

## Cam Switch

LW39-10/16/25/63/16N Series

[www.si-apt.com](http://www.si-apt.com)

# LW39 Series Cam Switch

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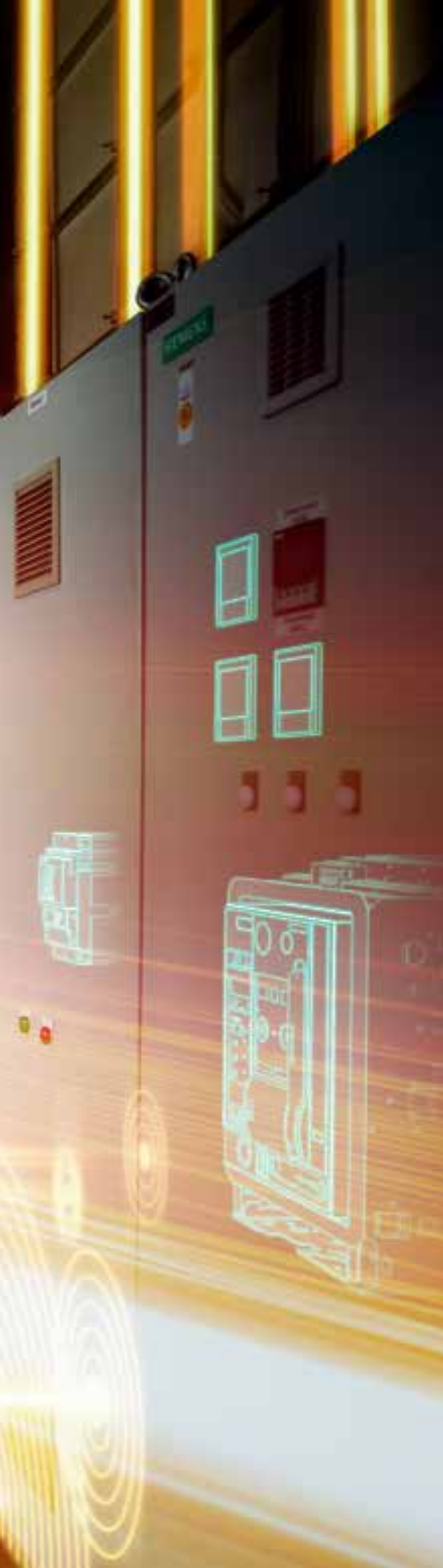
URL: <http://www.si-apt.com>

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# APT

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## Cam Switch

LW39-10/16/25/63/16N Series

CCC CE RoHS



## Company Profile

APT has been established in 1993. Today it is now a Chinese leading manufacturer of low-voltage components and has been specialized in the manufacturing of low voltage products such as pushbuttons, indicators, cam switches and general-purpose relays. In August 2008, Siemens Electrical Apparatus Ltd. Suzhou (hereinafter referred to as “Siemens”) made the wholly-owned acquisition of APT, putting the APT brand and related products under the operation of Siemens. With unified quality control and R&D resources of Siemens, APT focuses on manufacturing pushbuttons, indicators and other important low-voltage products such as tower lights, control cabinets, combined lights, current transformers and limit switches etc.

Through over 20 years of promotion and application, the APT products have been widely serving dozens of industrial fields in China including power, energy, rail transit, elevator, logistics, machine tool, etc. They have been successively selected and applied in Qinshan Nuclear Power Plant, the Three Gorges Project, Shenzhou V Spacecraft, Qinghai-Tibet Railway locomotives, “Harmony” Electric Multiple Unit, “Fuxing” Electric Multiple Unit, international airports and urban metros and have become the preferred brand for national key projects. At the same time, Siemens gives full play to its international operation experience to continuously enhance the management and business development of APT and better serve the Chinese market through advanced technology and improved product line.



## Technical Data of LW39 Series

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## LW39-10 Series

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## LW39-16 Series

LW39-16A / LW39-16B / LW39-16C Series

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## LW39-25 Series

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## LW39-16N Series

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## Code / Junction Table

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## Technical data

## Compliance

Working conditions

- Altitude ≤ 2000m
- Ambient temperature -25°C ~ +55 °C
- Relative air humidity ≤ 90%
- Installation category: III
- Pollution class: 3

GB/T 14048.5  
EN60947-5-1

## Electrical data

Technical data

Order code		LW39-10	LW39-16A(B、C)	LW39-25	LW39-63					
Rated insulation voltage $U_i$		440V	690V	690V	690V					
Conventional thermal current $I_{th}$		10A	16A	25A	63A					
Power frequency withstand voltage (1minute)		1890V	1890V	1890V	1890V					
AC working current $I_e$	AC-21 OFF/ON resistive load		10A	16A	25A	63A				
	AC-15 Control electromagnetic load $\cos\phi=0.4$	24V	10A	16A	25A	28A				
		48V	5A	8A	22A	25A				
		110V	4A	5A	18A	22A				
		220V	2A	3A	12A	16A				
		380V	1.2A	1.8A	8A	8A				
DC working current $I_e$	DC-21 OFF/ON resistive load	Number of contacts in series	1	2	3	4				
			24V	48V	70V	95V	10A	16A	25A	
		Voltage	48V	60V	95V	110V	6A	12A	22A	
			110V	220V	300V		0.56A	1A	5A	
			220V	440V			0.24A	0.4A	2.5A	
			440V				0.1A	0.27A	1.25A	

Order code							LW39-10	LW39-16A(B, C)	LW39-25	LW39-63
DC working current le	DC-13 Control electromagnetic load T=300ms	Number of contacts in series	1	2	3	4				
			Voltage	24V	48V	70V	95V	8A	12A	20A
		48V		60V	95V	110V	1.2A	2A	8A	
		110V		220V	300V		0.25A	0.4A	2.5A	
		220V		440V			0.12A	0.2A	1.25A	
		440V						0.1A	0.5A	
AC-3 Squirrel-cage asynchronous motor Startup, OFF during operation 3-phase 3-pole		380V					1.5KW	3kW	5.5kW	15KW
AC-4 Squirrel-cage asynchronous motor Startup, braking, reverse, inching 3-phase 3-pole							0.37KW	1.2kW	4kW	6KW
AC endurance							200,000 times	200,000 times	200,000 times	100,000 times
DC endurance							100,000 times	100,000 times	100,000 times	
Mechanical endurance (positioning type)							300,000 times	300,000 times	300,000 times	300,000 times

Technical data





## ◎ Meaning of order code

Note

Please provide the specific order code when the user orders LW39 series cam switches. There are three ways to confirm the specific order code:

- Select from the order codes of the common cam switches (please refer to P42-47). Please specify upon ordering if there is any further requirement;
- Please fill the specific order code according to the description of order code;
- Fill the blank junction schedule (P49) and we will help you confirm the order code.

No.	LW39-10 <input type="checkbox"/> <input type="checkbox"/> / <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
	1 2 3 4 5
1	Functional order code, to be selected according to the picture
2	Code of positioning feature (see P36-38)
3	Junction code (refer to P39)
4	Indicates the number of stages
5	Panel lettering code (see P40-41)

No.	LW39-16 <input type="checkbox"/> <input type="checkbox"/> - <input type="checkbox"/> - <input type="checkbox"/> / <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
	1 2 3 4 5 6 7
1	Functional order code, to be selected according to the picture
2	Code of positioning feature (see P36-38)
3	Junction code (refer to P39)
4	Indicates the number of stages
5	Voltage code of switch with light; omitted if without light “23” indicates 24V; “26” indicates 110V; “28” indicates DC220V; “31” indicates AC220V
6	Code of handle type; omitted in case of default handle; for other handles, please mark the handle code
7	Panel lettering code (see P40-41)

No.	LW39-25 <input type="checkbox"/> <input type="checkbox"/> - <input type="checkbox"/> - <input type="checkbox"/> / <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
	1 2 3 4 5 6 7
1	Functional order code, to be selected according to the picture
2	Code of positioning feature (see P36-38)
3	Junction code (refer to P39)
4	Indicates the number of stages
5	Voltage code of switch with light; omitted if without light “23” indicates 24V; “26” indicates 110V; “28” indicates DC220V; “31” indicates AC220V
6	Code of handle type (see P21); omitted in case of default handle; for other handles, please mark the handle code
7	Panel lettering code (see P40-41)

No.	LW39-63 <input type="checkbox"/> - <input type="checkbox"/> - <input type="checkbox"/> / <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/>
	1 2 3 4 5 6 7
1	Functional order code, to be selected according to the picture
2	Code of positioning feature (see P36-38)
3	Junction code (refer to P39)
4	Indicates the number of stages
5	Voltage code of switch with light; omitted if without light “23” indicates 24V; “26” indicates 110V; “28” indicates DC220V; “31” indicates AC220V
6	Code of handle type (see P24); omitted in case of default handle; for other handles, please mark the handle code
7	Panel lettering code (see P40-41)

Please provide the junction table for LW39-63/16 and the Sales Service Department will assist in determining the order code.

### Description of light box color code and voltage code:

“g” indicates green and “r” indicates red

“23” indicates AC/DC24V, “26” indicates AC/DC110V, “28” indicates DC220V, and “31” indicates AC220V.

Note: The color code has sequence requirement when the cam switch has light, with the panel pointing the front and indicated from left to right.

For example: “-gr23” indicates that the left is green light and the right is red light. “-rg 23” indicates that the left is red light and the right is green light.

Refer to the note on Page 24 for details of specific light box wiring diagram.

### Code of positioning feature

The code of positioning feature indicates the gear features of the cam switches, including two categories – positioning type and momentary type.

Positioning type

- The positioning type does not have momentary function. LW39 series cam switches can provide a variety of positioning angles such as 30°, 45°, 60° and 90°.
- Please pay attention to the applicable order codes of various positioning angles and fill the codes of positioning features of the ordered cam switches according to the positioning ring graphs and code examples.

Positioning angle	Applicable order code	Positioning ring graph	Code example
30°	LW39-10 LW39-16 LW39-25 LW39-63		“3KC” indicates 30° positioned, starting from position K and ending at position C clockwise. It has 5 positions - K, O, A, B, C.
45°	LW39-10 LW39-16 LW39-25 LW39-63		“4OB” indicates 45° positioned, starting from position O and ending at position B clockwise. It has 3 positions - O, A, B.
60°	LW39-10 LW39-16B LW39-16C LW39-63		“6KE” indicates 60° positioned, starting from position K and ending at position E clockwise. It has 4 positions - K, A, C, E.
90°	LW39-10 LW39-16 LW39-25 LW39-63		“9GC” indicates 90° positioned, starting from position G and ending at position C clockwise. It has 3 positions - G, A, C.

Meaning of order code



# LW39-10

## Subminiature Type Cam switch

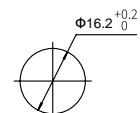
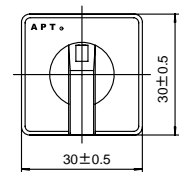
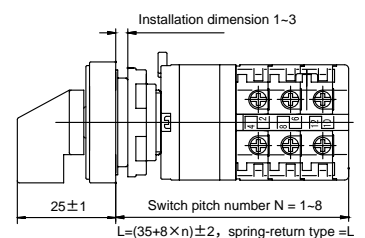
### Product feature

LW39-10 is widely applicable to the places with quite a small installation space. The single-hole installation method that is same as LA39 series pushbutton is used with the installation hole diameter of 16mm or 22mm. The international popular built-in wiring method is applied, safe and reliable. The operation head is designed with the sealing component and its protection class is IP65.

