

Product Category
Switches
Limit Switches
General-purpose Vertical
<b>WL-N / WLM-N</b>
D4C
D4CC
WL, WLM
HL-5000
D4A-□N

Product Category
Cautions
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Correction Notice

Two-circuit Limit Switch / Long-life Two-circuit Limit Switch

## WL-N / WLM-N

Select the Best Two-circuit Switch for the Operating Environment and Application from a Wide Range of Models



[Item list of WL-N / WLM-N](#)

about this Product Family

[Inquiry of this Product](#)

Related Contents

Common (4)

Limit Switches (2)

Features | Lineup | Specifications | **Dimensions** | Catalog

last update: October 07, 2015

Caution: All units are in millimeters unless otherwise indicated.

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

### General-purpose Switches

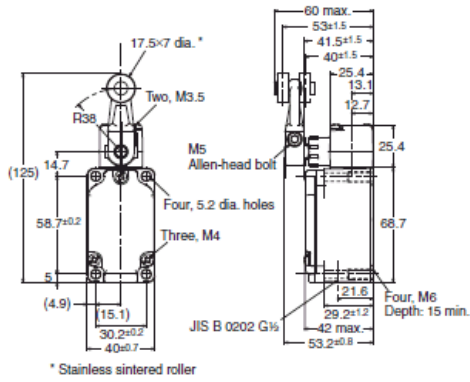
#### Standard Switches

#### Switches with Roller Lever Actuators

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

##### Roller lever R38

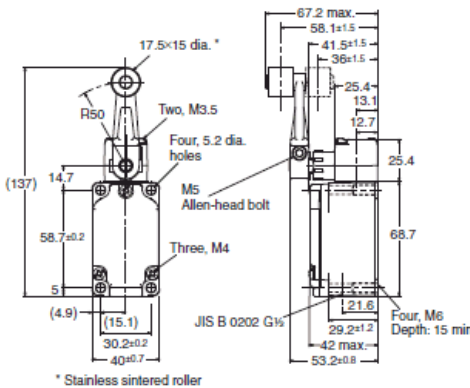
- Basic  
WLCA2-N  
WLCA2-2-N  
WLCA2-2N-N
- High-sensitivity  
WLG2-N
- High-precision  
WLGCA2-N



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

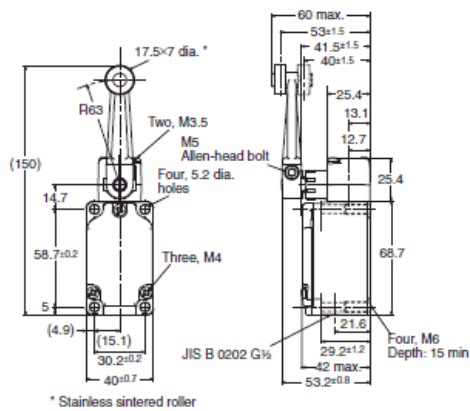
##### Roller lever R50

- Basic  
WLCA2-7-N



##### Roller lever R63

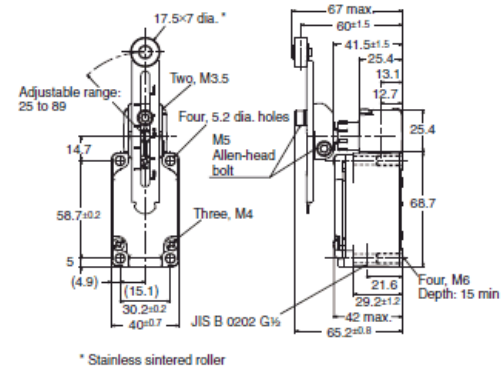
- Basic  
WLCA2-8-N



#### Adjustable roller lever

- Basic  
WLCA12-N

WLCA12-2-N  
 WLCA12-2N-N  
 High-sensitivity  
 WLG12-N



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

Operating characteristics	Model	WLCA12-N	WLCA12-2-N	WLCA12-2N-N	WLG12-N	WLCA12-N	WLCA12-2-N	WLCA12-2N-N	WLG12-N
Operating force	CF max.	13.24 N	13.24 N	13.24 N	13.24 N	13.24 N	13.24 N	13.24 N	13.24 N
Release force	RF max.	1.18 N	1.18 N	1.18 N	1.18 N	0.9 N	0.71 N	1.18 N	1.18 N
Preload	PF	15.07	20.07	20.07	19.7	16.07	16.07	16.07	16.07
Overload	OF max.	70	80	70	80	70	70	70	80
Movement Differential	MD max.	12	12	12	12	12	12	12	12

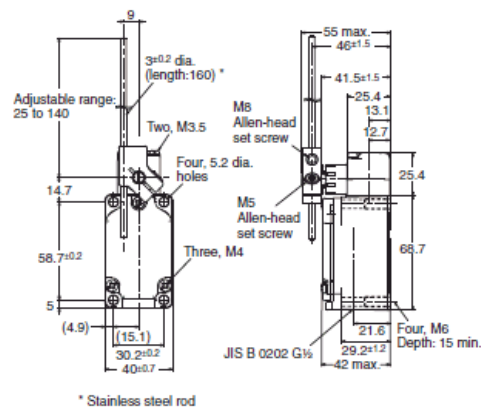
Operating characteristics	Model	WLCA12-N <sup>*)</sup>	WLCA12-2-N <sup>*)</sup>	WLCA12-2N-N <sup>*)</sup>	WLG12-N <sup>*)</sup>
Operating force	CF max.	13.24 N	13.24 N	13.24 N	13.24 N
Release force	RF max.	1.18 N	1.18 N	1.18 N	1.18 N
Preload	PF	15.07	20.07	20.07	19.7
Overload	OF max.	70	80	70	80
Movement Differential	MD max.	12	12	12	12

▶ Please click image to enlarge (open in a new window).

