Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!

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Two-circuit Limit Switch

WL-N/WL

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

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

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

⚠ **Be sure to read *Safety Precautions* on page 62 to 67 and *Safety Precautions for All Limit Switches*.**

Features

General-purpose Switches

A Wide Range of Models

You can select the optimum product for the workpiece shape and movement from a variety of actuators, including Roller Lever, Plunger, Flexible Rod, and Fork Lock Lever Switches.

Environment-resistant Switches

Six environment resistant models are available

Airtight Switches, Hermetic Switches, Heat-resistant Switches, Low-temperature Switches, Corrosion-proof Switches, and Weather-proof Switches are available.
You can select the model based on the onsite environment.

Spatter-prevention Switches

Ideal for Welding Sites

Uses stainless steel and plastic materials that prevent the adhesion of spatter.
They can be used to reduce problems caused by zinc power generated during welding.

Long-life Switches

Long-life Models for High-frequency Applications

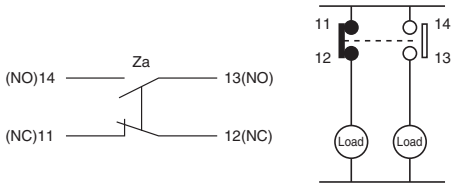
A mechanical durability of over 30 million cycles is achieved by improving slidability and the wear resistance of the head.

Features Common

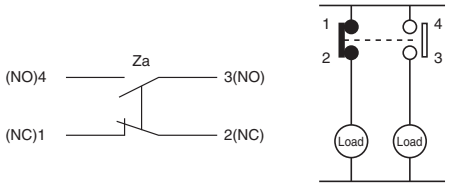
DPDB Operation

The two-circuit double-break structure ensures circuit braking.

- Basic/Retention type Switches (WL-N)



- High-sensitivity/High-precision Switches (WL)



Degree of Protection; IP67

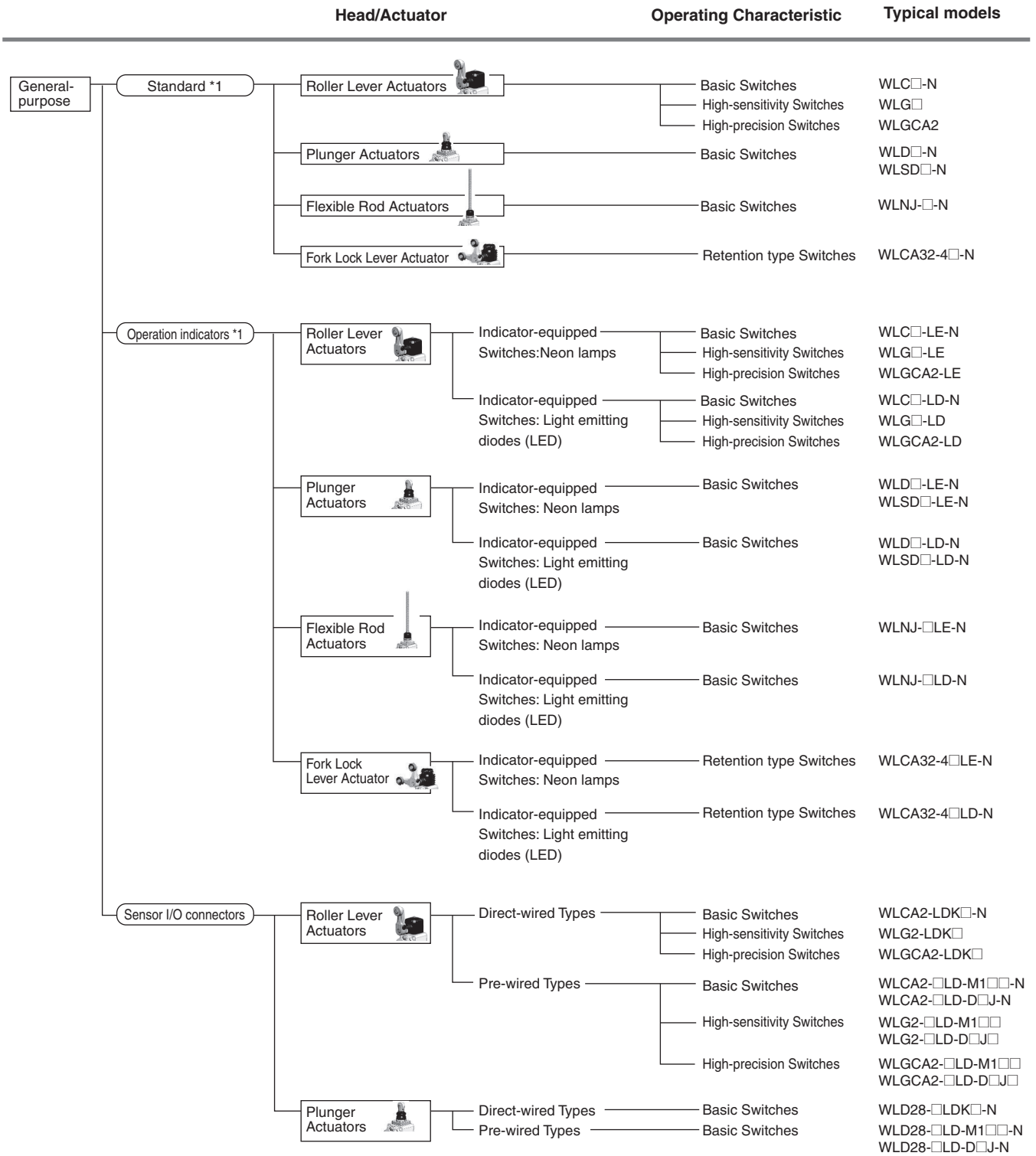
Models with Connectors to Reduce Wiring

A neon lamp or LED indicates the operating status. This makes startup checks and maintenance easy.

Sensor I/O Connector Models to Match Wiring Specifications

Direct-wire types and pre-wired types are available for easy replacement of limit switches.

Product Configuration



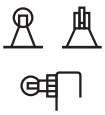
*1. The standard wiring specification is the Screw terminal type.
*2. Wiring specification: Smart-click type is also available.

		Head/Actuator	Operating Characteristic	Typical models
Environment-resistant *1	Airtight seal *4	Roller Lever Actuators 	Basic Switches	WLC□-55-N
			High-sensitivity Switches	WLG□-55
			High-precision Switches	WLGCA2-55
		Plunger Actuators 	Basic Switches	WLD□-55-N, WLSD□-55-N
		Flexible Rod Actuators 	Basic Switches	WLNJ-□55-N
	Hermetic seal *4	Roller Lever Actuators 	Basic Switches	WLC□-139-N
			High-sensitivity Switches	WLG□-139
			High-precision Switches	WLGCA2-139
		Plunger Actuators 	Basic Switches	WLD□-139-N, WLSD□-139-N
		Flexible Rod Actuators 	Basic Switches	WLNJ-□139-N
	Heat-resistant	Roller Lever Actuators 	Basic Switches	WLC□-TH-N
			High-sensitivity Switches	WLG□-TH
			High-precision Switches	WLGCA2-TH
		Plunger Actuators 	Basic Switches	WLD□-TH-N, WLSD□-TH-N
		Flexible Rod Actuators 	Basic Switches	WLNJ-□TH-N
	Low-temperature	Roller Lever Actuators 	Basic Switches	WLC□-TC-N
			High-sensitivity Switches	WLG□-TC
			High-precision Switches	WLGCA2-TC
		Plunger Actuators 	Basic Switches	WLD□-TC-N, WLSD□-TC-N
		Flexible Rod Actuators 	Basic Switches	WLNJ-□TC-N
	Corrosion-proof	Roller Lever Actuators 	Basic Switches	WLC□-RP-N
			High-sensitivity Switches	WLG□-RP
			High-precision Switches	WLGCA2-RP
		Plunger Actuators 	Basic Switches	WLD□-RP-N, WLSD□-RP-N
		Flexible Rod Actuators 	Basic Switches	WLNJ-□RP-N
	Weather-proof	Roller Lever Actuators 	Basic Switches	WLC□-P1-N
			High-sensitivity Switches	WLG□-P1
Spatter-prevention *1 *3		Roller Lever Actuators 	Basic Switches	WLCA2-□S-N
			High-sensitivity Switches	WLG2-□S
			High-precision Switches	WLGCA2-□S
		Plunger Actuators 	Basic Switches	WLD28-□S-N
Long-life *1 *2 *3		Roller Lever Actuators *4 	Basic Switches	WLMCA2-□-N
			High-sensitivity Switches	WLMG2-□
			High-precision Switches	WLMGCA2-□

*1. The standard wiring specification is the Screw terminal type.
*2. Wiring specification: Direct-wire Connector type is also available. Contact your OMRON sales representative for further information.
*3. Wiring specification: Pre-wired Connector type is also available. Contact your OMRON sales representative for further information.
*4. A type with an operation indicator light is also available. For details, see Ordering Information.

