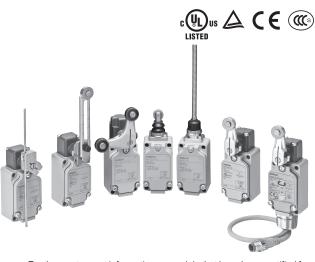
Two-circuit Limit Switches WL-N/WLG

Two-circuit limit switches that can be selected to match the operating environment and application WL-N/Basic models, WLG/High-sensitivity and High-precision models

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

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



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

Two-circuit Limit Switch

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

Common Features

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

WL-N/WLG

Model Number Structure

List of Models

Roller lever

					Actuator	<u> </u>	P	9	Adjustable Roller Lever		
Type of Switches	Operating environment		Indicator		Wiring Specifications	R38	R50	R63	(R25 to 89 mm)	Page	
			Without operation dicator			O*	0	0	O*		
			With operation	LED	Screw terminals	O*	0	0	O*	Ī	
General- purpose	Ambient operating temperature (-10 to 80°C)	indicator	Neon lamp		O*	0	0	O *	page 5		
Switches	tomporature (10 to 50 G)	With operation indicator		Direct-wire connector	O*						
		With operation indicator	LED	Pre-wired Connector	O*						
	Ambient operating temperature (5 to 120°C)	тн				0			0		
	Ambient operating temperature (-40 to 40°C)	тс			Screw terminals	О			0		
	Chemicals and oil	RP				О			О		
	Outdoors	P1				О			О		
(Coolant drops and mist	RP60				0			О		
Environment- resistant	Mist (Improved sealing for conduit opening and cover)	139 RP40	Without operation	on		0			0	page 33	
Switches	Constant water drops and mist (Molded conduit opening and cover.)	140	indicator		Direct-wire	0			0		
	Constant water drops or splattering cutting powder (Preventing intrusion of cutting powder through molded conduit opening, cover, and head seal, and a head cap)	141 145			cable	0			0		
				LED	Screw	0					
Spatter- prevention	Spattering from welding		With operation indicator	Neon lamp	terminals	О				page 51	
Switches		opationing from moraling		LED	Pre-wired connectors	0					
Long-life	Liab divebility			LED	Screw terminals	0					
Long-life Switches	High-durability	indicator	LED	Pre-wired connectors	0				page 62		

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

Plunger Actuators

		Sealed	Top-roller	Sealed	Sealed						
Туре	Operating environment		Indicator		Wiring Specifications	top-roller plunger	plunger	top plunger 📇	top-ball plunger	Page	
					0	O*	O*	0	0		
			With operation	LED	Screw terminals	O*	0	0	0		
General- purpose	Ambient operating tempera	ture	indicator	Neon lamp		O*	0	0	0	page 5	
Switches	(1010000)		With operation indicator		Direct-wire connector	O*					
			With operation indicator	LED	Pre-wired connectors	O*					
	Ambient operating temperature (5 to 120°C)	тн				0	0				
	Ambient operating temperature (-40 to 40°C)	тс		:		0					
	Chemicals and oil	RP				0					
	Outdoors	P1									
	Coolant drops and mist	RP60				0					
Environment- resistant	Mist (Improved sealing for conduit opening and cover)	139 RP40	Without operation	on		0	0			page 33	
Switches	Constant water drops and mist (Molded conduit opening and cover.)	140			Direct-wire	0					
	Constant water drops or splattering cutting powder (Preventing intrusion of cutting powder through molded conduit opening, cover, and head seal, and a head cap)	141 145			cable	0	O				
				LED	Screw	0					Ī
Spatter- prevention	Spattering from welding		With operation indicator		terminals	0				page 51	
Switches				LED	Pre-wired connectors	0					

					Actuator	Horizontal	Horizontal-	Horizontal-ball		
Туре	Operating environment		Indicator		Wiring Specifications	plunger	roller plunger	plunger	Page	
				Without operation indicator		O*	O *	0		
			With operation	LED	Screw terminals	О	0	0		
General- purpose	Ambient operating tempera	ature	indicator	Neon lamp		0	0	0	page 5	
Switches	(10.10.00.0)		With operation indicator							
			With operation indicator	LED	Pre-wired connectors					
	Ambient operating temperature (5 to 120°C)	тн				0	0			
	Ambient operating temperature (-40 to 40°C)	тс			Screw terminals	0	0			
	Chemicals and oil	RP				0	О			
	Outdoors	P1								
	Coolant drops and mist	RP60				0	О			
Environment- resistant	Mist (Improved sealing for conduit opening and cover)	139 RP40	Without operation	on		0			page 33	
Switches	Constant water drops and mist (Molded conduit opening and cover.)	140	mulcutor		Direct-wire		O			
	Constant water drops or splattering cutting powder (Preventing intrusion of cutting powder through molded conduit opening, cover, and head seal, and a head cap)	141 145			cable	0	0			
		nead seal, and a nead capy		LED	Screw					
Spatter- prevention			With operation indicator	Neon lamp	terminals				page 51	
Switches			indicator LED		Pre-wired connectors					

Note: 1. O indicates features included in the ordered model.

2. Models with airtight built-in switch specifications suitable for use in water drop or mist atmospheres are also available. Ask your OMRON representative for details.

WL-N/WLG

Flexible Rod Actuators

					Actuator		Adjustable rod	Rod spring	
Туре	Operating environment		Indicator		Wiring Specifications	rod lever (25 to 140 mm)	lever (350 to 380 mm)	lever	Page
			Without ope indicator	eration		O*	0	0	
			With LED operation indicator lamp	Screw terminals	0				
General- purpose Switches	Ambient operating tempera	nture			tommulo				
	(-10 to 80°C)		With operation indicator	LED	Direct-wire connector	0	0	0	page 5
			With operation indicator	LED	Pre-wired connectors	0	0	0	
	Ambient operating temperature (5 to 120°C)	тн				0			
	Ambient operating temperature (-40 to 40°C)	тс			Screw terminals	0			
	Chemicals and oil	RP				О			
Environment- resistant	Outdoors	P1	Without ope	eration		О			page 33
Switches	Coolant drops and mist	RP60	indicator			0			page 66
	Mist (Improved sealing for conduit opening and cover)	139 RP40			Direct-wire	0	 		
	Constant water drops and mist (Molded conduit opening and cover.)	140			cable	O			

					Actuator	Coil spring	[Coil spring	Resin rod [Steel wire	
Туре	Operating environment		Indicator		Wiring Specifications	(6.5 dia.)		(4.8 dia.)	(8 dia.)	(1 dia.)	Page
			Without operation indicator		_	O*		0	O *	0	
			With LED	Screw terminals	O*		0	O*	0		
General-	Ambient operating tempera	ture	operation indicator	Neon lamp		O*		0	O*	О	
purpose Switches	(-10 to 80°C)		With operation indicator	LED	Direct-wire connector						page 5
			With operation indicator	LED	Pre-wired Connector						
	Ambient operating temperature (5 to 120°C)	тн				0					
	Ambient operating temperature (-40 to 40°C)	тс			Screw terminals	0					
Fd.	Chemicals and oil	RP				О			0		
Environment- resistant	Outdoors	P1	Without ope	eration							page 33
Switches	Coolant drops and mist	RP60	indicator			0			0		- ago oo
	Mist (Improved sealing for conduit opening and cover)	139 RP40			Direct-wire cable	0			0		
	Constant water drops and mist (Molded conduit opening and cover.)	140				0			0		

Fork Lock Lever Actuators

				Actuator	Fork Lock	Fork Lock	Fork Lock	Fork Lock	
Туре	Operating environment	Indicator	Indicator		Lever A	Lever B	Lever C	Lever D	Page
		Without operation indicator		0.00	0	0	0	0	
	Ambient operating temperature (-10 to 80°C) W	With	LED	Screw terminals	0		0		
General-		operation indicator	Neon lamp	torrinia	0	0	0		
purpose Switches		With operation indicator	LED	Direct-wire connector					page 5
		With operation indicator	operation LED						

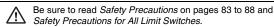
Note: O indicates features included in the ordered model.

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

General-purpose Switches WL-N/WLG

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

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





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

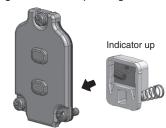
Features

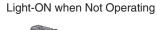
A type with operation indicators for easily confirming operation is available Indicates the operation status of the switches using LEDs and neon lamps.



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

Light-ON when Operating







Selectable based on wiring specifications



Screw terminals



Direct-wire connector



Pre-wired connector

Pre-wired connectors include Smartclick products that turn by only 1/8-turn when attaching and removing

This reduces the labor required for connections and maintenance.



Smartclick

WL-N/WLG

Model Number Structure

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

 $\mathbf{WL}_{(1)}^{\square}$ - $\underline{\square}$ $\underline{\square}$ $\underline{\square}$ $\underline{\square}$ $\underline{\square}$ + \mathbf{N}

(1) Actuator and Property Specifications

Code		Actuator	Pretravel (PT)
CA2			15±5°
CA2-2		Roller lever: R38 mm	25±5°
CA2-2N			20° max.
CA2-7	Roller Lever	Roller lever: R50 mm	15±5°
CA2-8	Holler Lever	Roller lever: R63 mm	15±5°
CA12			15±5°
CA12-2		Adjustable roller lever (R25 to 89 mm)	25±5°
CA12-2N		(1.20 to 00 11111)	20° max.
D28		Sealed top-roller plunger	1.7 mm max.
D2		Top-roller plunger	1.7 mm max.
D18	Plunger Actuators	Sealed top plunger	1.7 mm max.
D38		Sealed top-ball plunger	1.7 mm max.
SD		Horizontal plunger	2.8 mm max.
SD2		Horizontal-roller plunger	2.8 mm max.
SD3		Horizontal-ball plunger	2.8 mm max.
CL			15±5°
CL-2		Adjustable Rod Lever (25 to 140 mm)	25±5°
CL-2N		(20 10 1 10 11111)	20° max.
CAL4		Adjustable Rod Lever (350 to 380 mm)	15±5°
CAL5		Rod spring lever	15±5°
NJ	Flexible Rod Actuators	Coil spring (6.5 dia.)	20±10 mm
NJ-30		Coil spring (4.8 dia.)	20±10 mm
NJ-2		Flexible rod: Resin rod (8 dia.)	40±20 mm
NJ-S2		Flexible rod: Steel wire (1 dia.)	40±20 mm
CA32-41		A	55° max.
CA32-42	1!	В	55° max.
CA32-43	Fork Lock Lever *	С	55° max.
CA32-44		D	55° max.

$^{\ast}\,$ The lever attachment method varies in A to D.

Α	В	С	D

(2) Built-in Switch Specifications

Code	Specifications					
None	Standard					
55	Airtight built-in switch					

(3) Conduit Size, Ground Terminal Specifications

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

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

(4) Indicator Specifications

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

(5) Wiring Specifications

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

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

High-sensitivity and High-precision Models

 $\mathbf{WLG}_{\overbrace{(1)}} - \bigsqcup_{(2)} \bigsqcup_{(3)} \bigsqcup_{(4)} \bigsqcup_{(5)}$

(1) Actuator and Property Specifications

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

(2) Built-in Switch Specifications

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

(3) Conduit Size, Ground Terminal Specifications

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

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

(4) Indicator Specifications

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

^{* (5)}Wiring Specifications: Screw terminals only

(5) Wiring Specifications

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

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

WL-N/WLG

Ordering Information

Roller Lever

Standard built-in switch

				Without operation	With operation	on indicator *
Appearance	Actuator	Terminal shape	Pretravel (PT)	indicator	LED	Neon lamp
			(1.1)	Model	Model	Model
			15±5°	WLCA2-N	WLCA2-LD-N	WLCA2-LE-N
0			25±5°	WLCA2-2-N	WLCA2-2LD-N	WLCA2-2LE-N
	Roller lever: R38 mm		20° max.	WLCA2-2N-N	WLCA2-2NLD-N	WLCA2-2NLE-N
Φ			10°+2°	WLG2	WLG2-LD	WLG2-LE
			5° +2°	WLGCA2	WLGCA2-LD	WLGCA2-LE
		Screw terminals (Conduit size: G½)	15±5°	WLCA2-7-N	WLCA2-7LD-N	WLCA2-7LE-N
	Roller lever: R50 mm		25±5°			
•			20° max.			
<u> </u>			15±5°	WLCA2-8-N	WLCA2-8LD-N	WLCA2-8LE-N
	Roller lever: R63 mm		25±5°			
₩			20° max.			
0			15±5°	WLCA12-N	WLCA12-LD-N	WLCA12-LE-N
	Adjustable roller lever		25±5°	WLCA12-2-N	WLCA12-2LD-N	WLCA12-2LE-N
I ¶Ŷ₽	(R25 to 89 mm)		20° max.	WLCA12-2N-N	WLCA12-2NLD-N	WLCA12-2NLE-N
U			10°+2°	WLG12	WLG12-LD	WLG12-LE

^{*} The default setting is light-ON when not operating (NO wiring). Turn the lamp holder by 180° to change the setting to light-ON when operating (NC wiring).

Appearance	Actuator	Terminal shape	Pretravel (PT)	Connector shape	Voltage	Wiring locations	Connector pin No.	Model
					AC	NO only	NO: 3 4	WLCA2-LDK13A-N
					DC	NO only	NO: 3 4	WLCA2-LDK13-N
			15±5°		AC	NC+NO	NO: 3 4 NC: 1 2	WLCA2-LDK43A-N
	Roller lever: R38 mm	Direct-wire		Threaded		NC+NO	NO: 3 4 NC: 1 2	WLCA2-LDK43-N
	noller lever. noo illili	connector	20	(M12)		NO only	NO: 3 4	WLG2-LDK13
			10°-1°		DC	NC+NO	NO: 3 4 NC: 1 2	WLG2-LDK43
						NO only	NO: 3 4	WLGCA2-LDK13
			5°+2°			NC+NO	NO: 3 4 NC: 1 2	WLGCA2-LDK43
						NO only	NO: 3 4	WLCA2-LD-M1J-N
						NO only	NO: 3 4	WLCA2-LD-M1GJ-N
				Threaded		NC only	NC: 3 2	WLCA2-LD-M1JB-N
				(M12)		NC+NO	NO: 3 4 NC: 1 2	WLCA2-LD-DGJ-N WLCA2-LD-DK1EJ-N WLCA2-LD-DTG-LN
			15±5°			NO only	WLCA2-LD-DK1EJ-N	
				Consentations	martclick NC+NO NO only	NC+NO	NO: 3 4 NC: 1 2	WLCA2-LD-DTGJ-N
				Smartchek		NO only	NO: 3 4 NC: 2	WLCA2-LD-DTK1EJ-N
			NO only	NO: ③ ④	WLG2-LD-M1J			
				NO only	NO: 1 4	WLG2-LD-M1GJ		
				Threaded		NC only		WLG2-LD-M1JB
Bo.				(M12)		NC+NO	IO only NO: ① ④ WLG2-LD-M1GJ IC only NC: ③ ② WLG2-LD-M1JB IC+NO NO: ③ ④ WLG2-LD-DGJ03	
	Roller lever: R38 mm	Pre-wired connectors	10°+2°		DC	NO only	NO: 3 4 NC: 2	WLCA2-LDK43A-N WLG2-LDK13 WLG2-LDK13 WLGCA2-LDK13 WLGCA2-LDK43 WLCA2-LD-M1J-N WLCA2-LD-M1J-N WLCA2-LD-M1JB-N WLCA2-LD-DK1EJ-N WLCA2-LD-DTK1EJ-N WLCA2-LD-DTK1EJ-N WLG2-LD-M1J WLG2-LD-M1J WLG2-LD-M1J WLG2-LD-M1J WLG2-LD-M1J WLG2-LD-M1JB WLG2-LD-M1JB WLG2-LD-M1JB WLG2-LD-M1TJ WLG2-LD-M1TJ WLG2-LD-M1TJB WLG2-LD-M1TJB WLG2-LD-DTK1EJ03 WLG2-LD-DTK1EJ03 WLG2-LD-M1TJB WLG2-LD-M1TJB WLG2-LD-DTGJ03 WLG2-LD-DTK1EJ03 WLG2-LD-DTK1EJ03 WLG2-LD-DTK1EJ03 WLG2-LD-DTK1EJ03 WLGCA2-LD-M1J WLGCA2-LD-M1J WLGCA2-LD-M1JB WLGCA2-LD-M1JB WLGCA2-LD-DTGJ03
5			10 -10			NC : 1 2 NO only NO: 3 4 NC : 2 NC+NO NO: 3 4 NC : 2 NO only NO: 3 4 NC : 2 NO only NO: 3 4 NC : 3 2 NC only NO: 3 2 NC only NO: 3 3 4 NC : 1 2 NC only NO: 3 4 NC : 1 2 NC only NO: 3 4 NC : 1 2 NO only NO: 3 4 NC : 1 2 NO only NO: 3 4 NC : 1 2 NO only NO: 3 4 NC : 3 2 NC only NO: 3 4 NC : 3 2 NC only NO: 3 4 NC : 3 2 NC only NO: 3 4 NC : 3 2 NC only NO: 3 4 NC : 1 2 NC only NO: 3 4 NC only NO	WLG2-LD-M1TJ	
						NO only		WLG2-LD-M1TGJ
						NC only		WLG2-LD-M1TJB
				Smartclick		NC+NO	NO: 3 4 NC: 1 2	WLG2-LD-DTGJ03
						NO only	NO: 3 4 NC: 2	WLG2-LD-DTK1EJ03
						NO only	NO: 3 4	WLGCA2-LD-M1J
				Threaded		NO only	NO: ① ④	WLGCA2-LD-M1GJ
				(M12)		NC only	NC: 3 2	WLGCA2-LD-M1JB
			5° +2°	()		NC+NO	NO: 3 4 NC: 1 2	WLGCA2-LD-DGJ03
						NC+NO	NO: 3 4 NC: 1 2	WLGCA2-LD-DTGJ03
				Smartclick		NO only	NO: 3 4 NC: 2	WLGCA2-LD-DTK1EJ03

Note: 1. The photo shows a typical model.

^{2.} The default setting is light-ON when not operating (NO wiring). Turn the lamp holder by 180° to change the setting to light-ON when operating (NC wiring). (However, Three-core and Four-core Switches cannot be switched to light-ON when operating (NC wiring))

Airtight Built-in Switch

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

^{*} The default setting is light-ON when not operating (NO wiring). Turn the lamp holder by 180° to change the setting to light-ON when operating (NC wiring).

Appearance	Actuator	Terminal shape	Pretravel (PT)	Connector shape	Voltage	Wiring locations	Connector pin No.	Model
			15±5°			NO only	NO: 3 4	WLCA2-55LDK13-N
9			13±3			NC+NO	NO: 3 4 NC: 1 2	WLCA2-55LDK43-N
	Roller lever:	Direct-wire	10° ^{+2°}	Threaded (M12)	DC	NO only	NO: 3 4	WLG2-55LDK13
	R38 mm	connector	10 -1°	Tiffeaded (W12)	БС	NC+NO	NO: 3 4 NC: 1 2	WLG2-55LDK43
			5° +2° 0°			NO only	NO: 3 4	WLGCA2-55LDK13
			5 0°			NC+NO	NO: 3 4 NC: 1 2	WLGCA2-55LDK43
						NO only	NO: 3 4	WLCA2-55LD-M1J-N
						NO only	NO: 1 4	WLCA2-55LD-M1GJ-N
			15±5°	Threaded (M12)		NC only	NC: 3 2	WLCA2-55LD-M1JB-N
						NC+NO	NO: 3 4 NC: 1 2	WLCA2-55LD-DGJ-N
						NO only	NO: 3 4 NC: 2	WLCA2-55LD-DK1EJ-N
				Smartclick		NC+NO	NO: 3 4 NC: 1 2	WLCA2-55LD-DTGJ-N
Man .						NO only	NO: ③ ④	WLD2-55LD-M1J
	Roller lever:	Pre-wired			DC	NO only	NO: 1 4	WLG2-55LD-M1GJ
	R38 mm	connectors		Threaded (M12)	ВС	NC only	NC: 3 2	WLG2-55LD-M1JB
5						NC+NO	NO: 3 4 NC: 1 2	WLG2-55LD-DGJ03
•			10°+2°			NO only	NO: 3 4 NC: 2	WLG2-55LD-DK1EJ03
			10 .1°			NO only	NO: 3 4	WLG2-55LD-M1TJ
						NO only	NO: ① ④	WLG2-55LD-M1TGJ
				Smartclick		NC only	NC: 3 2	WLG2-55LD-M1TJB
						NC+NO	NO: 3 4 NC: 1 2	WLG2-55LD-DTGJ03
						NO only	NO: 3 4 NC: 2	WLG2-55LD-DTK1EJ03

Note: 1. The photo shows a typical model.