- Conventional thermal current 10A
- The maximum number of contact system

stages is 8

- The gold-plated silver alloy contact is used, which has greatly guaranteed the contact reliability under low voltage and low current.
- Operating angle: 30°, 45°, 60°, 90°, no more than 8 stages, the handles are not selectable.
- 60B angle is feasible, but not 90B angle.
- There is only standard handle for LW39-10 series.



# APT



# LW39-16 A/B/C

## Series Cam Switch

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### Product feature

- LW39-16 is widely applicable to the application situations such as measurement and control etc. , in electrical control panels and cabinets as well as mechanical and electrical control.
- Its conventional thermal current is 16A and can widely replace the domestic traditional order codes such as LW2 and LW5.
- There are three series for selection - A, B and C and the application demands of the users in various industries have been sufficiently considered.
- There are up to 100 non-common keys.

# LW39-16A/B/C

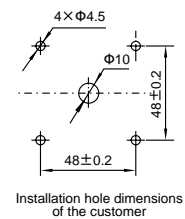
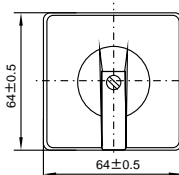
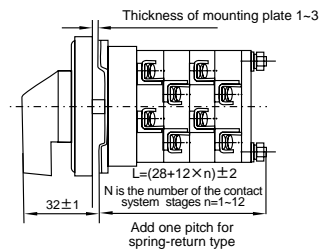


◎ **LW39-16A series**

Product feature

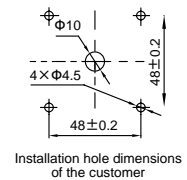
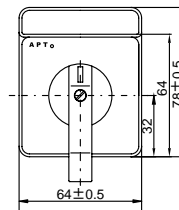
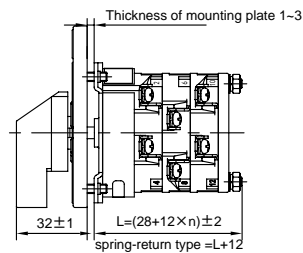
- This series is featured by aesthetic appearance, convenient operation, safety and reliability, with external wiring method for easy use.
- Conventional thermal current 16A
- Operating angle: 30° , 45° , 90°
- Max. number of the contact system stages is 12
- The protection class of IP65 can be customized for normal type

Note: if the working voltage is 24V and the working current is 100mA or below, please specify in the purchase order. We will have the contacts gold plated.



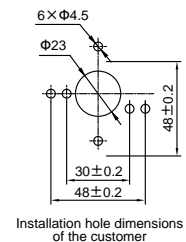
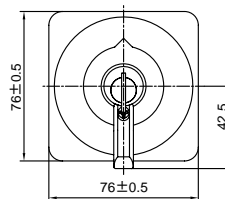
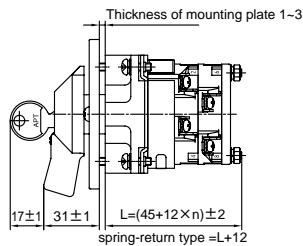
Normal type LW39-16A-□-□/□□□□

Positioning angle: 30° 45° 90° Max. 12 stages Applicable handles: all



The type with signage LW39-16A P-□-□/□□□□

Positioning angle: 30° 45° 90° Max. 12 stages Applicable handles: all

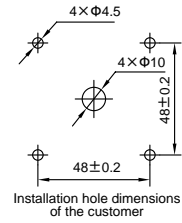
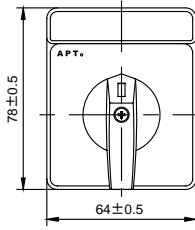
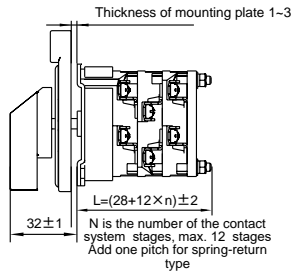


Handle with key type LW39-16A YS-□-□/□□□□

Positioning angle: 45° 90° Max. 12 stages Handles are not selectable

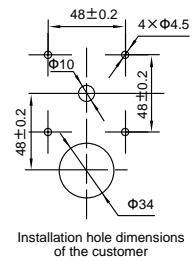
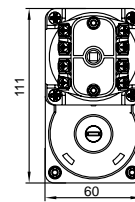
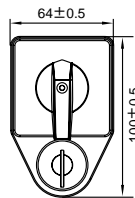
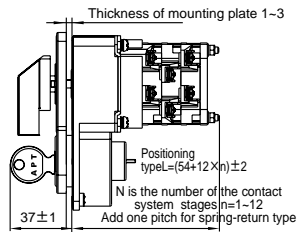
Note: ① Key operation method: it can be pulled out at every position and the handle will be locked after the key is pulled out. Please specify if there is any other requirement for operation. ② There are 54 non-common keys. ③ Operating angle is 45° and 90° , the pulling-out position can be designated.

LW39-16A



The type with signage LW39-16A P2-□-□/□□□

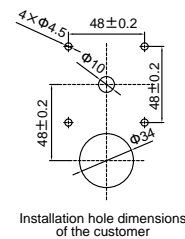
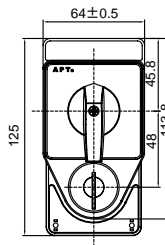
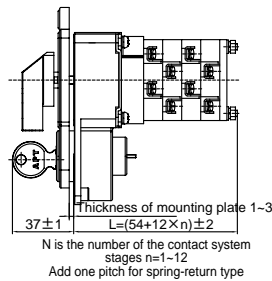
Positioning angle: 30° 45° 90° Max. 12 stages Applicable handles: all



Panel with key type LW39-16A YM-□-□/□□□

Positioning angle: 45° 90° Max. 12 stages Applicable handles: A, B, C, D

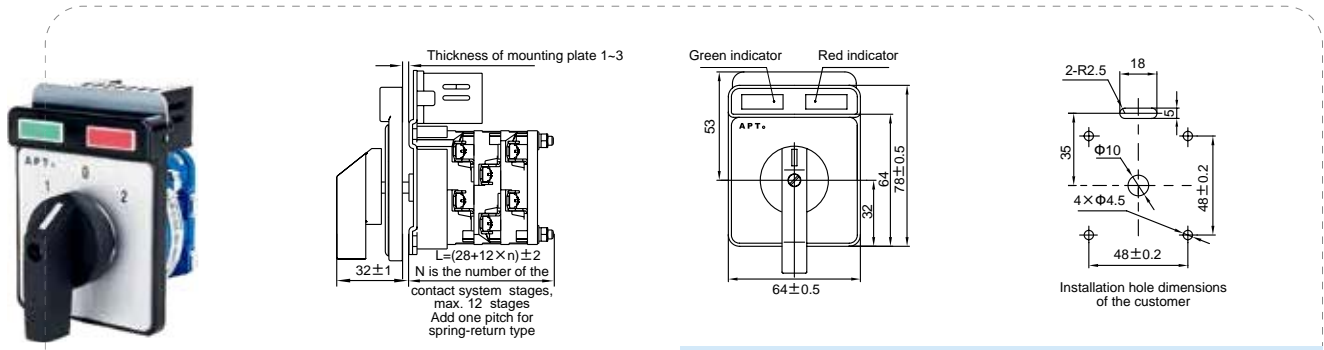
Note: ① Key operation method: it can be pulled out at every position and the handle will be locked after the key is pulled out. Please specify if there is any other requirement for operation. ② There are 100 non-common keys.



Signage frame with key type LW39-16A PYM-□-□/□□□

Positioning angle: 45° 90° Max. 12 stages Applicable handles: A, B, C, D

Note: ① Key operation method: it can be pulled out at every position and the handle will be locked after the key is pulled out. Please specify if there is any other requirement for operation. ② There are 100 non-common keys. ③ Handle operating angle is 45° and 90°, the pulling-out position can be designated.



Panel with light type LW39-16A DM-□-□/□□□□

Positioning angle: 30° 45° 90°    Max. 12 stages    Applicable handles: all

Note: the standard light box has 3 common negative-pole wiring terminals: X1(+), X0(-), X2(+). Please specify when placing the order if any special wiring method is required.

⊙ **Handles applicable to LW39-16A (defaulted as Ak handle if no requirement is specified)**

Code	Ak	Ar	Bk	Br	Ck	Cr	Dk	Dr
Handle								
Dimension								

Code	Ek	Er	Fk	Fr	Gk	Gr
Handle						
Dimension						

LW39-16A

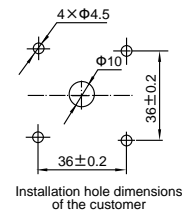
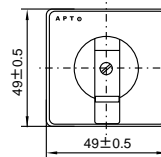
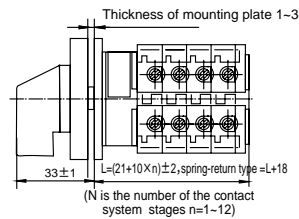


## ◎ LW39-16B series

Product feature

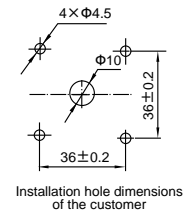
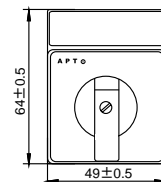
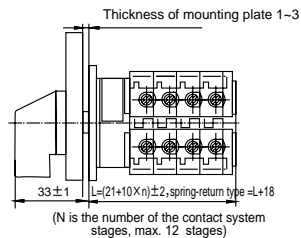
- This series is featured by miniature, aesthetic and novel appearance and reliable structure, with international popular built-in wiring method adopted, safe and reliable.
- Conventional thermal current 16A
- Operating angle: 30°, 45°, 60°, 90°
- Max. number of the contact system stages is 12. It is recommended not to exceed 8 stages (max. 8 stages for 30° positioning angle).
- The protection class of IP65 can be customized for normal type and the type with signage

Note: if the working voltage is 24V and the working current is 100mA or below, please specify in the purchase order. We will have the contacts gold plated.



