | 6 | 4 | | | |
| | 48 | 3 | 2 | 1.5 | 3 | 0.2 | | | |
| | 115 | 0.8 | 0.2 | | 0.8 | 0.1 | | | |

High-sensitivity and High-precision models (WLG)

| Ratings | | Non-inductive load (A) | |
|-------------|-----|--|----|
| | | High-sensitivity and High-precision models (WLG) | |
| | | Resistive load | |
| Voltage (V) | | NC | NO |
| AC | 115 | 5 | |
| DC | 115 | 0.4 | |

With Operation Indicators (Neon Lamps)

Basic models (WL-N)

| Ratings | | Non-inductive load (A) | | | | Inductive load (A) | | | |
|-------------|-----|------------------------|----|-----------|----|---------------------|-----|------------|----|
| | | Basic models (WL-N) | | | | Basic models (WL-N) | | | |
| | | Resistive load | | Lamp load | | Inductive load | | Motor load | |
| Voltage (V) | | NC | NO | NC | NO | NC | NO | NC | NO |
| AC | 125 | 10 | 3 | 1.5 | 10 | 5 | 2.5 | | |
| | 250 | 10 | 2 | 1 | 10 | 3 | 1.5 | | |

High-sensitivity and High-precision models (WLG)

| Ratings | | Non-inductive load (A) | |
|-------------|-----|--|----|
| | | High-sensitivity and High-precision models (WLG) | |
| | | Resistive load | |
| Voltage (V) | | NC | NO |
| AC | 125 | 5 | |
| | 250 | 5 | |

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

Allowable Inrush Current/Minimum Applicable Load

| Operating characteristics type | | Basic models (WL-N) | High-sensitivity and High-precision models (WLG) |
|--------------------------------|----|-------------------------------------|--|
| Inrush current | NC | 30 A max. | 15 A max. |
| | NO | 20 A max. | 10 A max. |
| Minimum applicable load | | 5 VDC 1 mA, resistive load, P level | 5 VDC 1 mA, resistive load, P level |

Operation Indicator

| Operation indicator type | LED | Neon lamp |
|-----------------------------------|---|--|
| Rated voltage | 10 to 115 VAC/DC | 125 to 250 VAC |
| Leakage current (Reference value) | Approx. 0.4 mA at 10 VAC/DC Approx. 0.5 mA at 115 VAC/DC | Approx. 0.6 mA at 125 VAC Approx. 1.9 mA at 250 VAC |

Direct-wired connector and Pre-wired Connector Type

Connector DC Specifications: With Operation Indicators (LEDs)
Basic models (WL-N)

| Ratings | Non-inductive load (A) | | | | Inductive load (A) | | | | |
|-------------|------------------------|-----|-----------|-----|---------------------|-----|------------|-----|----|
| | Basic models (WL-N) | | | | Basic models (WL-N) | | | | |
| | Resistive load | | Lamp load | | Inductive load | | Motor load | | |
| Voltage (V) | | NC | NO | NC | NO | NC | NO | NC | NO |
| DC | 12 | 3 | | 3 | | 3 | | 3 | |
| | 24 | 3 | | 3 | | 3 | | 3 | |
| | 48 | 4 | 2 | 1.5 | | 3 | | 2 | |
| | 115 | 0.8 | 0.2 | 0.2 | | 0.8 | | 0.2 | |

High-sensitivity and High-precision models (WLG)

| Ratings | Non-inductive load (A) | | | |
|-------------|--|-----|----|--|
| | High-sensitivity and High-precision models (WLG) | | | |
| | Resistive load | | | |
| Voltage (V) | | NC | NO | |
| DC | 115 | 0.4 | | |

Connector AC Specifications: With Operation Indicators (LEDs)
Basic models (WL-N)

| Ratings | Non-inductive load (A) | | | | Inductive load (A) | | | | |
|-------------|------------------------|----|-----------|----|---------------------|----|------------|----|-----|
| | Basic models (WL-N) | | | | Basic models (WL-N) | | | | |
| | Resistive load | | Lamp load | | Inductive load | | Motor load | | |
| Voltage (V) | | NC | NO | NC | NO | NC | NO | NC | NO |
| AC | 115 | 3 | | 3 | 1.5 | 3 | | 3 | 2.5 |

High-sensitivity and High-precision models (WLG)

| Ratings | Non-inductive load (A) | | | |
|-------------|--|----|----|--|
| | High-sensitivity and High-precision models (WLG) | | | |
| | Resistive load | | | |
| Voltage (V) | | NC | NO | |
| AC | 115 | 3 | | |

- 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.

Minimum Applicable Load

| Operating characteristics type | Basic models (WL-N) | High-sensitivity and High-precision models (WLG) |
|--------------------------------|-------------------------------------|--|
| Minimum applicable load | 5 VDC 1 mA, resistive load, P level | 5 VDC 1 mA, resistive load, P level |

Operation Indicator

| Operation indicator type | LED | Neon lamp |
|-----------------------------------|---|--|
| Rated voltage | 10 to 115 VAC/DC | 125 to 250 VAC |
| Leakage current (Reference value) | Approx. 0.4 mA at 10 VAC/DC Approx. 0.5 mA at 115 VAC/DC | Approx. 0.6 mA at 125 VAC Approx. 1.9 mA at 250 VAC |

Characteristics

| Operating characteristics type | | Basic models (WL-N) | High-sensitivity and High-precision models (WLG) |
|---------------------------------|-------------|---|---|
| Permissible operating frequency | Mechanical | 120 operations/minute | |
| | Electrical | 30 operations/minute | |
| Rated frequency | | 50/60 Hz | |
| Permissible operating speed | | 1 mm/s to 1 m/s (in case of WLCA2-N) | |
| Insulation resistance | | 100 MΩ min. (at 500 VDC) | |
| Contact resistance | | 25 mΩ max. (initial value for the built-in switch) | |
| Vibration resistance | | 10 to 55 Hz, 1.5-mm double amplitude | |
| Shock | Destruction | 1,000 m/s ² max. | |
| | Malfunction | 300 m/s ² max. *2 | |
| Durability *1 | Mechanical | 15,000,000 operations min. | 10,000,000 operations min. |
| | Electrical | 750,000 operations min. (3 A at 250 VAC, resistive load), but for high-precision models: *3 | 500,000 operations min. (3 A at 250 VAC, resistive load), but for high-precision models: *3 |
| Ambient operating temperature | | -10 to +80°C (with no icing) | |
| Ambient operating humidity | | 35 to 95%RH | |
| Degree of protection | | IP67 | |
| Weight | | Approx. 255 g (in case of WLCA2-N) | Approx. 270 g (in case of WLGCA2) |

Note: The above figures are initial values.

*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. Except Switches with Flexible Rod Actuators.

*3. In case of Screw terminals without operation indicators.

| Operating characteristics type | | Basic models (WL-N) | | High-sensitivity and High-precision models (WLG) | |
|--------------------------------|---|---------------------------------|--|--|--|
| Wiring Specifications | | Screw terminals | Direct-wire connector/ Pre-wired Connector Models | Screw terminals | Direct-wire connector/ Pre-wired Connector Models |
| Dielectric strength | Between terminals of the same polarity | 1,000 VAC, 50/60 Hz for 1 min * | 600 VAC, 50/60 Hz for 1 min * | 600 VAC, 50/60 Hz for 1 min * | 600 VAC, 50/60 Hz for 1 min * |
| | Between current-carrying metal part and ground | 2,200 VAC, 50/60 Hz for 1 min | 1,500 VAC, 50/60 Hz for 1 min | 1,500 VAC, 50/60 Hz for 1 min | 1,500 VAC, 50/60 Hz for 1 min |
| | Between each terminal and non-current-carrying metal part | 2,200 VAC, 50/60 Hz for 1 min | 1,500 VAC, 50/60 Hz for 1 min | 1,500 VAC, 50/60 Hz for 1 min | 1,500 VAC, 50/60 Hz for 1 min |

* Excluding those with operation indicators.

Circuit Configuration

Terminal Connection Diagram

| Operating characteristics type | Basic models (WL-N) | |
|--|---------------------|--|
| Wiring Specifications | Screw terminals | Direct-wire connector and Pre-wired Connector Models |
| Without operation indicator | | <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>AC</p> <p>①②③④ indicate the connector pin number.</p> </div> <div style="text-align: center;"> <p>DC</p> <p>①②③④ indicate the connector pin number.</p> </div> </div> |
| With operation indicator (Light-ON when not operating *) | | <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>AC</p> <p>①②③④ indicate the connector pin number.</p> </div> <div style="text-align: center;"> <p>DC</p> <p>①②③④ indicate the connector pin number.</p> </div> </div> |

| Operating characteristics type | High-sensitivity and High-precision models (WLG) | |
|--|--|--|
| Wiring Specifications | Screw terminals | Direct-wire connector and Pre-wired Connector Models |
| Without operation indicator | | <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>AC</p> <p>①②③④ indicate the connector pin number.</p> </div> <div style="text-align: center;"> <p>DC</p> <p>①②③④ indicate the connector pin number.</p> </div> </div> |
| With operation indicator (Light-ON when not operating *) | | <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>AC</p> <p>①②③④ indicate the connector pin number.</p> </div> <div style="text-align: center;"> <p>DC</p> <p>①②③④ indicate the connector pin number.</p> </div> </div> |

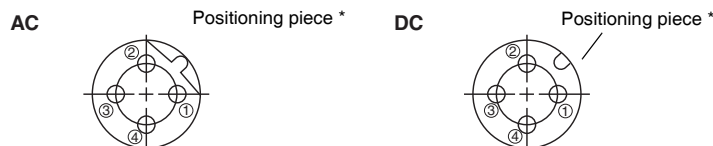
Note: Leakage current from indicator circuit may cause load malfunction (i.e., the load may remain ON). Make sure that the load operating current is higher than the leakage current.

For countermeasures, refer to technical support on your OMRON website.

* Light-ON when not operating means the operation indicator is lit when the actuator is free and is not lit when the actuator rotates or is pushed down and the Switch contacts contact to NO.

The above shows details of the switch interior. External wires (external resistances) are not shown. For details, refer to *Operation* on page 18.

Connector Pin Layout Diagram



* The position of the positioning piece is not always the same. If using an L-shaped connector causes problems in mounting, use a straight connector.

Structure and Nomenclature

WLCA2-N

Actuator Roller

The roller is made of self-lubricating sintered stainless steel and boasts high resistance to wear.

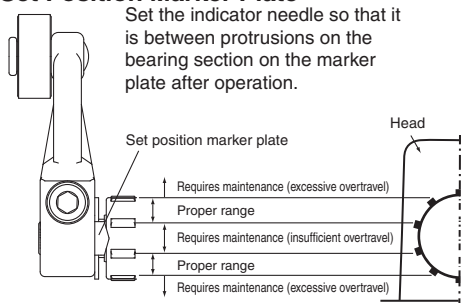
Lever

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

Roller Lever Bolt

Set Position Marker Plate

Set the indicator needle so that it is between protrusions on the bearing section on the marker plate after operation.



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.

Cover

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.

Head-mounting Screws

Shaft Section Seal

An oil seal is fitted on the inlet of the shaft section to maintain a tight seal.

Operational Plunger

You can change the direction of the operational plunger to electrically switch the direction of operation between both sides, left only, or right only. (Refer to page 87)

Head

You can remove the two screws to mount the switch in any of the four possible orientations. If changing the direction of the head, pay attention to the orientation of the operation plunger. (Refer to page 87)

Main unit

Built-in Switch

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

Terminal Screws

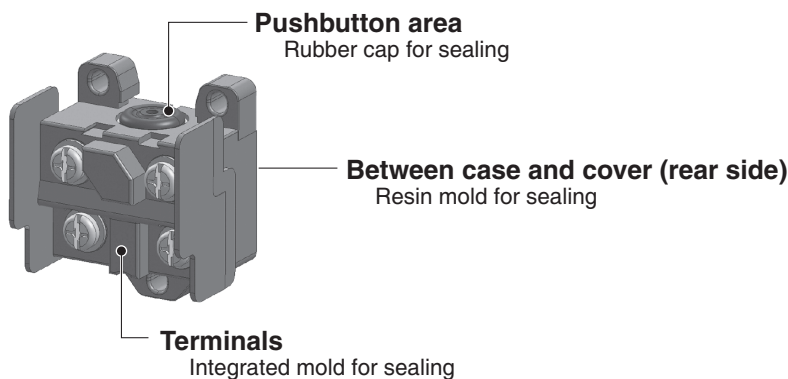
Four, M3.5 screws

Conduit Opening

The conduit screw is a parallel screw for G $\frac{1}{2}$ piping, and is used together with an SC connector to maintain a tight seal.

Built-in switch

Airtight built-in switch (-55)



General-purpose Switches

Environment-resistant Switches

Spatter-prevention Switches

Long-life Switches

Accessories

Safety Precautions

WLG2

Actuator

Roller

The roller is made of self-lubricating sintered stainless steel and boasts high resistance to wear.

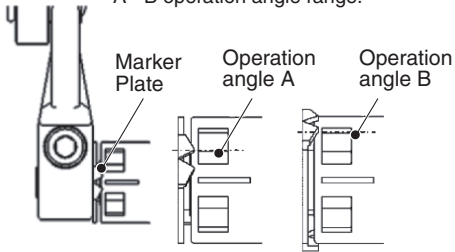
Lever

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

Roller Lever Setscrew

Set Position Marker Plate

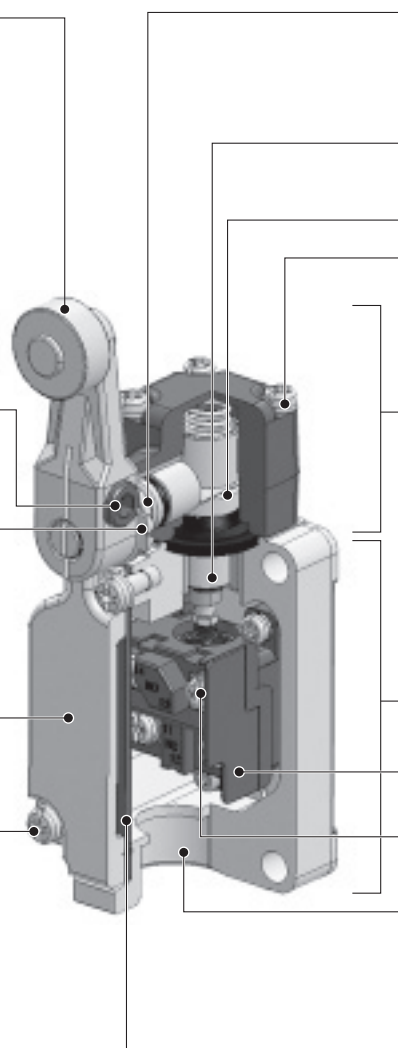
In the operation state, adjust the two pointers on the marker plate to within the A - B operation angle range.



Cover

Cover Setscrew

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



Shaft Section Seal

By fitting an O-ring to the rotary shaft and with an appropriate interference of the screws, high-sealing properties are maintained.

Bearing

The bearing smooths the plunger movement.

Operational Plunger

Head-mounting Screws

Head

By removing the four corner screws, the head can be mounted in any of four orientations.

Main unit

Built-in Switch

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

Terminal Screws

Four, M3.5 screws

Conduit Opening

The conduit screw is a parallel screw for G½ piping, and is used together with an SC connector to maintain a tight seal.

Separator

The separator has outstanding insulation properties and prevents the generation of any gases which may corrode the internal parts.

Note: The built-in switch structure and name of each part are the same as on page 15.

Operation Indicator

Indicator Covers

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

Indicator Windows

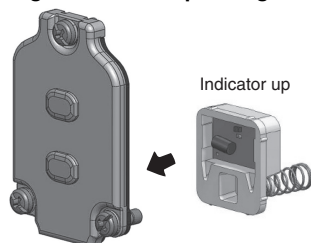
Operating status (i.e., light-ON when operating or light-ON when not operating) depends on whether a neon lamp or an LED is used.

Light-ON when Operating/Not Operating

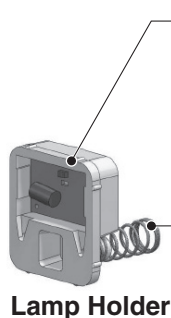
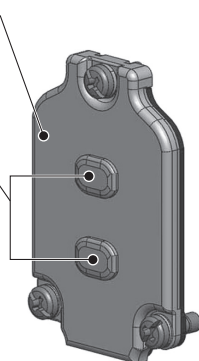
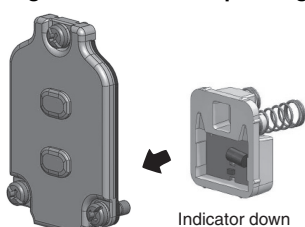
Indicators can be switched from light-ON when operating and light-ON when not operating, by simply rotating the indicator holder by 180°.

(However, Direct-wire connector, Pre-wired Connector, Three-core, and Four-core Switches cannot be switched to light-ON when operating (NC wiring).)

Light-ON when Operating



Light-ON when Not Operating

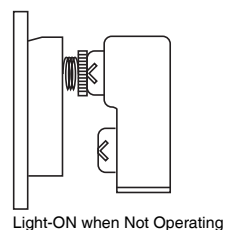


Indicator

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

The built-in switch's terminal screws are used to connect the indicator terminal. Since the connection spring (coil spring) is used for this connection, it will not be necessary to connect the indicator terminal. When a ground terminal is provided however, a lead wire must be used.



Operation

| Operation indicator type | Operation type | When load is connected to NC (11-12) | When load is connected to NO (13-14) |
|--------------------------|--------------------------------|--------------------------------------|--------------------------------------|
| LED Neon lamp | Light-ON when operating *1 | | |
| | Light-ON when not operating *2 | | |

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.

2. For details on accessories (sold separately), refer to page 78.

*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.

*3. The wiring varies depending on when the loads and indicator lamps are operating.

For contacts that include an internal circuit (indicator circuit), connect a resistor for protection.

To find the resistance value and capacity, calculate using the voltage, current, and power that is actually used.

· Resistance (Ω) = Voltage (V) \div Current (I)

· Power (W) = Current (A) \times Voltage (V)

· Capacity (W) = Power (W) \times Margin (approximately 2 \times)

Use the values below for reference.

Reference: Example of Protection Resistance

The capacity value is a numerical value that does not account for the margin. Select a resistor with sufficient capacity.

When calculating using the leakage current in this catalog, the display becomes slightly dim.

Use of a current that is at least around twice the leakage current is recommended.

| Indicator | | Voltage | Protection resistance (example) | |
|-----------|-----------------|------------|---------------------------------|-------------|
| Type | Leakage current | | Resistance | Capacity |
| LED | Approx. 0.5 mA | 115 VAC/DC | Approx. 50 k Ω | 0.27 W min. |
| | Approx. 0.4 mA | 24 VAC/DC | Approx. 10 k Ω | 0.06 W min. |
| | | 10 VAC/DC | Approx. 10 k Ω | 0.01 W min. |
| Neon lamp | Approx. 1.9 mA | 250 VAC | Approx. 100 k Ω | 0.63 W min. |
| | Approx. 0.6 mA | 125 VAC | Approx. 100 k Ω | 0.16 W min. |

Internal Circuits

| | |
|-----------|--|
| LED | |
| Neon lamp | |

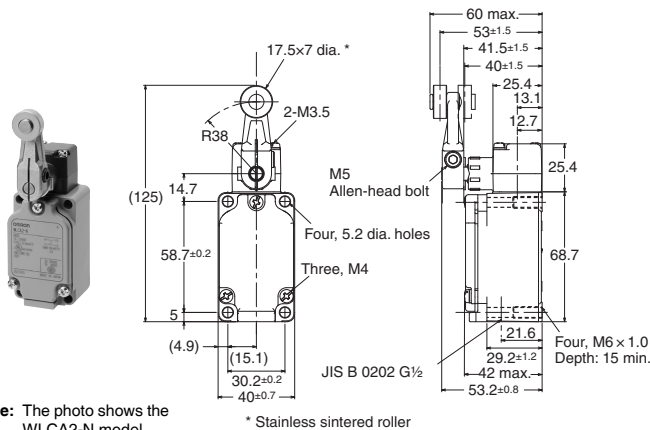
Dimensions

Roller Lever

Screw terminals

Roller lever R38

- WLCA2(-55)-N
- WLCA2-2(55)-N
- WLCA2-2N(55)-N

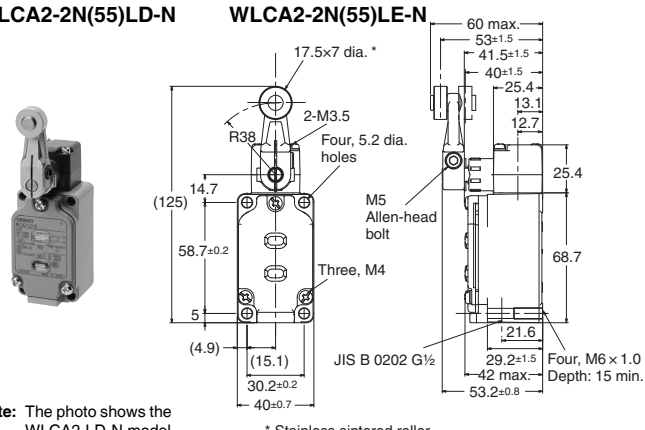


Note: The photo shows the WLCA2-N model.

* Stainless sintered roller

Roller lever R38 With operation indicator

- LED
 - WLCA2(-55)LD-N
 - WLCA2-2(55)LD-N
 - WLCA2-2N(55)LD-N
- Neon lamp
 - WLCA2(-55)LE-N
 - WLCA2-2(55)LE-N
 - WLCA2-2N(55)LE-N

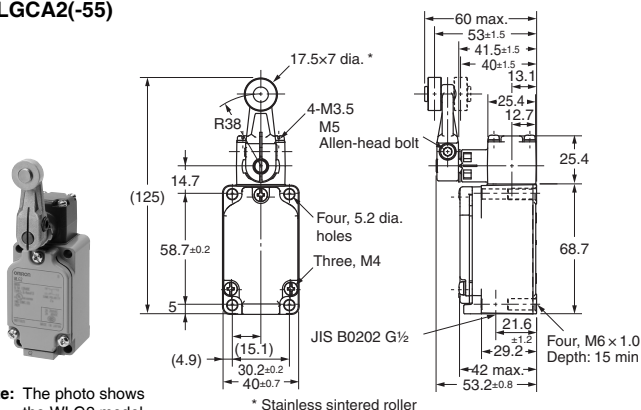


Note: The photo shows the WLCA2-LD-N model.

* Stainless sintered roller

Roller lever R38

- WLG2(-55)
- WLGCA2(-55)

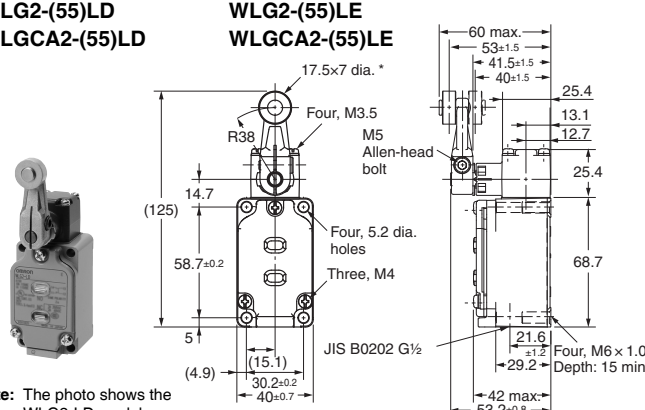


Note: The photo shows the WLG2 model.

* Stainless sintered roller

Roller lever R38 With operation indicator

- LED
 - WLG2(-55)LD
 - WLGCA2(-55)LD
- Neon lamp
 - WLG2(-55)LE
 - WLGCA2(-55)LE



Note: The photo shows the WLG2-LD model.

* Stainless sintered roller

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

Operating characteristics

| Model | | WLCA2(-55)-N WLCA2(-55)LD-N WLCA2(-55)LE-N | WLCA2-2(-55)-N WLCA2-2(55)LD-N WLCA2-2(55)LE-N | WLCA2-2N(-55)-N WLCA2-2N(55)LD-N WLCA2-2N(55)LE-N | WLG2(-55) WLG2(-55)LD WLG2(-55)LE | WLGCA2(-55) WLGCA2(-55)LD WLGCA2(-55)LE |
|-----------------------|---------|--|--|---|---|---|
| Operating force | OF max. | 13.34 N | 13.34 N | 13.34 N | 9.81 N | 13.34 N |
| Release force | RF min. | 1.18 N | 1.18 N | 1.18 N | 0.98 N | 1.47 N |
| Pretravel | PT | 15±5° | 25±5° | 20° max. | 10° +2° -1° | 5° +2° 0° |
| Overtravel | OT min. | 70° | 60° | 70° | 65° | 40° |
| Movement Differential | MD max. | 12° | 16° | 10° | 7° | 3° |

General-purpose Switches

Environment-resistant Switches

Spatter-prevention Switches

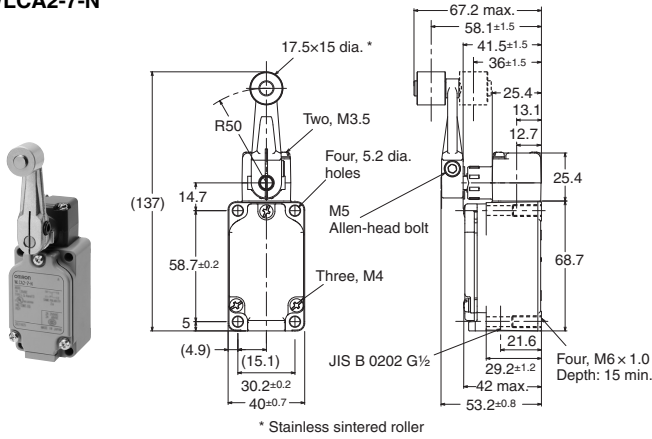
Long-life Switches

Accessories

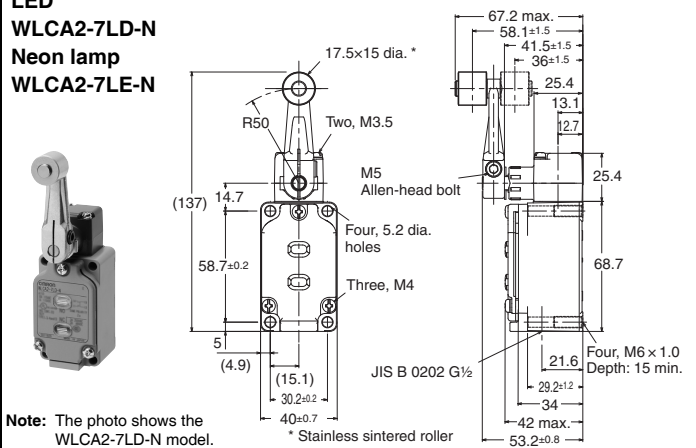
Safety Precautions

Screw terminals

Roller lever R50 WLCA2-7-N

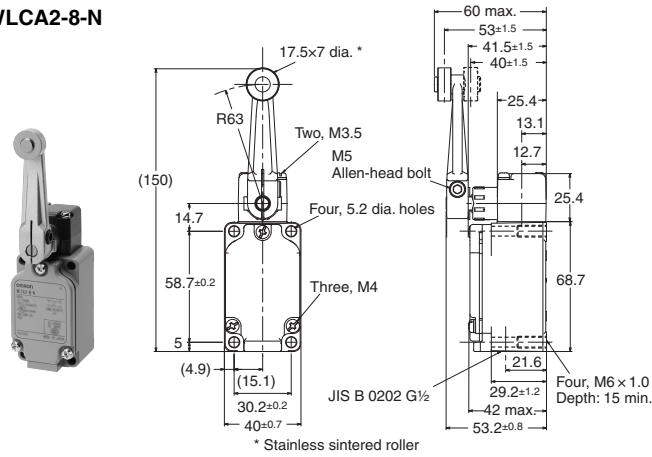


Roller lever R50 With operation indicator LED WLCA2-7LD-N Neon lamp WLCA2-7LE-N

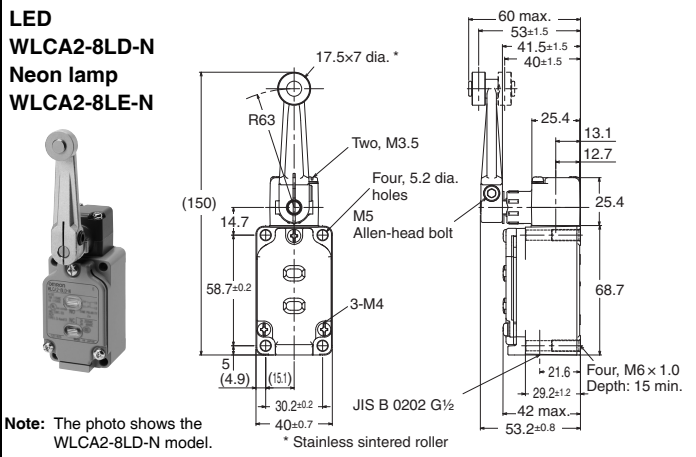


Note: The photo shows the WLCA2-7LD-N model.

Roller lever R63 WLCA2-8-N



Roller lever R63 With operation indicator LED WLCA2-8LD-N Neon lamp WLCA2-8LE-N



Note: The photo shows the WLCA2-8LD-N model.

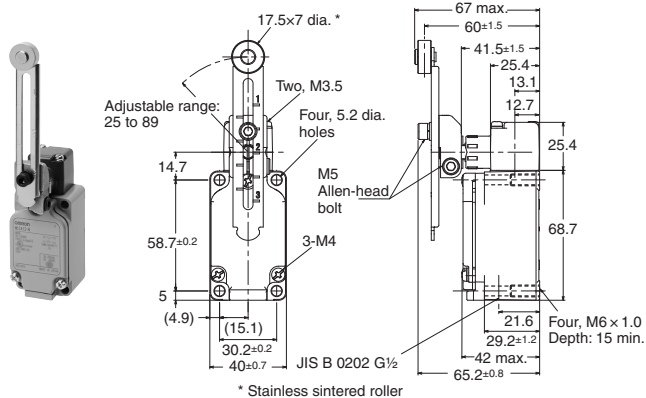
Note: Unless otherwise indicated, a tolerance of ± 0.4 mm applies to all dimensions.

| | Model | WLCA2-7-N WLCA2-7LD-N WLCA2-7LE-N | WLCA2-8-N WLCA2-8LD-N WLCA2-8LE-N |
|-----------------------|---------|---|---|
| Operating force | OF max. | 10.2 N | 8.04 N |
| Release force | RF min. | 0.9 N | 0.71 N |
| Pretravel | PT | $15 \pm 5^\circ$ | $15 \pm 5^\circ$ |
| Overtravel | OT min. | 70° | 70° |
| Movement Differential | MD max. | 12° | 12° |

Screw terminals

Adjustable Roller Lever (R25 to 89 mm)

WLCA12(-55)-N
WLCA12-2-N
WLCA12-2N-N

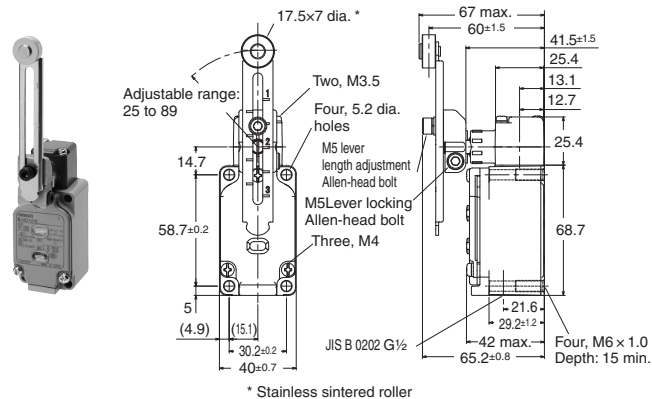


Note: The photo shows the WLCA12-N model.

Adjustable Roller Lever (R25 to 89 mm)

With operation indicator

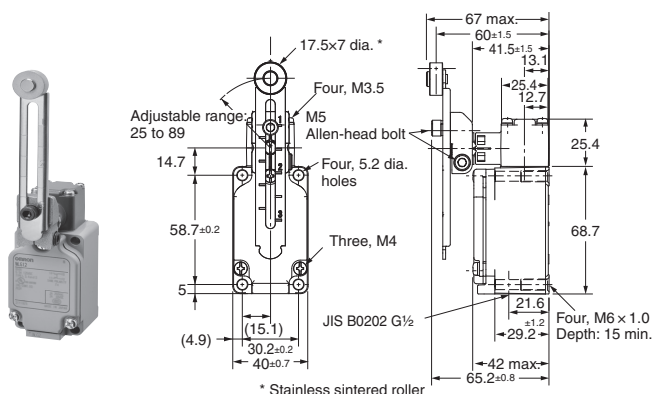
LED WLCA12(-55)LD-N
WLCA12-2LD-N
WLCA12-2NLD-N
Neon lamp WLCA12(-55)LE-N
WLCA12-2LE-N
WLCA12-2NLE-N



Note: The photo shows the WLCA12-LD-N model.

Adjustable Roller Lever (R25 to 89 mm)

WLG12

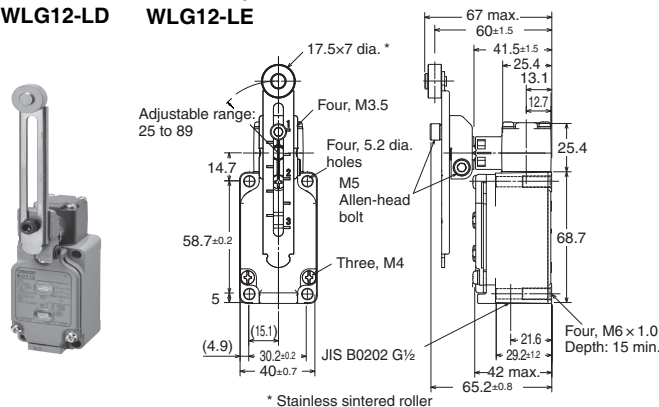


Note: Unless otherwise indicated, a tolerance of ±0.4 mm applies to all dimensions.

Adjustable Roller Lever (R25 to 89 mm)

With operation indicator

LED WLG12-LD
Neon lamp WLG12-LE



Note: The photo shows the WLG12-LD model.

Operating characteristics

| Model | | WLCA12 (-55) -N * WLCA12- (55) LD-N * WLCA12- (55) LE-N * | WLCA12-2-N * WLCA12-2LD-N * WLCA12-2LE-N * | WLCA12-2N-N * WLCA12-2NLD-N * WLCA12-2NLE-N * | WLG12 * WLG12-LD * WLG12-LE * |
|-----------------------|---------|---|--|---|-------------------------------------|
| Operating force | OF max. | 13.34 N | 13.34 N | 13.34 N | 9.81 N |
| Release force | RF min. | 1.18 N | 1.18 N | 1.18 N | 0.98 N |
| Pretravel | PT | 15±5° | 25±5° | 20° max. | 10°+2° -1° |
| Overtravel | OT min. | 70° | 60° | 70° | 65° |
| Movement Differential | MD max. | 12° | 16° | 10° | 7° |

* The operating characteristics are measured at the lever length of 38 mm.

Direct-wire connector

Roller lever R38 With operation indicator

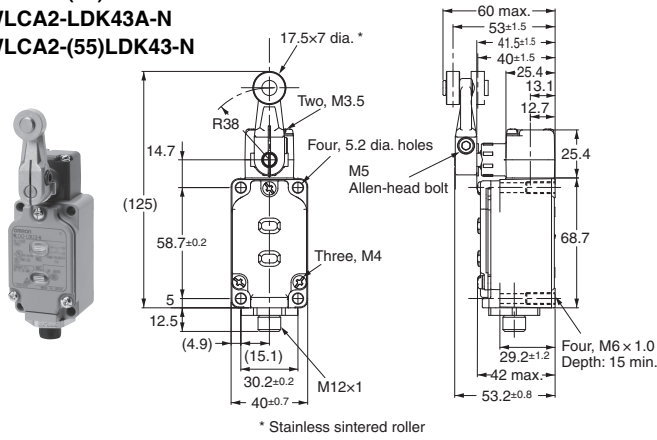
LED

WLCA2-LDK13A-N

WLCA2-(55)LDK13-N

WLCA2-LDK43A-N

WLCA2-(55)LDK43-N



Note: The photo shows the WLCA2-LDK13-N model.