Selection

WL-N/WL Actuator Types and Selection

Head	Appearance	Classification	Operating force (OF)	Repeat accuracy *1	Shock and vibration resistance *1	Description
Roller Lever Models 		Roller Lever	Medium	★★★ ★★ *2	★★★	• Can be used over a wide range, from positioning to workpiece detection. • Easy to use because the stroke in the direction of revolution can be set to an angle from 45° to 90° (varies by model), and the lever can be set to any angle over 360°. • High-sensitivity Switches with minimal movement before activation (example: WLG2) and High-precision Switches with high repeatability (example: WLGCA2) are available.
		Adjustable Roller Lever	Medium	★★	★★	• Adjustable length between dog and lever. (Consideration must be given to telegraphing.) • Can be used over a wide range, from positioning to workpiece detection. • High-sensitivity Switches with minimal movement before activation (example: WLG12) are also available.
		Adjustable Rod Lever	Medium	★★	★★	• Suitable for detection of a dog or workpiece with a large amount of play. (Consideration must be given to telegraphing.) • Also good for detection of irregularly shaped workpieces. • Lightest activation (WLCL-N) among rotating-type limit switches. • Rod length is adjustable. • High-sensitivity Switches with minimal movement before activation (example: WLG2) are also available.
Plunger Models 		Plunger	Large	★★★	★★★	• High repeatability, good for positioning detection. • The workpiece movement direction and plunger movement direction must be matched so that an unbalanced load is not applied to the plunger.
		Roller plunger	Large	★★★	★★★	• A wide range of operation is possible by attaching an auxiliary actuator to a cam, dog, cylinder, or other part. • High repeatability, good for positioning detection.
		Ball plunger	Large	★★	★★★	• The tip of the plunger is made of a steel ball, which can be operated in any direction with no limitations. • The ball plunger is convenient when the mounting side is not aligned with the movement direction of the dog or the Limit Switch is actuated by two dogs in X and Y directions.
Flexible rod Models 		Coil spring	Small	★	★	• Operation from any direction over 360° is possible, excluding the axial direction. • Lowest activation force of the limit switches. Effective for detection of non-uniform directions and shapes. • Large tolerance for workpiece play because the actuator absorbs movement after activation.
		Resin rod	Small	★	★	• The resin rod minimizes damage to the workpiece. • Operation from any direction over 360° is possible, excluding the axial direction. • Lowest activation force of the limit switches. Effective for detection of non-uniform directions and shapes. • Large tolerance for workpiece play because the actuator absorbs movement after activation.
		Steel wire	Small	★	★	• The steel wire enables easy workpiece length adjustment, and easy bending is possible. • Operation from any direction over 360° is possible, excluding the axial direction. • Lowest activation force of the limit switches. Effective for detection of non-uniform directions and shapes. • Large tolerance for workpiece play because the actuator absorbs movement after activation.
Fork Lock Lever Models 		Fork Lock Lever	Medium	★★	★★★	• Self-rotates when operated to a position of 55°, holds state at the 90° position. • Reciprocating motion can be detected with a single dog. • To allow greater deviation in the roller position, two dogs can be used.

*1. Indications for repeat accuracy and shock and vibration resistance are as follows: ★: OK, ★★: Good, ★★★: Excellent
*2. The top line shows High-precision Switches. The bottom line shows Basic Switches.

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

According to Operating Environment

	Environment	Key specifications	Models		
Ambient operating temperature	Normal	−10°C +80°C Water-resistant to IP67.	General-purpose Switches	Standard model High-sensitivity, High-precision model	WL□-N WLG□
			Long-life Switches	Standard model High-sensitivity, High-precision model	WLM□-N WLMG□
	High-temperature	+5°C +120°C To increase heat resistance, the rubber material have been changed.	Environment-resistant, Heat-resistant Switches	Standard model *1 High-sensitivity, High-precision model *1	WL□-TH-N WLG□-TH
	Low-temperature	−40°C +40°C To increase resistance to cold, epichlorhydrin rubber and other measures are used.	Environment-resistant, Low-temperature Switches	Standard model *1 High-sensitivity, High-precision model *1	WL□-TC-N WLG□-TC
Operating environment	Outdoors	A rubber material resistant to temperature changes is used. Stainless steel is used for the screws. The roller is made of stainless steel with superior corrosion resistance.	Environment-resistant, Weather-proof Switches	Standard model *1 High-sensitivity, High-precision model *1	WL□-P1-N WLG□-P1
	Chemicals and oil	Corrosion-proof specifications have been used for the housing, fluorine rubber has been used for rubber parts, and stainless steel has been used for screws and nuts (except for the actuator) to increase resistance to oils, chemicals, and weather.	Environment-resistant, Corrosion-proof Switches	Standard model *1 High-sensitivity, High-precision model *1	WL□-RP-N WLG□-RP
	Water drops and mist	Uses an airtight built-in switch.	Environment-resistant, Airtight Switches	Standard model *1 High-sensitivity, High-precision model *1	WL□-55-N WLG□-55
	Constant water drops and mist	Cables are attached. Uses a general-purpose built-in switch. The cover screws, case cover, and conduit opening are molded from epoxy resin to increase the seal. (The cover cannot be removed.)	Environment-resistant, Molded-terminal Switches	Standard model *1*2 High-sensitivity, High-precision model *1*2	WL□-139-N WLG□-139
		Cables are attached. Uses an airtight built-in switch. The case cover and conduit opening are molded from epoxy resin to increase the seal. (The cover cannot be removed.) The SC connector can be removed, so it is possible to use flexible conduit for the cable.	Environment-resistant, Molded-terminal Switches	Standard model *1*2 High-sensitivity, High-precision model *1*2	WL□-RP40-N WLG□-RP40
		Cables are attached. Uses an airtight built-in switch. The cover screws, case cover, and conduit opening are molded from epoxy resin to increase the seal. (The cover cannot be removed.)	Environment-resistant, Molded-terminal Switches	Standard model *1*2 High-sensitivity, High-precision model *1*2	WL□-140-N WLG□-140
	Constant water drops or splattering cutting powder	Cables are attached. Uses an airtight built-in switch. The cover screws, case cover, and conduit opening are molded from epoxy resin to increase the seal. (The cover cannot be removed.) Two-layer seal on actuator rotation shaft. -141: The Head section is molded from epoxy resin; Head direction cannot be changed. -145: The Head section is molded from epoxy resin; Head can be in any of 4 directions.	Environment-resistant, Molded-terminal Switches	Standard model *1*2 High-sensitivity, High-precision model *1*2	WL□-141-N WLG□-141
			Environment-resistant, Molded-terminal Switches	Standard model *1*2 High-sensitivity, High-precision model *1*2	WL□-145-N WLG□-145
	Coolant	Cables are attached. Uses an airtight built-in switch. The cover screws, case cover, conduit opening, and head screws are molded from epoxy resin to increase the seal. (The cover and head cannot be removed.) Rubber parts are made from fluorine rubber to increase resistance to coolant.	Environment-resistant, Anti-coolant Switches	Standard model *1*2 High-sensitivity, High-precision model *1*2	WL□-RP60-N WLG□-RP60
	Spattering from welding	To prevent spatter during welding, a heat-resistant resin is used for the indicator cover and screws and rollers are all made from stainless steel.	Spatter-prevention Switches	Standard model High-sensitivity, High-precision model	WL□-□S-N WLG2-□S WLGCA2-□S

*1. Not all functions can be combined with environment-resistant models.
*2. For details on the hermetic structure, see the hermetic mold specifications on pages 40 and 41.

According to Application Conditions

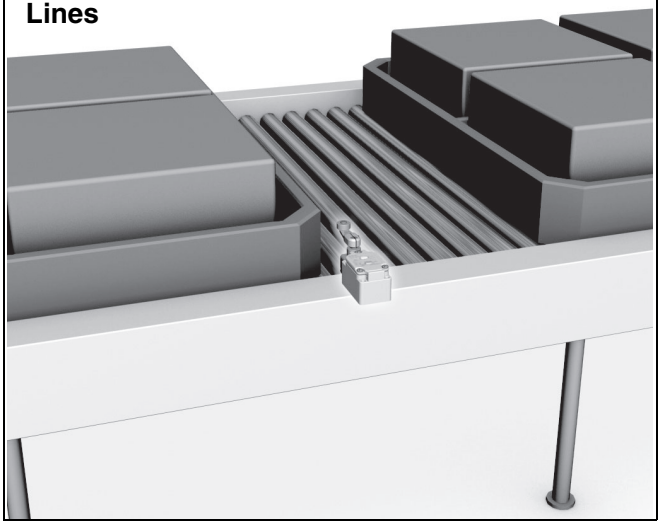
	Conditions	Key specifications	Models		
Load	Switching standard loads	10 A at 125,250, or 500 VAC 0.8 A at 125 VDC 0.4 A at 250 VDC	General-purpose Switches Environment-resistant Switches Spatter-prevention Switches Long-life Switches	Basic/Retention type Switches Basic Switches Basic Switches Basic Switches	WL□-□-N Applicable to either standard loads or microloads.
			General-purpose Switches Environment-resistant Switches Spatter-prevention Switches Long-life Switches	High-sensitivity/High-precision Switches High-sensitivity/High-precision Switches High-sensitivity/High-precision Switches High-sensitivity/High-precision Switches	WL WLG□ WLG□-S WLMG□
	Switching microloads	0.1 A at 125 VAC, resistive load 0.1 A at 30 VDC, resistive load	General-purpose Switches	Basic/Retention type Switches	WL□-□-N Applicable to either standard loads or microloads.
			General-purpose Microload Switches	High-sensitivity/High-precision Switches	WL WL01G□
Durability	Normal durability	Mechanical: 15 million operation min. (10 million operation min. for high-sensitivity models * or flexible rod models)	General-purpose Switches Spatter-prevention Switches	Basic Switches Basic Switches	WL□-N WL□-S-N
			General-purpose Switches Spatter-prevention Switches	High-sensitivity/High-precision Switches High-sensitivity/High-precision Switches	WL WLG□ WLG□-S
	Long-life	Mechanical: 30 million operation min.	Long-life Switches	Basic Switches	WLM□-N
			Long-life Switches	High-sensitivity/ High-precision Switches	WL WLMG□

