

KXM SERIES

KXM Limit Switch



- Universal Best-Selling Miniature Limit Switch
- Positive Opening (NC) for Safety
- Dual-Spring Mechanism Ensures Long Life
- 24K Gold Plated Contacts: Low Resistance & Stable Performance

400-886-3633
www.kacon.net

KACON

Limit Switch

KXM Series

Part Number Description

KXM - ❶ ❷ ☐

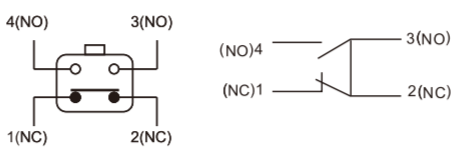
❶ Head Type	301 : Push Plunger	706 : Ø50 Adjustable Roller Lever - Aluminum	
	302 : Roller Plunger	726 : Ø50 Adjustable Roller Lever - Rubber	
	312 : Cross Roller Plunger	901 : Spring Rod	
	702 : Roller Lever	902 : Spring Wire	
	703 : Adjustable Roller Lever	903 : Spring Rod - Plastic Tip	
	704 : Adjustable Rod Lever	923 : Spring Rod - Metal Tip	
❷ Indicator Lamp	No mark : Standard (No Indicatior)	D : LED Lamp (12 ~ 24VDC/AC)	A : Neon Lamp (100 ~ 240VAC)
Waterproof Connect	No mark : Rubber base	P : Waterproof lock head	

General Specification

Contact Form		1N/O + 1N/C
Contact Material		Ag alloy/24K Au Plate
Rated Current		6A 250VAC ·Resistance load
Insulation Resistance		Min. 100mΩ 500VDC Insulation resistance
Contact Resistance		Max. 25mΩ
Dielectric Strength		1,500VAC ·50/60Hz 1 Min.
Internal Voltage	Between the terminals	1,000VAC 50/60Hz 1 Min.
	Between each terminal and non-charging parts	1,500VAC ·50/60Hz 1 Min.
Life Cycle	Mechanical	Min. 10,000,000
	Electrical	Min. 300,000 (6A 250VAC Resistive load)
Vibration Resistance		10 ~ 55Hz dual wave length 1.5mm
Shock Resistance	Malfunction	98m/s² ·Max. 10G
	Destruction	294m/s² ·Max. 30G
Degree Of Protection		IP66
Ambient Temperature		-20 ~ +60°C ·(with no icing)
Ambient Humidity		Max. 90%RH

		Non-Inductive				Inductive			
	Voltage	Resistive Load		Lamp Load		Motor Load		Inductive Load	
		NC(A)	NO(A)	NC(A)	NO(A)	NC(A)	NO(A)	NC(A)	NO(A)
Contact Ratings	125VAC	6		1.5	0.7	2	1	3	
	250VAC	6		1	0.5	1.5	0.8	3	
	12VDC	5		3		3		4	
	24VDC	5		3		3		4	
	125VDC	0.4	0.2	-		-		-	
	250VDC	0.4	0.2	-		-		-	

Internal Switch Contact Configuration



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KXM-301	KXM-302	KXM-312	KXM-702
			
KXM-703	**KXM-704**	**KXM-706**	**KXM-726**
			
KXM-901	**KXM-902**	**KXM-903**	**KXM-923**
			

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Contact Block

KXM-101

24K Au Plate



Indication Lamp NamePlate

KXM-102

12 ~ 24VAC/DC LED Lamp

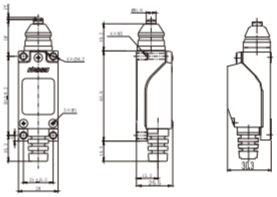
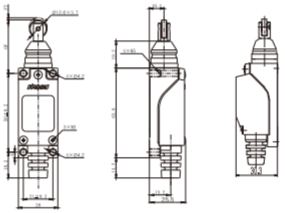
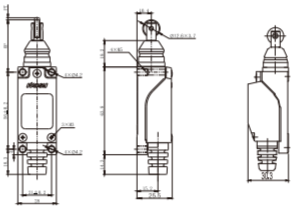
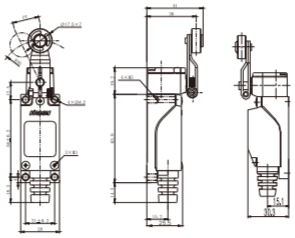


KXM-103

100 ~ 240VAC Neon Lamp



Product Selection

	Indicator Lamp	Part Number	Dimension
 Push Plunger	Standard	KXM - 301	
	LED Lamp	KXM- 301D	
	Neon Lamp	KXM - 301A	
 Roller Plunger	Standard	KXM - 302	
	LED Lamp	KXM - 302D	
	Neon Lamp	KXM - 302A	
 Cross Roller Plunger	Standard	KXM - 312	
	LED Lamp	KXM - 312D	
	Neon Lamp	KXM - 312A	
 Roller Lever	Standard	KXM - 702	
	LED Lamp	KXM - 702D	
	Neon Lamp	KXM - 702A	