The default setting is light-ON when not operating (NO wiring). Turn the lamp holder by 180° to change the setting to light-ON when operating (NC wiring). (However, Three-core and Four-core Switches cannot be switched to light-ON when operating (NC wiring))

Plunger Actuators

Standard built-in switch

				Without operation	With operation	on indicator *
Appearance	Actuator	Terminal shape	Pretravel (PT)	IIIUICALOI	LED	Neon lamp
			(/	Model	Model	Model
	Sealed top-roller plunger		1.7 mm max.	WLD28-N	WLD28-LD-N	WLD28-LE-N
	Top-roller plunger			WLD2-N	WLD2-LD-N	WLD2-LE-N
<u></u>	Sealed top plunger			WLD18-N	WLD18-LD-N	WLD18-LE-N
	Sealed top-ball plunger	Screw terminals (Conduit size: G½)		WLD38-N	WLD38-LD-N	WLD38-LE-N
	Horizontal plunger		2.8 mm max.	WLSD-N	WLSD-LD-N	WLSD-LE-N
@C[Horizontal-roller plunger			WLSD2-N	WLSD2-LD-N	WLSD2-LE-N
	Horizontal-ball plunger			WLSD3-N	WLSD3-LD-N	WLSD3-LE-N

^{*} The default setting is light-ON when not operating (NO wiring). Turn the lamp holder by 180° to change the setting to light-ON when operating (NC wiring).

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

Note: The default setting is light-ON when not operating (NO wiring). Turn the lamp holder by 180° to change the setting to light-ON when operating (NC wiring). (However, Three-core and Four-core Switches cannot be switched to light-ON when operating (NC wiring))

Airtight Built-in Switch

		Terminal shape	Dustus	Without operation	With operation	on indicator *
Appearance	Actuator		Pretravel (PT)	indicator	LED	Neon lamp
			(• •)	Model	Model	Model
	Sealed top-roller plunger		1.7 mm max.	WLD28-55-N	WLD28-55LD-N	WLD28-55LE-N
	Top-roller plunger	Screw terminals	1.7 mm max.	WLD2-55-N	WLD2-55LD-N	WLD2-55LE-N
	Horizontal plunger	(Conduit size: G½)	2.8 mm max.	WLSD-55-N	WLSD-55LD-N	
@C	Horizontal-roller plunger		2.8 mm max.	WLSD2-55-N	WLSD2-55LD-N	

^{*} The default setting is light-ON when not operating (NO wiring). Turn the lamp holder by 180° to change the setting to light-ON when operating (NC wiring).

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

Note: The default setting is light-ON when not operating (NO wiring). Turn the lamp holder by 180° to change the setting to light-ON when operating (NC wiring). (However, Three-core and Four-core Switches cannot be switched to light-ON when operating (NC wiring)).

Flexible Rod

Standard built-in switch

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

^{*} The default setting is light-ON when not operating (NO wiring). Turn the lamp holder by 180° to change the setting to light-ON when operating (NC wiring).

Airtight Built-in Switch Specifications

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

^{*} The default setting is light-ON when not operating (NO wiring). Turn the lamp holder by 180° to change the setting to light-ON when operating (NC wiring).

Fork Lock Lever

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

^{*} The default setting is light-ON when not operating (NO wiring). Turn the lamp holder by 180° to change the setting to light-ON when operating (NC wiring).

Specifications

Ratings

Screw terminals

Without Operation Indicator Basic models (WL-N)

		No	n-induct	ive load	(A)	Inductive load (A)			
Rati	Ratings		asic mod	els (WL-	N)	Ва	asic mod	els (WL-	N)
		Resistive load		Lamp	load	Inducti	ve load	Motor	r load
Volta	ge (V)	NC	NO	NC	NO	NC	NO	NC	NO
	125	1	10 3 1.5		1.5	10		5	2.5
AC	250	10		2	1	10		3	1.5
	500	10		1.5	0.8	3		1.5	0.8
	8	1	0	6	3	1	0	6	
	14	10		6	3	10		6	
DC	30	6		4	3	(6	4	
	125	0	.8	0.2	0.2	0.8		0.2	
	250	0	.4	0.1	0.1	0	.4	0.1	

High-sensitivity and High-precision models (WLG)

Ratings		Non-inductive load (A) High-sensitivity and High-precision models (WLG)			
	_	Horizontal plunger	models (WLSD□)		
		Resistive load			
Volta	ge (V)	NC	NO		
AC	125	5	5		
AC	250	5	5		
DO	125	0.	4		
DC	250	0.	2		

With Operation Indicator (LED) Basic models (WL-N)

	Ratings		n-induct	ive load	(A)	Inductive load (A)				
Rati			asic mod	els (WL-	N)	В	asic mod	els (WL-	N)	
		Resistive load Lam		Lamp	amp load		Inductive load		Motor load	
Volta	Voltage (V)		NO	NC	NO	NC	NO	NC	NO	
AC	115	10		3	1.5	10		5	2.5	
	12	1	0	6	3	1	10		6	
DC	24	6		4	3		3	4		
ВС	48	3		2	1.5	;	3		0.2	
	115	0.	.8	0	0.2		.8	0.1		

High-sensitivity and High-precision models (WLG)

Rati	ings	Non-inductive load (A) High-sensitivity and High-precision models (WLG) Horizontal plunger models (WLSD□) Resistive load			
Volta	ge (V)	NC	NO		
AC	115	5			
DC	115	0.4			

With Operation Indicators (Neon Lamps) Basic models (WL-N)

			n-induct	ive load	(A)	Inductive load (A)			
Ratings		Ва	asic mod	els (WL-	N)	Basic models (WL-N)			
		Resisti	tive load Lamp load			Inductive load Motor load			r load
Voltag	ge (V)	NC	NO	NC	NO	NC	NO	NC	NO
AC	125	1	10		1.5	10		5	2.5
250		10		2	1	10		3	1.5

High-sensitivity and High-precision models (WLG)

		Non-induct	ive load (A)		
Ratings		High-sensitivity and High-precision models (WLG) Horizontal plunger models (WLSD⊡)			
		Resistive load			
Volta	ge (V)	NC	NO		
AC	125	5			
AC	250	ţ	5		

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

Allowable Inrush Current/Minimum Applicable Load

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

Operation Indicator

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

Direct-wired connector and Pre-wired Connector Type

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

		Non-inductive load (A)				Inductive load (A)			
Ratings		Basic models (WL-N)				Basic models (WL-N)			
		Resistive load		Lamp load		Inductive load		Motor load	
Volta	Voltage (V)		NO	NC	NO	NC	NO	NC	NO
	12	3		3		(3	3	3
DC	24	3		3		3		3	
БС	48	4		2	1.5	3		2	
	115	0.	.8	0.2	0.2	0.8		0.2	

High-sensitivity and High-precision models (WLG)

			Non-inductive load (A)		
	Ratings		High-sensitivity and High-precision models (WLG) Horizontal plunger models (WLSD⊡)		
			Resisti	ve load	
	Voltage (V)		NC	NO	
	DC	115	0.4		

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

Ratings Basic models (WL-N) Basic models (WL-N	4)			
	Basic models (WL-N)			
Resistive load Lamp load Inductive load Motor	Motor load			
Voltage (V) NC NO NC NO NC NO NC	NO			
AC 115 3 3 1.5 3 3	2.5			

High-sensitivity and High-precision models (WLG)

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

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

Minimum Applicable Load

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

Operation Indicator

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

Characteristics

Operating of	haracteristics type	Basic models (WL-N)	High-sensitivity and High-precision models (WLG) Horizontal plunger models (WLSD□)		
Permissible operating	Mechanical	120 operations/minute			
frequency Electrical		30 operations/minute			
Rated frequency		50/60 Hz			
Permissible operating speed		1 mm/s to 1 m/s (in case of WLCA2-N)			
Insulation resistance		100 MΩ min. (at 500 VDC)			
Contact resistance		25 m Ω max. (initial value for the built-in switch)			
Vibration resistance	Malfunction	10 to 55 Hz, 1.5-mm double amplitude			
Destruction Destruction		1,000 m/s² max.			
Shock	Malfunction	300 m/s² max. *2			
	Mechanical	15,000,000 operations min.	10,000,000 operations min. *4		
Durability *1	Electrical	750,000 operations min. (3 A at 250 VAC, resistive load), but for high-precision models: *3	500,000 operations min. (3 A at 250 VAC, resistive load), but for high-precision models: *3		
Ambient operating tem	perature	-10 to +80°C (with no icing)			
Ambient operating hun	nidity	35 to 95%RH			
Degree of protection		IP67			
Weight		Approx. 255 g (in case of WLCA2-N)	Approx. 270 g (in case of WLGCA2)		

Note: The above figures are initial values.

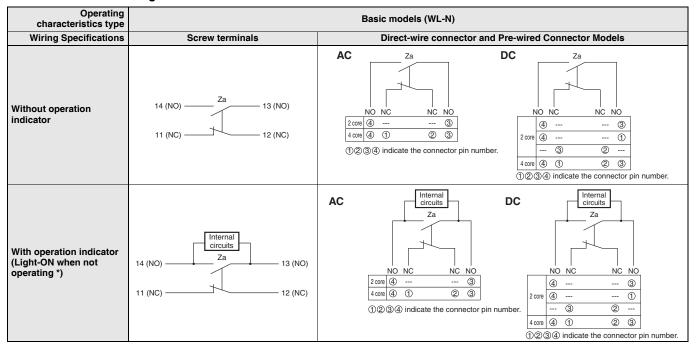
- *1. The values are calculated at an operating temperature of +5°C to +35°C, and an operating humidity of 40% to 70%RH. Contact your OMRON sales representative for more detailed information on other operating environments.
- *2. Except Switches with Flexible Rod Actuators.
- *3. In case of Screw terminals without operation indicators.
- *4. 15,000,000 operations min. for horizontal plunger models.

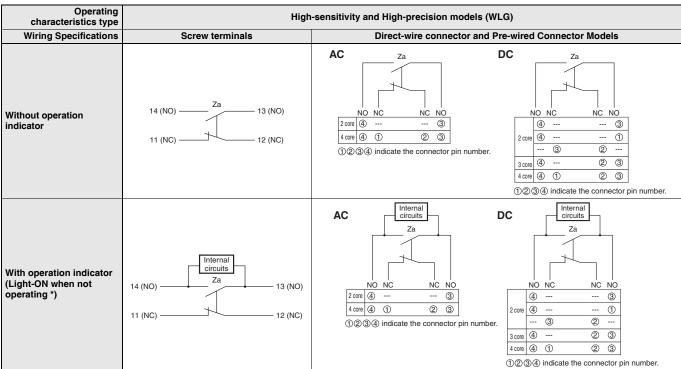
	Operating characteristics type	Basi	c models (WL-N)	High-sensitivity and High-precision models (WLG)		
Wiring Specifications		Screw terminals	Direct-wire connector/ Pre-wired Connector Models	Screw terminals	Direct-wire connector/ Pre-wired Connector Models	
	Between terminals of the same	1,000 VAC,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

Excluding those with operation indicators.

Circuit Configuration

Terminal Connection Diagram





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

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

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

Connector Pin Layout Diagram

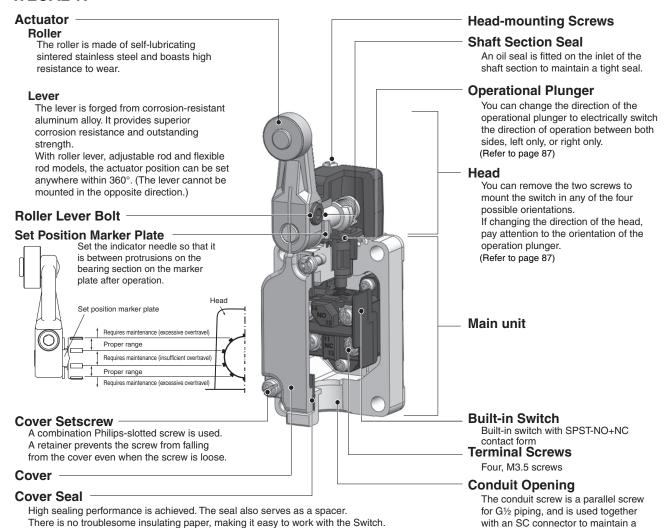


^{*} The position of the positioning piece is not always the same. If using an L-shaped connector causes problems in mounting, use a straight connector.

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

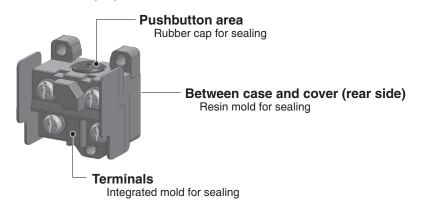
Structure and Nomenclature

WLCA2-N



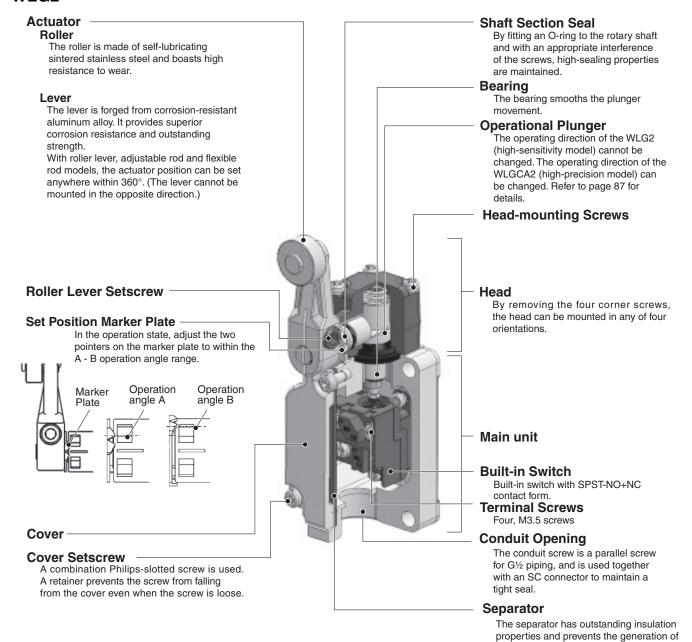
Built-in switch

Airtight built-in switch (-55)



tight seal.

WLG2



any gases which may corrode the internal

parts.

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

Operation Indicator

Indicator Covers

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

Indicator Windows

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

Light-ON when Operating/Not Operating

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

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

Indicator up

Light-ON when Operating

Light-ON when Not Operating





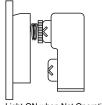
Lamp Holder

Indicator

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

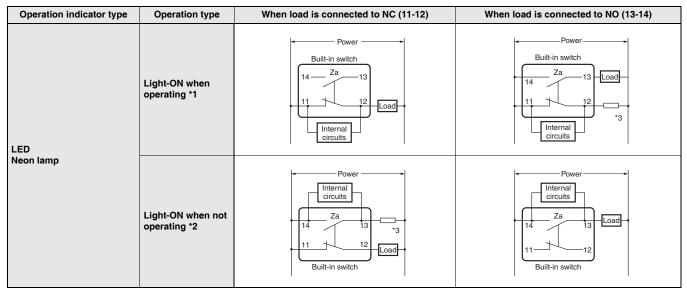
Contact Spring

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



Light-ON when Not Operating

Operation



- **Note: 1.** Leakage current from indicator circuit may cause load malfunction (i.e., the load may remain ON). Make sure that the load operating current is higher than the leakage current. For countermeasures, refer to technical support on your OMRON website.
 - 2. For details on accessories (sold separately), refer to page 78.
- *1. Light-ON when operating means that the lamp lights when the Limit Switch contacts (NC) release, or when the actuator rotates or is pushed down.
- *2. Light-ON when not operating means the lamp remains lit when the actuator is free, or when the Limit Switch contacts (NO) close when the actuator rotates or is pushed down.
- *3. The wiring varies depending on when the loads and indicator lamps are operating.

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

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

- · Resistance (Ω) = Voltage (V) ÷ Current (I)
- · Power (W) = Current (A) × Voltage (V)
- · Capacity (W) = Power (W) × Margin (approximately 2×)

Use the values below for reference.

Reference: Example of Protection Resistance

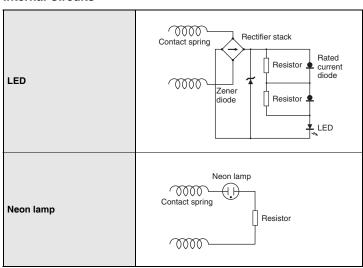
The capacity value is a numerical value that does not account for the margin. Select a resistor with sufficient capacity.

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

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

India	cator	Voltage	Protection resistance (example)		
Туре	Leakage current	voltage	Resistance	Capacity	
	Approx. 0.5 mA	115 VAC/DC	Approx. 50 kΩ	0.27 W min.	
LED	Approx. 0.4 mA	24 VAC/DC	Approx. 10 kΩ	0.06 W min.	
	Approx. 0.4 ma	10 VAC/DC	Approx. 10 kΩ	0.01 W min.	
Noon James	Approx. 1.9 mA	250 VAC	Approx. 100 kΩ	0.63 W min.	
Neon lamp	Approx. 0.6 mA	125 VAC	Approx. 100 kΩ	0.16 W min.	

Internal Circuits

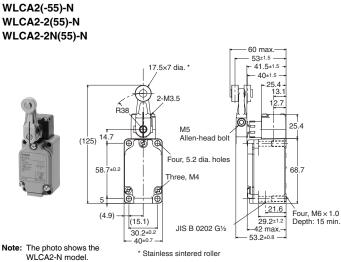


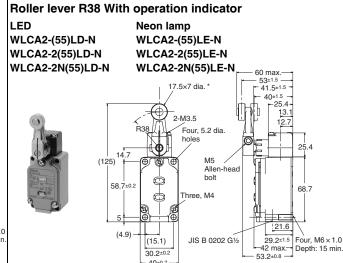
Long-life Switches

Dimensions (Unit: mm)

Roller Lever

Screw terminals Roller lever R38





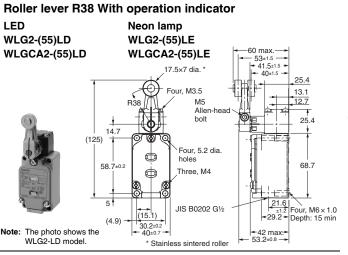
40±0.7

* Stainless sintered roller

Note: The photo shows the

WLCA2-LD-N model

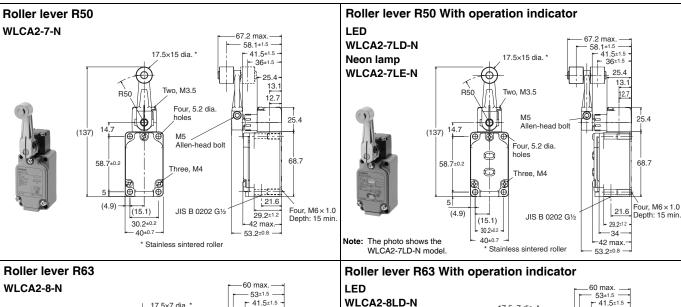
Roller lever R38 WLG2(-55) WLGCA2(-55) 17.5×7 dia. * -M3.5 M5 Allen-head bol 25.4 (125)Four, 5,2 dia. holes 68.7 58 7±0.2 Three, M4 21.6 ±1.2 •29.2 • JIS B0202 G1/2 Four, M6 × 1.0 Depth: 15 min (15.1) (4.9)30.2±0.2 40±0.7 +42 max.→ 53.2±0.8 → Note: The photo shows the WLG2 model. Stainless sintered roller

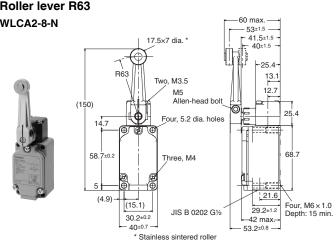


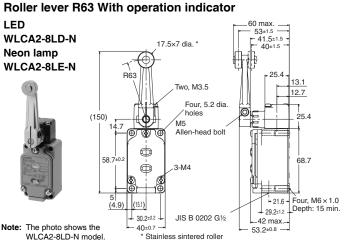
Note: Unless otherwise indicated, a tolerance of ±0.4 mm applies to all dimensions.