According to Ease of Installation and Maintenance

	Conditions	Key specifications	Models		
Operation indicator	Daily inspections and maintenance checks	Neon lamp 125 to 250 VAC Switching light-ON between operating/not operating. (Switching is not possible for Switches with Molded Terminals.)	General-purpose, Indicator-equipped Switches	Basic Switches High-sensitivity/High-precision Switches	WL□-LE-N WLG□-LE
			Spatter-prevention Switches	Basic Switches High-sensitivity/High-precision Switches	WL□-LES-N WLG□-LES
		LED 10 to 115 VAC/DC Switching light-ON between operating/not operating. (Switching not possible for models with molded terminals.)	General-purpose, Indicator-equipped Switches	Basic Switches High-sensitivity/High-precision Switches	WL□-LD-N WLG□-LD
			Spatter-prevention Switches	Basic Switches High-sensitivity/High-precision Switches	WL□-LDS-N WLG□-LDS
Wiring specification	Screw tightening and installation	Screw terminals. No ground terminal. Conduit size: G1/2	General-purpose Switches Long-life Switches	Basic Switches High-sensitivity/High-precision Switches Basic Switches High-sensitivity/High-precision Switches	WL□-N WLG□ WLM□-N WLMG□
		Screw terminals. Ground terminal. Conduit size: 4 sizes	General-purpose Switches	Basic Switches High-sensitivity/High-precision Switches	WL□-N WLG□
	One-touch connector attachment	Direct-wired connector, 2-conductor. Greatly reduces wiring work.	General-purpose Switches Long-life Switches	Basic Switches High-sensitivity/High-precision Switches Basic Switches High-sensitivity/High-precision Switches	WL□-□LDK13□-N WLG□-□LDK13□ WLM□-LDK13□-N WLMG□-□LDK13□
		Direct-wired connector, 4-conductor. Greatly reduces wiring work.	General-purpose Switches Long-life Switches	Basic Switches High-sensitivity/High-precision Switches Basic Switches High-sensitivity/High-precision Switches	WL□-□LDK43□-N WLG□-□LDK43□ WLM□-LDK43□-N WLMG□-□LDK43□
	Connector attachment in control and relay boxes	Pre-wired connector, 2-conductor. Greatly reduces wiring work. Smartclick connectors for even easier maintenance.	General-purpose Switches Spatter-prevention Switches Long-life Switches	Basic Switches High-sensitivity/High-precision Switches Basic Switches High-sensitivity/High-precision Switches Basic Switches High-sensitivity/High-precision Switches	WL□-□LD-M1□J-N WLG□-□LD-M1□J WL□-□S-M1□J-1-N WLG□-□S-M1□J-1 WLM□-LD-M1□J-N WLMG□-LD-M1□J
		Pre-wired connector, 4-conductor. Greatly reduces wiring work. Smartclick connectors for even easier maintenance.	General-purpose Switches Spatter-prevention Switches Long-life Switches	Basic Switches High-sensitivity/High-precision Switches Basic Switches High-sensitivity/High-precision Switches Basic Switches High-sensitivity/High-precision Switches	WL□-□LD-□GJ-N WLG□-□LD-□GJ□ WL□-□S-□GJS-N WLG□-□S-□GJS□ WLM□-LD-□GJ-N WLMG□-LD-□GJ□

Application Examples

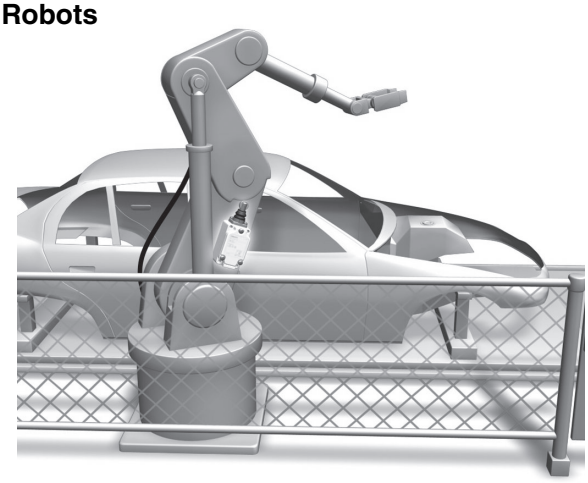
Detection of Passing Pallets on Production Lines



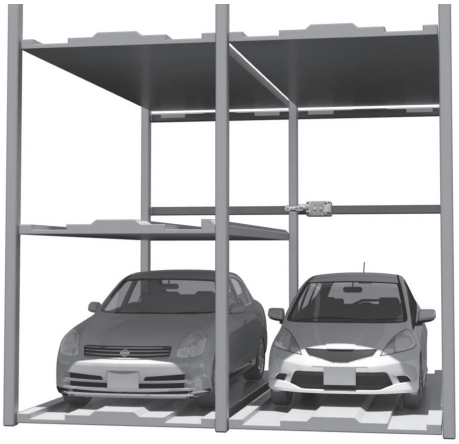
Detection of Work Table Origins (X, Y, and Z) on Machine Tools

Detection of Forward and Reverse Movement of Hydraulic Cylinders on Molding Machines

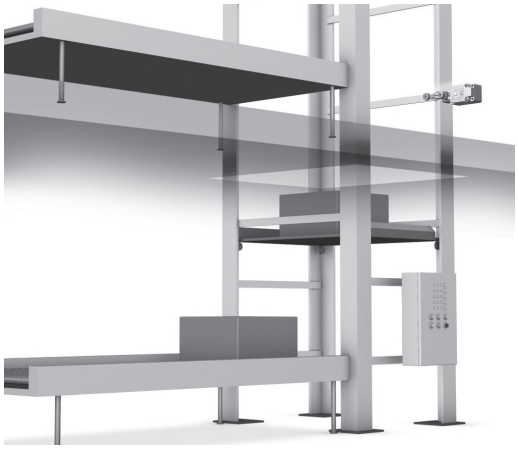
Detection of Arm Movement on Welding Robots



Detection of Car Pallet Positions in Parking Towers



Detection of Vertical Limits on Conveyor Systems



Model Number Structure

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

General-purpose Switches

Standard Switches **Operation indicator Switches** **Basic and Retention type Switches**

WL□-□□□□-N
(1) (2) (3) (4) (5)

(1) Actuator and Property Specifications

Code	Actuator
CA2	Roller lever: R38 mm
CA2-7	Roller lever: R50 mm
CA2-8	Roller lever: R63 mm
CA12	Adjustable roller lever: R25 to 89 mm
CL	Adjustable rod lever: 25 to 140 mm
CAL4	Adjustable rod lever: 350 to 380 mm
CAL5	Rod spring lever
CA2-2	Roller lever: R38 mm
CA12-2	Adjustable roller lever: R25 to 89 mm
CL-2	Adjustable rod lever: 25 to 140 mm
CA2-2N	Roller lever: R38 mm
CA12-2N	Adjustable roller lever: R25 to 89 mm
CL-2N	Adjustable rod lever: 25 to 140 mm
CA32-41	Fork lock lever
CA32-42	Fork lock lever
CA32-43	Fork lock lever
D18	Sealed top plunger
D28	Sealed top-roller plunger
D38	Sealed top-ball plunger
D2	Top-roller plunger
SD	Horizontal plunger
SD2	Horizontal-roller plunger
SD3	Horizontal-ball plunger
NJ	Flexible rod: Coil spring
NJ-30	Flexible rod: Coil spring, multi-wire
NJ-2	Flexible rod: Resin rod
NJ-S2	Flexible rod: Steel wire

(2) Built-in Switch Specifications

Code	Specifications
Blank	Standard built-in switch
55	Airtight built-in switch

(3) Conduit Size, Ground Terminal Specifications

Code	Specifications	
	Conduit Size	Ground terminal
Blank	G1/2	None
G1	G1/2	Provided *
G	Pg13.5	
Y	M20	
TS	1/2-14NPT	

* Models with ground terminals are certified for EN/IEC (CE Marking).

