

Wide Range of Two-circuit Switches; Select One for the Operating Environment/Application WL/Basic models

- A wide selection of models are available, including the overtravel models with greater OT, indicator-equipped models for checking operation, low-temperature models, heat-resistant models, and corrosion-proof models.
 - Microload models are added to the product lineup.
 - Approved standards: EC/IEC, UL, CSA, CCC (Chinese standard).
- Contact your OMRON representative for information on approved models.



Note: For details of The WL high-sensitivity, high-precision models, refer to *Limit Switch WL-N/WL Datasheet* (Cat. No. C151-E1).

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 page 39 to 42 and *Safety Precautions for All Limit Switches*.

Features

Standard Models

Many Variations in Standard Limit Switches A Wide Range of Models

The WL Series provides a complete range of Limit Switches with a long history of meeting user needs. Select environment-resistant specifications, actuators for essentially any workpiece, operating sensitivity matched to the workpiece, operation indicators to aid operation and maintenance, and various wiring specifications.

Environment-resistant Models

Select from Six Types of Environment Resistance

The series includes Airtight Switches, Hermetic Switches, Heat-resistant Switches, Low-temperature Switches, Corrosion-proof switches, and Weather-proof Switches. Select the one required by the onsite environment.

Spatter-prevention Models

Excellent Performance on Arc Welding Lines or Sites with Spattering Cutting Powder Ideal for Welding Sites

Stainless steel and resins that resist adhesion of spatters are used to prevent troubles caused by zinc powder generated during welding.

Long-life Models

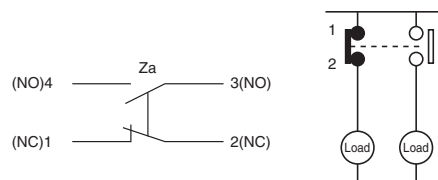
Mechanical Endurance of 30 Million Operations Long-life Models for High-frequency Applications

Long life has been achieved by increasing the resistance to friction and creating better sliding properties in the head mechanism. Greater visibility is provided when setting with a fluorescent display for setting the stroke.

Features Common to All Models

DPDB Operation

The double-pole, double-break structure ensures circuit braking.



Degree of Protection; IP67

O-rings, cover seals, and other measures provide a water-proof, drip-proof structure (IP67).

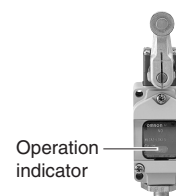
Approved Standards to Aid Export Machines

Various WL/WLM switches are approved by UL, CSA, TÜV, EN/IEC, and CCC making them ideal for export machines.

Operation Indicators for Easier Daily Inspections*

Confirm operation with a neon lamp or LED for easier startup confirmations and maintenance.

* Operation indicators are provided on Indicator-equipped switches, Spatter-prevention Basic Switches, and Long-life Basic Switches.



Models with Connectors to Reduce Wiring

Reduce wiring with one-touch connection. Models with direct-wired and prewired connectors that make Switch replacement easier are also available.

Dimensions and Operating Characteristics

(Unit: mm)

General-purpose Models

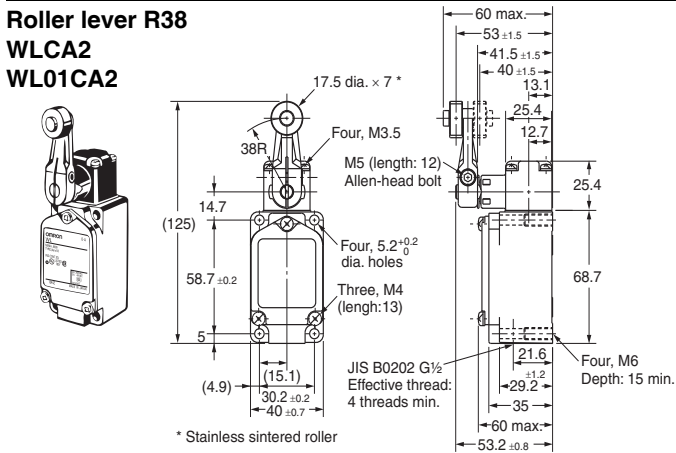
Standard Models

Basic

Rotating Lever For all models WL□ indicates a standard-load model and WL01□ indicates a microload model.