Operating Force(Max)	OF	900gf(8.83N)
Return Force(Min)	RF	150gf(1.47N)
Pre-travel(Max)	PT	1.5mm
Over-travel(Min)	OT	0.7mm
Movement Differential(Max)	MD	4mm
Total Travel	TT	5.5mm

Operating Force(Max)	OF	900gf(8.83N)
Return Force(Min)	RF	150gf(1.47N)
Pre-travel(Max)	PT	1.5mm
Over-travel(Min)	OT	0.7mm
Movement Differential(Max)	MD	4mm
Total Travel	TT	5.5mm

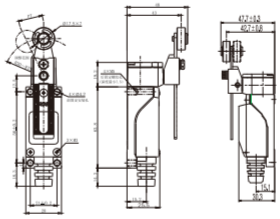
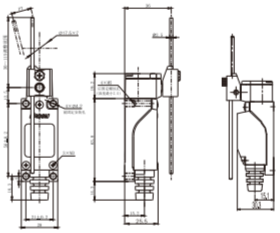
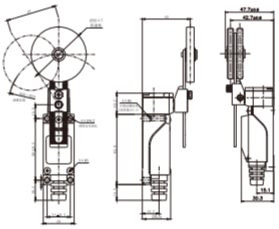
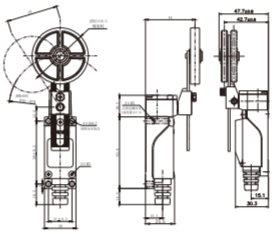
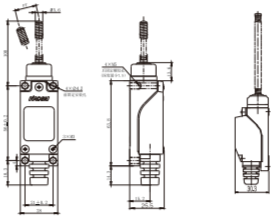
Operating Force(Max)	OF	900gf(8.83N)
Return Force(Min)	RF	150gf(1.47N)
Pre-travel(Max)	PT	1.5mm
Over-travel(Min)	OT	0.7mm
Movement Differential(Max)	MD	4mm
Total Travel	TT	5.5mm

Operating Force(Max)	OF	600gf(5.88N)
Return Force(Min)	RF	50gf(0.49N)
Pre-travel(Max)	PT	20±5°
Over-travel(Min)	OT	10°
Movement Differential(Max)	MD	75°
Total Travel	TT	95°

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Product Selection

	Indicator Lamp	Part Number	Dimension
 Adjustable Roller Lever	Standard	KXM - 703	
	LED Lamp	KXM - 703D	
	Neon Lamp	KXM - 703A	
 Adjustable Rod Lever	Standard	KXM - 704	
	LED Lamp	KXM - 704D	
	Neon Lamp	KXM - 704A	
 Ø50 Adjustable Aluminum Lever Type	Standard	KXM-706	
	LED Lamp	KXM-706D	
	Neon Lamp	KXM-706A	
 Ø50 Adjustable Roller Lever Type	Standard	KXM-726	
	LED Lamp	KXM-726D	
	Neon Lamp	KXM-726A	
 Spring Rod	Standard	KXM-901	
	LED Lamp	KXM-901D	
	Neon Lamp	KXM-901A	

Operating Force(Max)	OF	800gf(7.84N)~ 342gf(3.35N)
Return Force(Min)	RF	50gf(0.49N)~ 21gf(0.21N)
Pre-travel(Max)	PT	20±5°
Over-travel(Min)	OT	10°
Movement Differential(Max)	MD	75°
Total Travel	TT	95°

Operating Force(Max)	OF	800gf(7.84N)~ 342gf(3.35N)
Return Force(Min)	RF	50gf(0.49N)~ 21gf(0.21N)
Pre-travel(Max)	PT	20±5°
Over-travel(Min)	OT	10°
Movement Differential(Max)	MD	75°
Total Travel	TT	95°

Operating Force(Max)	OF	800gf(7.84N)~ 342gf(3.35N)
Return Force(Min)	RF	50gf(0.49N)~ 21gf(0.21N)
Pre-travel(Max)	PT	20±5°
Over-travel(Min)	OT	10°
Movement Differential(Max)	MD	75°
Total Travel	TT	95°