(4) Indicator Specifications

Code	Specifications
Blank	No indicator
LE	Neon lamp: 125 to 250 VAC
LD	LED (10 to 115 VAC/DC)

(5) Lever Specifications

Code	Specifications
Blank	Standard lever (Allen-head bolt)
A	Double nut lever

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

General-purpose Switches

Standard Switches **Operation indicator Switches** **High-sensitivity and High-precision Switches**

WL□□-□□□□□□□□□
(1) (2) (3) (4) (5) (6) (7) (8) (9) (10)

(1) Electrical Rating

Code	Specifications
Blank	Standard load
01	Microload

(2) Actuator and Property Specifications

Code	Actuator
G2	Roller lever: R38 mm High-sensitivity
GCA2	Roller lever: R38 mm High-precision
G12	Adjustable roller lever: R25 to 89 mm High-sensitivity
GL	Adjustable roller lever: 25 to 140 mm High-sensitivity

(3) Built-in Switch Specifications

Code	Specifications
Blank	Standard built-in switch
55	Airtight built-in switch

(4) Conduit Size, Ground Terminal Specifications

Code	Specifications	
	Conduit Size	Ground terminal
Blank	G1/2	None
G1	G1/2	Provided *
G	Pg13.5	
Y	M20	
TS	1/2-14NPT	

* Models with ground terminals are certified for EN/IEC (CE Marking).

(5) Indicator Type

Code	Specifications
Blank	No indicator
LE	Neon lamp: 125 to 250 VAC
LD	LED (10 to 115 VAC/DC)

(6) Lever Type

Code	Specifications
Blank	Standard lever (Allen-head bolt)
A	Double nut lever

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

General-purpose Switches

Sensor I/O Connector Switches **Basic and Retention type Switches**

WL□-□LD□-N
(1) (2) (3) (4)

(1) Actuator and Property Specifications

Code	Actuator
CA2	Roller lever: R38 mm
D28	Sealed top-roller plunger
D2	Top-roller plunger

(2) Built-in Switch Specifications

Code	Specifications
Blank	Standard built-in switch
55	Airtight built-in switch

(3) Indicator Specifications

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

(4) Connector Type Wiring Specifications

Code	Specifications				
	Shape		Voltage *1	Wiring locations	Connector pin No. *2
K13A	Direct-wire Connector type	Threaded (M12)	AC	NO only	NO: ③④
K13			DC	NO only	NO: ③④
K43A			AC	NC+NO	NC: ①②, NO: ③④
K43			DC	NC+NO	NC: ①②, NO: ③④
-M1J	Pre-wired Connector type *3	Threaded (M12)	DC	NO only	NO: ③④
-M1GJ			DC	NO only	NO: ①④
-M1JB			DC	NC only	NC: ③②
-AGJ			AC	NC+NO	NC: ①②, NO: ③④
-DGJ			DC	NC+NO	NC: ①②, NO: ③④
-DK1EJ			DC	NO only	NC: ②, NO: ③④
-M1TJ		Smartclick	DC	NO only	NO: ③④
-M1TGJ			DC	NO only	NO: ①④
-M1TJB			DC	NC only	NC: ③②
-DTGJ			DC	NC+NO	NC: ①②, NO: ③④
-DTK1EJ			DC	NO only	NC: ②, NO: ③④

*1. DC models are certified for EN/IEC (CE Marking).
*2. Refer to *Contact Forms* on page 21 for details on connector pin numbers.
*3. The standard cable length is 0.3 m. Contact your OMRON representative for information on other cable lengths.

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

General-purpose Switches

Sensor I/O Connector Switches **High-sensitivity and High-precision Switches**

WL□ □ - □ L D □ -N
(1) (2) (3) (4) (5)

(1) Electrical Rating

Code	Specifications
Blank	Standard load
01	Microload

(2) Actuator and Property Specifications

Code	Actuator
G2	Roller lever: R38 mm High-sensitivity
GCA2	Roller lever: R38 mm High-precision

(3) Built-in Switch Specifications

Code	Specifications
Blank	Standard built-in switch
55	Airtight built-in switch

(4) Indicator Specifications

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

(5) Connector Type Wiring Specifications

Code	Specifications				
	Shape		Voltage *1	Wiring locations	Connector pin No. *2
K13A	Direct-wire Connector type	Threaded (M12)	AC	NO only	NO: ③ ④
K13			DC	NO only	NO: ③ ④
K43A			AC	NC+NO	NC: ① ②, NO: ③ ④
K43			DC	NC+NO	NC: ① ②, NO: ③ ④
-M1J *1	Pre-wired Connector type *3		DC	NO only	NO: ③ ④
-M1GJ *1			DC	NO only	NO: ① ④
-M1JB			DC	NC only	NC: ③ ②
-AGJ03			AC	NC+NO	NC: ① ②, NO: ③ ④
-DGJ03 *1			DC	NC+NO	NC: ① ②, NO: ③ ④
-DK1EJ03 *1			DC	NO only	NC: ②, NO: ③ ④

*1. DC models are certified for EN/IEC (CE Marking).
*2. Refer to *Contact Forms* on page 21 for details on connector pin numbers.
*3. The standard cable length is 0.3 m. Contact your OMRON representative for information on other cable lengths.

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

Environment-resistant Switches **Basic Switches**

WL□-□□□□□□□□-N
(1) (2) (3) (4) (5) (6) (7) (8) (9)

(1) Actuator and Property Specifications

Code	Actuator
CA2	Roller lever: R38 mm
CA2-7	Roller lever: R50 mm
CA2-8	Roller lever: R63 mm
CA12	Adjustable roller lever: R25 to 89 mm
CL	Adjustable rod lever: 25 to 140 mm
CAL4	Adjustable rod lever: 350 to 380 mm
CAL5	Rod spring lever
CA2-2	Roller lever: R38 mm
CA12-2	Adjustable roller lever: R25 to 89 mm
CL-2	Adjustable rod lever: 25 to 140 mm
CA2-2N	Roller lever: R38 mm
CA12-2N	Adjustable roller lever: R25 to 89 mm
CL-2N	Adjustable rod lever: 25 to 140 mm
CA32-41	Fork lock lever
CA32-42	Fork lock lever
CA32-43	Fork lock lever
D18	Sealed top plunger
D28	Sealed top-roller plunger
D38	Sealed top-ball plunger
D2	Top-roller plunger
SD	Horizontal plunger
SD2	Horizontal-roller plunger
SD3	Horizontal-ball plunger
NJ	Flexible rod: Coil spring
NJ-30	Flexible rod: Coil spring, multi-wire
NJ-2	Flexible rod: Resin rod
NJ-S2	Flexible rod: Steel wire

(2) Environment-resistant Model Specifications

Code	Specifications
Blank	Standard
RP	Corrosion-proof
P1	Weather-resistant

(3) Built-in Switch Specifications

Code	Specifications
Blank	Standard built-in switch
55	Airtight built-in switch

(4) Temperature Specifications

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

*1. Cannot be combined with Corrosion-proof (RP) or Weather-proof (P1) Switches.

(5) Hermetic Specifications

Code	Specifications
Blank	No cable molding.
139	Standard built-in switch. Cable is attached. Molded conduit opening and cover. (The cover cannot be removed.)
140	Airtight built-in switch. Cable is attached. Molded conduit opening, cover, and cover screws. (The cover cannot be removed.)
141	Conduit opening, cover, head, cover attachment screw part, air-tight built-in switch. Cable is attached. Molded head screws. (The cover cannot be removed and the head direction cannot be changed.) Two-layer seal on actuator rotation shaft.
145	Airtight built-in switch. Cable is attached. Molded conduit opening, cover, and cover screws. (The cover cannot be removed. The head can be mounted in any of 4 directions.) Two-layer seal on actuator rotation shaft.
RP40	Airtight built-in switch. Cable is attached. 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	Airtight built-in switch. Cable is attached. Molded conduit opening, cover, cover screws, and head screws. (The cover cannot be removed and the head direction cannot be changed.) Fluorine rubber is used for all rubber parts.

(6) Conduit Size, Ground Terminal Specifications

Code	Specifications	
	Conduit Size	Ground terminal
Blank	G1/2	None
G1	G1/2	Provided *2
G	Pg13.5	
Y	M20	
TS	1/2-14NPT	

*2. Models with ground terminals are certified for EN/IEC (CE Marking).

(7) Indicator Specifications

Code	Specifications
Blank	No indicator
LE	Neon lamp: 125 to 250 VAC *3
LD	LED (10 to 115 VAC/DC) *3

*3. Cannot be combined with Corrosion-proof (RP), Weather-proof (P1), Heat-resistant (TC), or Low-temperature (TC) Switches.