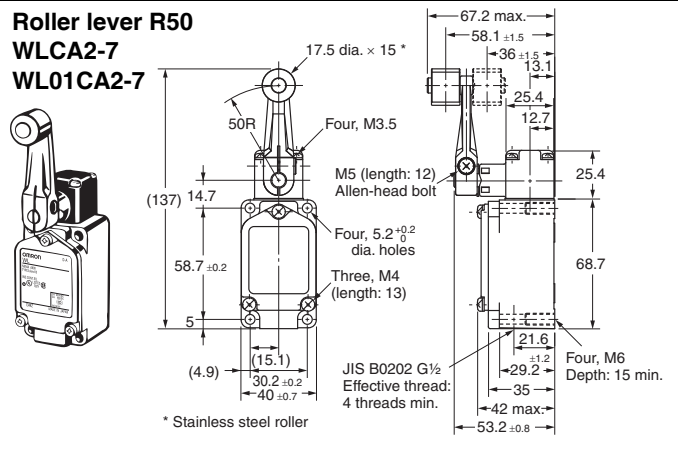
Roller lever R38

WLCA2
WL01CA2



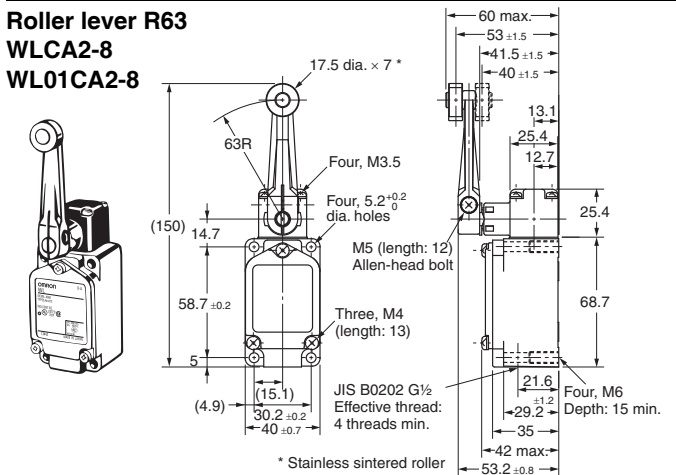
Roller lever R50

WLCA2-7
WL01CA2-7



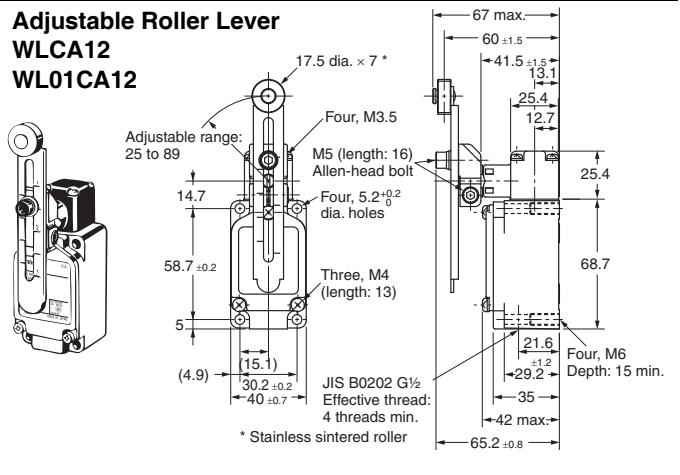
Roller lever R63

WLCA2-8
WL01CA2-8



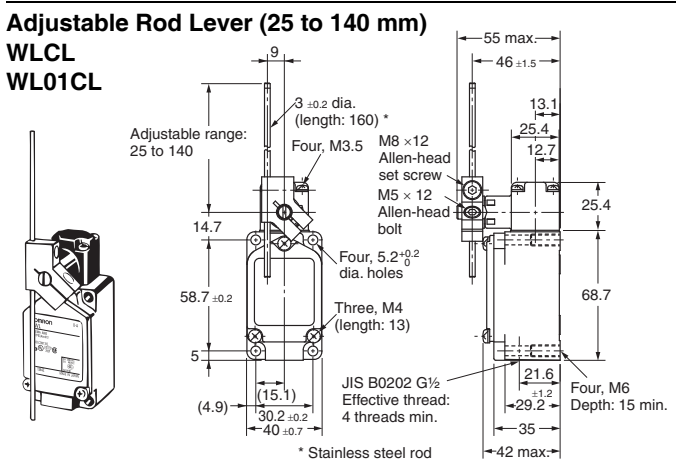
Adjustable Roller Lever

WLCA12
WL01CA12



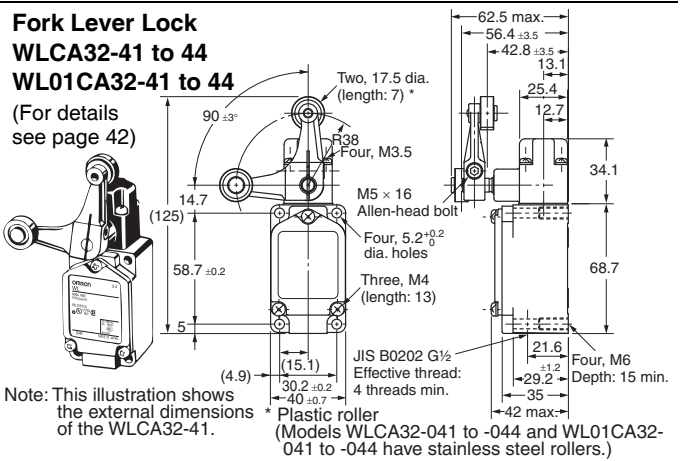
Adjustable Rod Lever (25 to 140 mm)