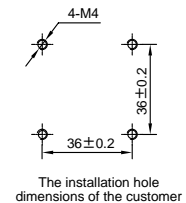
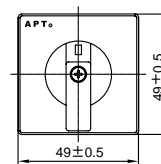
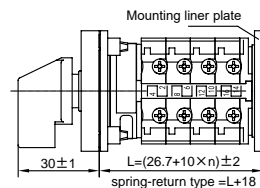
Normal type LW39-16B-□-□/□□□□

Positioning angle: 30° 45° 60° 90° Max. 12 stages, no more than 8 stages Applicable handles: all



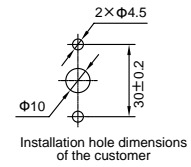
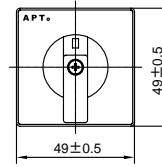
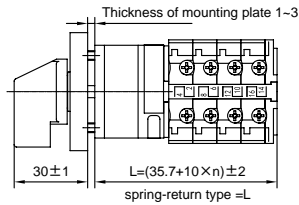
The type with signage LW39-16B P-□-□/□□□□

Positioning angle: 30° 45° 60° 90° Max. 12 stages, no more than 8 stages Applicable handles: all



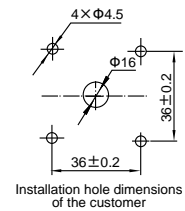
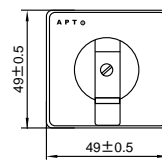
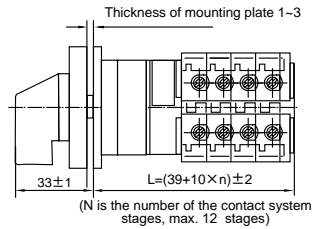
Base-mounted type LW39-16B M-□-□/□□□□

Positioning angle: 30° 45° 60° 90° Max. 12 stages, no more than 8 stages Applicable handles: all



Three-hole mounting type LW39-16B S-□-□/□□□

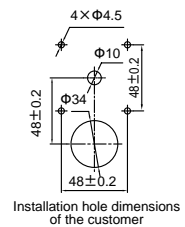
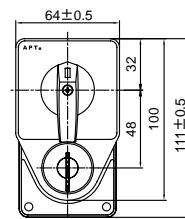
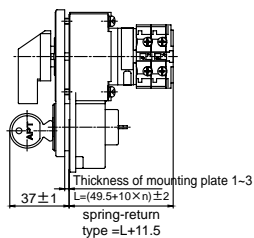
Positioning angle: 30° 45° 60° 90°    Max. 12 stages, no more than 8 stages    Applicable handles: all



Pull-out auto-resetting type LW39-16B ZL-□-□/□□□

定位特征: 9GC或B1    Max. 12 stages, no more than 8 stages    Applicable handles: all

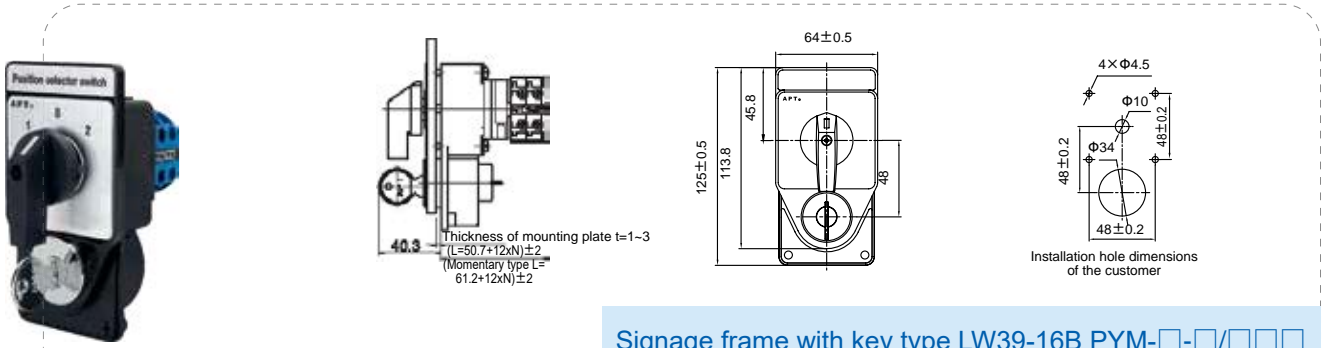
Note – applicable positioning feature: -90°, 0°, 90° (Code 9GC); momentary feature: -30° → 0° ← 30° (Code B1)



Panel with key type LW39-16B YM-□-□/□□□

Positioning angle: 45° 90°    Max. 12 stages, no more than 8 stages    Applicable handles: A、B、D

Note: ① Key operation method: it can be pulled out at every position and the handle will be locked after the key is pulled out. Please specify if there is any other requirement for operation. ② There are 100 non-common keys. ③ Handle operating angle is 45° and 90°, the pulling-out position can be designated.



Signage frame with key type LW39-16B PYM-□-□/□□□

Positioning angle: 45° 90°    Max. 12 stages, no more than 8 stages    Applicable handles: A、B、D

Note: ① Key operation method: it can be pulled out at every position and the handle will be locked after the key is pulled out. Please specify if there is any other requirement for operation. ② There are 100 non-common keys. ③ Handle operating angle is 45° and 90°, the pulling-out position can be designated.

### ◎ Handles applicable to LW39-16B (defaulted as Ak handle if no requirement is specified)

Code	Ak	Ar	Ak1	Bk	Ck	Dk
Handle						
Dimension						

Code	Gk	Gr	Hk	Lr	Nk	Nh
Handle						
Dimension						

LW39-16B

◎ **LW39-16C series**

Product feature

- This series adopts single-hole installation method, with the same contact system as series B. The international popular built-in wiring method is used, safe and reliable.
- Conventional thermal current 16A
- Operating angle: 30°, 45°, 60°, 90°
- Max. number of the contact system stages

Note: 1. if the working voltage is 24V and the working current is 100mA or below, please specify in the purchase order. We will have the contacts gold plated.  
2. The handle of LW39-16C series cannot be changed.

is 12. It is recommended not to exceed 8 stages (max. 8 stages for 30° positioning angle).

- The protection class of IP65 can be customized for normal type, handle with key type, without panel but with key type and the type with signage and key

Thickness of mounting plate 1-6

32.5±1 L=(46+10×n)±2 spring-return type=L+18

49±0.5

3.2<sup>+0.2</sup> 24+1.0 Φ22.3<sup>+0.4</sup>/<sub>0</sub>

Installation hole dimensions of the customer

**Normal type LW39-16C-□-□/□□**

Positioning angle: 30° 45° 60° 90° Max. 12 stages, no more than 8 stages Handles are not selectable

Thickness of mounting plate 1-6

37±1 L=(46+10×n)±2 spring-return type=L+18

49±0.5

3.2<sup>+0.2</sup> 24+1.0 Φ22.3<sup>+0.4</sup>/<sub>0</sub>

Installation hole dimensions of the customer

**Handle with key type LW39-16C YS-□-□/□□**

Positioning angle: 30° 45° 60° 90° Max. 12 stages, no more than 8 stages No handle

Note: ① Key operation method: it can be pulled out at every position and the handle will be locked after the key is pulled out. Please specify if there is any other requirement for operation. ② There are 100 non-common keys.

Thickness of mounting plate 1-5

25.5±1 L=(44+10×n)±2 spring-return type=L+18

45.6±0.3 45.9±0.3

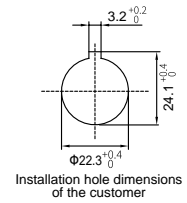
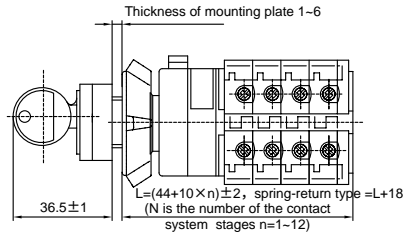
Φ22.3<sup>+0.4</sup>/<sub>0</sub>

Installation hole dimensions of the customer

**The type without panel LW39-16C U-□-□/□□**

Positioning angle: 30° 45° 60° 90° Max. 12 stages, no more than 8 stages Handles are not selectable

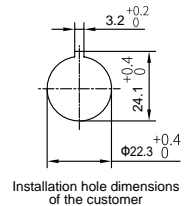
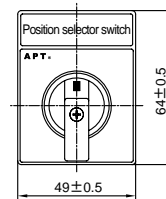
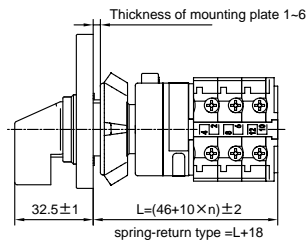
LW39-16C



Without panel but with key type LW39-16CUYS-□-□/□□□

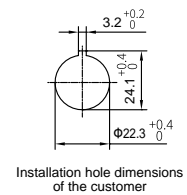
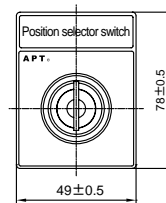
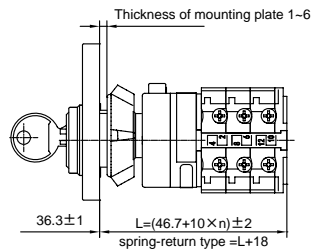
Positioning angle: 30° 45° 60° 90°

Note: ① Key operation method: it can be pulled out at every position and the handle will be locked after the key is pulled out. Please specify if there is any other requirement for operation. ② There are 100 non-common keys.



The type with signage LW39-16CP-□-□/□□□

Positioning angle: 30° 45° 60° 90° Max. 12 stages, no more than 8 stages Handles are not selectable



The type with signage and key LW39-16CPYS-□-□/□□□

Positioning angle: 30° 45° 60° 90° Max. 12 stages, no more than 8 stages Handles are not selectable

Note: ① Key operation method: it can be pulled out at every position and the handle will be locked after the key is pulled out. Please specify if there is any other requirement for operation. ② There are 100 non-common keys.

# APT



# LW39-25

## Cam switch with Powerful DC Function

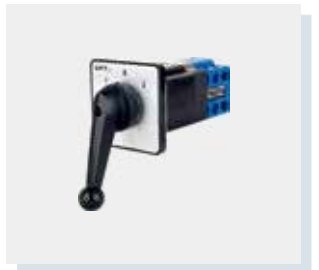
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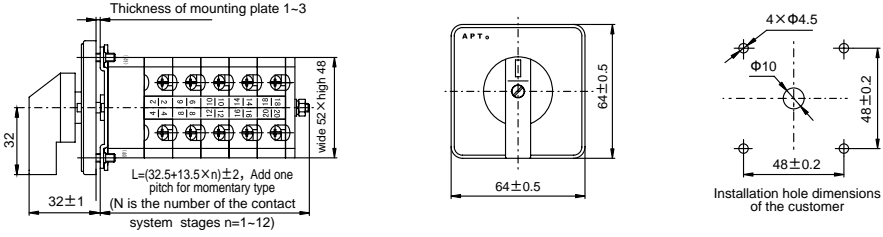
### Product feature

It is the latest product that has been completely independently developed with multiple design patents. LW39-25 is applicable to the applications with a bigger capacity, especially to DC application environment. The international popular built-in wiring method is used, safe and reliable. It has applied the rolling bearings inside with gentle action and hand feeling as well as long mechanical endurance.

- Conventional thermal current 25A, the DC breaking capacity reaches 5A/110V (DC-21)
- Operating angle: 30°, 45°, 90°
- It is extremely rich in the functional features and the maximum number of contact system stages is 12.
- The protection class of IP65 can be customized for normal type and the type with signage
- The gold-plated silver alloy contacts are used, which have greatly guaranteed the contact reliability under low voltage and low current.