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

Adjustable rod lever 25 to 140 mm

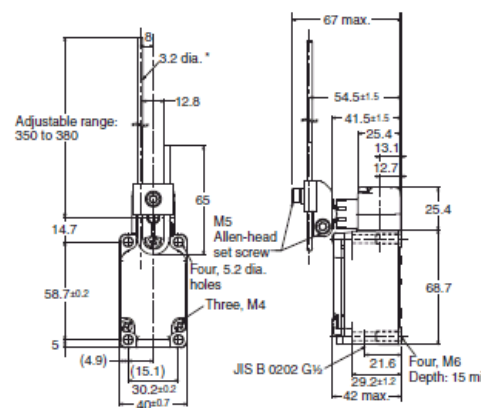
Basic  
 WLCL-N  
 WLCL-2-N  
 WLCL-2N-N  
 High-sensitivity  
 WLG1-N



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

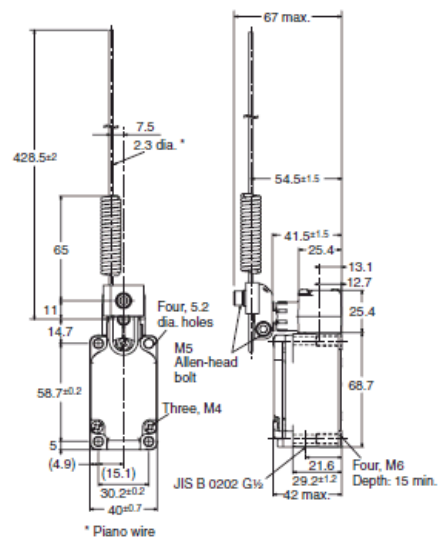
Adjustable rod lever

Basic  
 WLCAL4-N



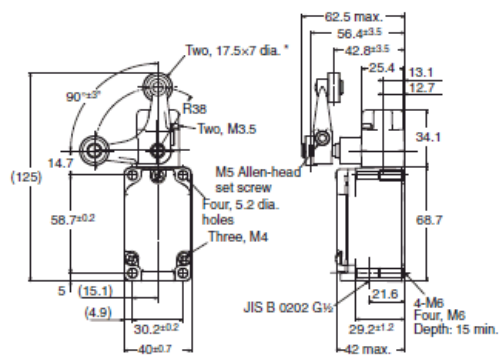
Rod spring lever

Basic  
 WLCAL5-N



Fork lever lock

Protective Switches  
 WLCA32-41-N  
 WLCA32-42-N  
 WLCA32-43-N  
 WLCA32-44-N



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

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

Operating characteristics	Model	WLCL-N*1	WLCL-2-N*1	WLCL-2N-N*1	WLGL-N*1	WLCALN*2	WLCLN-N
Operating force	OF max.	1.39 N	1.39 N	1.39 N	2.84 N	0.98 N	0.9 N
Release force	RF min.	0.27 N	0.27 N	0.27 N	0.25 N	0.13 N	0.08 N
Pretravel	PT	15±0°	25±0°	20° max.	10°±0°	15±0°	10±0°
Overtravel	OT	12°	19°	19°	10°	12°	12°
Movement Differential	MD max.	12°	19°	19°	10°	12°	12°

▶ Please click image to enlarge (open in a new window).

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

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

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

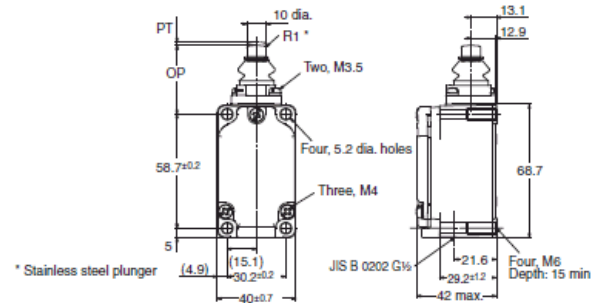
Operating characteristics	Model	WLCA32-41 to 44-N
Force necessary to reverse the direction of the lever	max.	11.77 N
Movement until the lever reverses		50±5°
Movement until switch operation	max.	55°
Movement after switch operation	min.	35°