WLCL
WL01CL



Fork Lever Lock

WLCA32-41 to 44
WL01CA32-41 to 44



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

Operating characteristics	Model	WLCA2	WLCA2-7	WLCA2-8	WLCA12 *1	WLCL *2
		WL01CA2	WL01CA2-7	WL01CA2-8	WL01CA12 *1	WL01CL *2
Operating force	OF max.	13.34 N	10.2 N	8.04 N	13.34 N	1.39 N
Release force	RF min.	2.23 N	1.67 N	1.34 N	2.23 N	0.27 N
Pretravel	PT	15° ±5°	15° ±5°	15° ±5°	15° ±5°	15° ±5°
Overtravel	OT min.	30°	30°	30°	30°	30°
Movement	MD max.	12°	12°	12°	12°	12°

*1. The operating characteristics for WLCA12 and WL01CA12 are measured at the lever length of 38 mm.

*2. The operating characteristics for WLCL and WL01CL are measured at the rod length of 140 mm.

Operating characteristics	Model	WLCA32-41 to 44 *1
		WL01CA32-41 to 44 *1
Force necessary to reverse the direction of the lever: Max.		11.77 N
Movement until the lever reverses		50° ±5°
Movement until switch operation: Min.		55°
Movement after switch operation: Max.		35°

OF and RF for WLCA12, with a lever length of 89 mm.

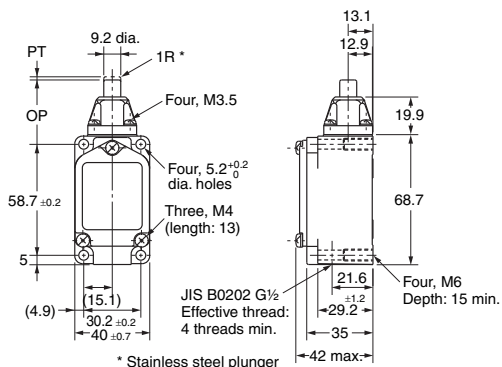
WLCA12, WL01CA12	
OF	5.68 N
RF	0.95 N

Basic

Plunger For all models WL□ indicates a standard-load model and WL01□ indicates a microload model.

