

Individual Parts

Heads

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

Actuator type	Set model	Head model (with Actuator)
Top plunger 	WLD	WL-7H100
	WLD2	WL-7H200
	WLD3	WL-7H300
	WLD28	WL-7H400
Horizontal plunger 	WLS	WL-8H100
	WLS2	WL-8H200
	WLS3	WL-8H300
Fork lever lock 	WLCA32-41	WL-5H5100
	WLCA32-42	WL-5H5102
	WLCA32-43	WL-5H5104
	WLCA32-44	WL-5H5104
Coil spring 	WLNJ	WL-9H100
	WLNJ-30	WL-9H200
	WLNJ-2	WL-9H300
	WLNJ-S2	WL-9H400

* The model number of Heads without levers are same as those of Heads with levers without the numbers at the end.
Example: WL-1H1100 becomes WL-1H without the lever.
However, the WLH2 and WLH12 become WL-2H-1 and the WLGCA2 becomes WL-1H-1 for the Heads without levers.
Other Heads are also available. Ask your OMRON representative.

Switches without levers

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

Covers with Operation Indicators

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

Note: The default setting is "light-ON when not operating."
Turn the lamp holder by 180° to change the setting to "light-ON when operating."

**Spatter-prevention Products
Head (with actuator)**

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

Lever

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

Cover with indicator Switches without Levers

Cover with Indicator	Switches without levers
Model	Model
Neon lamp WL-LES	WLCA2-LDS
LED (LED) WL-LDS	WLRH2-LES WLRH2-LDS WLRG2-LDS WLRGCA2-LES

WL Head Replacement

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

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

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

Specifications
Approved Standards

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

General-purpose/Weather-proof Switches

Ratings

Standard-load Switches

Item	Rated voltage (V)	Non-inductive load (A)				Inductive load (A)			
		Resistive load		Lamp load		Inductive load		Motor load	
		NC	NO	NC	NO	NC	NO	NC	NO
Basic models, overtravel models (except for high-sensitivity models), and high-precision models	125 VAC	10	3	1.5	10	5	2.5		
	250 VAC	10	2	1	10	3	1.5		
	500 VAC	10	1.5	0.8	3	1.5	0.8		
	8 VDC	10	6	3	10	6			
	14 VDC	10	6	3	10	6			
High-sensitivity overtravel models	30 VDC	6	4	3	6	4			
	125 VDC	0.8	0.2	0.2	0.8	0.2			
	250 VDC	0.4	0.1	0.1	0.4	0.1			
	125 VAC	5	—	—	—	—			
	250 VAC	5	—	—	—	—			
High-sensitivity overtravel models	125 VDC	0.4	—	—	—	—			
	250 VDC	0.2	—	—	—	—			

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

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.
 5. For PC loads, use the microload models.

Minimum applicable load	5 VDC 160 mA
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Approved Standard Ratings UL/CSA

Standard-load Switches: A600, NEMA

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

Microload Switches

0.1 A 125 VAC, 0.1 A 30 VDC

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

Model	Application category and ratings	Thermal current (I _{the})	Indicator
WL□	AC-15: 2 A/250 V DC-12: 2 A/48 V	10 A	—
WL01□	AC-14: 0.1 A/125 V DC-12: 0.1 A/48 V	0.5 A	—
WL□-LE	AC-15: 2 A/250 V	10 A	Neon lamp
WL01□-LE	AC-14: 0.1 A/125 V	0.5 A	Neon lamp
WL□-LD	AC-15: 2 A/115 V DC-12: 2 A/48 V	10 A	LED
WL01□-LD	AC-14: 0.1 A/115 V DC-12: 0.1 A/48 V	0.5 A	LED

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

Application category	AC-15
Rated operating current (I _e)	2A
Rated operating voltage (U _e)	250V

Indicator-equipped Switches

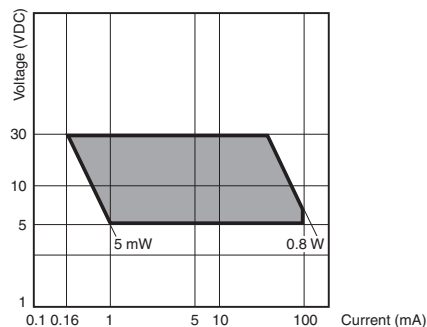
Model	Item	Max. rated voltage (V)	Leakage current (mA)
WL-LE	Neon lamp	125 AC	Approx. 0.6
		250 AC	Approx. 1.9
WL-LD	LED	115 AC/DC	Approx. 0.5
		10 to 24 AC/DC	Approx. 0.4

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

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

Operation in the following ranges will produce optimum performance.

Recommended load range	5 to 30 VDC 0.5 to 100 mA
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Recommended load range	5 VDC 1 mA
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Characteristics