### Switches with Plunger Actuators

#### Switches with Plunger Actuators

##### Sealed Top Plunger

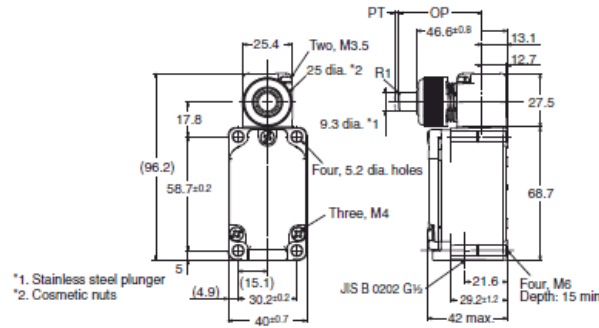
###### WLD18-N



\* Stainless steel plunger

##### Horizontal Plunger

###### WLS2-N

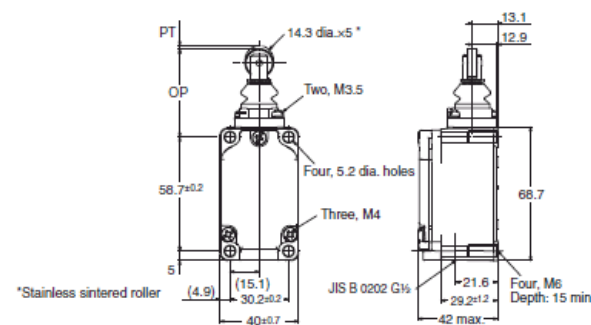


\*1. Stainless steel plunger

\*2. Cosmetic nuts

##### Sealed Top-roller Plunger

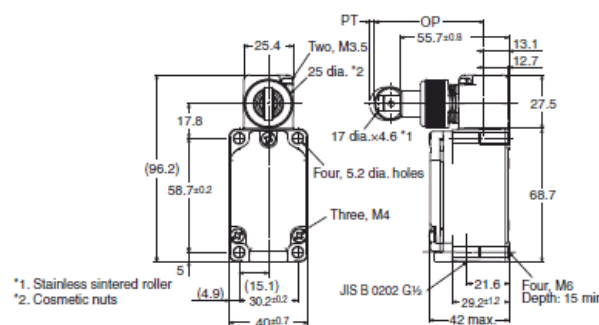
###### WLD28-N



\*Stainless sintered roller

##### Horizontal-roller Plunger

###### WLS2-N

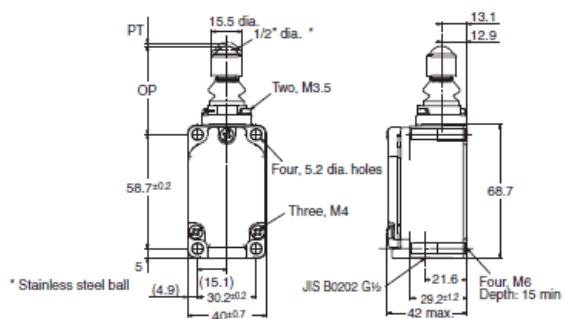


\*1. Stainless sintered roller

\*2. Cosmetic nuts

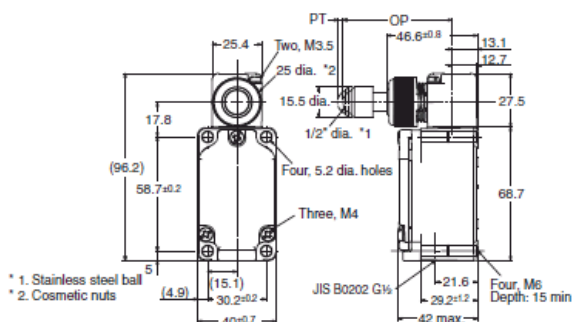
##### Sealed Top-ball Plunger

###### WLD38-N



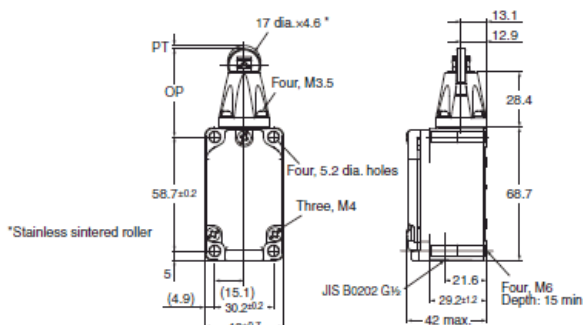
Horizontal-ball Plunger

WLS03-N



Top-roller Plunger

WLD2-N



Operating Characteristics	Model	WLD04N	WLD04N	WLD04N	WLD04N	WLD04N	WLD04N
Operating force	GF	26.67 N	18.87 N	18.87 N	26.67 N	40.00 N	40.00 N
Release force	RF	8.92 N	4.41 N	4.41 N	8.92 N	8.89 N	8.89 N
Preload	PT	1.7 mm	1.7 mm	1.7 mm	1.7 mm	2.8 mm	2.8 mm
Overtravel	OT	6.4 mm	6.4 mm	6.4 mm	6.4 mm	6.4 mm	4 mm
Movement Differential	MD	1 mm	1 mm	1 mm	1 mm	1 mm	1 mm
Operating position	OP	34±0.8 mm	44±0.8 mm	44±0.8 mm	44±0.8 mm	54±0.8 mm	54±0.8 mm
Stroke travel position	TP	25 mm	35 mm	35 mm	35 mm	45 mm	45 mm