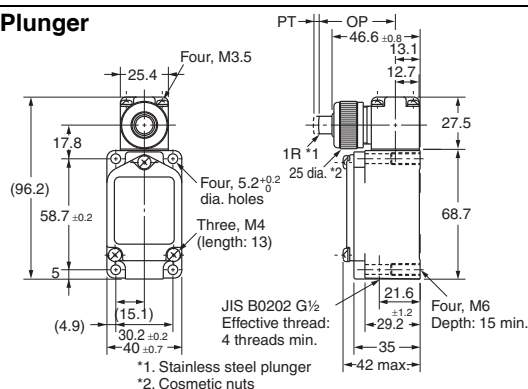
Top Plunger

**WLD
WL01D**



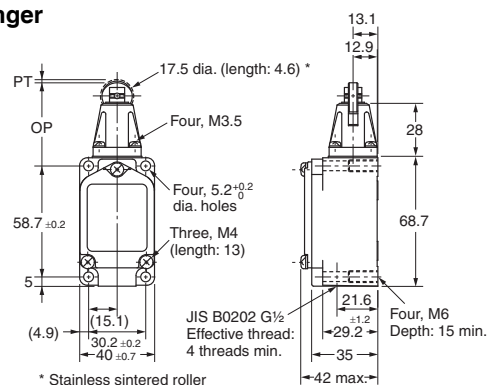
Horizontal Plunger

**WLS
WL01SD**



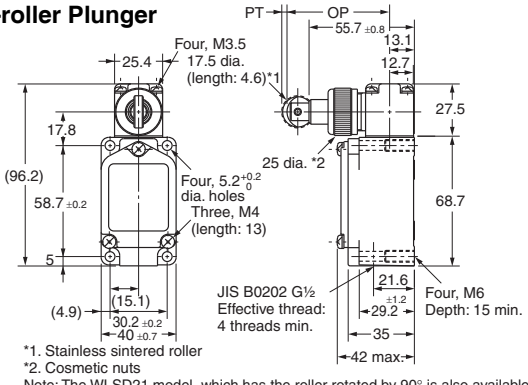
Top-roller Plunger

**WLD2
WL01D2**



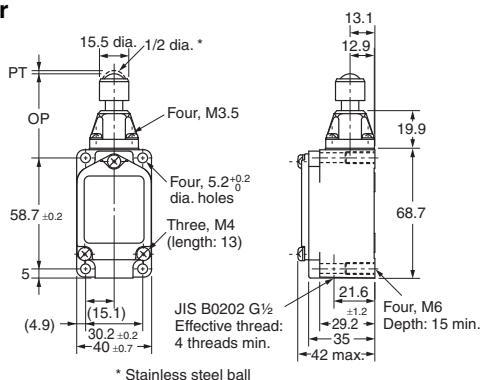
Horizontal-roller Plunger

**WLS2
WL01SD2**



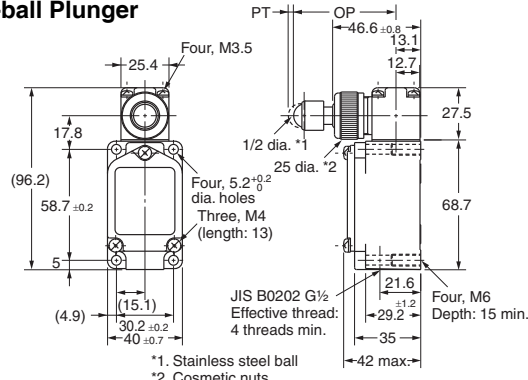
Top-ball Plunger

**WLD3
WL01D3**



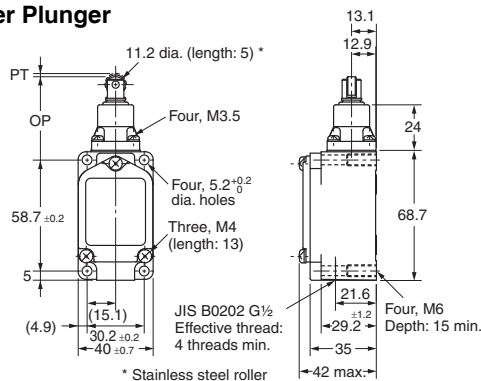
Horizontal-ball Plunger

**WLS3
WL01SD3**



Sealed Top-roller Plunger

**WLD28
WL01D28**



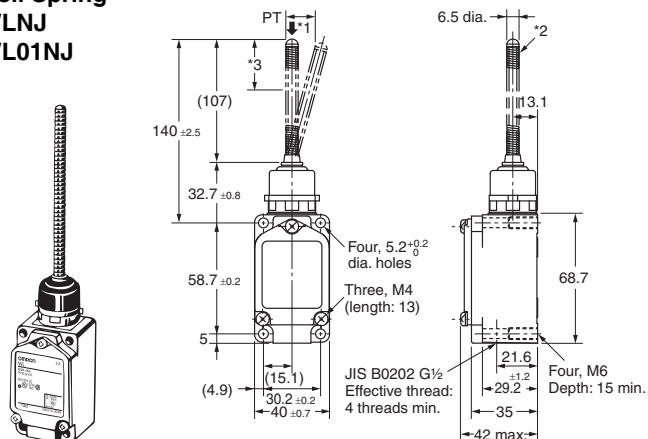
Note: Unless otherwise indicated, a tolerance of ±0.4 mm applies to all dimensions.

Operating characteristics	Model	WLD WL01D	WLD2 WL01D2	WLD3 WL01D3	WLD28 WL01D28	WLS2 WL01SD2	WLS3 WL01SD3	WLS WL01SD
Operating force	OF max.	26.67 N	26.67 N	26.67 N	16.67 N	40.03 N	40.03 N	40.03 N
Release force	RF min.	8.92 N	8.92 N	8.92 N	4.41 N	8.89 N	8.89 N	8.89 N
Pretravel	PT max.	1.7 mm	1.7 mm	1.7 mm	1.7 mm	2.8 mm	2.8 mm	2.8 mm
Overtravel	OT max.	6.4 mm	5.6 mm	4 mm	5.6 mm	5.6 mm	4 mm	6.4 mm
Movement Differential	MD max.	1 mm	1 mm	1 mm	1 mm	1 mm	1 mm	1 mm
Operating Position	OP	34 ±0.8 mm	44 ±0.8 mm	44.5 ±0.8 mm	44 ±0.8 mm	54.2 ±0.8 mm	54.1 ±0.8 mm	40.6 ±0.8 mm
Total travel Position	TTP max.	29.5 mm	39.5 mm	41 mm	39.5 mm	—	—	—