# LW39-25



Thickness of mounting plate 1-3

wide 52 X high 48

$L=(32.5+13.5 \times n) \pm 2$ , Add one pitch for momentary type  
(N is the number of the contact system stages n=1-12)

64±0.5

4 X Φ4.5

Φ10


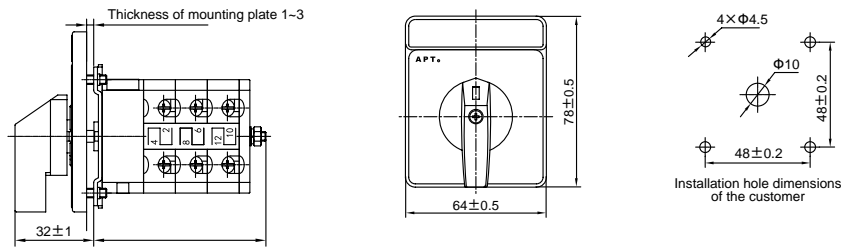
48±0.2

48±0.2

Installation hole dimensions of the customer

Normal type LW39-25-□-□/□□□

Positioning angle: 30° 45° 90°    Max. 12 stages    Applicable handles: all

Thickness of mounting plate 1-3

32±1

64±0.5

78±0.5

4 X Φ4.5

Φ10


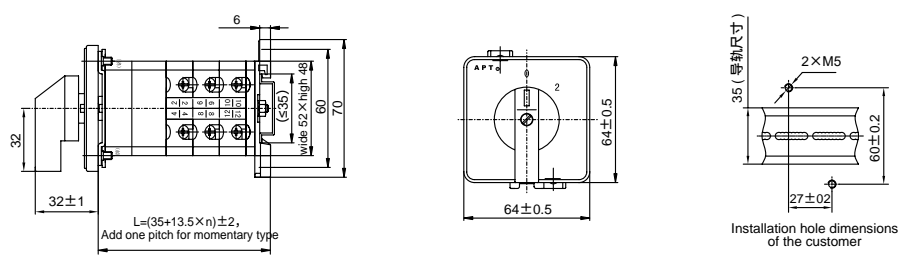
48±0.2

48±0.2

Installation hole dimensions of the customer

The type with signage LW39-25 P-□-□/□□□

Positioning angle: 30° 45° 90°    Max. 12 stages    Applicable handles: all

32±1

6

60

70

wide 52 X high 48

$L=(35+13.5 \times n) \pm 2$ , Add one pitch for momentary type

64±0.5

64±0.5

2 X M5

60±0.2

27±0.2

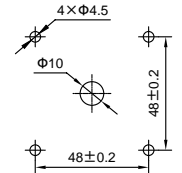
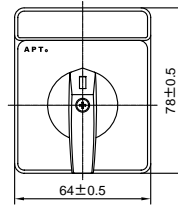
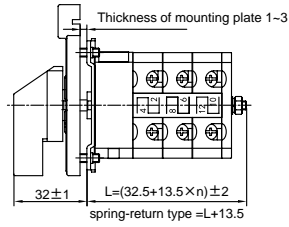
Installation hole dimensions of the customer

Base-mounted type LW39-25 M-□-□/□□□

Positioning angle: 30° 45° 90°    Max. 8 stages    Applicable handles: all

LW39-25





Installation hole dimensions of the customer

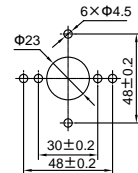
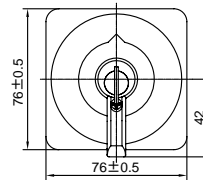
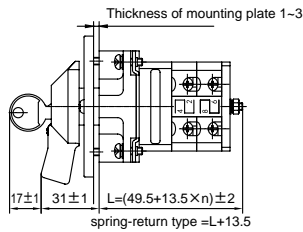
The type with signage LW39-25 P2-□-□/□□□

Positioning angle: 30° 45° 90°

Max. 12 stages

Applicable handles: all

Defaulted as AK handle



Installation hole dimensions of the customer

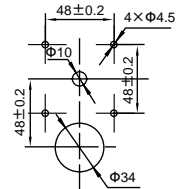
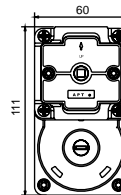
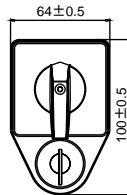
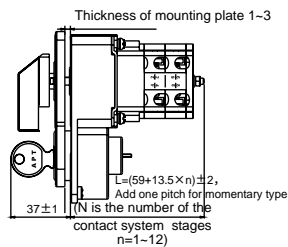
Handle with key type LW39-25 YS-□-□/□□□

Positioning angle: 45° 90°

Max. 12 stages

Handles are not selectable

Note: ① Key operation method: it can be pulled out at every position and the handle will be locked after the key is pulled out. Please specify if there is any other requirement for operation. ② There are 54 non-common keys. ③ Operating angle is 45° and 90°, the pulling-out position can be designated.



Installation hole dimensions of the customer

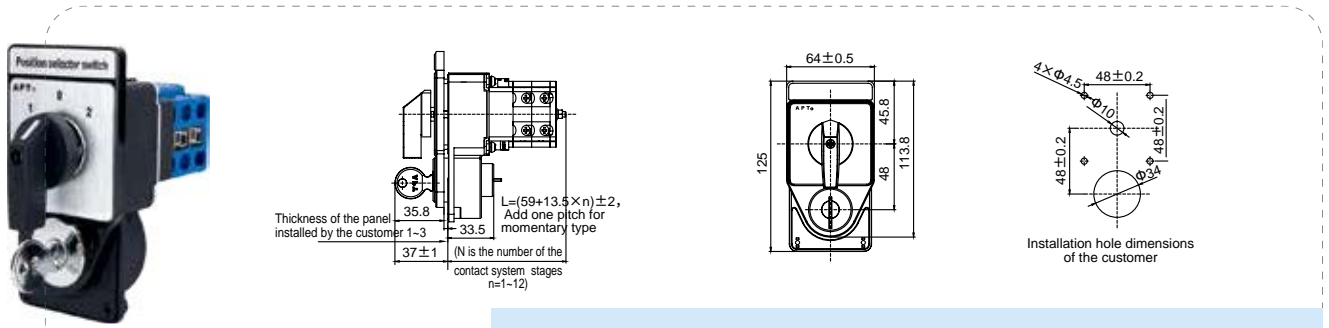
Panel with key type LW39-25 YM-□-□/□□□

Positioning angle: 45° 90°

Max. 12 stages

Applicable handles: A、B、C、D

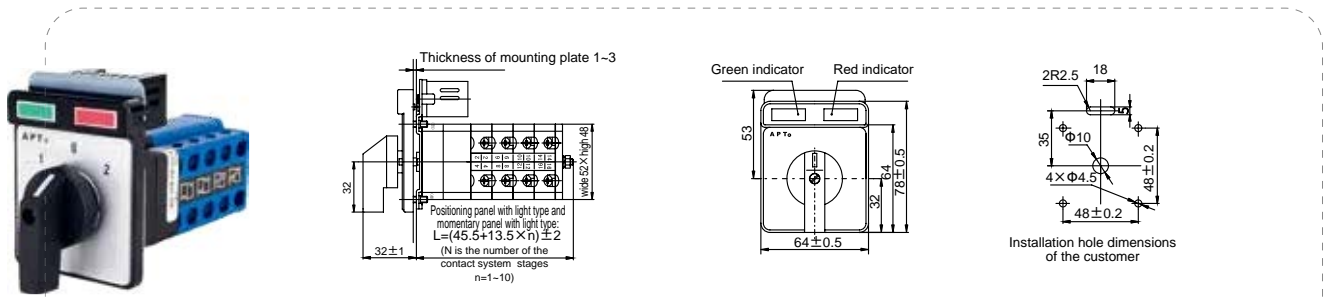
Note: ① Key operation method: it can be pulled out at every position and the handle will be locked after the key is pulled out. Please specify if there is any other requirement for operation. ② There are 54 non-common keys. ③ Operating angle is 45° and 90°, the pulling-out position can be designated.



Signage frame with key type LW39-25 PYM-□-□/□□□□

Positioning angle: 45° 90°    Max. 12 stages    Applicable handles: A、B、C、D

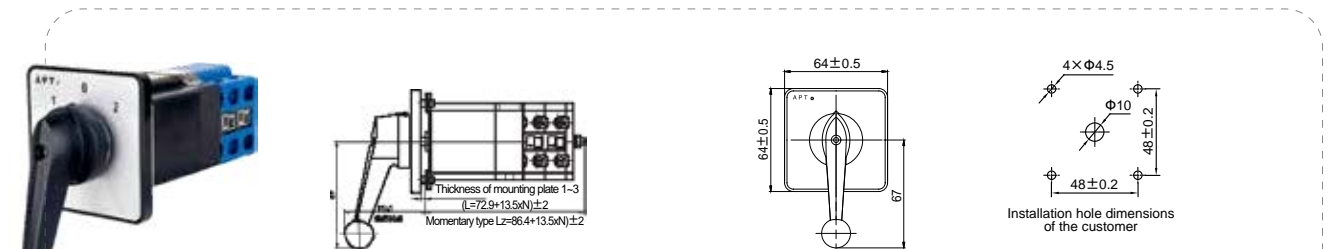
Note: ① Key operation method: it can be pulled out at every position and the handle will be locked after the key is pulled out. Please specify if there is any other requirement for operation. ② There are 54 non-common keys. ③ Operating angle is 45° and 90°, the pulling-out position can be designated.



Panel with light type LW39-25 DM-□-□/□□□□

Positioning angle: 30 °45° 90°    Max. 11 stages    Applicable handles: all

Note: the standard light box has 3 common negative-pole wiring terminals: X1(+), X0(-), X2(+). Please specify when placing the order if any special wiring method is required.



Note: the values in the bracket in the figure indicate the head dimension of the switch with signage

Pull-out (push-in) operation type LW39-25 LC (TC) -□-□/□□□□

Positioning angle: 45° 90°    Applicable handles: E、F

LW39-25

Note: the values in the bracket in the figure indicate the head dimension of the switch with signage

Pull-out (push-in) operation type LW39-25 LF (TF) -□-□/□□□

Positioning angle: 45° 90° Applicable handles: E、F

## ◎ Handles applicable to LW39-25 (defaulted as Ak handle if no requirement is specified)

Code	Ak	Ar	Bk	Br	Ck	Cr	Dk	Dr
Handle								
Dimension								
Code	Ek	Er	Fk	Fr	Gk	Gr		
Handle								
Dimension								

Note: For additional functions and order codes, please refer to Page 15 for details.

LW39-25

# APT



## LW39-63

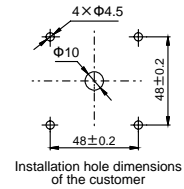
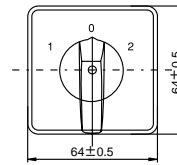
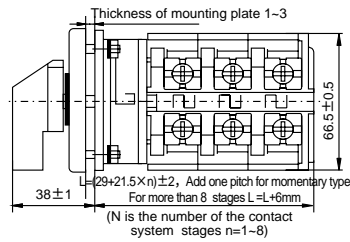
### Cam switch with Bigger Capacity

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#### Product feature

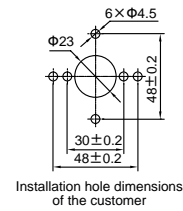
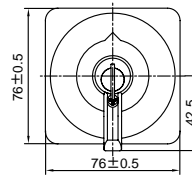
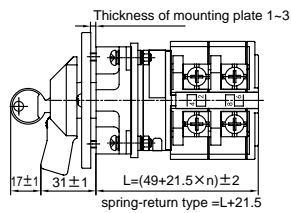
LW39-63 is applicable to the connection, breaking and changeover of the circuits with bigger capacity, the startup, acceleration, control and stop of single motor, the changeover of electrical control of the large capacity control circuit, as well as the remote control of power distribution equipment etc. The an external wiring method is easy for use.