(8) Indicator Wiring Specifications

Code	Specifications
2	NC connection: Light-ON when operating *4
3	NO connection: Light-ON when not operating *4

*4. Always include the indicator wiring specification if you specify a (5) hermetic structure and an (7) indicator.

(9) Lever Type

Code	Specifications
Blank	Standard lever (Allen-head bolt)
A	Double nut lever

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

Environment-resistant Switches **High-sensitivity and High-precision Switches**

WL□□-□□□□□□□□
(1) (2) (3) (4) (5) (6) (7) (8) (9) (10)

(1) Electrical Rating

Code	Specifications
Blank	Standard load
01	Microload

(2) Actuator and Property Specifications

Code	Actuator
G2	Roller lever: R38 mm High sensitivity
GCA2	Roller lever: R38 mm High-precision
G12	Adjustable roller lever: R25 to 89 mm High sensitivity
GL	Adjustable rod lever: 25 to 140 mm High sensitivity

(3) Environment-resistant Model Specifications

Code	Specifications
Blank	Standard
RP	Corrosion-proof
P1	Weather-proof

(4) Built-in Switch Specifications

Code	Specifications
Blank	Standard built-in switch
55	Airtight built-in switch

(5) Temperature Specifications

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

*1. Cannot be combined with Corrosion-proof (RP) or Weather-proof (P1) Switches.

(6) Hermetic Specification

Code	Specifications
Blank	No cable molding.
139	Standard built-in switch. Cable is attached. Molded conduit opening and cover. (The cover cannot be removed.)
140	Airtight built-in switch. Cable is attached. Molded conduit opening, cover, and cover screws. (The cover cannot be removed.)
141	Conduit opening, cover, head, cover attachment screw part, air-tight built-in switch. Cable is attached. Molded head screws. (The cover cannot be removed and the head direction cannot be changed.) Two-layer seal on actuator rotation shaft.
145	Airtight built-in switch. Cable is attached. Molded conduit opening, cover, and cover screws. (The cover cannot be removed. The head can be mounted in any of 4 directions.) Two-layer seal on actuator rotation shaft.
RP40	Airtight built-in switch. Cable is attached. 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	Airtight built-in switch. Cable is attached. Molded conduit opening, cover, cover screws, and head screws. (The cover cannot be removed and the head direction cannot be changed.) Fluorine rubber is used for all rubber parts.

(7) Conduit Size, Ground Terminal Specifications

Code	Specifications	
	Conduit Size	Ground terminal
Blank	G1/2	None
G1	G1/2	Provided *2
G	Pg13.5	
Y	M20	
TS	1/2-14NPT	

*2. Models with ground terminals are certified for EN/IEC (CE Marking).

(8) Indicator Type

Code	Specifications
Blank	No indicator
LE	Neon lamp: 125 to 250 VAC *3
LD	LED (10 to 115 VAC/DC) *3

*3. Cannot be combined with Corrosion-proof (RP), Weather-proof (P1), Heat-resistant (TC), or Low-temperature (TC) Switches.

(9) Indicator Wiring Specification

Code	Specifications
2	NC connection: Light-ON when operating *4
3	NO connection: Light-ON when not operating *4

*4. Always include the indicator wiring specification if you specify a (6) hermetic structure and an (8) indicator.

(10) Lever Type

Code	Specifications
Blank	Standard lever (Allen-head bolt)
A	Double nut lever

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

Spatter-prevention Switches **Basic Switches**

WL□ - □ □ S□ -N
(1) (2) (3) (4)

(1) Actuator and Property Specifications

Code	Actuator
CA2	Roller lever: R38 mm
D28	Sealed top-roller plunger

(2) Built-in Switch Specifications

Code	Specifications
Blank	Standard built-in switch
55	Airtight built-in switch

(3) Indicator Specifications

Code	Specifications
LE	Neon lamp: 125 to 250 VAC *1
LD	LED (10 to 115 VAC/DC)

*1. Cannot be combined with a (4) Connector Type Wiring Specifications.

(4) Connector Type Wiring Specifications

Code	Specifications				
	Shape		Voltage *2	Wiring locations	Connector pin No. *3
Blank	Screw terminal type		---	---	---
-M1J-1	Pre-wired Connector type *4	Threaded (M12)	DC	NO only	NO: ③ ④
-M1GJ-1			DC	NO only	NO: ① ④
-DGJS			DC	NC+NO	NC: ① ②, NO: ③ ④
-DTGJS		Smartclick	DC	NC+NO	NC: ① ②, NO: ③ ④

*2. DC models are certified for EN/IEC (CE Marking).
*3. Refer to *Contact Forms* on page 21 for details on connector pin numbers.
*4. The standard cable length is 0.3 m. Contact your OMRON representative for information on other cable lengths.

Spatter-prevention Switches **High-sensitivity and High-precision Switches**

WL□ □ - □ □ S□
(1) (2) (3) (4) (5)

(1) Electrical Rating

Code	Specifications
Blank	Standard load
01	Microload

(2) Actuator and Property Specifications

Code	Actuator
Blank	Roller lever: R38 High-sensitivity
GCA2	Roller lever: R38 High-precision

(3) Built-in Switch Specifications

Code	Specifications
Blank	Standard built-in switch
55	Airtight built-in switch

(4) Indicator Specifications

Code	Specifications
LE	Neon lamp: 125 to 250 VAC *1
LD	LED (10 to 115 VAC/DC)

*1. Cannot be combined with a (5) Connector Type Wiring Specifications.

(5) Connector Type Wiring Specifications

Code	Specifications				
	Shape		Voltage *2	Wiring locations	Connector pin No. *3
Blank	Screw terminal type		---	---	---
-M1J -1	Pre-wired Connector type *4	Threaded (M12)	DC	NO only	NO: ③ ④
-M1GJ -1			DC	NO only	NO: ① ④
-DGJS03			DC	NC+NO	NC: ① ②, NO: ③ ④

*2. DC models are certified for EN/IEC (CE Marking).
*3. Refer to *Contact Forms* on page 21 for details on connector pin numbers.
*4. The standard cable length is 0.3 m. Contact your OMRON representative for information on other cable lengths.

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

Long-life Switches — Basic Switches

WLM□ - LD□ -N
(1) (2) (3)

(1) Actuator and Property Specifications

Code	Actuator
CA2	Roller lever: R38 mm

(2) Indicator Type

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

(3) Connector Type Wiring Specifications

Code	Specifications				
	Shape		Voltage	Wiring locations	Connector pin No. *1
Blank	Screw terminal type		---	---	---
K13A	Direct-wire Connector type	Threaded (M12)	AC	NO only	NO: ③ ④
K13			DC	NO only	NO: ③ ④
K43A			AC	NC+NO	NC: ① ②, NO: ③ ④
K43			DC	NC+NO	NC: ① ②, NO: ③ ④
-M1J	Pre-wired Connector type *2	Threaded (M12)	DC	NO only	NO: ③ ④
-AGJ			AC	NC+NO	NC: ① ②, NO: ③ ④
-DGJ			DC	NC+NO	NC: ① ②, NO: ③ ④
-M1TJ		Smartclick	DC	NO only	NO: ③ ④
-DTGJ			DC	NC+NO	NC: ① ②, NO: ③ ④

*1. Refer to *Contact Forms* on page 21 for details on connector pin numbers.
*2. The standard cable length is 0.3 m. Contact your OMRON representative for information on other cable lengths.

Long-life Switches — High-sensitivity and High-precision Switches

WLM□ - LD□
(1) (2) (3)

(1) Actuator and Property Specifications

Code	Actuator
G2	Roller lever: R38 mm High-sensitivity
GCA2	Roller lever: R38 mm High-precision

(2) Indicator Type

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

(3) Connector Type Wiring Specifications

Code	Specifications				
	Shape		Voltage	Wiring locations	Connector pin No. *1
Blank	Screw terminal type		---	---	---
K13A	Direct-wire Connector type	Threaded (M12)	AC	NO only	NO: ③ ④
K13			DC	NO only	NO: ③ ④
K43A			AC	NC+NO	NC: ① ②, NO: ③ ④
K43			DC	NC+NO	NC: ① ②, NO: ③ ④
-M1J	Pre-wired Connector type *2		DC	NO only	NO: ③ ④
-AGJ03			AC	NC+NO	NC: ① ②, NO: ③ ④
-DGJ03			DC	NC+NO	NC: ① ②, NO: ③ ④

*1. Refer to *Contact Forms* on page 21 for details on connector pin numbers.
*2. The standard cable length is 0.3 m. Contact your OMRON representative for information on other cable lengths.