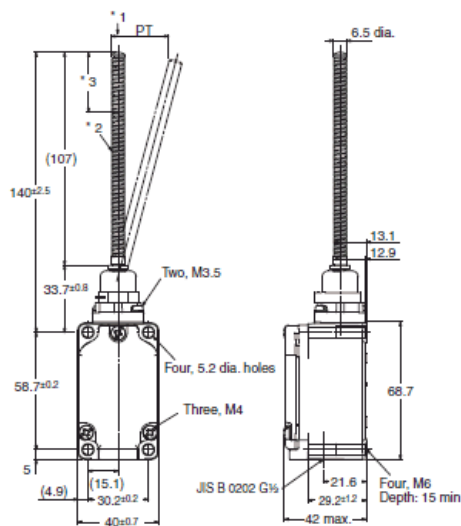
▶ Please click image to enlarge (open in a new window).

Switches with Flexible Rod Actuators

Basic Switches

Coil Spring

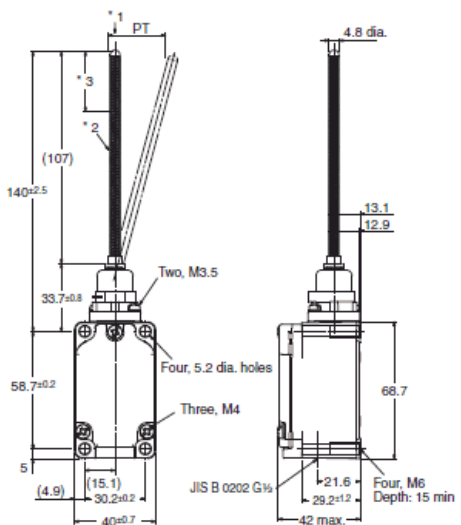
WLNJ-N



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

Coil Spring (Multi-wire)