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

Screw terminals







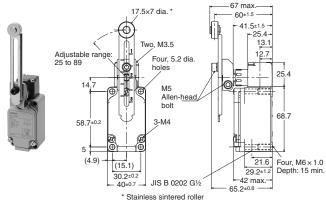
Note: Unless otherwise indicated, a tolerance of ± 0.4 mm applies to all dimensions.

		Model	WLCA2-7-N WLCA2-7LD-N WLCA2-7LE-N	WLCA2-8-N WLCA2-8LD-N WLCA2-8LE-N
Operating force	OF	max.	10.2 N	8.04 N
Release force	RF	min.	0.9 N	0.71 N
Pretravel	PT		15±5°	15±5°
Overtravel	ОТ	min.	70°	70°
Movement Differential	MD	max.	12°	12°

Screw terminals

Adjustable Roller Lever (R25 to 89 mm)

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



Note: The photo shows the WLCA12-N model.

Adjustable Roller Lever (R25 to 89 mm)

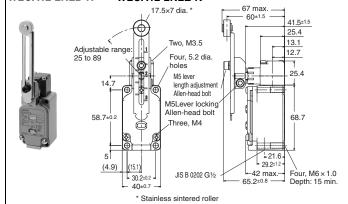
With operation indicator

 LED
 Neon lamp

 WLCA12-(55)LD-N
 WLCA12-(55)LE-N

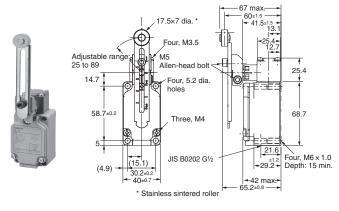
 WLCA12-2LD-N
 WLCA12-2LE-N

 WLCA12-2NLD-N
 WLCA12-2NLE-N



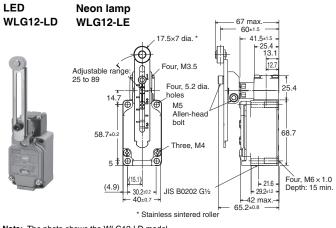
Note: The photo shows the WLCA12-LD-N model.

Adjustable Roller Lever (R25 to 89 mm) WLG12



Adjustable Roller Lever (R25 to 89 mm)

With operation indicator



Note: The photo shows the WLG12-LD model.

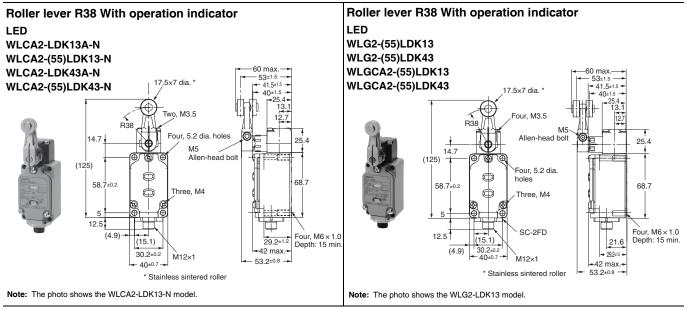
Note: Unless otherwise indicated, a tolerance of ± 0.4 mm applies to all dimensions.

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

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

WL-N/WLG

Direct-wire connector



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

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

Pre-wired connectors

Roller lever R38 With operation indicator

Threaded (M12)

WLCA2-(55)LD-M1J-N

WLCA2-(55)LD-M1GJ-N

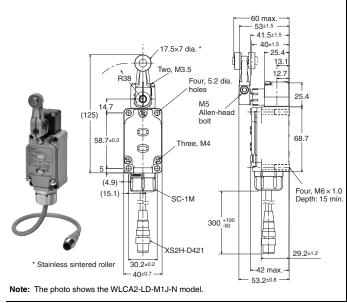
WLCA2-(55)LD-DGJ-N

WLCA2-(55)LD-DK1EJ-N

Smartclick

WLCA2(55)LD-DTGJ-N

WLCA2-LD-DTK1EJ-N



Roller lever R38 With operation indicator

Threaded (M12)

WLG2-(55)LD-M1J

WLG2-(55)LD-M1GJ

WLG2-(55)LD-M1JB

WLG2-(55)LD-DGJ03

WLG2-(55)LD-DK1EJ03

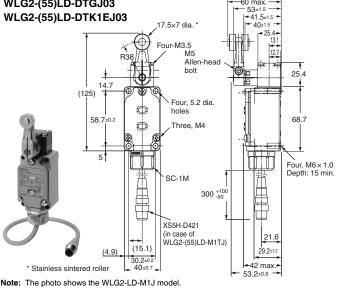
Smartclick

WLG2-(55)LD-M1TJ

WLG2-(55)LD-M1TGJ

WLG2-(55)LD-M1TJB

WLG2-(55)LD-DTGJ03

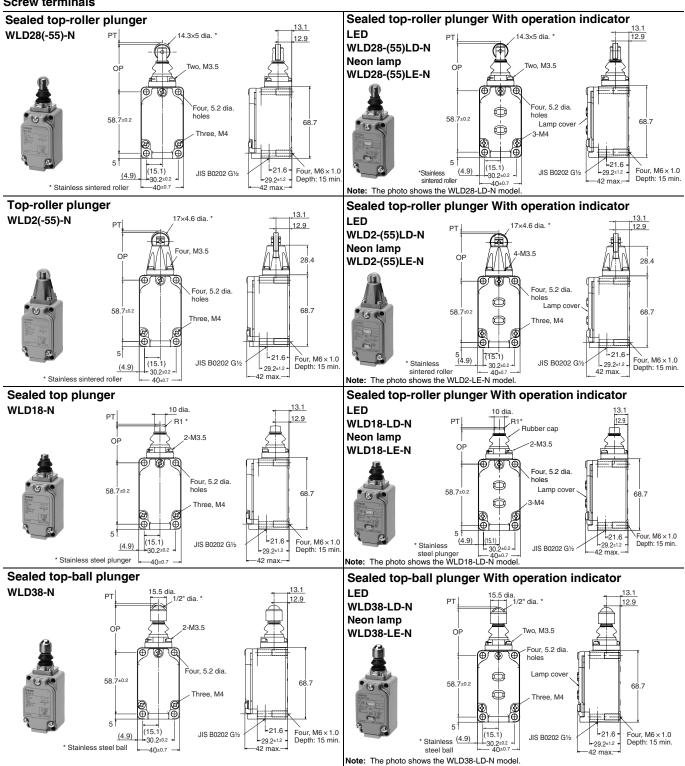


Note: Unless otherwise indicated, a tolerance of ±0.4 mm applies to all dimensions.

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

Plunger Actuators

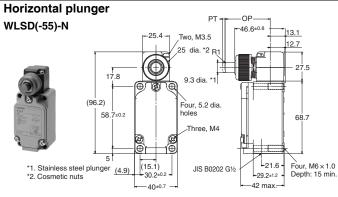
Screw terminals

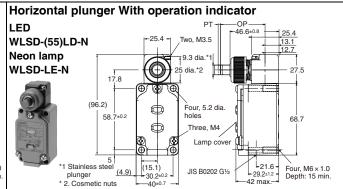


Note: Unless otherwise indicated, a tolerance of ±0.4 mm applies to all dimensions.

		Model	WLD28(-55)-N WLD28-(55)LD-N WLD28-(55)LE-N	WLD2(-55)-N WLD2-(55)LD-N WLD2-(55)LE-N	WLD18-N WLD18-LD-N WLD18-LE-N	WLD38-N WLD38-LD-N WLD38-LE-N
Operating force	OF	max.	16.67 N	26.67 N	26.67 N	16.67 N
Release force	RF	min.	4.41 N	8.92 N	8.92 N	4.41 N
Pretravel	PT	max.	1.7 mm	1.7 mm	1.7 mm	1.7 mm
Overtravel	OT	min.	5.6 mm	5.6 mm	6.4 mm	5.6 mm
Movement Differential	MD	max.	1 mm	1 mm	1 mm	1 mm
Operating position	OP	max.	44±0.8 mm	44±0.8 mm	34±0.8 mm	44.5±0.8 mm
Total travel position	TTP		39.5 mm	39.5 mm	29.5 mm	41 mm

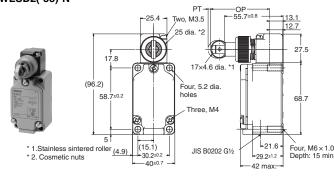
Screw terminals

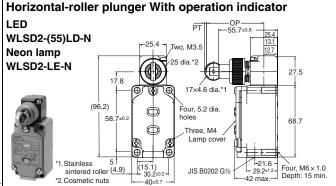




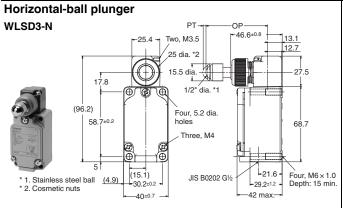
Note: The photo shows the WLSD-LD-N model.

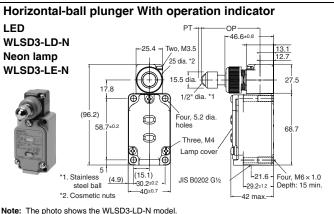
Horizontal-roller plunger WLSD2(-55)-N





Note: The photo shows the WLSD2-LD-N model.





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

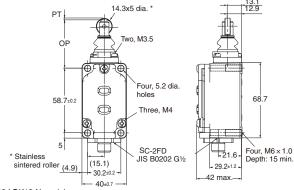
Model		WLSD(-55)-N	WLSD2(-55)-N	WLSD3-N			
		WLSD-(55)LD-N	WLSD2-(55)LD-N	WLSD3-LD-N			
		WLSD-LE-N	WLSD2-LE-N	WLSD3-LE-N			
Operating force	OF	max.	40.03 N	40.03 N	40.03 N		
Release force	RF	min.	8.89 N	8.89 N	8.89 N		
Pretravel	PT	max.	2.8 mm	2.8 mm	2.8 mm		
Overtravel	OT	min.	5.6 mm	5.6 mm	4 mm		
Movement Differential	MD	max.	1 mm	1 mm	1 mm		
Operating position	OP		40.6±0.8 mm	54.2±0.8 mm	54.1±0.8 mm		

Direct-wire connector

Sealed top-roller plunger With operation indicator

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





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

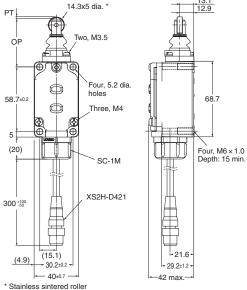
Pre-wired connectors

Sealed top-roller plunger With operation indicator

Threaded (M12)

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





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

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

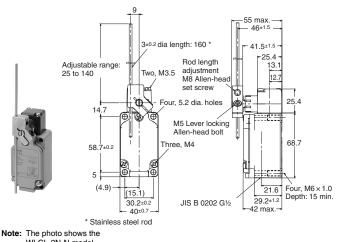
		Model	WLD28-(55)LDK13-N WLD28-(55)LDK43-N WLD28-(55)LD-M1J-N WLD28-(55)LD-M1GJ-N WLD28-(55)LD-DGJ-N WLD28-(55)LD-DK1EJ-N
Operating force	OF	max.	16.67 N
Release force	RF	min.	4.41 N
Pretravel	PT	max.	1.7 mm
Overtravel	OT	min.	5.6 mm
Movement Differential	MD	max.	1 mm
Operating position	OP	max.	44±0.8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

Flexible Rod

Screw terminals

Adjustable rod lever (25 to 140 mm) WLCL(-55)-N

WLCL-2-N WLCL-2N-N



Adjustable rod lever (25 to 140 mm)

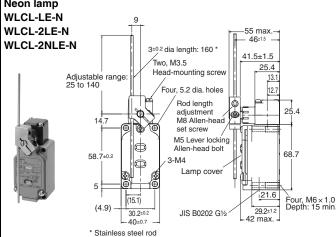
With operation indicator

LED

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

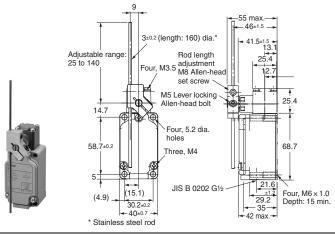
WLCL-2NLD-N

Neon lamp



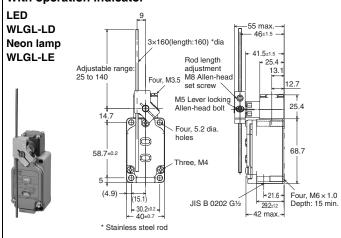
Note: The photo shows the WLCL-2LD-N model.

Adjustable rod lever (25 to 140 mm) **WLGL**



Adjustable Roller Lever (25 to 140 mm)

With operation indicator

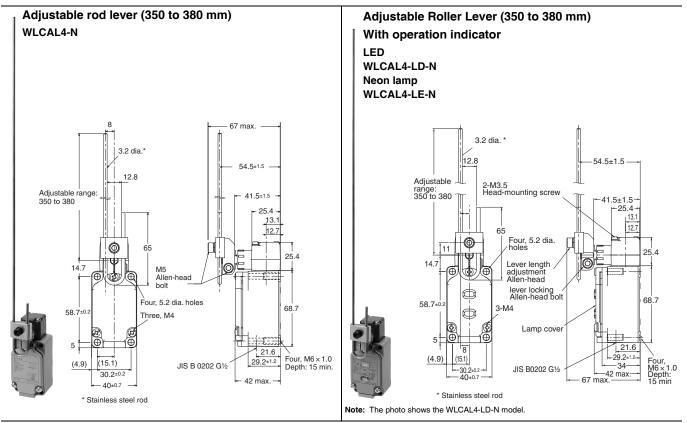


Note: Unless otherwise indicated, a tolerance of ± 0.4 mm applies to all dimensions.

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

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

Screw terminals



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

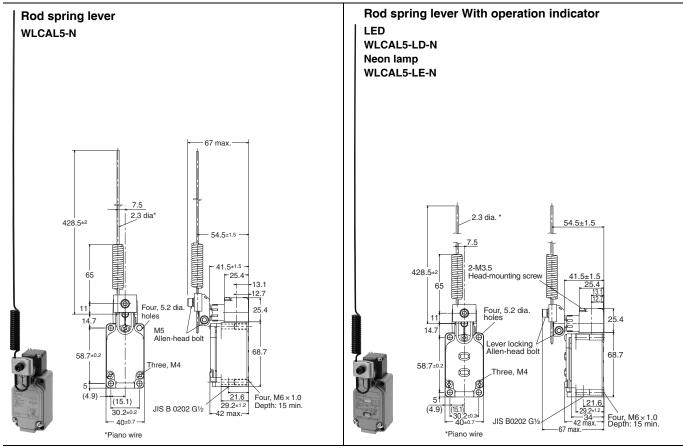
Operating characteristics

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

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

 $^{^{\}star}\,$ This is the value when the rod length is 380 mm.

Screw terminals



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

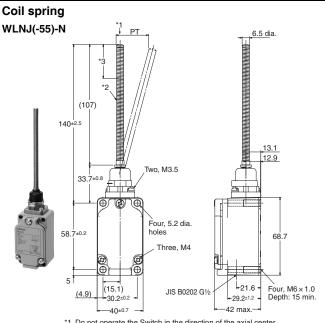
		Model	WLCAL5-N * WLCAL5-LD-N * WLCAL5-LE-N *
Operating force	OF	max.	0.9 N
Release force	RF	min.	0.09 N
Pretravel	PT	111111.	0.09 N 15±5°
Overtravel	OT	min.	70°
Movement Differential	MD	max.	12°

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

 $^{^{\}star}\,$ This is the value when the rod length is 380 mm.

Flexible Rod

Screw terminals



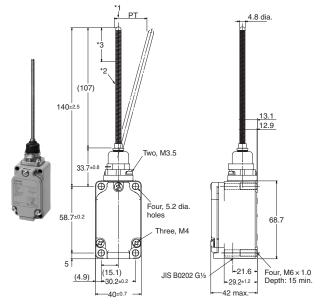
- *1. Do not operate the Switch in the direction of the axial center.
- *2. Stainless steel coil spring.
 *3. The range for operation is 1/3rd of the overall spring length from the end of the spring.

Coil spring With operation indicator 6.5 dia. WLNJ-(55)LD-N **Neon lamp** WLNJ-LE-N (107)140±2.5 Two M3.5 33.7±0.8 Four, 5.2 dia \bigoplus holes 58.7±0.2 68.7 Three, M4 5 (15.1) -30.2±0.2 21.6 Four, M6 × 1.0 Depth: 15 min. JIS B0202 G1/2 (4.9)42 max. -40±0.7

- Note: The photo WLNJ-LD-N
- *1. Do not operate the Switch in the direction of the axial center.
- Stainless steel coil spring
 - *3. The range for operation is 1/3rd of the overall spring length from

4.8 dia

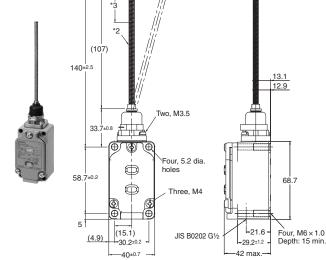
Coil Spring (Multi-wire) WLNJ-30-N



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

Coil Spring (Multi-wire) With operation indicator

WLNJ-30LD-N Neon lamp WLNJ-30LE-N (107) 140



- *1. Do not operate the Switch in the direction of the axial center.
- *2. Piano wire coil spring.
- *3. The range for operation is 1/3rd of the overall spring length from the end of the sprin Note: The photo shows the WLNJ-30LD-N model.

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

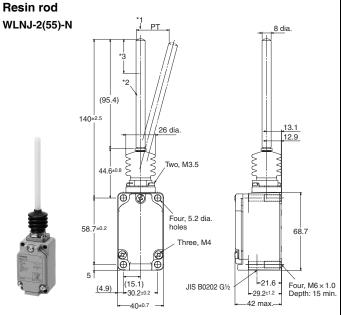
		Model	WLNJ(-55)-N * WLNJ-(55)LD-N * WLNJ-LE-N *	WLNJ-30-N * WLNJ-30LD-N * WLNJ-30LE-N *
Operating force	OF	max.	1.47 N	1.47 N
Pretravel	PT		20±10 mm	20±10 mm

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

Flexible Rod

Screw terminals

Steel wire



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

Resin rod With operation indicator 8 dia WLNJ-2(55)LD-N Neon lamp WLNJ-2LE-N (95.4) 140±2.5 12.9 Four, 5.2 dia 58.7±0.2 Four, M6 × 1.0 Depth: 15 min. (15.1)

- The photo shows the WLNJ-2LD-N model.
- *1. Do not operate the Switch in the direction of the axial center *2. Polyamide Resin Rod.

JIS B0202 G1/2

-29 2±1.2

42 max

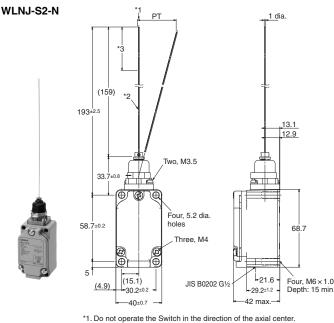
*3. The range for operation is 1/3rd of the overall rod length from the

-30.2±0.2

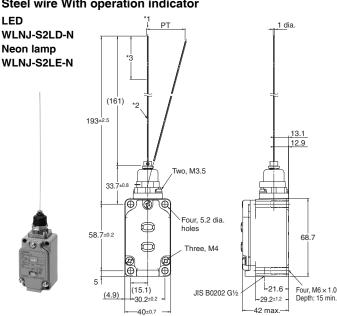
-40±0.7

(4.9)

Steel wire With operation indicator



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



- The photo shows the WLNJ-S2LD-N
- *1. Do not operate the Switch in the direction of the axial center.
- *2. Stainless steel coil spring.
 *3. The range for operation is 1/3rd of the overall spring length from the

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

		Model	WLNJ-2(55)-N * WLNJ-2(55)LD-N * WLNJ-2LE-N *	WLNJ-S2-N * WLNJ-S2LD-N * WLNJ-S2LE-N *
Operating force	OF	max.	1.47 N	0.28 N
Pretravel	PT		40±20 mm	40±20 mm

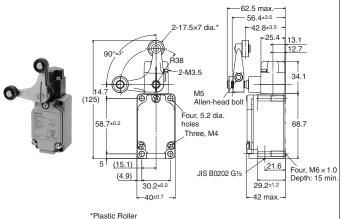
^{*} These values are for the top end of the spring, rod, or wire.

