WL/WLM

CSM_WL_WLM_DS_E_13_1

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

- 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.



 \triangle

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, Heatresistant 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

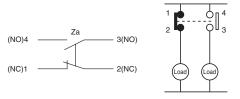
Mechanical Endurance of 30 Million Operations Long-life Models for High-frequency Applications

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.

High-precision Models Available in All Switch Types; Ideal for Position Control

High-precision models achieve a very small movement to operation (approx. 5°) and a repeat accuracy that is twice that of basic models.

Operation Indicators for Easier Daily Inspections*

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

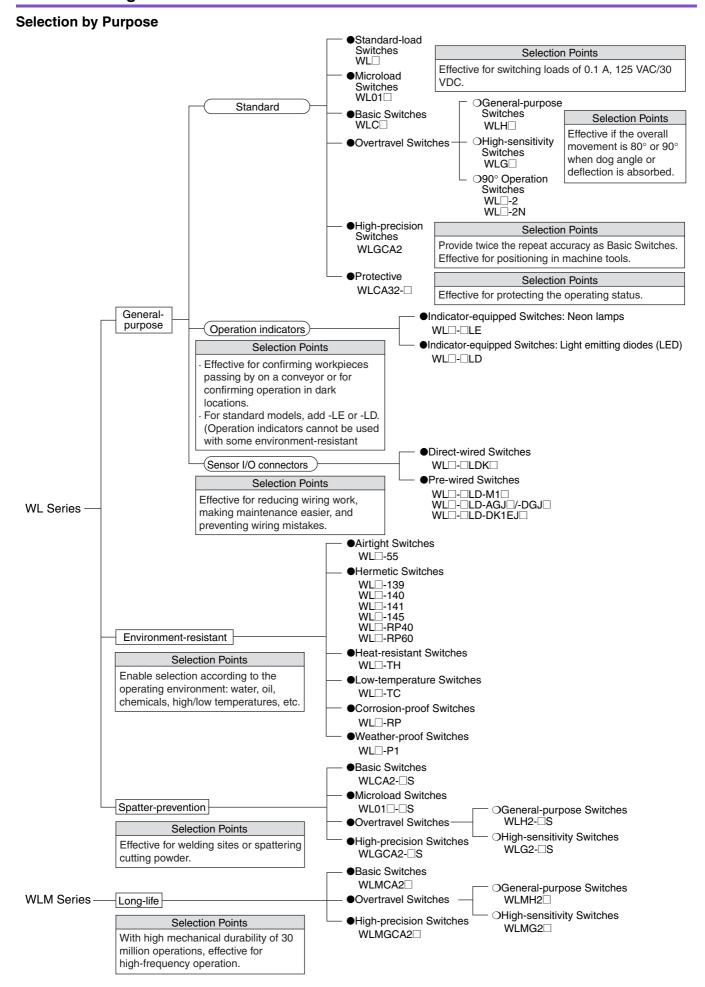
* Operation indicators are provided on Indicatorequipped switches, Spatter-prevention Basic Switches, and Long-life Basic Switches.



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.

Product Configuration



Tables of Models

General-purpose Switches

Spatter-prevention Switches

Long-life Switches

Heads (Roller levers only)

Туре	General Features Type		Head spe	cifications	Spatter prevention	Long-life
туре	Model	Total travel (TT)	One-side operation	Head mounting	Model	Model
Basic	WLC□	• With a Roller Lever	Possible *1 (Except for long-life models.)	Any of 4 directions	WLCA2-□S	WLMCA2□
General- purpose Overtravel	WLH□	Overtravel is large, making setting the dog easier. Mounting is compatible with WLH2.	Not possible *2	Any of 4 directions	WLH2-□S	WLH2□
High-sensitivity Overtravel	WLG□	Operation is highly sensitive with only 10° pretravel. Overtravel is large, making setting the dog easier. Mounting is compatible with WLG2.	Not possible *2	Any of 4 directions	WLG2-□S	WLMG2□
Overtravel,	WL□-2	Overtravel is large, making setting the dog easier.	Not possible *2	Any of 4 directions	_	_
90° operation	WL□-2N	Mounting is compatible with WLCA2-2.	Possible *1	Either of 2 directions		
High-precision	• Repeat accuracy is twice that basic models. • Operation is highly sensitive with only 5° pretravel. • Ideal for positioning, e.g.,		Possible *1	Any of 4 directions	WLGCA2-⊟S	WLMGCA2□
Maintained	WLCA32-□	When the dog throws the lever, the output is reversed and the reversed output is held even after the dog passed. The original status is returned to only after the dog passed.	_	Any of 4 directions	_	_

^{*1.} One-side operation means that three operational directions can be selected electrically, according to the change in direction of the operating plunger. The operating plunger is set for operation on both sides before delivery.

*2. Those models for which one-side operation is impossible can only operate on both sides.

Connectors and Conduits

Wiring type	General-purpose	Connector/conduit specifications	Spatter-prevention	Long-life
wiring type	Model	Connector/conduit specifications	Model	Model
Direct-wired connector	WL□-□LDK□	SC-2F/-4F Connector built-in	_	WLM -LDK
Pre-wired connector	WLULD-M1U WLULD-UGJU WLULD-DK1EJU	XS2H-series Pre-wired Connector built- in	WL□-□S-M1□J-1 WL□-□S-DGJS03	WLM□-LD-M1J WLM□-LD-□GJ□
Conduit (screw terminal)	WL	G1/2 with no ground terminal G1/2 with ground terminal Pg13.5 with ground terminal M20 with ground terminal 1/2 14NPT with ground terminal	_	WLM□-LD — — — —

Environment-resistant Switches

	Item	Environment-resistant				
Туре	Model	Application	Environment-resistant construction	Applicable models		
Airtight seal	Airtight seal WL□-55 Uses the W-10FB3-55 Airtight Built-in Switch. Note: Use the SC Connector for the conduit opening.		All models except the low- temperature and heat-re- sistant models Note: Models can be produced using standard actuators.			
	WL□-139	For uses in locations sub-		All models except the low-		
	WL□-140	ject to cutting oil or water		temperature and heat-re- sistant models		
Hermetic seal (Molded terminals/	WL□-141		Refer to page 25 for information on the environ- ment-resistant construction of Switches with Her-	Note: Models can be produced using standard		
Anti-coolant)	WL□-145		metic Seals.	actuators. Only the WLCA2, WLGCA2, or		
	WL□-RP40			WLH2 can be produced		
	WL□-RP60			for the WL□-141 and WL□-145.		
Low-temperature *	WL□-TC	Can be used at a temperature of -40°C (operating temperature range: -40 to 40°C), but cannot withstand icing.	Uses a general-purpose built-in switch. Silicone rubber is used for rubber parts such as the O-ring, gasket, etc.	All models except airtight seal, hermetic seal, heat- resistant, corrosion-proof, and indicator-equipped models		
Heat-resistant *	Heat-resistant * WL□-TH Can be used in temperatures of 120°C (operating temperature range: 5 to 120°C). • Uses a special built-in switch made from heat-resistant resin. • Silicone rubber is used for rubber parts such as the O-ring, gasket etc.		All models except airtight seal, hermetic seal, heat- resistant, corrosion-proof, and indicator-equipped, ny- lon roller (WLCA2-26N), seal roller models, and res- in rod (WLNJ-2) models			
Corrosion-proof	* Diecast parts, such as the switch box, are made of corrosion-proof aluminum. * Rubber sealing parts are made of fluorine rubber which aids in resisting oil, chemicals and adverse weather conditions. * Exposed nuts and screws (except the actuator section) are made of stainless steel. * Moving and rotary parts such as rollers are made of sintered stainless steel or stainless steel. * The Head, box, and cover are yellow.		All models except overtravel (90° operation), fork lever lock (WLCA32-41 to -43), low-temperature, heatresistant, and indicatorequipped models			
Weather-proof * WL□-P1 For use in parking lots and other outdoor locations. *Rubber parts are made from silicone rubber, which has a high-tolerance to deterioration over time and changes in temperature. *Rollers are made of stainless steel to improve corrosion resistance. *Exposed nuts and screws are made of stainless steel.		Only basic (WLCA2/CA12/CL), general-purpose over-travel (WLH2/H12/HL) and high-sensitivity overtravel (WLG2/G12/GL) models (excluding heat-resistant models).				

^{*} Weather Resistance, Cold Resistance, and Heat Resistance

Silicon rubber is used to increase resistance to weather, cold, and heat. Silicon rubber, however, can generate silicon gas. (This can occur at room temperature, but the amount of silicon gas generated increases at higher temperatures.) Silicon gas will react as a result of arc energy and form silicon oxide (SiO₂). If silicon oxide accumulates on the contacts, contact interference can occur and can interfere with the device. Before using a Switch, test it under actual application conditions (including the environment and operating frequency) to confirm that no problems will occur in actual.

Selection Guide

With the WL Series, OMRON will combine the switch, Actuator, and wiring method required to build the ideal switch for your application.

The WL Series consists of four basic types: General-purpose, Environment-resistant, Spatter-prevention, and Long-life Switches. WLCA2 Switches can be used for the most common applications.

According to Operating Environment -

	Environment	Key specifications		Models
perature	Normal	-10°C +80°C Water-resistant to IP67.	WLM	General-purpose Switches Long-life Switches
Ambient operating temperature	High-temperature	+5°C +120°C To increase heat resistance, the rubber material (silicon rubber) and the material of the built-in switch have been changed.	WL□-TH	Heat-resistant Switches *1
Ambient o	Low-temperature	-40°C +40°C To increase resistance to cold, silicon rubber and other measures are used.	WL□-TC	Low-temperature Switches *1
	Outdoors	Rubber parts are made from silicone rubber, which has a high-tolerance to deterioration over time and changes in temperature. Rollers are made of stainless steel to improve corrosion resistance. Exposed nuts and screws are made of stainless steel.	WL□-P1	Weather-proof Switches *1
	Chemicals and oil	Corrosion-proof aluminum diecast has been used for the housing, fluorine rubber has been used for rubber parts, and stainless steel has been used for screws and nuts (except for actuator) to increase resistance to oils, chemicals, and weather.	WL□-RP	Corrosion-proof Switches *1
	Water drops and mist	Uses an airtight built-in switch.	WL□-55	Airtight Switches *1
	Constant water drops and mist	Cables attached. Uses a general-purpose built-in switch. The case cover and conduit opening are molded from epoxy resin to increase the seal. The cover cannot be removed.	WL□-139 Hermetic, Molded-terminal Switches *1, *2	
ıment		Cables attached. Uses an airtight built-in switch. The case cover and box interior are molded from epoxy resin to increase the seal. The cover cannot be removed. The SC connector can be removed, so it is possible to use flexible conduits for the cable.	WL□-RP40 Hermetic, M Switches *1	olded-terminal *2
Operating environment		Cables attached. Uses an airtight built-in switch. The cover screws, case cover, box interior, and conduit opening are molded from epoxy resin to increase the seal. (The cover cannot be removed.)	WL□-140 Hermetic, M Switches *1	olded-terminal ,*2
Opera	Constant water drops or splattering cutting powder	Cables attached. Uses an airtight built-in switch. The cover screws, case cover, box interior, conduit opening, box head, and head screws are molded from epoxy resin to increase the seal. (The cover cannot be removed.) The Head opening is protected from cutting powder141: The Head section is molded from epoxy resin; Head direction cannot be changed145: The Head section is molded from epoxy resin; Head can be in any of 4 directions.	WL□-141, -145 Hermetic, Molded-terminal Switches *1, *2 (Only the WLCA2, WLG2, WLGCA2, and WLH2 can be produced.)	
	Coolant	Cables attached. Uses an airtight built-in switch. The case cover, box interior, conduit opening, and head screws are molded from epoxy resin to increase the seal. (The cover cannot be removed.) Rubber parts are made from fluorine rubber to increase resistance to coolant.	WL□-RP60 Hermetic, Molded-terminal Switches *1, *2	
	Spattering from welding	To prevent spatter during welding, a heat-resistant resin is used for the indicator cover and screws and rollers are all made from stainless steel.	WL□-S	Spatter-prevention Switches

^{*1.} Not all functions can be combined with environment-resistant switches. Refer to the applicable models on the previous page.
*2. Refer to page 25 for information on the construction of Hermetic Switches.

- According to Application Conditions —

	Conditions	Key specifications		Models
ad	Switching standard loads	10 A at 125,250, or 500 VAC 0.8 A at 125 VDC 0.4 A at 250 VDC	WL□-S WLM□	General-purpose Switches Spatter-prevention Switches Long-life Switches
Load	Switching microloads	0.1 A at 125 VAC, resistive load 0.1 A at 30 VDC, resistive load	WL01□ WL01□-S	General-purpose Microload Switches Spatter-prevention Microload Switches
oility	Normal durability	Mechanical: 15 million operation min. (10 million operation min. for overtravel general-purpose or high-sensitivity models or flexible rod models)	WL□ WL□-S	General-purpose Switches Spatter-prevention Switches
Durability	Long-life	Mechanical: 30 million operation min.	WLM	Long-life Switches

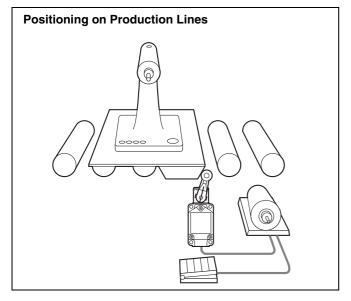
- According to Ease of Installation and Maintenance -

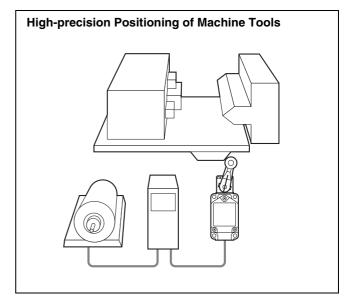
	Conditions	Key specifications	Models
Operation indicator	Daily inspections and maintenance	Switching light-ON between operating/not operating. (Switching not possible for models with molded terminals.) Neon lamp 125 to 250 VAC	WL□-LE General-purpose, Indicator-equipped (Neon Lamp) Switches WL□-LES Spatter-prevention, Indicator-equipped (Neon Lamp) Switches
	and maintenance checks	Switching light-ON between operating/not operating. (Switching not possible for models with molded terminals.) LED 10 to 115 VAC/DC	WL□-LD General-purpose, Indicator-equipped (LED) Switches WL□-LDS Spatter-prevention, Indicator-equipped (LED) Switches
	Screw tightening	Screw terminals. No ground terminal. Conduit size: G1/2	WL□ General-purpose Switches WLM□ Long-life Switches
	and installation	Screw terminals. Ground terminal. Conduit size: 4 sizes	WL□ General-purpose Switches
	One-touch connector attachment	Direct-wired connector, 2-conductor. Greatly reduces wiring work. Water-proof to IP67.	WL□-□LDK13 General-purpose, Direct-wired Connector Switches WLM□-LDK13 Long-life, Direct-wired Connector Switches
pecification		Direct-wired connector, 4-conductor. Greatly reduces wiring work. Water-proof to IP67.	WL□-□LDK43 General-purpose, Direct-wired Connector Switches WLM□-LDK43 Long-life, Direct-wired Connector Switches
Wiring specification	Connector attachment in	Pre-wired connector, 2-conductor. Greatly reduces wiring work. Water-proof to IP67.	WL□-□LD-M1J General-purpose, Pre-wired Connector Switches WL□-□S-M1J-1 Spatter-prevention, Pre-wired Connector Switches WLM□-LD-M1J Long-life, Pre-wired Connector Switches
	control and relay boxes	Pre-wired connector, 4-conductor. Greatly reduces wiring work. Water-proof to IP67.	WL□-□LD-□GJO3 General-purpose, Pre-wired Connector Switches WL□-□S-□GJSO3 Spatter-prevention, Pre-wired Connector Switches WLM□-LD-□GJO3 Long-life, Pre-wired Connector Switches