Basic

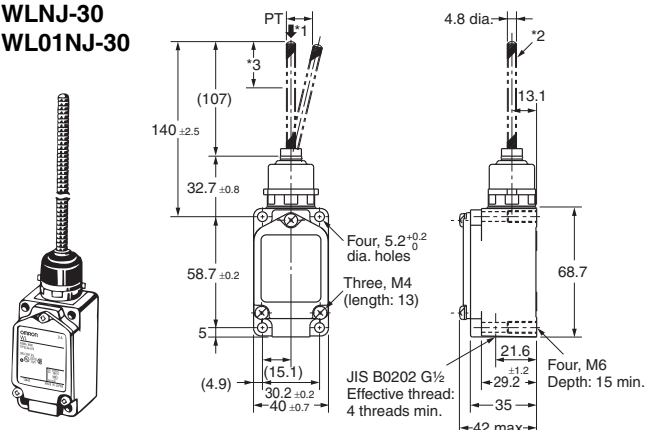
Flexible Rod..... For all models WL□ indicates a standard-load model and WL01□ indicates a microload model.

**Coil Spring
WLNJ
WL01NJ**



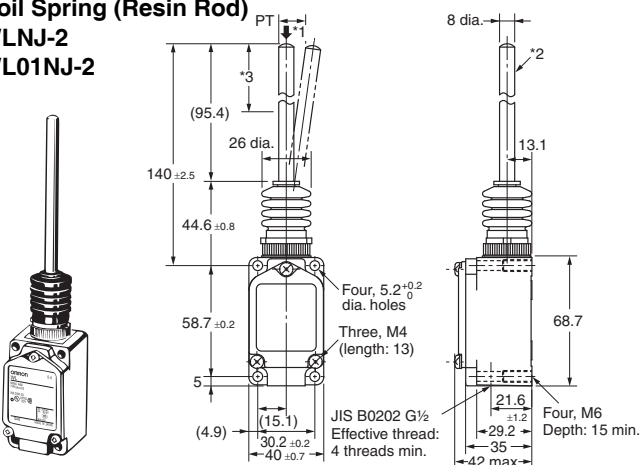
- *1. The coil spring may be operated from any direction except the axial direction (↓).
- *2. Stainless steel coil spring
- *3. Optimum operating range of the coil spring is within 1/3 of the entire length from the top end.

**Coil Spring (Multi-wire)
WLNJ-30
WL01NJ-30**



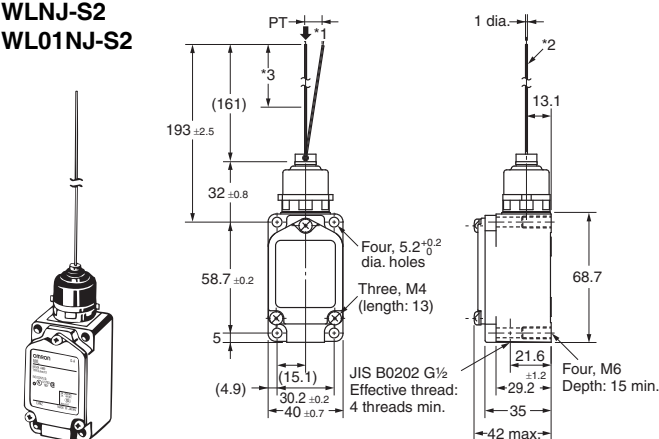
- *1. The coil spring may be operated from any direction except the axial direction (↓).
- *2. Piano wire coil
- *3. Optimum operating range of the coil spring is within 1/3 of the entire length from the top end.

**Coil Spring (Resin Rod)
WLNJ-2
WL01NJ-2**



- *1. The resin rod may be operated from any direction except the axial direction (↓).
- *2. Polyamide resin rod
- *3. Optimum operating range of the resin rod is within 1/3 of the entire length from the top end.

**Steel Wire
WLNJ-S2
WL01NJ-S2**



- *1. The steel wire may be operated from any direction except the axial direction (↓).
- *2. Stainless steel wire
- *3. Optimum operating range of the steel wire is within 1/3 of the entire length from the top end.

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

Model		WLNJ * WL01NJ *	WLNJ-30 * WL01NJ-30 *	WLNJ-2 * WL01NJ-2 *	WLNJ-S2 * WL01NJ-S2 *
Operating characteristics					
Operating force	OF max.	1.47 N	1.47 N	1.47 N	0.28 N
Pretravel	PT	20 ± 10mm	20 ± 10mm	40 ± 20mm	40 ± 20mm

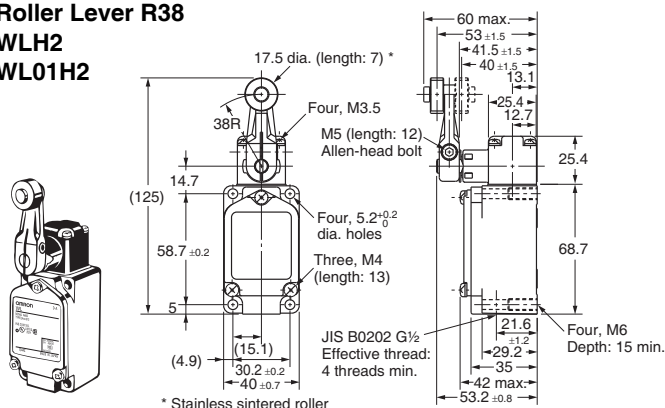
* These values are taken from the top end of the wire or spring.