Roller lever R38 With operation indicator

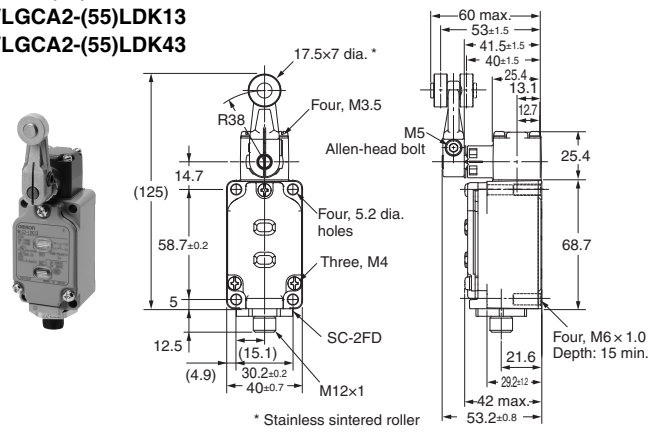
LED

WLG2-(55)LDK13

WLG2-(55)LDK43

WLGCA2-(55)LDK13

WLGCA2-(55)LDK43



Note: The photo shows the WLG2-LDK13 model.

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

Operating characteristics

| | | Model | WLCA2-LDK13A-N WLCA2-(55)LDK13-N WLCA2-LDK43A-N WLCA2-(55)LDK43-N | WLG2-(55)LDK13 WLG2-(55)LDK43 | WLCA2-(55)LDK13 WLCA2-(55)LDK43 |
|-----------------------|----|-------|--|----------------------------------|------------------------------------|
| Operating force | OF | max. | 13.34 N | 9.81 N | 13.34 N |
| Release force | RF | min. | 1.18 N | 0.98 N | 1.47 N |
| Pretravel | PT | | $15 \pm 5^\circ$ | $10^{+2^\circ}_{-1^\circ}$ | $5^{+2^\circ}_{0^\circ}$ |
| Overtravel | OT | min. | 70° | 65° | 40° |
| Movement Differential | MD | max. | 12° | 7° | 3° |

Pre-wired connectors

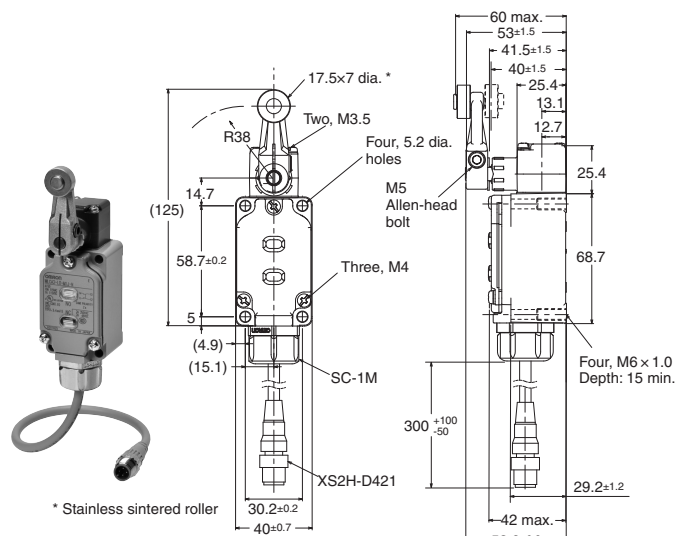
Roller lever R38 With operation indicator

LED

- Threaded (M12)
- WLCA2-(55)LD-M1J-N
- WLCA2-(55)LD-M1GJ-N
- WLCA2-(55)LD-DGJ-N
- WLCA2-(55)LD-DK1EJ-N

Smartclick

- WLCA2(55)LD-DTGJ-N
- WLCA2-LD-DTK1EJ-N



* Stainless sintered roller
 Note: The photo shows the WLCA2-LD-M1J-N model.

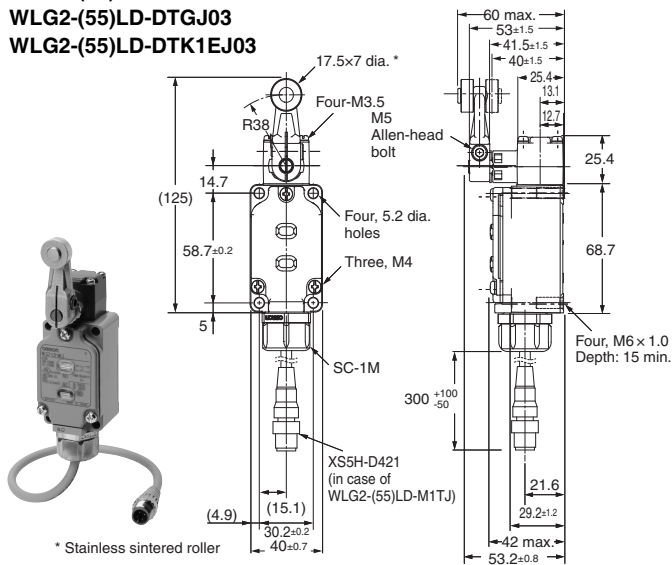
Roller lever R38 With operation indicator

LED

- Threaded (M12)
- WLG2-(55)LD-M1J
- WLG2-(55)LD-M1GJ
- WLG2-(55)LD-M1JB
- WLG2-(55)LD-DGJ03
- WLG2-(55)LD-DK1EJ03

Smartclick

- WLG2-(55)LD-M1TJ
- WLG2-(55)LD-M1TGJ
- WLG2-(55)LD-M1TJB
- WLG2-(55)LD-DTGJ03
- WLG2-(55)LD-DTK1EJ03



* Stainless sintered roller
 Note: The photo shows the WLG2-LD-M1J model.

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

Operating characteristics

| Model | WLCA2-(55)LD-M1J-N WLCA2-(55)LD-M1GJ-N WLCA2-(55)LD-M1JB-N WLCA2-(55)LD-DGJ-N WLCA2-(55)LD-DK1EJ-N WLCA2-(55)LD-DTGJ-N WLCA2-LD-DTK1EJ-N | WLG2-(55)LD-M1J WLG2-(55)LD-M1GJ WLG2-(55)LD-M1JB WLG2-(55)LD-DGJ03 WLG2-(55)LD-DK1EJ03 WLG2-(55)LD-M1TJ WLG2-(55)LD-M1TGJ WLG2-(55)LD-M1TJB WLG2-(55)LD-DTGJ03 WLG2-(55)LD-DTK1EJ03 | |
|-----------------------|--|---|-----------------------------------|
| Operating force | OF max. | 13.34 N | 9.81 N |
| Release force | RF min. | 1.18 N | 0.98 N |
| Pretravel | PT | 15±5° | 10 ⁺² / _{-1°} |
| Overtravel | OT min. | 70° | 65° |
| Movement Differential | MD max. | 12° | 7° |

General-purpose Switches

Environment-resistant Switches

Spatter-prevention Switches

Long-life Switches

Accessories

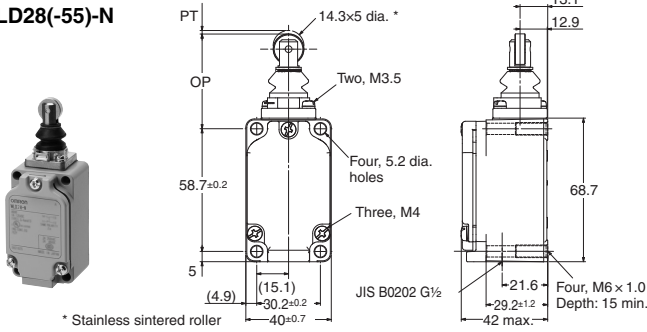
Safety Precautions

Plunger Actuators

Screw terminals

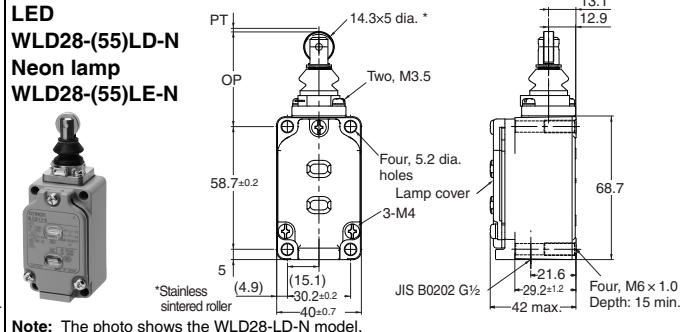
Sealed top-roller plunger

WLD28(-55)-N



Sealed top-roller plunger With operation indicator

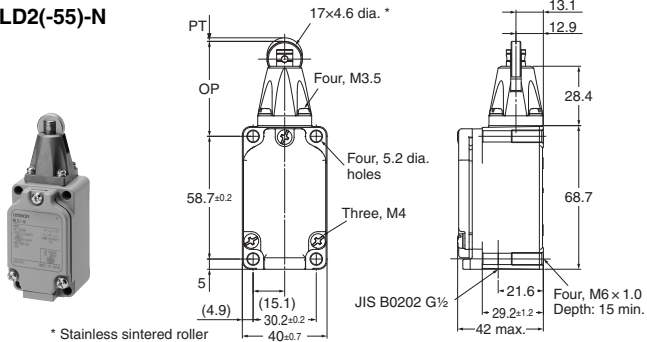
LED
WLD28(-55)LD-N
Neon lamp
WLD28(-55)LE-N



Note: The photo shows the WLD28-LD-N model.

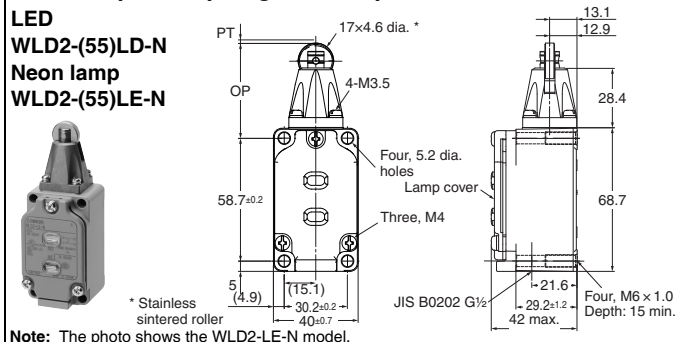
Top-roller plunger

WLD2(-55)-N



Sealed top-roller plunger With operation indicator

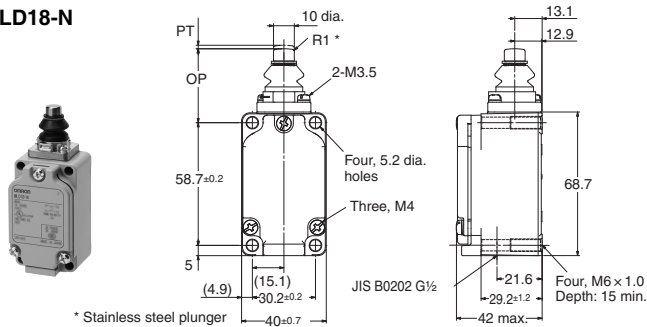
LED
WLD2(-55)LD-N
Neon lamp
WLD2(-55)LE-N



Note: The photo shows the WLD2-LE-N model.

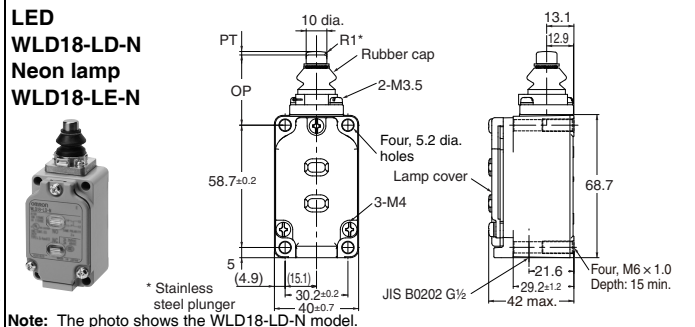
Sealed top plunger

WLD18-N



Sealed top-roller plunger With operation indicator

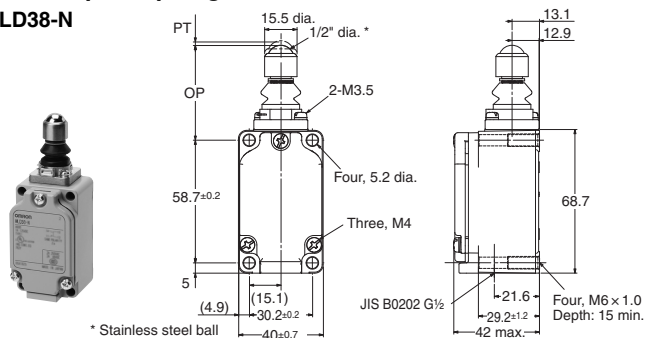
LED
WLD18-LD-N
Neon lamp
WLD18-LE-N



Note: The photo shows the WLD18-LD-N model.

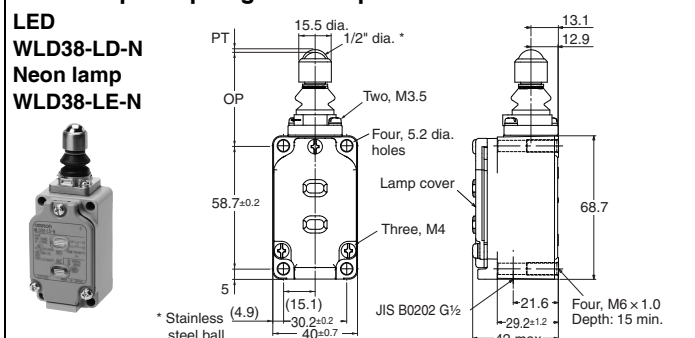
Sealed top-ball plunger

WLD38-N



Sealed top-ball plunger With operation indicator

LED
WLD38-LD-N
Neon lamp
WLD38-LE-N



Note: The photo shows the WLD38-LD-N model.

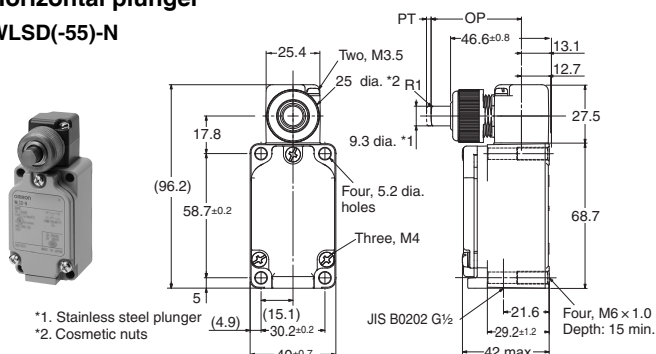
Note: Unless otherwise indicated, a tolerance of ± 0.4 mm applies to all dimensions.

Operating characteristics

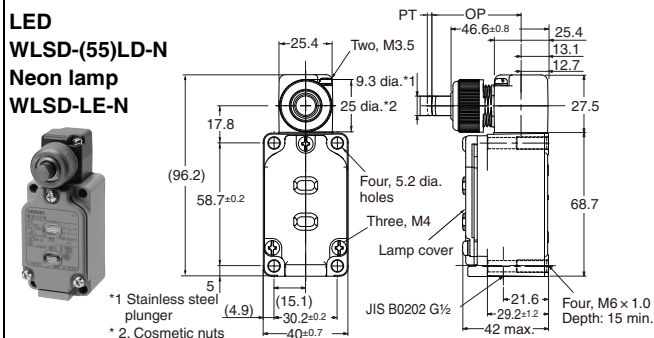
| | Model | WLD28(-55)-N WLD28(-55)LD-N WLD28(-55)LE-N | WLD2(-55)-N WLD2(-55)LD-N WLD2(-55)LE-N | WLD18-N WLD18-LD-N WLD18-LE-N | WLD38-N WLD38-LD-N WLD38-LE-N |
|-----------------------|-------|--|---|-------------------------------------|-------------------------------------|
| Operating force | OF | max. | 16.67 N | 26.67 N | 16.67 N |
| Release force | RF | min. | 4.41 N | 8.92 N | 4.41 N |
| Pretravel | PT | max. | 1.7 mm | 1.7 mm | 1.7 mm |
| Overtravel | OT | min. | 5.6 mm | 5.6 mm | 5.6 mm |
| Movement Differential | MD | max. | 1 mm | 1 mm | 1 mm |
| Operating position | OP | | 44±0.8 mm | 34±0.8 mm | 44.5±0.8 mm |
| Total travel position | TTP | max. | 39.5 mm | 29.5 mm | 41 mm |

Screw terminals

Horizontal plunger
WLS(55)-N

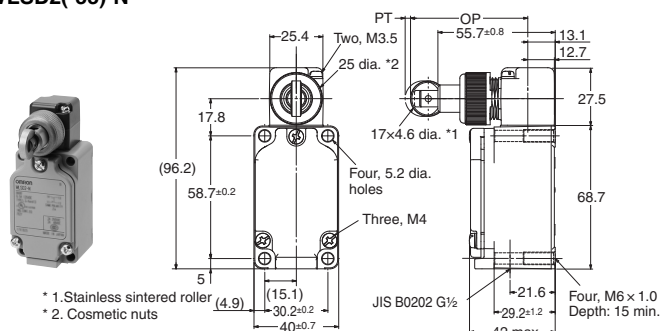


Horizontal plunger With operation indicator

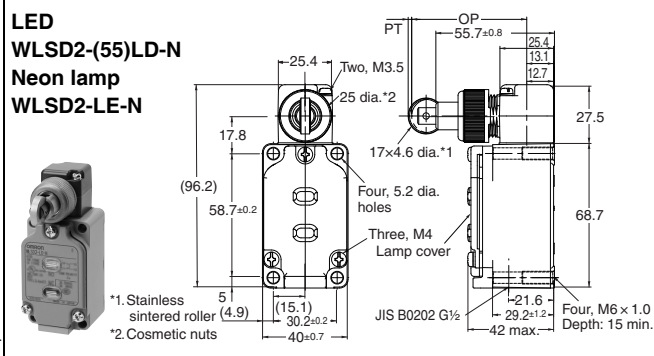


Note: The photo shows the WLS(55)-LD-N model.

Horizontal-roller plunger
WLS2(55)-N

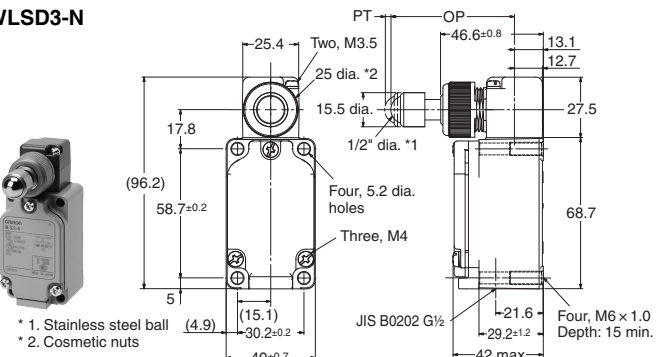


Horizontal-roller plunger With operation indicator

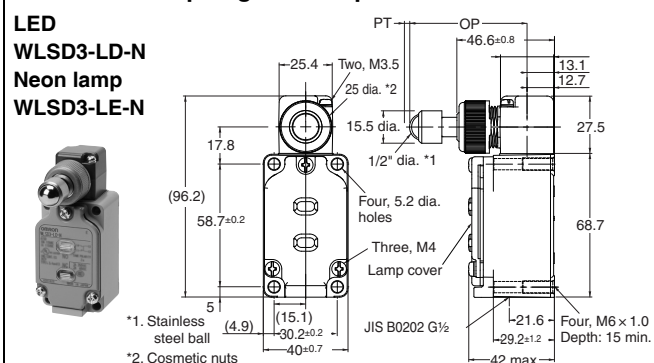


Note: The photo shows the WLS2(55)-LD-N model.

Horizontal-ball plunger
WLS3-N



Horizontal-ball plunger With operation indicator



Note: The photo shows the WLS3-LD-N model.

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

Operating characteristics

| | | Model | WLS(55)-N WLS(55)LD-N WLS(55)-LE-N | WLS2(55)-N WLS2(55)LD-N WLS2(55)-LE-N | WLS3-N WLS3-LD-N WLS3-LE-N |
|-----------------------|----|-------|--|---|----------------------------------|
| Operating force | OF | max. | 40.03 N | 40.03 N | 40.03 N |
| Release force | RF | min. | 8.89 N | 8.89 N | 8.89 N |
| Pretravel | PT | max. | 2.8 mm | 2.8 mm | 2.8 mm |
| Overtravel | OT | min. | 5.6 mm | 5.6 mm | 4 mm |
| Movement Differential | MD | max. | 1 mm | 1 mm | 1 mm |
| Operating position | OP | | 40.6±0.8 mm | 54.2±0.8 mm | 54.1±0.8 mm |

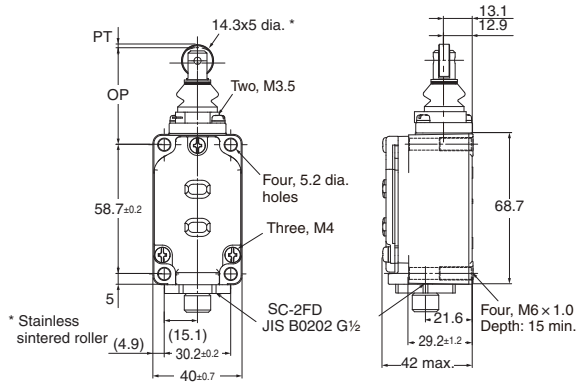
WL-N/WLG

Direct-wire connector

Sealed top-roller plunger With operation indicator

LED

WLD28-(55)LDK13-N
WLD28-(55)LDK43-N



Note: The photo shows the WLD28-LDK13-N model.

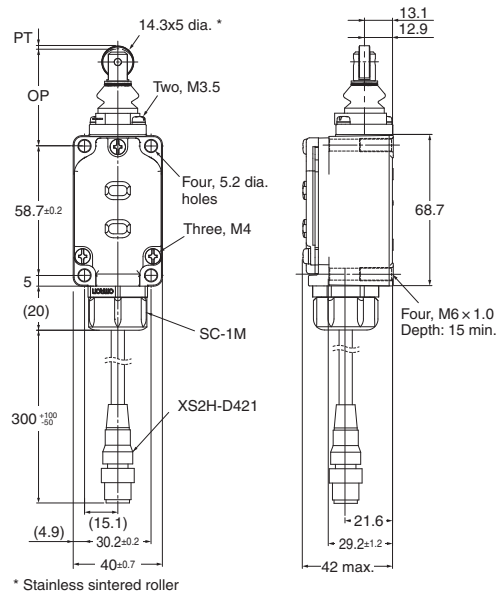
Pre-wired connectors

Sealed top-roller plunger With operation indicator

Threaded (M12)

LED

WLD28-(55)LD-M1J-N
WLD28-(55)LD-M1GJ-N
WLD28-(55)LD-DGJ-N



Note: The photo shows the WLD28-LD-M1J-N model.

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

Operating characteristics

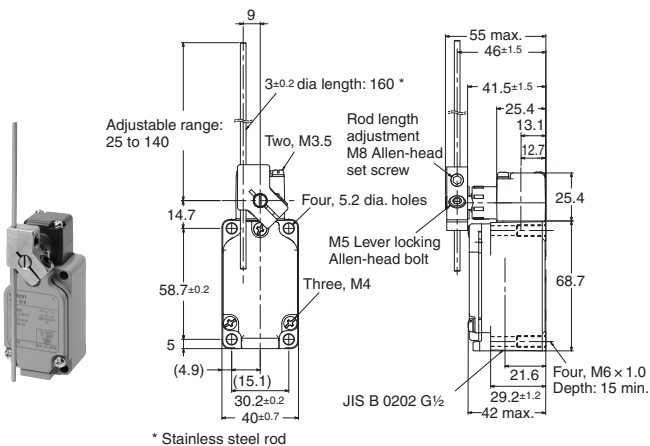
| | | Model | WLD28-(55)LDK13-N WLD28-(55)LDK43-N WLD28-(55)LD-M1J-N WLD28-(55)LD-M1GJ-N WLD28-(55)LD-DGJ-N WLD28-(55)LD-DK1EJ-N |
|-----------------------|-----|-------|---|
| Operating force | OF | max. | 16.67 N |
| Release force | RF | min. | 4.41 N |
| Pretravel | PT | max. | 1.7 mm |
| Overtravel | OT | min. | 5.6 mm |
| Movement Differential | MD | max. | 1 mm |
| Operating position | OP | | 44±0.8 mm |
| Total travel position | TTP | max. | 39.5 mm |

Flexible Rod

Screw terminals

Adjustable rod lever (25 to 140 mm)

WLCL(-55)-N
WLCL-2-N
WLCL-2N-N

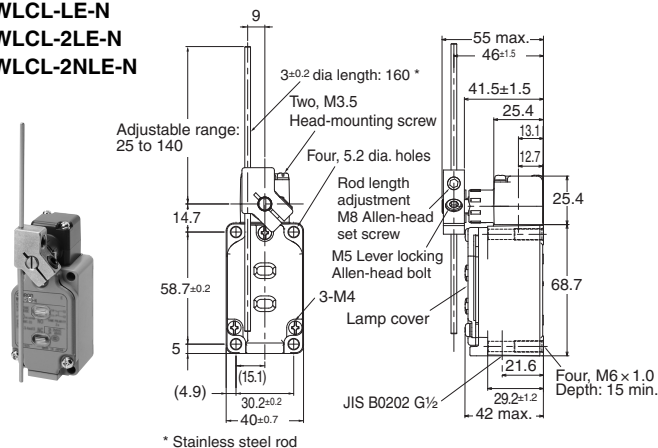


Note: The photo shows the WLCL-2N-N model.

Adjustable rod lever (25 to 140 mm)

With operation indicator

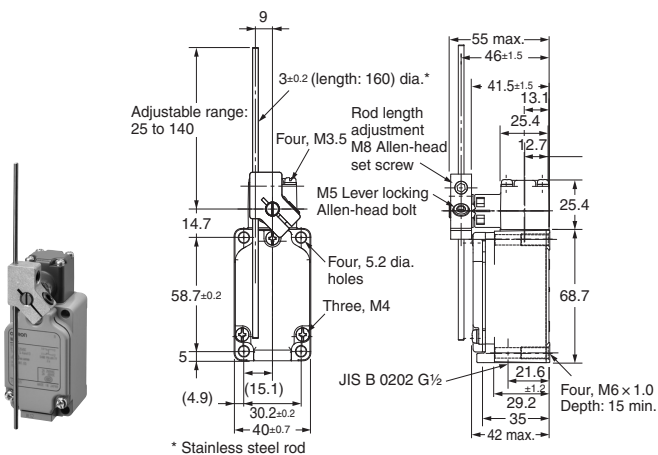
LED
WLCL(-55)LD-N
WLCL-2LD-N
WLCL-2NLD-N
Neon lamp
WLCL-LE-N
WLCL-2LE-N
WLCL-2NLE-N



Note: The photo shows the WLCL-2LD-N model.

Adjustable rod lever (25 to 140 mm)

WLGL

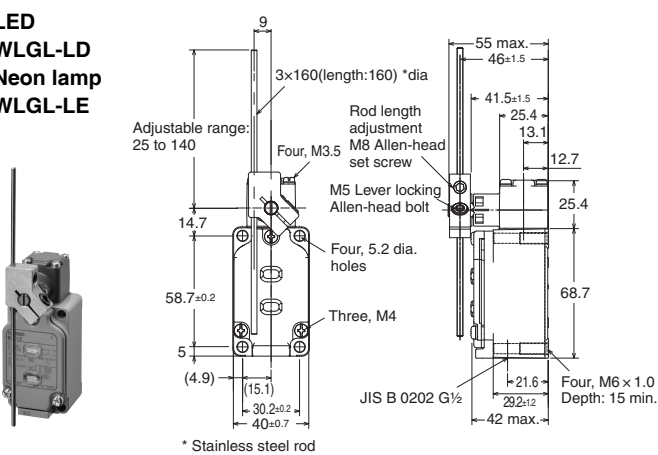


Note: Unless otherwise indicated, a tolerance of ± 0.4 mm applies to all dimensions.

Adjustable Roller Lever (25 to 140 mm)

With operation indicator

LED
WLGL-LD
Neon lamp
WLGL-LE



Operating characteristics

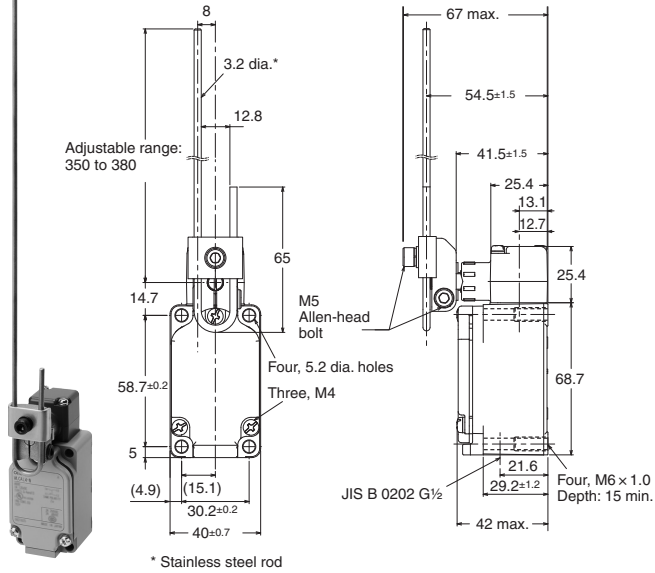
| Model | | WLCL(-55)-N * WLCL-LD-N * WLCL-LE-N * | WLCL-2-N * WLCL-2LD-N * WLCL-2LE-N * | WLCL-2N-N * WLCL-2NLD-N * WLCL-2NLE-N * | WLGL * WLGL-LD * WLGL-LE * |
|-----------------------|---------|---|--|---|-----------------------------------|
| Operating force | OF max. | 1.39 N | 1.39 N | 1.39 N | 2.84 N |
| Release force | RF min. | 0.27 N | 0.27 N | 0.27 N | 0.25 N |
| Pretravel | PT | 15 \pm 5° | 25 \pm 5° | 20° max. | 10° ^{+2°} _{-1°} |
| Overtravel | OT min. | 70° | 60° | 70° | 65° |
| Movement Differential | MD max. | 12° | 16° | 10° | 7° |

* This is the value when the rod length is 140 mm.

Screw terminals

Adjustable rod lever (350 to 380 mm)

WLCAL4-N



Adjustable Roller Lever (350 to 380 mm)

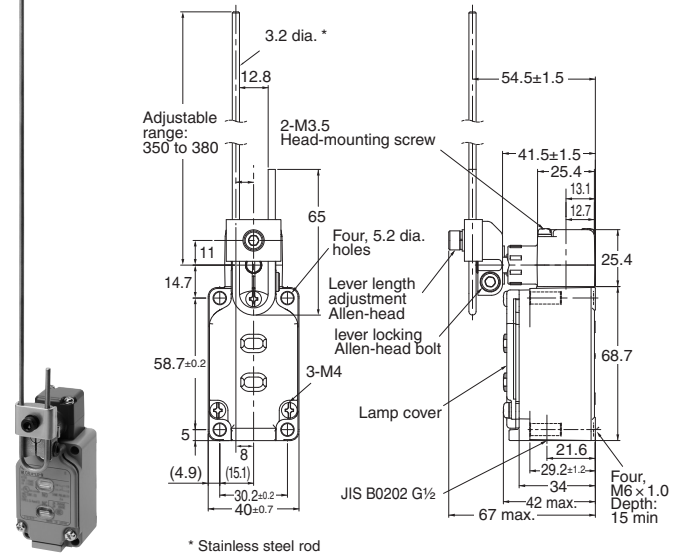
With operation indicator

LED

WLCAL4-LD-N

Neon lamp

WLCAL4-LE-N



Note: The photo shows the WLCAL4-LD-N model.

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

Operating characteristics

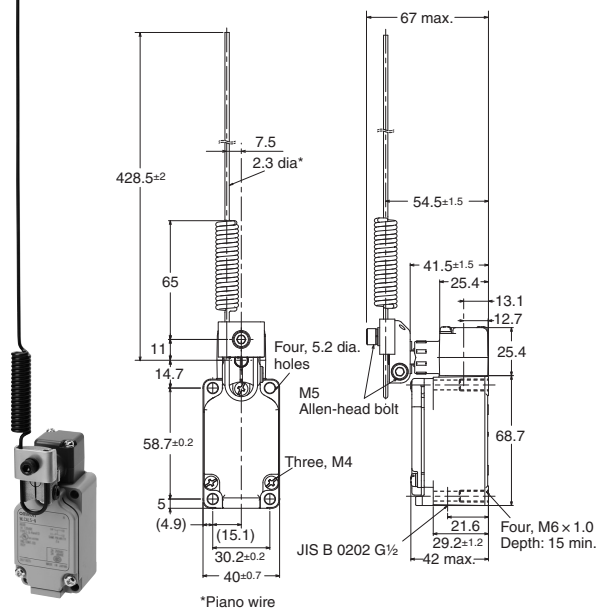
| | Model | WLCAL4-N * WLCAL4-LD-N * WLCAL4-LE-N * |
|-----------------------|---------|--|
| Operating force | OF max. | 0.98 N |
| Release force | RF min. | 0.15 N |
| Pretravel | PT | 15±5° |
| Overtravel | OT min. | 70° |
| Movement Differential | MD max. | 12° |

Note: With WLCAL4-N, WLCAL4-LD-N and WLCAL4-LE-N the actuator's tare is large, so depending on the installation direction, they may not be properly reset. Always install so that the actuator is facing downwards.

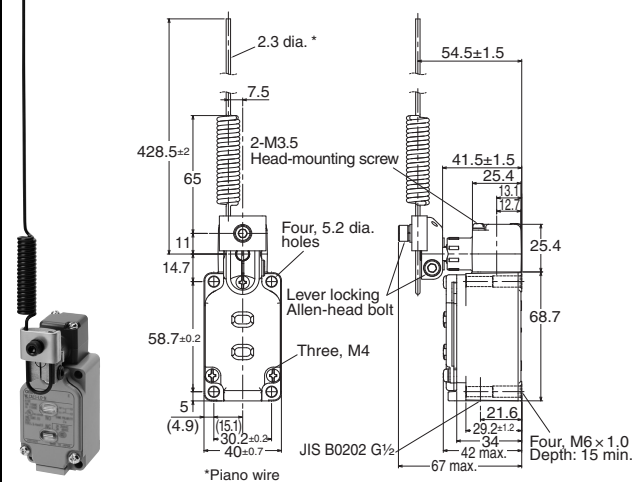
* This is the value when the rod length is 380 mm.

Screw terminals

Rod spring lever
WLCAL5-N



Rod spring lever With operation indicator
LED
WLCAL5-LD-N
Neon lamp
WLCAL5-LE-N



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

| Model | | WLCAL5-N * | WLCAL5-LD-N * | WLCAL5-LE-N * |
|-----------------------|---------|------------|---------------|---------------|
| Operating force | OF max. | 0.9 N | | |
| Release force | RF min. | 0.09 N | | |
| Pretravel | PT | 15±5° | | |
| Overtravel | OT min. | 70° | | |
| Movement Differential | MD max. | 12° | | |

Note: With WLCAL5-N, WLCAL5-LD-N, and WLCAL5-LE-N, the actuator's tare is large, so depending on the installation direction, they may not be properly reset. Always install so that the actuator is facing downwards.

* This is the value when the rod length is 380 mm.