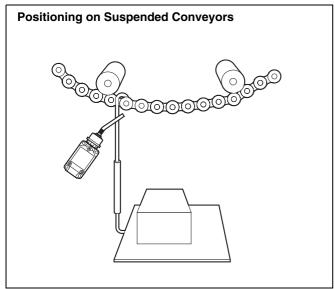
According to Form of Operation —

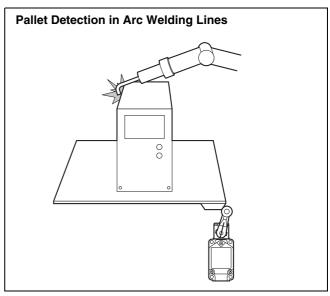
	Detection object		Key specifications		Models
	General	TT (total travel)	PT (pretravel)	WLCA2 WLCA2-□S WLMCA2	General-purpose Switches Spatter-prevention Switches Long-life Switches
ngles	Passing dogs	800	, 15°	WLH2 WLH2-□S WLMH2	General-purpose Switches Spatter-prevention Switches Long-life Switches
Operation angles	Passing dogs, high sensitivity	800 800	110°	WLG2 WLG2-□S WLMG2	General-purpose Switches Spatter-prevention Switches Long-life Switches
Ö	Passing dogs	90° 90°	WLCA2-2 7/25° WLCA2-2N 7/20°	WLCA2-2 WLCA2-2N	General-purpose Switches General-purpose Switches
	High precision	45 45		WLGCA2 WLGCA2-□S WLMGCA2	General-purpose Switches Spatter-prevention Switches Long-life Switches
		H38	Short lever One-Horizontal operation possible (WLCA□ only) Head mounts in any of 4 directions	WLU2-US	Roller Lever Actuators Roller Lever Actuators Roller Lever Actuators
ı	Dogs and workpieces (Mounts in any of 4 directions)	H30	Medium lever One-Horizontal operation possible (WLCA□ only) Head mounts in any of 4 directions	WLL12-7	Roller Lever Actuators
ı	4 directions)	•	Long lever One-Horizontal operation possible (WLCA□ only) Head mounts in any of 4 directions	VVLUZ-O	Roller Lever Actuators
	Adjustable between dog and lever	R25 to 89	One-Horizontal operation possible (WLCA□ only) Head mounts in any of 4 directions	WL□12	Adjustable Roller Lever Actuators
ı	Dogs or workpieces with large deflection	25 10 140	One-Horizontal operation possible (WLCL only) Head mounts in any of 4 directions	WL□L	Adjustable Rod Lever Actuators
ı		350 10 360	One-Horizontal operation not possible. Head mounts in any of 4 directions	WLHAL4	Adjustable Rod Lever Actuator
ators			One-Horizontal operation not possible. Head mounts in any of 4 directions	WLHAL5	Rod Spring Lever Actuator
Actua		•	Head mounts in any of 4 directions	s. WLCA32-41	Fork Lever Lock Actuator
	Round-trip operation of	•	Head mounts in any of 4 directions	s. WLCA32-42	Fork Lever Lock Actuator
	passing dogs	•	Head mounts in any of 4 directions	s. WLCA32-43	Fork Lever Lock Actuator
		•	Head mounts in any of 4 directions	s. WLCA32-44	Fork Lever Lock Actuator
				WLD	Top Plunger Actuator
		•	Head mounts in any of 4 directions	s. WLSD	Horizontal Plunger Actuator
	Cams or workpieces with			WLD3	Top-ball Plunger Actuator
	vertical movement		Head mounts in any of 4 directions		Horizontal-ball Plunger Actuator
			Available in sealed models. (WLD28□)	WLD2 WLD28	Top-roller Plunger Actuator Sealed Top-roller Plunger Actuator
				WLSD2	Horizontal-roller Plunger Actuator

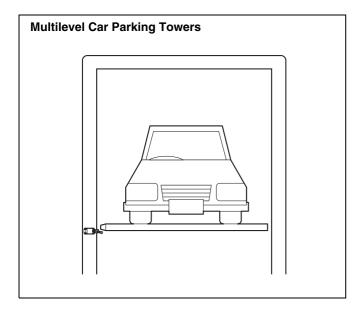
Application Examples

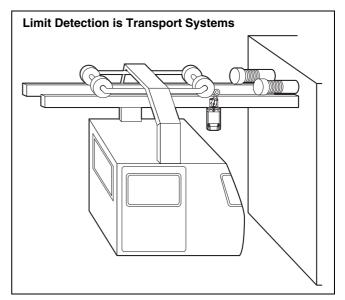












8

Model Number Structure

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

General-purpose and Environment-resistant Switches

(1) Electrical Rating

Blank	Standard load
	Microload
Note: Dir	mensions are the same as the standard

Note: Dimensions are the same as the standard models.

(3) Environment-resistant Model Specifications

	Standard
RP	Corrosion-proof *1
P1	Weather-proof *1

Note: Dimensions are the same as the standard models.

(4) Built-in Switch Type

Blank	Standard
55	Hermetically sealed *1

Note: Dimensions are the same as the standard models.

(5) Temperature Specifications

Blank Standard: -10°C to +80°C	
	Heat-resistant: +5°C to +120°C *1
TC	Low-temperature: -40°C to +40°C *1

Note: Dimensions are the same as the standard models.

(7) Conduit Size, Ground Terminal Specifications *2

Blank	Blank G1/2 without ground terminal			
G1	G1/2 with ground terminal			
G	G Pg13.5 with ground terminal			
Y M20 with ground terminal				
TS	1/2-14NPT with ground terminal			

Note: Dimensions are the same as the standard

(6) Hermetic Model Specifications

Blank	No cables or molding
139	General-purpose built-in switch with cables attached and molded conduit opening and cover (cover cannot be removed). *
140	Airtight built-in switch with cables attached and molded conduit opening, cover, and box interior cover screws (cover cannot be removed). *
141	Airtight built-in switch with cables attached and molded conduit opening, cover, head, box interior, cover screws, and head screws (cover cannot be removed, Head direction cannot be changed). The Head opening is created to protect it from cutting powder. *
145	Airtight built-in switch with cables attached and molded conduit opening, cover, box interior, and cover screws (cover cannot be removed, Head can be mounted in any of 4 directions). The Head opening is created to protect it from cutting powder. *
RP40	Airtight built-in switch with cables attached and molded cover and box interior (cover cannot be removed, Head direction can be changed). SC Connector can be removed, so it is possible to use flexible conduits for the cable. *
RP60	Airtight built-in switch with cables attached, fluorine rubber used, and molded conduit opening, cover, and box interior (cover cannot be removed, Head direction cannot be changed). *

^{*} Refer to page 4 for applicable models.

(2) Actuator and Head Specifications

Symbol	Actuator type	Switch without lever
CA2	Roller lever: Standard model R38	WLRCA2
CA2-7	Roller lever: Standard model R50	WLRCA2
CA2-8	Roller lever: Standard model R63	WLRCA2
H2	Roller lever: General-purpose overtravel model, 80°	WLRH2
G2	Roller lever: High-sensitivity overtravel, 80°	WLRG2
CA2-2	Roller lever: Overtravel, 90°	WLRCA2-2
CA2-2N	Roller lever: Overtravel, 90°	WLRCA2-2N
GCA2	Roller lever: High-precision R38	WLRGCA2
CA12	Adjustable roller lever: Standard	WLRCA2
H12	Adjustable roller lever: General-purpose overtravel model, 80°	WLRH2
G12	Adjustable roller lever: High-sensitivity overtravel, 80°	WLRG2
CA12-2	Adjustable roller lever: Overtravel, 90°	WLRCA2-2
CA12-2N	Adjustable roller lever: Overtravel, 90°	WLRCA2-2N
CL	Adjustable rod lever: Standard, 25 to 140 mm	WLRCL
HL	Adjustable rod lever: General-purpose overtravel model, 80°, 25 to 140 mm	WLRH2
HAL4	Adjustable rod lever: General-purpose overtravel model, 80° , 350 to 380 mm	WLRH2
GL	Adjustable rod lever: High-sensitivity overtravel, $80^{\circ}, 25 \ \text{to} \ 140 \ \text{mm}$	WLRG2
CL-2	Adjustable rod lever: Overtravel, 90°, 25 to 140 mm	WLRCA2-2
CL-2N	Adjustable rod lever: Overtravel, 90° , 25 to 140 mm	WLRCA2-2N
HAL5	Rod spring lever: General-purpose overtravel model, 80°	WLRH2
CA32-41	Fork lever lock: Maintained, WL-5A100	WLRCA32
CA32-42	Fork lever lock: Maintained, WL-5A102	WLRCA32
CA32-43	Fork lever lock: Maintained, WL-5A104	WLRCA32
D	Plunger: Top plunger	_
D2	Plunger: Top-roller plunger	_
D28	Plunger: Sealed top-roller plunger	_
D3	Plunger: Top-ball plunger	_
SD	Plunger: Horizontal plunger	_
SD2	Plunger: Horizontal-roller plunger	_
SD3	Plunger: Horizontal-ball plunger	_
NJ	Flexible rod: Coil spring	_
NJ-30	Flexible rod: Coil spring, multi-wire	_
NJ-2	Flexible rod: Coil spring, resin rod	_
NJ-S2	Flexible rod: Steel wire	_

(8) Indicator Type

Symbol	Element	Voltage	Leakage current
Blank	No indicator		
LE	Neon lamp	125 to 250 VAC	Approx. 0.6 to 1.9 mA
LD	LFD	115 VAC/VDC	Approx. 0.5 mA
LU	LED	10 to 24 VAC/VDC	Approx. 0.4 mA

Note: Dimensions are the same for both LE and LD models.

(9) Indicator Wiring

2	NC connection: Light-ON when operating
3	NO connection: Light-ON when not operating

Note: Include the indicator wiring specification only when a (6) hermetic seal and (8) operation indicator have been selected.

(10) Lever Type

	` ,	. *1
	Blank	Standard lever
Ī	Α	Double nut lever

^{*1.} Refer to page 4 for applicable models.

^{*1.} Refer to page 4 for applicable models.

^{*1.} Refer to page 4 for applicable models.

^{*2.} Models with ground terminals are approved by EN/IEC (CE marking).

General-purpose Switches

Sensor I/O Connector Switches

WL □□-□ LD □ (1) (2) (3) (4) (5)

(1) Electrical Rating

Blank	Standard load
01	Microload

Note: Dimensions are the same as the standard models.

(2) Actuator Type

CA2 Roller lever: Standard model	
GCA2	Roller lever: High-precision model
H2 Roller lever: General-purpose overtravel model	
G2	Roller-lever: High-sensitivity over- travel model
D2 Top-roller plunger	
D28	Sealed top-roller plunger

(3) Built-in Switch Type

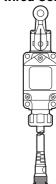
Blank	Standard
55	Hermetically sealed

Note: Dimensions are the same as the standard models.

Direct-wired Connector



Pre-wired Connector



(4) Indicator Type

LD	LED, 10 to 115	VAC/DC
	,	· / (U/ D U

(5) Wiring Specifications

K13A	Direct-wired Connector (2-conductor: AC, NO wiring, connector pins No. 3, 4)	
K13	Direct-wired Connector (2-conductor: DC, NO wiring, connector pins No. 3, 4)	
K43A	Direct-wired Connector (4-conductor: AC)	
K43	Direct-wired Connector (4-conductor: DC)	
-M1J *	Pre-wired Connector *2 (2-conductor: DC, NO wiring, connector pins No. 3, 4)	
-M1GJ *1	Pre-wired Connector *2 (2-conductor: DC, NO wiring, connector pins No. 1, 4)	
-M1JB	Pre-wired Connector *2 (2-conductor: DC, NC wiring, connector pins No. 3, 2)	
-AGJ03	Pre-wired Connector *2 (4-conductor, AC)	
-DGJ03 *1	Pre-wired Connector *2 (4-conductor, DC)	
-DK1EJ03 *1	Pre-wired Connector *2 (3-conductor: DC, NO wiring, connector pins No. 2, 3, 4)	

^{*1.} Models with pre-wired connectors and DC specifications have EN/IEC approval (CE marking).

Spatter-prevention Switches

WL		- 🗌 🔲	$S \square$
	(1)(2)	(3) (4)	(5)

(1) Electrical Rating

Blank	Standard load	
01	Microload	
Note: Dimensions are the same as the standard models.		

(2) Actuator Type

Roller lever: Standard model				
Roller lever: High-precision model				
Roller lever: General-purpose Overtravel model				
Roller lever: High-sensitivity Overtravel model				
Sealed top-roller plunger				

(3) Built-in Switch Type

Blank	Standard
55	Hermetically sealed

Note: Dimensions are the same as the standard models.

(4) Indicator Type

LD	LED, AC/DC
LE	Neon lamp

Note: Dimensions are the same for both LE and LD models.

(5) Wiring Specifications

Blank	Screw terminal: G1/2 conduit
-M1J-1 *1	Pre-wired Connector *2 (2-conductor: DC, NO wiring, connector pins No. 3, 4)
-M1GJ-1 *1	Pre-wired Connector *2 (2-conductor: DC, NO wiring, connector pins No. 1, 4)
-DGJS03 *1	Pre-wired Connector *2 (4-conductor: DC)

^{*1.} Models with pre-wired connectors and DC specifications are approved by EN/IEC (CE marking) except for LE Models (Neon Lamp Models). *2. With 0.3-m cable attached.

Long-life Switches

WLM		-LD	
	(1)	(2)	(3)

(1) Actuator

CA2	Roller lever: Standard model			
GCA2	GCA2 Roller lever: High-precision model			
H2	Roller lever: General-purpose overtravel model			
G2 Roller lever: High-sensitivity overtravel model				

(2) Indicator Type

•	
LD	LED, 10 to 115 VAC/DC

(3) Wiring Specifications

Blank	Screw terminal: G1/2 conduit		
K13A	Direct-wired Connector: 2-conductor, AC		
K13 Direct-wired Connector: 2-conductor, DC			
K43A	A Direct-wired Connector: 4-conductor, AC		
K43	Direct-wired Connector: 4-conductor, DC		
-M1J	Pre-wired Connector: 2-conductor, DC *		
-AGJ03	J03 Pre-wired Connector: 4-conductor, AC *		
-DGJ03	Pre-wired Connector: 4-conductor, DC *		

^{*} With 0.3-m cable attached.

^{*2.} With 0.3-m cable attached.

Ordering Information

General-purpose Switches

Standard Switches

Note: Models are also available with ground terminals.