Overtravel

General-purpose Models..... For all models WL□ indicates a standard-load model and WL01□ indicates a microload model.

Roller Lever R38

WLH2
WL01H2

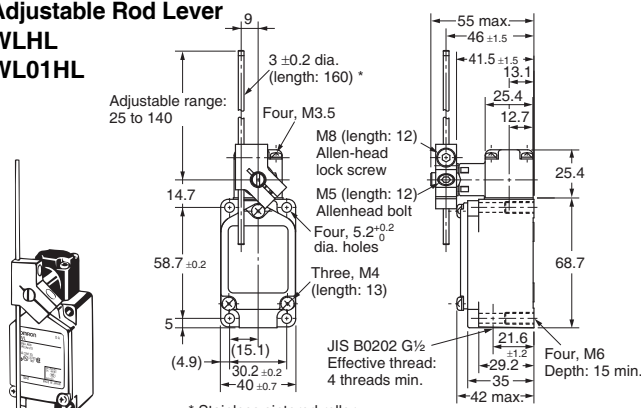


* Stainless sintered roller

Note: The built-in switch for WLH2 is W-10FB3.

Adjustable Rod Lever

WLHL
WL01HL

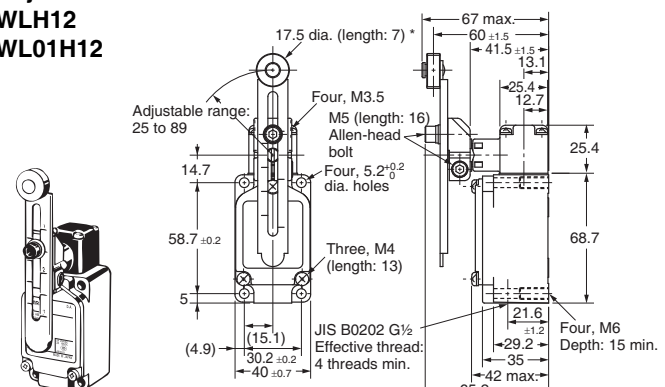


* Stainless sintered roller

Note: The built-in switch for WLHL is W-10FB3.

Adjustable Roller Lever

WLH12
WL01H12

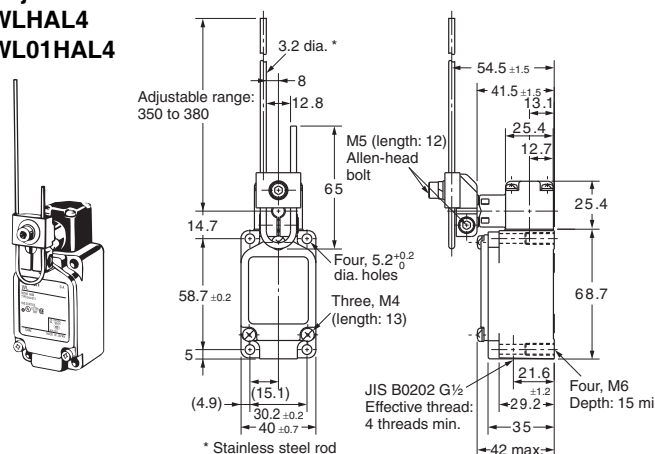


* Stainless sintered roller

Note: The built-in switch for WLH12 is W-10FB3.

Adjustable Rod Lever

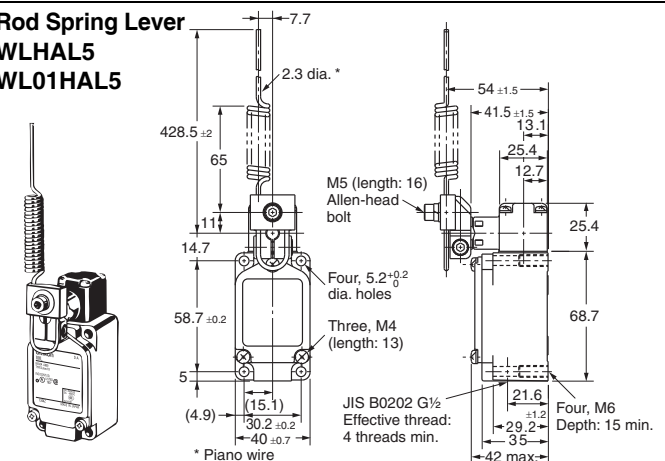
WLHAL4
WL01HAL4



* Stainless steel rod

Rod Spring Lever

WLHAL5
WL01HAL5



* Piano wire

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

OF and RF for WLH12 and WL01H12, with a lever length of 89 mm.