Fork Lock Lever

Screw terminals

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

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



With operation indicator **LED** WLCA32-41LD-N WLCA32-43LD-N The WLCA32-41L□-N is shown in the Neon lamp following diagram. WLCA32-41LE-N WLCA32-42LE-N 62.5 max. - 56.4±3.5 — WLCA32-43LE-N 2-17.5×7 dia. 25.4 13.1 12.7 90°± Two. M3.5 34.1 M5 lever locking (125) Allen-head bolt Four, 5.2 dia. holes 68.7 Ф Three, M4 5 (15.1) 21.6 Four. M6 x 1.0 JIS B0202 G1/2 (4.9)Depth: 15 min. 30 2±0.2 29 2±1.2 *Plastic Roller (The WLCA32-041L□-N to WLCA32-044L□-N have stainless sintered rollers.)

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

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

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

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

Operating characteristics

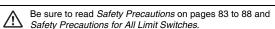
	Model	WLCA32-41 to WLCA32-44-N
Force necessary to reverse the direction of the lever Movement until the lever reverses	max.	11.77 N 50±5°
Movement until switch operation Movement after switch operation	max. min.	55° 35°

(The WLCA32-041-N to WLCA32-044-N have stainless sintered rollers.)

Environment-resistant Limit Switches WL-N/WLG

Wide range of available models to match your onsite environment

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





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

Features

O 1	1		11.			
Select	based	on	tne	operating	temperature	а

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

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

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

Model Number Structure

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

Basic models

WL□-							-N
(1)	(2)	(3)	(4)	(5)	(6)	$\overline{(7)}$	

(1) Actuator and Property Specifications

Code		Pretravel (PT)	
CA2			15±5°
CA2-2		Roller lever: (R38 mm)	25±5°
CA2-2N	Roller lever		20° max.
CA12	Holler level		15±5°
CA12-2		Adjustable Roller Lever (R25 to 89 mm)	25±5°
CA12-2N		(1120 to 00 11111)	20° max.
D28	Plunger	Sealed top-roller plunger	1.7 mm max.
D2		Top-roller plunger	1.7 mm max.
SD	Actuators	Horizontal plunger	2.8 mm max.
SD2		Horizontal-roller plunger	2.8 mm max.
CL			15±5°
CL-2	Flexible Rod Actuators	Adjustable rod lever (25 to 140mm)	25±5°
CL-2N		(20 10 1 10)	20° max.
NJ	, 101441010	Coil spring (6.5 dia.)	20±10mm
NJ-2		Flexible rod: Resin rod (8 dia.)	40±20mm

(2) Environment-resistant Specifications

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

(3) Built-in Switch Specifications

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

(4) Temperature Specifications

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

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

(5) Wiring and Built-in Switch Specifications

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

(6) Indicator Specifications

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

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

(7) Lamp Wiring

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

 $^{(\}mbox{\sc 4})$ Temperature Specifications $\,$ Cannot be combined with symbols TH or TC.

High-sensitivity and High-precision Models

(1) Actuator and Property Specifications

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

(2) Environment-resistant Specifications

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

(3) Built-in Switch Specifications

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

(4) Temperature Specifications

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

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

(5) Wiring and Built-in Switch Specifications

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

(6) Indicator Specifications

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

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

(7) Lamp Wiring

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

WL-N/WLG

Ordering Information

Roller Lever

Apperance	Actuator	Terminal shape	Built-in switch specification/ Temperature Specifications	Pretravel (PT)	Without operation indicator	With operation indicator	
						Indicator	LED
					Model	Wiring Specifications	Model
				15±5°	WLCA2-TH-N		
				25±5°	WLCA2-2TH-N		
			Heat-resistant type	20° max.	WLCA2-2NTH-N		
				10°+2°	WLG2-TH		
				5°+2°	WLGCA2-TH		
			Cold-resistant type	15±5°	WLCA2-TC-N		
				25±5°	WLCA2-2TC-N		
		Screw terminals (Conduit size: G ¹ / ₂)		20° max.	WLCA2-2NTC-N		
		(Conduit Size. G-72)		10°+2°	WLG2-TC		
				5°+2°	WLGCA2-TC		
				15±5°	WLCA2-RP-N		
			Corrosion-resistant type	10°+2°	WLG2-RP		
				5°+2°	WLGCA2-RP		
				15±5°	WLCA2-P1-N		
			Weather-resistant type	10°+2°	WLG2-P1		
						NC wiring	WLCA2-RP60LD2-N
				15±5°	WLCA2-RP60-N	NO wiring	WLCA2-RP60LD3-N
						NC wiring	WLCA2-2RP60LD2-N
		Direct-wire cable		25±5°	WLCA2-2RP60-N	NO wiring	WLCA2-2RP60LD3-N
			Coolant-resistant type	.3°		NC wiring	WLG2-RP60LD2
M	Rollerlever:			10°-1°	WLG2-RP60	NO wiring	WLG2-RP60LD3
(1)	R38 mm			5°+2°	WLGCA2-RP60	NC wiring	WLGCA2-RP60LD2
						NO wiring	WLGCA2-RP60LD3
			Corrosion-resistant type	15±5°	WLCA2-RP40-N		
			Molded terminal -139	15±5° 25±5°	WLCA2-139-N WLCA2-2139-N	NC wiring	WLCA2-139LD2-N
						NO wiring	WLCA2-139LD3-N
						NC wiring	WLCA2-2139LD2-N
						NO wiring	WLCA2-2139LD3-N
				20° max.	WLCA2-2N139-N		
				10°+2°	WLG2-139	NO wiring	WLG2-139LD3
				5°+2°	WLGCA2-139	NC wiring	WLGCA2-139LD2
						NO wiring	WLGCA2-139LD3
			Molded terminal -140	15±5°	WLCA2-140-N		
				20° max.	WLCA2-140-N WLCA2-2N140-N		
					10°-1° WLG2-140	NC wiring	WLG2-140LD2 *
				10°-1°		NO wiring	WLG2-140LD3 *
			Molded terminal -141		WLCA2-141-N	NC wiring	WLG2-140LD3 WLCA2-141LD2-N
				15±5°		NO wiring	WLCA2-141LD2-N WLCA2-141LD3-N
				10°-1°	WLG2-141	NC wiring	WLG2-141LD2
							WLG2-141LD2 WLG2-141LD3
				5°+2°	WI CCA2 141	NO wiring	
				5 0	WLGCA2-141	NO wiring	WLGCA2-141LD3

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

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

Plunger

Apperance	Actuator	Terminal shape	Built-in switch specification/	Pretravel (PT)	Without operation indicator
Apperance	Actuator	reminal shape	Temperature Specifications	Pretraver (P1)	Model
			Heat-resistant type		WLD28-TH-N
		Screw terminals (Conduit size: G1/2)	Cold-resistant type		WLD28-TC-N
A	Sealed top-roller plunger	(551133115325157)	Corrosion-resistant type		WLD28-RP-N
=	Sealed top-roller pluliger		Coolant-resistant type		WLD28-RP60-N
		Direct-wire cable	Molded terminal -139	1.7 mm max.	WLD28-139-N
			Molded terminal -140		WLD28-140-N
(a)	Top-roller plunger	Screw terminals (Conduit size: G¹/₂)	Heat-resistant type		WLD2-TH-N
		roller plunger Direct-wire cable	Coolant-resistant type		WLD2-RP60-N
		Direct-wire cable	Molded terminal -139		WLD2-139-N
			Heat-resistant type		WLSD-TH-N
		Screw terminals (Conduit size: G ¹ / ₂)	Cold-resistant type		WLSD-TC-N
	Horizontal plunger	(Conduit Size: G 72)	Corrosion-resistant type		WLSD-RP-N
		Direct-wire cable	Coolant-resistant type		WLSD-RP60-N
		Direct-wire cable	Molded terminal -139		WLSD-139-N
			Heat-resistant type	2.8 mm max.	WLSD2-TH-N
		Screw terminals (Conduit size: G ¹ / ₂)	Cold-resistant type		WLSD2-TC-N
	Horizontal-roller plunger	(Conduit Size: G 72)	Corrosion-resistant type		WLSD2-RP-N
117	Tionzoniai-roller plunger		Coolant-resistant type		WLSD2-RP60-N
		Direct-wire cable	Molded terminal -139		WLSD2-139-N
			Molded terminal -140		WLSD2-140-N

WL-N/WLG

Flexible Rod

A	Actuator	Terminal shape	Built-in switch specification/	Pretravel (PT)	Without operation indicator
Apperance	Actuator	reminal shape	Temperature Specifications	Pretraver (P1)	Model
			Heat-resistant type		WLNJ-TH-N
n		Screw terminals (Conduit size: G ¹ / ₂)	Cold-resistant type		WLNJ-TC-N
Ų	Cail anning (6 E dia)	(oondan oizor a 12)	Corrosion-resistant type	20±10 mm	WLNJ-RP-N
A.	Coil spring (6.5 dia.)		Coolant-resistant type	20±10 mm	WLNJ-RP60-N
100		Direct-wire cable	Molded terminal -139		WLNJ-139-N
			Molded terminal -140		WLNJ-140-N
Π		Screw terminals (Conduit size: G¹/₂)	Corrosion-resistant type	40±20 mm	WLNJ-2RP-N
	Resin rod (8 dia.)		Coolant-resistant type		WLNJ-2RP60-N
		Direct-wire cable	Molded terminal -139	40±20 mm	WLNJ-2139-N
<u> </u>			Molded terminal -140		WLNJ-2140-N
				15±5°	WLCL-TH-N
			Heat-resistant type	25±5°	WLCL-2TH-N
				20° max.	WLCL-2NTH-N
				10°+2°	WLGL-TH
				15±5°	WLCL-TC-N
		Screw terminals		25±5°	WLCL-2TC-N
		(Conduit size: G1/2)	Cold-resistant type	20° max.	WLCL-2NTC-N
	Adjustable rod lever (25 to 140 mm)			10°+2°	WLGL-TC
	(201011011111)		Corrosion-resistant type	15±5°	WLCL-RP-N
U			Corrosion-resistant type	10°+2°	WLGL-RP
			Weather registent type	15±5°	WLCL-P1-N
			Weather-resistant type	10°+2°	WLGL-P1
			Coolant-resistant type	15±5°	WLCL-RP60-N
		Direct-wire cable	Molded terminal -139	15±5°	WLCL-139-N
			Molded terminal -140	15±5°	WLCL-140-N

Specifications

Ratings

Screw terminals/Direct-wire cable

Without Operation Indicator Basic models (WL-N)

Ratings		Non-inductive load (A)				Inductive load (A)			
		Basic models (WL-N)				Basic models (WL-N)			
		Resistive load		Lamp load		Inducti	ve load	Motor load	
Voltage (V)		NC	NO	NC	NO	NC	NO	NC	NO
	125	10		3	1.5	10		5	2.5
AC	250	10		2	1	10		3	1.5
	500	10		1.5	0.8	;	3	1.5	0.8
	8	1	0	6	3	1	0	6	3
	14	1	0	6	3	10		6	
DC	30	6		4	3	6		4	
	125	0.	0.8		0.2	0	.8	0.2	
	250	0.	.4	0.1	0.1	0	.4	0.1	

High-sensitivity and High-precision models (WLG)

Ratings		Non-inductive load (A) High-sensitivity and			
nati	iliys	High-precision models (WLG)			
		Resistive load			
Volta	ge (V)	NC	NO		
AC	125	5	5		
AC	250	Ę	5		
D0	125	0.4			
DC	250	0.	2		

With Operation Indicator (LED) Basic models (WL-N)

Ratings		No	n-induct	ive load	(A)	Inductive load (A)				
		Ва	asic mod	els (WL-	N)	Ва	Basic models (WL-N)			
		Resisti	ve load	Lamp load		Inductive load		Motor load		
Voltage (V)		NC	NO	NC	NO	NC	NO	NC	NO	
AC	115	1	0	3	1.5	1	0	5	2.5	
	12	1	0	6	3	10		6		
DC	24	(3	4	3	6		4		
DC	48	3		2	1.5	3		0.2		
	115	0	.8	0	0.2		0.8		0.1	

High-sensitivity and High-precision models (WLG)

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

With Operation Indicators (Neon Lamps) Basic models (WL-N)

		Non-inductive load (A)				Inductive load (A)			
Ratings		Basic models (WL-N)				Basic models (WL-N)			
		Resistive load		Lamp load		Inductive load		Motor load	
Volta	ge (V)	NC	NO	NC	NO	NC	NO	NC	NO
40	125	1	10		1.5	10		5	2.5
AC 250		10		2	1	10		3	1.5

High-sensitivity and High-precision models (WLG)

mgir continuity and ringir productor modele (1124						
Ratings		Non-inductive load (A)				
		High-sensitivity and High-precision models (WLG)				
		Resistive load				
Volta	ge (V)	NC	NO			
AC	125	5				
AC	250	Ę	5			

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

Allowable Inrush Current/ Minimum applicable load

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

Operation Indicator

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

Characteristics

Operating charac	cteristics type	Basic models (WL-N)	High-sensitivity and High-precision models (WLG)				
Permissible operating	Mechanical	120 operations/minute					
frequency	Electrical 30 operations/minute						
Rated frequency		50/60 Hz	50/60 Hz				
Permissible operating	speed	1 mm/s to 1 m/s (in case of WLCA2-N)					
Insulation resistance		100 MΩ min. (at 500 VDC)					
Contact resistance		25 mΩ or less (default value, built-in switch only)					
Vibration resistance	Malfunction	10 to 55 Hz, 1.5-mm double amplitude *2					
Shock	Destruction	1,000 m/s² max.					
SHOCK	Malfunction	300m/s ² max. *2					
Dunchility #4	Mechanical	15,000,000 operations min.	10,000,000 operations min. *3				
Durability *1	Electrical	750,000 operations min. (3 A at 250 VAC, resistive load) *4	500,000 operations min. (3 A at 250 VAC, resistive load) *4				
Ambient operating tem	perature	-10 to +80°C (with no icing) *5					
Ambient operating humidity		35 to 95%RH					
Degree of protection		IP67					
Weight		Approx. 250 g (for WLCL-TH-N) Approx. 250 g (for WLCL-TH-N)					

Note: The above figures are initial values.

- *1. The values are calculated at an operating temperature of +5°C to +35°C, and an operating humidity of 40% to 70%RH. Contact your OMRON sales representative for more detailed information on other operating environments.
- *2. Except Switches with Flexible Rod Actuators.
- *3. 500,000 operations min. for Weather-resistant models.
- *4. In case of models without operation indicators.
- *5. For low-temperature models this is -40°C to +40°C (with no icing). For heat-resistant models the range is +5°C to 120°C.

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

^{*} Except models with operation indicators.

Circuit Configuration/Terminal Connection Diagram

Operating characteristics type	Basic models (WL-N)/High-sensitivity and high-precision models (WLG)				
Wiring Specifications	Screw terminals	Direct-wire cable			
Without operation indicator	14(NO) Za 13(NO) 11(NC) 12(NC)	NO NC NC NO 4 core White Black Red Blue			
Operation indicator (Light-ON when Not Operating *)	14(NO) Za 13(NO) 11(NC) 12(NC)	NO NC NC NO 4 core White Black Red Blue			

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

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

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

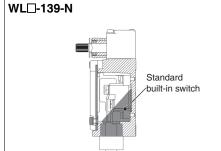
The above shows details of the switch interior. External wires (external resistances) are not shown. For details, refer to Operation on page 18.

Structure and Nomenclature

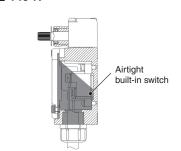
Mold Specifications

: Molded parts

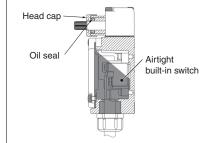
Prevent entry of foreign objects from conduit



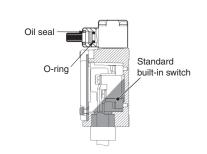
Prevent entry of foreign objects from conduit cover WL□-140-N



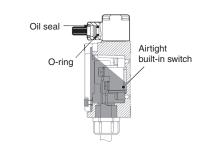
Prevent entry of foreign objects from head and conduit cover WL□-141-N



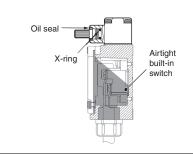
WLG□-139



WLG □-140

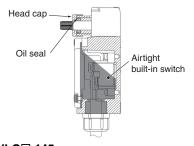


WLG□-141



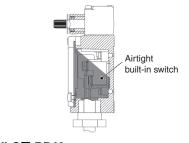
Prevent entry of metal powder from head and conduit

WL□-145-N

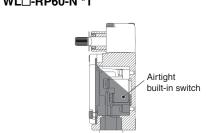


Prevent entry of metal powder from conduit cover

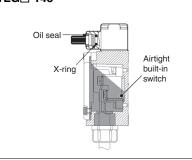
WL□-RP40-N



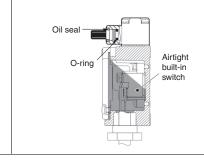
Prevent entry of metal powder from head and conduit cover WL□-RP60-N *1



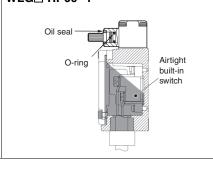
WLG□-145



WLG□-RP40



WLG□-RP60 *1



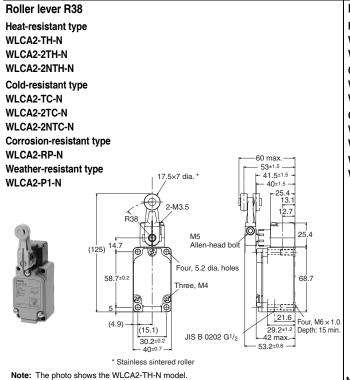
Model	Cable specifications	Connector specifications
WL□-139-N WLG□-139	Standard 5-m VCT cable. Finished outer diameter: 11.5 mm, 4 conductors.	Resin cap
WL□-140-N WLG□-140 WL□-141-N WLG□-141 WL□-145-N WLG□-145	Standard 5-m VCT cable, with high flexibility and good anti-oil properties attached. Finished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

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

Dimensions (Unit: mm)

Roller Lever

Screw terminals



Roller lever R38 Heat-resistant type WLG2-TH WLGCA2-TH Cold-resistant type WLG2-TC WLGCA2-TC Corrosion-resistant type WLG2-RP WLGCA2-RP Weather-resistant type WLG2-P1 17.5×7 dia. Four, 5.2 dia. 68.7 58.7 Three, M4 21.6 ±1.2 •29.2 • JIS B0202 G1/2 Four, M6 × 1.0 Depth: 15 min.

(15.1)

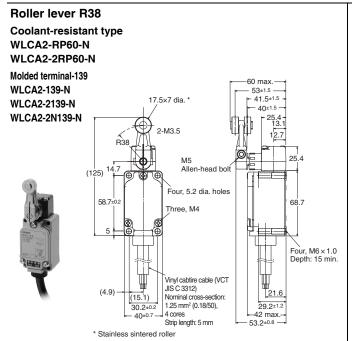
* Stainless sintered roller

42 max. ► 53.2±0.8 —

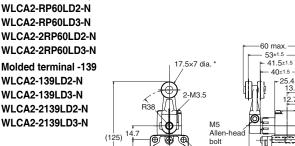
Note: The photo shows the WLG2-TH model.