Lever

Actuator		Roller lever R38	Roller lever R50	Roller lever R63	
Item			Model	Model	Model
Basic		Standard load	WLCA2	WLCA2-7	WLCA2-8
Dasic		Microload	WL01CA2	WL01CA2-7	WL01CA2-8
	General-	Standard load	WLH2	_	_
	purpose	Microload	WL01H2	_	_
	High-	Standard load	WLG2	_	_
Overtravel	sensitivity	Microload	WL01G2	_	_
Overtiavei		Standard load	WLCA2-2	_	_
	90°	Microload	WL01CA2-2	_	_
	operation	Standard load	WLCA2-2N	_	_
		Microload	WL01CA2-2N	_	_
High-precision		Standard load	WLGCA2	_	_
		Microload	WL01GCA2	_	_

		Actuator	Adjustable roller lever	Adjustable rod lever 25 to 140mm	Adjustable rod lever 350 to 380mm	Rod spring lever
Item	Item		Model	Model	Model	Model
Basic		Standard load	WLCA12	WLCL	_	_
Dasic	Microlo		WL01CA12	WL01CL	_	_
	General- purpose	Standard load	WLH12	WLHL	WLHAL4	WLHAL5
		Microload	WL01H12	WL01HL	_	_
	High-	Standard load	WLG12	WLGL	_	_
Overtravel	sensitivity	Microload	WL01G12	WL01GL	_	_
Overtiavei	reitiavei	Standard load	WLCA12-2	WLCL-2	_	_
	90°	Microload	WL01CA12-2	_	_	_
	operation	Standard load	WLCA12-2N	WLCL-2N	_	_
		Microload	WL01CA12-2N	WL01CL-2N	_	_

Actuator		Fork lever lock (with WL-5A100 plastic roller lever)	Fork lever lock (with WL-5A102 plastic roller lever)	Fork lever lock (with WL-5A104 plastic roller lever)	Fork lever lock (with WL-5A104 plastic roller lever)
Item		Model	Model	Model	Model
Maintained	Standard load	WLCA32-41	WLCA32-42	WLCA32-43	WLCA32-44
wamtameu	Microload	WL01CA32-41	_	WL01CA32-43	WL01CA32-44

Plunger

	Actuator	Top plunger 📇	Top-roller plunger	Top-ball plunger 🛔	Sealed top-roller plunger
Item		Model	Model	Model	Model
Top plunger	Standard load	WLD	WLD2	WLD3	WLD28
Top pluliger	Microload	WL01D	WL01D2	WL01D3	WL01D28

	Actuator	Horizontal plunger	Horizontal-roller plunger	Horizontal-ball plunger
Item		Model	Model	Model
Side plunger	Standard load	WLSD	WLSD2	WLSD3
Side pluliger	Microload	WL01SD	WL01SD2	WL01SD3

Flexible Rod

	Actuator	Coll spring (spring	Coil spring (spring diameter: 4.8)	Coil spring (resin rod diameter: 8)	Steel wire (wire diameter: 1)	
Item		Model	Model	Model	Model	
Flexible rod Standard load		WLNJ	WLNJ-30	WLNJ-2	WLNJ-S2	
riexible fou	Microload	WL01NJ	WL01NJ-30	WL01NJ-2	WL01NJ-S2	

General-purpose Switches

Indicator-equipped Switches

Lever

		Actuator	Roller lever R38	Roller lever R50	Roller lever R63	Adjustable roller lever
Item			Model	Model	Model	Model
Basic Neon lamp LED			WLCA2-LE	WLCA2-7LE	WLCA2-8LE	WLCA12-LE
			WLCA2-LD	WLCA2-7LD	WLCA2-8LD	WLCA12-LD
	General-	Neon lamp	WLH2-LE	_	_	WLH12-LE
	purpose	LED	WLH2-LD	_	_	WLH12-LD
	High-	Neon lamp	WLG2-LE	_	_	WLG12-LE
Overtravel	sensitivity	LED	WLG2-LD	_	_	WLG12-LD
Overliavei		Neon lamp	WLCA2-2LE	_	_	WLCA12-2LE
	90°	LED	WLCA2-2LD	_	_	WLCA12-2LD
	operation	Neon lamp	WLCA2-2NLE	_	_	WLCA12-2NLE
		LED	WLCA2-2NLD	_	_	WLCA12-2NLD
High-proc	High-precision Neon lamp		WLGCA2-LE	_	_	_
riigii-prec	151011	LED	WLGCA2-LD	_	_	_

		Actuator	Adjustable rod lever 25 to 140 mm	Adjustable rod lever 350 to 380 mm	Rod spring lever
Item			Model	Model	Model
Basic Neon lamp LED			WLCL-LE	_	_
			WLCL-LD	_	_
	General-	Neon lamp	WLHL-LE	WLHAL4-LE	WLHAL5-LE
	purpose	LED	WLHL-LD	WLHAL4-LD	WLHAL5-LD
	High-	Neon lamp	WLGL-LE	_	_
Overtravel	sensitivity	LED	WLGL-LD	_	_
Overtiavei		Neon lamp	WLCL-2LE	_	_
90	90°	LED	WLCL-2LD	_	_
	operation	Neon lamp	WLCL-2NLE	_	_
		LED	WLCL-2NLD	_	_

N	Actuator	WL-5A100 Plastic Roller Lever)	Fork lever lock (with WL-5A102 Plastic Roller Lever)	Fork lever lock (with WL-5A104 Plastic Roller Lever)
Item		Model	Model	Model
Maintained	Neon lamp	WLCA32-41LE	WLCA32-42LE	WLCA32-43LE
Manitanieu	LED	WLCA32-41LD	_	WLCA32-43LD

Plunger

Actuator		Top plunger 📇	Top-roller plunger	i op-pali bilinger 🚐	Sealed top-roller plunger
Item		Model	Model	Model	Model
Top plunger	Neon lamp	WLD-LE	WLD2-LE	WLD3-LE	WLD28-LE
Top plunger	LED	WLD-LD	WLD2-LD	WLD3-LD	WLD28-LD

		Horizontal plunger	Horizontal-roller plunger	Horizontal-ball plunger	
Item		Model	Model	Model	
Side plunger	Neon lamp	WLSD-LE	WLSD2-LE	WLSD3-LE	
Side pluliger	LED	WLSD-LD	WLSD2-LD	WLSD3-LD	

Flexible Rod

	Actuator	Coil spring (spring diameter: 6.5)	Coil spring (spring diameter: 4.8)	Coil spring (resin rod diameter: 8)	Steel wire (wire diameter: 1)	
Item		Model	Model	Model	Model	
Flexible rod Neon lamp LED		WLNJ-LE	WLNJ-30LE	WLNJ-2LE	WLNJ-S2LE	
		WLNJ-LD	WLNJ-30LD	WLNJ-2LD	WLNJ-S2LD	

General-purpose Switches

(Sensor I/O Connector Switches)

Direct-wired Connectors

					Item	Basic	Over	travel	High-precision							
						Dasic	General-purpose	High-sensitivity	nigh-precision							
Actuator		٧	Virin	g	Built-in switch specification	Model	Model	Model	Model							
Roller lever	2-con-	DC		connector	Standard	WLCA2-LDK13	WLH2-LDK13	WLG2-LDK13	WLGCA2-LDK13							
Notice level	ductor	or DC	or Bo	NO	NO	INO	DC NO				No. 3, 4	Airtight seal	WLCA2-55LDK13	WLH2-55LDK13	WLG2-55LDK13	WLGCA2-55LDK13
	4-con-	4-con- DC			Standard	WLCA2-LDK43	WLH2-LDK43	WLG2-LDK43	WLGCA2-LDK43							
	ductor	uctor		r 55		ctor			Airtight seal	WLCA2-55LDK43	WLH2-55LDK43	WLG2-55LDK43	WLGCA2-55LDK43			
Top-roller	2-con-	DC I	NO	connector	Standard	WLD2-LDK13	_	_	_							
plunger	ductor		uctor		or DC NO		DC NO		No. 3, 4	Airtight seal	WLD2-55LDK13	_	_	_		
	4-con-	n- DC			Standard	WLD2-LDK43	_	_	_							
	ductor	БС			Airtight seal	WLD2-55LDK43	_	_	_							

Pre-wired Connectors

					Item	Basic	Over	travel	High-precision	
						Dasic	General-purpose	High-sensitivity	nigii-precision	
Actuator		٧	Virin	g	Built-in switch specification	Model	Model	Model	Model	
				connector	Standard	WLCA2-LD-M1J	WLH2-LD-M1J	WLG2-LD-M1J	WLGCA2-LD-M1J	
			NO	No. 3, 4	Airtight seal	WLCA2-55LD-M1J	_	_	WLGCA2-55LD-M1J	
	2-con-	DC		1	connector	Standard	WLCA2-LD-M1GJ	WLH2-LD-M1GJ	WLG2-LD-M1GJ	WLGCA2-LD-M1GJ
Roller lever	ductor			pins No. 1, 4	Airtight seal	WLCA2-55LD-M1GJ	_	WLG2-55LD-M1GJ	_	
Notice level				connector	Standard	_	_	WLG2-LD-M1JB	_	
			INC	No. 3, 2	Airtight seal	WLCA2-55LD-M1JB	_	WLG2-55LD-M1JB	WLGCA2-55LD-M1JB	
	4-con-	DC			Standard	WLCA2-LD-DGJ03	WLH2-LD-DGJ03	WLG2-LD-DGJ03	_	
	ductor	DC			Airtight seal	WLCA2-55LD-DGJ03	_	WLG2-55LD-DGJ03	WLGCA2-55LD-DGJ03	
	3-con-	DC		connector	Standard	WLCA2-LD-DK1EJ03	_	WLG2-LD-DK1EJ03	_	
	ductor	DC			No. 2, 3, 4	Airtight seal	WLCA2-55LD-DK1EJ03	_	WLG2-55LD-DK1EJ03	_
					connector	Standard	WLD2-LD-M1J	_	_	_
			NO	No. 3, 4	Airtight seal	WLD2-55LD-M1J	_	_	_	
	2-con-	DC	NO	connector	Standard	WLD2-LD-M1GJ	_	_	_	
Top-roller	ductor	БС		No. 1, 4	Airtight seal	WLD2-55LD-M1GJ	_	_	_	
plunger			NC	connector	Standard	_	_	_	_	
			NC	No. 3, 2	Airtight seal	WLD2-55LD-M1JB	_	_	_	
	4-con-	DC			Standard	WLD2-LD-DGJ03	_	_	_	
	ductor	DC			Airtight seal					
	3-con-	DC		connector	Standard	WLD2-LD-DK1EJ03	_	_	_	
	ductor	ЪС		No. 2, 3, 4	Airtight seal	WLD2-55LD-DK1EJ03	_	_	_	

Environment-resistant Switches

Note: Models are also available with ground terminals.

				Actuator		Roller lever R38				
					Basic	Over	travel			
					Dasic	General-purpose	High-sensitivity			
Item					Model	Model	Model			
	No indicator				WLCA2-55	WLH2-55	WLG2-55			
Airtight seal			Indicator	LED	WLCA2-55LD	WLH2-55LD	WLG2-55LD			
			iliuicatoi	Neon	WLCA2-55LE	WLH2-55LE	WLG2-55LE			
		-139	No indicat	or	WLCA2-139	WLH2-139	WLG2-139			
	-139		Indicator	NC wiring	WLCA2-139LD2	_	_			
			NO wiring	WLCA2-139LD3	_	WLG2-139LD3				
	Molded		No indicat	or	WLCA2-140	WLH2-140	WLG2-140			
	terminals	-140	-140	-140	Indicator	NC wiring	WLCA2-140LD2	_	WLG2-140LD2	
Hermetic			indicator	NO wiring	WLCA2-140LD3	_	WLG2-140LD3			
seal			No indicat	or	WLCA2-141	WLH2-141	WLG2-141			
		-141	Indicator	NC wiring	WLCA2-141LD2	_	WLG2-141LD2			
			illulcator	NO wiring	WLCA2-141LD3	WLH2-141LD3	WLG2-141LD3			
			No indicat	or	WLCA2-RP60	WLH2-RP60	WLG2-RP60			
	Anti-coola	nt	Indicator	NC wiring	WLCA2-RP60LD2	_	WLG2-RP60LD2			
			illulcator	NO wiring	WLCA2-RP60LD3	WLH2-RP60LD3	WLG2-RP60LD3			
Heat-resist	Heat-resistant				WLCA2-TH	WLH2-TH	WLG2-TH			
Low-temper	erature		No indicat	or	WLCA2-TC	WLH2-TC	WLG2-TC			
Corrosion-	proof		INO MUICAL	OI .	WLCA2-RP	WLH2-RP	WLG2-RP			
Weather-p	roof				WLCA2-P1	WLH2-P1	WLG2-P1			

				Actuator	Roller lever R38								
					Over	travel	High-precision						
					90° (-2 model) 90° (-2N model)		- nigii-precision						
Item					Model	Model	Model						
			No indicat	or	WLCA2-255	WLCA2-2N55	WLGCA2-55						
Airtight seal Indicator LED Neon			LED	WLCA2-255LD	WLCA2-2N55LD	WLGCA2-55LD							
			Neon	WLCA2-255LE	WLCA2-2N55LE	WLGCA2-55LE							
		No indicat	or	WLCA2-2139	WLCA2-2N139	WLGCA2-139							
	-139	-139	Indicator	NC wiring	WLCA2-2139LD2	_	WLGCA2-139LD2						
			illulcator	NO wiring	WLCA2-2139LD3	_	WLGCA2-139LD3						
			No indicat	or	_	WLCA2-2N140	WLGCA2-140						
	Molded terminals	-140	-140	-140	-140	-140	-140	-140	Indicator	NC wiring	_	_	WLGCA2-140LD2
Hermetic	terminais		indicator	NO wiring	_	_	WLGCA2-140LD3						
seal			No indicat	or	_	_	WLGCA2-141						
		-141	Indicator	NC wiring	_	_	_						
			illuicator	NO wiring	_	_	WLGCA2-141LD3						
			No indicat	or	WLCA2-2RP60	_	WLGCA2-RP60						
	Anti-coola	nt	Indicator	NC wiring	WLCA2-2RP60LD2	_	WLGCA2-RP60LD2						
			indicator	NO wiring	WLCA2-2RP60LD3	_	WLGCA2-RP60LD3						
Heat-resist	ant				WLCA2-2TH	WLCA2-2NTH	WLGCA2-TH						
Low-tempe	erature		No indicator		WLCA2-2TC	WLCA2-2NTC	WLGCA2-TC						
Corrosion-	proof				_	_	WLGCA2-RP						

Actuator					Adjustable roller lever			
					Basic	Over	travel	
					Dasic	General-purpose	High-sensitivity	
Item					Model	Model	Model	
			No indicat	or	WLCA12-55	_	_	
Airtight sea	al		Indicator	LED	WLCA12-55LD	_	_	
				Neon	WLCA12-55LE	_	_	
	Molded	-139			WLCA12-139	_	_	
Hermetic	terminals	-140	No indicat	or	WLCA12-140	_	_	
seal	torminaio	-141	No indicator		WLCA12-141	_	_	
	Anti-coola	nt			WLCA12-RP60	_	_	
Heat-resist	Heat-resistant			WLCA12-TH	WLH12-TH	WLG12-TH		
Low-temperature No indicator			or	WLCA12-TC	WLH12-TC	WLG12-TC		
Corrosion-proof			- INO MUICAL	UI	WLCA12-RP	WLH12-RP	WLG12-RP	
Weather-pi	roof				WLCA12-P1	WLH12-P1	WLG12-P1	

	Actuator	Adjustable ro	oller lever	
		Overtravel		
		90° (-2 model)	90° (-2N model)	
Item		Model	Model	
Heat-resistant	No indicator	WLCA12-2TH	WLCA12-2NTH	
Low-temperature	NO IIIUICALOI	WLCA12-2TC	WLCA12-2NTC	