General-purpose Switches

Environment-resistant Switches

Spatter-prevention Switches

Long-life Switches

Accessories

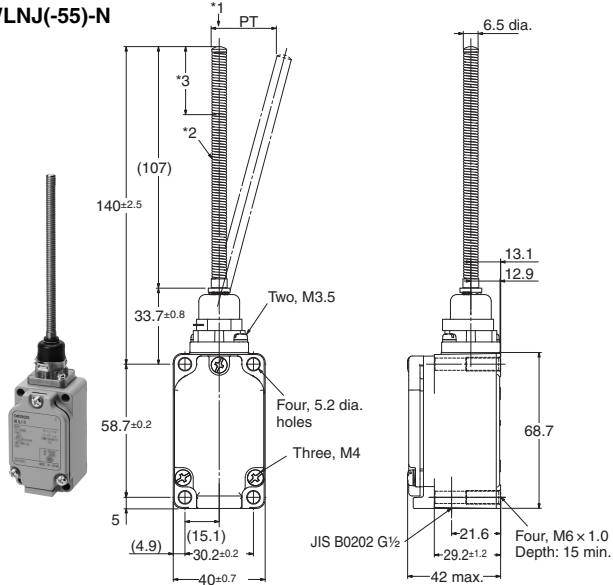
Safety Precautions

Flexible Rod

Screw terminals

Coil spring

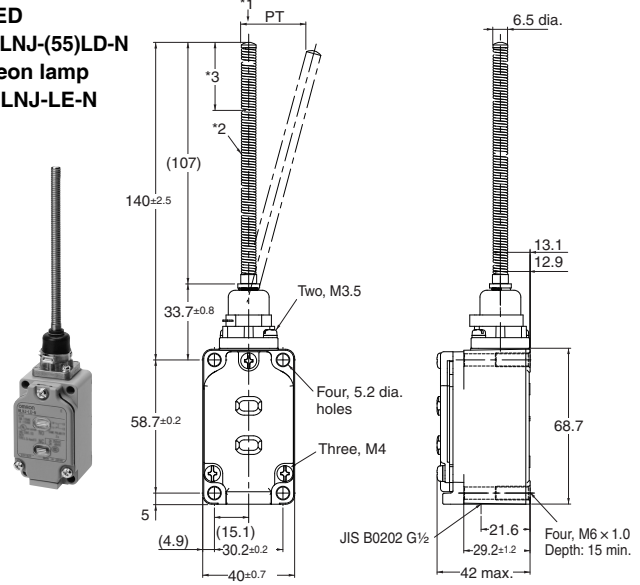
WLNJ(-55)-N



- *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 With operation indicator

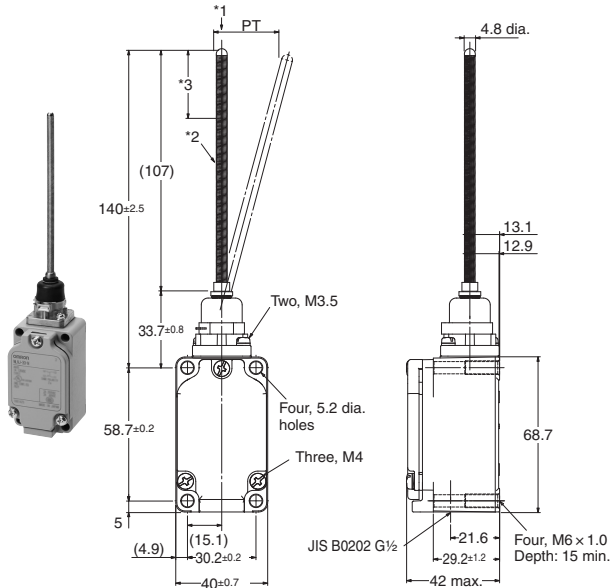
LED
WLNJ(-55)LD-N
Neon lamp
WLNJ-LE-N



- Note:** The photo shows the WLNJ-LD-N model.
- *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)

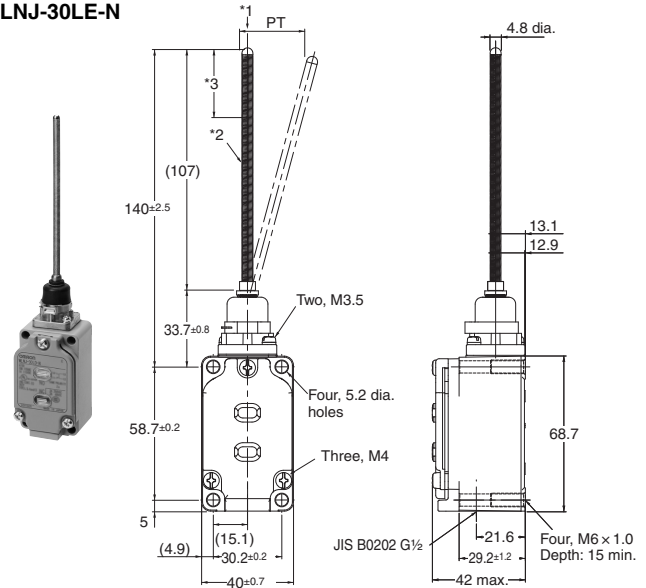
WLNJ-30-N



- *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.

Coil Spring (Multi-wire) With operation indicator

LED
WLNJ-30LD-N
Neon lamp
WLNJ-30LE-N



- Note:** The photo shows the WLNJ-30LD-N model.
- *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.

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

Operating characteristics

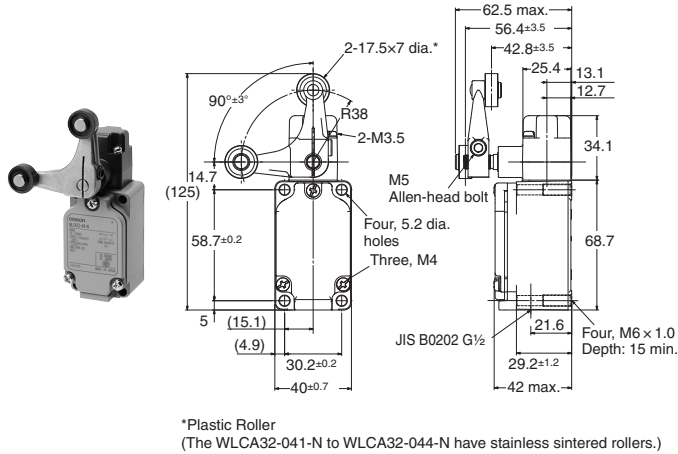
| Model | | WLNJ(-55)-N * WLNJ(-55)LD-N * WLNJ-LE-N * | WLNJ-30-N * WLNJ-30LD-N * WLNJ-30LE-N * |
|-----------------|----|---|---|
| Operating force | OF | 1.47 N | 1.47 N |
| Pretravel | PT | 20±10 mm | 20±10 mm |

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

Fork Lock Lever Screw terminals

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

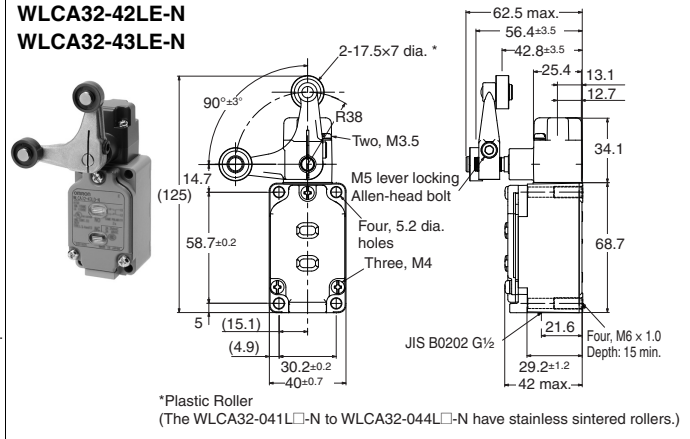
The WLCA32-41-N is shown in the following diagram.



Note: The photo shows the WLCA32-43-N model.

With operation indicator
LED
WLCA32-41LD-N
WLCA32-43LD-N
Neon lamp
WLCA32-41LE-N
WLCA32-42LE-N
WLCA32-43LE-N

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



Note: The photo shows the WLCA32-43LD-N model.

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

Operating characteristics

| | Model | WLCA32-41 to WLCA32-44-N |
|---|-------|--------------------------|
| Force necessary to reverse the direction of the lever | max. | 11.77 N |
| Movement until the lever reverses | | $50 \pm 5^\circ$ |
| Movement until switch operation | max. | 55° |
| Movement after switch operation | min. | 35° |

Environment-resistant Limit Switches WL-N/WLG

Wide range of available models to match your onsite environment

- Variety of head shapes, including Roller Lever, Plunger, and Flexible Rod Switches
- Select the optimum actuator model for the ambient operating temperature and operating environment for use in a wide range of applications
- Wiring specifications are available in Direct-wire cable types in addition to standard screw terminals types



For the most recent information on models that have been certified for safety standards, refer to your OMRON website.

! Be sure to read *Safety Precautions* on pages 83 to 88 and *Safety Precautions for All Limit Switches*.

Features

Select based on the operating temperature

- Ambient operating temperature of 5°C to 120°C: Heat-resistant type (WL□-TH-N/WL□-TH)
- Ambient operating temperature of -40°C to 40°C: Cold-resistant type (WL□-TC-N/WL□-TC)

Select based on the operating environment

- Outdoor use: Weather-resistant type (WL□-P1-N/WL□-P1)
- Chemicals and oils: Corrosion-resistant type (WL□-RP-N/WL□-RP)
- Coolant drops and mist: Coolant-resistant type (WL□-RP60-N/WL-RP60)
- Mist
 - Molded terminal 139 type (WL□-139-N/WL□-139)
The SC connector can be removed, so it is possible to use flexible conduit for the cable. (WL□-RP40-N/WL-RP40)
- Constant water drops and mist Molded terminal 140 type (WL□-140-N/WL□-140)
- Constant water drops or splattering cutting powder
 - Molded terminal 141 type (WL□-141-N/WL□-141)
 - Molded terminal 145 type (WL□-145-N/WL□-145)

Model Number Structure

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

Basic models

WL□ - □□□□□□ -N
 (1) (2) (3) (4) (5) (6) (7)

(1) Actuator and Property Specifications

| Code | Actuator | | Pretravel (PT) |
|---------|------------------------|--|----------------|
| CA2 | Roller lever | Roller lever: (R38 mm) | 15±5° |
| CA2-2 | | | 25±5° |
| CA2-2N | | | 20° max. |
| CA12 | | Adjustable Roller Lever (R25 to 89 mm) | 15±5° |
| CA12-2 | | | 25±5° |
| CA12-2N | | | 20° max. |
| D28 | Plunger Actuators | Sealed top-roller plunger | 1.7 mm max. |
| D2 | | Top-roller plunger | 1.7 mm max. |
| SD | | Horizontal plunger | 2.8 mm max. |
| SD2 | | Horizontal-roller plunger | 2.8 mm max. |
| CL | Flexible Rod Actuators | Adjustable rod lever (25 to 140mm) | 15±5° |
| CL-2 | | | 25±5° |
| CL-2N | | | 20° max. |
| NJ | | Coil spring (6.5 dia.) | 20±10mm |
| NJ-2 | | Flexible rod: Resin rod (8 dia.) | 40±20mm |

(2) Environment-resistant Specifications

| Code | Specifications |
|------|--------------------------|
| None | Standard built-in switch |
| RP | Corrosion-resistant type |
| P1 | Weather-resistant type |

(3) Built-in Switch Specifications

| Code | Specifications |
|------|--------------------------|
| None | Standard built-in switch |
| 55 | Airtight built-in switch |

(4) Temperature Specifications

| Code | Specifications |
|------|--|
| None | Ambient operating temperature (-10 to +80°C) |
| TH | Ambient operating temperature (5 to 120°C) (Heat-resistant type) * |
| TC | Ambient operating temperature (-40 to +40°C) (Cold-resistant type) * |

* (2) Environment-resistant Specifications Cannot be combined with symbols RP or P1.

(5) Wiring and Built-in Switch Specifications

| Code | Terminal shape | Internal switch Specifications | Mold specifications |
|------|--|--------------------------------|--|
| None | Screw terminals (Conduit size: G ¹ / ₂) | Standard | None |
| 139 | Direct-wire cable | Airtight built-in switch | Molded conduit opening and cover. (The cover cannot be removed.) |
| 140 | | | Molded conduit opening, cover, and cover mounting screws. (The cover cannot be removed.) |
| 141 | | | Molded conduit opening, cover, cover mounting screws, and head. (The cover cannot be removed, and head direction cannot be changed.) |
| 145 | | | Molded conduit opening, cover, and cover mounting screws. (The cover cannot be removed.) |
| RP40 | | | Molded conduit opening and cover. (The cover cannot be removed.) SC Connector can be removed, so it is possible to use flexible conduits for the cable. |
| RP60 | | | Molded conduit opening, cover, cover mounting screws, and head mounting screws. (The cover cannot be removed, and head direction cannot be changed.) Fluorine rubber is used for all rubber parts. |

(6) Indicator Specifications

| Code | Specifications |
|------|------------------------------|
| None | No indicator |
| LD | LED (10 to 115 V AC/DC) * |
| LE | Neon lamp (125 to 250 VAC) * |

* (2) Environment-resistant Specifications Cannot be combined with symbols RP or P1.

(4) Temperature Specifications Cannot be combined with symbols TH or TC.

(7) Lamp Wiring

| Code | Specifications |
|------|------------------------------------|
| None | No indicator |
| 2 | NC wiring (Lit when operating) |
| 3 | NO wiring (Lit when not operating) |

High-sensitivity and High-precision Models

WLG□ - □□□□□□□
 (1) (2) (3) (4) (5) (6) (7)

(1) Actuator and Property Specifications

| Code | Actuator | | Pretravel (PT) |
|------|--------------|---|-----------------------------------|
| 2 | Roller lever | Roller lever: R38 mm High-sensitivity Models | 10 ^{0+2°} _{-1°} |
| CA2 | | Roller lever: R38 mm High-precision Models | 5 ^{0-2°} _{0°} |
| 12 | | Adjustable Roller Lever (R25 to 89 mm) high-sensitivity model | 10 ^{0+2°} _{-1°} |
| L | Flexible rod | Adjustable rod lever (25 to 140 mm) high-sensitivity model | 10 ^{0+2°} _{-1°} |

(2) Environment-resistant Specifications

| Code | Specifications |
|------|--------------------------|
| None | Standard Built-in Switch |
| RP | Corrosion-resistant type |
| P1 | Weather-resistant type |

(3) Built-in Switch Specifications

| Code | Specifications |
|------|--------------------------|
| None | Standard Built-in Switch |
| 55 | Airtight built-in switch |

(4) Temperature Specifications

| Code | Specifications |
|------|--|
| None | Ambient operating temperature -10 to +80°C |
| TH | Ambient operating temperature (5 to 120°C) (Heat-resistant type) * |
| TC | Ambient operating temperature (-40 to +40°C) (Cold-resistant type) * |

* (2) Environment-resistant Specifications Cannot be combined with symbols RP or P1.

(5) Wiring and Built-in Switch Specifications

| Code | Terminal shape | Built-in switch specification | Mold specifications |
|------|--|-------------------------------|--|
| None | Screw terminals (Conduit size: G ¹ / ₂) | Standard | None |
| 139 | Direct-wire cable | | Molded conduit opening and cover. (The cover cannot be removed.) |
| 140 | Direct-wire cable | Airtight built-in switch | Molded conduit opening, cover, and cover mounting screws. (The cover cannot be removed.) |
| 141 | | | Molded conduit opening, cover, cover mounting screws, and head. (The cover cannot be removed, and head direction cannot be changed.) |
| RP60 | | | Molded conduit opening, cover, cover mounting screws, and head mounting screws. (The cover cannot be removed, and head direction cannot be changed.) Fluorine rubber is used for all rubber parts. |

(6) Indicator Specifications

| Code | Specifications |
|------|-------------------------------|
| None | No indicator |
| LD | LED (10 to 115 V AC/DC) * |
| LE | Neon lamp (125 to 250 V AC) * |

* (2) Environment-resistant Specifications Symbols: RP, P1
 (4) Temperature Specifications Cannot be combined with symbols TH or TC.

(7) Lamp Wiring

| Code | Specifications |
|------|------------------------------------|
| None | No indicator |
| 2 | NC wiring (Lit when operating) |
| 3 | NO wiring (Lit when not operating) |

General-purpose Switches

Environment-resistant Switches

Spatter-prevention Switches


Long-life Switches

Accessories


Safety Precautions

Ordering Information



Roller Lever

| Appearance | Actuator | Terminal shape | Built-in switch specification/ Temperature Specifications | Pretravel (PT) | Without operation indicator | | With operation indicator | |
|--|------------------------|---|--|-----------------------------------|-----------------------------|-----------------------|--------------------------|-----------|
| | | | | | Model | Indicator | LED | |
| | | | | | | Wiring Specifications | Model | |
|  | Rollerlever: R38 mm | Screw terminals (Conduit size: G1/2) | Heat-resistant type | 15±5° | WLCA2-TH-N | --- | --- | |
| | | | | 25±5° | WLCA2-2TH-N | --- | --- | |
| | | | | 20° max. | WLCA2-2NTH-N | --- | --- | |
| | | | | 10 ^{0+2°} _{-1°} | WLG2-TH | --- | --- | |
| | | | | 5 ^{0+2°} _{0°} | WLGCA2-TH | --- | --- | |
| | | | Cold-resistant type | 15±5° | WLCA2-TC-N | --- | --- | |
| | | | | 25±5° | WLCA2-2TC-N | --- | --- | |
| | | | | 20° max. | WLCA2-2NTC-N | --- | --- | |
| | | | | 10 ^{0+2°} _{-1°} | WLG2-TC | --- | --- | |
| | | | | 5 ^{0+2°} _{0°} | WLGCA2-TC | --- | --- | |
| | | | Corrosion-resistant type | 15±5° | WLCA2-RP-N | --- | --- | |
| | | | | 10 ^{0+2°} _{-1°} | WLG2-RP | --- | --- | |
| | | | | 5 ^{0+2°} _{0°} | WLGCA2-RP | --- | --- | |
| | | | Weather-resistant type | 15±5° | WLCA2-P1-N | --- | --- | |
| | | | | 10 ^{0+2°} _{-1°} | WLG2-P1 | --- | --- | |
| | | Direct-wire cable | Coolant-resistant type | 15±5° | WLCA2-RP60-N | NC wiring | WLCA2-RP60LD2-N | |
| | | | | | | NO wiring | WLCA2-RP60LD3-N | |
| | | | | 25±5° | WLCA2-2RP60-N | NC wiring | WLCA2-2RP60LD2-N | |
| | | | | | | NO wiring | WLCA2-2RP60LD3-N | |
| | | | | 10 ^{0+2°} _{-1°} | WLG2-RP60 | NC wiring | WLG2-RP60LD2 | |
| | | | | | | NO wiring | WLG2-RP60LD3 | |
| | | | | 5 ^{0+2°} _{0°} | WLGCA2-RP60 | NC wiring | WLGCA2-RP60LD2 | |
| | | | | | | NO wiring | WLGCA2-RP60LD3 | |
| | | | | Corrosion-resistant type | 15±5° | WLCA2-RP40-N | --- | --- |
| | | | | | Molded terminal -139 | 15±5° | WLCA2-139-N | NC wiring |
| | | | 25±5° | WLCA2-2139-N | | NO wiring | WLCA2-139LD3-N | |
| | | | | | | NC wiring | WLCA2-2139LD2-N | |
| | | | NO wiring | WLCA2-2139LD3-N | | | | |
| | | | 20° max. | WLCA2-2N139-N | | --- | --- | |
| | | | 10 ^{0+2°} _{-1°} | WLG2-139 | | NO wiring | WLG2-139LD3 | |
| | | | 5 ^{0+2°} _{0°} | WLGCA2-139 | NC wiring | WLGCA2-139LD2 | | |
| | | | | | NO wiring | WLGCA2-139LD3 | | |
| | | | Molded terminal -140 | 15±5° | WLCA2-140-N | --- | --- | |
| | | | | 20° max. | WLCA2-2N140-N | --- | --- | |
| | | | Molded terminal -141 | 10 ^{0+2°} _{-1°} | WLG2-140 | NC wiring | WLG2-140LD2 * | |
| | | NO wiring | | | | WLG2-140LD3 * | | |
| | | 15±5° | | WLCA2-141-N | NC wiring | WLCA2-141LD2-N | | |
| | | | | | NO wiring | WLCA2-141LD3-N | | |
| | | 10 ^{0+2°} _{-1°} | | WLG2-141 | NC wiring | WLG2-141LD2 | | |
| | | | | | NO wiring | WLG2-141LD3 | | |
| 5 ^{0+2°} _{0°} | WLGCA2-141 | NO wiring | WLGCA2-141LD3 | | | | | |




* Ask your OMRON representative for details on Two-core switches.

| Apperance | Actuator | Terminal shape | Built-in switch specification/ Temperature Specifications | Pretravel (PT) | Without operation indicator |
|---|---|---|--|-----------------------------------|--------------------------------|
| | | | | | Model |
|  | Adjustable roller lever (R25 to 89 mm) | Screw terminals (Conduit size: G ¹ / ₂) | Heat-resistant type | 15±5° | WLCA12-TH-N |
| | | | | 25±5° | WLCA12-2TH-N |
| | | | | 20° max. | WLCA12-2NTH-N |
| | | | | 10 ^{0+2°} _{-1°} | WLG12-TH |
| | | | Cold-resistant type | 15±5° | WLCA12-TC-N |
| | | | | 25±5° | WLCA12-2TC-N |
| | | | | 20° max. | WLCA12-2NTC-N |
| | | | | 10 ^{0+2°} _{-1°} | WLG12-TC |
| | | | Corrosion-resistant type | 15±5° | WLCA12-RP-N |
| | | | | 10 ^{0+2°} _{-1°} | WLG12-RP |
| | | | Weather-resistant type | 15±5° | WLCA12-P1-N |
| | | | | 10 ^{0+2°} _{-1°} | WLG12-P1 |
| | | Direct-wire cable | Coolant-resistant type | 15±5° | WLCA12-RP60-N |
| | | | Molded terminal -139 | 15±5° | WLCA12-139-N |
| | | | Molded terminal -140 | 15±5° | WLCA12-140-N |

Plunger

| Apperance | Actuator | Terminal shape | Built-in switch specification/ Temperature Specifications | Pretravel (PT) | Without operation indicator |
|---|---------------------------|---|--|----------------|---|
| | | | | | Model |
|  | Sealed top-roller plunger | Screw terminals (Conduit size: G ¹ / ₂) | Heat-resistant type | 1.7 mm max. | WLD28-TH-N |
| | | | Cold-resistant type | | WLD28-TC-N |
| | | | Corrosion-resistant type | | WLD28-RP-N |
| | | Direct-wire cable | Coolant-resistant type | | WLD28-RP60-N |
| | | | Molded terminal -139 | | WLD28-139-N |
| | | | Molded terminal -140 | | WLD28-140-N |
| | | | Top-roller plunger | | Screw terminals (Conduit size: G ¹ / ₂) |
| Coolant-resistant type | WLD2-RP60-N | | | | |
| Direct-wire cable | Molded terminal -139 | WLD2-139-N | | | |
|  | Horizontal plunger | Screw terminals (Conduit size: G ¹ / ₂) | Heat-resistant type | 2.8 mm max. | WLSD-TH-N |
| | | | Cold-resistant type | | WLSD-TC-N |
| | | | Corrosion-resistant type | | WLSD-RP-N |
| | | Direct-wire cable | Coolant-resistant type | | WLSD-RP60-N |
| | | | Molded terminal -139 | | WLSD-139-N |
| | | | Horizontal-roller plunger | | Screw terminals (Conduit size: G ¹ / ₂) |
| Cold-resistant type | WLS2-TC-N | | | | |
| Corrosion-resistant type | WLS2-RP-N | | | | |
| Direct-wire cable | Coolant-resistant type | WLS2-RP60-N | | | |
| | Molded terminal -139 | WLS2-139-N | | | |
| Molded terminal -140 | WLS2-140-N | | | | |

Flexible Rod

| Appearance | Actuator | Terminal shape | Built-in switch specification/ Temperature Specifications | Pretravel (PT) | Without operation indicator |
|---|--|--|--|----------------------------------|-----------------------------|
| | | | | | Model |
|  | Coil spring (6.5 dia.) | Screw terminals (Conduit size: G ^{1/2}) | Heat-resistant type | 20±10 mm | WLNJ-TH-N |
| | | | Cold-resistant type | | WLNJ-TC-N |
| | | | Corrosion-resistant type | | WLNJ-RP-N |
| | | Direct-wire cable | Coolant-resistant type | | WLNJ-RP60-N |
| | | | Molded terminal -139 | | WLNJ-139-N |
| | | | Molded terminal -140 | | WLNJ-140-N |
|  | Resin rod (8 dia.) | Screw terminals (Conduit size: G ^{1/2}) | Corrosion-resistant type | 40±20 mm | WLNJ-2RP-N |
| | | | Coolant-resistant type | 40±20 mm | WLNJ-2RP60-N |
| | | Direct-wire cable | Molded terminal -139 | | WLNJ-2139-N |
| | | | Molded terminal -140 | WLNJ-2140-N | |
|  | Adjustable rod lever (25 to 140 mm) | Screw terminals (Conduit size: G ^{1/2}) | Heat-resistant type | 15±5° | WLCL-TH-N |
| | | | | 25±5° | WLCL-2TH-N |
| | | | | 20° max. | WLCL-2NTH-N |
| | | | Cold-resistant type | 10 ^{+2°} _{-1°} | WLGL-TH |
| | | | | 15±5° | WLCL-TC-N |
| | | | | 25±5° | WLCL-2TC-N |
| | | | | 20° max. | WLCL-2NTC-N |
| | | | Corrosion-resistant type | 10 ^{+2°} _{-1°} | WLGL-TC |
| | | | | 15±5° | WLCL-RP-N |
| | | | Weather-resistant type | 10 ^{+2°} _{-1°} | WLGL-RP |
| | | | | 15±5° | WLCL-P1-N |
| | | | Direct-wire cable | 10 ^{+2°} _{-1°} | WLGL-P1 |
| Coolant-resistant type | 15±5° | WLCL-RP60-N | | | |
| Molded terminal -139 | 15±5° | WLCL-139-N | | | |
| Molded terminal -140 | 15±5° | WLCL-140-N | | | |

Specifications

Ratings

Screw terminals/Direct-wire cable

Without Operation Indicator

Basic models (WL-N)

| Ratings | | Non-inductive load (A) | | | | Inductive load (A) | | | |
|-------------|-----|------------------------|----|-----------|-----|---------------------|----|------------|-----|
| | | Basic models (WL-N) | | | | Basic models (WL-N) | | | |
| | | Resistive load | | Lamp load | | Inductive load | | Motor load | |
| Voltage (V) | | NC | NO | NC | NO | NC | NO | NC | NO |
| AC | 125 | 10 | | 3 | 1.5 | 10 | | 5 | 2.5 |
| | 250 | 10 | | 2 | 1 | 10 | | 3 | 1.5 |
| | 500 | 10 | | 1.5 | 0.8 | 3 | | 1.5 | 0.8 |
| DC | 8 | 10 | | 6 | 3 | 10 | | 6 | |
| | 14 | 10 | | 6 | 3 | 10 | | 6 | |
| | 30 | 6 | | 4 | 3 | 6 | | 4 | |
| | 125 | 0.8 | | 0.2 | 0.2 | 0.8 | | 0.2 | |
| | 250 | 0.4 | | 0.1 | 0.1 | 0.4 | | 0.1 | |

High-sensitivity and High-precision models (WLG)

| Ratings | | Non-inductive load (A) | |
|-------------|-----|--|----|
| | | High-sensitivity and High-precision models (WLG) | |
| | | Resistive load | |
| Voltage (V) | | NC | NO |
| AC | 125 | 5 | |
| | 250 | 5 | |
| DC | 125 | 0.4 | |
| | 250 | 0.2 | |

With Operation Indicator (LED)

Basic models (WL-N)

| Ratings | | Non-inductive load (A) | | | | Inductive load (A) | | | |
|-------------|-----|------------------------|----|-----------|-----|---------------------|----|------------|-----|
| | | Basic models (WL-N) | | | | Basic models (WL-N) | | | |
| | | Resistive load | | Lamp load | | Inductive load | | Motor load | |
| Voltage (V) | | NC | NO | NC | NO | NC | NO | NC | NO |
| AC | 115 | 10 | | 3 | 1.5 | 10 | | 5 | 2.5 |
| DC | 12 | 10 | | 6 | 3 | 10 | | 6 | |
| | 24 | 6 | | 4 | 3 | 6 | | 4 | |
| | 48 | 3 | | 2 | 1.5 | 3 | | 0.2 | |
| | 115 | 0.8 | | 0.2 | | 0.8 | | 0.1 | |

High-sensitivity and High-precision models (WLG)

| Ratings | | Non-inductive load (A) | |
|-------------|-----|--|----|
| | | High-sensitivity and High-precision models (WLG) | |
| | | Resistive load | |
| Voltage (V) | | NC | NO |
| AC | 115 | 5 | |
| DC | 115 | 0.4 | |

With Operation Indicators (Neon Lamps)

Basic models (WL-N)

| Ratings | | Non-inductive load (A) | | | | Inductive load (A) | | | |
|-------------|-----|------------------------|----|-----------|-----|---------------------|----|------------|-----|
| | | Basic models (WL-N) | | | | Basic models (WL-N) | | | |
| | | Resistive load | | Lamp load | | Inductive load | | Motor load | |
| Voltage (V) | | NC | NO | NC | NO | NC | NO | NC | NO |
| AC | 125 | 10 | | 3 | 1.5 | 10 | | 5 | 2.5 |
| | 250 | 10 | | 2 | 1 | 10 | | 3 | 1.5 |

High-sensitivity and High-precision models (WLG)

| Ratings | | Non-inductive load (A) | |
|-------------|-----|--|----|
| | | High-sensitivity and High-precision models (WLG) | |
| | | Resistive load | |
| Voltage (V) | | NC | NO |
| AC | 125 | 5 | |
| | 250 | 5 | |

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

Allowable Inrush Current/ Minimum applicable load

| Operating characteristics type | Basic models (WL-N) | | High-sensitivity and High-precision models (WLG) |
|--------------------------------|-------------------------------------|-----------|--|
| Inrush current | NC | 30 A max. | |
| | NO | 20 A max. | |
| Minimum applicable load | 5 VDC 1 mA, resistive load, P level | | 5 VDC 1 mA, resistive load, P level |

Operation Indicator

| Operation indicator type | LED | Neon lamp |
|-----------------------------------|---|--|
| Rated voltage | 10 to 115 VAC/DC | 125 to 250 VAC |
| Leakage current (Reference value) | Approx. 0.4 mA at 10 VAC/DC Approx. 0.5 mA at 115 VAC/DC | Approx. 0.6 mA at 125 VAC Approx. 1.9 mA at 250 VAC |

Characteristics

| Operating characteristics type | | Basic models (WL-N) | High-sensitivity and High-precision models (WLG) |
|---------------------------------|-------------|---|---|
| Permissible operating frequency | Mechanical | 120 operations/minute | |
| | Electrical | 30 operations/minute | |
| Rated frequency | | 50/60 Hz | |
| Permissible operating speed | | 1 mm/s to 1 m/s (in case of WLCA2-N) | |
| Insulation resistance | | 100 MΩ min. (at 500 VDC) | |
| Contact resistance | | 25 mΩ or less (default value, built-in switch only) | |
| Vibration resistance | Malfunction | 10 to 55 Hz, 1.5-mm double amplitude *2 | |
| Shock | Destruction | 1,000 m/s ² max. | |
| | Malfunction | 300m/s ² max. *2 | |
| Durability *1 | Mechanical | 15,000,000 operations min. | 10,000,000 operations min. *3 |
| | Electrical | 750,000 operations min. (3 A at 250 VAC, resistive load) *4 | 500,000 operations min. (3 A at 250 VAC, resistive load) *4 |
| Ambient operating temperature | | -10 to +80°C (with no icing) *5 | |
| Ambient operating humidity | | 35 to 95%RH | |
| Degree of protection | | IP67 | |
| Weight | | Approx. 250 g (for WLCL-TH-N) | Approx. 250 g (for WLCL-TH-N) |

Note: The above figures are initial values.

- *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. Except Switches with Flexible Rod Actuators.
- *3. 500,000 operations min. for Weather-resistant models.
- *4. In case of models without operation indicators.
- *5. For low-temperature models this is -40°C to +40°C (with no icing). For heat-resistant models the range is +5°C to 120°C.

| Operating characteristics type | | Basic models (WL-N) | High-sensitivity and High-precision models (WLG) |
|--------------------------------|---|--|--|
| Wiring Specifications | | Screw terminals/Direct-wire cable models | Screw terminals/Direct-wire cable models |
| Dielectric strength | Between terminals of the same polarity | 1,000 VAC, 50/60 Hz for 1 min * | 600 VAC, 50/60 Hz for 1 min * |
| | Between current-carrying metal part and ground | 2,200 VAC, 50/60 Hz for 1 min | 1,500 VAC, 50/60 Hz for 1 min |
| | Between each terminal and non-current-carrying metal part | 2,200 VAC, 50/60 Hz for 1 min | 1,500 VAC, 50/60 Hz for 1 min |

* Except models with operation indicators.

Circuit Configuration/Terminal Connection Diagram

| Operating characteristics type | Basic models (WL-N)/High-sensitivity and high-precision models (WLG) | |
|---|--|-------------------|
| Wiring Specifications | Screw terminals | Direct-wire cable |
| Without operation indicator | | |
| Operation indicator (Light-ON when Not Operating *) | | |

Note: 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.

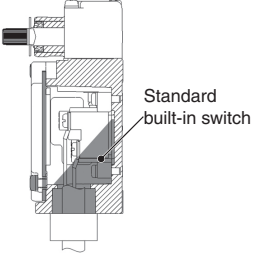
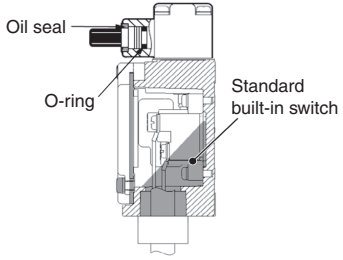
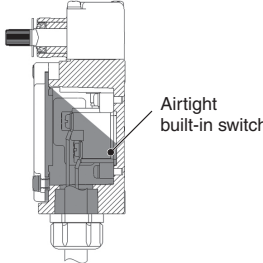
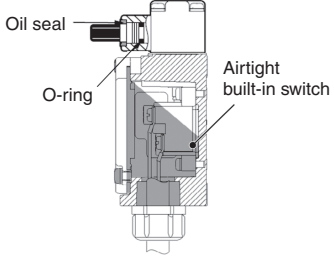
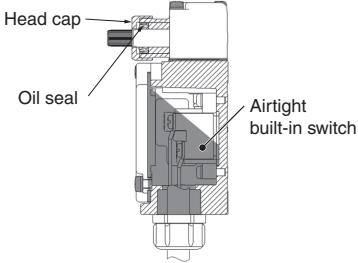
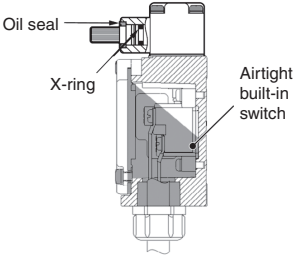
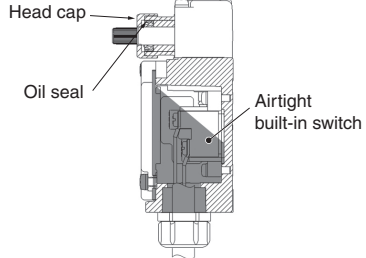
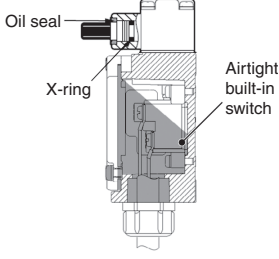
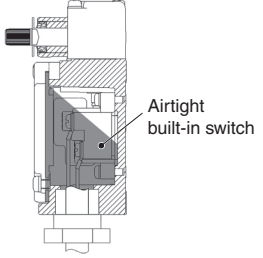
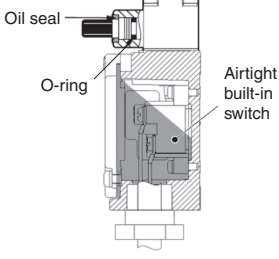
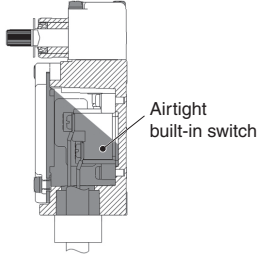
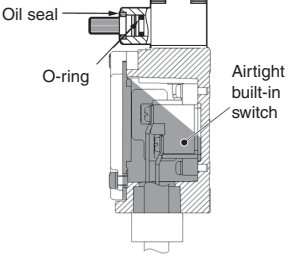
For countermeasures, refer to technical support on your OMRON website.