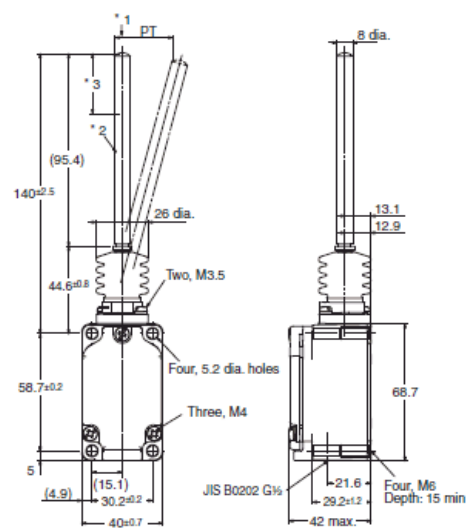
WLNJ-30-N



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

Resin Rod

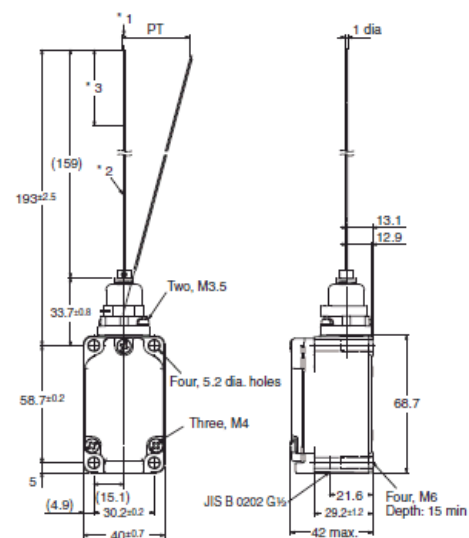
WLNJ-2-N



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

**Steel Wire**

**WLNJ-S2-N**



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

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

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

**Sensor I/O connector Switches**

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

**Switches with Roller Lever Actuators**

**Switches with Direct-wired Connectors**

**Basic Switches**

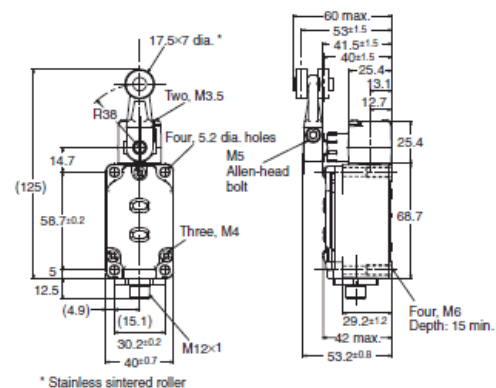
WLCA2-LDK13-N

**High-sensitivity Switches**

WLG2-LDK13-N

**High-precision Switches**

WLGCA2-LDK13-N



\* Stainless sintered roller

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

**Switches with Pre-wired Connectors**

**Basic Switches**

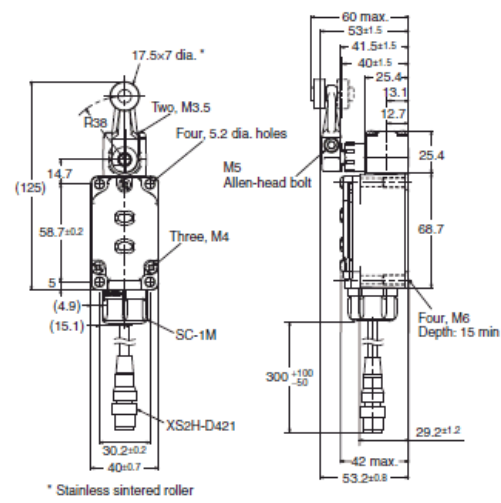
WLCA2-LD-M1J-N

**High-sensitivity Switches**

WLG2-LD-M1J-N

**High-precision Switches**

WLGCA2-LD-M1J-N



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

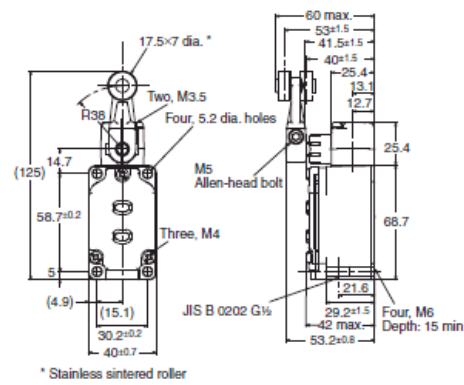
Note: The following diagrams are for a indicator-equipped models.

Operating characteristics		Model	Basic Switches	High-sensitivity Switches	High-precision Switches
Operating force	OF	max.	13.34 N	13.34 N	13.34 N
Release force	RF	min.	1.18 N	1.18 N	1.18 N
Pretravel	PT		15±5°	10°±	5°±
Overtravel	OT	min.	70°	80°	85°
Movement Differential	MD	max.	12°	7°	3°

#### Operation indicator Switches

##### Roller lever

WLCA2-LD-N  
WLCA2-LE-N



Operating characteristics		Model	WLCA2-LD-N WLCA2-LE-N
Operating force	OF	max.	13.34 N
Release force	RF	min.	1.18 N
Pretravel	PT		15±5°
Overtravel	OT	min.	70°
Movement Differential	MD	max.	12°

#### Spatter-prevention Switches

##### Switches with Roller Lever Actuators

##### Switches with Screw Terminals

##### Basic Switches

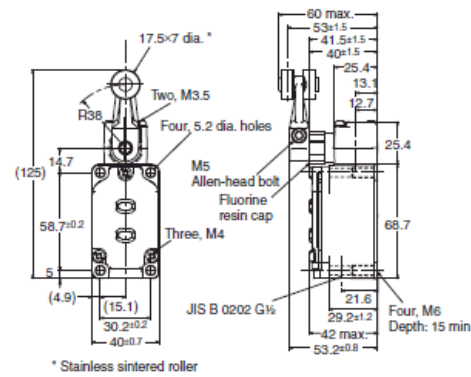
WLCA2-[]S-N

##### High-sensitivity Switches

WLG2-[]S-N

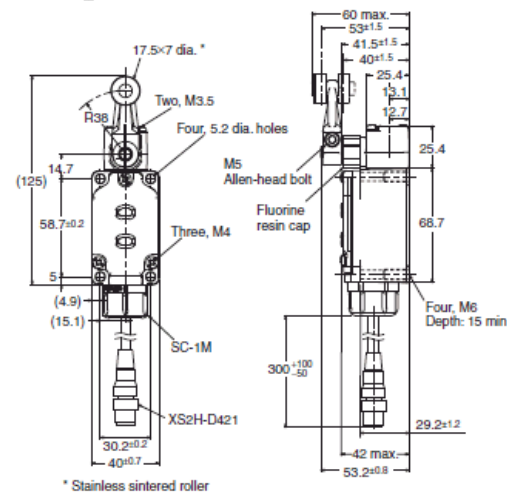
##### High-precision Switches

WLGCA2-[]S-N



##### Switches with Pre-wired Connectors

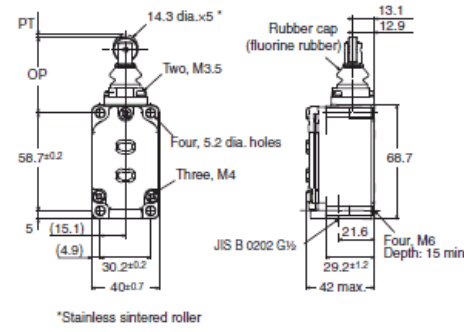
WLCA2-[]S-M1J-1-N



##### Switches with Sealed Top-roller Plungers

##### Switches with Screw Terminals

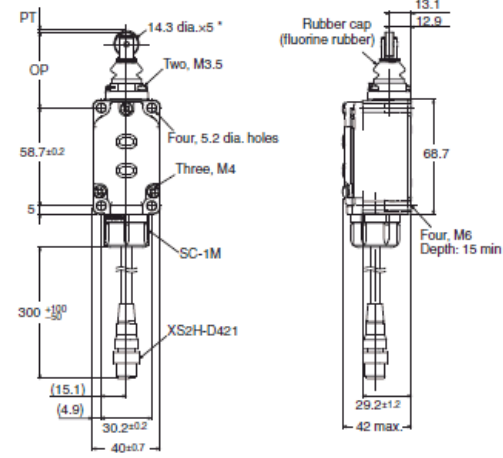
WLD28-[S]-N



\*Stainless sintered roller

Switches with Pre-wired Connectors

WLD28-[S]-M1J-1-N



\*Stainless sintered roller

Note: The above diagrams are for Indicator-equipped Switches.