Actuator					Adjustable rod lever 25 to 140 mm			
					Basic	Over	travel	
					Dasic	General-purpose	High-sensitivity	
Item					Model	Model	Model	
			No indicat	or	WLCL-55	_	_	
Airtight sea	al		Indicator	LED	WLCL-55LD	_	_	
				Neon	_	_	_	
	Maldad	-139			WLCL-139	_	_	
Hermetic	Molded terminals	-140	No indicat	or	WLCL-140	_	_	
seal	terminais	-141	NO IIIUICALOI	_	_	_		
	Anti-coola	nt			WLCL-RP60	_	_	
Heat-resist	ant				WLCL-TH	WLHL-TH	WLGL-TH	
Low-temperature No indicator				WLCL-TC	WLHL-TC	WLGL-TC		
Corrosion-proof			- NO INGICAL	.UI	WLCL-RP	WLHL-RP	WLGL-RP	
Weather-pr	oof				WLCL-P1	WLHL-P1	WLGL-P1	

	Actuator	Adjustable rod lever 25 to 140 mm		
		Overtravel		
		90° (-2 model)	90° (-2N model)	
Item		Model	Model	
Heat-resistant		WLCL-2TH	WLCL-2NTH	
Low-temperature	No indicator	WLCL-2TC	WLCL-2NTC	
Corrosion-proof		WLCL-2RP	_	

omron 15

Actuator				Actuator	Top-roller plunger 🛔	Sealed top-roller plunger	Horizontal plunger
Item					Model	Model	Model
			No indicat	or	WLD2-55	WLD28-55	WLSD-55
Airtight sea	al		Indicator	LED	WLD2-55LD	WLD28-55LD	WLSD-55LD
			indicator	Neon	WLD2-55LE	WLD28-55LE	_
Hamastia	Molded	-139			WLD2-139	WLD28-139	WLSD-139
Hermetic seal	terminals	-140	No indicat	or	_	WLD28-140	_
	Anti-coola	nt			WLD2-RP60	WLD28-RP60	WLSD-RP60
Heat-resist	Heat-resistant			WLD2-TH	WLD28-TH	WLSD-TH	
Low-tempe	Low-temperature No in		No indicat	or	WLD2-TC	_	WLSD-TC
Corrosion-	proof				WLD2-RP	WLD28-RP	WLSD-RP

Note: The standard cable length for models with airtight seals is 5 m.

					Horizontal-roller plunger	Coil spring (spring diameter: 6.5)	Coil spring (resin rod diameter: 8)
Item					Model	Model	Model
			No indicat	or	WLSD2-55	WLNJ-55	WLNJ-255
Airtight sea	al		Indicator	LED	WLSD2-55LD	WLNJ-55LD	WLNJ-255LD
			indicator	Neon	_	_	_
Hermetic	Molded	-139			WLSD2-139	WLNJ-139	_
seal	terminals	-140	No indicat	or	WLSD2-140	WLNJ-140	WLNJ-2140
	Anti-coola	nt			WLSD2-RP60	WLNJ-RP60	WLNJ-2RP60
Heat-resist	Heat-resistant			WLSD2-TH	WLNJ-TH	_	
Low-tempe	Low-temperature No indicate		or	WLSD2-TC	WLNJ-TC	WLNJ-2TC	
Corrosion-	proof				WLSD2-RP	WLNJ-RP	WLNJ-2RP

Note: The standard cable length for models with airtight seals is 5 m.

Spatter-prevention Switches

		Actuator	Roller le	Sealed top-roller plunger				
			Double nut lever	Allen-head lever				
Item			Model	Model	Model			
	Basic		WLCA2-LEAS	WLCA2-LES	WLD28-LES			
Neon lamp operation	Overtravel	General-purpose	WLH2-LEAS	WLH2-LES	_			
indicator	Overtiavei	Overtiavei	Overtiavei	Overtiavei	High-sensitivity	WLG2-LEAS	WLG2-LES	_
	High-precis	ion	_	WLGCA2-LES	_			
	Basic		WLCA2-LDAS	WLCA2-LDS	WLD28-LDS			
LED operation	Overtravel	General-purpose	WLH2-LDAS	WLH2-LDS	_			
indicator	Overtraver	High-sensitivity	WLG2-LDAS	WLG2-LDS	_			
	High-precis	ion	_	WLGCA2-LDS	_			

Note: Ask your OMRON representative about WL01 \square - \square S Microload Switches.

Long-life Switches

Item				LED operati	on indicator *1	
			Basic	Ove	rtravel	High-precision
			Dasic	General-purpose	High-sensitivity	nigh-precision
Actuator			Model	Model	Model	Model
Roller lever, screw terminal			WLMCA2-LD	WLMH2-LD	WLMG2-LD	WLMGCA2-LD
©	0	AC	WLMCA2-LDK13A	WLMH2-LDK13A	WLMG2-LDK13A	WLMGCA2-LDK13A
Roller lever,	2-conductor	DC	WLMCA2-LDK13	WLMH2-LDK13	WLMG2-LDK13	WLMGCA2-LDK13
connector	4-conductor	AC	WLMCA2-LDK43A	WLMH2-LDK43A	WLMG2-LDK43A	WLMGCA2-LDK43A
		DC	WLMCA2-LDK43	WLMH2-LDK43	WLMG2-LDK43	WLMGCA2-LDK43
Roller lever, pre-wired connector *2	2-conductor	DC	WLMCA2-LD-M1J	WLMH2-LD-M1J	WLMG2-LD-M1J	WLMGCA2-LD-M1J
	4-conductor	DC	WLMCA2-LD-DGJ03	WLMH2-LD-DGJ03	WLMG2-LD-DGJ03	_

Connecting Cables

Straight Cable



Voltage specification	Number of conductors	Cable length	Model
	2	2 m	XS2F-A421-DB0-A
AC	2	5 m	XS2F-A421-GB0-A
AC	4	2 m	XS2F-A421-D90-A
	4	5 m	XS2F-A421-G90-A
	2	2 m	XS2F-D421-DD0-A
DC	2	5 m	XS2F-D421-GD0-A
ЪС	4	2 m	XS2F-D421-D80-A
	4	5 m	XS2F-D421-G80-A

^{*1.} The default setting is "light-ON when not operating."
Turn the lamp holder by 180° to change the setting to "light-ON when operating". (Ask your OMRON representative about 2-conductor models.)
*2. With 0.3-m cable attached.

Individual Parts

Heads

Actuator type	Set model	Head model (with Actuator)
	WLCA2	WL-1H1100
©	WLG2	WL-2H1100
Roller lever	WLH2	WL-2H1100-1 *
	WLCA2-2	WL-3H1100
	WLCA2-2N	WL-6H1100
	WLCA12	WL-1H2100
A dimension ©	WLG12	WL-2H2100
Adjustable roller lever	WLH12	WL-2H2100-1 *
Toller level	WLCA12-2	WL-3H2100
	WLCA12-2N	WL-6H2100
1	WLCL	WL-4H4100
Adjustable	WLGL	WL-2H4100
rod lever	WLCL-2	WL-3H4100
	WLCL-2N	WL-6H4100

Actuator type	Set model	Head model (with Actuator)
	WLD	WL-7H100
Top plunger	WLD2	WL-7H200
Top plunger	WLD3	WL-7H300
	WLD28	WL-7H400
Hardward 200	WLSD	WL-8H100
Horizontal plunger	WLSD2	WL-8H200
pianger	WLSD3	WL-8H300
	WLCA32-41	WL-5H5100
Fork lever	WLCA32-42	WL-5H5102
lock ©	WLCA32-43	WL-5H5104
	WLCA32-44	WL-5H5104
n	WLNJ	WL-9H100
Coil spring	WLNJ-30	WL-9H200
Con spring	WLNJ-2	WL-9H300
	WLNJ-S2	WL-9H400

^{*} The model number of Heads without levers are same as those of Heads with levers without the numbers at the end. Example: WL-1H1100 becomes WL-1H without the lever.

However, the WLH2 and WLH12 become WL-2H-1 and the WLGCA2 becomes WL-1H-1 for the Heads without levers. Other Heads are also available. Ask your OMRON representative.

Switches without levers

	Actuator type	Switches without levers	
		Model	
	Basic R38	WLRCA2	
	High-precision R38	WLRGCA2	
Switches for roller levers	High-sensitivity overtravel, 80°	WLRG2	
owneries for roller levers (i)	General-purpose overtravel, 80°	WLRH2	
	Overtravel, 90° operation	WLRCA2-2	
	Overtravel, 90° operation	WLRCA2-2N	
	Basic	WLRCA2	
O	High-sensitivity overtravel, 80°	WLRG2	
Switches for adjustable roller levers	General-purpose overtravel, 80°	WLRH2	
Toller levels	Overtravel, 90° operation	WLRCA2-2	
	Overtravel, 90° operation	WLRCA2-2N	
	Basic, 25 to 140 mm	WLRCL	
Switches for adjustable	High-sensitivity overtravel, 80°, 25 to 140 mm	WLRG2	
rod lever	Overtravel, 90° operation, 25 to 140 mm	WLRCA2-2	
	Overtravel, 90° operation, 25 to 140 mm	WLRCA2-2N	
Switches for top plungers	_	_	
Switches for horizontal plungers	_	_	
Switches for fork lever locks	Maintained, WL-5A100 Maintained, WL-5A102 Maintained, WL-5A104	WLRCA32	
Switches for coil springs	_	_	

Covers with Operation Indicators

Cover	Cover only with indicator
Item	Model
Neon lamp	WL-LE
LED	WL-LD

Note: The default setting is "light-ON when not operating."

Turn the lamp holder by 180° to change the setting to "light-ON when operating."



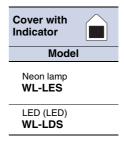
Spatter-prevention Products Head (with actuator)

Complete Heads with allen-head levers Model WL-1H1100S (for WLCA2-□ or WLGCA2-□) WLGCA2-□) Double Nut Lever B WL-2H1100S (for WLH2-□ or WLG2-□)

Lever

Allen-head Lever	Double Nut Lever
Model	Model
WL-1A103S Roller lever	WL-1A105S Roller Lever

Cover with indicator Switches without Levers



Switches without levers	
Model	
WLRCA2-LDS	
WLRH2-LES	
WLRH2-LDS	
WLRG2-LDS	
WLRGCA2-LES	S

WL Head Replacement

Heads can be replaced within the same model group. They cannot be replaced between different model groups.

Group No.	Set model number	Head model number (with Actuator)
	WLCA2	WL-1H1100
1	WLCA2-7	WL-1H1200
ı	WLCA2-8	WL-1H1300
	WLCA12	WL-1H2100
2	WLCL	WL-4H4100 *
	WLH2	WL-2H1100-1
	WLH12	WL-2H2100-1
3	WLHL	WL-2H4100
	WLHAL4	WL-2H4106
	WLHAL5	WL-2H4107
	WLCA2-2N	WL-6H1100
4	WLCA12-2N	WL-6H2100
	WLCL-2N	WL-6H4100
	WLCA2-2	WL-3H1100
5	WLCA12-2	WL-3H2100
	WLCL-2	WL-3H4100
	WLG2	WL-2H1100
6	WLG12	WL-2H2100
	WLGL	WL-2H4100
	WLCA32-41	WL-5H5100
7	WLCA32-42	WL-5H5102
/	WLCA32-43	WL-5H5104
	WLCA32-44	WL-5H5104
	WLD	WL-7H100
8	WLD2	WL-7H200
	WLD3	WL-7H300
9	WLD28	WL-7H400 *
	WLSD	WL-8H100
10	WLSD2	WL-8H200
	WLSD3	WL-8H300
4.4	WLNJ	WL-9H100
11	WLNJ-30	WL-9H200
12	WLNJ-2	WL-9H300 *
13	WLNJ-S2	WL-9H400 *

^{*} This Heads are special and must be used. Do not use any other Head.

Specifications

Approved Standards

Agency	Standard	File No.	Approved models	
UL	UL508	E76675		
CSA	CSA CSA C22.2 No.14 LR45746			
TÜV Rheinland	EN60947-5-1	J50022353, J9950023, J9950959	Contact your OMRON representative for information on approved models.	
CCC (CQC) GB14048.5 20040		2004010305128675		

General-purpose/Weather-proof Switches

Ratings

Standard-load Switches

Item		Non-inductive load (A)			Inductive load (A)				
	Rated voltage (V)	Resistive load		Lamp load		Inductive load		Motor load	
Model	(-)	NC NO		NC	NO	NC	Ю	NC	NO
Basic models, overtravel models (except	125 VAC 250 VAC 500 VAC	1	0 0 0	3 2 1.5	1.5 1 0.8	1 1 3	0	5 3 1.5	2.5 1.5 0.8
for high- sensitivity models), and high-precision models	8 VDC 14 VDC 30 VDC 125 VDC 250 VDC	1 6 0	0 0 6 .8 .4	6 6 4 0.2 0.1	3 3 0.2 0.1		.8	0. 0.	6 1 .2
High-sensitivity overtravel	ty 125 VAC 5 250 VAC 5					_	_	_	
models	125 VDC 250 VDC	0.4 0.2		_			_	_	_

Inrush cur-		30 A max. (15 A max. *)
rent	NO	20 A max. (10 A max. *)

^{*} For high-sensitivity overtravel models.

- Note: 1. The above figures are for steady-state
 - In le above ingures 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.

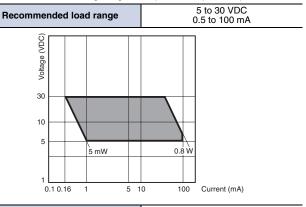
 5. For PC loads, use the microload models.

Minimum applicable load 5 VDC 160 mA

Microload Switches (Refer to these ratings before using the product.)

Rated voltage (V)	Rated current (A) - Resistive load
AC 125	0.1
DC 30	0.1

Operation in the following ranges will produce optimum performance.



Recommended load range	5 VDC 1 mA

Approved Standard Ratings UL/CSA

Standard-load Switches: A600, NEMA

Rated	Carry cur- Current (A)			Volt-amp	eres (VA)
voltage	rent	Make	Break	Make	Break
120 VAC		60	6		
240 VAC	10 A	30	3	7.200	720
480 VAC	10 A	15	1.5	7,200	/20
600 VAC		12	1.2		

Microload Switches

0.1 A 125 VAC, 0.1 A 30 VDC

TÜV (EN60947-5-1) (Only models with ground terminals are approved.)