	WLH12, WL01H12
OF	4.18 N
RF	0.42 N

	Model	WLH2 WL01H2	WLH12 *1 WL01H12 *1	WLHL *2 WL01HL *2	WLHAL4 *3 WL01HAL4 *3	WLHAL5 WL01HAL5
Operating characteristics						
Operating force	OF max.	9.81 N	9.81 N	2.84 N	0.98 N	0.90 N
Release force	RF min.	0.98 N	0.98 N	0.25 N	0.15 N	0.09 N
Pretravel	PT	15° ±5°	15° ±5°	15° ±5°	15° ±5°	15° ±5°
Overtravel	OT min.	55°	55°	55°	55°	55°
Movement Differential	MD max.	12°	12°	12°	12°	12°

Note: With WLHAL4, WL01HAL4, WLHAL5, and WL01HAL5, 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.

*1. The operating characteristics of WLH12, and WL01H12 are measured at the lever length of 38 mm.

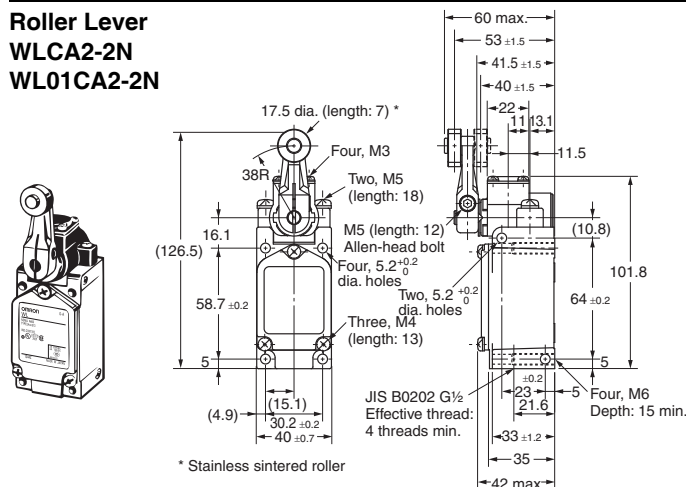
*2. The operating characteristics of WLHL, and WL01HL are measured at the rod length of 140 mm.

*3. The operating characteristics of WLHAL4, and WL01HAL4 are measured at the rod length of 380 mm.

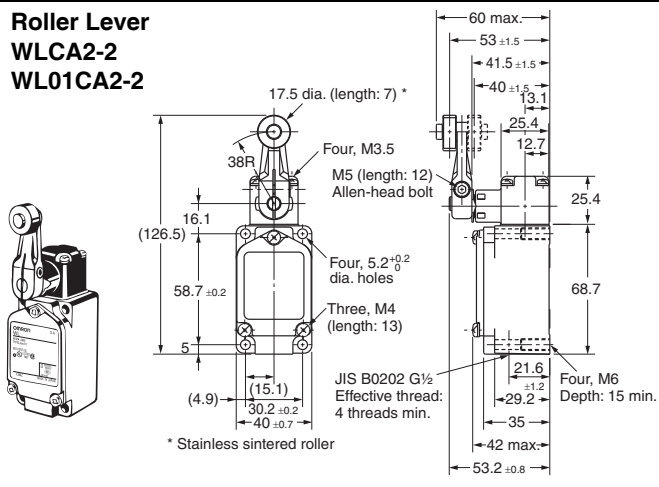
Overtravel

Side-installation Models... For all models WL□ indicates a standard-load model and WL01□ indicates a microload model.