Operating characteristics	Actuator	Switches with Roller Lever Actuators			
		Basic Switches	High-sensitivity Switches	High-precision Switches	Switches with Sealed Top-roller Plungers
Operating force	GF max	13.34 N	13.34 N	13.34 N	15.67 N
Release force	RF min	1.18 N	1.18 N	1.18 N	4.41 N
Preload	PT	16.0 P	107.5 P	81 P	Max. 1.7 mm
Overtravel	OT min	30°	80°	80°	5.0 mm
Overtravel	OT max	12°	7°	7°	1.0 mm
Operating position	OT	—	—	—	44±0.8 mm
Total travel position	TTP max	—	—	—	38.5 mm

▶ Please click image to enlarge (open in a new window).

Long-life Switches

Switches with Roller Lever Actuators

Switches with Screw Terminals

Basic Switches

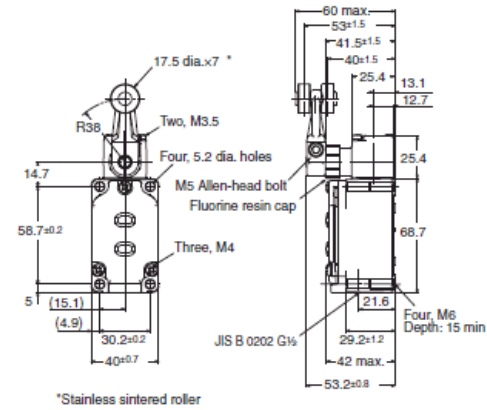
WLMCA2-LD-N

High-sensitivity Switches

WLMG2-LD-N

High-precision Switches

WLMGCA2-LD-N



\*Stainless sintered roller

Switches with Direct-wired Connectors

Basic Switches

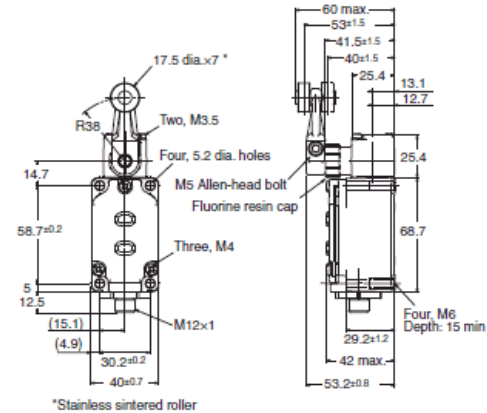
WLMCA2-LDK13-N

High-sensitivity Switches

WLMG2-LDK13-N

High-precision Switches

WLMGCA2-LDK13-N



\*Stainless sintered roller

Switches with Pre-wired Connectors

Basic Switches

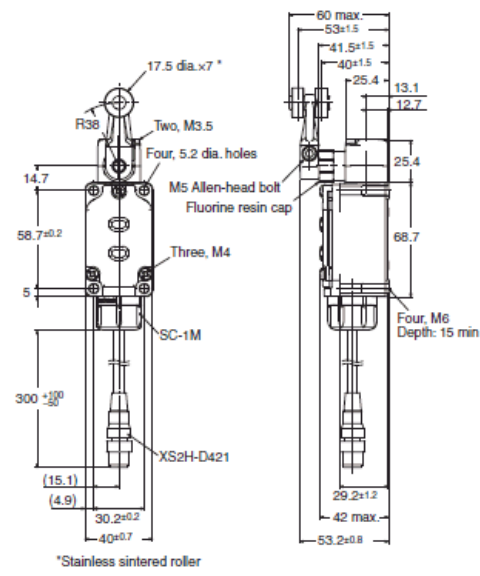
WLMCA2-LD-M1J-N

High-sensitivity Switches

WLMG2-LD-M1J-N

High-precision Switches

WLMGCA2-LD-M1J-N



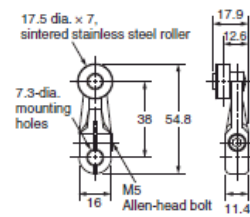
Note: 1. Unless otherwise indicated, a tolerance of  $\pm 0.4$  mm applies to all dimensions.  
 2. The above diagrams are for Indicator-equipped Switches.