- Conventional thermal current 63A
- Operating angle: 30° , 45° , 60° , 90°
- The maximum number of contact system stages is 8
- A variety of special product order codes are provided pertinent to the operation fields of the motors



Normal type LW39-63-□-□/□□□□

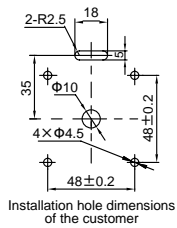
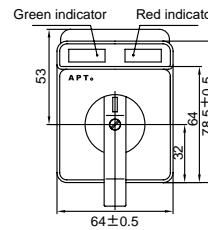
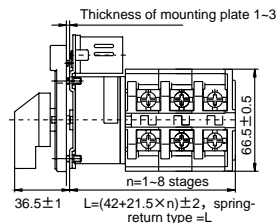
Positioning angle: 30° 45° 60° 90° Max. 12 stages Iron pull rod if more than 8 stages



Handle with key type LW39-63 YS-□-□/□□

Positioning angle: 45° 90° Max. 8 stages Handles are not selectable

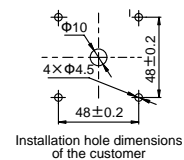
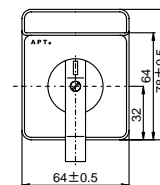
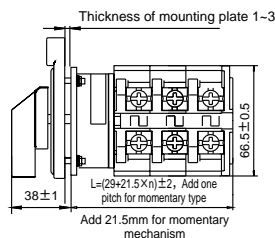
Note: ① Key operation method: it can be pulled out at every position and the handle will be locked after the key is pulled out. Please specify if there is any other requirement for operation. ② There are 54 non-common keys. ③ Operating angle is 45° and 90°, the pulling-out position can be designated.



Panel with light type LW39-63 DM-□-□/□□□□

Positioning angle: 30° 45° 60° 90° Max. 8 stages Applicable handles: all

Note: the standard lightbox has 3 common negative-pole wiring terminals: X1(+), X0(-), X2(+). Please specify when placing the order if any special wiring method is required.



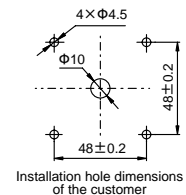
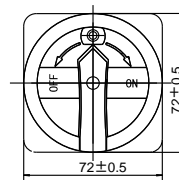
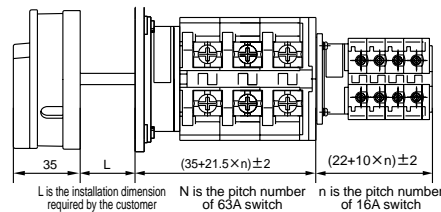
The type with signage LW39-63 P-□-□/□□□□

Positioning angle: 30° 45° 60° 90° Max. 8 stages Applicable handles: all

◎ **LW39-63/16**

Product feature

- LW39-63/16 is a special series with master switch and auxiliary switch, applicable for connecting and disconnecting circuits in the power distribution line or electromechanical control line, meanwhile delivering signals to control circuits. The master switch has the features of LW39-63 series cam switch and the auxiliary switch has the features of LW39-16B series cam switch. They can be operated integrally with the same axle.



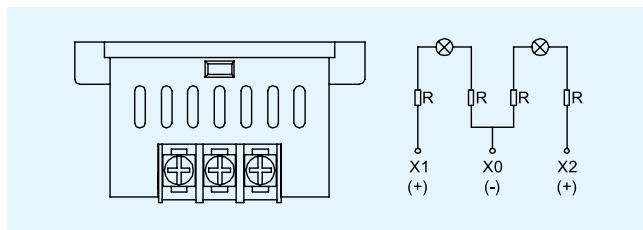
Please provide the junction table for LW39-63/16 and the Sales Service Department will assist in determining the order code.

◎ **LW39-63 Applicable handles: (defaulted as Ak handle if no requirement is specified)**

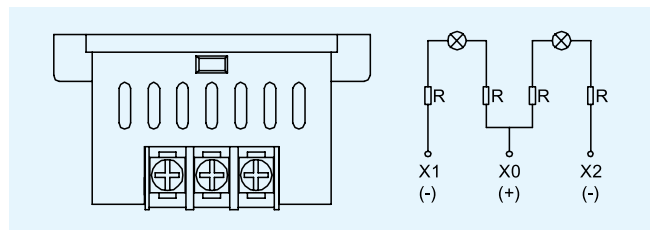
Code	Ak	Gk	Gr
Handle Dimension			

◎ **Schematic diagram of light box wiring for illuminated cam switch**

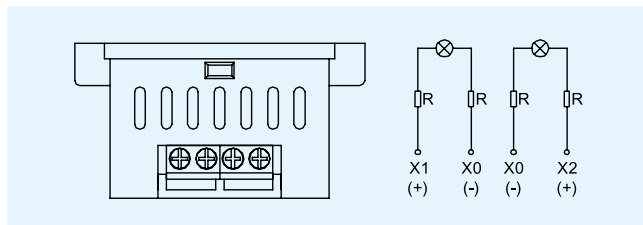
3 wiring terminals (the common terminal is the negative pole)



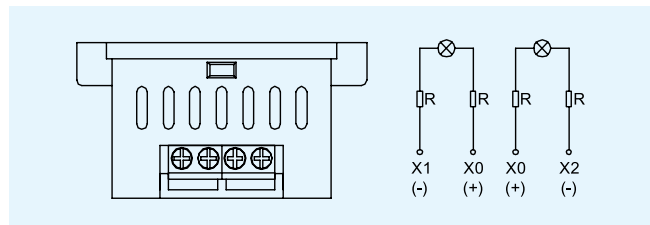
3 wiring terminals (the common terminal is the positive pole)



4 wiring terminals (no common terminal, two wiring terminals in the middle are the negative poles)



4 wiring terminals (no common terminal, two wiring terminals in the middle are the positive poles)



Note: ① X0 is defaulted as the negative pole for standard product. Please specify in the purchase order if positive pole is required. ② When dismantling and installing the illuminated mounting plate, it shall be pulled and inserted gently to avoid damage to the illuminated mounting plate and socket.

LW39-63

# APT



# LW39-16N

## Series Cam Switch

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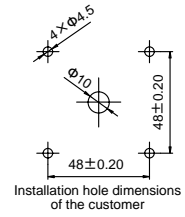
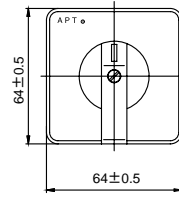
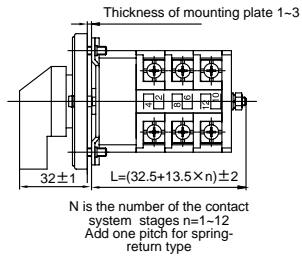
### Product feature

- LW39-16N series cam switch is a series of products that are dedicatedly researched and developed by our company to keep and ensure its leadership in the industry. It is featured by various and beautiful types, rich specifications and series as well as powerful junction functions. The new series of products with the specially miniaturized design have the miniature, aesthetic and novel profile and reliable structure. The built-in wiring method is adopted for safer and more reliable wiring; the contact system has adopted the rolling bearing to have the gentle action and hand feeling and also effectively improve its mechanical endurance; it has multiple features and functions for option, which can meet most demands on the applications in electrical control panels and cabinets as well as mechanical and electrical control.
- LW39-16N series cam switch applies to the circuits of AC50~60Hz, voltage of 690V and below as well as DC440V and below. It can be used for the changeover of electrical control, remote control of power distribution equipment, changeover of electrical measuring instrument, control of servo motor' s micro-motors as well as the direct control of small-capacity squirrel-cage motors etc.

# LW39-16N





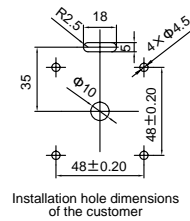
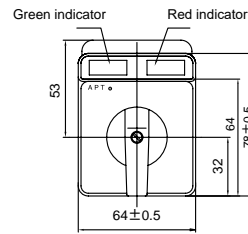
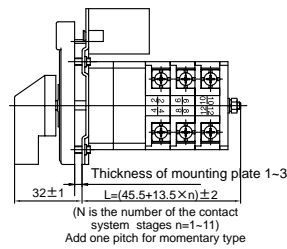


## Normal type LW39-16N-□-□...□/□-□-□-□...□-□

Positioning angle: 30° 45° 90°

Max. number of stages: positioned with 12 stages, reset with 11 stages

Applicable handles: all



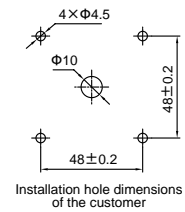
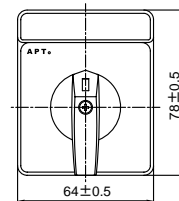
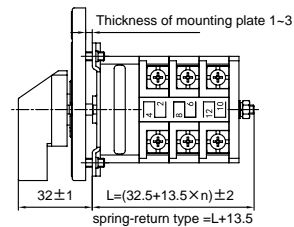
## Panel with light type LW39-16ND-□-□...□/□-□-□-□...□-□

Positioning angle: 30° 45° 90°

Max. number of stages: positioned with 11 stages, reset with 10 stages

Applicable handles: all

Note: the standard lightbox has 3 common negative-pole wiring terminals: X1(+), X0(-), X(+). Please specify when placing the order if any special wiring method is required.



## Signage type LW39-16NP-□-□...□/□-□-□-□...□-□

Positioning angle: 30° 45° 90°

Max. number of stages: positioned with 12 stages, reset with 11 stages

Applicable handles: all

Thickness of mounting plate 1-3  
 $L=(32.5+13.5 \times n) \pm 2$   
 spring-return type  $=L+13.5$

78±0.5  
 64±0.5

4xΦ4.5  
 Φ10  
 48±0.2  
 48±0.2

Installation hole dimensions of the customer

**Signage type LW39-16NP2-□-□...□/□-□-□-□...□-□**

Positioning angle: 30° 45° 90°    Max. number of stages: positioned with 12 stages, reset with 11 stages    Applicable handles: all

Thickness of mounting plate 1-3  
 $L=(48.5+13.5 \times n) \pm 2$   
 (N is the number of the contact system stages n=1-11)  
 Add one pitch for momentary type

76±0.5  
 49  
 72±0.5

Φ10  
 4xΦ4.5  
 36±0.20  
 36±0.20

Installation hole dimensions of the customer

**Large panel with signage type LW39-16NP3-□-□...□/□-□-□-□...□-□**

Positioning angle: 30° 45° 90°    Max. number of stages: positioned with 11 stages, reset with 10 stages    Applicable handles: not selectable

Thickness of mounting plate 1-3  
 $L=(50.5+13.5 \times n) \pm 2$   
 N is the number of the contact system stages n=1-12  
 Add one pitch for spring-return type

76±0.5  
 76±0.5  
 42.5

6xΦ4.5  
 Φ22  
 48±0.20  
 30±0.20  
 48±0.20

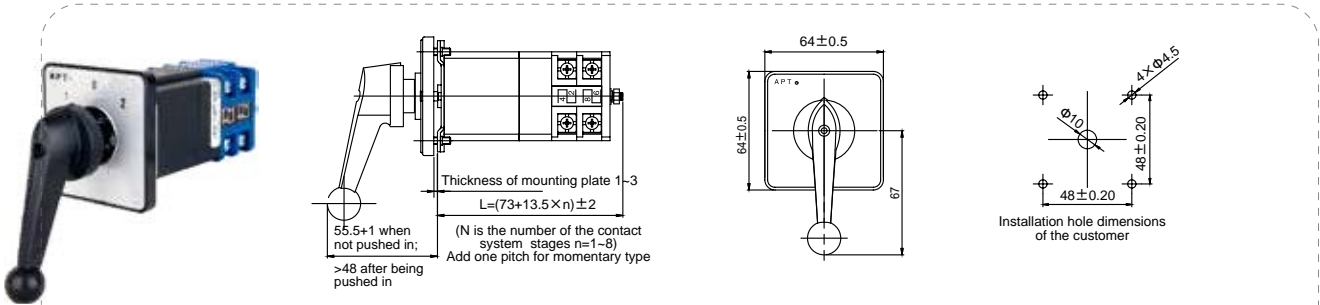
Installation hole dimensions of the customer