Model	Application category and ratings	Thermal cur- rent (Ithe)	Indicator		
WL□	AC-15: 2 A/250 V DC-12: 2 A/48 V	10 A	_		
WL01□	AC-14: 0.1 A/125V DC-12: 0.1 A/48 V	0.5 A	_		
WL□-LE	AC-15: 2 A/250 V	10 A	Neon lamp		
WL01□-LE	AC-14: 0.1 A/125 V	0.5 A	Neon lamp		
WL□-LD	AC-15: 2 A/115 V DC-12: 2 A/48 V	10 A	LED		
WL01□-LD	AC-14: 0.1 A/115 V DC-12: 0.1 A/48 V	0.5 A	LED		
Note: As an example, AC-15: 2 A/250 V means the following:					

Note: As an example, AC-15: 2 A/250 V means the following

Application category	AC-15
Rated operating current (le)	2A
Rated operating voltage (Ue)	250V

Indicator-equipped Switches

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

Characteristics

Degree of protection		IP67		
Durability	Mechanical	15,000,000 operations min. *2		
*1	Electrical	750,000 operations min. *3		
Operating speed		1 mm/s to 1 m/s (in case of WLCA2)		
Operating	Mechanical	120 operations/minute min.		
frequency	Electrical	30 operations/minute min.		
Rated frequ	ency	50/60 Hz		
Insulation re	esistance	100 MΩ min. (at 500 VDC)		
Contact res	istance	$25~\text{m}\Omega$ max. (initial value for the built-in switch when tested alone) *6		
	Between terminals of the same polarity	1,000 VAC (600 VAC), 50/60 Hz for 1 min		
Dielectric strength	Between current- carrying metal part and ground	2,200 VAC (1,500 VAC), 50/60 Hz for 1 min/Uimp 2.5 kV		
	Between each termi- nal and non-current- carrying metal part	2,200 VAC (1,500 VAC), 50/60 Hz for 1 min/Uimp 2.5 kV		
Rated insula	ation voltage (Ui)	250 V (EN60947-5-1)		
Pollution de environmen	egree (operating t)	3 (EN60947-5-1)		
Short-circuit p	protective device (SCPD)	10 A, fuse type gG or gl (IEC60269)		
Conditional	short-circuit current	100 A (EN60947-5-1)		
Convention current (Ithe	al enclosed thermal	10 A, 0.5 A (EN60947-5-1)		
Protection a	against electric shock	Class I		
Vibration resistance	Malfunction	10 to 55 Hz, 1.5-mm double amplitude *4		
Shock	Destruction	1,000 m/s ² min.		
resistance	Malfunction	300 m/s ² min. *4		
Ambient operating temperature		-10°C to +80°C (with no icing) *5		
•	erating humidity	35% to 95% RH		
Weight		Approx. 275 g (in case of WLCA2)		
Nister of The	- I	_		

- Note: 1. The above figures are initial values.
 2. The figures in parentheses for dielectric strength are those for the high-sensitivity overtravel models.
- *1. The values are calculated at an operating temperature of +5°C to +35°C and an operating humidity of 40% to 70%RH. Contact your OMRON sales representative for more detailed information on other operating environments.

 *2. Durability is 10,000,000 operations min. for general-purpose or high-
- sensitivity overtravel models, and for flexible rod models
- 500,000 operations min. for weather-proof models.
 *3. Durability is 500,000 operations min. for high-sensitivity models. All
- 5. Durability is 500,000 operations min. 101 night-sensitivity models. All microload models are 1,000,000 operations min. 500,000 operations min. for weather-proof models.
 *4. Except flexible rod models. The shock resistance (malfunction) for microload models is 200 m/s² min.
 *5. For low-temperature models this is -40°C to +40°C (with no icing). For heatresistant models the range is +5°C to +120°C.
 *6. For microload models, the contact resistance is 50 mO may, (initial value for the contact resistance is 50 mO may.)
- *6. For microload models, the contact resistance is 50 m Ω max. (initial value for built-in switch).

Spatter-prevention Switches

Ratings Screw terminals

Item		Non-inductive load (A)			ad (A)	Inc	luctive	load	(A)
	Rated voltage (V)	Resistive load				Inductive load		Motor load	
Model		NC	NO	NC	NO	NC	NO	NC	NO
WL□-LES	125 VAC 250 VAC		0 0	3 2	1.5 1		0 0	5 3	2.5 1.5
	115 VAC	1	0	3	1.5	1	0	5	2.5
WL□-LDS	12 VDC 24 VDC	1	0	6 4	3		0	6	
	48 VDC	3		2	1.5		3	2	-

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

Inrush	NC	30 A max.
current	NO	20 A max.
Operating temperature		-10°C to +80°C (with no icing)
Operating humidity		35% to 95%RH max.

Approved Standard Ratings UL/CSA

LE Switches (Neon lamp): A300

Rated	Carry	Curre	nt (A)	Volt-amp	eres (VA)
voltage	current	Make	Break	Make	Break
120 VAC 240 VAC	10 A	60 30	6 3	7,200	720

LD Switches (LED)

Rated voltage	Carry current
115 VAC	10 A
115 VDC	0.8 A

CCC (GB14048.5)

Model	Application category and ratings
WL	AC-15: 2 A/250 V DC-12: 2 A/48 V
WL01□	AC-14: 0.1 A/125V DC-12: 0.1 A/48 V
WL□-LE	AC-15: 2 A/250 V
WL01□-LE	AC-14: 0.1 A/125 V
WL□-LD	AC-15: 2 A/115 V DC-12: 2 A/48 V
WL01□-LD	AC-14: 0.1 A/115 V DC-12: 0.1 A/48 V

Note: As an example, AC-15: 2 A/250 V means the following:

Application category	AC-15
Rated operating current (le)	2 A
Rated operating voltage (Ue)	250 V

Characteristics

Degree of p	rotection	IP67		
Durability	Mechanical	15,000,000 operations min. *2		
*1	Electrical	750,000 operations min. *3		
Operating s	peed	1 mm/s to 1 m/s (in case of WLCA2)		
Operating	Mechanical	120 operations/minute min.		
frequency	Electrical	30 operations/minute min.		
Rated frequ	ency	50/60 Hz		
Insulation r	esistance	100 MΩ min. (at 500 VDC)		
Contact res	istance	$25~\text{m}\Omega$ max. (initial value for the builtin switch when tested alone)		
	Between terminals of the same polarity	1,000 VAC (600 VAC), 50/60 Hz for 1 min		
Dielectric strength	Between current- carrying metal part and ground	2,200 VAC (1,500 VAC), 50/60 Hz for 1 min/Uimp 2.5 kV		
	Between each terminal and non-current- carrying metal part	2,200 VAC (1,500 VAC), 50/60 Hz for 1 min/Uimp 2.5 kV		
Rated insul (Ui)	ation voltage	250 V (EN60947-5-1)		
	environment)	3 (EN60947-5-1)		
device (SCI		10 A, fuse type gG or gI (IEC60269)		
Conditional current	short-circuit	100 A (EN60947-5-1)		
Convention thermal cur	al enclosed rent (Ithe)	10 A, 0.5 A (EN60947-5-1)		
Protection a electric sho		Class I		
Vibration resistance	Malfunction	10 to 55 Hz, 1.5-mm double amplitude		
Shock	Destruction	1,000 m/s ² min.		
	Malfunction	300 m/s ² min.		
Ambient op temperature		-10°C to +80°C (with no icing)		
Ambient op humidity	erating	35% to 95%RH		
Weight		Approx. 275 g (in case of WLCA2)		
· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·	· · · · · · · · · · · · · · · · · · ·		

- Note: 1. The above figures are initial values.
 2. The figures in parentheses for dielectric strength are those for the high-sensitivity overtravel models.
- *1. The values are calculated at an operating temperature of +5°C to +35°C and an operating humidity of 40% to 70%RH. Contact your OMRON sales representative for more detailed information on other operating environments.
- *2. Durability is 10,000,000 operations min. for general-purpose or highsensitivity overtravel models.
- *3. Durability is 500,000 operations min. for high-precision models. All microload models however, are 1,000,000 operations min.

Long-life Switches

Ratings

General Ratings (Refer to these ratings before using the product.)

Screw Terminal Switches

Item	5	Non-inductive load (A)				Inductive load (A)			
	Rated voltage (V)	Resi		Lamp load		Induc- tive load		Motor load	
Model	(*)	NC	NO	NC	NO	NC	NO	NC	NO
Basic models,	115 AC	10		3	1.5	10		5	2.5
overtravel mod- els, (except for high-sensitivity models), and high-precision models	12 DC 24 DC 48 DC 115 DC		0 6 3).8	6 4 2 0.2	3 3 1.5 0.2		0 6 3).8	2 0.	1
High-sensitivity	115 AC	5		_		_		_	
overtravel mod- els	115 DC	0	.4	_	-	_		_	

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

* For high-sensitivity overtravel models.

Direct-wired Connector and Pre-wired Connector Switches

		Non	-induct	ive load	(A) b	Inductive load (A)				
Model	Model Rated voltage (V)		Resistive load		Lamp load		Inductive load		Motor load	
(*)	NC	NO	NC	NO	NC	NO	NC	NO		
	12 DC	3	3	3	3	3	3	3	3	
DC	24 DC	3	3	3	3	3	3	3	3	
ЪС	48 DC	3	3	3	3	3	3	3	3	
	115 DC	0.8	0.8	0.2	0.2	0.8	0.8	0.2	0.2	
AC	115 AC	3	3	3	1.5	3	3	3	2.5	

Note: 1. 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).
- 3. A lamp load has an inrush current of 10 times the steady-state current.
- 4. A motor load has an inrush current of 6 times the steady-state current.

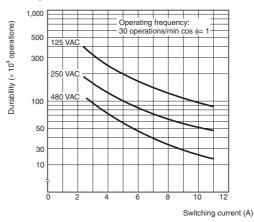
Characteristics

Degree of pr	otection	IP67			
	Mechanical	30,000,000 operations min.			
Durability *	Electrical	30,000,000 operations min. (10 mA at 24 VDC, resistive load) 750,000 operations min. (10 A at 115 VAC, resistive load), but for high-precision models: 500,000 operations min. (10 A at 115 VAC, resistive load)			
Operating sp	eed	1 mm/s to 1 m/s (in case of WLCA2)			
Operating Mechanical		120 operations/minute			
frequency Electrical		30 operations/minute			
Rated frequency		50/60 Hz			
Insulation resistance		100 MΩ min. (at 500 VDC)			
Contact resistance		$25~\text{m}\Omega$ max. (initial value for the builtin switch when tested alone)			
	Between terminals of the same polarity	1,000 VAC (except connector models)			
Dielectric strength (50/60 Hz for 1 min)	Between current- carrying metal part and ground	2,200 VAC (1,500 V)			
	Between each terminal and non-current- carrying metal part	2,200 VAC (1,500 V)			
Vibration resistance Malfunction		10 to 55 Hz, 1.5-mm double amplitude			
Shock Destruction		1,000 m/s ² min.			
resistance Malfunction		300 m/s ² min.			
Ambient operating temperature		-10°C to +80°C (with no icing)			
Ambient ope humidity	erating	35% to 95%RH			
Weight		Approx. 275 g (in case of WLCA2)			

Note: The figures in parentheses for dielectric strength, are those for overtravel (high-sensitivity) or connector models.

Engineering Data Electrical Durability: cos∮= 1

(Operating temperature: +5°C to +35°C, operating humidity: 40% to 70%RH)

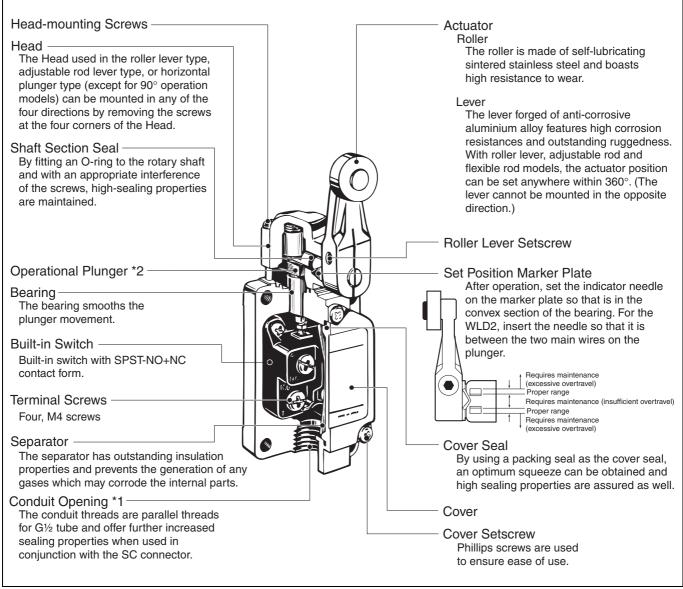


^{*} The values are calculated at an operating temperature of +5°C to +35°C, and an operating humidity of 40% to 70%RH. Contact your OMRON sales representative for more detailed information on other operating environments.

Structure and Nomenclature

Structure

General-purpose Switches: WLCA2



^{*1.} The display for conduit threads has changed from PF½ to G½, according to revisions of JIS B 0202. This is only a change in the display, so the thread size and pitch have not changed. (Conduit threads Pg 13.5 and ½-14NPT are also available.)

^{*2.} By changing the orientation of the operational plunger, any one of the three operational directions (both sides, left, or right) can be selected electrically.

Indicators

Indicator Covers

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

Indicator Windows

Operation (i.e., light-ON when operating or light-ON when not operating) depends on whether a neon lamp or 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°.

(Molded terminals cannot be switched in this way.)



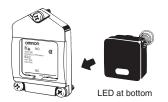
Indicator

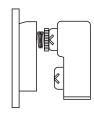




Light-ON when Not Operating

OMROD



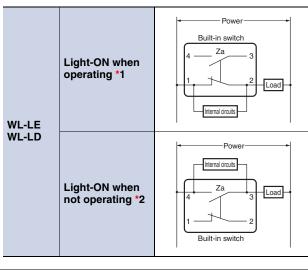


The indicator is either a neon lamp or

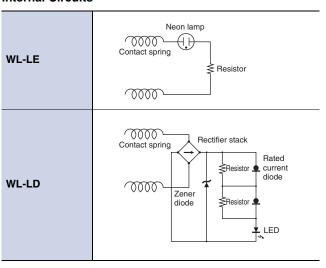
have a built-in rectifier stack, so it is not necessary to change the polarity.

an LED. Models with LED indicators

Operation



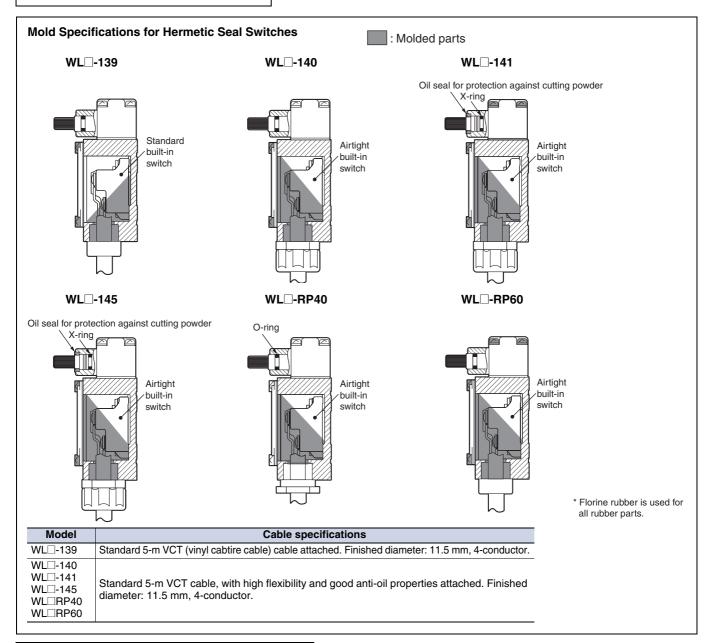
Internal Circuits



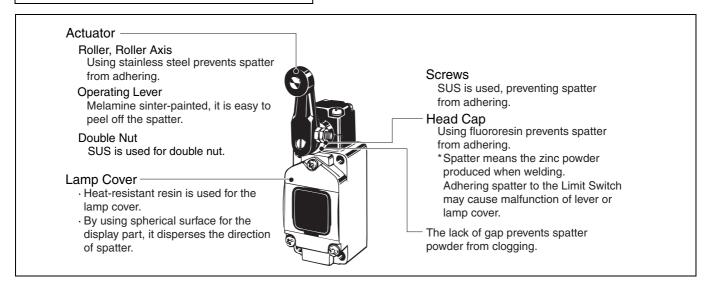
Note: 1. The indicator cover cannot be replaced on the molded terminals. In all cases the indicator does not light when the load is ON.