Ordering Information

General-purpose Switches

Standard Switches

Switches with Roller Lever Actuators

Basic Switches

Actuator	Roller lever: R38 	Roller lever: R50 	Roller lever: R63 
Pretravel (PT)	Model	Model	Model
15±5°	WLCA2-N	WLCA2-7-N	WLCA2-8-N
25±5°	WLCA2-2-N	—	—
20° max.	WLCA2-2N-N	—	—

Actuator	Adjustable roller lever 	Adjustable rod lever: 25 to 140 mm 	Adjustable rod lever: 350 to 380 mm 	Rod spring lever 
Pretravel (PT)	Model	Model	Model	Model
15±5°	WLCA12-N	WLCL-N	WLCAL4-N	WLCAL5-N
25±5°	WLCA12-2-N	WLCL-2-N	—	—
20° max.	WLCA12-2N-N	WLCL-2N-N	—	—

High-sensitivity Switches

Actuator	Roller lever: R38 	Adjustable roller lever 	Adjustable rod lever: 25 to 140 mm 
Load	Model	Model	Model
Standard load	WLG2	WLG12	WLGL
Microload	WL01G2	WL01G12	WL01GL

High-precision Switches

Actuator	Roller lever: R38 
Load	Model
Standard load	WLGCA2
Microload	WL01GCA2

Switches with Plunger Actuators

Basic Switches

Actuator	Sealed Top Plunger 	Sealed Top-roller plunger 	Sealed Top-ball plunger 	Top-roller plunger 
Pretravel (PT)	Model	Model	Model	Model
1.7 mm max.	WLD18-N	WLD28-N	WLD38-N	WLD2-N

Actuator	Horizontal plunger 	Horizontal-roller plunger 	Horizontal-ball plunger 
Pretravel (PT)	Model	Model	Model
2.8 mm max.	WLSD-N	WLSD2-N	WLSD3-N

Switches with Flexible Rod Actuators

Basic Switches

Actuator	Coil spring (spring diameter: 6.5) 	Coil spring (spring diameter: 4.8) 
Pretravel (PT)	Model	Model
20±10 mm	WLNJ-N	WLNJ-30-N

Actuator	Resin rod (rod diameter: 8) 	Steel wire (wire diameter: 1) 
Pretravel (PT)	Model	
40±20 mm	WLNJ-2-N	WLNJ-S2-N

Switches with Fork Lock Lever Actuator

Retention type Switches

Actuator	Fork lock lever 	Fork lock lever 	Fork lock lever 	Fork lock lever 
Pretravel (PT)	Model	Model	Model	Model
55° max.	WLCA32-41-N	WLCA32-42-N	WLCA32-43-N	WLCA32-44-N

General-purpose Switches

Operation indicator Switches

Switches with Roller Lever Actuators

Basic Switches

Actuator		Roller lever: R38 	Roller lever: R50 	Roller lever: R63 
Indicator *	Pretravel (PT)	Model	Model	Model
Neon lamp	15±5°	WLCA2-LE-N	WLCA2-7LE-N	WLCA2-8LE-N
	25±5°	WLCA2-2LE-N	—	—
	20° max.	WLCA2-2NLE-N	—	—
LED	15±5°	WLCA2-LD-N	WLCA2-7LD-N	WLCA2-8LD-N
	25±5°	WLCA2-2LD-N	—	—
	20° max.	WLCA2-2NLD-N	—	—

Actuator		Adjustable roller lever 	Adjustable rod lever: 25 to 140 mm 	Adjustable rod lever: 350 to 380 mm 	Rod Spring Lever 
Indicator *	Pretravel (PT)	Model	Model	Model	Model
Neon lamp	15±5°	WLCA12-LE-N	WLCL-LE-N	WLCAL4-LE-N	WLCAL5-LE-N
	25±5°	WLCA12-2LE-N	WLCL-2LE-N	—	—
	20° max.	WLCA12-2NLE-N	WLCL-2NLE-N	—	—
LED	15±5°	WLCA12-LD-N	WLCL-LD-N	WLCAL4-LD-N	WLCAL5-LD-N
	25±5°	WLCA12-2LD-N	WLCL-2LD-N	—	—
	20° max.	WLCA12-2NLD-N	WLCL-2NLD-N	—	—

High-sensitivity Switches

Actuator		Roller lever R38 
Indicator *	Pretravel (PT)	Model
Neon lamp	10° $^{+2°}_{-1°}$	WLG2-LE
LED		WLG2-LD

Actuator		Adjustable roller lever 	Adjustable rod lever: 25 to 140 mm 
Indicator *	Pretravel (PT)	Model	Model
Neon lamp	10° $^{+2°}_{-1°}$	WLG12-LE	WLGL-LE
LED		WLG12-LD	WLGL-LD

High-precision Switches

Actuator		Roller lever R38 
Indicator *	Pretravel (PT)	Model
Neon lamp	5° $^{+2°}_{0°}$	WLGCA2-LE
LED		WLGCA2-LD

Switches with Fork Lock Lever Actuator

Retention type Switches

Actuator		Fork lock lever 	Fork lock lever 	Fork lock lever 
Indicator *	Pretravel (PT)	Model	Model	Model
Neon lamp	55° max.	WLCA32-41LE-N	WLCA32-42LE-N	WLCA32-43LE-N
LED		WLCA32-41LD-N	—	WLCA32-43LD-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).

Switches with Plunger Actuators

Basic Switches

Actuator		Sealed Top plunger 	Sealed Top-roller plunger 	Sealed Top-ball plunger 	Top-roller plunger 
Indicator *	Pretravel (PT)	Model	Model	Model	Model
Neon lamp	1.7 mm max.	WLD18-LE-N	WLD28-LE-N	WLD38-LE-N	WLD2-LE-N
LED		WLD18-LD-N	WLD28-LD-N	WLD38-LD-N	WLD2-LD-N

Actuator		Horizontal plunger 	Horizontal-roller plunger 	Horizontal-ball plunger 
Indicator *	Pretravel (PT)	Model	Model	Model
Neon lamp	2.8 mm max.	WLSD-LE-N	WLSD2-LE-N	WLSD3-LE-N
LED		WLSD-LD-N	WLSD2-LD-N	WLSD3-LD-N

Switches with Flexible Rod Actuators

Basic Switches

Actuator		Coil spring (spring diameter: 6.5) 	Coil spring (spring diameter: 8) 
Indicator *	Pretravel (PT)	Model	Model
Neon lamp	20±10 mm	WLNJ-LE-N	WLNJ-30LE-N
LED		WLNJ-LD-N	WLNJ-30LD-N

Actuator		Resin rod (rod diameter: 8) 	Steel wire (wire diameter: 1) 
Indicator *	Pretravel (PT)	Model	Model
Neon lamp	40±20 mm	WLNJ-2LE-N	WLNJ-S2LE-N
LED		WLNJ-2LD-N	WLNJ-S2LD-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).

General-purpose Switches

Sensor I/O Connector Switches

Switches with Direct-wired Connectors

Basic Switches

					Actuator	Roller lever: R38 	Sealed Top-roller plunger 
Connector shape	Built-in switch specification	Voltage	Wiring Specifications	Connector pin No.	Pretravel (PT)	Model	Model
Threaded	General-purpose	AC	NO only 2 core	NO ③ ④	15±5°	WLCA2-LDK13A-N	—
			NC + NO 4 core	NC ① ② NO ③ ④		WLCA2-LDK43A-N	—
		DC	NO only 2 core	NO ③ ④		WLCA2-LDK13-N	WLD28-LDK13-N
			NC + NO 4 core	NC ① ② NO ③ ④		WLCA2-LDK43-N	WLD28-LDK43-N
	Airtight	DC	NO only 2 core	NO ③ ④		WLCA2-55LDK13-N	WLD28-55LDK13-N
			NC + NO 4 core	NC ① ② NO ③ ④		WLCA2-55LDK43-N	WLD28-55LDK43-N

High-sensitivity Switches

					Actuator	Roller lever: R38 
Connector shape	Built-in switch specification	Voltage	Wiring Specifications	Connector pin No.	Pretravel (PT)	Model
Threaded	General-purpose	DC	NO only 2 core	NO ③ ④	10° $^{+2°}_{-1°}$	WLG2-LDK13
			NC + NO 4 core	NC ① ② NO ③ ④		WLG2-LDK43
	Airtight		NO only 2 core	NO ③ ④		WLG2-55LDK13
			NC + NO 4 core	NC ① ② NO ③ ④		WLG2-55LDK43

High-precision Switches

					Actuator	Roller lever: R38 
Connector shape	Built-in switch specification	Voltage	Wiring Specifications	Connector pin No.	Pretravel (PT)	Model
Threaded	General-purpose	DC	NO only 2 core	NO ③ ④	5° $^{+2°}_{0°}$	WLGCA2-LDK13
			NC + NO 4 core	NC ① ② NO ③ ④		WLGCA2-LDK43
	Airtight		NO only 2 core	NO ③ ④		WLGCA2-55LDK13
			NC + NO 4 core	NC ① ② NO ③ ④		WLGCA2-55LDK43