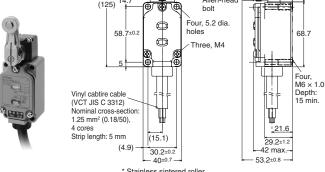
		Model	WLCA2-TH-N WLCA2-TC-N WLCA2-RP-N WLCA2-P1-N	WLCA2-2TH-N WLCA2-2TC-N	WLCA2-2NTH-N WLCA2-2NTC-N	WLG2-TH WLG2-TC WLG2-RP WLG2-P1	WLGCA2-TH WLGCA2-TC WLGCA2-RP
Operating force	OF	max.	13.34 N	13.34 N	13.34 N	9.81 N	13.34 N
Release force	RF	min.	1.18 N	1.18 N	1.18 N	0.98 N	1.47 N
Pretravel	PT		15±5°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

Direct-wire cable



Roller lever R38 With operation indicator Coolant-resistant specifications

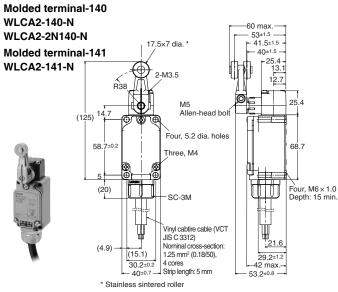




Note: The photo shows the WLCA2-RP60LD3-N model.

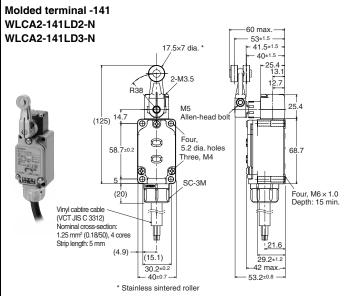
Note: The photo shows the WLCA2-139-N model.

Roller lever R38



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

Roller lever R38 With operation indicator

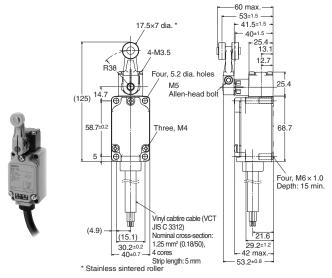


Note: The photo shows the WLCA2-141LD2-N model.

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

	M	lodel	WLCA2-RP60-N WLCA2-RP60LD2-N WLCA2-RP60LD3-N WLCA2-139-N WLCA2-139LD2-N WLCA2-139LD3-N WLCA2-140-N WLCA2-141-N WLCA2-141-N WLCA2-141LD2-N WLCA2-141LD3-N	WLCA2-2N139-N WLCA2-2N140-N	WLCA2-2RP60-N WLCA2-2RP60LD2-N WLCA2-2RP60LD3-N WLCA2-2139-N WLCA2-2139LD2-N WLCA2-2139LD3-N
Operating force Release force Pretravel Overtravel Movement Differential	RF PT OT	max. min. min. max.	13.34 N 1.18 N 15±5° 70° 12°	13.34 N 1.18 N 20° max. 70° 10°	13.34 N 1.18 N 25±5° 60° 16°

Roller lever R38 Coolant-resistant type WLG2-RP60 Molded terminal -139 WLG2-139



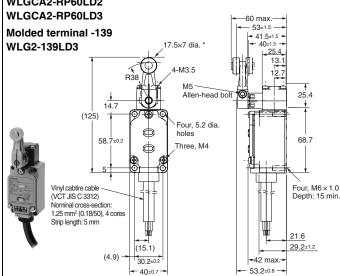
Note: The photo shows the WLG2-139 model.

Roller lever R38

Roller lever R38 With operation indicator Coolant-resistant specifications

WLG2-RP60LD2

WLG2-RP60LD3 WLGCA2-RP60LD2



* Stainless sintered roller

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

Molded terminal -140 WLG2-140 -60 max Molded terminal -141 53±1.5 — - 41.5±1.5 WLG2-141 17.5×7 dia. * 4-M3 5 M5 (125) Four. 5.2 dia holes 58. 68.7 Three, M4 Four, M6 × 1.0 Depth: 15 min. Vinyl cabtire cable (VCT JIS C 3312) Nominal cross-section: 1.25 mm² (0.18/50), 4 coi Strip length: 5 mm 21.6

(15.1)

30.2±0.2

40±0.7-

* Stainless sintered roller

Roller lever R38 With operation indicator

Molded terminal -140 WLG2-140LD2 WLG2-140LD3 60 max. 53±1.5 — - 41.5±1.5 Molded terminal -141 17.5×7 dia. 40±1.5 WLG2-141LD2 WLG2-141LD3 4-M3.5 WLGCA2-141LD3 M5 Allen-head bol (125) Four 5.2 dia holes 58. Three, M4 Four, M6 × 1.0 Depth: 15 min. SC-3M Vinyl cabtire cable (VCT JIS C 3312) Nominal cross-section: (4.9)(15.1) 1.25 mm² (0.18/50), 4 cores 30.2±0 29.2±1.2 42 max.-40±0.7 — Strip length: 5 mm * Stainless sintered roller 53.2±0.8 → Note: The photo shows the WLG2-141LD2 model.

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

29 2±1.2

42 max.

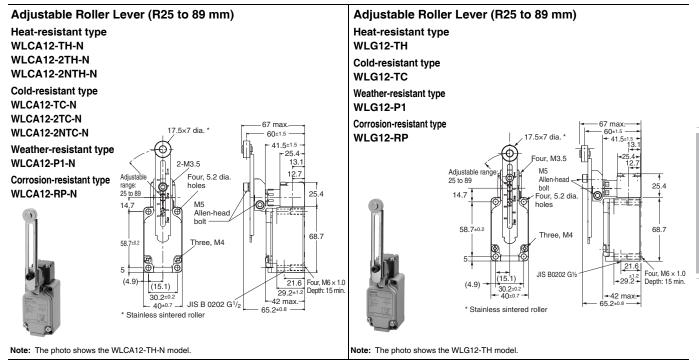
53.2±0.8

Operating characteristics

Note: The photo shows the WLG2-141 model.

	,	Model	WLG2-139 WLG2-140 WLG2-141 WLG2-RP60 WLG2-RP60LD2 WLG2-RP60LD3 WLG2-139LD3 WLG2-140LD2 WLG2-140LD3 WLG2-141LD2 WLG2-141LD2 WLG2-141LD2	WLGCA2-RP60LD2 WLGCA2-RP60LD3 WLGCA2-141LD3
Operating force Release force Pretravel Overtravel Movement Differential	OF RF PT OT MD	max. min. min. max.	9.81 N 0.98 N 10°-2° 65° 7°	13.34 N 1.47 N 5°°°° 40° 3°

Screw terminals



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

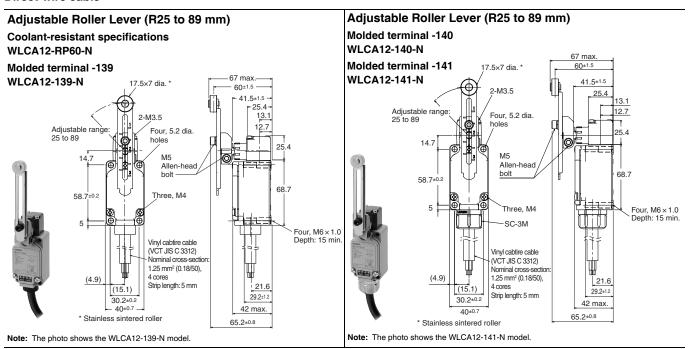
Operating characteristics

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

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

WL-N/WLG

Direct-wire cable



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

Operating characteristics

		Model	WLCA12-RP60-N WLCA12-139-N WLCA12-140-N WLCA12-141-N
Operating force	OF	max.	13.34 N
Release force	RF	min.	1.18 N
Pretravel	PT		15±5°
Overtravel	ОТ	min.	70°
Movement Differential	MD	max.	12°

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

13.1

12.9

28.4

Four, M6 × 1.0 Depth: 15 min.

-21.6

29.2±1.2

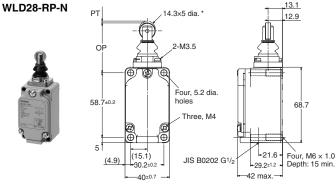
Plunger Actuators

Screw terminals

Sealed top-roller plunger **Heat-resistant specifications** WLD28-TH-N

Cold-resistant specifications WLD28-TC-N

Corrosion-resistant specifications



* Stainless sintered roller

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

* Stainless sintered roller (4.9)

Top-roller plunger

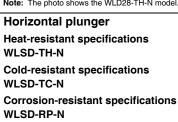
WLD2-TH-N

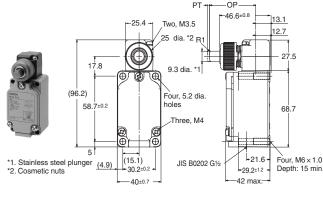
Heat-resistant specifications

Horizontal-roller plunger Heat-resistant specifications WLSD2-TH-N

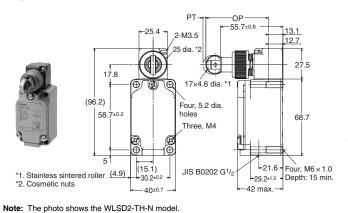
Cold-resistant specifications WLSD2-TC-N

Corrosion-resistant specifications WLSD2-RP-N





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



17×4.6 dia. '

Four, 5.2 dia

Three, M4

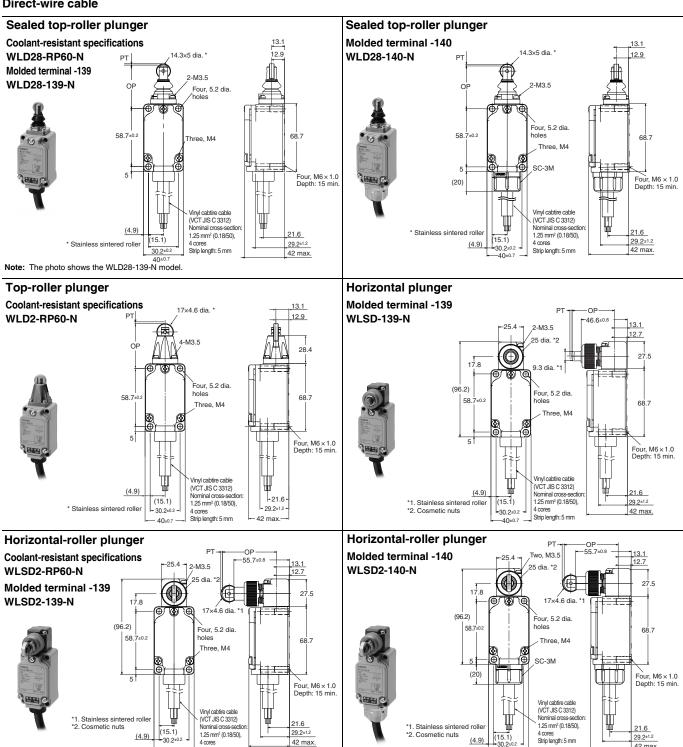
40±0.7

JIS B0202 G1/

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

		Model	WLD28-TH-N WLD28-TC-N WLD28-RP-N	WLD2-TH-N	WLSD-TH-N WLSD-TC-N WLSD-RP-N	WLSD2-TH-N WLSD2-TC-N WLSD2-RP-N
Operating force Release force Pretravel Overtravel Movement Differential	OF RF PT OT MD	max. min. max. min. max.	16.67 N 4.41 N 1.7 mm 5.6 mm 1 mm	26.67 N 8.92 N 1.7 mm 5.6 mm 1 mm	40.03 N 8.89 N 2.8 mm 5.6 mm 1 mm	40.03 N 8.89 N 2.8 mm 5.6 mm 1 mm
Operating position Total travel position	OP TTP	max.	44±0.8 mm 39.5 mm	44±0.8 mm 39.5 mm	40.6±0.8 mm 	54.2±0.8 mm

Direct-wire cable



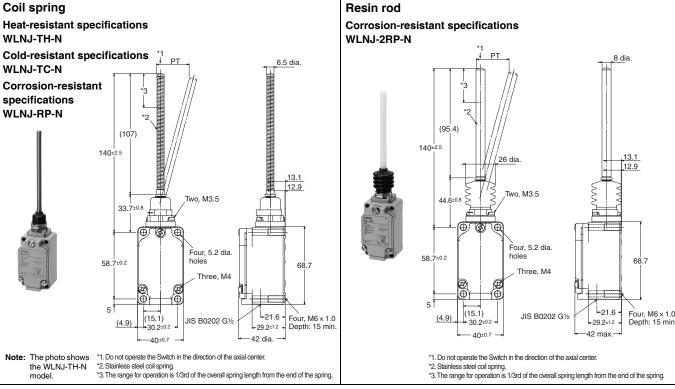
Note: Unless otherwise indicated, a tolerance of ±0.4 mm applies to all dimensions.

Strip length: 5 mm

operating characteristics								
		Model	WLD28-RP60-N WLD28-139-N WLD28-140-N	WLD2-RP60-N	WLSD-139-N	WLSD2-RP60-N WLSD2-139-N WLSD2-140-N		
Operating force	OF	max.	16.67 N	26.67 N	40.03 N	40.03 N		
Release force	RF	min.	4.41 N	8.92 N	8.89 N	8.89 N		
Pretravel	PT	max.	1.7 mm	1.7 mm	2.8 mm	2.8 mm		
Overtravel	OT	min.	5.6 mm	5.6 mm	5.6 mm	5.6 mm		
Movement Differential	MD	max.	1 mm	1 mm	1 mm	1mm		
Operating position	OP	max.	44±0.8 mm	44±0.8 mm	40.6±0.8 mm	54.2±0.8 mm		
Total travel position	TTP		39.5 mm	39.5 mm				

Flexible Rod

Screw terminals



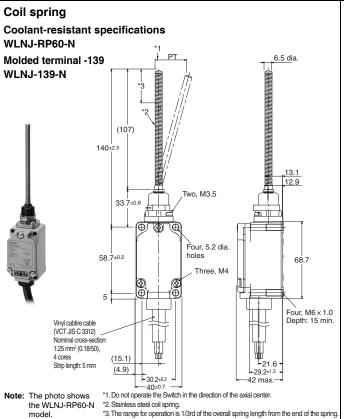
Note: Unless otherwise indicated, a tolerance of ± 0.4 mm applies to all dimensions.

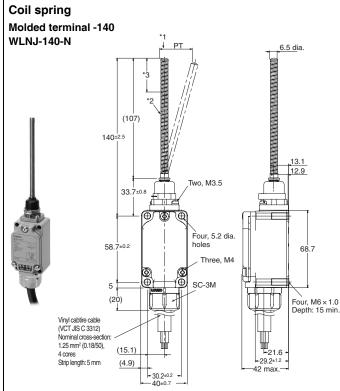
		Model	WLNJ-TH-N * WLNJ-TC-N * WLNJ-RP-N *	WLNJ-2RP-N *
Operating force	OF	max.	1.47 N	1.47 N
Pretravel	PT		20±10 mm	40±20 mm

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

Direct-wire cable

Resin rod

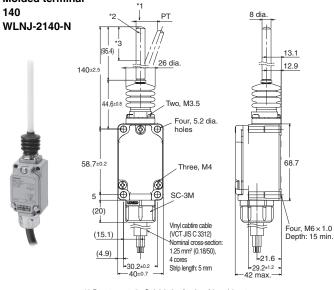




- *1. Do not operate the Switch in the direction of the axial center.
- *2. Stainless steel coil spring.
 *3. The range for operation is 1/3rd of the overall spring length from the end of the spring.

Coolant-resistant specifications WLNJ-2RP60-N 8 dia. Molded terminal -139 WLNJ-2139-N 13.1 26 dia 12.9 Two, M3.5 Four, 5.2 dia holes 58.7±0.2 68.7 Three, M4 Vinyl cabtire cable (VCT JIS C 3312) Four, M6 × 1.0 Depth: 15 mir Nominal cross-section 1.25 mm² (0.18/50) Strip length: 5 mm (15.1)29.2±1.2 (4.9)-30 2±0.2 -40±0.7 *1. Do not operate the Switch in the direction of the axial center. Note: The photo shows the WLNJ-2RP60-N 2 Stainless steel coil spring. model. 3. The range for operation is 1/3rd of the overall spring length from the end of the spring

Resin rod Molded terminal -



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

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

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

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

Spatter-prevention Switches WL-N/WLG

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

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

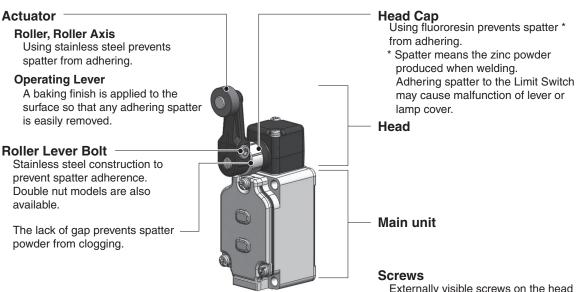
Be sure to read *Safety Precautions* on pages 83 to 88 and *Safety Precautions for All Limit Switches*.



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

Features

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



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

WL-N/WLG

Model Number Structure

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

Basic models

$$\textbf{WL} \underline{\square} - \underline{\square} \, \underline{\square} \, \underline{\square} \, \underline{\square} \, \textbf{S} \, \underline{\square} \, \textbf{-N}$$

(1) Actuator and Property Specifications

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

(2) Built-in Switch Specifications

Code	Specifications	
None	Standard built-in switch	

(3) Indicator Specifications

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

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

High-sensitivity and High-precision Models

WLG□-	- 🗌			S	
(1)	(2)	(3)	(4)		(5)

(1) Actuator and Property Specifications

Code		Pretravel (PT)	
2	Roller lever	Roller lever: R38 mm High-sensitivity Models	10°+2°
CA2	Roller lever	Roller lever: R38 mm High-precision Models	5°+2°

(2) Built-in Switch Specifications

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

(3) Indicator Specifications

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

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

(4) Lever Type *

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

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

(5) Wiring Specifications

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

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

(4) Lever Type *

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

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

(5) Wiring Specifications

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

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

Ordering Information

Roller Lever

Standard built-in switch

Screw terminals

				With operation indicator *		
Appearance	Actuator Pre	Pretravel (PT)	Lever type	LED	Neon lamp	
				Model	Model	
©# •		15±5°	Double nut Lever	WLCA2-LDAS-N	A2-LDAS-N WLCA2-LEAS-N	
	D	15±5	15±5	Allen-head Lever	WLCA2-LDS-N	WLCA2-LES-N
	Roller lever: R38 mm	10° +2°	Double nut Lever	WLG2-LDAS	WLG2-LEAS	
			Allen-head	WLG2-LDS	WLG2-LES	
		5°+2°	Lever	WLGCA2-LDS	WLGCA2-LES	

^{*} The default setting is light-ON when not operating (NO wiring). Turn the lamp holder by 180° to change the setting to light-ON when operating (NC wiring).

Pre-wired Connectors

							_	With operation indicator *
Appearance	Actuator	Pretravel (PT)	Lever type	Connector shape	Usage Voltage	Wiring locations	Connector pin No.	LED
				S.I.upo			J	Model
						NO only	NO: 3 4	WLCA2-LDS-M1J-1-N
		15±5°				NC+NO	NO: ③ ④ NC: ① ②	WLCA2-LDS-DGJS-N
					DC		NO: ③ ④ NC: ① ②	WLG2-LDS-DGJS03
○		10°+2°					NO: ③ ④ NC: ②	WLG2-LDS-DK1EJ03
	Roller lever: R38 mm						NO: 3 4	WLG2-LDS-M1J-1
· ·						NO only	NO: ① ④	WLG2-LDS-M1GJ-1
		5°+2°					NO: 3 4	WLGCA2-LDS-M1J-1
		5 _{0°}					NO: 1 4	WLGCA2-LDS-M1GJ-1
		15±5°		Smartclick		NC+NO	NO: ③ ④ NC: ① ②	WLCA2-LDS-DTGJS-N
		10° +2°				NO only	NO: ① ④	WLG2-LDS-DTGJS03

^{*} The default setting is light-ON when not operating (NO wiring). Turn the lamp holder by 180° to change the setting to light-ON when operating (NC wiring). (However, Three-core and Four-core Switches cannot be switched to light-ON when operating (NC wiring).)