* Light-ON when not operating means the operation indicator is lit when the actuator is free and is not lit when the actuator rotates or is pushed down, and the Switch contacts contact to NO.

The above shows details of the switch interior. External wires (external resistances) are not shown. For details, refer to *Operation* on page 18.

Structure and Nomenclature

Mold Specifications : Molded parts

| | | |
|---|--|--|
| <p>Prevent entry of foreign objects from conduit WL□-139-N</p>  <p>Standard built-in switch</p> <p>WLG□-139</p>  <p>Oil seal O-ring Standard built-in switch</p> | <p>Prevent entry of foreign objects from conduit cover WL□-140-N</p>  <p>Airtight built-in switch</p> <p>WLG□-140</p>  <p>Oil seal O-ring Airtight built-in switch</p> | <p>Prevent entry of foreign objects from head and conduit cover WL□-141-N</p>  <p>Head cap Oil seal Airtight built-in switch</p> <p>WLG□-141</p>  <p>Oil seal X-ring Airtight built-in switch</p> |
| <p>Prevent entry of metal powder from head and conduit WL□-145-N</p>  <p>Head cap Oil seal Airtight built-in switch</p> <p>WLG□-145</p>  <p>Oil seal X-ring Airtight built-in switch</p> | <p>Prevent entry of metal powder from conduit cover WL□-RP40-N</p>  <p>Airtight built-in switch</p> <p>WLG□-RP40</p>  <p>Oil seal O-ring Airtight built-in switch</p> | <p>Prevent entry of metal powder from head and conduit cover WL□-RP60-N *1</p>  <p>Airtight built-in switch</p> <p>WLG□-RP60 *1</p>  <p>Oil seal O-ring Airtight built-in switch</p> |

| Model | Cable specifications | Connector specifications |
|---|--|--------------------------|
| WL□-139-N WLG□-139 | Standard 5-m VCT cable. Finished outer diameter: 11.5 mm, 4 conductors. | Resin cap |
| WL□-140-N WLG□-140 WL□-141-N WLG□-141 WL□-145-N WLG□-145 | Standard 5-m VCT cable, with high flexibility and good anti-oil properties attached. Finished outer diameter: 11.5 mm, 4 conductors. | Metal connector |
| WL□-RP40-N WLG□-RP40 | | Resin connector *2 |
| WL□-RP60-N WLG□-RP60 | | Resin cap |

*1. Fluorine rubber is used for all rubber parts.
*2. The connector can be removed, so it is possible to use flexible conduit for the cable.

General-purpose Switches

Environment-resistant Switches

Spatter-prevention Switches

Long-life Switches

Accessories

Safety Precautions

Roller Lever

Screw terminals

Roller lever R38

Heat-resistant type

WLCA2-TH-N

WLCA2-2TH-N

WLCA2-2NTH-N

Cold-resistant type

WLCA2-TC-N

WLCA2-2TC-N

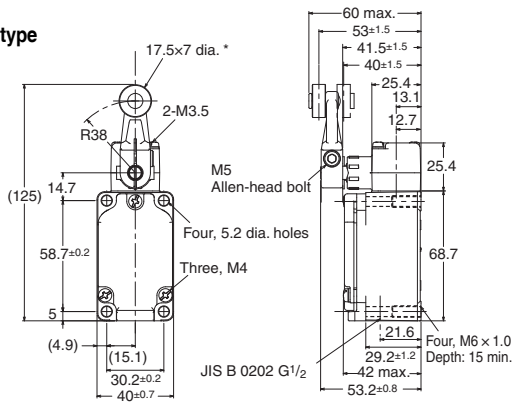
WLCA2-2NTC-N

Corrosion-resistant type

WLCA2-RP-N

Weather-resistant type

WLCA2-P1-N



* Stainless sintered roller

Note: The photo shows the WLCA2-TH-N model.

Roller lever R38

Heat-resistant type

WLG2-TH

WLGCA2-TH

Cold-resistant type

WLG2-TC

WLGCA2-TC

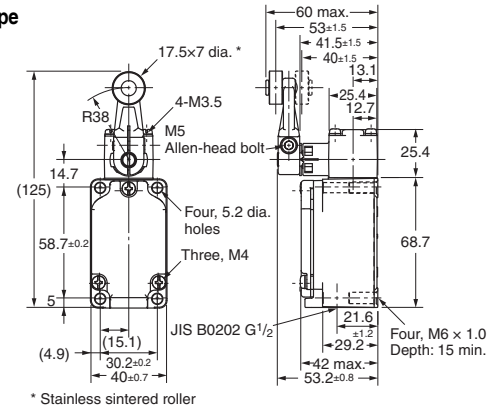
Corrosion-resistant type

WLG2-RP

WLGCA2-RP

Weather-resistant type

WLG2-P1



* Stainless sintered roller

Note: The photo shows the WLG2-TH model.

Operating characteristics

| | Model | WLCA2-TH-N WLCA2-TC-N WLCA2-RP-N WLCA2-P1-N | WLCA2-2TH-N WLCA2-2TC-N | WLCA2-2NTH-N WLCA2-2NTC-N | WLG2-TH WLG2-TC WLG2-RP WLG2-P1 | WLGCA2-TH WLGCA2-TC WLGCA2-RP |
|-----------------------|---------|--|----------------------------|------------------------------|--|-------------------------------------|
| Operating force | OF max. | 13.34 N | 13.34 N | 13.34 N | 9.81 N | 13.34 N |
| Release force | RF min. | 1.18 N | 1.18 N | 1.18 N | 0.98 N | 1.47 N |
| Pretravel | PT | 15±5° | 25±5° | 20° max. | 10° ⁺² ₋₁ | 5° ⁺² ₀ |
| Overtravel | OT min. | 70° | 60° | 70° | 65° | 40° |
| Movement Differential | MD max. | 12° | 16° | 10° | 7° | 3° |

Direct-wire cable

Roller lever R38

Coolant-resistant type

WLCA2-RP60-N

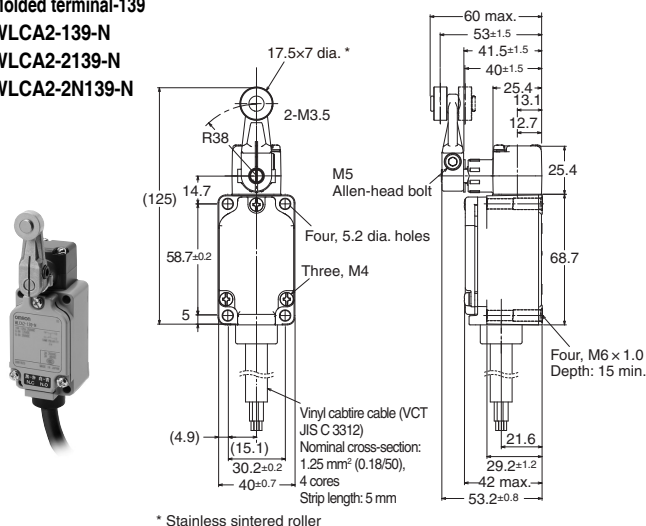
WLCA2-2RP60-N

Molded terminal-139

WLCA2-139-N

WLCA2-2139-N

WLCA2-2N139-N



Note: The photo shows the WLCA2-139-N model.

Roller lever R38 With operation indicator

Coolant-resistant specifications

WLCA2-RP60LD2-N

WLCA2-RP60LD3-N

WLCA2-2RP60LD2-N

WLCA2-2RP60LD3-N

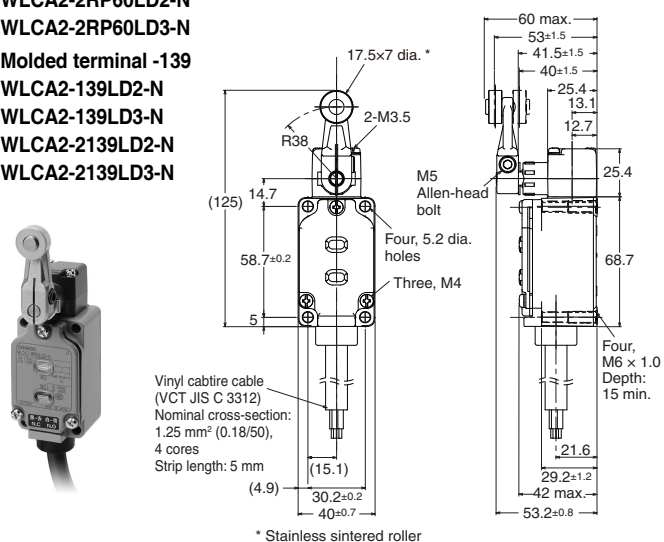
Molded terminal -139

WLCA2-139LD2-N

WLCA2-139LD3-N

WLCA2-2139LD2-N

WLCA2-2139LD3-N



Note: The photo shows the WLCA2-RP60LD3-N model.

Roller lever R38

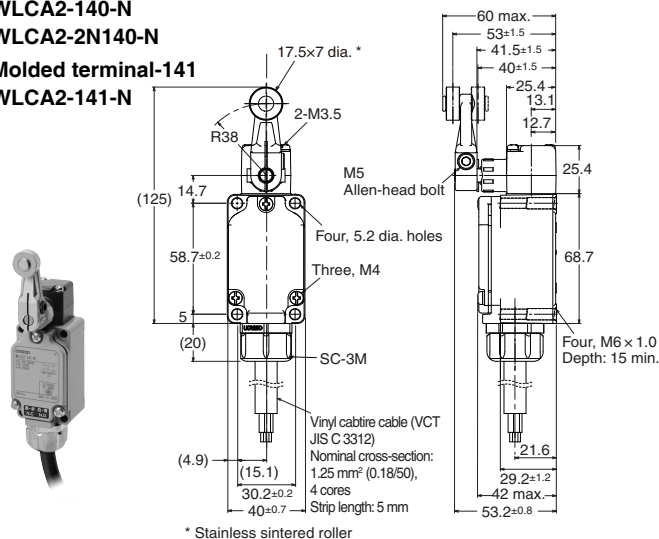
Molded terminal-140

WLCA2-140-N

WLCA2-2N140-N

Molded terminal-141

WLCA2-141-N



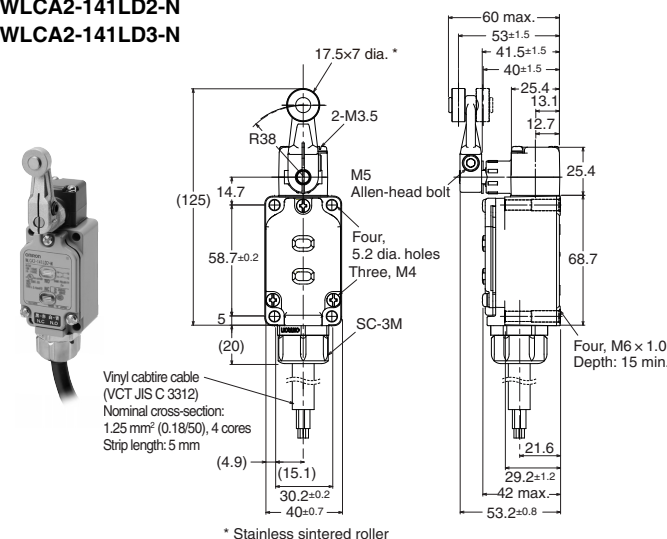
Note: The photo shows the WLCA2-141-N model.

Roller lever R38 With operation indicator

Molded terminal -141

WLCA2-141LD2-N

WLCA2-141LD3-N



Note: The photo shows the WLCA2-141LD2-N model.

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

Operating characteristics

| Model | WLCA2-RP60-N WLCA2-RP60LD2-N WLCA2-RP60LD3-N WLCA2-139-N WLCA2-139LD2-N WLCA2-139LD3-N WLCA2-140-N WLCA2-141-N WLCA2-141LD2-N WLCA2-141LD3-N | WLCA2-2N139-N WLCA2-2N140-N | WLCA2-2RP60-N WLCA2-2RP60LD2-N WLCA2-2RP60LD3-N WLCA2-2139-N WLCA2-2139LD2-N WLCA2-2139LD3-N | |
|-----------------------|---|--------------------------------|---|---------|
| 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° | 20° max. | 25±5° |
| Overtravel | OT min. | 70° | 70° | 60° |
| Movement Differential | MD max. | 12° | 10° | 16° |

General-purpose Switches

Environment-resistant Switches

Spatter-prevention Switches

Long-life Switches

Accessories

Safety Precautions

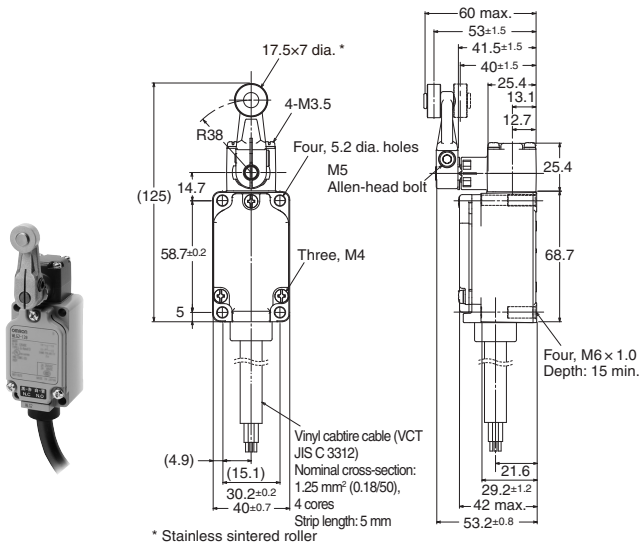
Roller lever R38

Coolant-resistant type

WLG2-RP60

Molded terminal -139

WLG2-139



Note: The photo shows the WLG2-139 model.

Roller lever R38 With operation indicator

Coolant-resistant specifications

WLG2-RP60LD2

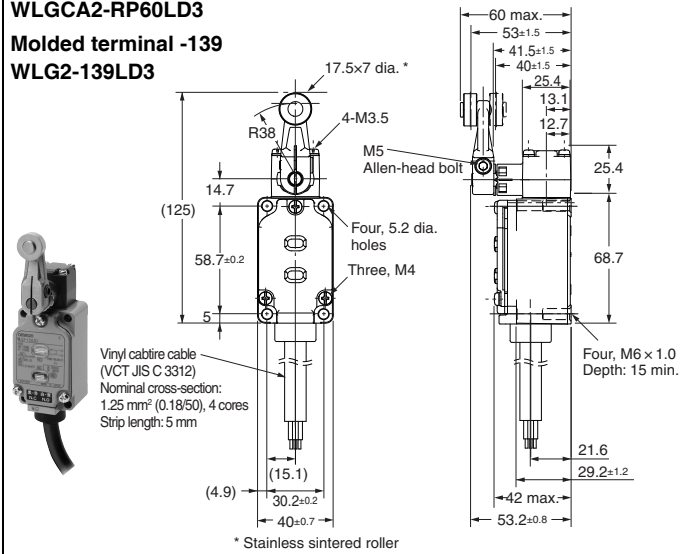
WLG2-RP60LD3

WLGCA2-RP60LD2

WLGCA2-RP60LD3

Molded terminal -139

WLG2-139LD3



Note: The photo shows the WLG2-139LD3 model.

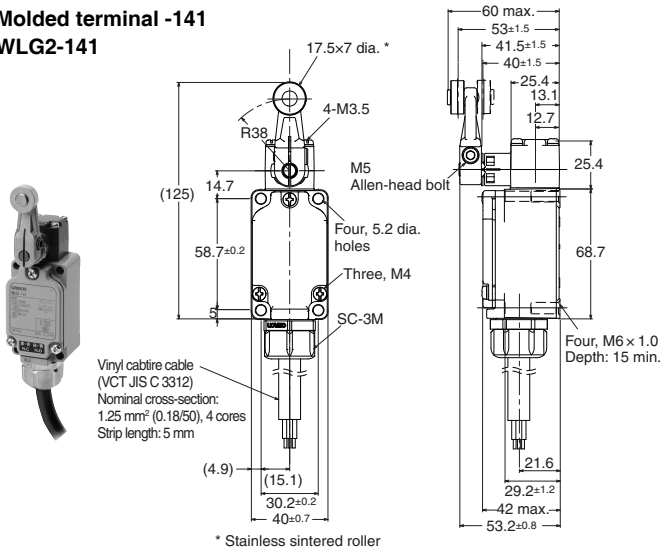
Roller lever R38

Molded terminal -140

WLG2-140

Molded terminal -141

WLG2-141



Note: The photo shows the WLG2-141 model.

Roller lever R38 With operation indicator

Molded terminal -140

WLG2-140LD2

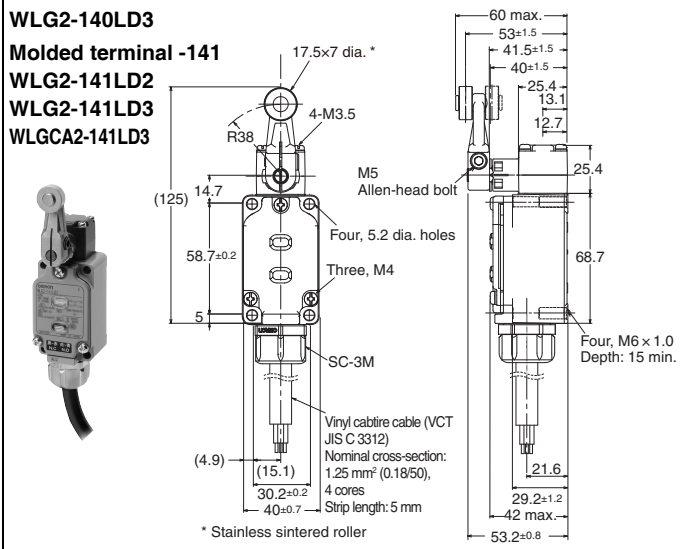
WLG2-140LD3

Molded terminal -141

WLG2-141LD2

WLG2-141LD3

WLGCA2-141LD3



Note: The photo shows the WLG2-141LD2 model.

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

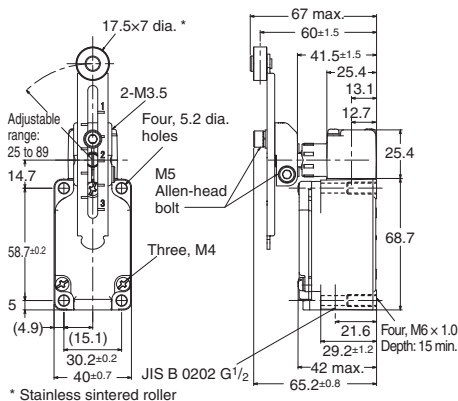
Operating characteristics

| Model | | WLG2-139 WLG2-140 WLG2-141 WLG2-RP60 WLG2-RP60LD2 WLG2-RP60LD3 WLG2-139LD3 WLG2-140LD2 WLG2-140LD3 WLG2-141LD2 WLG2-141LD3 | WLGCA2-RP60LD2 WLGCA2-RP60LD3 WLGCA2-141LD3 |
|-----------------------|---------|--|---|
| Operating force | OF max. | 9.81 N | 13.34 N |
| Release force | RF min. | 0.98 N | 1.47 N |
| Pretravel | PT | 10° ^{+22°} _{-1°} | 5° ^{+22°} _{0°} |
| Overtravel | OT min. | 65° | 40° |
| Movement Differential | MD max. | 7° | 3° |

Screw terminals

Adjustable Roller Lever (R25 to 89 mm)

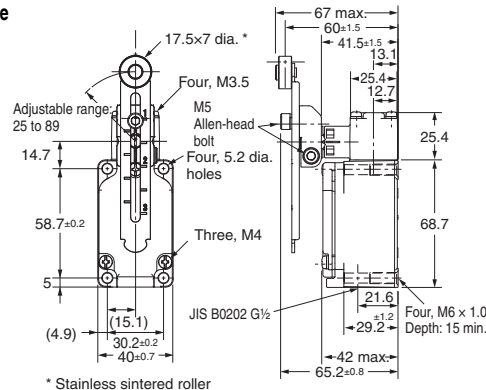
- Heat-resistant type
- WLCA12-TH-N
- WLCA12-2TH-N
- WLCA12-2NTH-N
- Cold-resistant type
- WLCA12-TC-N
- WLCA12-2TC-N
- WLCA12-2NTC-N
- Weather-resistant type
- WLCA12-P1-N
- Corrosion-resistant type
- WLCA12-RP-N



Note: The photo shows the WLCA12-TH-N model.

Adjustable Roller Lever (R25 to 89 mm)

- Heat-resistant type
- WLG12-TH
- Cold-resistant type
- WLG12-TC
- Weather-resistant type
- WLG12-P1
- Corrosion-resistant type
- WLG12-RP



Note: The photo shows the WLG12-TH model.

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

Operating characteristics

| Model | | WLCA12-TH-N | WLCA12-2TH-N | WLCA12-2NTH-N | WLG12-TH |
|-----------------------|---------|-------------|--------------|---------------|-----------------------------------|
| | | WLCA12-TC-N | WLCA12-2TC-N | WLCA12-2NTC-N | WLG12-TC |
| | | WLCA12-P1-N | | | WLG12-P1 |
| | | WLCA12-RP-N | | | WLG12-RP |
| Operating force | OF max. | 13.34 N | 13.34 N | 13.34 N | 9.81 N |
| Release force | RF min. | 1.18 N | 1.18 N | 1.18 N | 0.98 N |
| Pretravel | PT | 15±5° | 25±5° | 20° max. | 10° ^{+2°} _{-1°} |
| Overtravel | OT min. | 70° | 60° | 70° | 65° |
| Movement Differential | MD max. | 12° | 16° | 10° | 7° |

Note: The operating characteristics are measured at the lever length of 38 mm.

Direct-wire cable

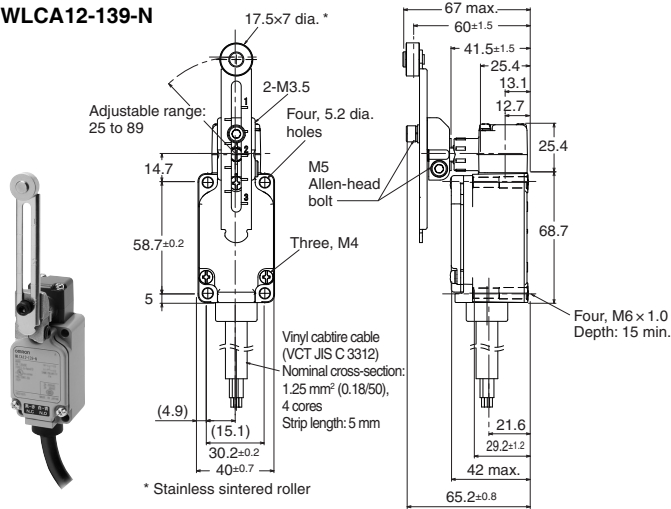
Adjustable Roller Lever (R25 to 89 mm)

Coolant-resistant specifications

WLCA12-RP60-N

Molded terminal -139

WLCA12-139-N



Note: The photo shows the WLCA12-139-N model.

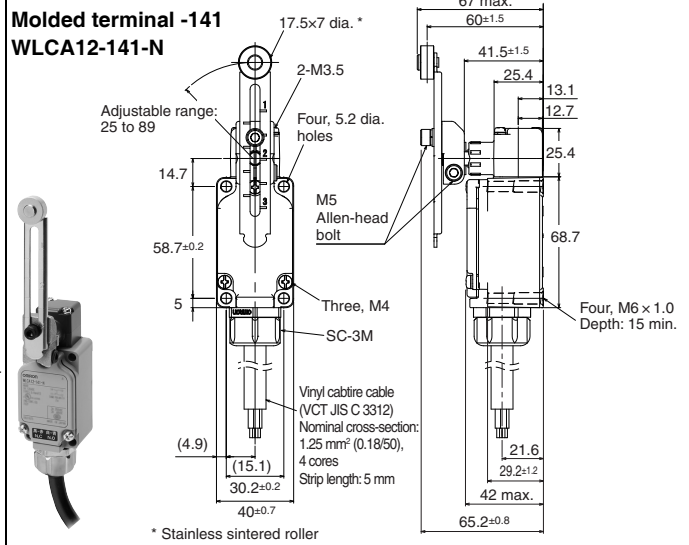
Adjustable Roller Lever (R25 to 89 mm)

Molded terminal -140

WLCA12-140-N

Molded terminal -141

WLCA12-141-N



Note: The photo shows the WLCA12-141-N model.

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

Operating characteristics

| Model | | WLCA12-RP60-N WLCA12-139-N WLCA12-140-N WLCA12-141-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° |
| Movement Differential | MD max. | 12° |

Note: The operating characteristics are measured at the lever length of 38 mm.

Plunger Actuators

Screw terminals

Sealed top-roller plunger

Heat-resistant specifications

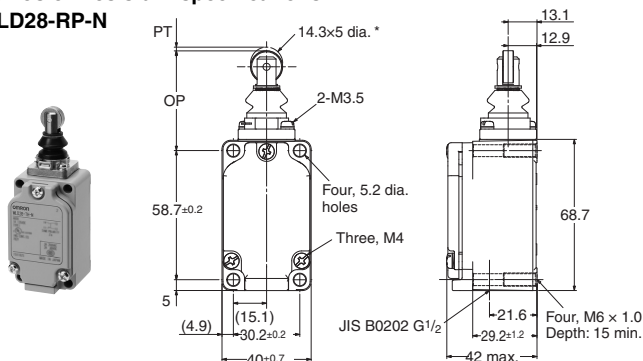
WLD28-TH-N

Cold-resistant specifications

WLD28-TC-N

Corrosion-resistant specifications

WLD28-RP-N



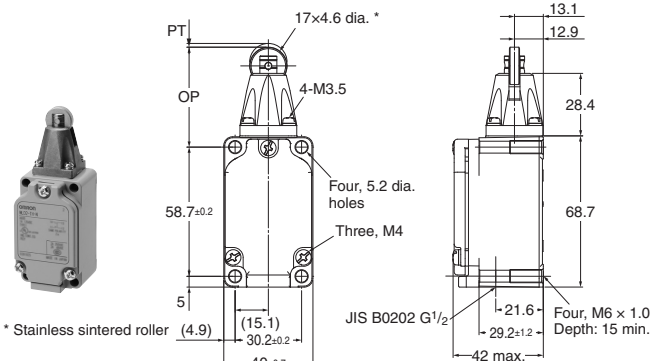
* Stainless sintered roller

Note: The photo shows the WLD28-TH-N model.

Top-roller plunger

Heat-resistant specifications

WLD2-TH-N



* Stainless sintered roller

Horizontal plunger

Heat-resistant specifications

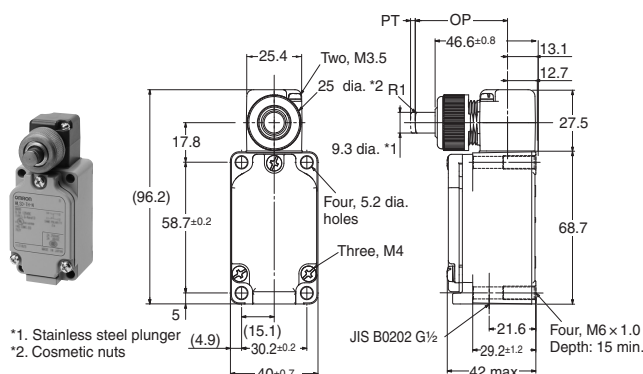
WLS2-TH-N

Cold-resistant specifications

WLS2-TC-N

Corrosion-resistant specifications

WLS2-RP-N



*1. Stainless steel plunger
*2. Cosmetic nuts

Note: The photo shows the WLS2-TH-N model.

Horizontal-roller plunger

Heat-resistant specifications

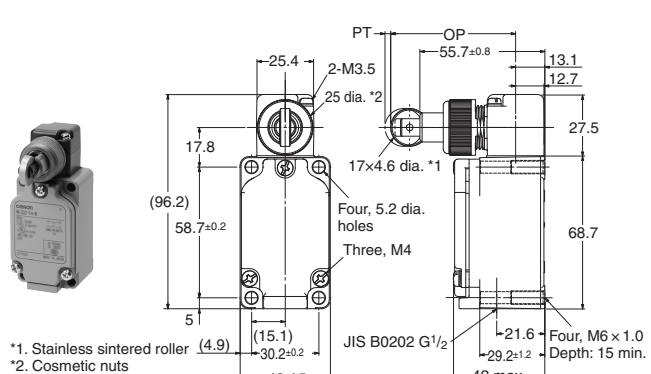
WLS2-TH-N

Cold-resistant specifications

WLS2-TC-N

Corrosion-resistant specifications

WLS2-RP-N



*1. Stainless sintered roller
*2. Cosmetic nuts

Note: The photo shows the WLS2-TH-N model.

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

Operating characteristics

| Model | | | WLD28-TH-N WLD28-TC-N WLD28-RP-N | WLD2-TH-N | WLS2-TH-N WLS2-TC-N WLS2-RP-N | WLS2-TH-N WLS2-TC-N WLS2-RP-N |
|-----------------------|-----|------|--|-----------|-------------------------------------|-------------------------------------|
| Operating force | OF | max. | 16.67 N | 26.67 N | 40.03 N | 40.03 N |
| Release force | RF | min. | 4.41 N | 8.92 N | 8.89 N | 8.89 N |
| Pretravel | PT | max. | 1.7 mm | 1.7 mm | 2.8 mm | 2.8 mm |
| Overtravel | OT | min. | 5.6 mm | 5.6 mm | 5.6 mm | 5.6 mm |
| Movement Differential | MD | max. | 1 mm | 1 mm | 1 mm | 1 mm |
| Operating position | OP | | 44±0.8 mm | 44±0.8 mm | 40.6±0.8 mm | 54.2±0.8 mm |
| Total travel position | TTP | max. | 39.5 mm | 39.5 mm | --- | --- |

General-purpose Switches

Environment-resistant Switches

Spatter-prevention Switches

Long-life Switches

Accessories

Safety Precautions

Direct-wire cable

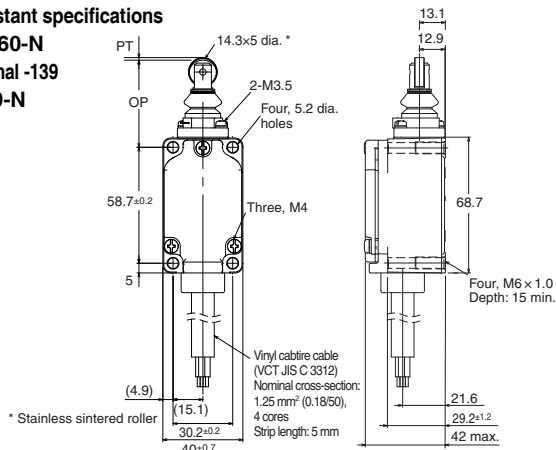
Sealed top-roller plunger

Coolant-resistant specifications

WLD28-RP60-N

Molded terminal -139

WLD28-139-N

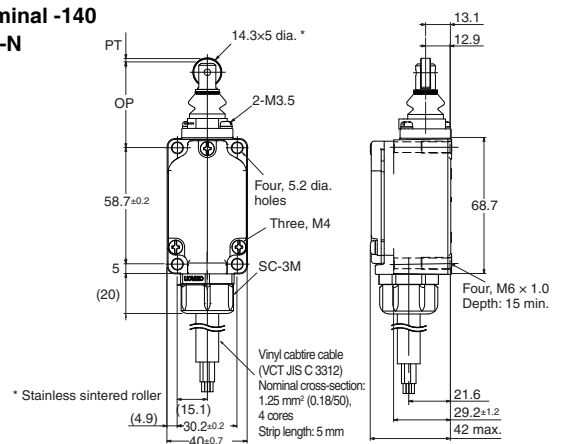


Note: The photo shows the WLD28-139-N model.