**Metal handle with key type LW39-16NYS-□-□...□/□-□-□-□...□-□**

Positioning angle: 45° 90°    Max. number of stages: positioned with 12 stages, reset with 11 stages    Applicable handles: not selectable

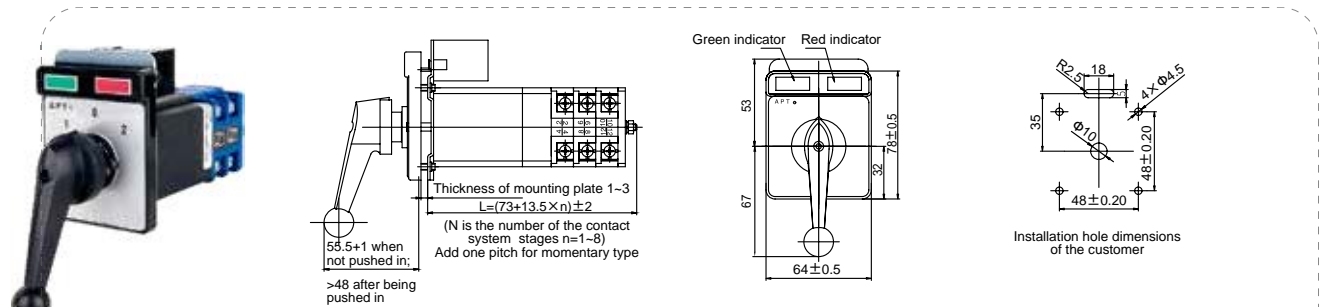
Note: ① There are 54 non-common keys. ② Operating angle is 45° and 90°, the pulling-out position can be designated.

LW39-16N



Normal push-in (pull-out) type LW39-16NTF(LF) -□-□...□/□-□-□-□...□-□

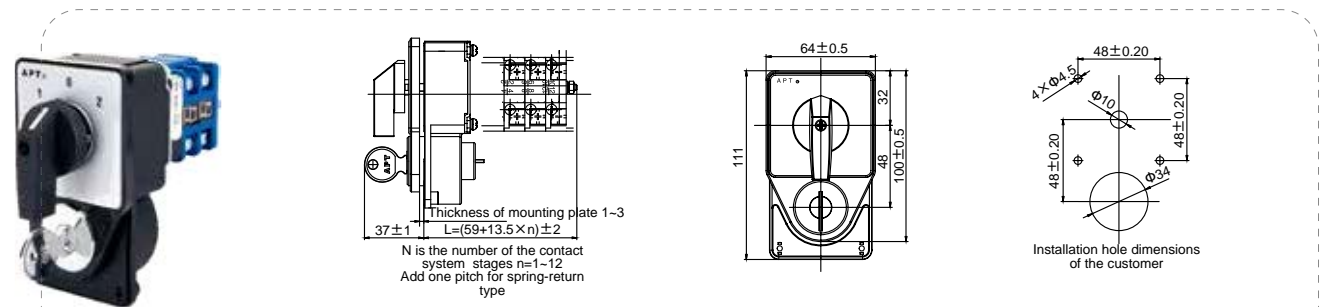
Positioning angle: 45° 90°    Max. number of stages: positioned with 8 stages, reset with 7 stages    Applicable handles: E、F



Illuminated push-in (pull-out) type LW39-16NTFD(LFD) -□-□...□/□-□-□-□...□-□

Positioning angle: 45° 90°    Max. number of stages: positioned with 8 stages, reset with 7 stages    Applicable handles: E、F


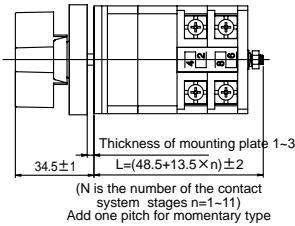
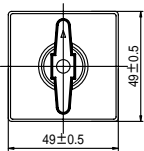
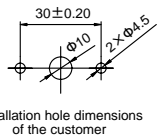
Note: the standard lightbox has 3 common negative-pole wiring terminals: X1(+), X0(-), X(+). Please specify when placing the order if any special wiring method is required.



Panel key type LW39-16NYM-□-□...□/□-□-□-□...□-□


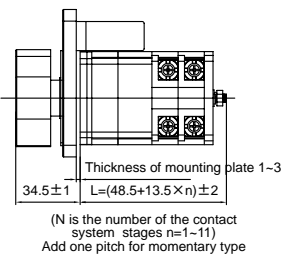
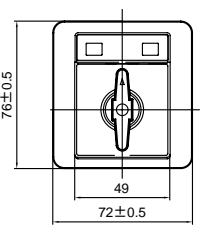
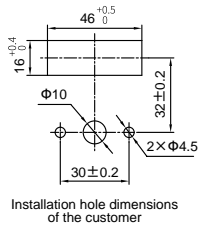
Positioning angle: 45° 90°    Max. number of stages: positioned with 12 stages, reset with 11 stages    Applicable handles: A、B、C、D

Note: ① Key operation method: it can be pulled out at every position and the handle will be locked after the key is pulled out. Please specify if there is any other requirement for operation. ② There are 100 non-common keys. ③ Handle Operating angle is 45° and 90° , the pulling-out position can be designated.

**Three-hole mounting type LW39-16NS-□-□...□/□-□-□-□...□-□**


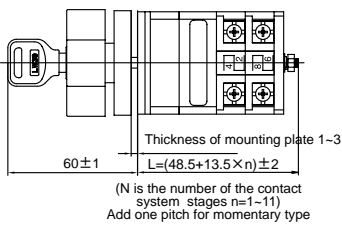
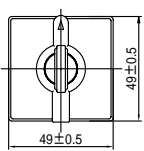
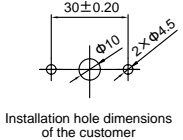
Positioning angle: 30° 45° 90° Max. number of stages: positioned with 11 stages, reset with 10 stages Applicable handles: not selectable

**Three-hole installation type LW39-16NSD-□-□...□/□-□-□-□...□-□**

Positioning angle: 45° 90° Max. number of stages: positioned with 11 stages, reset with 10 stages Applicable handles: not selectable

Note: the standard light box has 6 common positive-pole wiring terminals: G-, C+, (blank), (blank), C+, R-. Please specify when placing the order if any special wiring method is required.

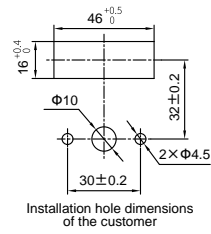
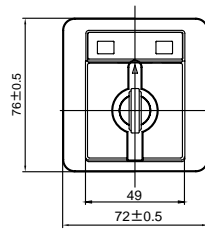
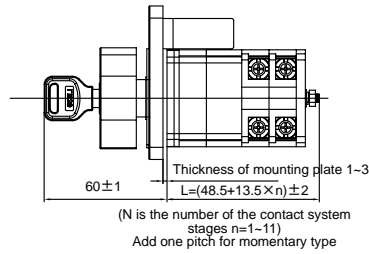





**Three-hole installation with light type LW39-16NSY-□-□...□/□-□-□-□...□-□**

Positioning angle: 45° 90° Max. number of stages: positioned with 11 stages, reset with 10 stages Applicable handles: not selectable

Note: ① Key operation method: the handle will be locked after the key is pulled out. ② There are 50 non-common keys. ③ The key can be pulled out at only one gear among -45°, 0° and 45°.

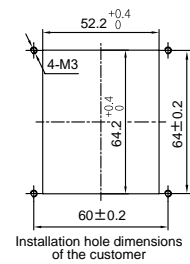
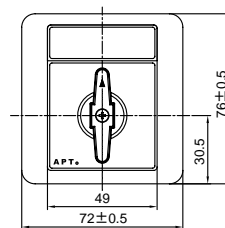
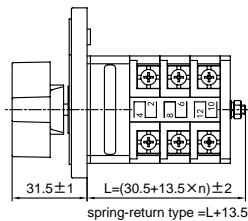
LW39-16N



### Three-hole installation key with light type LW39-16NSDY-□-□...□/□-□-□-□...□-□

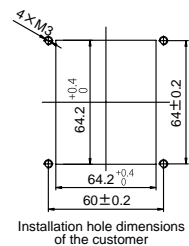
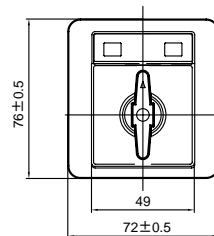
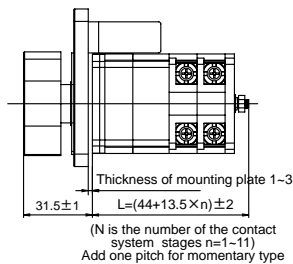
Positioning angle: 45° 90° Max. number of stages: positioned with 11 stages, reset with 10 stages Applicable handles: not selectable

- Note: ① The standard light box has 6 common positive-pole wiring terminals: G-, C+, (blank), (blank), C+, R-. Please specify when placing the order if any special wiring method is required.  
 ② Key operation method: the handle will be locked after the key is pulled out. There are 50 non-common keys.  
 ③ The key can be pulled out at only one gear among -45°, 0° and 45°.