Airtight Built-in Switch

Pre-wired Connector types

					Usage			With operation indicator *
Appearance	Actuator	Pretravel (PT)	Lever type	Lever type Connector shape		Wiring locations	Connector pin No.	LED
						locations	p rto.	Model
					DC	NO only	NO: 3 4	WLG2-55LDS-M1J-1
							NO: ① ④	WLG2-55LDS-M1GJ-1
	Roller lever: R38 mm	10° +2°				NC+NO	NO: ③ ④ NC: ① ②	WLG2-55LDS-DGJS03
							NO: ③ ④ NC: ① ②	WLG2-55LDS-M1TGJ

^{*} The default setting is light-ON when not operating (NO wiring). Turn the lamp holder by 180° to change the setting to light-ON when operating (NC wiring). (However, Three-core and Four-core Switches cannot be switched to light-ON when operating (NC wiring).)

Plunger Actuators

Standard built-in switch

Screw terminals

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

^{*} The default setting is light-ON when not operating (NO wiring). Turn the lamp holder by 180° to change the setting to light-ON when operating (NC wiring).

Pre-wired Connectors

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

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

* The default setting is light-ON when not operating (NO wiring). Turn the lamp holder by 180° to change the setting to light-ON when operating (NC wiring). (However, Three-core and Four-core Switches cannot be switched to light-ON when operating (NC wiring).)

Specifications

Ratings

Screw terminals

With Operation Indicator Basic models (WL-N)

		No	n-induct	ive load	(A)	Inductive load (A)			
Ratings		Ва	asic mod	els (WL-	N)	Basic models (WL-N)			
		Resistive load		Lamp load		Inductive load		Motor load	
Volta	ge (V)	NC NO		NC	NO	NC	NO	NC	NO
AC	115	1	10		1.5	10		5	2.5
	12	1	0	6	3	1	0	6	
DC	24	(6	4	3	6	3	4	
ЪС	48	(3		1.5	3		0.2	
	115	0	.8	0	0.2		.8	0.1	

High-sensitivity and High-precision models (WLG)

		Non-inductive load (A)				
Rat	ings	High-sensitivity and High-precision models (WLG)				
		Resistive load				
Volta	ge (V)	NC	NO			
AC	115	5				
DC	115	0.4				

With Operation Indicators (Neon Lamps) Basic models (WL-N)

Ratings		No	n-induct	ive load	(A)	Inductive load (A)			
		Ва	asic mod	els (WL-	N)	Basic models (WL-N)			
		Resisti	Resistive load Lamp load			Inducti	ve load	Motor load	
Volta	ge (V)	NC	NO	NC	NO	NC	NO	NC	NO
AC	125	1	10		1.5	10		5	2.5
AC	250	10		6	1	10		3	1.5

High-sensitivity and High-precision models (WLG)

		Non-induct	Non-inductive load (A)				
Ratings		High-sens High-precision					
		Resistive load					
Volta	ge (V)	NC NO					
AC	125	5					
AC	250	5					

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

Allowable Inrush Current/Minimum Applicable Load

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

Operation Indicator

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

Pre-wired connectors

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

High-sensitivity and High-precision models (WLG)

Ratings		No	n-induct	ive load	(A)	Inductive load (A)				
		Ва	asic mod	els (WL-	N)	Ва	Basic models (WL-N)			
		Resistive load		Lamp load		Inductive load		Motor load		
Voltage (V)		NC	NO	NC	NO	NC	NO	NC	NO	
	12	3	3	3		3	3		3	
DC	24	3	3	3		3		3		
ЪС	48	4	4		1.5	3		2		
	115	0.	0.8		0.2 0.2		0.8		0.2	

		Non-induct	Non-inductive load (A)		
Rat	ings	High-sensitivity and High-precision models (WLG)			
		Resistive load			
Voltage (V)		NC	NO		
DC	115	0	0.4		

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

Minimum Applicable Load

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

Operation Indicator

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

Characteristics

Operating char	acteristics type	Basic models (WL-N)	High-sensitivity and High-precision models (WLG)	
Permissible	Mechanical	120 operations/minute		
operating frequency	Electrical	30 operations/minute		
Rated frequency		50/60 Hz		
Permissible opera	ating speed	1 mm/s to 1 m/s (for WLCA2-LDS-N)		
Insulation resista	nce	100 MΩ min. (at 500 VDC)		
Contact resistance	е	$25 \text{ m}\Omega$ max. (initial value for the built-in switch)		
Vibration resistance	Malfunction	10 to 55 Hz, 1.5-mm double amplitude		
Shock	Destruction	1,000 m/s² max.		
SHOCK	Malfunction	300 m/s² max.		
Durability *1	Mechanical	15,000,000 operations min.	10,000,000 operations min.	
Durability 1	Electrical	750,000 operations min. (3 A at 115 VAC, resistive load) *2	500,000 operations min. (3 A at 115 VAC, resistive load) *2	
Ambient operating temperature		-10 to +80°C (with no icing)		
Ambient operating humidity 35 to 95%RH				
Degree of protection IP67		IP67		
Weight Approx. 255 g (in case of WLCA2-LDS-N) Approx. 270 g (in case of WLGCA2-LDS)		Approx. 270 g (in case of WLGCA2-LDS)		

Note: The above figures are initial values.

^{*2.} In case of models with operation indicators (LEDs).

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

^{*} Excluding those with operation indicators.

^{*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.

Terminal Connection Diagram

Operating characteristics type	Basic models (WL-N)		
Wiring Specifications	Screw terminals	Direct-wire connector and Pre-wired Connector Models	
Without operation indicator	14 (NO) Za 13 (NO) 11 (NC) 12 (NC)	DC Za NO NC NC NO 4 3 2 core 4 1 3 2 4 core 4 1 2 3 1 2 3 indicate the connector pin number.	
With Operation Indicator (Light-ON When Not Operating *)	14 (NO) — Tale (NO) — Tale (NO) — Tale (NC)	DC Internal circuits Za	

Operating characteristics type	High-sensitivity and High-	precision Switches (WLG)	
Wiring Specifications	Screw terminals	Direct-wire connector and Pre-wired Connector Models	
Without operation indicator	14 (NO) Za 13 (NO) 11 (NC) 12 (NC)	DC Za NO NC NC NO (4) (3) 2 core (4) (1) (3) (2) 3 core (4) (2) (3) 4 core (4) (1) (2) (3) (1) ② (3) (4) indicate the connector pin number.	
With Operation indicator (Light-ON when Not Operating *)	14 (NO) Za 13 (NO) 11 (NC) 12 (NC)	NO NC NC NO 4 3	

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

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

Connector Pin Layout Diagram





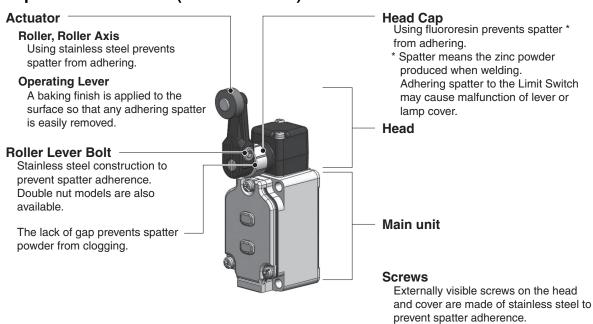
^{*} The position of the positioning piece is not always the same. If using an L-shaped connector causes problems in mounting, use a straight connector.

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

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

Structure and Nomenclature

Spatter-prevention Models (WLCA2-LES-N)

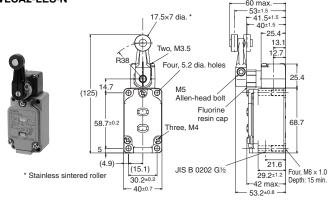


Dimensions (Unit: mm)

Roller Lever

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

WLCA2-LES-N



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

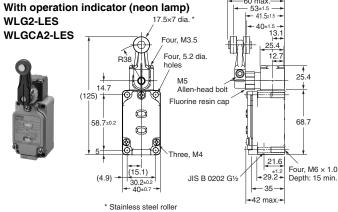
Roller lever R38

Allen-head lever

With operation indicator (LED)

WLG2-LDS

WLGCA2-LDS
With operation indicator (neon lam

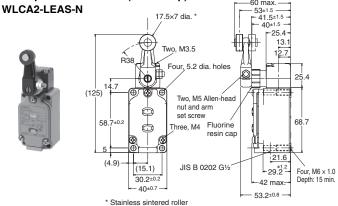


Note: The photo shows the WLG2-LDS model.

Roller lever R38

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

With operation indicator (neon lamp)



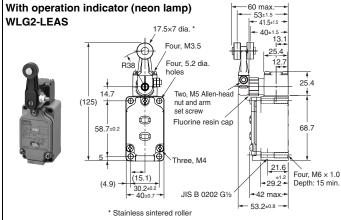
Note: The photo shows the WLCA2-LDAS-N model.

Roller lever R38

Double nut lever

With operation indicator (LED)

WLG2-LDAS



Note: The photo shows the WLG2-LDAS model.

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

Мо	WLCA2-LDAS-N WLCA2-LEAS-N WLCA2-LDS-N WLCA2-LES-N	WLG2-LDAS WLG2-LDS WLG2-LEAS WLG2-LES	WLGCA2-LDS WLGCA2-LES
Operating force OF m Release force RF m Pretravel PT Overtravel OT m Movement Differential MD man	n. 1.18 N 15±5° n. 70°	9.81 N 0.98 N 10°. ^{42°} 65° 7°	13.34 N 1.47 N 5°*2° 40° 3°

Note: The photo shows the

model.

WLCA2-LDS-M1J-1-N

Pre-wired connector (threaded) **Roller lever R38** Allen-head lever With operation indicator (LED) WLCA2-LDS-M1J-1-N WLCA2-LDS-DGJS-N 53±1.5 41.5±1.5 17.5×7 dia. 13.1 Two, M3.5 Four 5.2 dia holes M5 Allen-head (125)bolt Fluorine \bigoplus resin cap 58.7 68.7 Three, M4 (4.9) Four, M6 × 1.0 (15.1)Depth: 15 mir SC-1M

Ħ

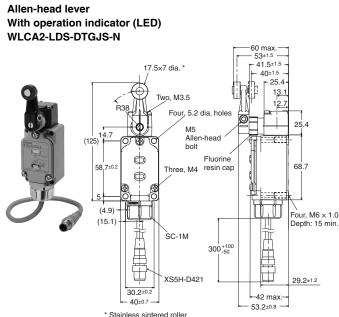
30.2±0.2

40±0.7

* Stainless sintered roller

Pre-wired connector type (Smartclick)

Roller lever R38



Roller lever R38 Allen-head lever Threaded (M12) With operation indicator (LED) WLG2-LDS-DGJS03 60 max WLG2-LDS-DK1EJ03 WLG2-55LDS-M1J-1 17.5x7 dia. 1 WLG2-55LDS-M1GJ-1 WLG2-55LDS-DGJS03 WLG2-LDS-M1J-1 Four, 5.2 dia, holes WLG2-LDS-M1GJ-1 M5 Allen-head bolt (125)WLGCA2-LDS-M1J-1 Fluorine resin car WLGCA2-LDS-M1GJ-1 Three, M4 68.7 Four M6 x 1.0 Depth: 15 min. SC-1M (15.1) 300+100 XS2H-D421 Ш 21.6 30.2+0 • 29.2**•** -42 max. * Stainless sintered roller 53.2±0.8 -

Roller lever R38

29.2±1.2

-42 max.-

53.2±0.8

Allen-head lever **Smartclick** With operation indicator (LED) .60 max WLG2-LDS-DTGJS03 WLG2-55LDS-M1TGJ 17.5×7 dia. Four, M3.5 Four, 5.2 dia. holes ф 25.4 M5 $(125)^{14.7}$ Allen-head bolt resin cap 68.7 58.7±0 Four. M6 × 1.0 (4.9)(15.1) SC-1M XS5H-D421 21.6 30.2±0.2 ±29 2 40±0.7 42 max: Stainless sintered roller 53.2±0.8 -

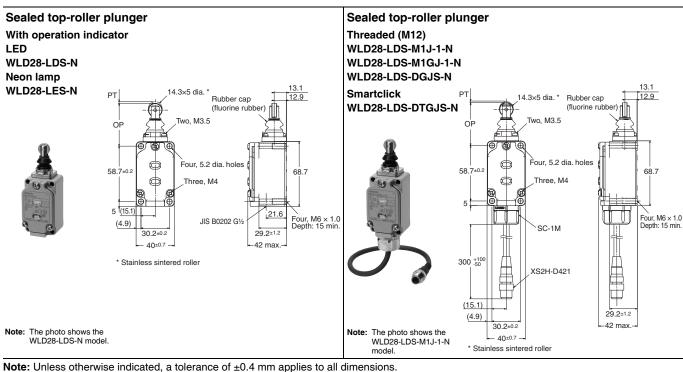
Note: The photo shows the WLG2-55LDS-M1TGJ model.

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

Operating characteristics

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

Mod	WLCA2-LDS-M1J-1-N el WLCA2-LDS-DGJS-N WLCA2-LDS-DTGJS-N	WLG2-LDS-DGJS03 WLG2-LDS-DK1EJ03 WLG2-55LDS-M1J-1 WLG2-55LDS-M1GJ-1 WLG2-55LDS-M1J-1 WLG2-LDS-M1J-1 WLG2-LDS-M1GJ-1 WLG2-LDS-DTGJS03 WLG2-LDS-DTGJS03 WLG2-55LDS-M1TGJ	WLGCA2-LDS-M1J-1 WLGCA2-LDS-M1GJ-1
Operating force OF ma		9.81 N	13.34 N
Release force RF mir		0.98 N	1.47 N
Pretravel PT	15±5°	10°+2°	5°+2°
Overtravel OT mir	. 70°	65°	40°
Movement Differential MD max	. 12°	7°	3°



Operating characteristics				
Model	WLD28-LDS-N WLD28-LES-N WLD28-LDS-M1J-1-N WLD28-LDS-M1GJ-1-N WLD28-LDS-DGJS-N WLD28-LDS-DTGJS-N			
Operating force OF max. Release force RF min. Pretravel PT max. Overtravel OT min. Movement Differential MD max.	16.67 N 4.41 N 1.7 mm 5.6 mm 1 mm			
Operating Position OP Total travel Position TTP max.	44. 5±0.8 mm 39.5 mm			

Long-life Switches WL-N/WLG

A mechanical durability of over 30 Million Operations

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



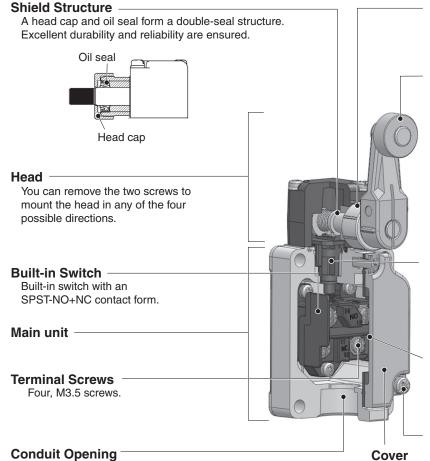
For the most recent information on models that have been certified for safety standards, refer to your OMRON website.



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

Features

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



Head Cap

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

Actuator

Roller

The roller is made of self-lubricating sintered stainless steel.

It provides superior resistance to wear.

Lever

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

Operating Plunger

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

Cover Seal

High sealing performance is achieved. The seal also serves as a spacer.

There is no troublesome insulating paper, making it easy to work with the Switch.

Cover Setscrew

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

In addition to parallel threads for G1/2 tubing,

direct-wired and pre-wired connector types are available.

Model Number Structure

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

$$WLM$$
 $\underset{(1)}{\square}$ - \underline{LD} $\underset{(2)}{\square}$ -N

(1) Actuator and Property Specifications

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

(2) Indicator Specifications

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

(3) Wiring Specifications

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

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

High-sensitivity and High-precision Switches

$$\mathbf{WLMG} \underline{\square}_{(1)} - \underline{\mathbf{LD}} \underline{\square}_{(2)}$$

(1) Actuator and Property Specifications

Code		Pretravel (PT)	
2	Roller lever	Roller lever: R38 mm High-sensitivity Models	10° +2° -1°
CA2	Roller lever	Roller lever: R38 mm High-precision Models	5° +2° 0°

(2) Indicator Specifications

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

(3) Wiring Specifications

Code	Terminal shape	Connector	Voltage	Wiring	Connector
3343	топппан опаро	shape		locations	pin No.
None	Screw terminals (Conduit size: G½)				
K13A			AC	NO only	NO: 3 4
K13			DC	NO only	NO: 3 4
K43A	Direct-wire connector	Threaded (M12)	AC	NC+NO	NO: ③ ④ NC: ① ②
K43			DC	NC+NO	NO: ③ ④ NC: ① ②
-M1J		Threaded	DC	NO only	NO: 3 4
-DGJ03	Pre-wired connectors *	(M12)	DC	NC+NO	NO: ③ ④ NC: ① ②
-DTGJ03		Smartclick	DC	NC+NO	NO: ③ ④ NC: ① ②

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

WL-N/WLG

Ordering Information

Roller Lever

Screw terminals

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

^{*} The default setting is light-ON when not operating (NO wiring). Turn the lamp holder by 180° to change the setting to light-ON when operating (NC wiring).

Direct-wire connector

						With operation indicator *
Appearance	Actuator	Pretravel (PT)	Voltage	Wiring locations	Connector pin No.	LED
		(,		iodationo		Model
			AC	NO only	NO: 3 4	WLMCA2-LDK13A-N
S _m		1E.E°	AC	NC+NO	NO: 3 4 NC: 1 2	WLMCA2-LDK43A-N
		15±5°	DC	NO only	NO: 3 4	WLMCA2-LDK13-N
-			DC	NC+NO	NO: 3 4 NC: 1 2	WLMCA2-LDK43-N
		400 +2°	10° +2°	NO only	NO: 3 4	WLMG2-LDK13A
	Roller lever: R38 mm			NC+NO	NO: 3 4 NC: 1 2	WLMG2-LDK43A
	Holler lever: H36 IIIIII	10 -10	DC	NO only	NO: 3 4	WLMG2-LDK13
			ЪС	NC+NO	NO: 3 4 NC: 1 2	WLMG2-LDK43
			AC	NO only	NO: 3 4	WLMGCA2-LDK13A
7		5° +2°	AC	NC+NO	NO: 3 4 NC: 1 2	WLMGCA2-LDK43A
		5 0°	DC	NO only	NO: 3 4	WLMGCA2-LDK13
			DC	NC+NO	NO: 3 4 NC: 1 2	WLMGCA2-LDK43

^{*} The default setting is light-ON when not operating (NO wiring). Turn the lamp holder by 180° to change the setting to light-ON when operating (NC wiring). (However, Three-core and Four-core Switches cannot be switched to light-ON when operating (NC wiring).)

Pre-wired connectors

							With operation indicator *
Appearance	Actuator	Pretravel (PT)	Voltage	Connector shape	Wiring locations	Connector pin No.	LED
		(/		onapo	locations	piii ito:	Model
					NO only	NO: 3 4	WLMCA2-LD-M1J-N
Bu.			AC	Threaded (M12)	NC+NO	NO: 3 4 NC: 1 2	WLMCA2-LD-AGJ-N
		15±5°		(2)	NOTIO	NO: 3 4 NC: 1 2	WLMCA2-LD-DGJ-N
	Roller lever: R38 mm		DC	Smartclick	NC+NO	NO: 3 4 NC: 1 2	WLMCA2-LD-DTGJ-N
				Threaded (M12)	NO only	NO: 3 4	WLMG2-LD-M1J
		10° +2°			NC+NO	NO: 3 4 NC: 1 2	WLMG2-LD-DGJ03
2				Smartclick	NC+NO	NO: 3 4 NC: 1 2	WLMG2-LD-DTGJ03
<i>3</i> ,		5° +2°		Threaded (M12)	NO only	NO: 3 4	WLMGCA2-LD-M1J
				Smartclick	NC+NO	NO: 3 4 NC: 1 2	WLMGCA2-LD-DTGJ03

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

* The default setting is for light-ON when not operating. Turn the lamp holder by 180° to change the setting to light-ON when operating. (However, Four-core Switches cannot be switched to light-ON when operating (NC wiring).