Sealed top-roller plunger

Molded terminal -140

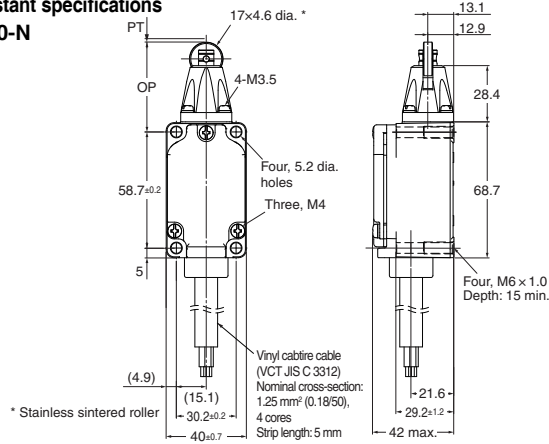
WLD28-140-N



Top-roller plunger

Coolant-resistant specifications

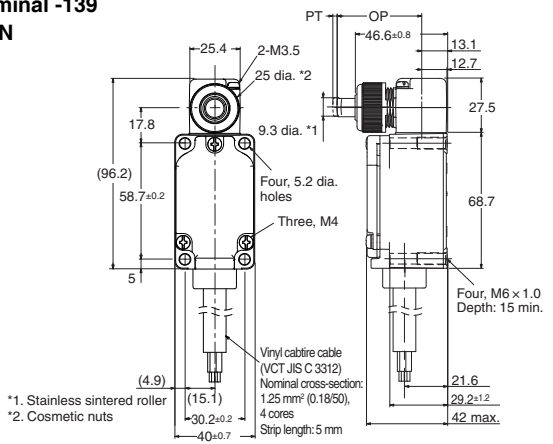
WLD2-RP60-N



Horizontal plunger

Molded terminal -139

WLS2-139-N



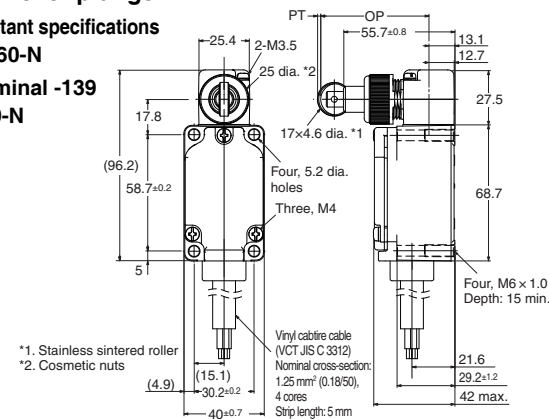
Horizontal-roller plunger

Coolant-resistant specifications

WLS2-RP60-N

Molded terminal -139

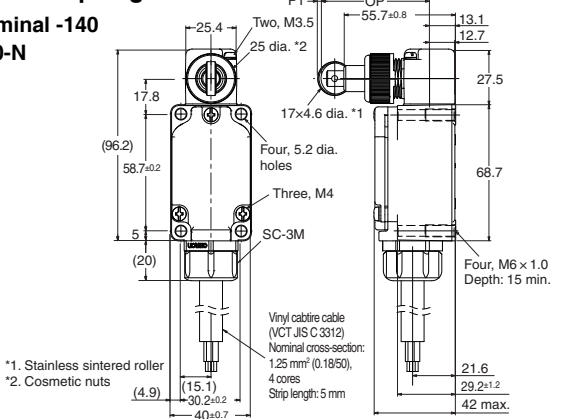
WLS2-139-N



Horizontal-roller plunger

Molded terminal -140

WLS2-140-N



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

Operating characteristics

| | Model | WLD28-RP60-N WLD28-139-N WLD28-140-N | WLD2-RP60-N | WLS2-139-N | WLS2-RP60-N WLS2-139-N WLS2-140-N |
|-----------------------|-------|--|-------------|------------|---|
| Operating force | OF | max. | 16.67 N | 26.67 N | 40.03 N |
| Release force | RF | min. | 4.41 N | 8.92 N | 8.89 N |
| Pretravel | PT | max. | 1.7 mm | 1.7 mm | 2.8 mm |
| Overtravel | OT | min. | 5.6 mm | 5.6 mm | 5.6 mm |
| Movement Differential | MD | max. | 1 mm | 1 mm | 1 mm |
| Operating position | OP | | 44±0.8 mm | 44±0.8 mm | 54.2±0.8 mm |
| Total travel position | TTP | max. | 39.5 mm | 39.5 mm | --- |

Flexible Rod

Screw terminals

Coil spring

Heat-resistant specifications

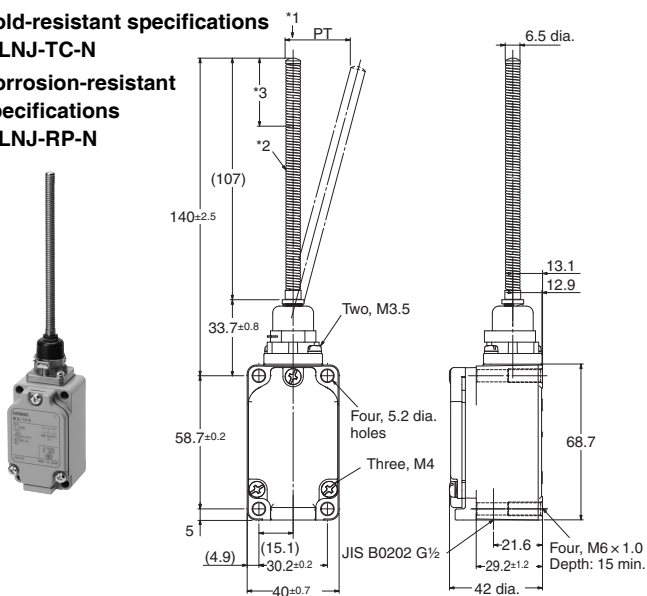
WLNJ-TH-N

Cold-resistant specifications

WLNJ-TC-N

Corrosion-resistant specifications

WLNJ-RP-N



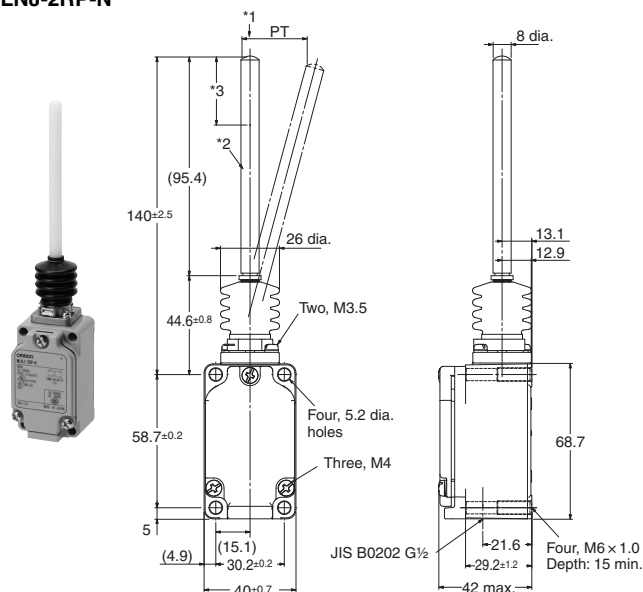
Note: The photo shows the WLNJ-TH-N model.

*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.

Resin rod

Corrosion-resistant specifications

WLNJ-2RP-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.

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

Operating characteristics

| Model | | WLNJ-TH-N * WLNJ-TC-N * WLNJ-RP-N * | WLNJ-2RP-N * |
|-----------------|----|---|--------------|
| Operating force | OF | 1.47 N | 1.47 N |
| Pretravel | PT | 20±10 mm | 40±20 mm |

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

Direct-wire cable

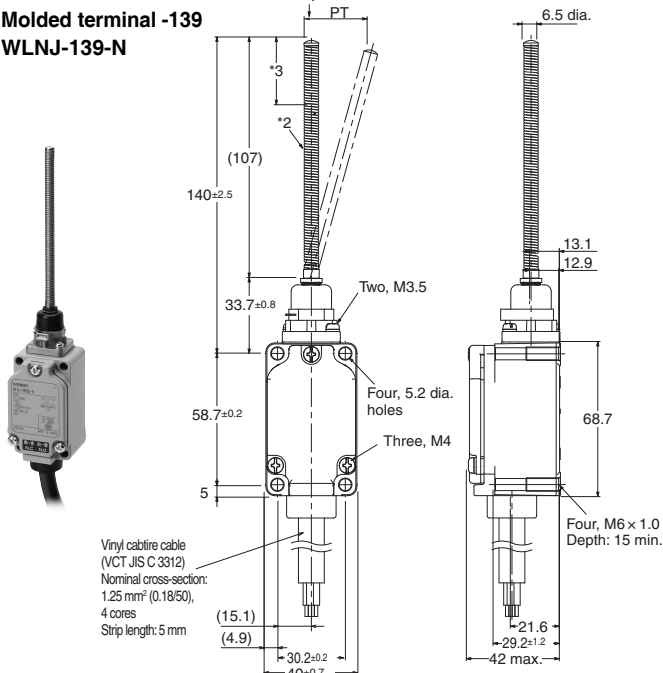
Coil spring

Coolant-resistant specifications

WLNJ-RP60-N

Molded terminal -139

WLNJ-139-N



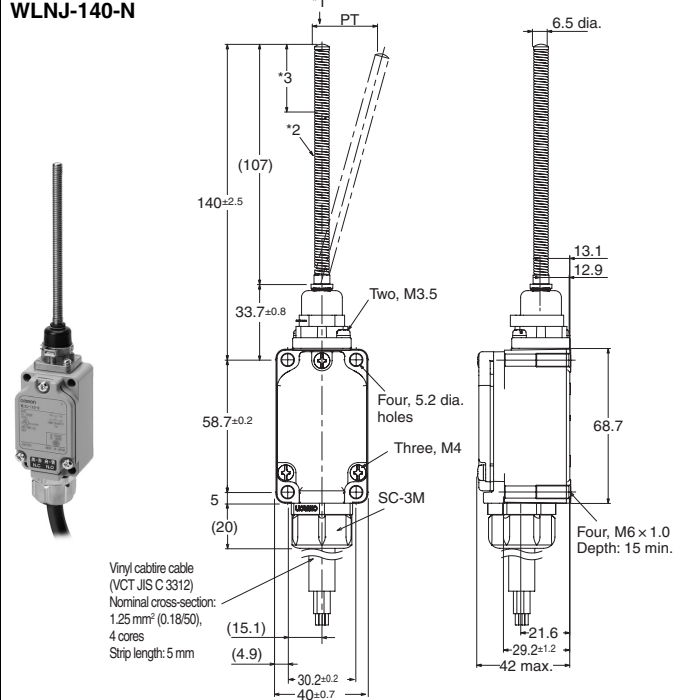
Note: The photo shows the WLNJ-RP60-N model.

- *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

Molded terminal -140

WLNJ-140-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.

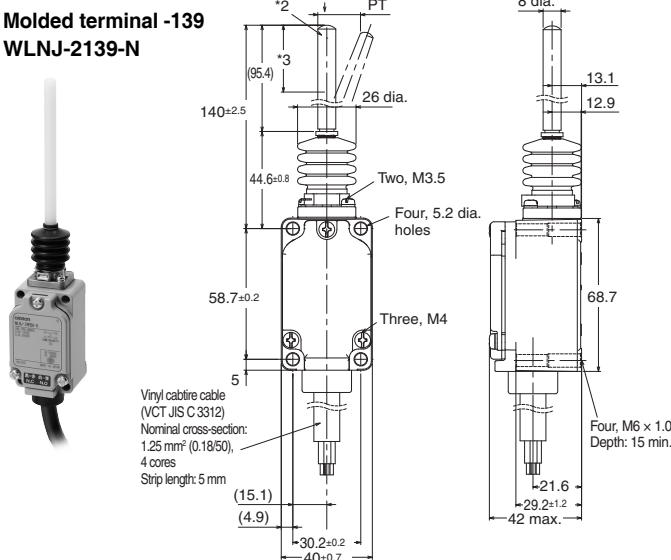
Resin rod

Coolant-resistant specifications

WLNJ-2RP60-N

Molded terminal -139

WLNJ-2139-N



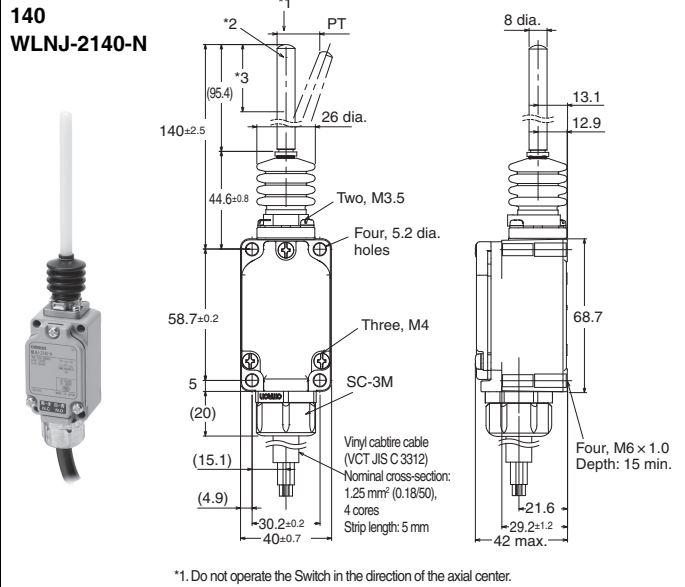
Note: The photo shows the WLNJ-2RP60-N model.

- *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.

Resin rod

Molded terminal -140

WLNJ-2140-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.

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

Operating characteristics

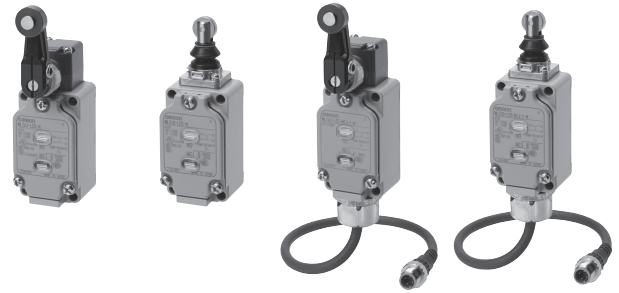
| | Model | WLNJ-RP60-N * | WLNJ-2RP60-N * |
|-----------------|-------|---------------|----------------|
| | | WLNJ-139-N * | WLNJ-2139-N * |
| | | WLNJ-140-N * | WLNJ-2140-N * |
| Operating force | OF | 1.47 N | 1.47 N |
| Pretravel | PT | 20±10 mm | 40±20 mm |

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


Spatter-prevention Switches WL-N/WLG

Uses stainless steel and plastic materials that prevent the adhesion of spatter, helping reduce problems caused by zinc power generated during welding.

- Excellent Performance on Arc Welding Lines or Sites with Spattering Cutting Powder
- In addition to screw terminals types, Pre-wired connector types are available.
- Standard configuration includes operation indicators
- Includes baking finish for easy peeling of any spatter adhering to lever
- Stainless steel materials are used for the screws, rollers, and other parts for reducing spatter adhesion during welding process
- Degree of Protection; IP67



For the most recent information on models that have been certified for safety standards, refer to your OMRON website.

 Be sure to read *Safety Precautions* on pages 83 to 88 and *Safety Precautions for All Limit Switches*.

Features

Structure designed for use in spattering environments from welding
(Typical model: WLCA2-LDS-N)

Actuator

Roller, Roller Axis

Using stainless steel prevents spatter from adhering.

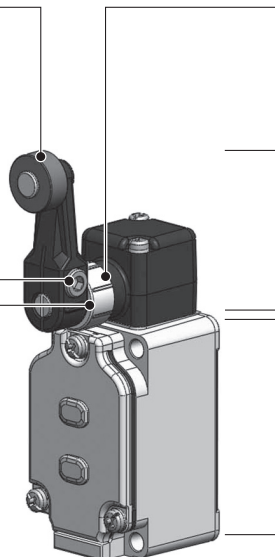
Operating Lever

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.

The lack of gap prevents spatter powder from clogging.



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.

Head

Main unit

Screws

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

Model Number Structure

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

Basic models

WL□ - □□□ S□ -N
 (1) (2) (3) (4) (5)

(1) Actuator and Property Specifications

| Code | Actuator | | Pretravel (PT) |
|------|-------------------|---------------------------|----------------|
| CA2 | Roller lever | Roller lever: R38 mm | 15±5° |
| D28 | Plunger Actuators | Sealed top-roller plunger | 1.7 mm max. |

(2) Built-in Switch Specifications

| Code | Specifications |
|------|--------------------------|
| None | Standard built-in switch |

(3) Indicator Specifications

| Code | Specifications |
|------|------------------------------|
| LD | LED (10 to 115 VAC/DC) |
| LE | Neon lamp (125 to 250 VAC) * |

* (5)Wiring Specifications Cannot be combined with the pre-wired connector type.

High-sensitivity and High-precision Models

WLG□ - □□□ S□
 (1) (2) (3) (4) (5)

(1) Actuator and Property Specifications

| Code | Actuator | | Pretravel (PT) |
|------|--------------|---|-----------------------------------|
| 2 | Roller lever | Roller lever: R38 mm High-sensitivity Models | 10 ^{°+2°} _{-1°} |
| CA2 | Roller lever | Roller lever: R38 mm High-precision Models | 5 ^{°+2°} _{0°} |

(2) Built-in Switch Specifications

| Code | Specifications |
|------|--------------------------|
| None | Standard built-in switch |
| 55 | Airtight built-in switch |

(3) Indicator Specifications

| Code | Specifications |
|------|------------------------------|
| LD | LED (10 to 115 VAC/DC) |
| LE | Neon lamp (125 to 250 VAC) * |

* (5) Wiring Specifications Cannot be combined with pre-wired connector type.

(4) Lever Type *

| Code | Specifications | Lever type |
|------|----------------------|------------------|
| None | Roller lever: R38 mm | Allen-head lever |
| A | Roller lever: R38 mm | Double nut lever |

* (5) Wiring Specifications Cannot be combined with pre-wired connector type.

(5) Wiring Specifications

| Code | Terminal shape | Connector shape | Voltage | Wiring locations | Connector pin No. |
|---------|------------------------------------|-----------------|---------|--------------------|--------------------|
| None | Screw terminals (Conduit size: G½) | --- | --- | --- | --- |
| -M1J-1 | Pre-wired connectors * | Threaded (M12) | DC | NO only | NO: ③ ④ |
| -M1GJ-1 | | | DC | NO only | NO: ① ④ |
| -DGJS | | DC | NC+NO | NO: ③ ④ NC: ① ② | |
| -DTGJS | | Smartclick | DC | NC+NO | NO: ③ ④ NC: ① ② |

* The standard cable length for a pre-wired connector is 0.3 m. Contact your OMRON representative for information on other cable lengths.

(4) Lever Type *

| Code | Specifications | Lever type |
|------|----------------------|------------------|
| None | Roller lever: R38 mm | Allen-head lever |
| A | Roller lever: R38 mm | Double nut lever |

* (5) Wiring Specifications Cannot be combined with pre-wired connector type.

(5) Wiring Specifications

| Code | Terminal shape | Connector shape | Voltage | Wiring locations | Connector pin No. |
|----------|------------------------------------|-----------------|---------|------------------|--------------------|
| None | Screw terminals (Conduit size: G½) | --- | --- | --- | --- |
| -M1J-1 | Pre-wired connectors * | Threaded (M12) | DC | NO only | NO: ③ ④ |
| -M1GJ-1 | | | DC | NO only | NO: ① ④ |
| -DGJS03 | | | DC | NC+NO | NO: ③ ④ NC: ① ② |
| -DK1EJ03 | | DC | NO only | NO: ③ ④ NC: ② | |
| -M1TGJ | | Smartclick | DC | NO only | NO: ① ④ |
| -DTGJS03 | | | DC | NC+NO | NO: ③ ④ NC: ① ② |


* The standard cable length for a pre-wired connector is 0.3 m. Contact your OMRON representative for information on other cable lengths.

Ordering Information

Roller Lever


Standard built-in switch

Screw terminals

| Appearance | Actuator | Pretravel (PT) | Lever type | With operation indicator * | |
|---|----------------------|-----------------------------------|------------------|----------------------------|--------------|
| | | | | LED | Neon lamp |
| | | | | Model | Model |
|  | Roller lever: R38 mm | 15±5° | Double nut Lever | WLCA2-LDAS-N | WLCA2-LEAS-N |
| | | | Allen-head Lever | WLCA2-LDS-N | WLCA2-LES-N |
| | | 10 ^{°+2°} _{-1°} | Double nut Lever | WLG2-LDAS | WLG2-LEAS |
| | | | Allen-head Lever | WLG2-LDS | WLG2-LES |
| | | 5 ^{°+2°} _{0°} | Double nut Lever | WLCA2-LDAS | WLCA2-LEAS |
| | | | Allen-head Lever | WLCA2-LDS | WLCA2-LES |

* 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).


Pre-wired Connectors

| Appearance | Actuator | Pretravel (PT) | Lever type | Connector shape | Usage Voltage | Wiring locations | Connector pin No. | With operation indicator * |
|---|----------------------|-----------------------------------|------------------|------------------|---------------|-------------------|-------------------|----------------------------|
| | | | | | | | | LED |
| | | | | | | | | Model |
|  | Roller lever: R38 mm | 15±5° | Allen-head Lever | Threaded (M12) | DC | NO only | NO: ③ ④ NC: ② | WLCA2-LDS-M1J-1-N |
| | | | | | | | | WLCA2-LDS-DGJS-N |
| | | NO only | | | | NO: ③ ④ NC: ② | WLG2-LDS-DGJS03 | |
| | | | | | | | WLG2-LDS-DK1EJ03 | |
| | | | | | | | WLG2-LDS-M1J-1 | |
| | | | | | | | WLG2-LDS-M1GJ-1 | |
| | | | | | | | WLCA2-LDS-M1J-1 | |
| | | | | | | | WLCA2-LDS-M1GJ-1 | |
| | | Smartclick | | NO: ③ ④ NC: ② | | WLCA2-LDS-DTGJS-N | | |
| | | | | | | WLG2-LDS-DTGJS03 | | |
| 10 ^{°+2°} _{-1°} | 15±5° | 10 ^{°+2°} _{-1°} | Allen-head Lever | Smartclick | DC | NO only | NO: ③ ④ NC: ② | WLCA2-LDS-M1J-1-N |
| | | | | | | | | WLCA2-LDS-DGJS-N |
| | | | | | | | | WLG2-LDS-DGJS03 |
| | | | | | | | | WLG2-LDS-DK1EJ03 |
| | | | | | | | | WLG2-LDS-M1J-1 |
| | | | | | | | | WLG2-LDS-M1GJ-1 |
| 5 ^{°+2°} _{0°} | 15±5° | 10 ^{°+2°} _{-1°} | Allen-head Lever | Smartclick | DC | NO only | NO: ③ ④ NC: ② | WLCA2-LDS-M1J-1-N |
| | | | | | | | | WLCA2-LDS-DGJS-N |
| 10 ^{°+2°} _{-1°} | 15±5° | 10 ^{°+2°} _{-1°} | Allen-head Lever | Smartclick | DC | NO only | NO: ③ ④ NC: ② | WLCA2-LDS-M1J-1-N |
| | | | | | | | | WLCA2-LDS-DGJS-N |
| 10 ^{°+2°} _{-1°} | 15±5° | 10 ^{°+2°} _{-1°} | Allen-head Lever | Smartclick | DC | NO only | NO: ③ ④ NC: ② | WLCA2-LDS-M1J-1-N |
| | | | | | | | | WLCA2-LDS-DGJS-N |

* 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). (However, Three-core and Four-core Switches cannot be switched to light-ON when operating (NC wiring).)

Airtight Built-in Switch

Pre-wired Connector types


| Appearance | Actuator | Pretravel (PT) | Lever type | Connector shape | Usage Voltage | Wiring locations | Connector pin No. | With operation indicator * |
|---|----------------------|-----------------------------------|------------------|-----------------|---------------|------------------|-------------------|----------------------------|
| | | | | | | | | LED |
| | | | | | | | | Model |
|  | Roller lever: R38 mm | 10 ^{°+2°} _{-1°} | Allen-head Lever | Threaded (M12) | DC | NO only | NO: ③ ④ NC: ② | WLG2-55LDS-M1J-1 |
| | | | | | | | | WLG2-55LDS-M1GJ-1 |
| | | | | | | | | WLG2-55LDS-DGJS03 |
| | | | | Smartclick | | NO: ③ ④ NC: ② | WLG2-55LDS-M1TGJ | |
| | | | | | | | WLG2-55LDS-M1J-1 | |
| | | | | | | | WLG2-55LDS-M1GJ-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). (However, Three-core and Four-core Switches cannot be switched to light-ON when operating (NC wiring).)

Plunger Actuators


Standard built-in switch

Screw terminals

| Appearance | Actuator | Pretravel (PT) | With operation indicator * | |
|---|---------------------------|----------------|----------------------------|-------------|
| | | | LED | Neon lamp |
| | | | Model | Model |
|  | Sealed top-roller plunger | 1.7 mm max. | WLD28-LDS-N | WLD28-LES-N |

* 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).

Pre-wired Connectors

| Appearance | Actuator | Pretravel (PT) | Connector shape | Voltage | Wiring locations | Connector pin No. | With operation indicator * |
|---|---------------------------|----------------|-----------------|---------|------------------|--------------------|----------------------------|
| | | | | | | | LED |
| | | | | | | | Model |
|  | Sealed top-roller plunger | 1.7 mm max. | Threaded (M12) | DC | NO only | NO: ③ ④ | WLD28-LDS-M1J-1-N |
| | | | | DC | NO only | NO: ① ④ | WLD28-LDS-M1GJ-1-N |
| | | | | DC | NC+NO | NO: ③ ④ NC: ① ② | WLD28-LDS-DGJS-N |
| | | | Smartclick | DC | NC+NO | NO: ③ ④ NC: ① ② | WLD28-LDS-DTGJS-N |

Note: The standard cable length for a pre-wired connector is 0.3 m. Contact your OMRON representative for information on other cable lengths.

* 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). (However, Three-core and Four-core Switches cannot be switched to light-ON when operating (NC wiring).)

Specifications

Ratings

Screw terminals

With Operation Indicator

Basic models (WL-N)

| Ratings | | Non-inductive load (A) | | | | Inductive load (A) | | | |
|-------------|-----|------------------------|----|-----------|-----|---------------------|----|------------|-----|
| | | Basic models (WL-N) | | | | Basic models (WL-N) | | | |
| | | Resistive load | | Lamp load | | Inductive load | | Motor load | |
| Voltage (V) | | NC | NO | NC | NO | NC | NO | NC | NO |
| AC | 115 | 10 | | 3 | 1.5 | 10 | | 5 | 2.5 |
| | 12 | 10 | | 6 | 3 | 10 | | 6 | |
| DC | 24 | 6 | | 4 | 3 | 6 | | 4 | |
| | 48 | 3 | | 2 | 1.5 | 3 | | 0.2 | |
| | 115 | 0.8 | | 0.2 | | 0.8 | | 0.1 | |

High-sensitivity and High-precision models (WLG)

| Ratings | | Non-inductive load (A) | | | |
|-------------|-----|--|----|--|--|
| | | High-sensitivity and High-precision models (WLG) | | | |
| | | Resistive load | | | |
| Voltage (V) | | NC | NO | | |
| AC | 115 | 5 | | | |
| DC | 115 | 0.4 | | | |

With Operation Indicators (Neon Lamps)

Basic models (WL-N)

| Ratings | | Non-inductive load (A) | | | | Inductive load (A) | | | |
|-------------|-----|------------------------|----|-----------|-----|---------------------|----|------------|-----|
| | | Basic models (WL-N) | | | | Basic models (WL-N) | | | |
| | | Resistive load | | Lamp load | | Inductive load | | Motor load | |
| Voltage (V) | | NC | NO | NC | NO | NC | NO | NC | NO |
| AC | 125 | 10 | | 3 | 1.5 | 10 | | 5 | 2.5 |
| | 250 | 10 | | 6 | 1 | 10 | | 3 | 1.5 |

High-sensitivity and High-precision models (WLG)

| Ratings | | Non-inductive load (A) | | | |
|-------------|-----|--|----|--|--|
| | | High-sensitivity and High-precision models (WLG) | | | |
| | | Resistive load | | | |
| Voltage (V) | | NC | NO | | |
| AC | 125 | 5 | | | |
| | 250 | 5 | | | |

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

Allowable Inrush Current/Minimum Applicable Load

| Operating characteristics type | | Basic models (WL-N) | High-sensitivity and High-precision models (WLG) |
|--------------------------------|----|-------------------------------------|--|
| Inrush current | NC | 30 A max. | 15 A max. |
| | NO | 20 A max. | 10 A max. |
| Minimum applicable load | | 5 VDC 1 mA, resistive load, P level | 5 VDC 1 mA, resistive load, P level |

Operation Indicator

| Operation indicator type | LED | Neon lamp |
|-----------------------------------|---|--|
| Rated voltage | 10 to 115 VAC/DC | 125 to 250 VAC |
| Leakage current (Reference value) | Approx. 0.4 mA at 10 VAC/DC Approx. 0.5 mA at 115 VAC/DC | Approx. 0.6 mA at 125 VAC Approx. 1.9 mA at 250 VAC |

Pre-wired connectors

Connector DC Specifications: With Operation Indicators (LEDs) Basic models (WL-N)

| Ratings | | Non-inductive load (A) | | | | Inductive load (A) | | | |
|-------------|-----|------------------------|-----|-----------|-----|---------------------|-----|------------|----|
| | | Basic models (WL-N) | | | | Basic models (WL-N) | | | |
| | | Resistive load | | Lamp load | | Inductive load | | Motor load | |
| Voltage (V) | | NC | NO | NC | NO | NC | NO | NC | NO |
| DC | 12 | 3 | | 3 | | 3 | | 3 | |
| | 24 | 3 | | 3 | | 3 | | 3 | |
| | 48 | 4 | 2 | 1.5 | 3 | | 2 | | |
| | 115 | 0.8 | 0.2 | 0.2 | 0.8 | | 0.2 | | |

High-sensitivity and High-precision models (WLG)

| Ratings | | Non-inductive load (A) | |
|-------------|-----|--|----|
| | | High-sensitivity and High-precision models (WLG) | |
| | | Resistive load | |
| Voltage (V) | | NC | NO |
| DC | 115 | 0.4 | |

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

Minimum Applicable Load

| Operating characteristics type | Basic models (WL-N) | High-sensitivity and High-precision Switches (WLG) |
|--------------------------------|-------------------------------------|--|
| Minimum applicable load | 5 VDC 1 mA, resistive load, P level | 5 VDC 1 mA, resistive load, P level |

Operation Indicator

| Operation indicator type | LED | Neon lamp |
|-----------------------------------|--|---|
| Rated voltage | 10 to 115 VAC/DC | 125 to 250 VAC |
| Leakage current (Reference value) | Approx. 0.4 mA at 10 VAC/DC; Approx. 0.5 mA at 115 VAC/DC | Approx. 0.6 mA at 125 VAC; Approx. 1.9 mA at 250 VAC |

Characteristics

| Operating characteristics type | | Basic models (WL-N) | High-sensitivity and High-precision models (WLG) |
|---------------------------------|-------------|---|---|
| Permissible operating frequency | Mechanical | 120 operations/minute | |
| | Electrical | 30 operations/minute | |
| Rated frequency | | 50/60 Hz | |
| Permissible operating speed | | 1 mm/s to 1 m/s (for WLCA2-LDS-N) | |
| Insulation resistance | | 100 MΩ min. (at 500 VDC) | |
| Contact resistance | | 25 mΩ max. (initial value for the built-in switch) | |
| Vibration resistance | Malfunction | 10 to 55 Hz, 1.5-mm double amplitude | |
| Shock | Destruction | 1,000 m/s ² max. | |
| | Malfunction | 300 m/s ² max. | |
| Durability *1 | Mechanical | 15,000,000 operations min. | 10,000,000 operations min. |
| | Electrical | 750,000 operations min. (3 A at 115 VAC, resistive load) *2 | 500,000 operations min. (3 A at 115 VAC, resistive load) *2 |
| Ambient operating temperature | | -10 to +80°C (with no icing) | |
| Ambient operating humidity | | 35 to 95%RH | |
| Degree of protection | | IP67 | |
| Weight | | Approx. 255 g (in case of WLCA2-LDS-N) | Approx. 270 g (in case of WLGCA2-LDS) |

Note: The above figures are initial values.

*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. In case of models with operation indicators (LEDs).

| Operating characteristics type | | Basic models (WL-N) | | High-sensitivity and High-precision Switches (WLG) | |
|--------------------------------|---|---------------------------------|--|--|--|
| Wiring Specifications | | Screw terminals | Direct-wire connector and Pre-wired Connector Models | Screw terminals | Direct-wire connector and Pre-wired Connector Models |
| Dielectric strength | Between terminals of the same polarity | 1,000 VAC, 50/60 Hz for 1 min * | 600 VAC, 50/60 Hz for 1 min * | 600 VAC, 50/60 Hz for 1 min * | 600 VAC, 50/60 Hz for 1 min * |
| | Between current carrying metal part and ground | 2,200 VAC, 50/60 Hz for 1 min | 1,500 VAC, 50/60 Hz for 1 min | 1,500 VAC, 50/60 Hz for 1 min | 1,500 VAC, 50/60 Hz for 1 min |
| | Between each terminal and non-current carrying metal part | 2,200 VAC, 50/60 Hz for 1 min | 1,500 VAC, 50/60 Hz for 1 min | 1,500 VAC, 50/60 Hz for 1 min | 1,500 VAC, 50/60 Hz for 1 min |

* Excluding those with operation indicators.

Terminal Connection Diagram

| Operating characteristics type | Basic models (WL-N) | |
|--------------------------------|-----------------------|--|
| | Wiring Specifications | Direct-wire connector and Pre-wired Connector Models |
| Without operation indicator | | <p>DC</p> <p>①②③④ indicate the connector pin number.</p> |
| | | <p>DC</p> <p>①②③④ indicate the connector pin number.</p> |

| Operating characteristics type | High-sensitivity and High-precision Switches (WLG) | |
|--------------------------------|--|--|
| | Wiring Specifications | Direct-wire connector and Pre-wired Connector Models |
| Without operation indicator | | <p>DC</p> <p>①②③④ indicate the connector pin number.</p> |
| | | <p>DC</p> <p>①②③④ indicate the connector pin number.</p> |

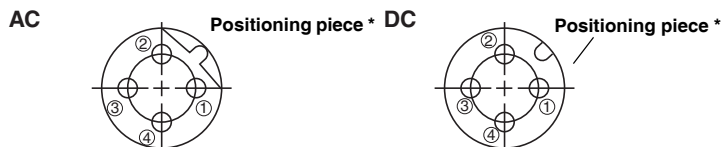
Note: Leakage current from indicator circuit may cause load malfunction (i.e., the load may remain ON). Make sure that the load operating current is higher than the leakage current.

For countermeasures, refer to technical support on your OMRON website.

* Light-ON when not operating means the operation indicator is lit when the actuator is free and is not lit when the actuator rotates or is pushed down, the Switch contacts contact NO.

The above shows details of the switch interior. External wires (external resistances) are not shown. For details, refer to *Operation* on page 18.

Connector Pin Layout Diagram



* The position of the positioning piece is not always the same. If using an L-shaped connector causes problems in mounting, use a straight connector.

General-purpose Switches

Environment-resistant Switches

Spatter-prevention Switches

Long-life Switches

Accessories

Safety Precautions

Structure and Nomenclature

Spatter-prevention Models (WLCA2-LES-N)

Actuator

Roller, Roller Axis

Using stainless steel prevents spatter from adhering.

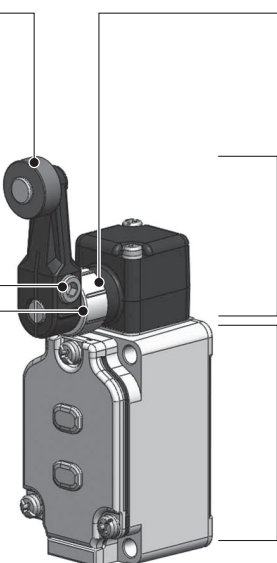
Operating Lever

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.

The lack of gap prevents spatter powder from clogging.



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.

Head

Main unit

Screws

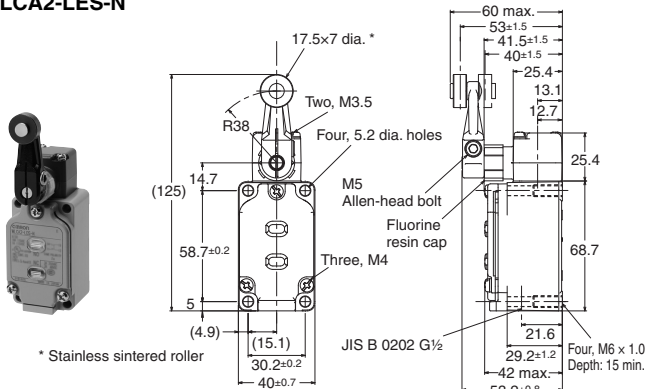
Externally visible screws on the head and cover are made of stainless steel to prevent spatter adherence.

Dimensions

Roller Lever

Roller lever R38

Allen-head lever
With operation indicator (LED)
WLCA2-LDS-N
With operation indicator (neon lamp)
WLCA2-LES-N

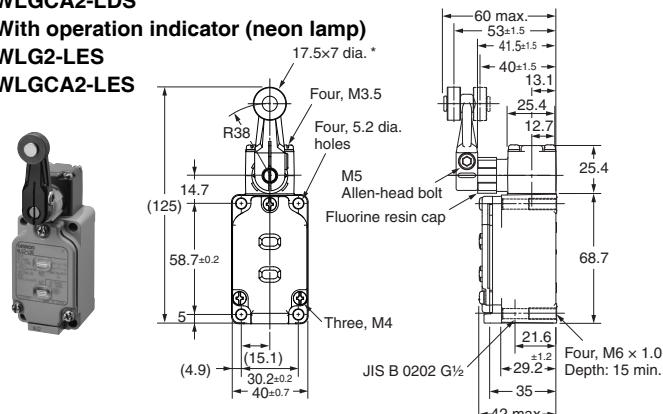


* Stainless sintered roller

Note: The photo shows the WLCA2-LDS-N model.

Roller lever R38

Allen-head lever
With operation indicator (LED)
WLG2-LDS
WLGCA2-LDS
With operation indicator (neon lamp)
WLG2-LES
WLGCA2-LES

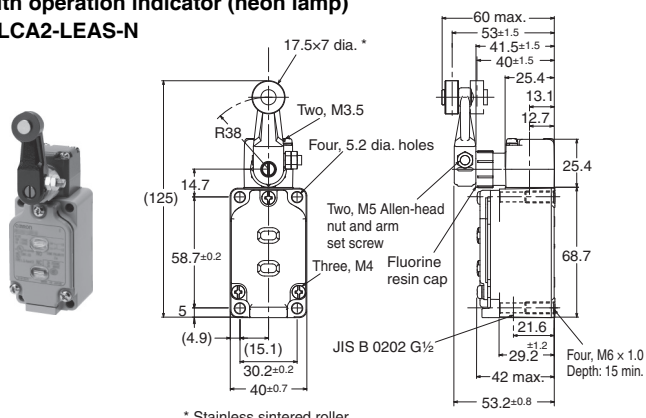


* Stainless steel roller

Note: The photo shows the WLG2-LDS model.