- 2. Leakage current from indicator circuit may cause load's malfunction. Please check the load's OFF current before use the indicator-equipped switch.
- *1. Light-ON when operating means that the lamp lights when the Limit Switch contacts (NC) release, or when the actuator rotates or is pushed down.
- *2. Light-ON when not operating means the lamp remains lit when the actuator is free, or when the Limit Switch contacts (NO) close when the actuator rotates or is pushed down.

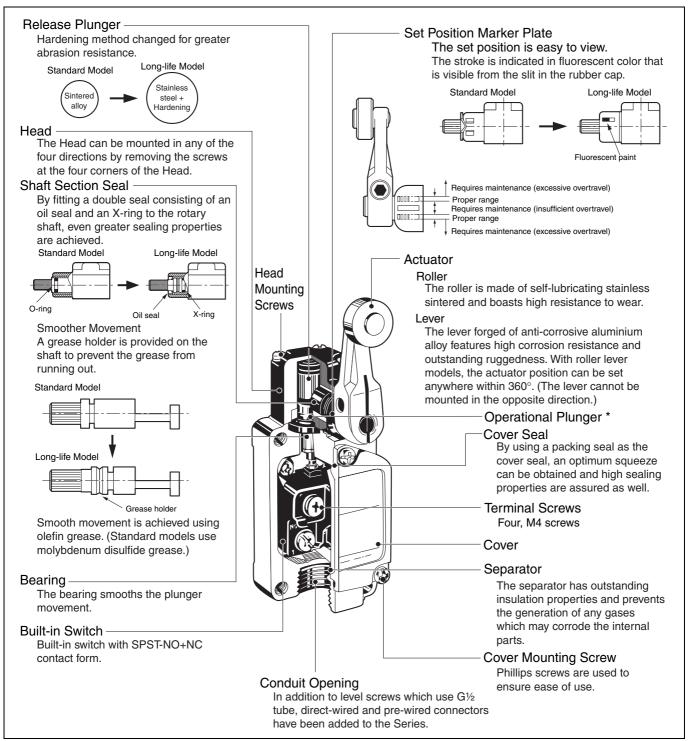
Environment-resistant Switches



Spatter-prevention Switches: WLCA2-LEAS



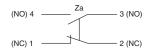
Long-life Switches: WLMGCA2-LD



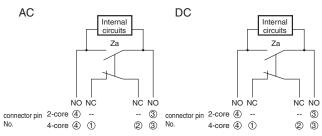
^{*} By changing the direction of the operational plunger, any one of the three operational directions (both sides, left, or right) can be selected.

Contact Forms

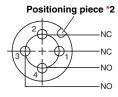
Screw Terminal Switches



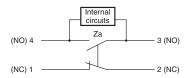
Direct-wired Connector Switches Indicator-equipped (Light-ON when Not Operating) Switches *1



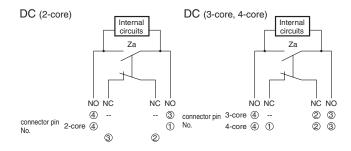
Positioning piece *2 NC NC NC NO NO NO



Screw Terminal Switches Indicator-equipped (Light-ON when Not Operating) Switches *1



Pre-wired Connector Switches Indicator-equipped (Light-ON when Not Operating) Switches *1



Note: Leakage current from indicator circuit may cause load's malfunction. Please check the load's OFF current before use the indicator-equipped switch.

*1. Light-ON when not operating means the indicator is lit when the actuator is free and is not light when the Switch contacts (NO) close when the actuator rotates or is pushed down.

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

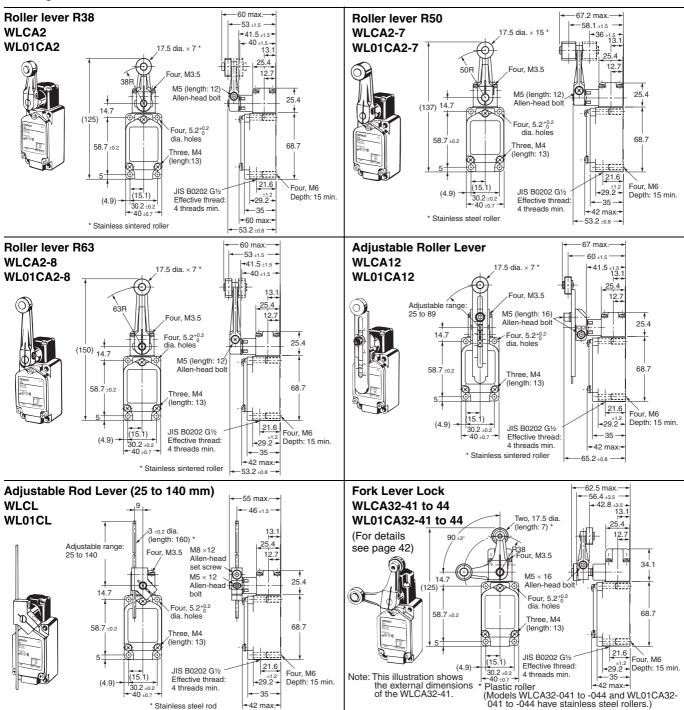
(Unit: mm)

General-purpose Models

Standard Models

Basic

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



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

* Stainless steel rod

Operating characte		WLCA2 WL01CA2	WLCA2-7 WL01CA2-7	WLCA2-8 WL01CA2-8	WLCA12 *1 WL01CA12 *1	WLCL *2 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 Overtravel Movement Differential	PT	15° ±5°	15° ±5°	15° ±5°	15° ±5°	15° ±5°
	OT min.	30°	30°	30°	30°	30°
	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.

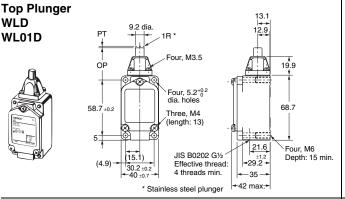
Model Operating characteristics	WLCA32-41 to 44 *1 WL01CA32-41 to 44 *1
Force necessary to reverse the direction of the lever: Max.	11.77 N
Movement until the lever reverses	50° ±5°
Movement until switch operation: Min.	55°
Movement after switch operation: Max.	35°

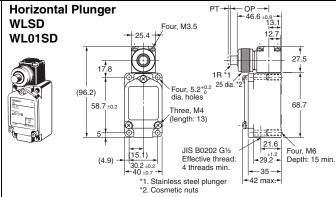
OF and RF for WLCA12, with a lever length of 89 mm.

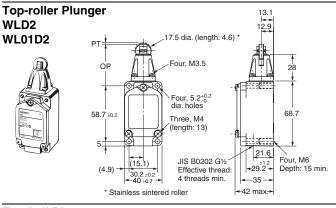
	WLCA12, WL01CA12
OF	5.68 N
RF	0.95 N

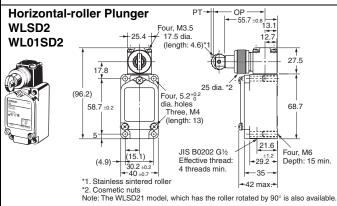


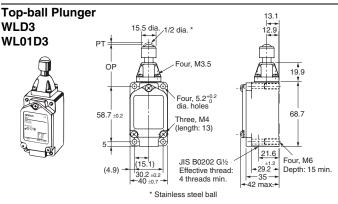
PlungerFor all models WL□ indicates a standard-load model and WL01□ indicates a microload model.

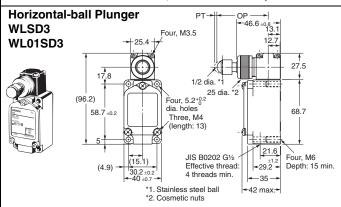


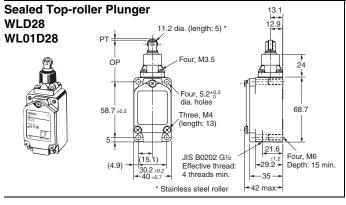












Note: Unless otherwise indicated, a tolerance of $\pm 0.4~\text{mm}$ applies to all dimensions.

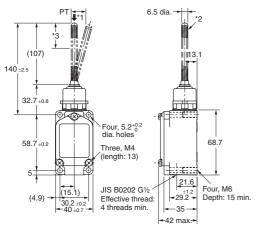
Operating characteristi	Model	WLD	WLD2	WLD3	WLD28	WLSD2	WLSD3	WLSD
	cs	WL01D	WL01D2	WL01D3	WL01D28	WL01SD2	WL01SD3	WL01SD
Operating force	OF max.	26.67 N	26.67 N	26.67 N	16.67 N	40.03 N	40.03 N	40.03 N
Release force	RF min.	8.92 N	8.92 N	8.92 N	4.41 N	8.89 N	8.89 N	8.89 N
Pretravel	PT max.	1.7 mm	1.7 mm	1.7 mm	1.7 mm	2.8 mm	2.8 mm	2.8 mm
Overtravel	OT min.	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



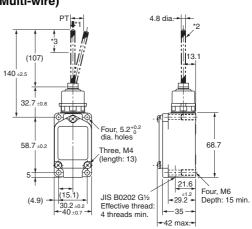


- *1. The coil spring may be operated from any direction except the axial direction (↓).
 *2. Stainless steel coil spring
- *3. Optimum operating range of the coil spring is within 1/3 of the entire length from the top end.

Coil Spring (Multi-wire)

WLNJ-30 WL01NJ-30





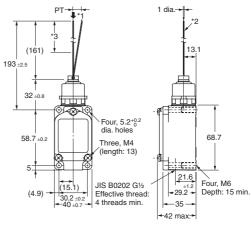
- *1. The coil spring may be operated from any direction except the axial direction (↓).
 *2. Piano wire coil
- *3. Optimum operating range of the coil spring is within 1/3 of the entire length from the top end.

Coil Spring (Resin Rod) $_{\rm PT}$ 8 dia. WLNJ-2 WL01NJ-2 (95.4) 26 dia 44 6 Four, 5.2^{+0.2} 58.7 ±0.2 68.7 Three, M4 (length: 13) -21.6 Four M6 JIS B0202 G1/2 ±1.2 Depth: 15 min. (4.9)Effective thread: $30.2_{\pm 0.2}$ Effective threa 4 threads min.

- *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
- xial 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.

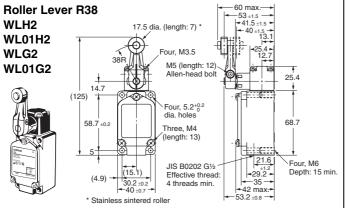
Model	WLNJ *	WLNJ30 *	WLNJ-2 *	WLNJ-S2 *	
Operating characteristics	WL01NJ *	WL01NJ30 *	WL01NJ-2 *	WL01NJ-S2 *	
Operating force OF max. Pretravel PT	1.47 N	1.47 N	1.47 N	0.28 N	
	20 ±10mm	20 ±10mm	40 ±20mm	40 ±20mm	

-42 max.→

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

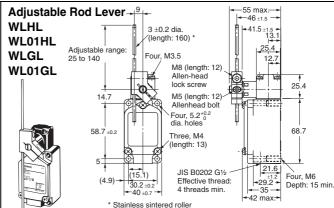
Overtravel

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



Note: 1. WL□G2 is identical to other models except in the shape of the set position marker plate.

- 2. The built-in switch for WLH2 is W-10FB3.
- 3. The built-in switch for WLG2 is W-10FB3-8.



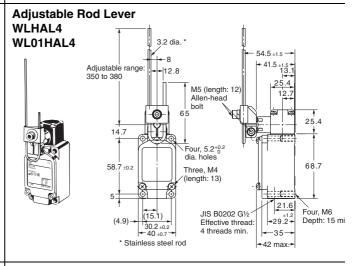
Note: 1. WL \square GL is identical to other models except in the shape of the set position marker plate.

- 2. The built-in switch for WLHL is W-10FB3.
- 3. The built-in switch for WLGL is W-10FB3-8.

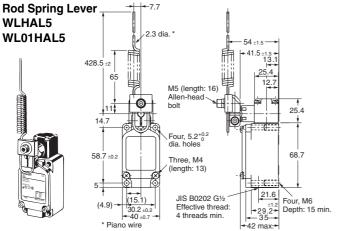
Adjustable Roller Lever 17.5 dia. (length: 7) WLH12 WL01H12 Four, M3.5 Adjustable range 25 to 89 WLG12 M5 (length: 16) • WL01G12 Allen-head holt Four, 5.2^{+0.2} dia. holes 58.7 ±0.2 Three, M4 (length: 13) 21.6 Four, M6 JIS B0202 G1/2 ±1.2 (15.1) Effective thread Depth: 15 min. 35 42 max.

> Note: 1. WL G12 is identical to other models except in the shape of the set position marker plate.

- 2. The built-in switch for WLH12 is W-10FB3.
- 3. The built-in switch for WLG12 is W-10FB3-8.



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

	WLH12, WLA01H12	WLG12, WL01G12
OF	4.18 N	4.18 N
RF	0.42 N	0.42 N

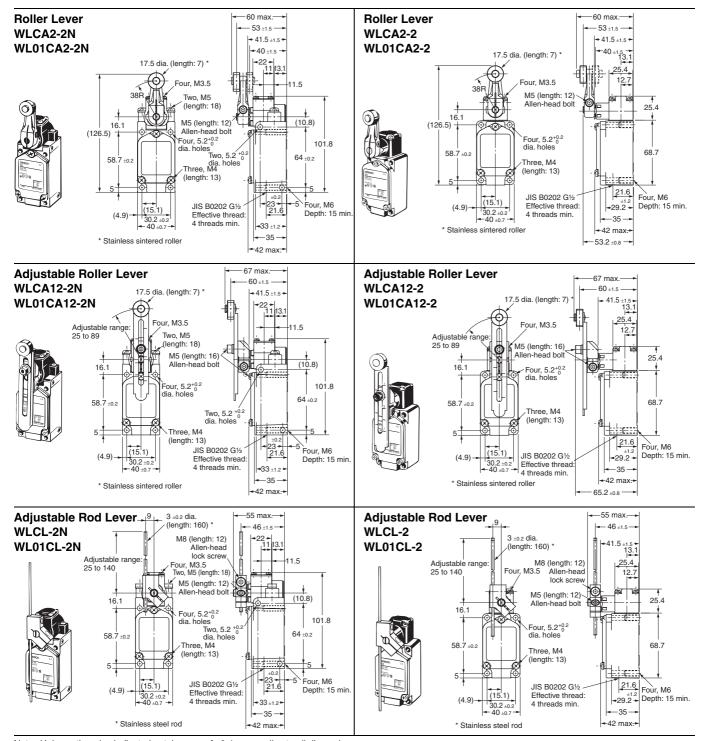
Operating character	Model istics	WLH2 WL01H2	WLG2 WL01G2	WLH12 *1 WL01H12 *1	WLG12 *1 WL01G12 *1	WLHL *1 WL01HL *1	WLGL *2 WL01GL *2	WLHAL4*3 WL01HAL4*3	WLHAL5 WL01HAL5
Operating force Release force	OF max. RF min.	9.81 N 0.98 N	9.81 N 0.98 N	9.81 N 0.98 N	9.81 N 0.98 N	2.84 N 0.25 N	2.84 N 0.25 N	0.98 N 0.15 N	0.90 N 0.09 N
Pretravel	PT	15° ±5°	10°+2°	15° ±5°	10°+2°	15° ±5°	10°+2°	15° ±5°	15° ±5°
Overtravel	OT min.	55°	65°	55°	65°	55°	65°	55°	55°
Movement Differenti	al MD max.	12°	7°	12°	7°	12°	7°	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, WL01HL12, WLG12, and WL01G12 are measured at the lever length of 38 mm.
 *2. The operating characteristics of WLHL, WL01HL, WLGL, and WL01GL 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.