Specifications

Ratings

Screw terminals

With Operation Indicator Basic models (WL-N)

115

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

High-sensitivity and High-precision models (WLG)

	Non-inductive load (A)				
s	High-sensitivity and High-precision models (WLG)				
	Resisti	ve load			
(V)	NC	NO			
115	5				
115	0.4				
((V) 115	High-sens High-precision Resisti (V) NC 115			

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

0.8

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

0.8

0.1

- 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.

Allowable Inrush Current/Minimum Applicable Load

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

Operation Indicator

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

Direct-wire connector and Pre-wired Connector Models Type

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

		No	n-induct	ive load	(A)	Inductive load (A)				
Ratings		Ва	sic mod	els (WL-	N)	Ва	Basic models (WL-N)			
		Resistive load		Lamp load		Inductive load		Motor load		
Voltag	je (V)	NC NO		NC	NO	NC	NO	NC	NO	
	12	3		3		3		3		
DC	24	3	3	3		3		3		
DC	48	4		2	1.5	1.5 3		3 2		
	115	0.8		0.2 0.2		0.8		0.2		

High-sensitivity and High-precision models (WLG)

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

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

		Non-inductive load (A)				Inductive load (A)			
Rat	ings	Basic models (WL-N)				Basic models (WL-N)			
		Resistive load		Lamp load		Inductive load		Motor load	
Volta	ge (V)	NC	NO	NC	NO	NC NO		NC	NO
AC	115	3		3	1.5	3		3	2.5

High-sensitivity and High-precision models (WLG)

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

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

Minimum Applicable Load

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

Operation Indicator

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

WL-N/WLG

Characteristics

Operating char	acteristics type	Basic models (WL-N) High-sensitivity and High-precision models (WLG)			
Permissible	Mechanical	120 operations/minute			
operating frequency	Electrical	0 operations/minute			
Rated frequency		50/60 Hz			
Permissible oper	ating speed	1 mm/sec to 1 m/sec			
Insulation resista	ince	100 M Ω min. (at 500 VDC)			
Contact resistance	ce	25 m Ω max. (initial value for the built-in switch)			
Vibration resistance	Malfunction	10 to 55 Hz, 1.5-mm double amplitude			
Shock	Destruction	1,000 m/s² max.			
SHOCK	Malfunction	300 m/s² max.			
	Mechanical	30,000,000 operations min.			
Durability * Electrical		30,000,000 operations min. (10 mA at 24 VAC, resistive load) 750,000 operations min. (3 A at 115 VAC, resistive load) 500,000 operations min. (3 A at 115 VAC, resistive load)			
Ambient operating temperature		-10 to +80°C (with no icing)			
Ambient operating humidity		35 to 95%RH			
Degree of protection		IP67			
Weight		Approx. 255 g (in case of WLMCA2-LD-N)	Approx. 270 g (in case of WLMGCA2-LD)		

Note: The above figures are initial values.

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

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

^{*} Excluding those with operation indicators.

Terminal Connection Diagram

Operating characteristics type	Basic models (WL-N)					
Wiring Specifications	Screw terminals	Direct-wire connector and Pre-wired Connector Models				
Operation indicator (Light-ON when Not Operating *)	14 (NO)	AC Internal circuits DC Internal circuits Za Za Za Za Za Za Za Z				

Operating characteristics type	High-sensitivity and High-precision models (WLG)						
Wiring Specifications	Screw terminals	Direct-wire connector and Pre-wired Connector Models					
Operation indicator (Light-ON when Not Operating *)	14 (NO)	AC Internal circuits Za Za Za Za Za Za Za Z					

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

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

Connector Pin Layout Diagram

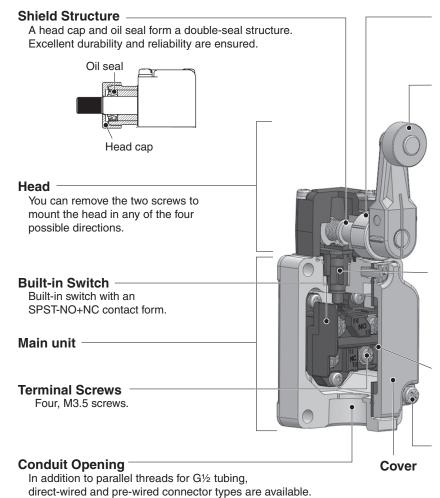


* The position of the positioning piece is not always the same. If using an L-shaped connector causes problems in mounting, use a straight connector.

WL-N/WLG

Structure and Nomenclature

WLMCA2-N



Head Cap

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

Actuator

Roller

The roller is made of self-lubricating sintered stainless steel.

It provides superior resistance to wear.

Lever

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

Operating Plunger

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

Cover Seal

High sealing performance is achieved. The seal also serves as a spacer.

There is no troublesome insulating paper, making it easy to work with the Switch.

Cover Setscrew

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

WLMG2

Actuator

Roller

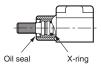
The roller is made of self-lubricating stainless sintered and boasts high resistance to wear.

Lever

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

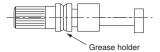
Shaft Section Seal

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



Smoother Movement

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



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

Cover

Cover Mounting Screw

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

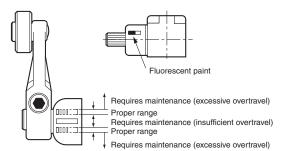
Cover Seal

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

Set Position Marker Plate

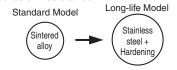
The set position is easy to view.

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



Release Plunger

Hardening method changed for greater abrasion resistance.



Head Mounting Screws

Operational Plunger

Head

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

Bearing

The bearing smooths the plunger movement.

Terminal Screws

Four, M3.5 screws

Built-in Switch

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

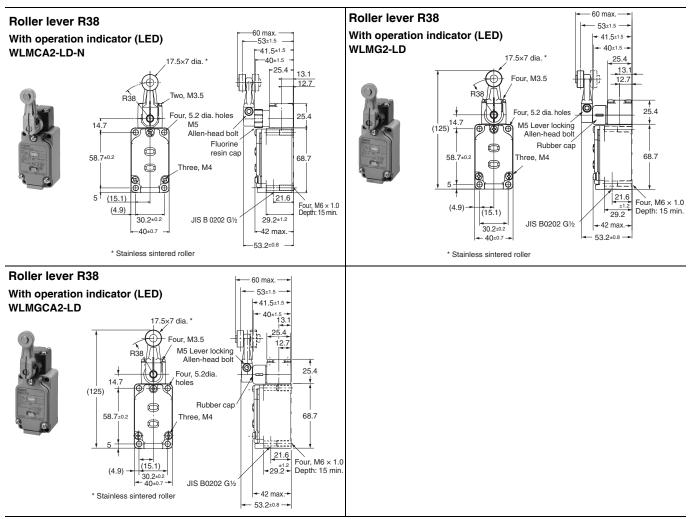
Conduit Opening

In addition to parallel threads for G½ tubing, direct-wired and pre-wired connector types are available.

Dimensions (Unit: mm)

Roller Lever

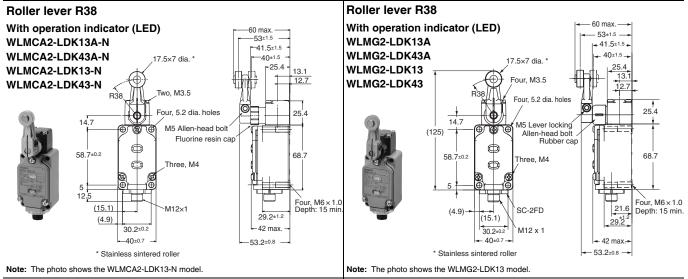
Screw terminals

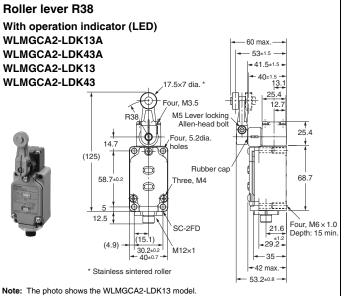


Note: Unless otherwise indicated, a tolerance of ± 0.4 mm applies to all dimensions.

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

Direct-wire connector

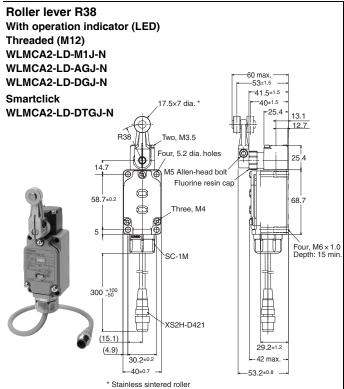




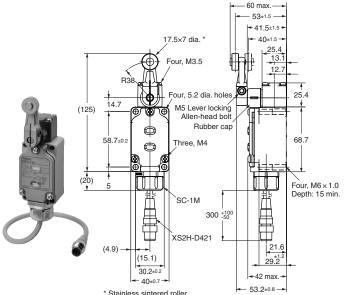
Note: Unless otherwise indicated, a tolerance of ±0.4 mm applies to all dimensions.

	Model	WLMCA2-LDK13A-N WLMCA2-LDK43A-N WLMCA2-LDK13-N WLMCA2-LDK43-N	WLMG2-LDK13A WLMG2-LDK43A WLMG2-LDK13 WLMG2-LDK43	WLMGCA2-LDK13A WLMGCA2-LDK43A WLMGCA2-LDK13 WLMGCA2-LDK43
-	OF max.	13.34 N	9.81 N	13.34 N
Release force F	RF min.	1.18 N	0.98 N	1.47 N
Pretravel F	PT	15±5°	10° +2°	5° +2° 0°
Overtravel C	OT min.	70°	65°	40°
Movement Differential N	ID max.	12°	7°	3°

Pre-wired connectors



Roller lever R38
With operation indicator (LED)
Threaded (M12)
WLMG2-LD-M1J
WLMG2-LD-DTGJ03



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

With operation indicator (LED) Threaded (M12) WLMGCA2-LD-M1J **Smartclick** 17.5×7 dia. * WLMGCA2-LD-DTGJ03 Four, M3.5 (length: 26.5) M5 Lever locking Allen-head bol Four, 5.2 dia (125) Rubber cap 68.7 58.7±0.2 Three, M4 SC-1M (20) Four, M6×1.0 Depth: 15 min 300 +100 XS2H-D421 ±1.2 **-**29.2**-**(15.1) (4.9)-42 max.→ 30.2±0.2 40±0.7

* Stainless sintered roller

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

Roller lever R38

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

Operating characteristics

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

	I	Model	WLMCA2-LD-M1J-N WLMCA2-LD-AGJ-N WLMCA2-LD-DGJ-N WLMCA2-LD-DTGJ-N	WLMG2-LD-M1J WLMG2-LD-DGJ03 WLMG2-LD-DTGJ03	WLMGCA2-LD-M1J WLMGCA2-LD-DTGJ03
Operating force	OF	max.	13.34 N	9.81 N	13.34 N
Release force	RF	min.	1.18 N	0.98 N	1.47 N
Pretravel	PT		15±5°	10° +2°	5° +2° 0°
Overtravel	ОТ	min.	70°	65°	40°
Movement Differentia	I MD	max.	12°	7°	3°

Common Specifications

Specifications

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

Approved Standards

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

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

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

A600 Authentication conditions

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

C300 Authentication conditions

	Rated	Carrying	Curre	nt (A)	Volt-amp	ere (VA)
	voltage	current	Make	Break	Make	Break
٠	120 VAC 240 VAC	2.5 A	15 7.5	1.5 0.75	1,800	180

A300 Authentication conditions

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

A150 Authentication conditions

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

C150 Authentication conditions

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

B600 Authentication conditions

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

B300 Authentication conditions

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

B150 Authentication conditions

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

TÜV (EN 60947-5-1)

			Spec	ificatio	ns	
Authentication		Direct-wire cable type				
conditions	No inc	licator	Neon lamp	LE	D	wired DC connector model
Working load category	AC-15	DC-12	AC-15	AC-15	DC-12	DC-12
Rated working voltage (Ue)	250 V	48 V	250 V	115 V	48 V	48 V
Rated working current (le)	2 A					
Conditional short-circuit current				100 A		
Short-circuit protective device (SCPD)			10 A, f	use type	gG	
Rated insulation voltage (Ui)			250 V			48 V
Rated impulse dielectric strength (Uimp)	4 kV 800 V					800 V
Pollution degree	3					
Protection against electric shock			Class I			Class III

CCC (GB/T14048.5)

		Specifications								
Authentication conditions		o cator	Neon lamp	LE	ĒD	With Pre- wired DC connector model	With Pre- wired AC connector model			
Working load category	AC-15	DC-13	AC-15	AC-15	DC-13	DC-13	AC-15			
Rated working voltage (Ue)	250 V	48 V	250 V	250 V	48 V	48 V	250 V			
Rated working current (le)		2 A								
Conditional short-circuit current				100	0 A					
Short-circuit protective device (SCPD)		10 A, fuse type gG								
Rated insulation voltage (Ui)				250	V					

Common Accessories (Sold Separately)

Ordering Information

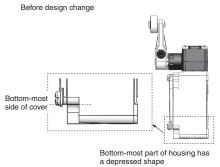
Single-item ordering models

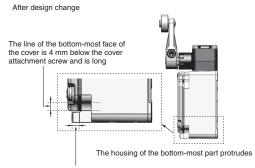
...... Switches without levers, heads, and actuators can be ordered separately. Use by combining with models that are not available as a set. You can also use them as maintenance parts for inventory management.

General-purpose Models

Actuator	Pretravel (PT)	Set Model Numbers	Switches without levers	Heads (with Actuators)	Actuator *	
Actuator	Pretravel (P1)	Set Woder Numbers	Model	Model	Model	
	15±5°	WLCA2-N	WLRCA2-N	WL-1H1100-N		
Roller lever: R38 mm	25±5°	WLCA2-2-N	WLRCA2-2-N	WL-3H1100-N	WL-1A100	
Holler lever: H30 IIIIII	20° max.	WLCA2-2N-N	WLRCA2-2N-N	WL-1H1100-N	WL-1A100	
	10° +2°	WLG2	WLRG2	WL-2H1100-K *		
	15±5°	WLCA12-N	WLRCA2-N	WL-1H2100-N		
Adjustable roller lever	25±5°	WLCA12-2-N	WLRCA2-2-N	WL-3H2100-N	WL-2A100	
(R25 to 89 mm)	20° max.	WLCA12-2N-N	WLRCA2-2N-N	WL-1H2100-N	WL-2A100	
	10° +2°	WLG12	WLRG2	WL-2H2100-K *		
	15±5°	WLCL-N	WLRCL-N	WL-4H4100-N		
Adjustable rod lever:	25±5°	WLCL-2-N	WLRCA2-2-N	WL-3H4100-N	WL-4A100	
(25 to 140mm)	20° max.	WLCL-2N-N	WLRCA2-2N-N	WL-1H4100-N	WL-4A100	
	10°+2°	WLGL	WLRG2	WL-2H4100-K *		
Sealed top plunger	1.7 mm max.	WLD18-N		WL-7H100-N		
Sealed top-roller plunger	1.7 mm max.	WLD28-N		WL-7H400-N		
Sealed top-ball plunger	1.7 mm max.	WLD38-N		WL-7H300-N		
Horizontal plunger	2.8 mm max.	WLSD-N		WL-8H100-N		
Horizontal-roller plunger	2.8 mm max.	WLSD2-N		WL-8H200-N		
Horizontal-ball plunger	2.8 mm max.	WLSD3-N		WL-8H300-N		
Coil spring (6.5 dia.)	20±10 mm	WLNJ-N		WL-9H100-N		
Coil spring (4.8 dia.)	20±10 mm	WLNJ-30-N		WL-9H200-N		
Flexible rod: Resin rod (8 dia.)	40±20 mm	WLNJ-2-N		WL-9H300-N		
Flexible rod: Steel wire (1 dia.)	40±20 mm	WLNJ-S2-N		WL-9H400-N		
Fork Lock Lever A	55° max.	WLCA32-41-N		WL-5H5100-N	WL-5A100	
Fork Lock Lever B	55° max.	WLCA32-42-N	WI DOAGO N	WL-5H5102-N	WL-5A102	
Fork Lock Lever C	55° max.	WLCA32-43-N	WLRCA32-N	WL-5H5104-N	WL-5A104	
Fork Lock Lever D	55° max.	WLCA32-44-N		WL-5H5104-N	WL-5A104	

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





The bottom-most face of the case protrudes 4 mm from the contact surface of the cover

75

Spatter-prevention Models

Actuator	Lever type	Indicator	Pretravel (PT)	Set Model Numbers	Switches without levers	Actuator *	
Actuator	Level type	maicator	Pretraver (P1)	Set Model Numbers	Model	Model	
		LED	15±5°	WLCA2-LDAS-N	WLRCA2-LDS-N		
	Roller lever: R38 mm Allen-head lever	Neon lamp		WLCA2-LEAS-N	WLRCA2-LES-N	WL-1A105S	
Roller lever:		LED	10° +2°	WLG2-LDAS	WLRG2-LDS		
R38 mm		LED	LED	15±5°	WLCA2-LDS-N	WLRCA2-LDS-N	
		Neon lamp	10±0	WLCA2-LES-N	WLRCA2-LES-N	WL-1A103S	
		LED	10°+2°	WLG2-LDS	WLRG2-LDS		

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

Connector (Conduit size: JIS B0202G1/2)

Appearance	Dimensions (Unless otherwise indicated,	Application/	Inner diameter (D)		diameter able	Model	Applicable limit switch
	a tolerance of ±0.4 mm applies to all dimensions.)	Specifications	of seal rubber	min.	max.		models
	Ball head lock nut (zinc die-cast		7 dia.	5.5 dia.	7.5 dia.	SC-1M	
	JIS B 0202 G½ and zinc plating sealing rubber (intilier rubber) (stainless sleel) Sealing rubber (claimless sleel) Connector (zinc die-cast and zinc plating) Sealing rubber (intilier rubber)	Cabtire cable	9 dia.	7.5 dia.	9.5 dia.	SC-2M	
		(Metal, with	12.5 dia.	11 dia.	13 dia.	SC-3M	
		O-ring)	14 dia.	12 dia.	14 dia.	SC-4M	
			11 dia.	9 dia.	11 dia.	SC-5M	
	Ball head lock nut (brass and nickel plating)		7 dia.	5.5 dia.	7.5 dia.	SC-21	
	JIS B 0202 G½ 14.5 dia 4.8 Washer Value Value		9 dia.	7.5 dia.	9.5 dia.	SC-22	
	(stainless steel) Connector (brass and nickel plating)	Cabtire cable (Metal)	12.5 dia.	11 dia.	13 dia.	SC-23	WL□-N
	29.3 27.7 10 10 10 10 10 10 10 10 10 10 10 10 10	()	14 dia.	12 dia.	14 dia.	SC-24	WLG□ Wiring
	(34)		11 dia.	9 dia.	11 dia.	SC-25	Specifications:
#	Sealing rubber (nitrile nubber) 10	Ball head lock nut (nitrile rubber) Connector (polyacetal resin) Polyacetal resin) Polyacetal resin) Connector (polyacetal resin) Connector (polyacetal resin) Control (polyacetal resin)		7.5 dia.	9 dia.	SC-6	Screw terminals
	Hexagonal nut (polyacetal resin) A.5 Hexagonal nut (polyacetal resin) Filing (chicroprene rubber)		10.6 dia.	8.5 dia.	10.5 dia.	SC-P2	

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

* mark dimensional table

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

FA Connectors

Model	Number of conductors	Voltage specification	Size of conduit	Size of crimp terminal	Applicable model
SC-2F	2	125 VDC			
SC-2FAD	2	250 VDC	JIS B0202G1/2	M4	WL-N, WLG
SC-4F4D	4	125 VDC	010 0020201/2		
SC-4F4AD	4	250 VDC			

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

Sensor I/O connectors

Appearance	AC/DC type	Number of cable cores	Cable length (m)	Cable model	Compatible model
		•	2	XS2F-A421-DB0-F	WL□-□K13A-N
		2	5	XS2F-A421-GB0-F	WLG□-□K13A
	for AC	4	2	XS2F-A421-D90-F	WL□-□K43A-N WL□-□-AGJ-N
		7	5	XS2F-A421-G90-F	WLG□-□K43A WLG□-□-AGJ03
M12 Screw (Straight)			2	XS2F-D421-DD0	WL□-□K13-N WL□-□-M1J-N
W12 Screw (Straight)		2	5	XS2F-D421-GD0	WLG□-□K13 WLG□-□-M1J
	for DC 4		2	XS2F-D421-DA0-F	WL□-□-M1GJ□-N
			5	XS2F-D421-GA0-F	WLG□-□-M1GJ□
M12 Smartclick (Straight)		4	2	XS2F-D421-D80-F	WL□-□K43-N WL□-□-M1JB-N WL□-□-DGJ-N WL□-□-DK1EJ-N
			5	XS2F-D421-G80-F	WLG□-□K43 WLG□-□-M1JB WLG□-□-DGJ03 WLG□-□-DK1EJ03
		4	2	XS5F-D421-D80-F	WLD-D-M1TJ-N WLD-D-M1TGJ-N WLD-D-M1TJB-N WLD-D-DTGJ-N WLD-D-DTK1EJ-N
		4	5	XS5F-D421-G80-F	WLG□-□-M1TJ WLG□-□-M1TGJ WLG□-□-DTGJ03 WLG□-□-DTK1EJ03

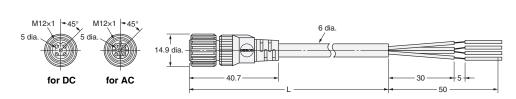
Note: For details, refer to the data sheet for XS2 Round Water-resistant Connectors (M12 Threads) or XS5 Round Water-resistant Connectors (M12 Smartclick).