Roller lever R38

Double nut lever
With operation indicator (LED)
WLCA2-LDAS-N
With operation indicator (neon lamp)
WLCA2-LEAS-N

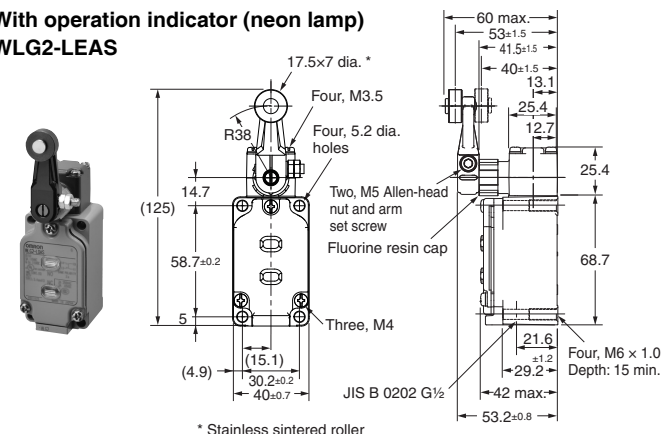


* Stainless sintered roller

Note: The photo shows the WLCA2-LDAS-N model.

Roller lever R38

Double nut lever
With operation indicator (LED)
WLG2-LDAS
With operation indicator (neon lamp)
WLG2-LEAS



* Stainless sintered roller

Note: The photo shows the WLG2-LDAS model.

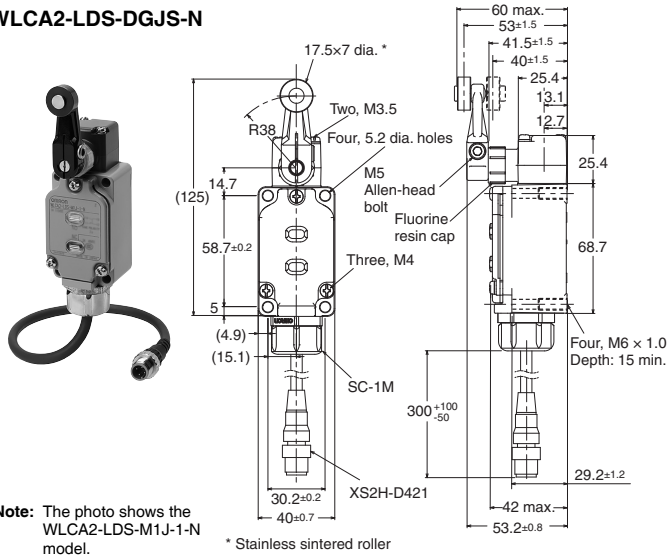
Note: Unless otherwise indicated, a tolerance of ±0.4 mm applies to all dimensions.

Operating characteristics

| | Model | WLCA2-LDAS-N WLCA2-LEAS-N WLCA2-LDS-N WLCA2-LES-N | WLG2-LDAS WLG2-LDS WLG2-LEAS WLG2-LES | WLGCA2-LDS WLGCA2-LES |
|-----------------------|---------|--|--|------------------------------|
| Operating force | OF max. | 13.34 N | 9.81 N | 13.34 N |
| Release force | RF min. | 1.18 N | 0.98 N | 1.47 N |
| Pretravel | PT | 15±5° | 10 [°] _{-1°} | 5 [°] _{0°} |
| Overtravel | OT min. | 70° | 65° | 40° |
| Movement Differential | MD max. | 12° | 7° | 3° |

Pre-wired connector (threaded)

Roller lever R38
Allen-head lever
With operation indicator (LED)
WLCA2-LDS-M1J-1-N
WLCA2-LDS-DGJS-N

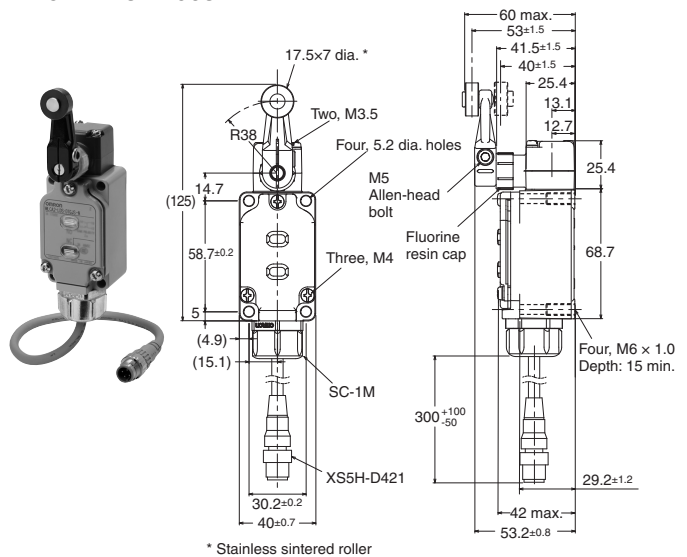


Note: The photo shows the WLCA2-LDS-M1J-1-N model.

* Stainless sintered roller

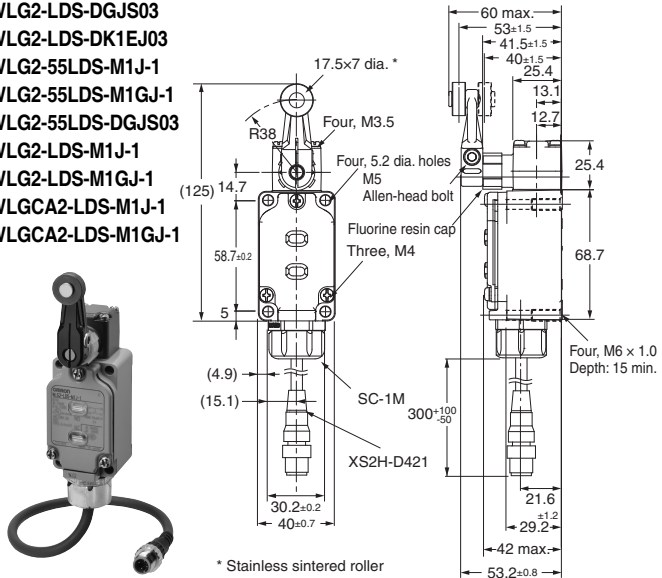
Pre-wired connector type (Smartclick)

Roller lever R38
Allen-head lever
With operation indicator (LED)
WLCA2-LDS-DTGJS-N



* Stainless sintered roller

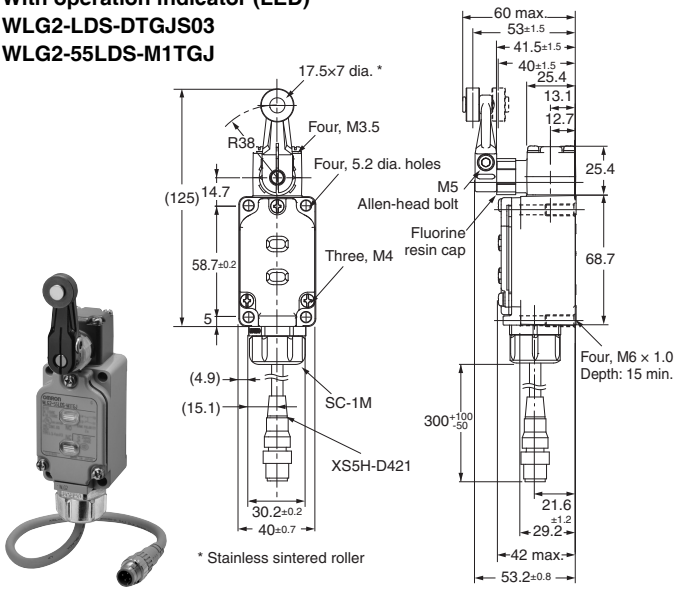
Roller lever R38
Allen-head lever
Threaded (M12)
With operation indicator (LED)
WLG2-LDS-DGJS03
WLG2-LDS-DK1EJ03
WLG2-55LDS-M1J-1
WLG2-55LDS-M1GJ-1
WLG2-55LDS-DGJS03
WLG2-LDS-M1J-1
WLG2-LDS-M1GJ-1
WLGCA2-LDS-M1J-1
WLGCA2-LDS-M1GJ-1



Note: The photo shows the WLG2-LDS-M1J-1 model.

* Stainless sintered roller

Roller lever R38
Allen-head lever
Smartclick
With operation indicator (LED)
WLG2-LDS-DTGJS03
WLG2-55LDS-M1TGJ



Note: The photo shows the WLG2-55LDS-M1TGJ model.

* Stainless sintered roller

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

Operating characteristics

| Model | WLCA2-LDS-M1J-1-N WLCA2-LDS-DGJS-N WLCA2-LDS-DTGJS-N | WLG2-LDS-DGJS03 WLG2-LDS-DK1EJ03 WLG2-55LDS-M1J-1 WLG2-55LDS-M1GJ-1 WLG2-55LDS-DGJS03 WLG2-LDS-M1J-1 WLG2-LDS-M1GJ-1 WLG2-LDS-DTGJS03 WLG2-55LDS-M1TGJ | WLGCA2-LDS-M1J-1 WLGCA2-LDS-M1GJ-1 | |
|-----------------------|--|--|---------------------------------------|--------------------------------|
| Operating force | OF max. | 13.34 N | 9.81 N | 13.34 N |
| Release force | RF min. | 1.18 N | 0.98 N | 1.47 N |
| Pretravel | PT | 15±5° | 10 ^{+2°} _{-1°} | 5 ^{+2°} _{0°} |
| Overtravel | OT min. | 70° | 65° | 40° |
| Movement Differential | MD max. | 12° | 7° | 3° |

Sealed top-roller plunger

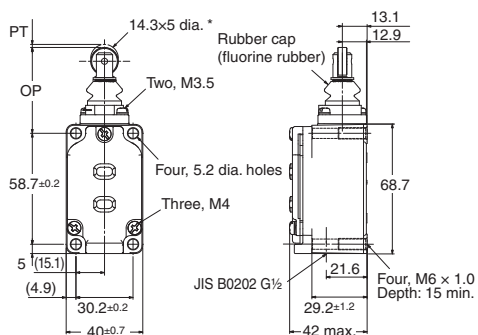
With operation indicator

LED

WLD28-LDS-N

Neon lamp

WLD28-LES-N



Note: The photo shows the WLD28-LDS-N model.

Sealed top-roller plunger

Threaded (M12)

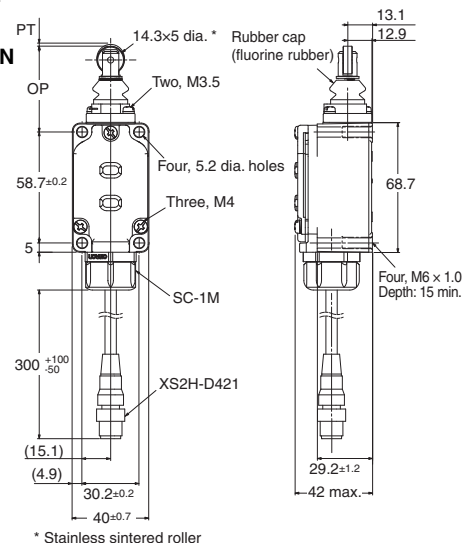
WLD28-LDS-M1J-1-N

WLD28-LDS-M1GJ-1-N

WLD28-LDS-DGJS-N

Smartclick

WLD28-LDS-DTGJS-N



Note: The photo shows the WLD28-LDS-M1J-1-N model.

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

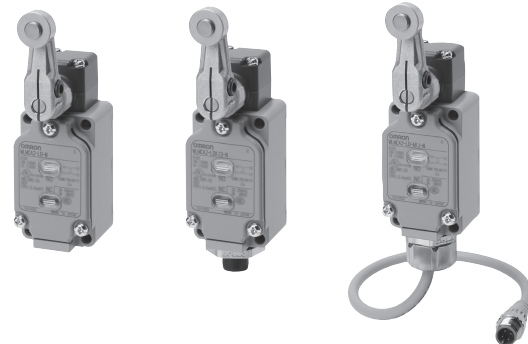
Operating characteristics

| Model | WLD28-LDS-N WLD28-LES-N WLD28-LDS-M1J-1-N WLD28-LDS-M1GJ-1-N WLD28-LDS-DGJS-N WLD28-LDS-DTGJS-N |
|--------------------------------|--|
| Operating force OF max. | 16.67 N |
| Release force RF min. | 4.41 N |
| Pretravel PT max. | 1.7 mm |
| Overtravel OT min. | 5.6 mm |
| Movement Differential MD max. | 1 mm |
| Operating Position OP | 44.5±0.8 mm |
| Total travel Position TTP max. | 39.5 mm |

Long-life Switches WL-N/WLG

A mechanical durability of over 30 Million Operations

- Long life has been achieved by increasing the resistance to friction and creating better sliding properties in the head mechanism
- Direct-wire Connector and Pre-wired Connector Models in the lineup
- Operation indicators (LED) installed in all the Long-life Switches.



For the most recent information on models that have been certified for safety standards, refer to your OMRON website.

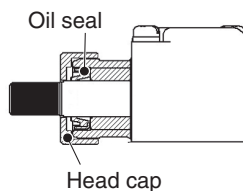
Be sure to read *Safety Precautions* on pages 83 to 88 and *Safety Precautions for All Limit Switches*.

Features

Mechanical structure featuring mechanical durability of more than 30 million operations (WLMCA2-N)

Shield Structure

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



Head

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

Built-in Switch

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

Main unit

Terminal Screws

Four, M3.5 screws.

Conduit Opening

In addition to parallel threads for G $\frac{1}{2}$ tubing, direct-wired and pre-wired connector types are available.

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

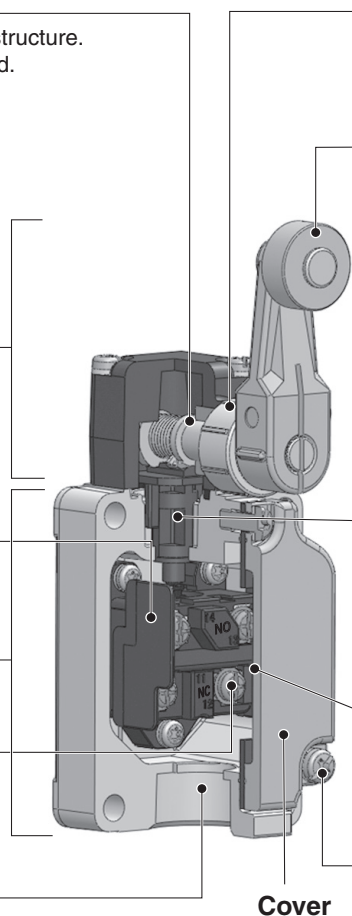
PEEK resin is used. It provides superior resistance to wear. You can change the mounting direction to use any one of the three operating directions (both sides, left side, or right side).

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



Model Number Structure

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

Basic models

WLM□ - LD□ -N
(1) (2) (3)

(1) Actuator and Property Specifications

| Code | Actuator | | Pretravel (PT) |
|------|--------------|----------------------|----------------|
| CA2 | Roller lever | Roller lever: R38 mm | 15±5° |

(2) Indicator Specifications

| Code | Specifications |
|------|------------------------|
| LD | LED (10 to 115 VAC/DC) |

(3) Wiring Specifications

| Code | Terminal shape | Connector shape | Voltage | Wiring locations | Connector pin No. |
|-------|------------------------------------|-----------------|------------|------------------|--------------------|
| None | Screw terminals (Conduit size: G½) | --- | --- | --- | --- |
| K13A | Direct-wire connector | Threaded (M12) | AC | NO only | NO: ③ ④ |
| K13 | | | DC | NO only | NO: ③ ④ |
| K43A | | | AC | NC+NO | NO: ③ ④ NC: ① ② |
| K43 | | | DC | NC+NO | NO: ③ ④ NC: ① ② |
| -M1J | Pre-wired connectors * | Threaded (M12) | DC | NO only | NO: ③ ④ |
| -AGJ | | | AC | NC+NO | NO: ③ ④ NC: ① ② |
| -DGJ | | | DC | NC+NO | NO: ③ ④ NC: ① ② |
| -DTGJ | | | Smartclick | DC | NC+NO |

* The standard cable length for a pre-wired connector is 0.3 m. Contact your OMRON representative for information on other cable lengths.

High-sensitivity and High-precision Switches

WLMG□ - LD□
(1) (2) (3)

(1) Actuator and Property Specifications

| Code | Actuator | | Pretravel (PT) |
|------|--------------|---|-----------------------------------|
| 2 | Roller lever | Roller lever: R38 mm High-sensitivity Models | 10° ^{+2°} _{-1°} |
| CA2 | Roller lever | Roller lever: R38 mm High-precision Models | 5° ^{+2°} _{0°} |

(2) Indicator Specifications

| Code | Specifications |
|------|------------------------|
| LD | LED (10 to 115 VAC/DC) |

(3) Wiring Specifications



| Code | Terminal shape | Connector shape | Voltage | Wiring locations | Connector pin No. | |
|---------|------------------------------------|-----------------|------------|------------------|--------------------|--------------------|
| None | Screw terminals (Conduit size: G½) | --- | --- | --- | --- | |
| K13A | Direct-wire connector | Threaded (M12) | AC | NO only | NO: ③ ④ | |
| K13 | | | DC | NO only | NO: ③ ④ | |
| K43A | | | AC | NC+NO | NO: ③ ④ NC: ① ② | |
| K43 | | | DC | NC+NO | NO: ③ ④ NC: ① ② | |
| -M1J | Pre-wired connectors * | Threaded (M12) | DC | NO only | NO: ③ ④ | |
| -DGJ03 | | | DC | NC+NO | NO: ③ ④ NC: ① ② | |
| -DTGJ03 | | | Smartclick | DC | NC+NO | NO: ③ ④ NC: ① ② |

* The standard cable length for a pre-wired connector is 0.3 m. Contact your OMRON representative for information on other cable lengths.

Ordering Information



Roller Lever

Screw terminals

| Appearance | Actuator | Pretravel (PT) | With operation indicator * | |
|---|----------------------|------------------------------------|----------------------------|--|
| | | | LED | |
| | | | Model | |
|  | Roller lever: R38 mm | 15±5° | WLMCA2-LD-N | |
|  | | 10° ^{+2°} _{-.1°} | WLMG2-LD | |
| | | 5° ^{+2°} _{0°} | WLMGCA2-LD | |



* 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).

Direct-wire connector

| Appearance | Actuator | Pretravel (PT) | Voltage | Wiring locations | Connector pin No. | With operation indicator * | |
|--|----------------------|------------------------------------|---------------|------------------|-------------------|----------------------------|--|
| | | | | | | LED | |
| | | | | | | Model | |
|  | Roller lever: R38 mm | 15±5° | AC | NO only | NO: ③ ④ | WLMCA2-LDK13A-N | |
| | | | | NC+NO | NO: ③ ④ NC: ① ② | WLMCA2-LDK43A-N | |
| | | | DC | NO only | NO: ③ ④ | WLMCA2-LDK13-N | |
| | | | | NC+NO | NO: ③ ④ NC: ① ② | WLMCA2-LDK43-N | |
|  | Roller lever: R38 mm | 10° ^{+2°} _{-.1°} | AC | NO only | NO: ③ ④ | WLMG2-LDK13A | |
| | | | | NC+NO | NO: ③ ④ NC: ① ② | WLMG2-LDK43A | |
| | | | DC | NO only | NO: ③ ④ | WLMG2-LDK13 | |
| | | | | NC+NO | NO: ③ ④ NC: ① ② | WLMG2-LDK43 | |
| | | | AC | NO only | NO: ③ ④ | WLMGCA2-LDK13A | |
| | | | | NC+NO | NO: ③ ④ NC: ① ② | WLMGCA2-LDK43A | |
| DC | NO only | NO: ③ ④ | WLMGCA2-LDK13 | | | | |
| | NC+NO | NO: ③ ④ NC: ① ② | WLMGCA2-LDK43 | | | | |

* 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). (However, Three-core and Four-core Switches cannot be switched to light-ON when operating (NC wiring).)

Pre-wired connectors

| Appearance | Actuator | Pretravel (PT) | Voltage | Connector shape | Wiring locations | Connector pin No. | With operation indicator * | |
|---|----------------------|------------------------------------|---------|-----------------|------------------|--------------------|----------------------------|--|
| | | | | | | | LED | |
| | | | | | | | Model | |
|  | Roller lever: R38 mm | 15±5° | AC | Threaded (M12) | NO only | NO: ③ ④ | WLMCA2-LD-M1J-N | |
| | | | | | NC+NO | NO: ③ ④ NC: ① ② | WLMCA2-LD-AGJ-N | |
| | | | | Smartclick | NC+NO | NO: ③ ④ NC: ① ② | WLMCA2-LD-DGJ-N | |
| | | | | | NC+NO | NO: ③ ④ NC: ① ② | WLMCA2-LD-DTGJ-N | |
|  | Roller lever: R38 mm | 10° ^{+2°} _{-.1°} | DC | Threaded (M12) | NO only | NO: ③ ④ | WLMG2-LD-M1J | |
| | | | | | NC+NO | NO: ③ ④ NC: ① ② | WLMG2-LD-DGJ03 | |
| | | | | Smartclick | NC+NO | NO: ③ ④ NC: ① ② | WLMG2-LD-DTGJ03 | |
| | | | | | NC+NO | NO: ③ ④ NC: ① ② | WLMG2-LD-DTGJ03 | |
| | | | | Threaded (M12) | NO only | NO: ③ ④ | WLMGCA2-LD-M1J | |
| | | | | | NC+NO | NO: ③ ④ NC: ① ② | WLMGCA2-LD-DTGJ03 | |

Note: The standard cable length for a pre-wired connector is 0.3 m. Contact your OMRON representative for information on other cable lengths.

* 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. (However, Four-core Switches cannot be switched to light-ON when operating (NC wiring).)

Specifications

Ratings

Screw terminals

With Operation Indicator

Basic models (WL-N)

| Ratings | | Non-inductive load (A) | | | | Inductive load (A) | | | |
|-------------|-----|------------------------|----|-----------|-----|---------------------|----|------------|-----|
| | | Basic models (WL-N) | | | | Basic models (WL-N) | | | |
| | | Resistive load | | Lamp load | | Inductive load | | Motor load | |
| Voltage (V) | | NC | NO | NC | NO | NC | NO | NC | NO |
| AC | 115 | 10 | | 3 | 1.5 | 10 | | 5 | 2.5 |
| DC | 12 | 10 | | 6 | 3 | 10 | | 6 | |
| | 24 | 6 | | 4 | 3 | 6 | | 4 | |
| | 48 | 3 | | 2 | 1.5 | 3 | | 0.2 | |
| | 115 | 0.8 | | 0.2 | | 0.8 | | 0.1 | |

High-sensitivity and High-precision models (WLG)

| Ratings | | Non-inductive load (A) | |
|-------------|-----|--|----|
| | | High-sensitivity and High-precision models (WLG) | |
| | | Resistive load | |
| Voltage (V) | | NC | NO |
| AC | 115 | 5 | |
| DC | 115 | 0.4 | |

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

Allowable Inrush Current/Minimum Applicable Load

| Operating characteristics type | | Basic models (WL-N) | High-sensitivity/ High-precision models (WLG) |
|--------------------------------|----|-------------------------------------|---|
| Inrush current | NC | 30 A max. | 15 A max. |
| | NO | 20 A max. | 10 A max. |
| Minimum applicable load | | 5 VDC 1 mA, resistive load, P level | 5 VDC 1 mA, resistive load, P level |

Operation Indicator

| Operation indicator type | | LED | Neon lamp |
|-----------------------------------|--|--|---|
| Rated voltage | | 10 to 115 VAC/DC | 125 to 250 VAC |
| Leakage current (Reference value) | | Approx. 0.4 mA at 10 VAC/DC; Approx. 0.5 mA at 115 VAC/DC | Approx. 0.6 mA at 125 VAC; Approx. 1.9 mA at 250 VAC |

Direct-wire connector and Pre-wired Connector Models Type

DC Connector: With Operation Indicators (LEDs)

Basic models (WL-N)

| Ratings | | Non-inductive load (A) | | | | Inductive load (A) | | | |
|-------------|-----|------------------------|----|-----------|-----|---------------------|----|------------|----|
| | | Basic models (WL-N) | | | | Basic models (WL-N) | | | |
| | | Resistive load | | Lamp load | | Inductive load | | Motor load | |
| Voltage (V) | | NC | NO | NC | NO | NC | NO | NC | NO |
| DC | 12 | 3 | | 3 | | 3 | | 3 | |
| | 24 | 3 | | 3 | | 3 | | 3 | |
| | 48 | 4 | | 2 | 1.5 | 3 | | 2 | |
| | 115 | 0.8 | | 0.2 | 0.2 | 0.8 | | 0.2 | |

High-sensitivity and High-precision models (WLG)

| Ratings | | Non-inductive load (A) | |
|-------------|-----|--|----|
| | | High-sensitivity and High-precision models (WLG) | |
| | | Resistive load | |
| Voltage (V) | | NC | NO |
| DC | 115 | 0.4 | |

AC Connector: With Operation Indicators (LEDs)

Basic models (WL-N)

| Ratings | | Non-inductive load (A) | | | | Inductive load (A) | | | |
|-------------|-----|------------------------|----|-----------|-----|---------------------|----|------------|-----|
| | | Basic models (WL-N) | | | | Basic models (WL-N) | | | |
| | | Resistive load | | Lamp load | | Inductive load | | Motor load | |
| Voltage (V) | | NC | NO | NC | NO | NC | NO | NC | NO |
| AC | 115 | 3 | | 3 | 1.5 | 3 | | 3 | 2.5 |

High-sensitivity and High-precision models (WLG)

| Ratings | | Non-inductive load (A) | |
|-------------|-----|--|----|
| | | High-sensitivity and High-precision models (WLG) | |
| | | Resistive load | |
| Voltage (V) | | NC | NO |
| AC | 115 | 3 | |

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

Minimum Applicable Load

| Operating characteristics type | | Basic models (WL-N) | High-sensitivity and High-precision models (WLG) |
|--------------------------------|--|-------------------------------------|--|
| Minimum applicable load | | 5 VDC 1 mA, resistive load, P level | 5 VDC 1 mA, resistive load, P level |

Operation Indicator

| Operation indicator type | | LED |
|-----------------------------------|--|--|
| Rated voltage | | 10 to 115 VAC/DC |
| Leakage current (Reference value) | | Approx. 0.4 mA at 10 VAC/DC; Approx. 0.5 mA at 115 VAC/DC |

Characteristics

| Operating characteristics type | | Basic models (WL-N) | High-sensitivity and High-precision models (WLG) |
|---------------------------------|-------------|--|--|
| Permissible operating frequency | Mechanical | 120 operations/minute | |
| | Electrical | 30 operations/minute | |
| Rated frequency | | 50/60 Hz | |
| Permissible operating speed | | 1 mm/sec to 1 m/sec | |
| Insulation resistance | | 100 MΩ min. (at 500 VDC) | |
| Contact resistance | | 25 mΩ max. (initial value for the built-in switch) | |
| Vibration resistance | Malfunction | 10 to 55 Hz, 1.5-mm double amplitude | |
| Shock | Destruction | 1,000 m/s ² max. | |
| | Malfunction | 300 m/s ² max. | |
| Durability * | Mechanical | 30,000,000 operations min. | |
| | Electrical | 30,000,000 operations min. (10 mA at 24 VAC, resistive load) 750,000 operations min. (3 A at 115 VAC, resistive load) | 500,000 operations min. (3 A at 115 VAC, resistive load) |
| Ambient operating temperature | | -10 to +80°C (with no icing) | |
| Ambient operating humidity | | 35 to 95%RH | |
| Degree of protection | | IP67 | |
| Weight | | Approx. 255 g (in case of WLMCA2-LD-N) | Approx. 270 g (in case of WLMGCA2-LD) |

Note: The above figures are initial values.

* 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.

| Operating characteristics type | | Basic models (WL-N) | | High-sensitivity and High-precision Switches (WLG) | |
|--------------------------------|---|---------------------------------|--|--|--|
| Wiring Specifications | | Screw terminals | Direct-wire connector and Pre-wired Connector Models | Screw terminals | Direct-wire connector and Pre-wired Connector Models |
| Dielectric strength | Between terminals of the same polarity | 1,000 VAC, 50/60 Hz for 1 min * | 600 VAC, 50/60 Hz for 1 min * | 600 VAC, 50/60 Hz for 1 min * | 600 VAC, 50/60 Hz for 1 min * |
| | Between current-carrying metal part and ground | 2,200 VAC, 50/60 Hz for 1 min | 1,500 VAC, 50/60 Hz for 1 min | 1,500 VAC, 50/60 Hz for 1 min | 1,500 VAC, 50/60 Hz for 1 min |
| | Between each terminal and non-current-carrying metal part | 2,200 VAC, 50/60 Hz for 1 min | 1,500 VAC, 50/60 Hz for 1 min | 1,500 VAC, 50/60 Hz for 1 min | 1,500 VAC, 50/60 Hz for 1 min |

* Excluding those with operation indicators.

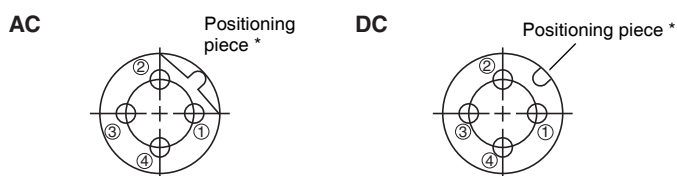
Terminal Connection Diagram

| Operating characteristics type | Basic models (WL-N) | | | | | | | | | | | | | | | | | | | | | |
|---|--|--|--------|---|-----|-----|---|--------|---|---|---|---|--------|---|-----|-----|---|--------|---|---|---|---|
| Wiring Specifications | Screw terminals | Direct-wire connector and Pre-wired Connector Models | | | | | | | | | | | | | | | | | | | | |
| Operation indicator (Light-ON when Not Operating *) | | <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>AC</p> <table border="1"> <tr> <td>2 core</td> <td>④</td> <td>---</td> <td>---</td> <td>③</td> </tr> <tr> <td>4 core</td> <td>④</td> <td>①</td> <td>②</td> <td>③</td> </tr> </table> <p>①②③④ indicate the connector pin number.</p> </div> <div style="text-align: center;"> <p>DC</p> <table border="1"> <tr> <td>2 core</td> <td>④</td> <td>---</td> <td>---</td> <td>③</td> </tr> <tr> <td>4 core</td> <td>④</td> <td>①</td> <td>②</td> <td>③</td> </tr> </table> <p>①②③④ indicate the connector pin number.</p> </div> </div> | 2 core | ④ | --- | --- | ③ | 4 core | ④ | ① | ② | ③ | 2 core | ④ | --- | --- | ③ | 4 core | ④ | ① | ② | ③ |
| 2 core | ④ | --- | --- | ③ | | | | | | | | | | | | | | | | | | |
| 4 core | ④ | ① | ② | ③ | | | | | | | | | | | | | | | | | | |
| 2 core | ④ | --- | --- | ③ | | | | | | | | | | | | | | | | | | |
| 4 core | ④ | ① | ② | ③ | | | | | | | | | | | | | | | | | | |
| Operating characteristics type | High-sensitivity and High-precision models (WLG) | | | | | | | | | | | | | | | | | | | | | |
| Wiring Specifications | Screw terminals | Direct-wire connector and Pre-wired Connector Models | | | | | | | | | | | | | | | | | | | | |
| Operation indicator (Light-ON when Not Operating *) | | <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p>AC</p> <table border="1"> <tr> <td>2 core</td> <td>④</td> <td>---</td> <td>---</td> <td>③</td> </tr> <tr> <td>4 core</td> <td>④</td> <td>①</td> <td>②</td> <td>③</td> </tr> </table> <p>①②③④ indicate the connector pin number.</p> </div> <div style="text-align: center;"> <p>DC</p> <table border="1"> <tr> <td>2 core</td> <td>④</td> <td>---</td> <td>---</td> <td>③</td> </tr> <tr> <td>4 core</td> <td>④</td> <td>①</td> <td>②</td> <td>③</td> </tr> </table> <p>①②③④ indicate the connector pin number.</p> </div> </div> | 2 core | ④ | --- | --- | ③ | 4 core | ④ | ① | ② | ③ | 2 core | ④ | --- | --- | ③ | 4 core | ④ | ① | ② | ③ |
| 2 core | ④ | --- | --- | ③ | | | | | | | | | | | | | | | | | | |
| 4 core | ④ | ① | ② | ③ | | | | | | | | | | | | | | | | | | |
| 2 core | ④ | --- | --- | ③ | | | | | | | | | | | | | | | | | | |
| 4 core | ④ | ① | ② | ③ | | | | | | | | | | | | | | | | | | |

Note: 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.

* Light-ON when not operating means the operation indicator is lit when the actuator is free and is not lit when the Switch contacts (NO) close when the actuator rotates or is pushed down. The above shows details of the switch interior. External wires (external resistances) are not shown. For details, refer to *Operation* on pages 18.

Connector Pin Layout Diagram



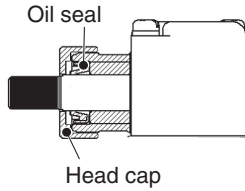
* The position of the positioning piece is not always the same. If using an L-shaped connector causes problems in mounting, use a straight connector.

Structure and Nomenclature

WLMCA2-N

Shield Structure

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



Head

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

Built-in Switch

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

Main unit

Terminal Screws

Four, M3.5 screws.

Conduit Opening

In addition to parallel threads for G $\frac{1}{2}$ tubing, direct-wired and pre-wired connector types are available.

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

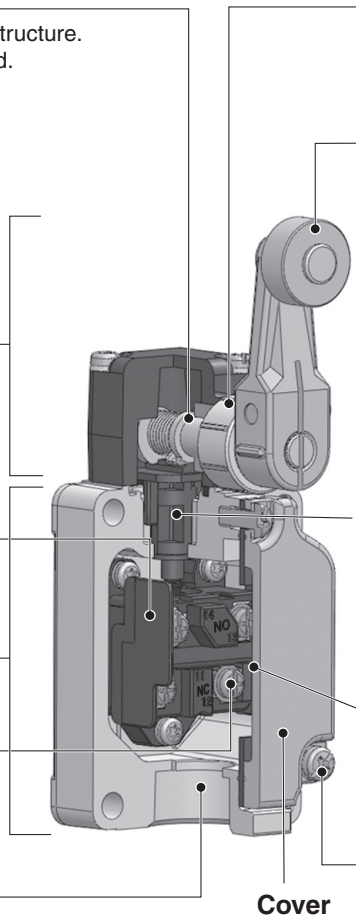
PEEK resin is used. It provides superior resistance to wear. You can change the mounting direction to use any one of the three operating directions (both sides, left side, or right side).

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.



WLMG2

Actuator

Roller

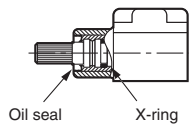
The roller is made of self-lubricating stainless sintered and boasts high resistance to wear.

Lever

The lever forged of anti-corrosive aluminium alloy features high corrosion resistance and outstanding ruggedness. With roller lever models, the actuator position can be set anywhere within 360°. (The lever cannot be mounted in the opposite direction.)

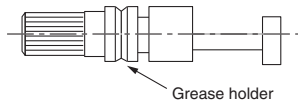
Shaft Section Seal

By fitting a double seal consisting of an oil seal and an X-ring to the rotary shaft, even greater sealing properties are achieved.



Smoother Movement

A grease holder is provided on the shaft to prevent the grease from running out.



Smooth movement is achieved using olefin grease. (Standard models use molybdenum disulfide grease.)

Cover

Cover Mounting Screw

A combination Phillips-slotted screws are used to ensure ease of use.

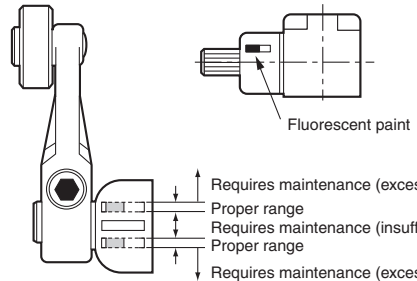
Cover Seal

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.