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

Mode Operating characteristics	WLCA2-2N WL01CA2-2N	WLCA12-2N *1 WL01CA12-2N *1	WLCL-2N *2 WL01CL-2N *2	WLCA2-2 WL01CA2-2	WLCA12-2 *1 WL01CA12-2 *1	WLCL-2 *2 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°

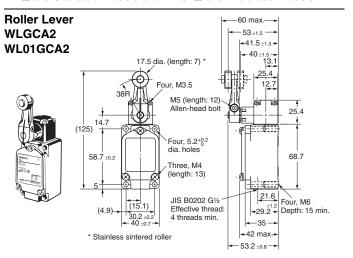
^{*1.} The operating characteristics of WLCA12-2N and WL01CA12-2N are measured at the lever length of 38 mm. *2. The operating characteristics of WLCL-2N and WL01CL-2N are measured at the rod length of 140 mm.

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

	WLCA12-2N, WLA01CA12-2N			
OF	4.10 N			
RF	0.50 N			

High-precision Models

WL□ are Standard Models and WL01□ are Microload Models.



Operating characteris		WLGCA2 WL01GCA2
Operating force	OF max.	13.34 N
Release force	RF min.	1.47 N
Pretravel	PT	5°+2°
Overtravel	OT min.	40°
Movement Differentia	3°	

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

(Sensor I/O Connector Switches)

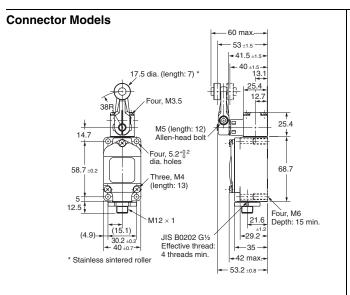
Direct-wired Connector/Pre-wired Connector Models

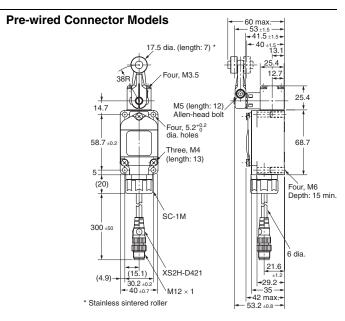
Refer to page 17 for the connecting cable.

Roller Lever PlungersWL□ are Standard Models and WL01□ are Microload Models.

Standard Models (WLCA2), High-precision Models (WLGCA2),

Overtravel General-purpose Models (WLH2), Overtravel High-sensitivity Models (WLG2)





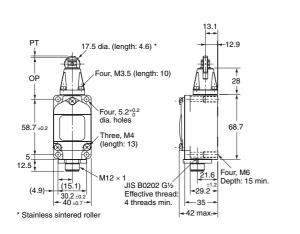
Note: 1. Only the dimension of the set position marker plate is different for WLG2 Models.

- 2. Unless otherwise indicated, a tolerance of ± 0.4 mm applies to all dimensions. 3. The models with operation indicators are shown in the above diagrams.

Operating characte	Actuator eristics	Standard roller lever actuator	High-precision roller lever actuator	Overdrive general- purpose actuator	Overdrive high-sensitivity actuator
Operating force	OF max.	13.34 N	13.34 N	9.81 N	9.81 N
Release force	RF min.	2.23 N	1.47 N	0.98 N	0.98 N
Pretravel	PT	15° ±5°	5°+2°	15° ±5°	10°+2°
Overtravel	OT min.	30°	40°	55°	65°
Movement Different	ial MD max.	12°	3°	12°	7°

Top-roller Plunger (WLD2)

Direct-wired Connector Models



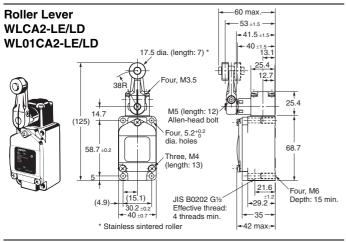
Pre-wired Connector Models our, M3.5 (length: 10) OP 28 Four, 5.2^{+0.2} dia. holes 68.7 Three, M4 (length: 13) (20) Four, M6 Depth: 15 min. 21.6 SC-1M 300 ±50 6 dia. XS2H-D421 30.2 ±0.2 -40 ±0.7 M12 × 1 * Stainless sintered roller

Note: 1. Unless otherwise indicated, a tolerance of ± 0.4 mm applies to all dimensions.

2. The following diagrams are for a indicator-equipped models.

Actuator Operating characteristics	Top-roller plunger
Operating force OF max.	26.67 N
Release force RF min.	8.92 N
Pretravel PT max.	1.7 mm
Overtravel OT min.	5.6 mm
Movement Differential MD max.	1 mm
Operating Position OP	44 ±0.8mm
Total travel Position TTP max.	39.5 mm

Indicator-equipped Models

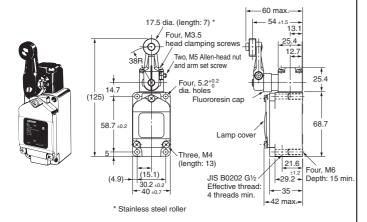


Note: Unless otherwise indicated, a tolerance of ± 0.4 mm applies to all dimensions.

Operating characteris	WLCA2-LE/LD WL01CA2-LE/LD	
Operating force	OF max.	13.34 N
Release force	RF min.	2.23 N
Pretravel	PT	15° ±5°
Overtravel	OT min.	30°
Movement Differential	MD max.	12°

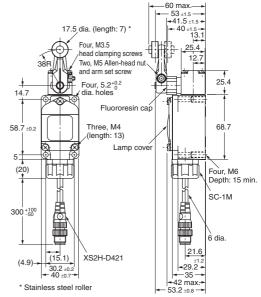
Spatter-prevention Models

Roller Lever (Screw Terminals)
WLCA2-□S/WL01□-□S
WLH2-□S/WLG2-□S
WLGCA2-□S

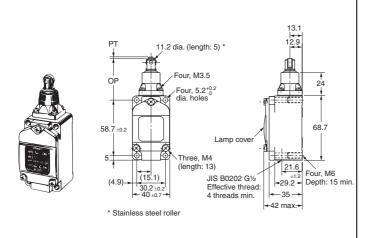


Roller Lever (Pre-wired connectors) WLCA2-□S-M1J*/WL01□-□S-M1J* WLH2-□S-M1J*/WLG2-□S-M1J*

* External dimensions are the same even for different core wires.

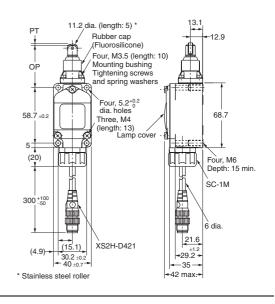


Sealed Top-roller Plunger (Screw Terminals) WLD28-\(\sigma\)S



Sealed Top-roller Plunger (Pre-wired connectors) WLD28-\(\sigma\)S-M1J*

* External dimensions are the same even for different core wires.

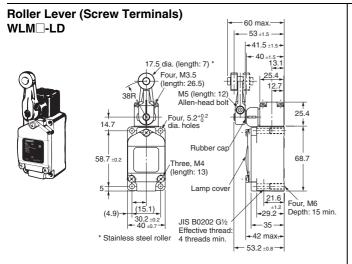


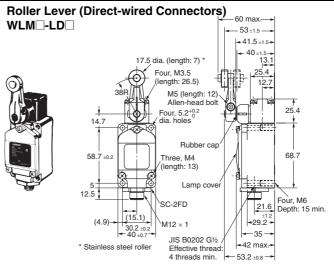
Note: Unless otherwise indicated, a tolerance of $\pm 0.4 \ \text{mm}$ applies to all dimensions.

Actuator		Roller Lever				Cooled Ton veller
		Basic Overtravel models		High-precision	Sealed Top-roller Plunger	
Operating characteristics		Dasic	General-purpose	High-sensitivity	nigh-precision	i lunger
Operating force	OF max.	13.34 N	9.81 N	9.81 N	13.34 N	16.67 N
Release force	RF min.	2.23 N	0.98 N	0.98 N	1.47 N	4.41 N
Pretravel	PT	15° ±5°	15° ±5°	10°+2°	5°+2°	1.7 mm max.
Overtravel	OT min.	30°	55°	65°	40°	5.6 mm
Movement Differential	MD max.	12°	12°	7 °	3°	1 mm
Operating Position	OP	_	_	_	_	44 ±0.8 mm
Total travel Position	TTP max.		_	_		39.5 mm

Long-life Models

Rotating Lever Models





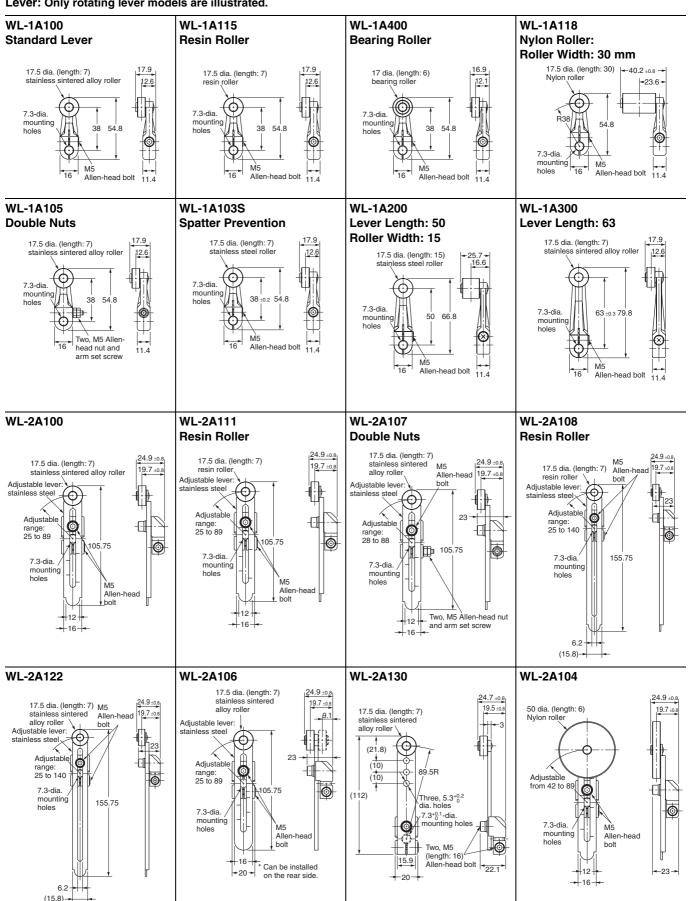
Roller Lever (Pre-wired Connectors) WLM -LD 17.5, dia. (length: 7) 40±1.5 --13.1 Four, M3.5 (length: 26.5) 12.7 M5 (length: 12) Allen-head bolt Four, 5.2^{+0.2} dia. holes 25.4 14.7 Rubber cap Three, M4 58.7 68.7 (length: 13) Lamp cove (20) Four, M6 Depth: 15 min. XS2H-D421 300 ± 50 44.7 6 dia. 21.6 (15.1) 30.2 ±0.2 40 ±0.7 * Stainless steel roller

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

Operating characteris	Model tics	WLMCA2-LD□ Basic models	WLMH2-LD□ General-purpose overtravel models	WLMG2-LD□ High-sensitivity overtravel models	WLMGCA2-LD□ High-precision models
Operating force	OF max.	9.81 N	9.81 N	9.81 N	13.34 N
Release force	RF min.	0.98 N	0.98 N	0.98 N	1.47 N
Pretravel	PT	15° ±5°	15° ±5°	10°+2°	5°+2°
Overtravel	OT min.	30°	55°	65°	40°
Movement Differential	MD max.	12°	12°	7°	3°

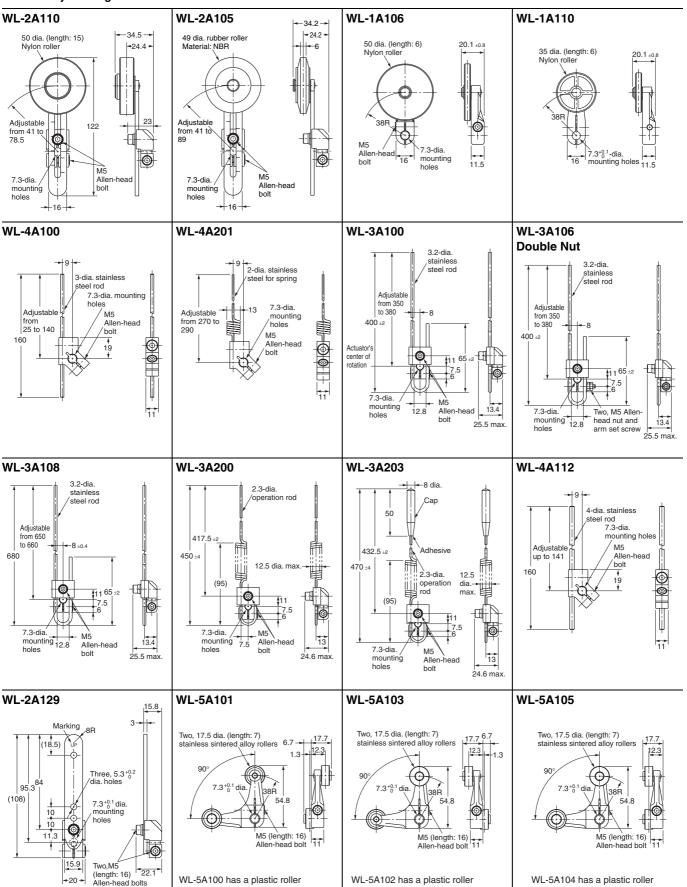
Actuators (Levers Only)

Lever: Only rotating lever models are illustrated.



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

Lever: Only rotating lever models are illustrated.



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

Refer to Safety Precautions for All Limit Switches.

Precautions for Safe Use

- When a rod or wired-type actuator is used, do not touch the top end of the actuator. Doing so may result in injury.
 (Applicable models)
- WLHAL5 and WL01HAL5 Rod Spring Levers and WLNJ-S2 and WL01NJ-S2 Steel-wire Actuators.
- A short-circuit may cause damage to the Switch, so insert a circuit breaker fuse, of 1.5 to 2 times the rated current, in series with the Switch.
- In order to meet EN approval ratings, use a 10-A fuse that corresponds to IEC60269, either a gl or gG for general-purpose types and spatter-prevention models only.

Precautions for Correct Use

- When wiring terminal screws, use M4 round crimp terminals and tighten screws to the recommended torque. Wiring with bare wires, or incorrect crimp terminals, or not tightening screws to the recommended torque can lead to short-circuits, leakage current, and fire.
- When performing internal wiring there is a chance of short-circuit, leakage current, or fire, so be sure to protect the inside of the Switch from splashes of oil or water, corrosive gases, and cutting powder.
- 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 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.