Туре	Compatible model		Remarks			Model
		General-purpose models	Indicator *1	LED	Color: Red	WL-LD-N
Cover with indicator lamps *1	WL-N	Long-life models (Basic models, High-sensitivity Switches)		Neon lamp	Color: Orange	WL-LE-N
		0 5 1.1		LED	Color: Red	WL-LDS-N
	Spatter Prevention models			Neon lamp	Color: Orange	WL-LES-N
	WLG	General-purpose models		LED	Color: Red	WL-LD-K *2
		Long-life models	Indicator	Neon lamp	Color: Orange	WL-LE-K *2
		0 " 5 " 11		LED	Color: Red	WL-LDS-K *2
		Spatter Prevention models		Neon lamp	Color: Orange	WL-LES-K *2
Terminal Plate	WL□-N		Change from bipolar to monopolar (contact C).		opolar (contact C).	WL-N TERMINAL PLATE
Side mounting plate	WL□-2N-N					WLN-P001

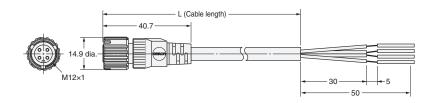
^{*1.} The default setting is for light-ON when not operating. Turn the lamp holder by 180° to change the setting to light-ON when operating.
*2. The WL-LD-K, WL-LE-K, WL-LDS-K, and WL-LES-K correspond with each set model WLG□, the design of which was changed in April 2019. Refer to the notes on page 75 for details.

Dimensions (Unit: mm)

Sensor I/O connectors XS2F-A421-□□0-F XS2F-D421-□□0 XS2F-D421-□□0-F



XS5F-D421-□80-F



Wiring Diagram

XS2F

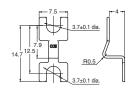
AC/DC Type		Two-core model		Four-core model
AC/DC Type	Model	Wiring Diagram	Model	Wiring Diagram
AC	XS2F-A421-DB0-F XS2F-A421-GB0-F	Terminal No. Cable color of core sheath	XS2F-A421-D90-F XS2F-A421-G90-F	
DC	XS2F-D421-DD0 XS2F-D421-GD0	Terminal No. Cable color of core sheath	XS2F-D421-D80-F XS2F-D421-G80-F	Terminal No. Cable color of core sheath Characteristics of the color of core sheath
20	XS2F-D421-DA0-F XS2F-D421-GA0-F	Terminal No. Cable color of core sheath Brown		

XS5F

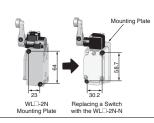
AC/DC Type		Four-core model		
AO/DO Type	Model	Wiring Diagram		
DC	XS5F-D421-D80-F XS5F-D421-G80-F	Terminal No. Cable color of core sheath Brown White Blue Black		

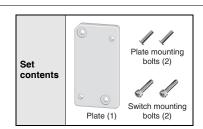
Terminal Plate WL-N TERMINAL PLATE

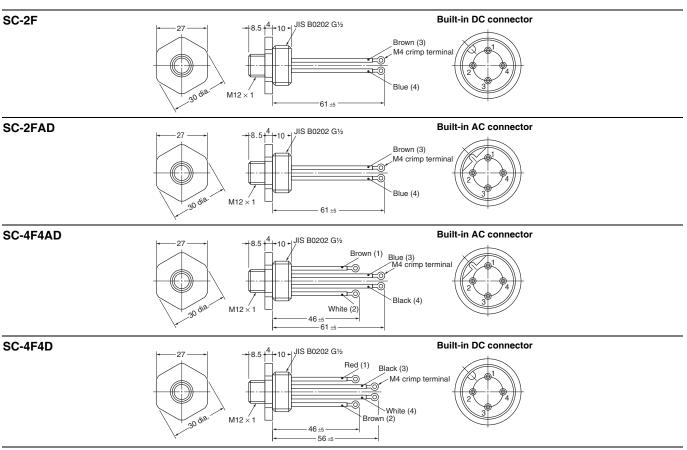




Side mounting plate WLN-P001





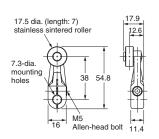


Note: 1. Each dimension has a tolerance of ± 0.4 mm unless otherwise specified.

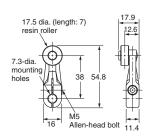
2. Figures in parentheses are connector pin numbers.

Actuators

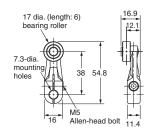
WL-1A100 Standard Lever



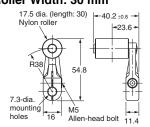
WL-1A115 Resin Roller



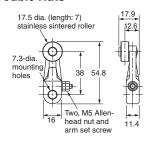
WL-1A400 Bearing Roller



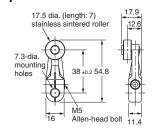
WL-1A118 Nylon Roller: Roller Width: 30 mm



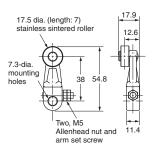
WL-1A105 Double Nuts



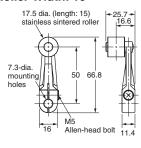
WL-1A103S Spatter Prevention



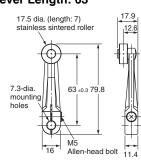
WL-105S Spatter Prevention



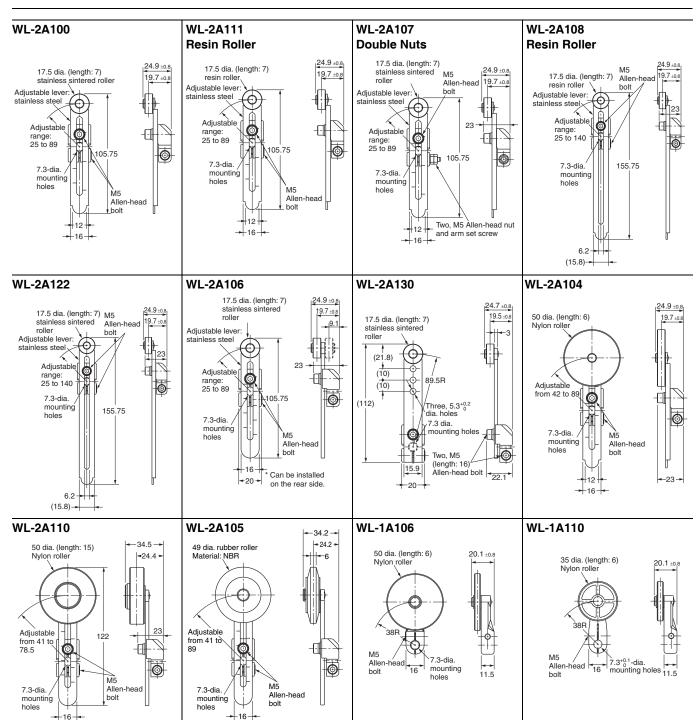
WL-1A200 Lever Length: 50 Roller Width: 15



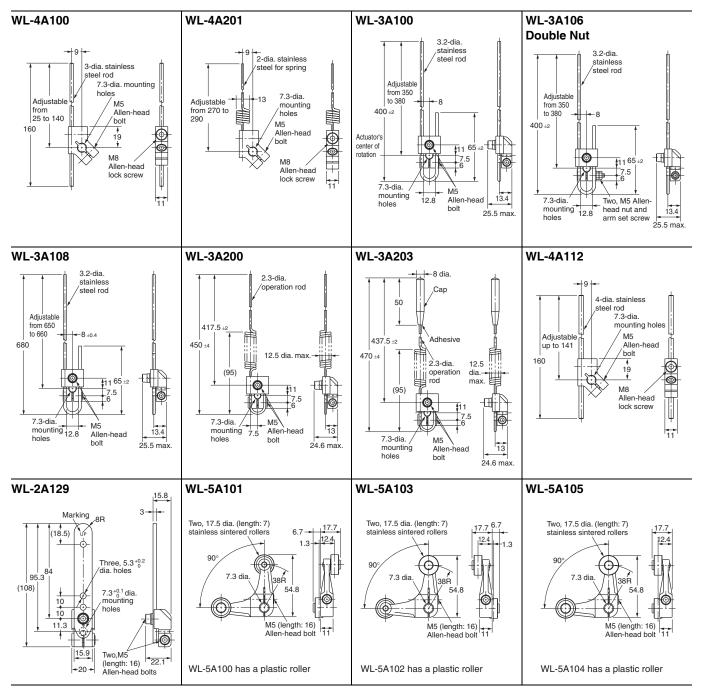
WL-1A300 Lever Length: 63



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



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



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

2. When using the adjustable roller (rod) lever, make sure that the lever is facing downwards. Use caution, as telegraphing (the Switch turns ON and OFF repeatedly due to inertia) may occur.

Safety Precautions

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

Meanings of Warning Signal Text

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

Precautions for Safe Use

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

Precautions for Correct Use

Operating Environment

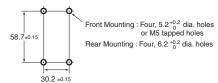
- This switch is only for indoor use. If it is used in outdoor, it may be cause of switch failure.
- Take special care to use where there is fine powder, mud and/or foreign materials stacking. And check the condition with actual using condition before using. Then use without a performance problem.
-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



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

Installing the Switch

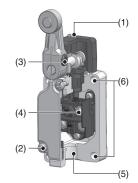
 To install the Switch, make a mounting panel, as shown in the following diagram, and tighten screws using the appropriate tightening torque.



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

Appropriate Tightening Torque

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



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

Using Switches for Micro Loads

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

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

Note: The P level indicates the standard malfunction level at a reliability level of 60% (λ 60). (JISC5003) λ 60 = 0.1×10⁻⁶/ operations indicates that the estimated malfunction rate is less than 1/10,000,000 operations with a reliability level of 60%.

Wiring

In the case of mounting screw

Basic models

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



In the case of prewired connector and direct

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

How to handle

Changing direction of the head

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

Built-in Switch

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

Overtravel Markers

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

Conduit opening preparation

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







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



(3) Connector tube contains external jacket



Microload Applications

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

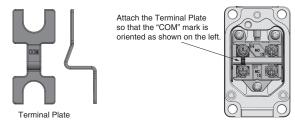
Operaition indicator

Indicator-equipped switch has contacts and indicator in parallel. When contacts are open, leakage current flows through the indicator circuit and may cause load's malfunction. Leakage current may cause load malfunction (i.e., the load may remain ON). Make sure that the load operating current is higher than the leakage current. For countermeasures, refer to technical support on your OMRON website.

Terminal Plate

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

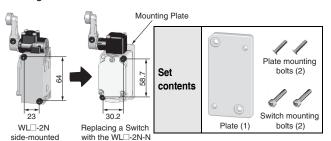
WL-N TERMINAL PLATE



Terminal Plate Mounting Diagram

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

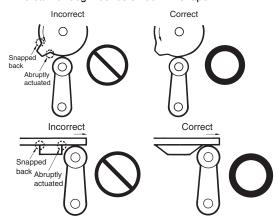
We provide a special mounting plate (sold separately) that features mounting compatibility when replacing with the WL□-2N-N series. If you use the Mounting Plate, the Switch mounting holes and actuator position will be compatible. Note: The position of the dog remains unchanged.



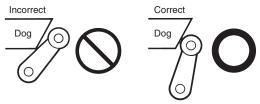
Operation Procedures

Operation

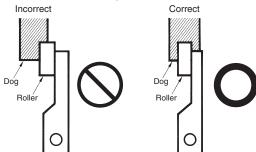
- Carefully determine the position and shape of the dog or cam so
 that the actuator will not abruptly snap back, thus causing shock.
 In order to operate the Limit Switch at a comparatively high speed,
 use a dog or cam that keeps the Limit Switch turned ON for a
 sufficient time so that the relay or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



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



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



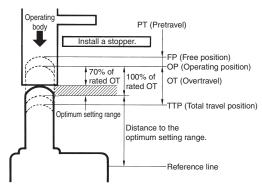
 With a roller actuator, the dog must touch the actuator at a right angle. The actuator or shaft may deform or break if the dog touches the actuator (roller) at an oblique angle.



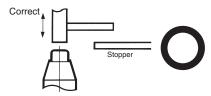




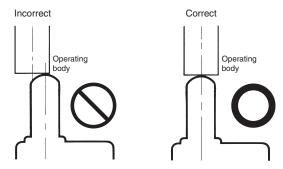
 Mount so that the actuator travel after operation (OT) is not exceeded. If the travel after operation (OT) exceeds the limit, switch failure could result. When mounting the Limit Switch, be sure to adjust the Limit Switch carefully while considering the whole movement of the actuator.



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



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

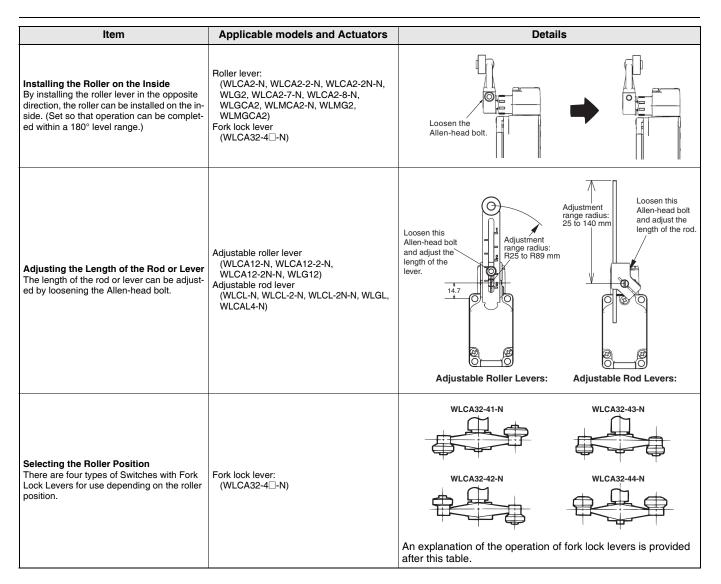


Others

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

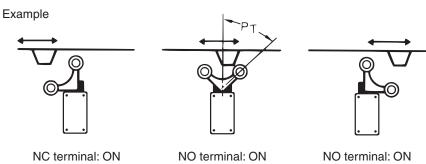
Using the Switches

Item	Applicable models and Actuators	Details
Changing the Installation Position of the Actuator By loosening the Allen-head bolt on the actuator lever, the position of the actuator can be set anywhere within the 360°. With Operation Indicator-equipped Switches, the actuator lever comes in contact with the top of the indicator cover, so use caution when rotating and setting the lever. When the lever only moves forwards and backwards, it will not contact the lamp cover. (This does not apply to Long-life Models.)	Roller lever: (WLCA2-N, WLCA2-2-N, WLCA2-2N-N, WLG2, WLCA2-7-N, WLGA2-8-N, WLGCA2, WLMGA2, WLMGCA2, WLMGCA2, WLMGCA2, WLMGCA12-N, WLCA12-12-N, WLCL-12-N, WLCL-12-N, WLCL-12-N, WLCA12-N, WLC	Loosen the Allen-head bolt, set the actuator's position and then tighten the bolt again.
Changing the Orientation of the Head By removing the head screws (two or four screws), mounting in any of four orientations is possible. Be sure to change the plunger for internal operations at the same time. Note that this does not apply to the WLG2, WLMG2, WLG12, or WLGL. The roller plunger can be set in either of two positions at 90°.	Roller lever: (WLCA2-N, WLCA2-2-N, WLCA2-2N-N, WLG2, WLCA2-7-N, WLCA2-8-N, WLGCA2, WLMGCA2, WLMGCA2, WLMGCA2, WLMGCA2, WLMGCA2) Adjustable roller lever (WLCA12-N, WLCA12-2-N, WLCA12-2N-N, WLCA12-2N-N, WLGL2) Adjustable rod lever (WLCL-N, WLCL-2-N, WLCL-2N-N, WLGL, WLCAL4-N, WLCAL5-N) Horizontal plunger (WLSD□-N) Top-roller plunger (WLD2-N) Sealed top-roller plunger (WLD28-N) Fork lock lever (WLCA32-4□-N) Note: Does not include -RP60 Series or -141 Series	Head Loosen the screws.
Changing the Operating Direction By removing the Head on models which can operate on one-side only, and then changing the direction of the operational plunger, one of three operating directions can be selected. The tightening torque for the screws on the Head is 0.78 to 0.88 N·m. (The operating direction of the WLG2 (highsensitivity model) cannot be changed.)	Roller lever: (WLCA2-N, WLCA2-2-N, WLCA2-2N-N, WLCA2-7-N, WLCA2-8-N, WLMCA2-N) Adjustable roller lever (WLCA12-N, WLCA12-2-N, WLCA12-2N-N) Adjustable rod lever (WLCL-N, WLCL-2-N, WLCL-2N-N, WLCAL4-N, WLCAL5-N)	Setting One-side Operation for Basic Models The output of the Switch will be changed, regardless of which direction the lever is pushed. Operating Operation Not operating Operation Counterclockwise operation
	Roller lever: (WLGCA2, WLMGCA2)	Setting One-side Operation for High-precision Models The output of the Switch will be changed, regardless of which direction the lever is pushed. Operating Operating Not operating Operation Operating Operation Operating Operation Operating Operation Operating Operation Oper



Operation of Fork Lock Levers

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



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Suitability of Use.

Omron Companies shall not be responsible for conformity with any standards, codes or regulations which apply to the combination of the Product in the Buyer's application or use of the Product. At Buyer's request, Omron will provide applicable third party certification documents identifying ratings and limitations of use which apply to the Product. This information by itself is not sufficient for a complete determination of the suitability of the Product in combination with the end product, machine, system, or other application or use. Buyer shall be solely responsible for determining appropriateness of the particular Product with respect to Buyer's application, product or system. Buyer shall take application responsibility in all cases.

NEVER USE THE PRODUCT FOR AN APPLICATION INVOLVING SERIOUS RISK TO LIFE OR PROPERTY OR IN LARGE QUANTITIES WITHOUT ENSURING THAT THE SYSTEM AS A WHOLE HAS BEEN DESIGNED TO ADDRESS THE RISKS, AND THAT THE OMRON PRODUCT(S) IS PROPERLY RATED AND INSTALLED FOR THE INTENDED USE WITHIN THE OVERALL EQUIPMENT OR SYSTEM.

Programmable Products.

Omron Companies shall not be responsible for the user's programming of a programmable Product, or any consequence thereof.

Performance Data.

Data presented in Omron Company websites, catalogs and other materials 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 user must correlate it to actual application requirements. Actual performance is subject to the Omron's Warranty and Limitations of Liability.

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 part numbers when published ratings or features are changed, or when significant construction changes are made. However, some specifications of the Product may be changed without any notice. When in doubt, special part numbers may be assigned to fix or establish key specifications for your application. Please consult with your Omron's representative at any time to confirm actual specifications of purchased Product.

Errors and Omissions.

Information presented by Omron Companies has been checked and is believed to be accurate; however, no responsibility is assumed for clerical, typographical or proofreading errors or omissions.

Note: Do not use this document to operate the Unit.

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