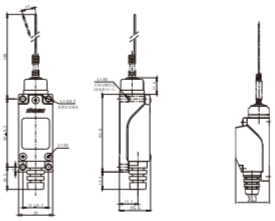
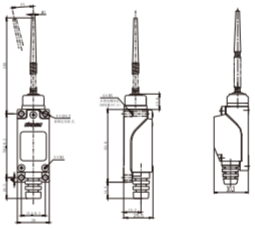
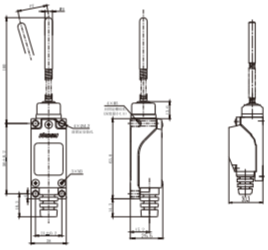
Operating Force(Max)	OF	800gf(7.84N)~ 342gf(3.35N)
Return Force(Min)	RF	50gf(0.49N)~ 21gf(0.21N)
Pre-travel(Max)	PT	20±5°
Over-travel(Min)	OT	10°
Movement Differential(Max)	MD	75°
Total Travel	TT	95°

Operating Force(Max)	OF	90gf0.88N)
Return Force(Min)	RF	-
Pre-travel(Max)	PT	30±5°
Over-travel(Min)	OT	-
Movement Differential(Max)	MD	20°
Total Travel	TT	50°

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Product Selection

	Indicator Lamp	Part Number	Dimension
 Spring Wire	Standard	KXM-902	
	LED Lamp	KXM-902D	
	Neon Lamp	KXM-902A	
 Spring Rod-Plastic Tip	Standard	KXM-903	
	LED Lamp	KXM-903D	
	Neon Lamp	KXM-903A	
 Spring Rod-Metal Tip	Standard	KXM-923	
	LED Lamp	KXM-923D	
	Neon Lamp	KXM-923A	

Operating Force(Max)	OF	90gf0.88N)
Return Force(Min)	RF	-
Pre-travel(Max)	PT	30±5°
Over-travel(Min)	OT	-
Movement Differential(Max)	MD	20°
Total Travel	TT	50°

Operating Force(Max)	OF	90gf0.88N)
Return Force(Min)	RF	-
Pre-travel(Max)	PT	30±5°
Over-travel(Min)	OT	-
Movement Differential(Max)	MD	20°
Total Travel	TT	50°

Operating Force(Max)	OF	90gf0.88N)
Return Force(Min)	RF	-
Pre-travel(Max)	PT	30±5°
Over-travel(Min)	OT	-
Movement Differential(Max)	MD	20°
Total Travel	TT	50°

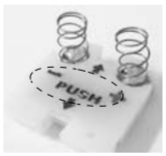
Limit Switch

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Operation indicator lamp Ratings

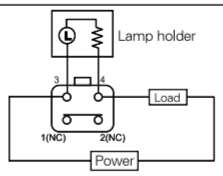
Item / Indicator Lamp	Rated voltage	Rated current	Order code
NEON lamp	80 ~ 240VAC	0.2 ~ 1.5mA	AC load: KXM - □A
LED lamp	12 ~ 24VDC	0.5 ~ 1.5mA	DC load: KXM - □D

- There are two types of lamps: Neon and LED lamps.
- The circuit check and fault detection are easy because the switch operation status is easily checked outside.
- This is ideal for the places where checking the passage of products is difficult onthe conveyor line.
- The LED type has the + or - polarity. Pay attention to the polarity, which is indicated inside.
- The lens section of the indicator lamp cover ensures sufficient brightness with its diffusible resin diamond cut structure.
- The waterproof performance is excellent because the indicator lamp and cover are formed together.

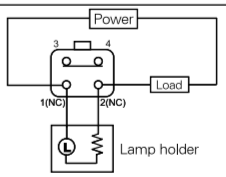


Operation indicator lamp wiring and circuit diagram

Internal wiring



ON in non-operation
[Lamp ON when NC ON]

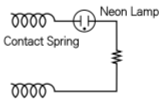


ON in operation
[Lamp ON when NO ON]

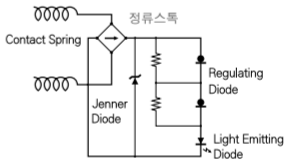
☞ Caution: Use the same power supply for terminals / Connect the same polarity for terminals 1 and 4, and 2 and 3.

Diagram

NEON Lamp



LED Lamp



Operation indicator lamp direction shift

- The lamp terminal does not require additional wiring, because it is connected via the spring in the indicator cover and the built-in switch terminal bolts.
- The indicator lamp can be selected between the modes of ON in operation and ON in nonoperation.
- The indicator lamp can be shifted by removing the lamp holder inside the cover using tools including drivers.