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

Switches with Pre-wired Connectors

Basic Switches

					Actuator	Roller lever: R38 	Sealed Top-roller Plunger 
Connector shape	Built-in switch specification	Voltage	Wiring Specifications	Connector pin No.	Pretravel (PT)	Model	Model
Threaded *	General-purpose	DC	NO only 2 core	NO ③ ④	15±5°	WLCA2-LD-M1J-N	WLD28-LD-M1J-N
				NO ① ④		WLCA2-LD-M1GJ-N	WLD28-LD-M1GJ-N
			NC only 2 core	NC ③ ②		WLCA2-LD-M1JB-N	—
			NC + NO 4 core	NC ① ② NO ③ ④		WLCA2-LD-DGJ-N	WLD28-LD-DGJ-N
			NO only 3 core	NO ③ ④ NC ②		WLCA2-LD-DK1EJ-N	WLD28-LD-DK1EJ-N
	Airtight		NO only 2 core	NO ③ ④		WLCA2-55LD-M1J-N	WLD28-55LD-M1J-N
				NO ① ④		WLCA2-55LD-M1GJ-N	WLD28-55LD-M1GJ-N
			NC only 2 core	NC ③ ②		WLCA2-55LD-M1JB-N	WLD28-55LD-M1JB-N
			NC + NO 4 core	NC ① ② NO ③ ④		WLCA2-55LD-DGJ-N	—
			NO only 3 core	NO ③ ④ NC ②		WLCA2-55LD-DK1EJ-N	WLD28-55LD-DK1EJ-N

High-sensitivity Switches

					Actuator	Roller lever: R38 
Connector shape	Built-in switch specification	Voltage	Wiring Specifications	Connector pin No.	Pretravel (PT)	Model
Threaded *	General-purpose	DC	NO only 2 core	NO ③ ④	10° $^{+2°}_{-1°}$	WLG2-LDK13
			NC + NO 4 core	NC ① ② NO ③ ④		WLG2-LDK43
	Airtight		NO only 2 core	NO ③ ④		WLG2-55LDK13
			NC + NO 4 core	NC ① ② NO ③ ④		WLG2-55LDK43

High-precision Switches

					Actuator	Roller lever: R38 
Connector shape	Built-in switch specification	Voltage	Wiring Specifications	Connector pin No.	Pretravel (PT)	Model
Threaded *	General-purpose	DC	NO only 2 core	NO ③ ④	5° $^{+2°}_{0°}$	WLG2-LDK13
			NC + NO 4 core	NC ① ② NO ③ ④		WLG2-LDK43
	Airtight		NO only 2 core	NO ③ ④		WLG2-55LDK13
			NC + NO 4 core	NC ① ② NO ③ ④		WLG2-55LDK43

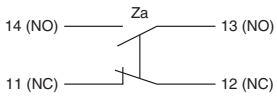
* The standard cable length for a pre-wired connector is 0.3 m. Contact your OMRON representative for information on other cable lengths.

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).)

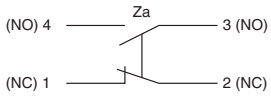
Contact Forms

Wiring specification
Screw terminal types
No indicator

Basic Switches

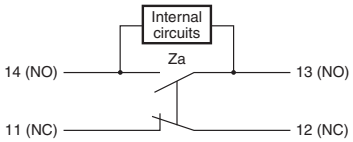


High-sensitivity/ High-precision Switches

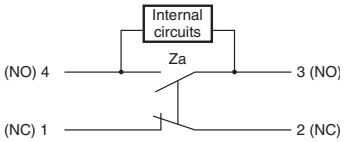


Operation indicator (Light-ON when Not Operating) Switches

Basic Switches



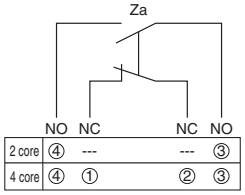
High-sensitivity/ High-precision Switches



Direct-wire Connector and Pre-wired Connector types
No indicator

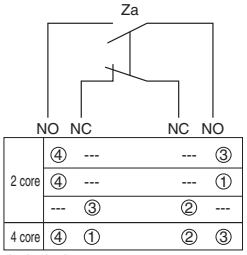
Basic

AC



①②③④ indicate the connector pin number.

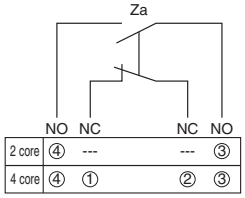
DC



①②③④ indicate the connector pin number.

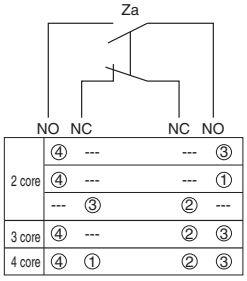
High-sensitivity/High-precision Switches

AC



①②③④ indicate the connector pin number.

DC

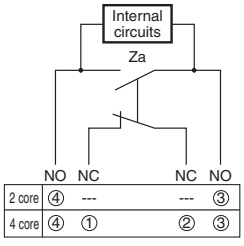


①②③④ indicate the connector pin number.

Operation indicator (Light-ON when Not Operating) Switches

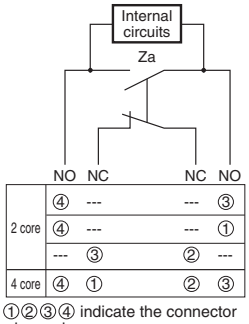
Basic

AC



①②③④ indicate the connector pin number.

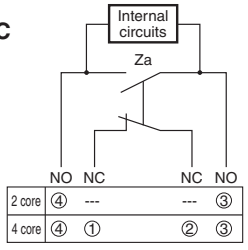
DC



①②③④ indicate the connector pin number.

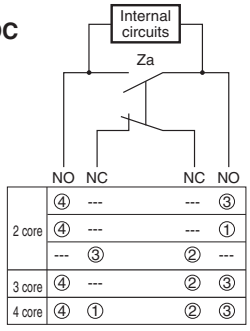
High-sensitivity/High-precision Switches

AC



①②③④ indicate the connector pin number.

DC

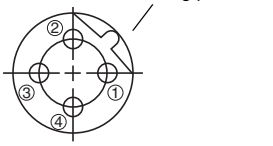


①②③④ indicate the connector pin number.

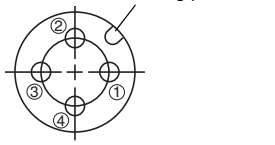
Connector Pin Layout Diagram

Basic/High-sensitivity/High-precision Switches

AC



DC

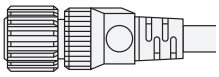
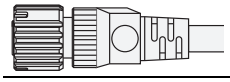


Note: Leakage current from indicator circuit may cause load malfunction (i.e., the load may remain ON). Make sure that the load operating current is higher than the leakage current. For countermeasures, refer to technical support on your OMRON website.

*1. 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.

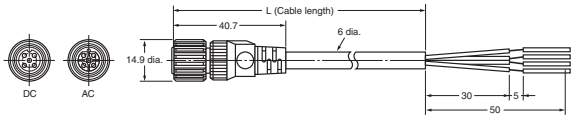
*2. The position of the positioning piece is not always the same. If using an L-shaped connector causes problems in application, use a straight connector.

Connecting Sensor I/O connector cable (Socket)

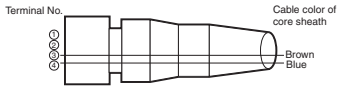
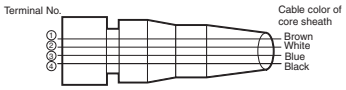
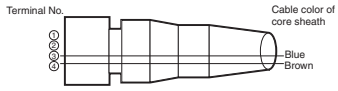
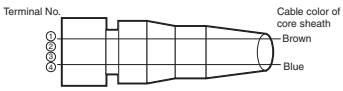
Type	AC/DC Type	Number of cable cores	Cable length L (m)	Model	Applicable limit switch models
M12 Screw (Straight) 	AC	2	2 m	XS2F-A421-DB0-F	WL□-□K13A-N
			5 m	XS2F-A421-GB0-F	
		4	2 m	XS2F-A421-D90-F	WL□-□K43A-N WL□-□-AGJ-N
			5 m	XS2F-A421-G90-F	
	DC	2	2 m	XS2F-D421-DD0	WL□-□K13-N WL□-□-M1J-N
			5 m	XS2F-D421-GD0	
			2 m	XS2F-D421-DA0-F	WL□-□-M1GJ□-N
			5 m	XS2F-D421-GA0-F	
		4	2 m	XS2F-D421-D80-F	WL□-□K43-N WL□-□-M1JB-N WL□-□-DGJ-N
			5 m	XS2F-D421-G80-F	
M12 Smart click type (Straight) 	DC	4	2 m	XS5F-D421-D80-F	WL□-□-M1TJ-N WL□-□-M1TJB-N
			5 m	XS5F-D421-G80-F	

Dimensions (Unit: mm)