Actuator		Switches with Roller Lever Actuators		
		Basic Switches	High-sensitivity Switches	High-precision Switches
Operating force	OF max.	13.34 N	13.34 N	13.34 N
Release force	RF min.	1.18 N	1.18 N	1.18 N
Pretravel	PT	$15 \pm 5^\circ$	$10^\circ$	$5^\circ$
Overtravel	OT min.	$70^\circ$	$80^\circ$	$85^\circ$
Movement Differential	MD max.	$12^\circ$	$7^\circ$	$3^\circ$

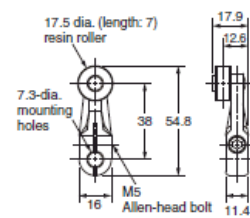
#### Actuators (Levers Only)

Lever: Only rotating lever models are illustrated.

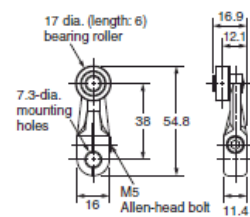
#### WL-1A100 Standard Lever



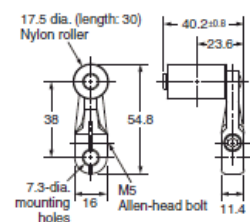
#### WL-1A115 Resin Roller



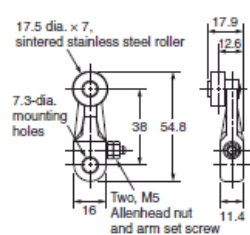
#### WL-1A400 Bearing Roller



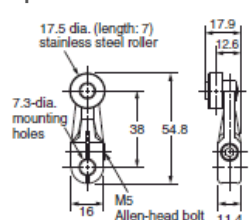
#### WL-1A118 Nylon Roller: Roller Width: 30 mm