Set Position Marker Plate

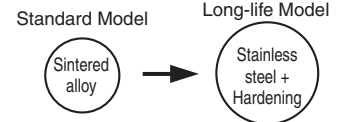
The set position is easy to view.

The stroke is indicated in fluorescent color that is visible from the slit in the rubber cap.



Release Plunger

Hardening method changed for greater abrasion resistance.



Head Mounting Screws

Operational Plunger

Head

The Head can be mounted in any of the four directions by removing the screws at the four corners of the Head.

Bearing

The bearing smooths the plunger movement.

Terminal Screws

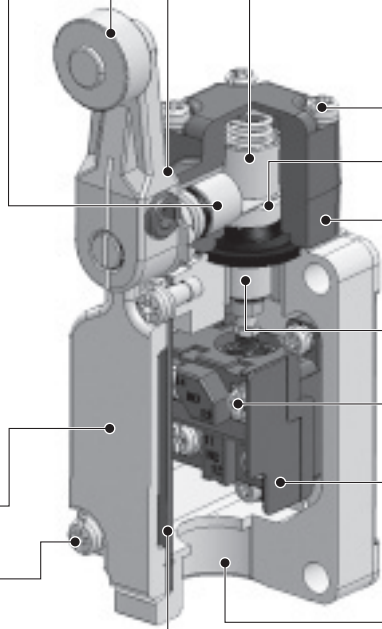
Four, M3.5 screws

Built-in Switch

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

Conduit Opening

In addition to parallel threads for G $\frac{1}{2}$ tubing, direct-wired and pre-wired connector types are available.



General-purpose Switches

Environment-resistant Switches

Spatter-prevention Switches

Long-life Switches

Accessories

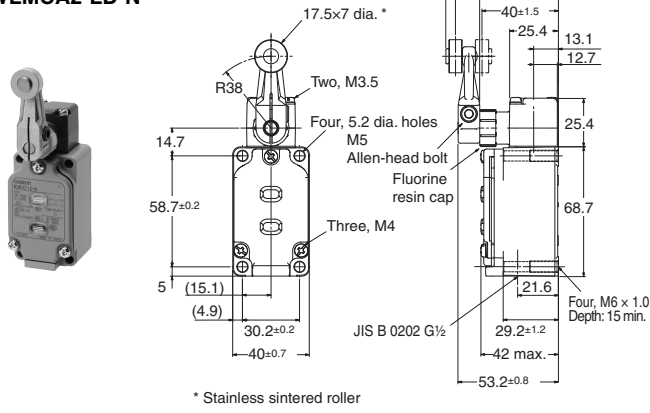
Safety Precautions

Roller Lever

Screw terminals

Roller lever R38

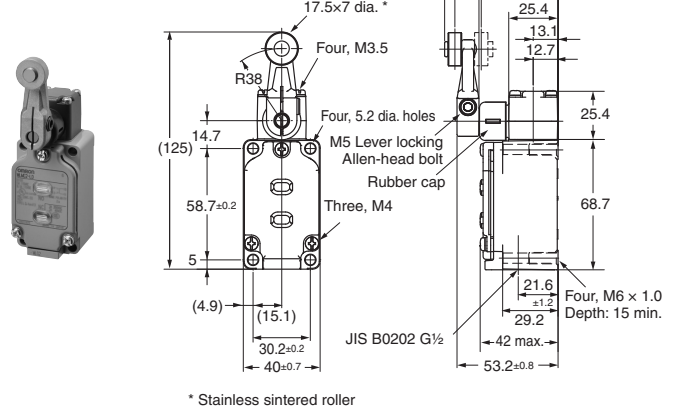
With operation indicator (LED)
WLMCA2-LD-N



* Stainless sintered roller

Roller lever R38

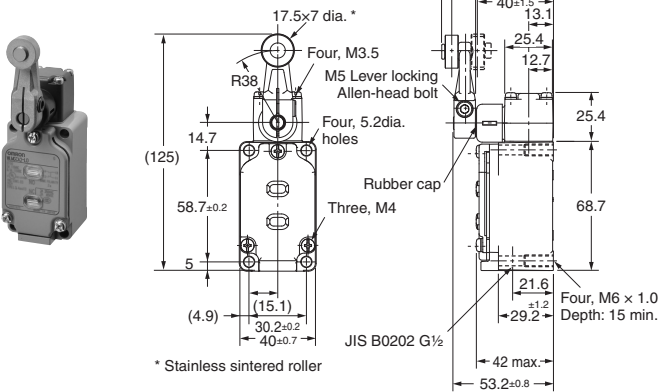
With operation indicator (LED)
WLMG2-LD



* Stainless sintered roller

Roller lever R38

With operation indicator (LED)
WLMGCA2-LD



* Stainless sintered roller

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

Operating characteristics

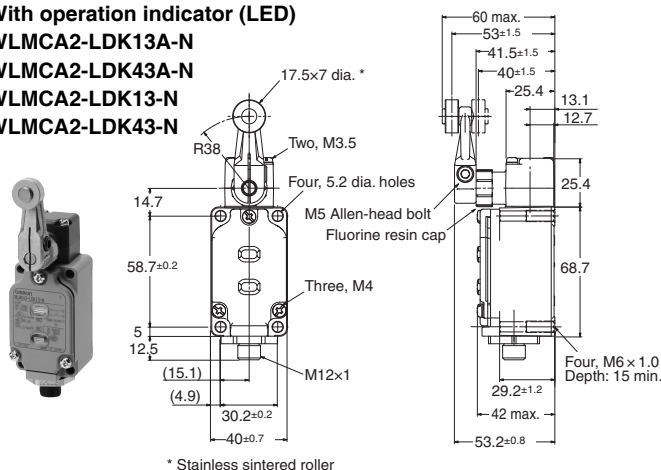
| | Model | WLMCA2-LD-N | WLMG2-LD | WLMGCA2-LD |
|-----------------------|---------|-------------|----------------|--------------|
| Operating force | OF max. | 13.34 N | 9.81 N | 13.34 N |
| Release force | RF min. | 1.18 N | 0.98 N | 1.47 N |
| Pretravel | PT | 15±5° | 10° +2° -1° | 5° +2° 0° |
| Overtravel | OT min. | 70° | 65° | 40° |
| Movement Differential | MD max. | 12° | 7° | 3° |

Direct-wire connector

Roller lever R38

With operation indicator (LED)

- WLMCA2-LDK13A-N
- WLMCA2-LDK43A-N
- WLMCA2-LDK13-N
- WLMCA2-LDK43-N

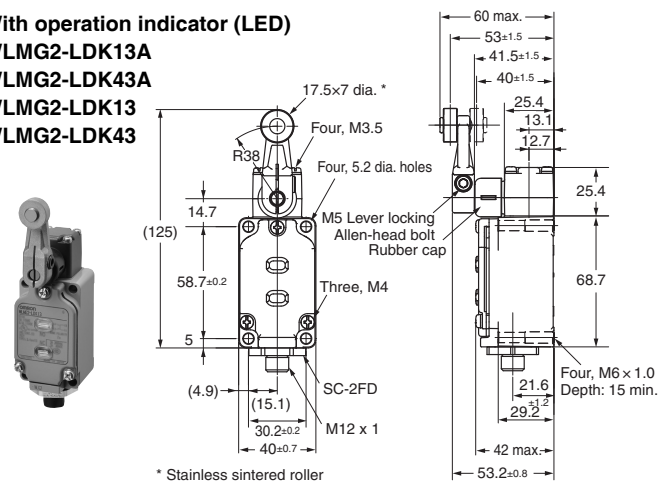


Note: The photo shows the WLMCA2-LDK13-N model.

Roller lever R38

With operation indicator (LED)

- WLMG2-LDK13A
- WLMG2-LDK43A
- WLMG2-LDK13
- WLMG2-LDK43

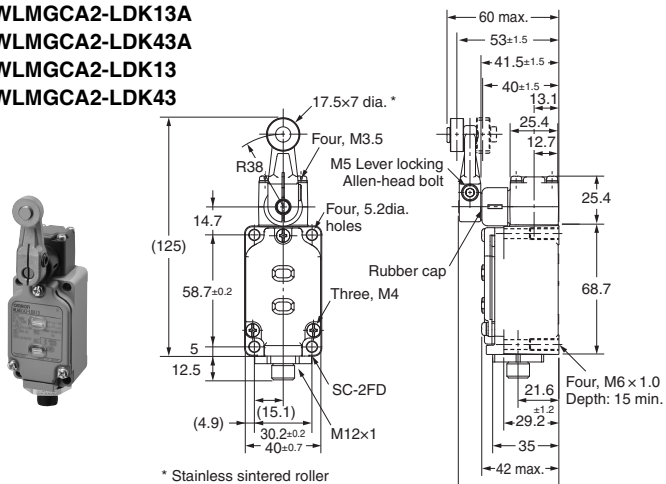


Note: The photo shows the WLMG2-LDK13 model.

Roller lever R38

With operation indicator (LED)

- WLMGCA2-LDK13A
- WLMGCA2-LDK43A
- WLMGCA2-LDK13
- WLMGCA2-LDK43



Note: The photo shows the WLMGCA2-LDK13 model.

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

Operating characteristics

| | Model | WLMCA2-LDK13A-N WLMCA2-LDK43A-N WLMCA2-LDK13-N WLMCA2-LDK43-N | WLMG2-LDK13A WLMG2-LDK43A WLMG2-LDK13 WLMG2-LDK43 | WLMGCA2-LDK13A WLMGCA2-LDK43A WLMGCA2-LDK13 WLMGCA2-LDK43 |
|-----------------------|---------|--|--|--|
| Operating force | OF max. | 13.34 N | 9.81 N | 13.34 N |
| Release force | RF min. | 1.18 N | 0.98 N | 1.47 N |
| Pretravel | PT | 15±5° | 10° ^{+2°} _{-1°} | 5° ^{+2°} _{0°} |
| Overtravel | OT min. | 70° | 65° | 40° |
| Movement Differential | MD max. | 12° | 7° | 3° |

General-purpose Switches

Environment-resistant Switches

Spatter-prevention Switches

Long-life Switches

Accessories

Safety Precautions

Pre-wired connectors

Roller lever R38

With operation indicator (LED)

Threaded (M12)

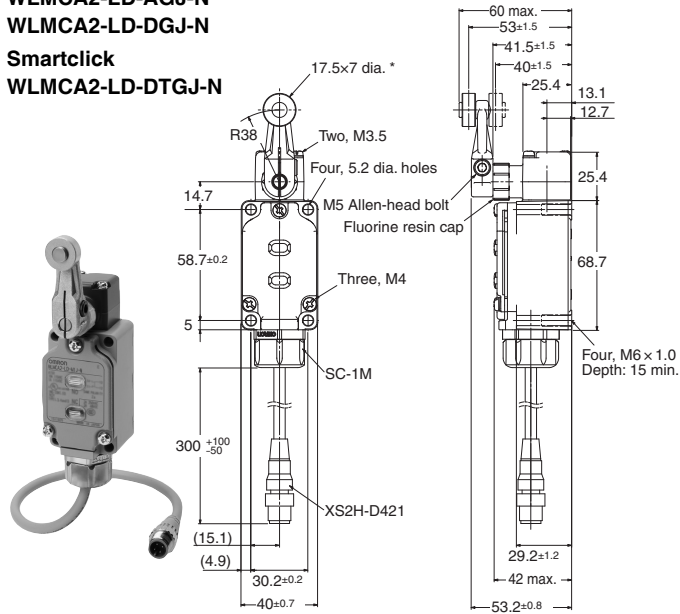
WLMCA2-LD-M1J-N

WLMCA2-LD-AGJ-N

WLMCA2-LD-DGJ-N

Smartclick

WLMCA2-LD-DTGJ-N



* Stainless sintered roller

Note: The photo shows the WLMCA2-LD-M1J-N model.

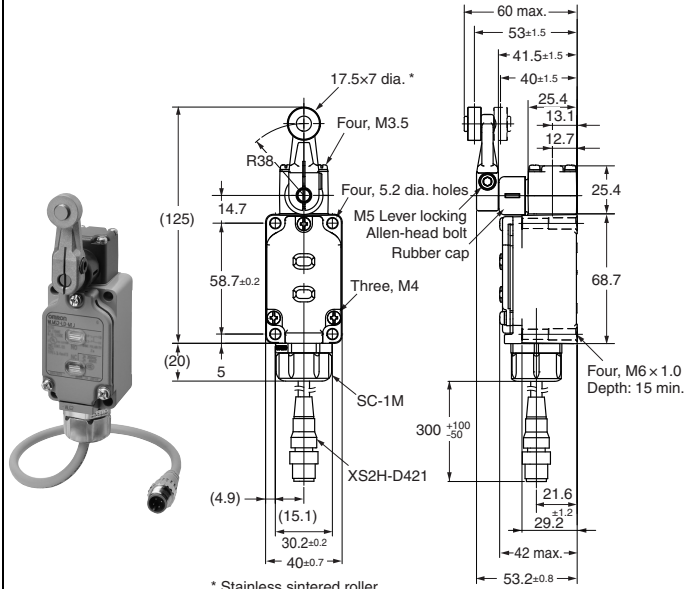
Roller lever R38

With operation indicator (LED)

Threaded (M12)

WLMG2-LD-M1J

WLMG2-LD-DTGJ03



* Stainless sintered roller

Note: The photo shows the WLMG2-LD-M1J model.

Roller lever R38

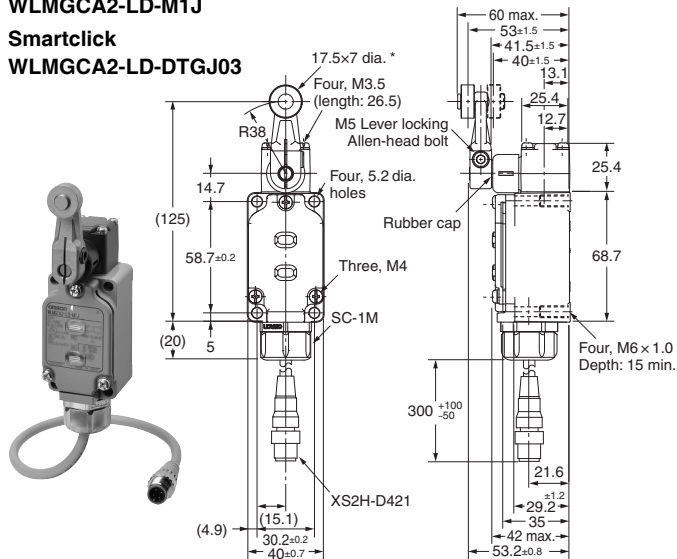
With operation indicator (LED)

Threaded (M12)

WLMGCA2-LD-M1J

Smartclick

WLMGCA2-LD-DTGJ03



* Stainless sintered roller

Note: The photo shows the WLMGCA2-LD-M1J model.

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

Operating characteristics

| | Model | WLMCA2-LD-M1J-N WLMCA2-LD-AGJ-N WLMCA2-LD-DGJ-N WLMCA2-LD-DTGJ-N | WLMG2-LD-M1J WLMG2-LD-DGJ03 WLMG2-LD-DTGJ03 | WLMGCA2-LD-M1J WLMGCA2-LD-DTGJ03 |
|-----------------------|---------|---|---|-------------------------------------|
| Operating force | OF max. | 13.34 N | 9.81 N | 13.34 N |
| Release force | RF min. | 1.18 N | 0.98 N | 1.47 N |
| Pretravel | PT | 15 \pm 5° | 10° $^{+2}_{-1}$ ° | 5° $^{+2}_{-0}$ ° |
| Overtravel | OT min. | 70° | 65° | 40° |
| Movement Differential | MD max. | 12° | 7° | 3° |

Common Specifications

Specifications

General-purpose/Environment-resistant/Spatter-prevention/Long-life Switches

Approved Standards

| Agency | Standard | File No. | Approved models |
|---------------|-----------------|---|---|
| UL | UL508 | Contact your OMRON representative for information | Contact your OMRON representative for information |
| CSA cUL | CSA C22.2 No.14 | | |
| TÜV Rheinland | EN60947-5-1 | | |
| CCC (CQC) | GB/T14048.5 | | |

Approved Standard Ratings

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

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

A600 Authentication conditions

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

C300 Authentication conditions

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

A300 Authentication conditions

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

A150 Authentication conditions

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

C150 Authentication conditions

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

B600 Authentication conditions

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

B300 Authentication conditions

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

B150 Authentication conditions

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

General-purpose Switches

Environment-resistant Switches

Spatter-prevention Switches

Long-life Switches

Accessories

Safety Precautions

TÜV (EN 60947-5-1)

| Authentication conditions | Specifications | | | | | |
|---|------------------------|-------|-----------|-------|-----------|-----------------------------------|
| | Direct-wire cable type | | | | | With Pre-wired DC connector model |
| | 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 | | | | | |
| Protection against electric shock | Class I | | | | Class III | |

CCC (GB/T14048.5)

| Authentication conditions | Specifications | | | | | | |
|---|--------------------|-------|-----------|-------|-------|-----------------------------------|-----------------------------------|
| | No indicator | | Neon lamp | LED | | With Pre-wired DC connector model | With Pre-wired AC connector model |
| Working load category | AC-15 | DC-13 | AC-15 | AC-15 | DC-13 | DC-13 | AC-15 |
| Rated working voltage (Ue) | 250 V | 48 V | 250 V | 250 V | 48 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 | | | | | | |

Common Accessories (Sold Separately)

Ordering Information

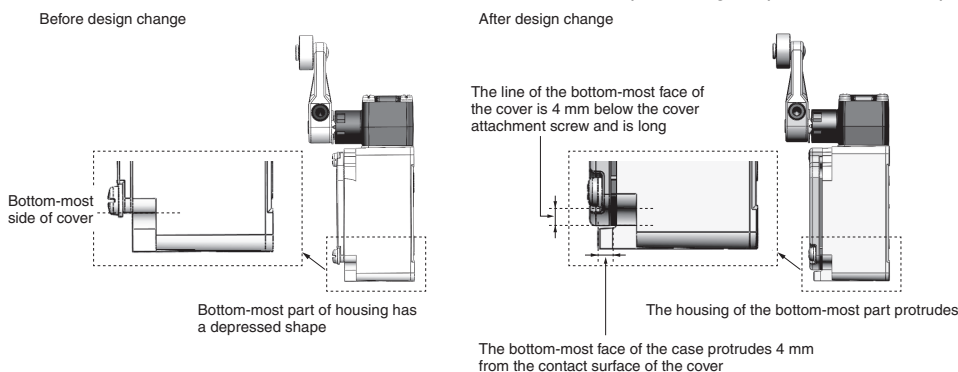
Single-item ordering models

..... Switches without levers, heads, and actuators can be ordered separately. Use by combining with models that are not available as a set. You can also use them as maintenance parts for inventory management.

General-purpose Models

| Actuator | Pretravel (PT) | Set Model Numbers | Switches without levers | Heads (with Actuators) | Actuator * |
|--|-----------------------------------|-------------------|-------------------------|------------------------|------------|
| | | | Model | Model | Model |
| Roller lever: R38 mm | 15±5° | WLCA2-N | WLRCA2-N | WL-1H1100-N | WL-1A100 |
| | 25±5° | WLCA2-2-N | WLRCA2-2-N | WL-3H1100-N | |
| | 20° max. | WLCA2-2N-N | WLRCA2-2N-N | WL-1H1100-N | |
| | 10° ^{+2°} _{-1°} | WLG2 | --- | WL-2H1100-K * | |
| Adjustable roller lever (R25 to 89 mm) | 15±5° | WLCA12-N | WLRCA2-N | WL-1H2100-N | WL-2A100 |
| | 25±5° | WLCA12-2-N | WLRCA2-2-N | WL-3H2100-N | |
| | 20° max. | WLCA12-2N-N | WLRCA2-2N-N | WL-1H2100-N | |
| | 10° ^{+2°} _{-1°} | WLG12 | WLRG2 | WL-2H2100-K * | |
| Adjustable rod lever: (25 to 140mm) | 15±5° | WLCL-N | WLRCL-N | WL-4H4100-N | WL-4A100 |
| | 25±5° | WLCL-2-N | WLRCA2-2-N | WL-3H4100-N | |
| | 20° max. | WLCL-2N-N | WLRCA2-2N-N | WL-1H4100-N | |
| | 10° ^{+2°} _{-1°} | WGL | WLRG2 | WL-2H4100-K * | |
| Sealed top plunger | 1.7 mm max. | WLD18-N | --- | WL-7H100-N | --- |
| Sealed top-roller plunger | 1.7 mm max. | WLD28-N | --- | WL-7H400-N | --- |
| Sealed top-ball plunger | 1.7 mm max. | WLD38-N | --- | WL-7H300-N | --- |
| Horizontal plunger | 2.8 mm max. | WLSD-N | --- | WL-8H100-N | --- |
| Horizontal-roller plunger | 2.8 mm max. | WLSD2-N | --- | WL-8H200-N | --- |
| Horizontal-ball plunger | 2.8 mm max. | WLSD3-N | --- | WL-8H300-N | --- |
| Coil spring (6.5 dia.) | 20±10 mm | WLNJ-N | --- | WL-9H100-N | --- |
| Coil spring (4.8 dia.) | 20±10 mm | WLNJ-30-N | --- | WL-9H200-N | --- |
| Flexible rod: Resin rod (8 dia.) | 40±20 mm | WLNJ-2-N | --- | WL-9H300-N | --- |
| Flexible rod: Steel wire (1 dia.) | 40±20 mm | WLNJ-S2-N | --- | WL-9H400-N | --- |
| Fork Lock Lever A | 55° max. | WLCA32-41-N | WLRCA32-N | WL-5H5100-N | WL-5A100 |
| Fork Lock Lever B | 55° max. | WLCA32-42-N | | WL-5H5102-N | WL-5A102 |
| Fork Lock Lever C | 55° max. | WLCA32-43-N | | WL-5H5104-N | WL-5A104 |
| Fork Lock Lever D | 55° max. | WLCA32-44-N | | WL-5H5104-N | WL-5A104 |

* The WL-2H1100-K, WL-2H2100-K, and WL-2H4100-K correspond with each set model WLG□, the design of which was changed in April 2019. Please inquire if you desire a single-item head manufactured before the design change. On products that underwent the design change in April 2019, the front of the switch box cover at the bottom front has a protruding shape, and on earlier products has a depressed shape.



General-purpose Switches

Environment-resistant Switches

Spatter-prevention Switches

Long-life Switches

Accessories

Safety Precautions

Spatter-prevention Models

| Actuator | Lever type | Indicator | Pretravel (PT) | Set Model Numbers | Switches without levers | Actuator * |
|-------------------------|------------------|-----------|-----------------------------------|-------------------|-------------------------|------------|
| | | | | | Model | Model |
| Roller lever: R38 mm | Double nut lever | LED | 15±5° | WLCA2-LDAS-N | WLRCA2-LDS-N | WL-1A105S |
| | | Neon lamp | | WLCA2-LEAS-N | WLRCA2-LES-N | |
| | | LED | 10 ^{0+2°} _{-1°} | WLG2-LDAS | WLRG2-LDS | |
| | Allen-head lever | LED | 15±5° | WLCA2-LDS-N | WLRCA2-LDS-N | WL-1A103S |
| | | Neon lamp | | WLCA2-LES-N | WLRCA2-LES-N | |
| | | LED | 10 ^{0+2°} _{-1°} | WLG2-LDS | WLRG2-LDS | |

* The actuator is identical for the WL and WL-N models.

Connector (Conduit size: JIS B0202G1/2)

| Appearance | Dimensions (Unless otherwise indicated, a tolerance of ±0.4 mm applies to all dimensions.) | Application/ Specifications | Inner diameter (D) of seal rubber | External diameter of cable | | Model | Applicable limit switch models |
|------------|--|--|--|-------------------------------|-----------|-------|--|
| | | | | min. | max. | | |
| | | Cable cable (Metal, with O-ring) | 7 dia. | 5.5 dia. | 7.5 dia. | SC-1M | WL□-N WLG□ Wiring Specifications: Screw terminals |
| | | | 9 dia. | 7.5 dia. | 9.5 dia. | SC-2M | |
| | | | 12.5 dia. | 11 dia. | 13 dia. | SC-3M | |
| | | | 14 dia. | 12 dia. | 14 dia. | SC-4M | |
| 11 dia. | 9 dia. | 11 dia. | SC-5M | | | | |
| | | Cable cable (Metal) | 7 dia. | 5.5 dia. | 7.5 dia. | SC-21 | |
| | | | 9 dia. | 7.5 dia. | 9.5 dia. | SC-22 | |
| | | | 12.5 dia. | 11 dia. | 13 dia. | SC-23 | |
| | | | 14 dia. | 12 dia. | 14 dia. | SC-24 | |
| 11 dia. | 9 dia. | 11 dia. | SC-25 | | | | |
| | | Cable cable (Resin) | 9 dia. | 7.5 dia. | 9 dia. | SC-6 | |
| | | | 10.6 dia. | 8.5 dia. | 10.5 dia. | SC-P2 | |

Note: 1. Please use sealing tape with SC Connectors. SC-1M to SC-5M, however, are provided with an O-ring (NBR) and therefore sealing tape is not necessary to ensure a proper seal. The SC-6 and SC-P2 models are made of resin. If higher sealing performance is required, use one of SC-1M to SC-5M, which have metal connectors.

2. Unless otherwise indicated, a tolerance of ±0.4 mm applies to all dimensions.

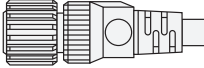
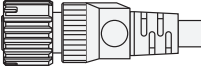
* mark dimensional table

| Model | Inner diameter (D) of sealed rubber | Internal diameter (E) of washer | Applicable cable |
|------------|--|---------------------------------------|----------------------|
| SC-21, -1M | 7 dia. | 10.4 dia. | 5.5 dia. to 7.5 dia. |
| SC-22, -2M | 9 dia. | 13.2 dia. | 7.5 dia. to 9.5 dia. |
| SC-23, -3M | 12.5 dia. | 14.6 dia. | 11 dia. to 13 dia. |
| SC-24, -4M | 14 dia. | 14.6 dia. | 12 dia. to 14 dia. |
| SC-25, -5M | 11 dia. | 13.2 dia. | 9 dia. to 11 dia. |
| SC-6 | 9 dia. | 10 dia. | 7.5 dia. to 9 dia. |

FA Connectors

| Model | Number of conductors | Voltage specification | Size of conduit | Size of crimp terminal | Applicable model |
|----------|-------------------------|--------------------------|-----------------|---------------------------|------------------|
| SC-2F | 2 | 125 VDC | JIS B0202G1/2 | M4 | WL-N, WLG |
| SC-2FAD | 2 | 250 VDC | | | |
| SC-4F4D | 4 | 125 VDC | | | |
| SC-4F4AD | 4 | 250 VDC | | | |

Sensor I/O connectors

| Appearance | AC/DC type | Number of cable cores | Cable length (m) | Cable model | Compatible model |
|---|------------|-----------------------|------------------|-----------------|---|
| M12 Screw (Straight)  | for AC | 2 | 2 | XS2F-A421-DB0-F | WL□-□K13A-N WLG□-□K13A |
| | | | 5 | XS2F-A421-GB0-F | |
| | | 4 | 2 | XS2F-A421-D90-F | WL□-□K43A-N WLG□-□AGJ-N WLG□-□K43A WLG□-□AGJ03 |
| | | | 5 | XS2F-A421-G90-F | |
| | for DC | 2 | 2 | XS2F-D421-DD0 | WL□-□K13-N WLG□-□M1J-N WLG□-□K13 WLG□-□M1J |
| | | | 5 | XS2F-D421-GD0 | |
| | | | 2 | XS2F-D421-DA0-F | WL□-□M1GJ□-N |
| | | | 5 | XS2F-D421-GA0-F | WLG□-□M1GJ□ |
| | | 4 | 2 | XS2F-D421-D80-F | WL□-□K43-N WLG□-□M1JB-N WLG□-□DGJ-N WLG□-□DK1EJ-N WLG□-□K43 WLG□-□M1JB WLG□-□DGJ03 WLG□-□DK1EJ03 |
| | | | 5 | XS2F-D421-G80-F | |
| M12 Smartclick (Straight)  | for DC | 4 | 2 | XS5F-D421-D80-F | WL□-□M1TJ-N WLG□-□M1TGJ-N WLG□-□M1TJB-N WLG□-□DTGJ-N WLG□-□DTK1EJ-N WLG□-□M1TJ WLG□-□M1TGJ WLG□-□M1TJB WLG□-□DTGJ03 WLG□-□DTK1EJ03 |
| | | | 5 | XS5F-D421-G80-F | |

Note: For details, refer to the data sheet for XS2 Round Water-resistant Connectors (M12 Threads) or XS5 Round Water-resistant Connectors (M12 Smartclick).

| Type | Compatible model | Remarks | Model | |
|-------------------------------|------------------|---|---|--|
| Cover with indicator lamps *1 | WL-N | Indicator *1 | General-purpose models Long-life models (Basic models, High-sensitivity Switches) | LED Color: Red WL-LD-N |
| | | | Neon lamp Color: Orange WL-LE-N | |
| | | | Spatter Prevention models | LED Color: Red WL-LDS-N |
| | | | | Neon lamp Color: Orange WL-LES-N |
| | WLG | Indicator | General-purpose models | LED Color: Red WL-LD-K *2 |
| | | | Long-life models | Neon lamp Color: Orange WL-LE-K *2 |
| | | | Spatter Prevention models | LED Color: Red WL-LDS-K *2 |
| | | | | Neon lamp Color: Orange WL-LES-K *2 |
| Terminal Plate | WL□-N | Change from bipolar to monopolar (contact C). | WL-N TERMINAL PLATE | |
| Side mounting plate | WL□-2N-N | --- | WLN-P001 | |

*1. 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.
 *2. The WL-LD-K, WL-LE-K, WL-LDS-K, and WL-LES-K correspond with each set model WLG□, the design of which was changed in April 2019. Refer to the notes on page 75 for details.

General-purpose Switches

Environment-resistant Switches

Spatter-prevention Switches

Long-life Switches

Accessories

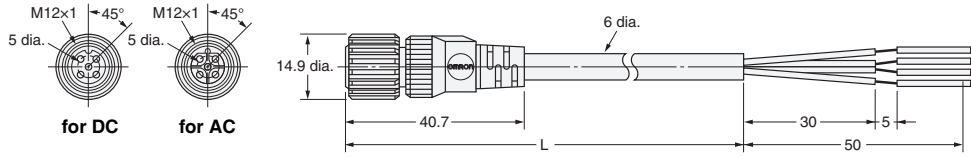
Safety Precautions

Dimensions

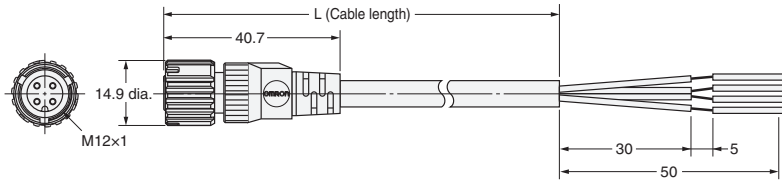
(Unit: mm)

Sensor I/O connectors

- XS2F-A421-□□0-F
- XS2F-D421-□□D0
- XS2F-D421-□□0-F



XS5F-D421-□□80-F



Wiring Diagram

XS2F

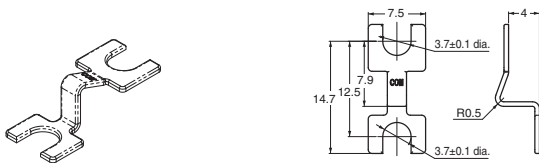
| AC/DC Type | Two-core model | | Four-core model | |
|------------|------------------------------------|------------------------------------|------------------------------------|----------------|
| | Model | Wiring Diagram | Model | Wiring Diagram |
| AC | XS2F-A421-DB0-F XS2F-A421-GB0-F | | XS2F-A421-D90-F XS2F-A421-G90-F | |
| | DC | XS2F-D421-DD0 XS2F-D421-GD0 | | |
| | | XS2F-D421-DA0-F XS2F-D421-GA0-F | | |

XS5F

| AC/DC Type | Model | Wiring Diagram |
|------------|------------------------------------|----------------|
| DC | XS5F-D421-D80-F XS5F-D421-G80-F | |

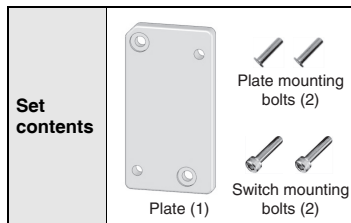
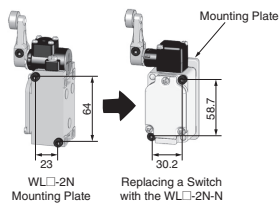
Terminal Plate

WL-N TERMINAL PLATE

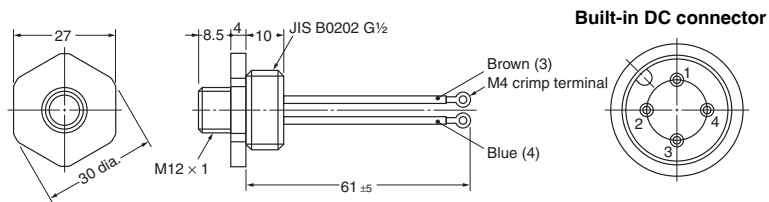


Side mounting plate

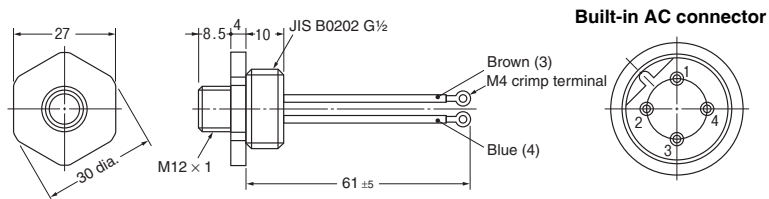
WLN-P001



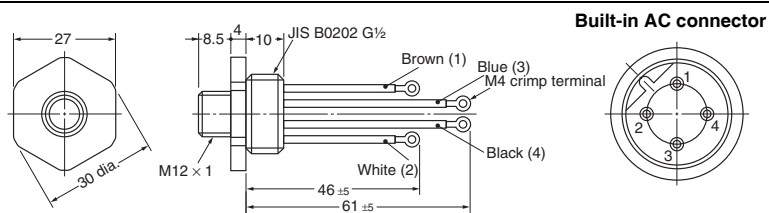
SC-2F



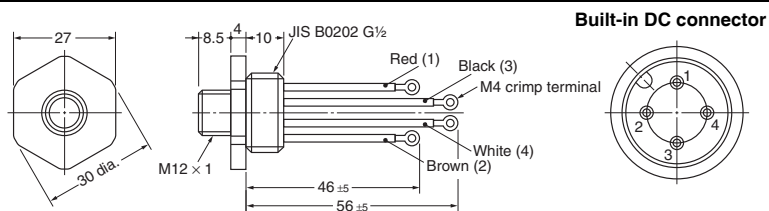
SC-2FAD



SC-4F4D



SC-4F4D



Note: 1. Each dimension has a tolerance of ± 0.4 mm unless otherwise specified.
 2. Figures in parentheses are connector pin numbers.