Operating Environment

- 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.

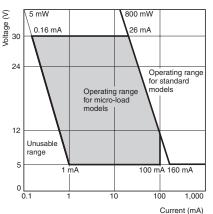


- Constantly subjecting a Switch to vibration or shock can result in wear, which can lead to contact interference with contacts, operation failure, reduced durability, and other problems.
 Excessive vibration or shock can lead to false contact operation or damage. Install Switches in locations not subject 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 killers) or remove the source of silicon gas.

Using Switches for Micro Loads

Contact faults may occur if a Switch for a general-load is used to switch a micro load circuit. Use switches in the ranges shown in the diagram below. However, even when using micro load models within the operating range shown here, if inrush current occurs when the contact is opened or closed, it may increase contact wear and so decrease durability. Therefore, insert a contact protection circuit where necessary. The minimum applicable load is the N-level reference value. This value indicates the malfunction reference level for the reliability level of 60% ($\lambda 60$).

The equation, $\hat{\lambda}_{60}=0.5\times10^{-6}$ /operations indicates that the estimated malfunction rate is less than 1/2,000,000 operations with a reliability level of 60%.



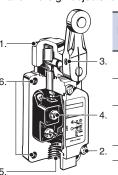
30

Built-in Switch

Do not remove or replace the built-in switch. If the position of the built-in switch moves, it can cause reduced performance, and if the insulation sheet moves (separator), the insulation may become ineffective.

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 correct torque.
- In particular, when changing the direction of the Head, make sure that all screws are tightened again to the correct torque. Do not allow foreign objects to fall into the Switch.



	No.	Туре	Appropriate tightening torque
i.	1.	Head mounting screw	0.78 to 0.88 N⋅m
	2.	Cover mounting screw	1.18 to 1.37 N⋅m
	3.	Allen-head bolt (for securing the lever)	4.90 to 5.88 N·m
	4.	Terminal screw	0.59 to 0.78 N·m
	5.	Connector	1.77 to 2.16 N·m

Installing the Switch

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

Mounting

	WL		
Front Mountig/ Rear Mountig	Front Mountig : Four, 5.2*02 dia. holes or M5 tapped holes Rear Mountig : Four, 6.2*02 dia. holes 58.7 ±0.15 30.2 ±0.15		
In case overtr	e of side mounting for avel,90 [°] WL□-□□2N	Mounting locations	
Side Mountig	Two, 5.2 ^{+0.2} dia. holes 64 ±0.15 23 ±0.15		

Connectors

Either the easy-to-use Allen-head nut or the SC Connector can be used as connectors. To ensure high-sealing properties, use the SC Connector. Refer to *Limit Switch Connectors* for details on SC Connectors.

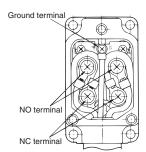
Wiring

 Use 1.25-mm² lead wires and M4-insulation covered crimp terminals for wiring.

Crimp Terminal External Dimensions

dz dia.: 4.3 D dia.: 4.5 B: 8.5 L: 21.0 F: 7.8 I: 9.0 (mm)

Wiring Method Switch Box Section



 The ground terminal is only installed on models with ground terminals.

Rotating Lever Set Position (General-purpose or Spatterprevention Switches Only)

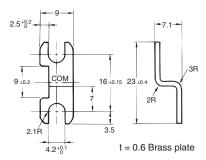
All rotating lever models, except the fork lever lock models, have a set position marker plate. (See page 23.) After operation, set the indicator needle on the marker plate so that is in the convex section of the bearing.

Operation Set Position (Long-life Switches Only)

For all Long-life Switching, there is a set position marker slit on the rubber cap of the head. After operation, set the slit on the rubber cap so that the fluorescent color on the shaft section can be seen.

Terminal Plate

By using a short circuit plate, as shown in the following diagram, the Switch can be fabricated into a single-polarity double-break switch. When ordering, specify WL Terminal Plate (product code: WL-9662F).



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.

Please check the load's OFF current before use the indicatorequipped switch.

Using the Switches

Changing the Installation Position of the Actuator

Item

By loosening the Allen-head bolt on the actuator lever, the position of the actuator can be set anywhere within the 360°. With 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 (except for long-life models).

Roller Levers:

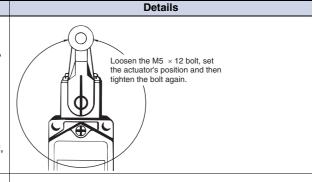
WLCA2, WL01CA2, WLCA2-2, WL01CA2-2, WLH2, WL01H2, WLG2, WL01G2, WLMCA2□, WLMH2□, WLMG2□, WLMGCA2□ Adjustable Roller Levers:

Applicable models and Actuators

WLCA12, WL01CA12, WLCA12-2, WL01CA12-2, WLH12, WL01H12,

WLG12, WL01G12, Adjustable Rod Levers:

WLCL, WL01CL, WLCL-2, WL01CL-2, WLHL, WL01HL, WLGL, WL01GL



Changing the Orientation of the Head

By removing the screws in the four corners of the Head, the Head can be set in any of the four directions. Be sure to change the plunger for internal operations at the same time. (The operational plunger does not need to be changed on general-purpose and highsensitivity overtravel models.) The roller plunger can be set in either two positions at 90°.

WLCA2-2N and WL01CA2-2N can be set only in either the forward or backward direction.

Roller Levers:

WLCA□, WL01CA□, WLCA□-2, WL01CA□-2, WLGCA□, WLH□, WL01H□, WLG□, WL01G□ WLMCA2 \square , WLMH2 \square , WLMG2 \square , WLMGCA2

Adjustable Rod Levers:

WLCL, WL01CL, WLCL-2, WL01CL-2

Horizontal Plungers:

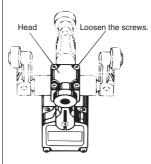
WLSD□, WL01ŠD□

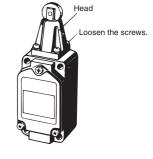
Top-roller Plungers: WLD2, WL01D2

Sealed Top-roller Plungers:

WLD28, WL01D28

Does not include -RP60 Series or -141

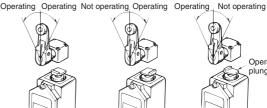




One-side Operation for General-purpose and High-precision Switches

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.



Operational plunger

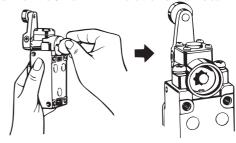
Operation in both

Clockwise operation

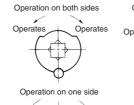
Counterclockwise operation

Cam Direction Changing Procedure for Overtravel, 90° Operation Switches Loosen the cam holder with a coin or screwdriver. Take out the cam from the Switch

Change the direction of the cam as required by your intended operation and then reinstall the cam

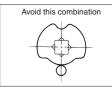


Relationship of cam to operation as observed from the rear of Switch



Operation on one side Operates Does not operate

operate



Changing the Operating Direction

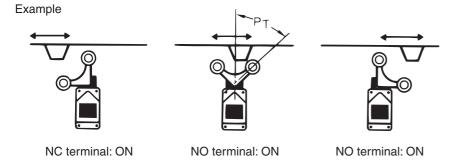
By removing the Head on models which can operate on one-side only, and then changing the direction of the operational plunger, one of three operating directions can be selected. For overtravel 90° operation models, one of three operating directions can be selected by loosening the rubber holder using either a coin or a flat-blade screwdriver and changing the direction of the internal rubber section. The tightening torque for the screws on the Head is 0.78 to 0.88 Nem.

Roller Levers: WLCA2, WL01CA2, WLGCA2, WLMGCA2□ Adjustable Roller Levers: WLCA12, WL01CA12 Adjustable Rod Levers: WĹCL, WL01CL Overtravel Models: WLCA□-2N, WL01CA□-2N

Item	Applicable models and Actuators	Details
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.)	Roller Levers: WLCA□, WL01CA□, WLH□, WL-CA□-2, WL01CA□-2, WLMCA2□, WLMH2□, WLMG2□, WLMGCA2□, WLG□, except for the adjustable roller levers. Fork Lever Locks: WLCA32-4□, WL01CA32-4□	Loosen the Allen-head bolt.
Selecting the Roller Position There are four types of fork lever lock for use depending on the roller position.	Fork Lever Locks: WLCA32-4□, WL01CA32-4□	WLCA32-41 WLCA32-42 WLCA32-44 WLCA32-44
Adjusting the Length of the Rod or Lever The length of the rod or lever can be adjusted by loosening the Allen-head bolt.	Adjustable Roller Levers: WLCA12, WL01CA12 etc. Adjustable Rod Levers: WLCL, WL01CL, etc.	WLCA12 etc. Adjustment range radius: 25 to 89 mm Loosen this Allen-head bolt and adjust the length of the lever.

Operation of Fork Lever Locks

The fork lever lock is configured so that the dog pushes the lever to reverse the output and this reversed state is maintained even after the dog continues on. If the dog then pushes the lever from the opposite direction, the lever will return to its original position.



42

Read and Understand This Catalog

Please read and understand this catalog before purchasing the products. Please consult your OMRON representative if you have any questions or comments

Warranty and Limitations of Liability

WARRANTY

OMRON's exclusive warranty is that the products are free from defects in materials and workmanship for a period of one year (or other period if specified) from date of sale by OMRON.

OMRON MAKES NO WARRANTY OR REPRESENTATION, EXPRESS OR IMPLIED, REGARDING NON-INFRINGEMENT, MERCHANTABILITY, OR FITNESS FOR PARTICULAR PURPOSE OF THE PRODUCTS. ANY BUYER OR USER ACKNOWLEDGES THAT THE BUYER OR USER ALONE HAS DETERMINED THAT THE PRODUCTS WILL SUITABLY MEET THE REQUIREMENTS OF THEIR INTENDED USE. OMRON DISCLAIMS ALL OTHER WARRANTIES, EXPRESS OR IMPLIED.

LIMITATIONS OF LIABILITY

OMRON SHALL NOT BE RESPONSIBLE FOR SPECIAL, INDIRECT, OR CONSEQUENTIAL DAMAGES, LOSS OF PROFITS OR COMMERCIAL LOSS IN ANY WAY CONNECTED WITH THE PRODUCTS, WHETHER SUCH CLAIM IS BASED ON CONTRACT, WARRANTY, NEGLIGENCE, OR STRICT LIABILITY

In no event shall the responsibility of OMRON for any act exceed the individual price of the product on which liability is asserted.

IN NO EVENT SHALL OMRON BE RESPONSIBLE FOR WARRANTY, REPAIR, OR OTHER CLAIMS REGARDING THE PRODUCTS UNLESS OMRON'S ANALYSIS CONFIRMS THAT THE PRODUCTS WERE PROPERLY HANDLED, STORED, INSTALLED, AND MAINTAINED AND NOT SUBJECT TO CONTAMINATION, ABUSE, MISUSE, OR INAPPROPRIATE MODIFICATION OR REPAIR.

Application Considerations

SUITABILITY FOR USE

OMRON shall not be responsible for conformity with any standards, codes, or regulations that apply to the combination of products in the customer's application or use of the products.

At the customer's request, OMRON will provide applicable third party certification documents identifying ratings and limitations of use that apply to the products. This information by itself is not sufficient for a complete determination of the suitability of the products in combination with the end product, machine, system, or other application or use.

The following are some examples of applications for which particular attention must be given. This is not intended to be an exhaustive list of all possible uses of the products, nor is it intended to imply that the uses listed may be suitable for the products:

- Outdoor use, uses involving potential chemical contamination or electrical interference, or conditions or uses not described in this catalog.
- Nuclear energy control systems, combustion systems, railroad systems, aviation systems, medical equipment, amusement machines, vehicles, safety equipment, and installations subject to separate industry or government regulations.
- Systems, machines, and equipment that could present a risk to life or property.

Please know and observe all prohibitions of use applicable to the products.

NEVER USE THE PRODUCTS FOR AN APPLICATION INVOLVING SERIOUS RISK TO LIFE OR PROPERTY WITHOUT ENSURING THAT THE SYSTEM AS A WHOLE HAS BEEN DESIGNED TO ADDRESS THE RISKS, AND THAT THE OMRON PRODUCTS ARE PROPERLY RATED AND INSTALLED FOR THE INTENDED USE WITHIN THE OVERALL EQUIPMENT OR SYSTEM.

PROGRAMMABLE PRODUCTS

OMRON shall not be responsible for the user's programming of a programmable product, or any consequence thereof.

Disclaimers

CHANGE IN SPECIFICATIONS

Product specifications and accessories may be changed at any time based on improvements and other reasons.

It is our practice to change model numbers when published ratings or features are changed, or when significant construction changes are made. However, some specifications of the products may be changed without any notice. When in doubt, special model numbers may be assigned to fix or establish key specifications for your application on your request. Please consult with your OMRON representative at any time to confirm actual specifications of purchased products.

DIMENSIONS AND WEIGHTS

Dimensions and weights are nominal and are not to be used for manufacturing purposes, even when tolerances are shown.

PERFORMANCE DATA

Performance data given in this catalog is provided as a guide for the user in determining suitability and does not constitute a warranty. It may represent the result of OMRON's test conditions, and the users must correlate it to actual application requirements. Actual performance is subject to the OMRON Warranty and Limitations of Liability.

ERRORS AND OMISSIONS

The information in this document has been carefully checked and is believed to be accurate; however, no responsibility is assumed for clerical, typographical, or proofreading errors, or omissions.

2011.10

In the interest of product improvement, specifications are subject to change without notice.





OOO «ЛайфЭлектроникс" "LifeElectronics" LLC

ИНН 7805602321 КПП 780501001 P/C 40702810122510004610 ФАКБ "АБСОЛЮТ БАНК" (ЗАО) в г.Санкт-Петербурге К/С 3010181090000000703 БИК 044030703

Компания «Life Electronics» занимается поставками электронных компонентов импортного и отечественного производства от производителей и со складов крупных дистрибьюторов Европы, Америки и Азии.

С конца 2013 года компания активно расширяет линейку поставок компонентов по направлению коаксиальный кабель, кварцевые генераторы и конденсаторы (керамические, пленочные, электролитические), за счёт заключения дистрибьюторских договоров

Мы предлагаем:

- Конкурентоспособные цены и скидки постоянным клиентам.
- Специальные условия для постоянных клиентов.
- Подбор аналогов.
- Поставку компонентов в любых объемах, удовлетворяющих вашим потребностям.
- Приемлемые сроки поставки, возможна ускоренная поставка.
- Доставку товара в любую точку России и стран СНГ.
- Комплексную поставку.
- Работу по проектам и поставку образцов.
- Формирование склада под заказчика.
- Сертификаты соответствия на поставляемую продукцию (по желанию клиента).
- Тестирование поставляемой продукции.
- Поставку компонентов, требующих военную и космическую приемку.
- Входной контроль качества.
- Наличие сертификата ISO.

В составе нашей компании организован Конструкторский отдел, призванный помогать разработчикам, и инженерам.

Конструкторский отдел помогает осуществить:

- Регистрацию проекта у производителя компонентов.
- Техническую поддержку проекта.
- Защиту от снятия компонента с производства.
- Оценку стоимости проекта по компонентам.
- Изготовление тестовой платы монтаж и пусконаладочные работы.



Тел: +7 (812) 336 43 04 (многоканальный) Email: org@lifeelectronics.ru