### Large panel installation type LW39-16NX-□-□...□/□-□-□-□...□-□

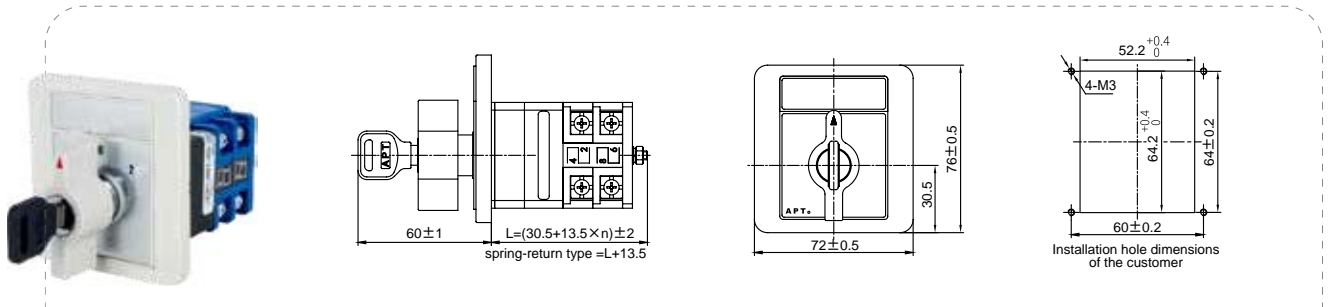
Positioning angle: 45° 90° Max. number of stages: positioned with 12 stages, reset with 11 stages Applicable handles: not selectable



### Large panel installation with light type LW39-16NXD-□-□...□/□-□-□-□...□-□

Positioning angle: 45° 90° Max. number of stages: positioned with 11 stages, reset with 10 stages Applicable handles: not selectable

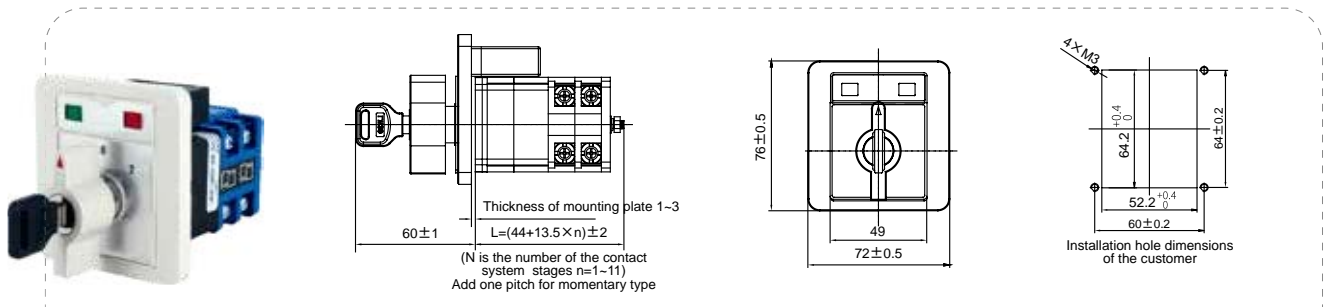
- Note: the standard light box has 6 common positive-pole wiring terminals: G-, C+, (blank), (blank), C+, R-. Please specify when placing the order if any special wiring method is required.



Large panel installation key type LW39-16NXY-□-□...□/□-□-□-□...□-□

Positioning angle: 45° 90° Max. number of stages: positioned with 12 stages, reset with 11 stages Applicable handles: not selectable

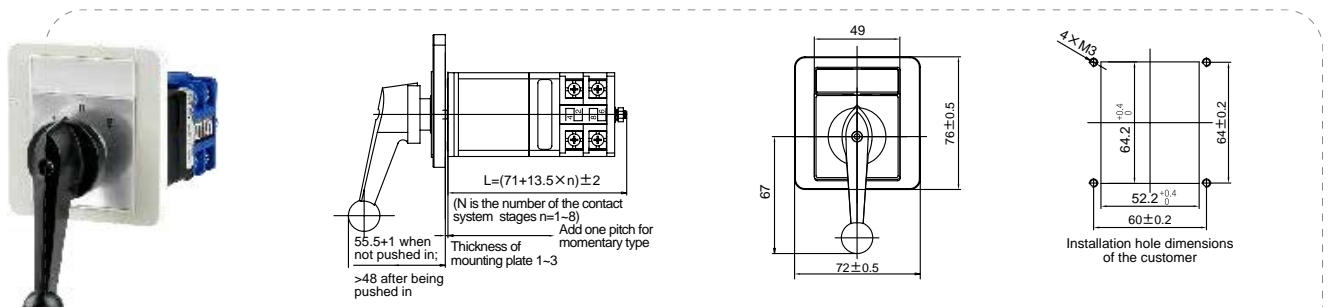
Note: ① Key operation method: the handle will be locked after the key is pulled out. ② There are 50 non-common keys. ③ The key can be pulled out at only one gear among -45°, 0° and 45°.



Large panel installation key with light type LW39-16NXDY-□-□...□/□-□-□-□...□-□

Positioning angle: 45° 90° Max. number of stages: positioned with 11 stages, reset with 10 stages Applicable handles: not selectable

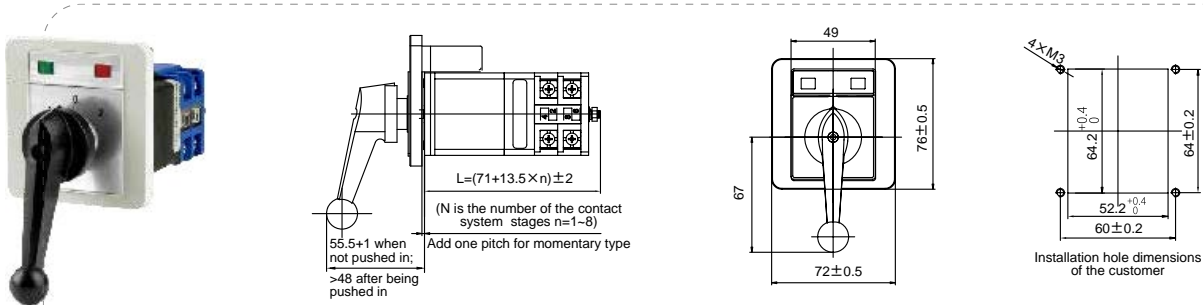
Note: ① The standard light box has 6 common positive-pole wiring terminals: G-, C+, (blank), (blank), C+, R-. Please specify when placing the order if any special wiring method is required. ② Key operation method: the handle will be locked after the key is pulled out. There are 50 non-common keys. ③ The key can be pulled out at only one gear among -45°, 0° and 45°.



Large panel installation push-in (pull-out) type LW39-16NXTF(LF)-□-□...□/□-□-□-□...□-□

Positioning angle: 45° 90° Max. number of stages: positioned with 8 stages, reset with 7 stages Applicable handles: E, F

LW39-16N



Large panel installation push-in (pull-out) with light type LW39-16NXTFD(LFD)-□-□···□/□-□-□-□···□-□

Positioning angle: 45° 90° Max. number of stages: positioned with 8 stages, reset with 7 stages Applicable handles: E、F

Note: the standard light box has 6 common positive-pole wiring terminals: G-, C+, (blank), (blank), C+, R-. Please specify when placing the order if any special wiring method is required.

## ◎ Handles applicable to LW39-16N (defaulted as Ak handle if no requirement is specified)

Code	Ak	Ar	Bk	Br	Ck	Cr	Dk	Dr
Handle								
Dimension								

Code	Ek	Er	Fk	Fr	Gr
Handle					
Dimension					

## Code description

Spring return  
type code table

- One or more gears of spring return type have spring return function. LW39 series cam switches have provided tens of momentary ways for option to the users and can satisfy their special demands.
- The following table lists the commonly used momentary functions and the codes of their positioning features. Please pay attention to their applicable order codes.

Note: “Y” indicates that the code can be produced “Y\*” indicates that the code can be produced, but no more than 3 stages Blank indicates that the code cannot be produced.  
If there is any further request, please consult the Technical Support Department.

Momentary code	Momentary angle	LW39-10	LW39-16A	LW39-16B	LW39-16C	LW39-16N	LW39-25	LW39-63
A1	0° ← 30°	Y*		Y*	Y*			
A2	0° ← 45°		Y	Y	Y	Y	Y	Y
A3	-45° ← 45°			Y	Y			
A4	-45° ← 0°		Y	Y	Y	Y	Y	Y
A5	0° ← 90°			Y				
B1	-30° → 0° ← 30°	Y*		Y*	Y*			
B2	-45° → 0° ← 45°		Y	Y	Y	Y	Y	Y
B3	<u>-60° → -30° → 0° ← 30° ← 60°</u>		Y	Y*	Y*		Y	
B4	-90° -45° 0° 45° ← 90°		Y	Y*	Y*	Y	Y	Y
B5	-90° -45° 0° ← 45°		Y	Y	Y	Y	Y	Y
B6	<u>-90° → -60° → -30° → 0° ← 30° ← 60° ← 90°</u>			Y*	Y*			
B7	-90° → -45° 0° 45° 90° 135°			Y	Y			
B8	-90° → -45° 0° 45° 90°			Y	Y			
B9	-45° → 0° 45° 90° 135°			Y	Y			
B10	-45° → 0° 45° 90° 135° 180°			Y	Y			
B11	-45° → 0° ← 45° ← 90°			Y	Y			
BA	<u>-90° → -45° → 0° ← 45° ← 90°</u>		Y	Y	Y	Y	Y	Y
BA1	-45° → 0° → 45° ← 90° ← 135°			Y	Y			
BC	-45° → 0° 0° ← 45°		Y	Y	Y	Y	Y	Y

Feature code



Momentary code	Momentary angle	LW39-10	LW39-16A	LW39-16B	LW39-16C	LW39-16N	LW39-25	LW39-63
Z1	-135° → -90° 0° ← 45°		Y	Y	Y	Y	Y	Y
Z2	-45° → 0° 90° ← 135°		Y	Y	Y	Y	Y	Y
ZA	-90° → -45° 0° 45° ← 90°		Y	Y	Y	Y	Y	Y
ZB	-90° → -45° 0° 45°		Y	Y	Y	Y	Y	Y
ZC	-45° 0° 45° ← 90°		Y	Y	Y	Y	Y	Y
ZD	-90° 0° ← 45°		Y	Y	Y	Y	Y	Y
ZE	0° 45° ← 90°		Y	Y	Y	Y	Y	Y
ZF	-45° 0° ← 45°		Y	Y	Y	Y	Y	Y
ZG	-45° → 0° 45°		Y	Y	Y	Y	Y	Y
ZK	-45° → 0° 45° 90°		Y	Y	Y	Y	Y	Y
ZK1	-45° → 0° 45° 90° 135°		Y	Y	Y	Y	Y	Y
W	-120° → -90° 0° ← 30°	Y*		Y*	Y*			
WA	-90° 0° ← 30°	Y*		Y*	Y*			
WB	-30° → 0° 90°	Y*		Y*	Y*			
WC	0° 90° ← 120°	Y*		Y*	Y*			
WR	-120° → -90° 0° 90° ← 120°	Y*		Y*	Y*			
WS	-90° 0° 90° ← 120°	Y*		Y*	Y*			
WT	-120° → -90° 0° 90°	Y*		Y*	Y*			
WU	-90° -30° → 0° ← 30°			Y*	Y*			
WV	-90° 0° ← 30° 90°			Y*	Y*			
WW	-90° -30° → 0° ← 30° 90°			Y*	Y*			

## ◎ Junction code

The junction codes in the column of the order code can be written with the following two methods:

- Check and write according to our “Junction Code Table” ;
- We can write for your, but you shall provide the junction table and wiring diagrams or fill the blank junction schedule (P49).

For example:

Requirements: 3 gears; the 1st gear has 4 pairs of contacts connected, the 2nd gear has 2 pairs of contacts connected and the 3rd gear has 4 pairs of contacts connected. According to the “Junction Code Table” ,

The junction code is 424/3

Junction code	424/3		
Operation gear	1	2	3
1-2	×		×
3-4	×		×
5-6	×		×
7-8	×		×
9-10		×	
11-12		×	

If the corresponding junction table cannot be found in “Junction Code Table” , the customer shall provide the junction diagrams (fill in with reference to the blank junction schedule on P49) and add “×” behind the junction code.

Junction code : 424×

Junction code	424×/3		
Operation gear	1	2	3
1-2	×		×
3-4	×		
5-6		×	×
7-8	×		×
9-10			×
11-12	×	×	

Note: X in the junction table indicates that the contact is in the connected status.