General-purpose Switches

Environment-resistant Switches

Spatter-prevention Switches

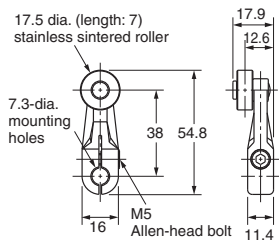
Long-life Switches

Accessories

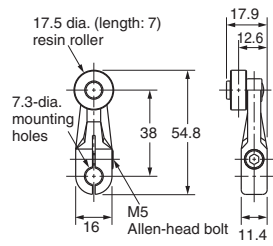
Safety Precautions

Actuators

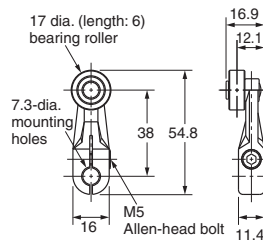
WL-1A100
Standard Lever



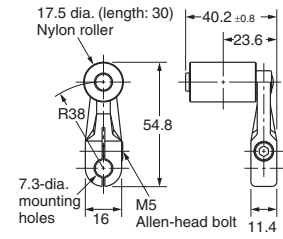
WL-1A115
Resin Roller



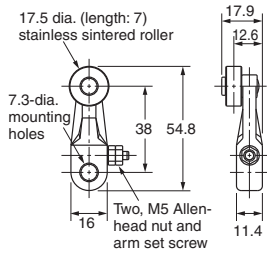
WL-1A400
Bearing Roller



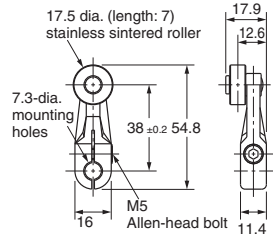
WL-1A118
Nylon Roller:
Roller Width: 30 mm



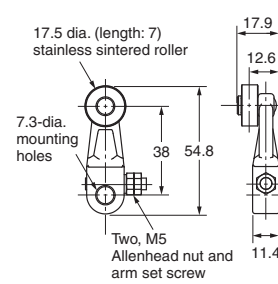
WL-1A105
Double Nuts



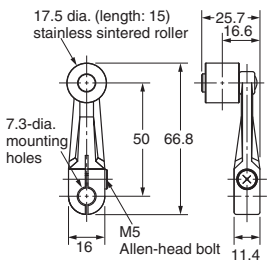
WL-1A103S
Spatter Prevention



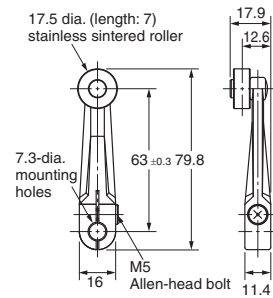
WL-105S
Spatter Prevention



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



WL-1A300
Lever Length: 63



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

| | | | |
|---|---|---|--|
| <p>WL-2A100</p> <p>17.5 dia. (length: 7) stainless sintered roller Adjustable lever: stainless steel Adjustable range: 25 to 89 7.3-dia. mounting holes M5 Allen-head bolt</p> | <p>WL-2A111 Resin Roller</p> <p>17.5 dia. (length: 7) resin roller Adjustable lever: stainless steel Adjustable range: 25 to 89 7.3-dia. mounting holes M5 Allen-head bolt</p> | <p>WL-2A107 Double Nuts</p> <p>17.5 dia. (length: 7) stainless sintered roller Adjustable lever: stainless steel Adjustable range: 25 to 89 7.3-dia. mounting holes Two, M5 Allen-head nut and arm set screw</p> | <p>WL-2A108 Resin Roller</p> <p>17.5 dia. (length: 7) resin roller Adjustable lever: stainless steel Adjustable range: 25 to 140 7.3-dia. mounting holes M5 Allen-head bolt</p> |
| <p>WL-2A122</p> <p>17.5 dia. (length: 7) M5 stainless sintered roller Adjustable lever: stainless steel Adjustable range: 25 to 140 7.3-dia. mounting holes M5 Allen-head bolt</p> | <p>WL-2A106</p> <p>17.5 dia. (length: 7) stainless sintered roller Adjustable lever: stainless steel Adjustable range: 25 to 89 7.3-dia. mounting holes M5 Allen-head bolt</p> <p>* Can be installed on the rear side.</p> | <p>WL-2A130</p> <p>17.5 dia. (length: 7) stainless sintered roller Adjustable lever: stainless steel Adjustable range: 25 to 140 7.3-dia. mounting holes Two, M5 (length: 16) Allen-head bolt</p> | <p>WL-2A104</p> <p>50 dia. (length: 6) Nylon roller Adjustable from 42 to 89 7.3-dia. mounting holes M5 Allen-head bolt</p> |
| <p>WL-2A110</p> <p>50 dia. (length: 15) Nylon roller Adjustable from 41 to 78.5 7.3-dia. mounting holes M5 Allen-head bolt</p> | <p>WL-2A105</p> <p>49 dia. rubber roller Material: NBR Adjustable from 41 to 89 7.3-dia. mounting holes M5 Allen-head bolt</p> | <p>WL-1A106</p> <p>50 dia. (length: 6) Nylon roller Adjustable from 41 to 78.5 7.3-dia. mounting holes M5 Allen-head bolt</p> | <p>WL-1A110</p> <p>35 dia. (length: 6) Nylon roller Adjustable from 41 to 78.5 7.3-dia. mounting holes M5 Allen-head bolt</p> |

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

General-purpose Switches

Environment-resistant Switches

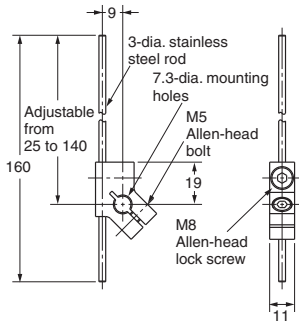
Spatter-prevention Switches

Long-life Switches

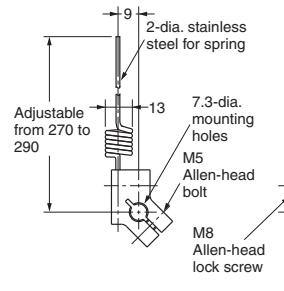
Accessories

Safety Precautions

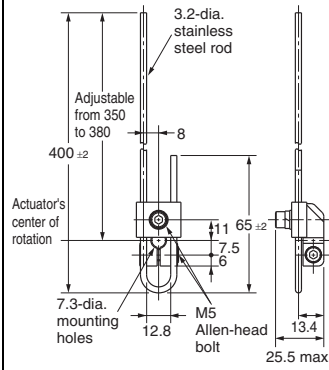
WL-4A100



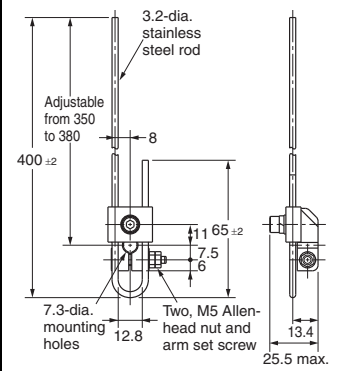
WL-4A201



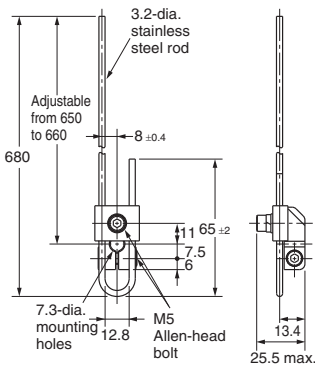
WL-3A100



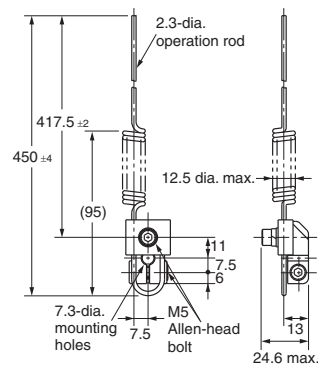
WL-3A106 Double Nut



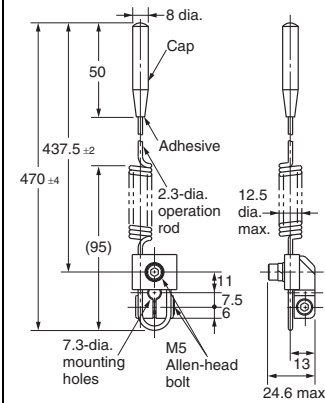
WL-3A108



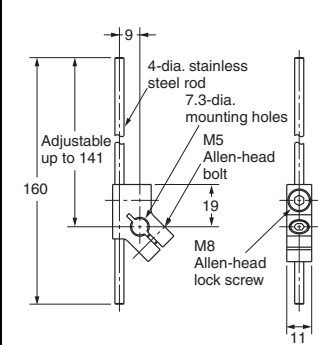
WL-3A200



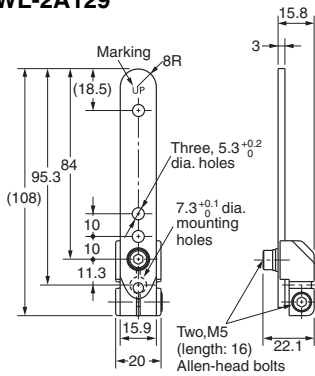
WL-3A203



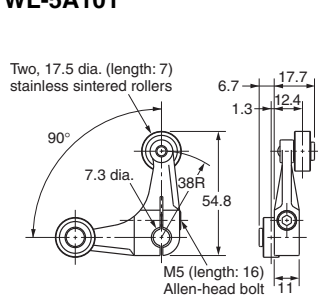
WL-4A112



WL-2A129

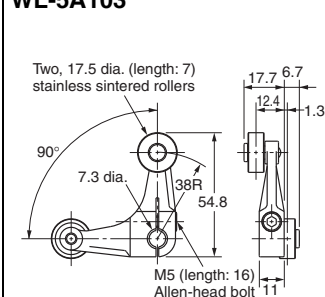


WL-5A101



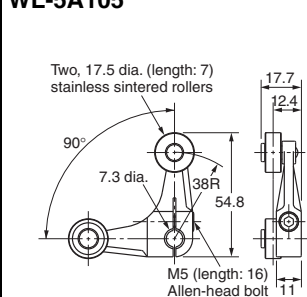
WL-5A100 has a plastic roller

WL-5A103



WL-5A102 has a plastic roller

WL-5A105



WL-5A104 has a plastic roller

Note: 1. Unless otherwise indicated, a tolerance of ± 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.

Safety Precautions

For the Safety Precautions for All Limit Switches, refer to the OMRON website.

Meanings of Warning Signal Text

| | |
|------------------------------------|---|
| Precautions for Safe Use | Indicates an action that must be performed or avoided for safe use of this product. |
| Precautions for Correct Use | Indicates an action that must be performed or avoided for preventing operation failure or malfunction of the product or adverse impact on performance or functionality. |

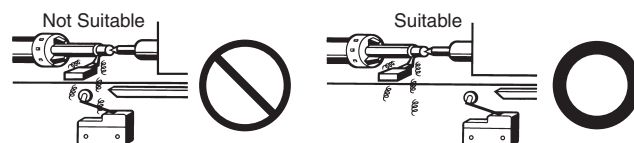
Precautions for Safe Use

- Be sure to ground. Otherwise electric shock may result.
- Do not touch charged switch terminals while the switch has carry current, Otherwise electric shock may result.
- Do not disassemble the limit switch or touch inside of it under supplying power, Otherwise electric shock may result.
- Do not disassemble or touch the inside while the power is turned on. Otherwise electric shock may result.
- Do not touch the wire or rod type actuator in order to prevent injury. Doing so may result in injury.
- Connect a fuse which has 1.5 to 2 times higher breaking current than the switch rated current to the switch in series in order to prevent the switch from short-circuit damage.
- On the occasion when using the switch with EN/IEC/GB ratings, use a 10 A fuse that complies IEC60269, either type gG.
- The durability of switch is depends on the operating condition Be sure to check the condition with actual using condition before using, and use with the number of times of operating without a performance problem.
- Otherwise, there is the possibility of spoiling the normal operation. Do not drop the switch.
- Do not connect a Single Limit Switch to two power supplies that are different in polarity or type. Risk of interference.
- Be sure to keep the load current less than the rated value. Otherwise, there is the possibility that the switch may be damage and/or burnout.
- Do not use the Switch by itself in atmospheres containing flammable or explosive gases. Arcs and heating resulting from switching may cause fire or explosion.
- Be sure to prevent the foreign materials such like a scrapped cable intrusion in to the switch when wiring. Otherwise, there is the possibility of spoiling the normal operation.
- Never wire to the wrong terminals.
- Using the Switch in a pressed-in state for an extended period of time can accelerate part deterioration and also lead to failure to return to the original position. Check the Switch beforehand, and perform periodic inspection and replacement.
- Do not store or use the switch with following place.
 - Where the temperature fluctuates greatly.
 - Where the humidity is very high and condensation may occur.
 - Where the vibration is too much.
 - Where receiving direct sunshine.
 - Where receiving salty wind.
 - Where exposed to cutting powder, machining chips, oil, and chemicals inside the protective doors.
 - Where exposed to cleansers, thinners, and other solvents
- Do not use or store the Switch in locations with corrosive gas, such as sulfuric gas (H₂S or SO₂), ammonium gas (NH₃), nitric gas (HNO₃), or chlorine gas (Cl₂), or high temperature and humidity. Otherwise, contact failure or corrosion damage may result.
- Do not disassemble and/or modify the switch at anytime.
- Otherwise, there is the possibility of spoiling the normal operation. Do not apply the force such like deformation and/or degeneration to the switch.
- If the Switch will not be switched ON or OFF for an extended period of time, contact reliability may degrade due to oxidation of the contact points, resulting in inadequate conductivity, which could lead to an accident.

Precautions for Correct Use

Operating Environment

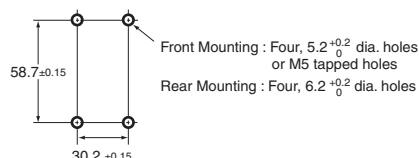
- This switch is only for indoor use. If it is used in outdoor, it may be cause of switch failure.
- Take special care to use where there is fine powder, mud and/or foreign materials stacking. And check the condition with actual using condition before using. Then use without a performance problem.
- Seal material may deteriorate if a Switch is used outdoor or where subject to special cutting oils, solvents, or chemicals. Always appraise performance under actual application conditions and set suitable maintenance and replacement periods.
- Install Switches where they will not be directly subject to cutting chips, dust, or dirt. The Actuator and Switch must also be protected from the accumulation of cutting chips or sludge.



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

Installing the Switch

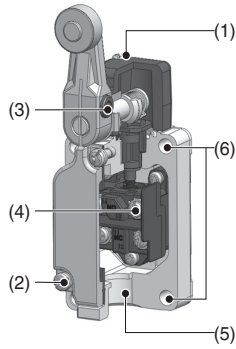
- To install the Switch, make a mounting panel, as shown in the following diagram, and tighten screws using the appropriate tightening torque.



* If the conduit size and ground terminal specifications are "with TS 1/2-14NPT ground terminal", the back mounting hole is 4-6.2 dia. ^{+0.2}/₀.

Appropriate Tightening Torque

- If screws are too loose they can lead to an early malfunction of the Switch, so ensure that all screws are tightened using the appropriate tightening torque.
- In particular, when changing the direction of the Head, make sure that all screws are tightened again to the appropriate tightening torque. Do not allow foreign objects to fall into the Switch.



| No. | Item | Torque | Screw type |
|-----|---|------------------|------------------------------------|
| (1) | Head mounting screw | 0.78 to 0.88 N·m | M3.5 screw |
| (2) | Cover mounting screw | 1.18 to 1.37 N·m | M4 screw |
| (3) | Allen-head bolt (for securing the roller lever) | 4.90 to 5.88 N·m | M5 Allen-head bolt |
| (3) | Allen-head bolt (for securing the roller lever) | 0.88 to 1.08 N·m | M8 hexagon socket set screw |
| (4) | Terminal screw | 0.59 to 0.78 N·m | M3.5 screw |
| (5) | Connectors | 1.77 to 2.16 N·m | G1/2 or Pg13.5 or M20 or 1/2-14NPT |
| (6) | Unit mounting screw | 4.90 to 5.88 N·m | M5 screw |
| | Back mounting screws | 4.90 to 5.88 N·m | M6 screw |

Using Switches for Micro Loads

- The switch contacts can be used both for standard loads and microloads, but once a contact has been used to open and close a load it can no longer be used for lower loads. Doing so will damage the contact surface and reduce contact reliability.
- If an inrush current or other sudden load occurs during a switch operation, the switch will begin to degrade severely which can result in reduced durability. Use a contact protection circuit if required.

For the WL-N, the P level is at the min. operating load of 5 VDC and 1 mA resistive load.

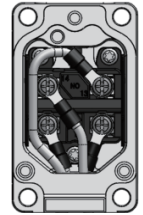
Note: The P level indicates the standard malfunction level at a reliability level of 60% (λ_{60}). (JISC5003) $\lambda_{60} = 0.1 \times 10^{-6}/$ operations indicates that the estimated malfunction rate is less than 1/10,000,000 operations with a reliability level of 60%.

Wiring

In the case of mounting screw

Basic models

- Use M3.5-nylon insulation covered crimp terminals (round type) for wiring. Ex.) N1.25-M3.5 (RAP1.25-3.5) (J.S.T. Mfg. Co.,Ltd.)
- Appropriate wire size is AWG16 (1.25 mm²).
- Do not supply electric power when wiring. Otherwise electric shock may result.
- Do not pull out the wires with excessive force. It may cause of coming off the wire.
- Avoid connecting the wires directly to the terminal. Instead, attach using a crimp terminal.
- In the case of indicator unit, to avoid interference between lump unit and crimp terminals, wire according to right wiring figure.
- Attach the indicator unit spring to terminal screw certainly, otherwise it's possible to be destroyed or shorted.
- The ground terminal is only installed on models with ground terminals.



In the case of prewired connector and direct connector

- Holding the connector certainly when pulling connector.
- Don't pull the cable holding it.

How to handle

Changing direction of the head

- By removing two head screws or four head screws, mounting in any of four orientations is possible. Be sure to change the plunger for internal operations at the same time.

Built-in Switch

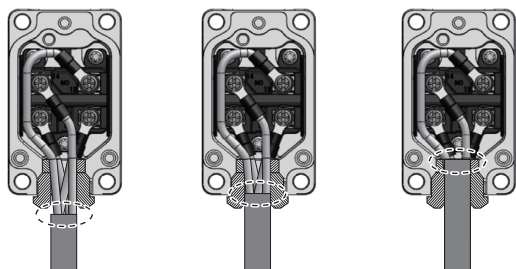
- Do not remove or replace the built-in switch. Risk of malfunctioning.

Overtravel Markers

- All Switches with Roller Lever Actuators except for Switches with Fork Lock Levers and Low-temperature Switches have a set position marker plate.
- To allow the roller lever type actuator to travel properly, set the roller lever according to the dog or cam stroke so that the arrowhead of the lever is positioned within the overtravel markers (pages 15, 16). This enables usage in the optimum state.

Conduit opening preparation

- The connector must be tightened at a suitable tightening torque (1.77 to 2.16 N). Tightening with excessive torque could damage the case.
- Select the connector based on the sealed rubber inner diameter for matching the cable outer diameter. For details, refer to Accessories (Sold Separately) - Connector (Conduit size: JIS B0202G1/2) on page 76.
- When mounting the connector, use seal tape (not needed if the connector includes an O-ring) on the threaded section of the connector to ensure sealing performance.
- To ensure compliance of this Switch with the CSA standards, use of a waterproof connector compliant with the CSA is recommended.
- Using an inappropriate connector or assembling Switches incorrectly (assembly, tightening torque) can result in malfunction, leakage current, or fire, so be sure to read the connector instruction manual thoroughly beforehand.
- Even when the connector is assembled and set correctly, the end of the cable and the inside of the Switch may come in contact. This can lead to malfunction, leakage current, or fire, so be sure to protect the end of the cable from splashes of oil or water and corrosive gases.
- The following wiring is recommended for preventing the entry of fluids from the conduit opening.



(1) Connector tube contains internal stranded wire
 (2) Connector tube contains internal stranded wire and external jacket
 (3) Connector tube contains external jacket



Microload Applications

- The WL-N basic model, WLG high-sensitivity model, and high-precision model contacts can be used both for standard loads and microloads, but once a contact has been used to open and close a load, it can no longer be used for lower loads. Doing so will damage the contact surface and reduce contact reliability.
- If an inrush current or other sudden load occurs during a switch operation, the switch will begin to degrade severely which can result in reduced durability. Use a contact protection circuit if required.

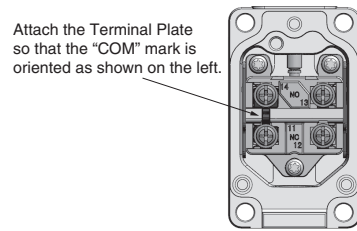
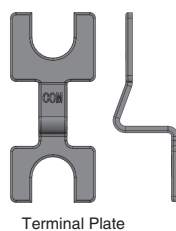
Operation indicator

Indicator-equipped switch has contacts and indicator in parallel. When contacts are open, leakage current flows through the indicator circuit and may cause load's malfunction. Leakage current 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.

Terminal Plate

By using the Terminal Plate (sold separately), as shown in the following diagram, the Switch can be used as a single-polarity double-break switch.

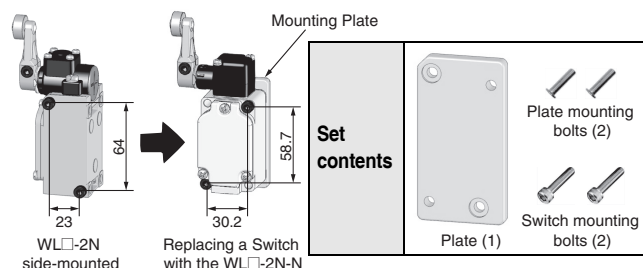
WL-N TERMINAL PLATE



Terminal Plate Mounting Diagram

To customers using the WL□-2N series model in a side-mounted configuration

We provide a special mounting plate (sold separately) that features mounting compatibility when replacing with the WL□-2N-N series. If you use the Mounting Plate, the Switch mounting holes and actuator position will be compatible. Note: The position of the dog remains unchanged.



General-purpose Switches

Environment-resistant Switches

Spatter-prevention Switches

Long-life Switches

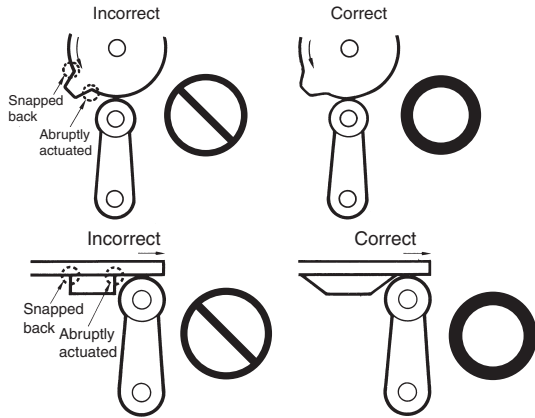
Accessories

Safety Precautions

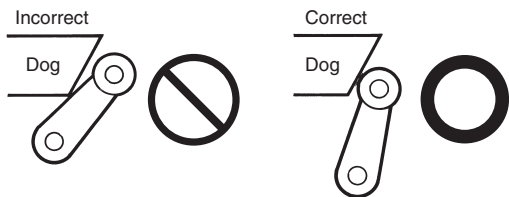
Operation Procedures

Operation

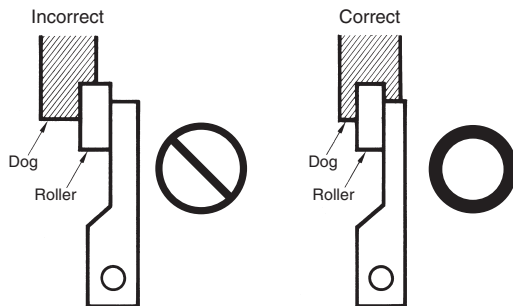
- Carefully determine the position and shape of the dog or cam so that the actuator will not abruptly snap back, thus causing shock. In order to operate the Limit Switch at a comparatively high speed, use a dog or cam that keeps the Limit Switch turned ON for a sufficient time so that the relay or valve will be sufficiently energized.
- The method of operation, the shape of the cam or dog, the operating frequency, and the travel after operation have a large influence on the durability and operating accuracy of the Limit Switch. The cam or dog must be smooth in shape.



- Appropriate force must be imposed on the actuator by the cam or dog in both rotary operation and linear operation. If the dog touches the lever as shown below, the operating position will not be stable.



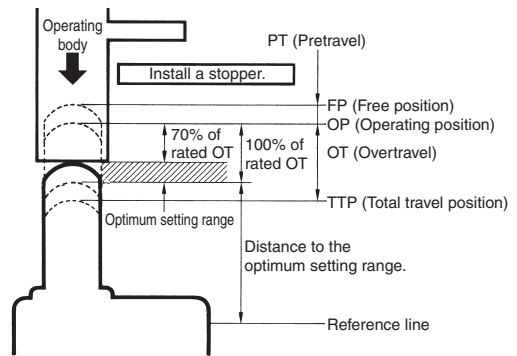
- Unbalanced force must not be imposed on the actuator. Otherwise, wear and tear on the actuator may result.



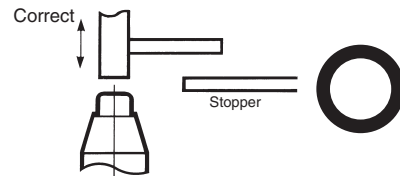
- With a roller actuator, the dog must touch the actuator at a right angle. The actuator or shaft may deform or break if the dog touches the actuator (roller) at an oblique angle.



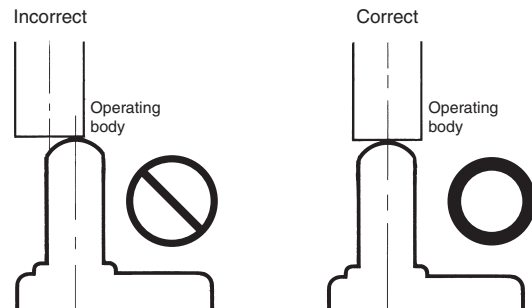
- Mount so that the actuator travel after operation (OT) is not exceeded. If the travel after operation (OT) exceeds the limit, switch failure could result. When mounting the Limit Switch carefully while considering the whole movement of the actuator.



- The Limit Switch may soon malfunction if the OT is excessive. Therefore, adjustments and careful consideration of the position of the Limit Switch and the expected OT of the operating body are necessary when mounting the Limit Switch.



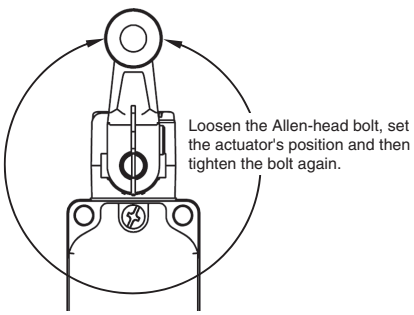
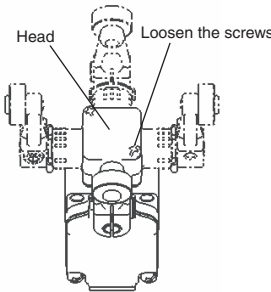
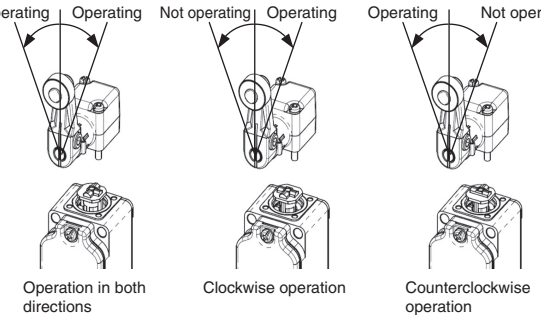
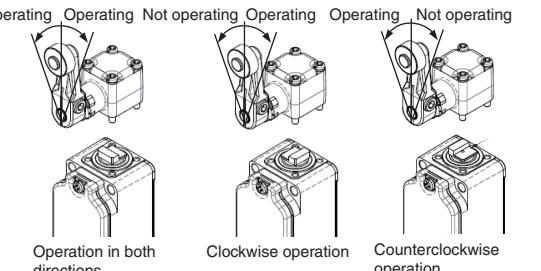
- When using a pin-plunger actuator, make sure that the stroke of the actuator and the movement of the dog are located along a single straight line.



Others

- If the Switch will be left in a location outside the storage environment conditions, if condensation has formed, or after long-term storage exceeding one year, at the minimum, check the operating characteristics, contact resistance, insulation resistance, and dielectric strength, and conduct a check under the operating conditions.
- If using normal open (NO), be sure to fully press in the actuator. The proper press-in depth is 70 to 100% of rated OT.
- Conduct periodic inspection on a regular schedule.

Using the Switches

| Item | Applicable models and Actuators | Details |
|--|--|---|
| <p>Changing the Installation Position of the Actuator By loosening the Allen-head bolt on the actuator lever, the position of the actuator can be set anywhere within the 360°. With Operation Indicator-equipped Switches, the actuator lever comes in contact with the top of the indicator cover, so use caution when rotating and setting the lever. When the lever only moves forwards and backwards, it will not contact the lamp cover. (This does not apply to Long-life Models.)</p> | <p>Roller lever: (WLCA2-N, WLCA2-2-N, WLCA2-2N-N, WLG2, WLCA2-7-N, WLCA2-8-N, WLGCA2, WLMCA2-N, WLMG2, WLMGCA2) Adjustable roller lever (WLCA12-N, WLCA12-2-N, WLCA12-2N-N, WLG12) Adjustable rod lever (WLCL-N, WLCL-2-N, WLCL-2N-N, WLGL, WLCAL4-N, WLCAL5-N)</p> |  |
| <p>Changing the Orientation of the Head By removing the head screws (two or four screws), mounting in any of four orientations is possible. Be sure to change the plunger for internal operations at the same time. The roller plunger can be set in either of two positions at 90°.</p> | <p>Roller lever: (WLCA2-N, WLCA2-2-N, WLCA2-2N-N, WLG2, WLCA2-7-N, WLCA2-8-N, WLGCA2, WLMCA2-N, WLMG2, WLMGCA2) Adjustable roller lever (WLCA12-N, WLCA12-2-N, WLCA12-2N-N, WLG12) Adjustable rod lever (WLCL-N, WLCL-2-N, WLCL-2N-N, WLGL, WLCAL4-N, WLCAL5-N) Horizontal plunger (WLS□-N) Top-roller plunger (WLD2-N) Sealed top-roller plunger (WLD28-N) Fork lock lever (WLCA32-4□-N) Note: Does not include -RP60 Series or -141 Series</p> |  |
| <p>Changing the Operating Direction By removing the Head on models which can operate on one-side only, and then changing the direction of the operational plunger, one of three operating directions can be selected. The tightening torque for the screws on the Head is 0.78 to 0.88 N·m.</p> | <p>Roller lever: (WLCA2-N, WLCA2-2-N, WLCA2-2N-N, WLCA2-7-N, WLCA2-8-N, WLMCA2-N) Adjustable roller lever (WLCA12-N, WLCA12-2-N, WLCA12-2N-N) Adjustable rod lever (WLCL-N, WLCL-2-N, WLCL-2N-N, WLCAL4-N, WLCAL5-N)</p> | <p>One-side Operation for General Models The output of the Switch will be changed, regardless of which direction the lever is pushed. The output of the Switch will only be changed when the lever is pushed in one direction.</p>  |
| <p>Roller lever: (WLGCA2, WLMGCA2)</p> | <p>Roller lever: (WLGCA2, WLMGCA2)</p> | <p>One-side Operation for High-precision Switches The output of the Switch will be changed, regardless of which direction the lever is pushed. The output of the Switch will only be changed when the lever is pushed in one direction.</p>  |

General-purpose Switches

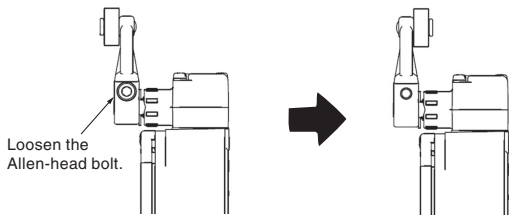
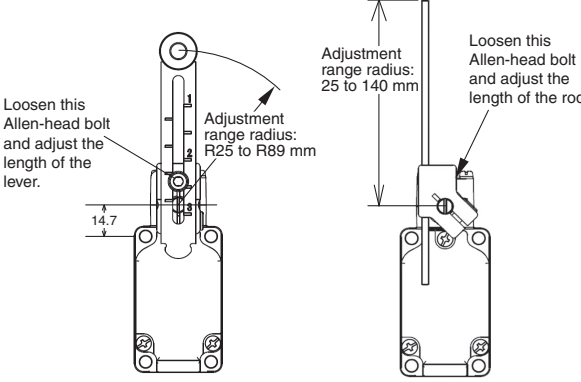
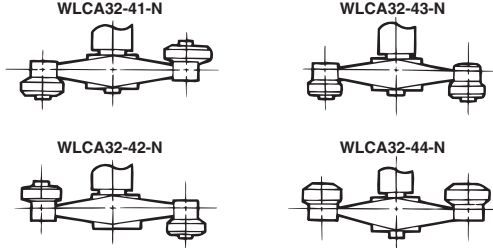
Environment-resistant Switches

Spatter-prevention Switches

Long-life Switches

Accessories

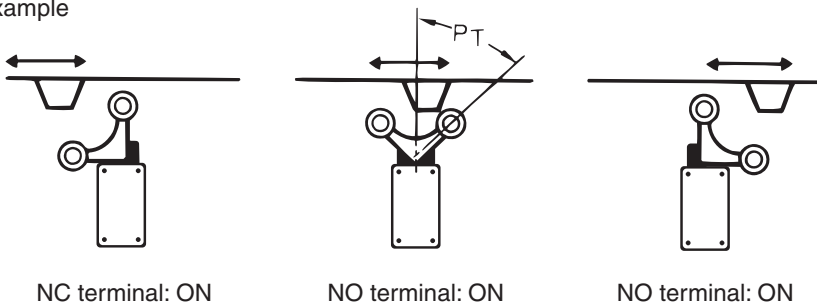
Safety Precautions

| Item | Applicable models and Actuators | Details |
|--|--|--|
| <p>Installing the Roller on the Inside By installing the roller lever in the opposite direction, the roller can be installed on the inside. (Set so that operation can be completed within a 180° level range.)</p> | <p>Roller lever: (WLCA2-N, WLCA2-2-N, WLCA2-2N-N, WLG2, WLCA2-7-N, WLCA2-8-N, WLCA2-8-N, WLMGCA2, WLMGCA2) Fork lock lever (WLCA32-4□-N)</p> |  |
| <p>Adjusting the Length of the Rod or Lever The length of the rod or lever can be adjusted by loosening the Allen-head bolt.</p> | <p>Adjustable roller lever (WLCA12-N, WLCA12-2-N, WLCA12-2N-N, WLG12) Adjustable rod lever (WLCL-N, WLCL-2-N, WLCL-2N-N, WLGL, WLCAL4-N)</p> |  <p>Adjustable Roller Levers: Adjustable Rod Levers:</p> |
| <p>Selecting the Roller Position There are four types of Switches with Fork Lock Levers for use depending on the roller position.</p> | <p>Fork lock lever: (WLCA32-4□-N)</p> |  <p>An explanation of the operation of fork lock levers is provided after this table.</p> |

Operation of Fork Lock Levers

A Switch with a Fork Lock Lever is constructed so that the dog pushes the lever to invert the output and this inverted state is maintained even after the dog moves on. If the dog then pushes the lever from the opposite direction, the lever will return to its original position.

Example



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OMRON Corporation Industrial Automation Company
Kyoto, JAPAN

Contact: www.ia.omron.com

Regional Headquarters

OMRON EUROPE B.V.

Wegalaan 67-69, 2132 JD Hoofddorp
The Netherlands

Tel: (31)2356-81-300/Fax: (31)2356-81-388

OMRON ELECTRONICS LLC

2895 Greenspoint Parkway, Suite 200
Hoffman Estates, IL 60169 U.S.A.

Tel: (1) 847-843-7900/Fax: (1) 847-843-7787

OMRON ASIA PACIFIC PTE. LTD.

No. 438A Alexandra Road # 05-05/08 (Lobby 2),
Alexandra Technopark,
Singapore 119967

Tel: (65) 6835-3011/Fax: (65) 6835-2711

OMRON (CHINA) CO., LTD.

Room 2211, Bank of China Tower,
200 Yin Cheng Zhong Road,
PuDong New Area, Shanghai, 200120, China

Tel: (86) 21-5037-2222/Fax: (86) 21-5037-2200

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