#### WL-1A105 Double Nuts

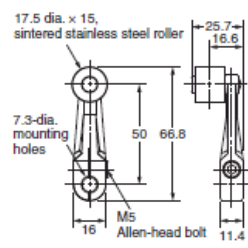


#### WL-1A103S Spatter

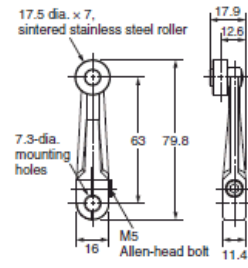


#### WL-1A200 Lever Length: 50 Roller Width: 15

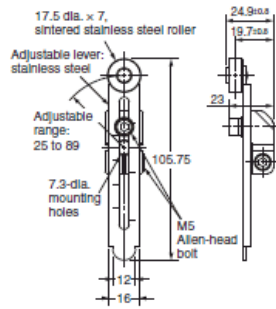




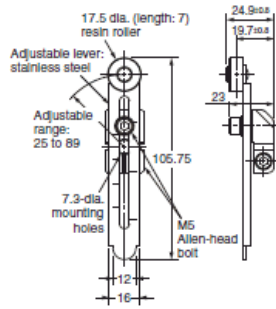
**WL-1A300**  
 Lever Length: 63



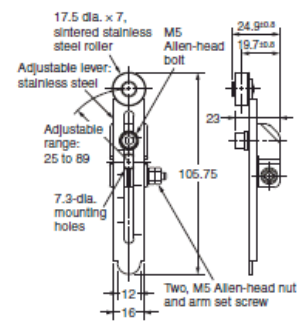
**WL-2A100**



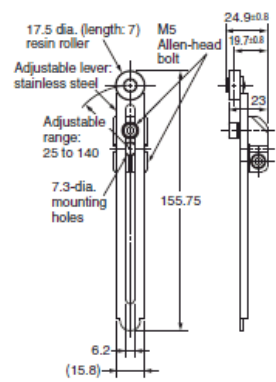
**WL-2A111**  
 Resin Roller



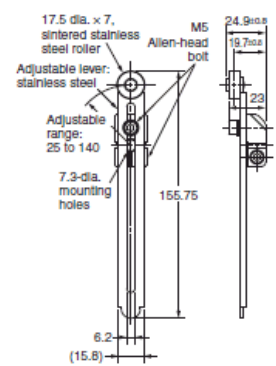
**WL-2A107**  
 Double Nuts



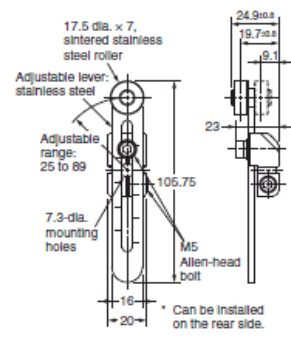
**WL-2A108**  
 Resin Roller



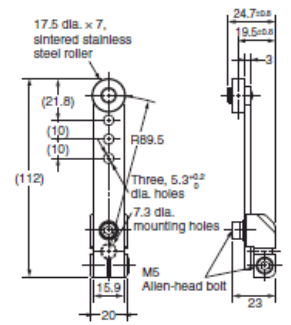
**WL-2A122**



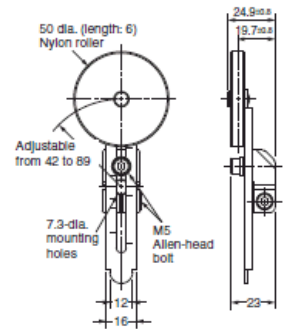
**WL-2A106**



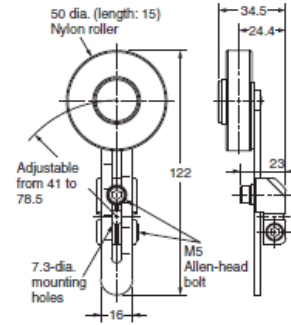
WL-2A130



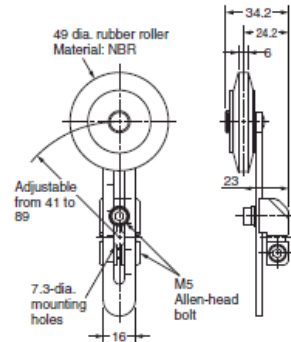
WL-2A104



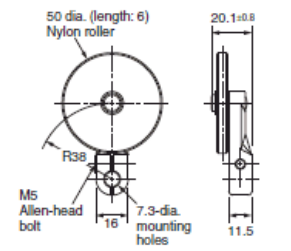
WL-2A110



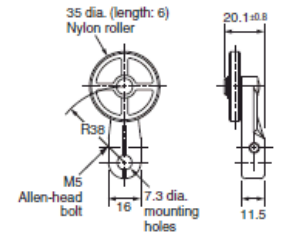
WL-2A105



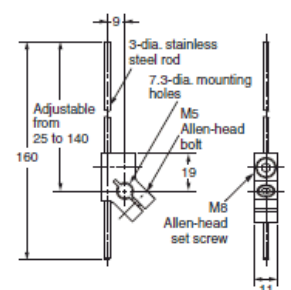
WL-1A106



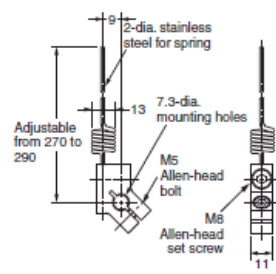
WL-1A110



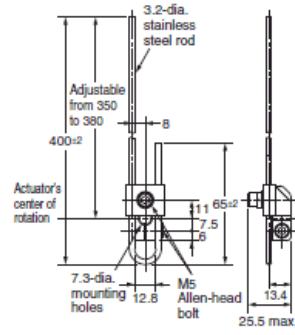
WL-4A100



WL-4A201

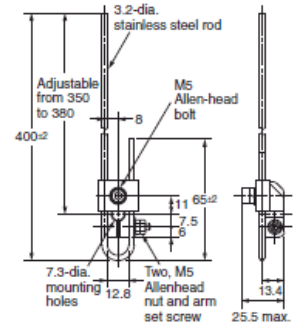


WL-3A100

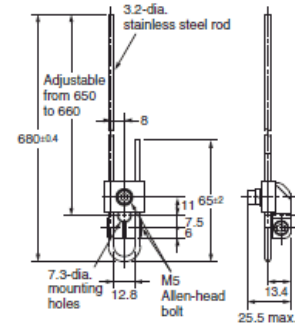


WL-3A106

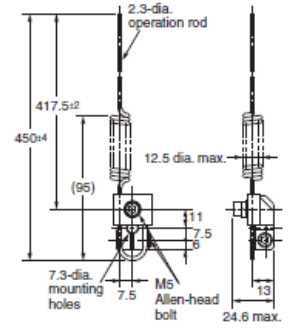
Double Nut



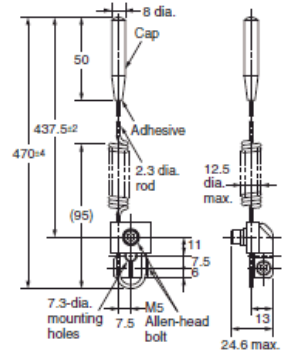
WL-3A108



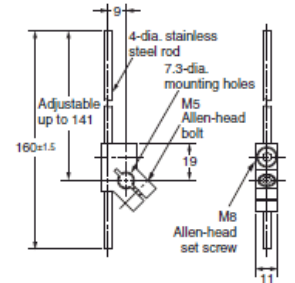
WL-3A200



WL-3A203

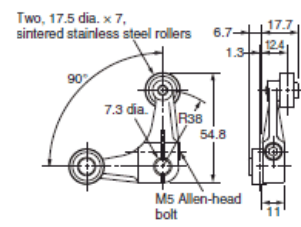


WL-4A112



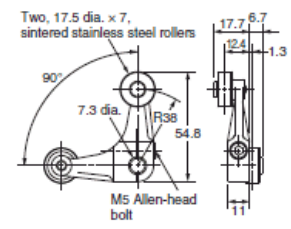
WL-2A129

#### WL-5A101



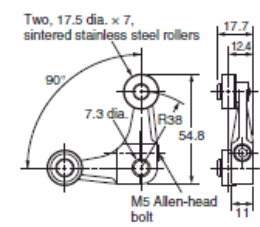
WL-5A100 has a plastic roller

#### WL-5A103



WL-5A102 has a plastic roller

#### WL-5A105



WL-5A104 has a plastic roller

Note: 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.

last update: October 07, 2015

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