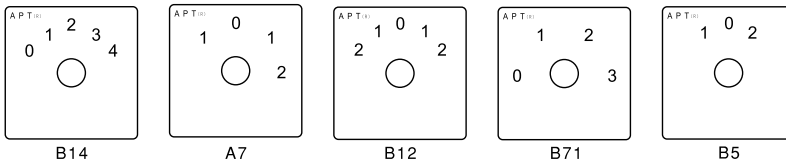
◎ Panel lettering code

The lettering codes of panel indicate the specific requirements for lettering on the panels of the cam switches. The user can select according to “Common Lettering Codes of Panel”, or provide the requirements for customization. If there are no lettering codes of the panel in the ordered models, the factory will provide the panels according to the defaulted lettering rules.

Defaulted lettering rules

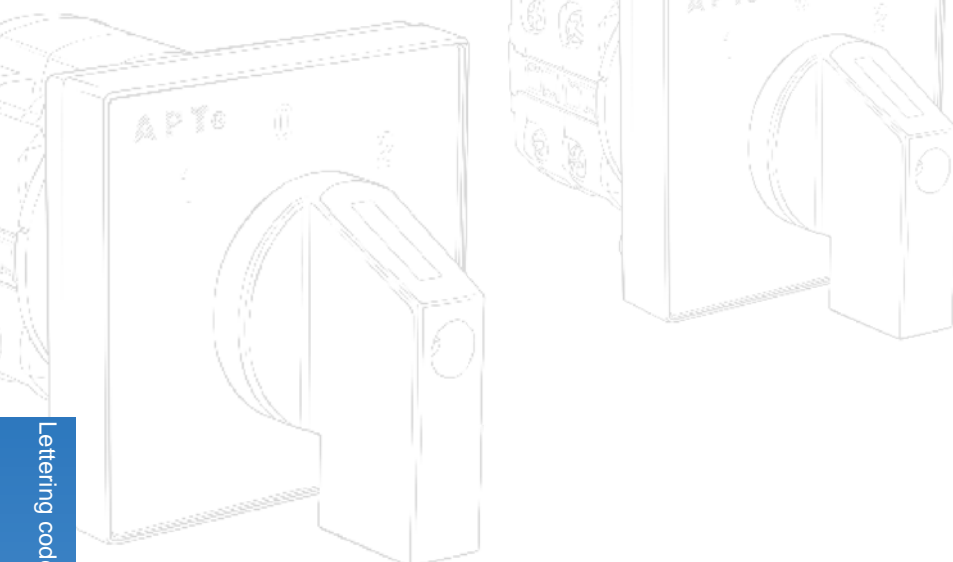
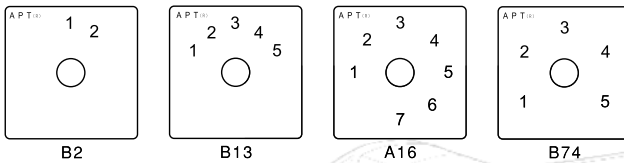
- If the junctions at a gear are completely disconnected, the lettering of this gear shall be “0” and then the gears on both sides shall be lettered in sequence of Arabic figure as “1”, “2”, “3” … For 3-gear cam switches, there is no lettering mode of 1-0-1. Instead, the lettering mode of 1-0-2 will be applied.

For example:



- If there is no “0” gear, each gear will be lettered in sequence of Arabic figure as “1”, “2”, “3” …(clockwise).

For example:

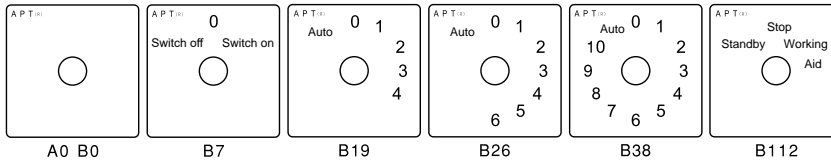


Lettering codes

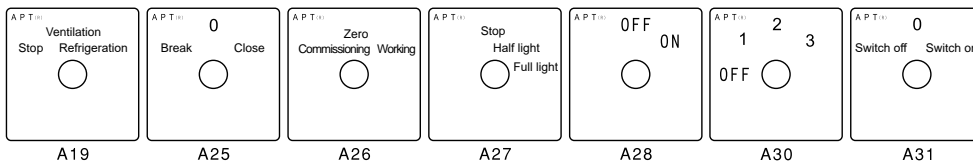
Notes: the codes starting with A are applicable to LW39-10, LW39-16A, LW39-25 and LW39-63  
The codes starting with B are applicable to LW39-16B and LW39-16C

Common lettering codes of panel

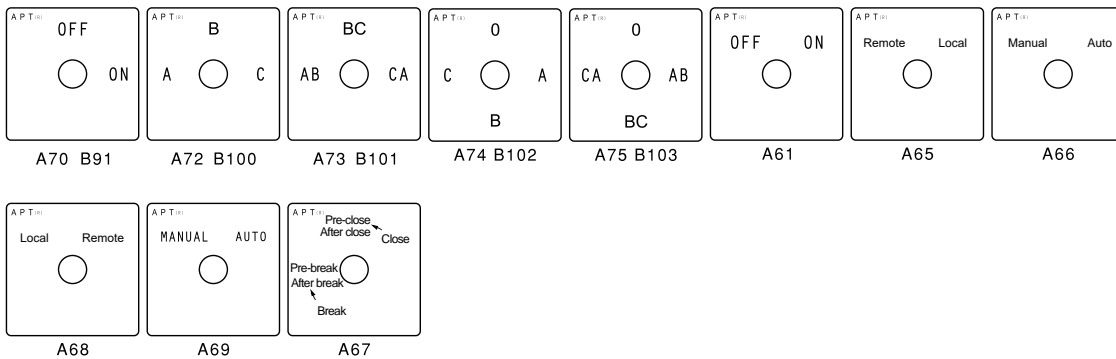
### Positioning Angle - 30°



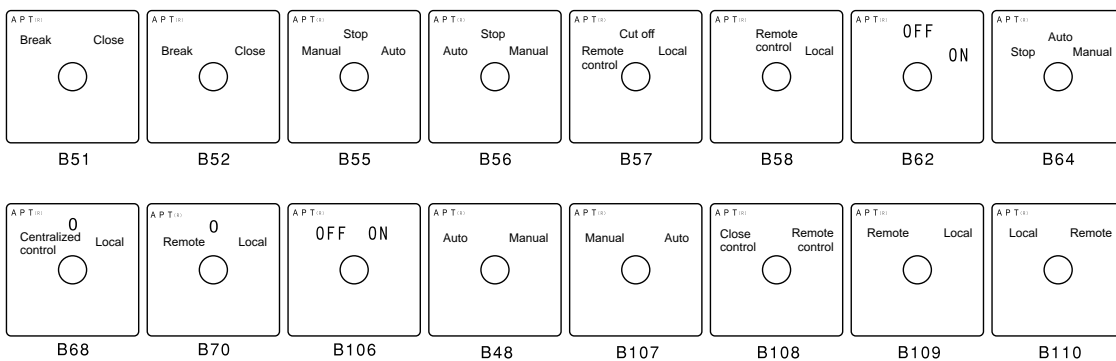
### Positioning Angle - 45°



### Positioning Angle - 90° and combined angles



### Positioning Angle - 60°



Special lettering is indicated by "P"

Lettering codes

## Product order code of switches controlling the motors

No.	L W 3 9 - <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> <input type="checkbox"/> / <input type="checkbox"/> - <input type="checkbox"/>
	1      2      3
1	Conventional thermal current
2	Code of usage feature (refer to Table 2)
3	Motor power (kW)

## Usage

Table 2 Codes of usage features of operating motor

Usage	Direct startup squirrel-cage motor	Forward / backward startup squirrel-cage motor	Dual-speed motor direct startup and variable speed	delta startup squirrel-cage motor
Feature code	Q	N	S	XS

Function	Order code	Panel symbol	Junction table																																																		
Direct startup, disconnected during the operation	LW39-63-Q15/2 LW39-25-Q5.5/2 LW39-16A-Q3/2 LW39-16B-Q3/2		<table border="1"> <thead> <tr> <th colspan="2">Panel symbol</th> <th>OFF</th> <th>ON</th> </tr> <tr> <th colspan="2">Handle angle</th> <th>0°</th> <th>45°</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>1-2</td> <td></td> <td>×</td> </tr> <tr> <td>B</td> <td>3-4</td> <td></td> <td>×</td> </tr> <tr> <td>C</td> <td>5-6</td> <td></td> <td>×</td> </tr> <tr> <td></td> <td>7-8</td> <td></td> <td></td> </tr> </tbody> </table>	Panel symbol		OFF	ON	Handle angle		0°	45°	A	1-2		×	B	3-4		×	C	5-6		×		7-8																												
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Startup, plug braking Reversal, closed ON/OFF	LW39-63-N6/3 LW39-25-N4/3 LW39-16A-N1.2/3 LW39-16B-N1.2/3		<table border="1"> <thead> <tr> <th colspan="2">Panel symbol</th> <th>1</th> <th>0</th> <th>2</th> </tr> <tr> <th colspan="2">Handle angle</th> <th>45°</th> <th>0°</th> <th>45°</th> </tr> </thead> <tbody> <tr> <td>A</td> <td>1-2</td> <td></td> <td></td> <td>×</td> </tr> <tr> <td>B</td> <td>3-4</td> <td>×</td> <td></td> <td></td> </tr> <tr> <td></td> <td>5-6</td> <td>×</td> <td></td> <td></td> </tr> <tr> <td></td> <td>7-8</td> <td></td> <td></td> <td>×</td> </tr> <tr> <td>C</td> <td>9-10</td> <td>×</td> <td>×</td> <td>×</td> </tr> <tr> <td></td> <td>11-12</td> <td>×</td> <td>×</td> <td>×</td> </tr> </tbody> </table>	Panel symbol		1	0	2	Handle angle		45°	0°	45°	A	1-2			×	B	3-4	×				5-6	×				7-8			×	C	9-10	×	×	×		11-12	×	×	×										
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## Blank junction schedule

Customer Name: \_\_\_\_\_

Contact Person: \_\_\_\_\_

Contact information Tel No.: \_\_\_\_\_

Fax No.: \_\_\_\_\_

Description of Basic Parameters of Cam switch:

Conventional Thermal Current: \_\_\_\_\_ A

Function and Order Code Selection: \_\_\_\_\_

Handle Selection: \_\_\_\_\_ (Fill the code)

For the common junction code table, please refer to 《LW39 Cam Switch Selection Guide and Junction Code Table》

Panel Symbol														
<b>Handle Direction</b>														
1 ○—○—○—○ 2 3 ○—○—○—○ 4														
5 ○—○—○—○ 6 7 ○—○—○—○ 8														
9 ○—○—○—○ 10 11 ○—○—○—○ 12														
13 ○—○—○—○ 14 15 ○—○—○—○ 16														
17 ○—○—○—○ 18 19 ○—○—○—○ 20														
21 ○—○—○—○ 22 23 ○—○—○—○ 24														
25 ○—○—○—○ 26 27 ○—○—○—○ 28														
29 ○—○—○—○ 30 31 ○—○—○—○ 32														
33 ○—○—○—○ 34 35 ○—○—○—○ 36														
37 ○—○—○—○ 38 39 ○—○—○—○ 40														
41 ○—○—○—○ 42 43 ○—○—○—○ 44														
45 ○—○—○—○ 46 47 ○—○—○—○ 48														

Order code of cam switch (filled by the manufacturer): \_\_\_\_\_