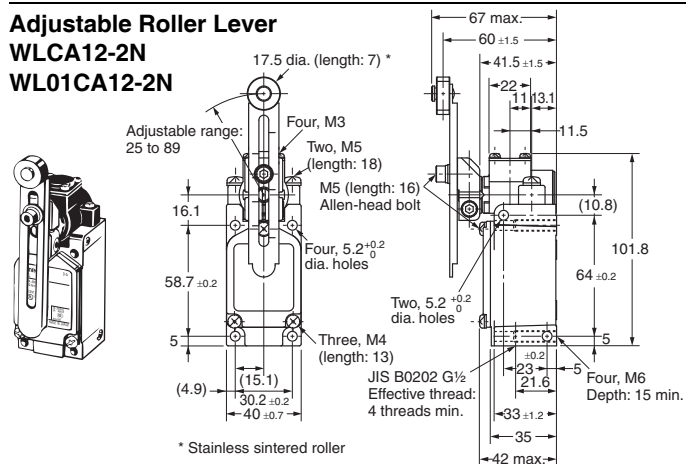
Roller Lever
WLCA2-2N
WL01CA2-2N



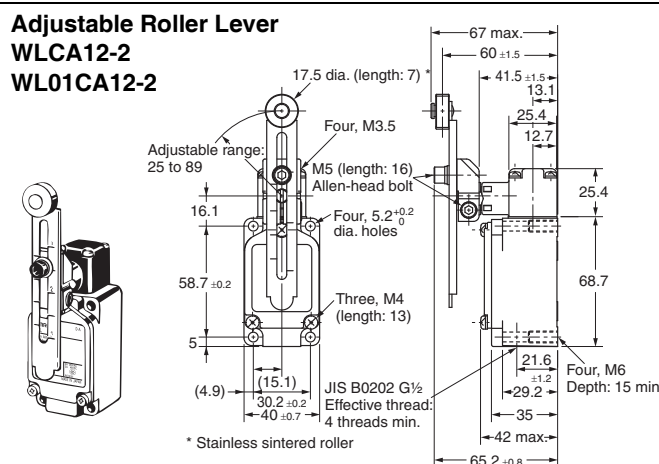
Roller Lever
WLCA2-2
WL01CA2-2



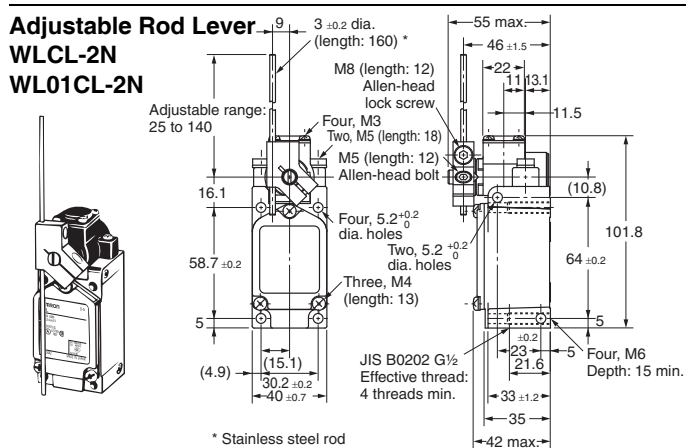
Adjustable Roller Lever
WLCA12-2N
WL01CA12-2N



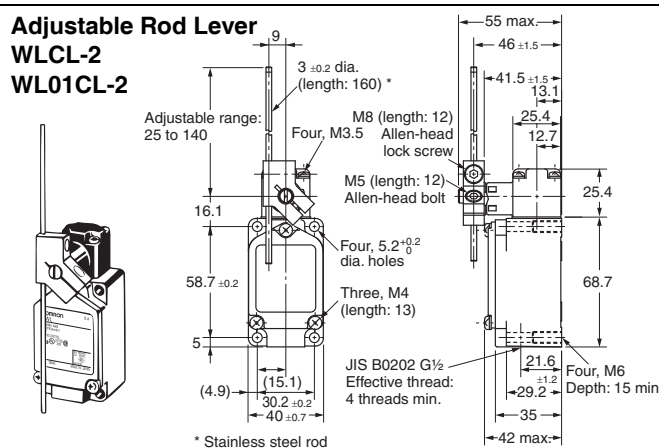
Adjustable Roller Lever
WLCA12-2
WL01CA12-2



Adjustable Rod Lever
WLCL-2N
WL01CL-2N



Adjustable Rod Lever
WLCL-2
WL01CL-2



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

Operating characteristics	Model	WLCA2-2N	WLCA12-2N *1	WLCL-2N *2	WLCA2-2	WLCA12-2 *1	WLCL-2 *2
	WL01CA2-2N	WL01CA12-2N *1	WL01CL-2N *2	WL01CA2-2	WL01CA12-2 *1	WL01CL-2 *2	
Operating force	OF max.	9.61 N	9.61 N	2.84 N	8.83 N	8.83 N	2.55 N
Release force	RF min.	1.18 N	1.18 N	0.25 N	0.49 N	0.49 N	0.1 N
Pretravel	PT	20° max.	20° max.	20° max.	25° ±5°	25° ±5°	25° ±5°
Overtravel	OT min.	70°	70°	70°	60°	60°	60°
Movement Differential	MD max.	10°	10°	10°	16°	16°	16°

*1. The operating characteristics of WLCA12-2N and WL01CA12-2N are measured at the lever length of 38 mm.
 *2. The operating characteristics of WLCL-2N and WL01CL-2N are measured at the rod length of 140 mm.

OF and RF for WLCA12-2N and WL01CA12-2N, with a lever length of 89 mm.

	WLCA12-2N, WL01CA12-2N
OF	4.10 N
RF	0.50 N