Degree of protection		IP67
Durability *1	Mechanical	15,000,000 operations min. *2
	Electrical	750,000 operations min. *3
Operating speed		1 mm/s to 1 m/s (in case of WLCA2)
Operating frequency	Mechanical	120 operations/minute min.
	Electrical	30 operations/minute min.
Rated frequency		50/60 Hz
Insulation resistance		100 MΩ min. (at 500 VDC)
Contact resistance		25 mΩ max. (initial value for the built-in switch when tested alone) *6
Dielectric strength	Between terminals of the same polarity	1,000 VAC (600 VAC), 50/60 Hz for 1 min
	Between current-carrying metal part and ground	2,200 VAC (1,500 VAC), 50/60 Hz for 1 min/Uimp 2.5 kV
	Between each terminal and non-current-carrying metal part	2,200 VAC (1,500 VAC), 50/60 Hz for 1 min/Uimp 2.5 kV
Rated insulation voltage (U _i)		250 V (EN60947-5-1)
Pollution degree (operating environment)		3 (EN60947-5-1)
Short-circuit protective device (SCPD)		10 A, fuse type gG or gI (IEC60269)
Conditional short-circuit current		100 A (EN60947-5-1)
Conventional enclosed thermal current (I _{the})		10 A, 0.5 A (EN60947-5-1)
Protection against electric shock		Class I
Vibration resistance	Malfunction	10 to 55 Hz, 1.5-mm double amplitude *4
Shock resistance	Destruction	1,000 m/s ² max.
	Malfunction	300 m/s ² max. *4
Ambient operating temperature		−10°C to +80°C (with no icing) *5
Ambient operating humidity		35% to 95% RH
Weight		Approx. 275 g (in case of WLCA2)

Note: 1. The above figures are initial values.

2. The figures in parentheses for dielectric strength are those for the high-sensitivity overtravel models.

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

*2. Durability is 10,000,000 operations min. for general-purpose or high-sensitivity overtravel models, and for flexible rod models.

500,000 operations min. for weather-proof models.

*3. Durability is 500,000 operations min. for high-sensitivity models. All microload models are 1,000,000 operations min.

500,000 operations min. for weather-proof models.

*4. Except flexible rod models. The shock resistance (malfunction) for microload models is 200 m/s² max.

*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.

*6. For microload models, the contact resistance is 50 mΩ max. (initial value for built-in switch).

Spatter-prevention Switches

Ratings

Screw terminals

Item	Rated voltage (V)	Non-inductive load (A)				Inductive load (A)			
		Resistive load		Lamp load		Inductive load		Motor load	
		NC	NO	NC	NO	NC	NO	NC	NO
WL□-LES	125 VAC	10	3	1.5	10	5	2.5		
	250 VAC	10	2	1	10	3	1.5		
WL□-LDS	115 VAC	10	3	1.5	10	5	2.5		
	12 VDC	10	6	3	10	6			
	24 VDC	6	4	3	6	4			
	48 VDC	3	2	1.5	3	2			

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

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

Approved Standard Ratings UL/CSA

LE Switches (Neon lamp): A300

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

LD Switches (LED)

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

CCC (GB14048.5)

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

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

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

Characteristics

Degree of protection		IP67
Durability *1	Mechanical	15,000,000 operations min. *2
	Electrical	750,000 operations min. *3
Operating speed		1 mm/s to 1 m/s (in case of WLCA2)
Operating frequency	Mechanical	120 operations/minute min.
	Electrical	30 operations/minute min.
Rated frequency		50/60 Hz
Insulation resistance		100 MΩ min. (at 500 VDC)
Contact resistance		25 mΩ max. (initial value for the built-in switch when tested alone)
Dielectric strength	Between terminals of the same polarity	1,000 VAC (600 VAC), 50/60 Hz for 1 min
	Between current-carrying metal part and ground	2,200 VAC (1,500 VAC), 50/60 Hz for 1 min/Uimp 2.5 kV
	Between each terminal and non-current-carrying metal part	2,200 VAC (1,500 VAC), 50/60 Hz for 1 min/Uimp 2.5 kV
Rated insulation voltage (Ui)		250 V (EN60947-5-1)
Pollution degree (operating environment)		3 (EN60947-5-1)
Short-circuit protective device (SCPD)		10 A, fuse type gG or gI (IEC60269)
Conditional short-circuit current		100 A (EN60947-5-1)
Conventional enclosed thermal current (Ithe)		10 A, 0.5 A (EN60947-5-1)
Protection against electric shock		Class I
Vibration resistance	Malfunction	10 to 55 Hz, 1.5-mm double amplitude
Shock resistance	Destruction	1,000 m/s ² max.
	Malfunction	300 m/s ² max.
Ambient operating temperature		-10°C to +80°C (with no icing)
Ambient operating humidity		35% to 95%RH
Weight		Approx. 275 g (in case of WLCA2)

Note: 1. The above figures are initial values.
 2. The figures in parentheses for dielectric strength are those for the high-sensitivity overtravel models.

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

*2. Durability is 10,000,000 operations min. for general-purpose or high-sensitivity overtravel models.

*3. Durability is 500,000 operations min. for high-precision models. All microload models however, are 1,000,000 operations min.

Long-life Switches

Ratings

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

Screw Terminal Switches

Item Model	Rated voltage (V)	Non-inductive load (A)				Inductive load (A)			
		Resistive load		Lamp load		Induc- tive load		Motor load	
		NC	NO	NC	NO	NC	NO	NC	NO
Basic models, overtravel mod- els, (except for high-sensitivity models), and high-precision models	115 AC	10		3	1.5	10		5	2.5
	12 DC	10	6	3		10		6	
	24 DC	6	4	3		6		4	
	48 DC	3	2	1.5		3		2	
	115 DC	0.8	0.2	0.2		0.8		0.2	
High-sensitivity overtravel mod- els	115 AC	5		—		—		—	
	115 DC	0.4		—		—		—	

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

* For high-sensitivity overtravel models.

Direct-wired Connector and Pre-wired Connector Switches

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

- 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.

Characteristics

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

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

* 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.

Engineering Data

Electrical Durability: $\cos\phi=1$

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