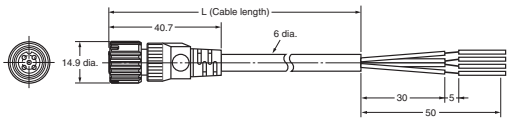
XS2F-□421-□□0-□
XS2F-D421-□D0



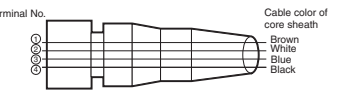
Wiring Diagram

AC/DC Type	Two-core model		Four-core model	
	Model	Wiring Diagram	Model	Wiring Diagram
AC	XS2F-A421-DB0-F XS2F-A421-GB0-F		XS2F-A421-D90-F XS2F-A421-G90-F	
DC	XS2F-D421-DD0 XS2F-D421-GD0		XS2F-D421-D80-F XS2F-D421-G80-F	
	XS2F-D421-DA0-F XS2F-D421-GA0-F			

XS5F-D421-□80-F



Wiring Diagram

AC/DC Type	Four-core model	
	Model	Wiring Diagram
DC	XS5F-D421-D80-F XS5F-D421-G80-F	

Environment-resistant Switches

Switches with Roller Lever Actuators
Basic Switches

Actuator		Roller lever: R38 	Adjustable roller lever 	Adjustable rod lever: 25 to 140 mm 
Built-in switch specification		Model	Model	Model
Airtight seal		WLCA2-55-N	WLCA12-55-N	WLCL-55-N
		WLCA2-255-N	—	—
		WLCA2-2N55-N	—	—
Hermetic seal *	Molded terminals, -139 models	WLCA2-139-N	WLCA12-139-N	WLCL-139-N
		WLCA2-2139-N	—	—
		WLCA2-2N139-N	—	—
	Molded terminals, -140 models	WLCA2-140-N	WLCA12-140-N	WLCL-140-N
		—	—	—
		WLCA2-2N140-N	—	—
	Molded terminals, -141 models	WLCA2-141-N	WLCA12-141-N	—
		—	—	—
		—	—	—
	Anti-coolant	WLCA2-RP60-N	WLCA12-RP60-N	WLCL-RP60-N
		WLCA2-2RP60-N	—	—
		—	—	—
Heat-resistant		WLCA2-TH-N	WLCA12-TH-N	WLCL-TH-N
		WLCA2-2TH-N	WLCA12-2TH-N	WLCL-2TH-N
		WLCA2-2NTH-N	WLCA12-2NTH-N	WLCL-2NTH-N
Low-temperature		WLCA2-TC-N	WLCA12-TC-N	WLCL-TC-N
		WLCA2-2TC-N	WLCA12-2TC-N	WLCL-2TC-N
		WLCA2-2NTC-N	WLCA12-2NTC-N	WLCL-2NTC-N
Corrosion-proof		WLCA2-RP-N	WLCA12-RP-N	WLCL-RP-N
Weather-proof		WLCA2-P1-N	WLCA12-P1-N	WLCL-P1-N

* The maximum cable length for a Hermetic Switch is 5 m.

High-sensitivity Switches

Actuator		Roller lever: R38 	Adjustable roller lever 	Adjustable rod lever: 25 to 140 mm 
Built-in switch specification		Model	Model	Model
Airtight seal		WLG2-55	—	—
Hermetic seal *	Molded terminals, -139 models	WLG2-139	—	—
	Molded terminals, -140 models	WLG2-140	—	—
	Molded terminals, -141 models	WLG2-141	—	—
	Anti-coolant	WLG2-RP60	—	—
Heat-resistant		WLG2-TH	WLG12-TH	WLGL-TH
Low-temperature		WLG2-TC	WLG12-TC	WLGL-TC
Corrosion-proof		WLG2-RP	WLG12-RP	WLGL-RP
Weather-proof		WLG2-P1	WLG12-P1	WLGL-P1

* The maximum cable length for a Hermetic Switch is 5 m.

High-precision Switches

Actuator		Roller lever: R38 
Built-in switch specification		Model
Airtight seal		WLGCA2-55
Hermetic seal *	Molded terminals, -139 models	WLGCA2-139
	Molded terminals, -140 models	WLGCA2-140
	Molded terminals, -141 models	WLGCA2-141
	Anti-coolant	WLGCA2-RP60
Heat-resistant		WLGCA2-TH
Low-temperature		WLGCA2-TC
Corrosion-proof		WLGCA2-RP
Weather-proof		—

* The maximum cable length for a Hermetic Switch is 5 m.

Switches with Plunger Actuators
Basic Switches

Actuator		Sealed Top-roller plunger 	Top-roller plunger 	Horizontal plunger 	Horizontal-roller plunger 
Built-in switch specification		Model	Model	Model	Model
Airtight seal		WLD28-55-N	WLD2-55-N	WLSD-55-N	WLSD2-55-N
Hermetic seal *	Molded terminals, -139 models	WLD28-139-N	WLD2-139-N	WLSD-139-N	WLSD2-139-N
	Molded terminals, -140 models	WLD28-140-N	—	—	WLSD2-140-N
	Anti-coolant	WLD28-RP60-N	WLD2-RP60-N	WLSD-RP60-N	WLSD2-RP60-N
Heat-resistant		WLD28-TH-N	WLD2-TH-N	WLSD-TH-N	WLSD2-TH-N
Low-temperature		—	—	WLSD-TC-N	WLSD2-TC-N
Corrosion-proof		WLD28-RP-N	—	WLSD-RP-N	WLSD2-RP-N

* The maximum cable length for a Hermetic Switch is 5 m.

Switches with Flexible Rod Actuators
Basic Switches

Actuator		Coil spring (spring diameter: 6.5) 	Resin rod (rod diameter: 8) 
Built-in switch specification		Model	Model
Airtight seal		WLNJ-55-N	WLNJ-255-N
Hermetic seal *	Molded terminals, -139 models	WLNJ-139-N	WLNJ-2139-N
	Molded terminals, -140 models	WLNJ-140-N	WLNJ-2140-N
	Anti-coolant	WLNJ-RP60-N	WLNJ-2RP60-N
Heat-resistant		WLNJ-TH-N	—
Low-temperature		WLNJ-TC-N	—
Corrosion-proof		WLNJ-RP-N	WLNJ-2RP-N

* The maximum cable length for a Hermetic Switch is 5 m.

Environment-resistant Switches

Operation indicator Switches

Switches with Roller Lever Actuators

Basic Switches

Actuator				Roller lever: R38 	Adjustable roller lever 	Adjustable rod lever: 25 to 140 mm 
Built-in switch specification		Indicator *	Wiring Specifications	Model	Model	Model
Airtight seal		Neon lamp	NO wiring	WLCA2-55LE-N	WLCA12-55LE-N	—
			NO wiring	WLCA2-255LE-N	—	—
			NO wiring	WLCA2-2N55LE-N	—	—
		LED	NO wiring	WLCA2-55LD-N	WLCA12-55LD-N	WLCL-55LD-N
			NO wiring	WLCA2-255LD-N	—	—
			NO wiring	WLCA2-2N55LD-N	—	—
Hermetic seal	Molded terminals, -139 models	LED	NC wiring	WLCA2-139LD2-N	—	—
			NO wiring	WLCA2-139LD3-N	—	—
			NC wiring	WLCA2-2139LD2-N	—	—
			NO wiring	WLCA2-2139LD3-N	—	—
	Molded terminals, -140 models		NC wiring	WLCA2-141LD2-N	—	—
			NO wiring	WLCA2-141LD3-N	—	—
	Anti-coolant		NC wiring	WLCA2-RP60LD2-N	—	—
			NO wiring	WLCA2-RP60LD3-N	—	—
			NC wiring	WLCA2-2RP60LD2-N	—	—
			NO wiring	WLCA2-2RP60LD3-N	—	—

High-sensitivity Switches

Actuator				Roller lever: R38 
Built-in switch specification		Indicator *	Wiring Specifications	Model
Airtight seal		Neon lamp	NO wiring	WLG2-55LE
		LED	NO wiring	WLG2-55LD
Hermetic seal	Molded terminals, -139 models	LED	NC wiring	—
			NO wiring	WLG2-139LD3
	Molded terminals, -140 models		NC wiring	WLG2-140LD2
			NO wiring	WLG2-140LD3
	Molded terminals, -141 models		NC wiring	WLG2-141LD2
			NO wiring	WLG2-141LD3
	Anti-coolant		NC wiring	WLG2-RP60LD2
			NO wiring	WLG2-RP60LD3

High-precision Switches

Actuator				Roller lever: R38 
Built-in switch specification		Indicator *	Wiring Specifications	Model
Airtight seal		Neon lamp	NO wiring	WLGCA2-55LE
		LED	NO wiring	WLGCA2-55LD
Hermetic seal	Molded terminals, -139 models	LED	NC wiring	WLGCA2-139LD2
			NO wiring	WLGCA2-139LD3
	Molded terminals, -140 models		NC wiring	WLGCA2-140LD2
			NO wiring	WLGCA2-140LD3
	Molded terminals, -141 models		NC wiring	—
			NO wiring	WLGCA2-141LD3
	Anti-coolant		NC wiring	WLGCA2-RP60LD2
			NO wiring	WLGCA2-RP60LD3

* 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).
(Note that the lamp holder cannot be replaced on hermetic models.)