Lamp holder removal



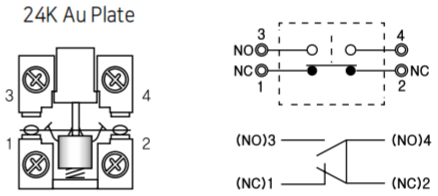
ON in operation



ON in non-operation

- The user can change the mode of operation status indication by changing the lamp holder mounting direction by 180°(up or down) inside the indicator lamp cover.
- The factory setting is ON in operation

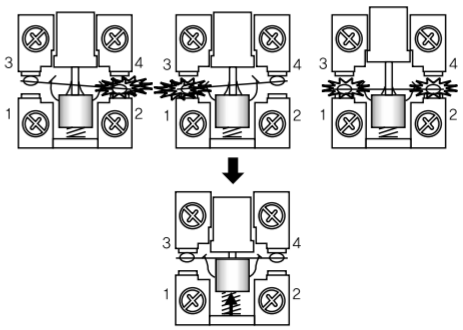
Built-in switch circuit diagram



Direct contact opening⇨ Direct Openning

1. The device is safe with the mechanism that cuts off the circuit when the switch contact weld occurs.
2. If the contact weld appears, the plunger directly pushes up the movable terminal to forcefully separate the NC contact and cut off the circuit.
3. The direct opening function is for the Nc contact only.
4. The plunger continues to push the movable terminal during operation, and t he circuit is not cut off by mechanical impact.

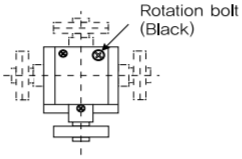
Welding



Contact weld After direct opening

Head mounting

In the lever type, the head can be placed in one of four directions at 90° rotation interval.



To change the head direction, loosen the black bolt on the top of the head, rotate the head, and tighten the bolt again.

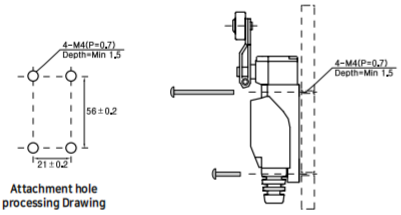
Limit Switch

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Mounting on the panel

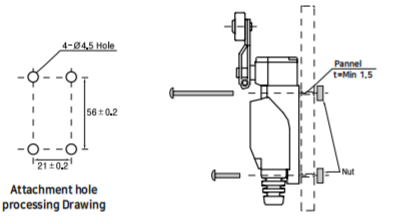
1. This product can be mounted on the front or rear.
2. Before the installation of the product, determine its position so that the OT of the actuator is proper.
   ⇨ An excessive OT leads to a decrease in the product life due to the strong wear and fatigue
3. After determining the mounting position, refer to the following types to process the panel.
4. Be sure to use spring washers for the mounting bolts so that the product will not be removed by vibration or impact.

Type 1. Front Attached -Direct Tap Processing on the panel



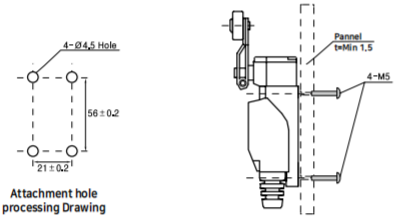
Attachment hole processing Drawing

Type 2. Front Attachment -Direct hole processing on the panel



Attachment hole processing Drawing

Type 3. Rear Attachment -Using M5 Tap of the product



Attachment hole processing Drawing

☞ The bolts and nuts above are shipped together with the product.

Wires

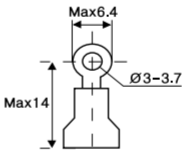
1. The proper size of wires that pass through the wiring lead-out (NBR) is Ø6.6 ~ Ø8.5.
2. The use of VCTF cable is desirable.
3. The following table shows the specifications of the VCTF cable. Refer to the table for cable selection.

Small Line Number	Conductor (L)	Completed outer diameter (I)
2 wire	0.75mm² 1.25mm² 2.0mm²	Ø6.6mm Ø7.4mm Ø8.0mm
3 wire	0.75mm² 1.25mm² 2.0mm²	Ø7.0mm Ø7.8mm Ø8.5mm
4 wire	0.75mm² 1.25mm²	Ø7.6mm Ø8.5mm

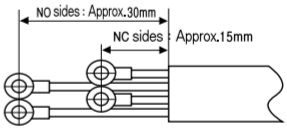


VCTF : The cable for 300 V or less indoor small appliances, which is manufactured by insulating stranded copper wires with PVC.

4. When wiring the switch terminals, do not directly connect the lead wire to the terminal, but use the O-type clamp terminal with insulation shielding.
5. After wiring, be sure to mount the cover before applying the power. Otherwise, it may lead to an electric shock.



Clamp terminal specifications



O-terminal wiring reference

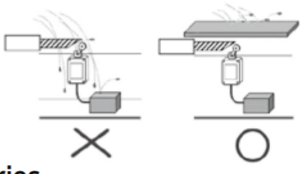
Tightening torque

When mounting the product, excessive force for bolts or nuts may damage the product. Observe the following tightening torques.

Front Attachment	M4- Max. 12kgf.cm / 1.2N.m
Rear Attachment	M5- Max. 19.6kgf.cm / 2.0N.m
Switch Terminal	M3- Max. 4.9kgf.cm / 0.5N.m

Environment

- Do not use the product under water or oil, nor in the environment where it is influenced by oil or water because this product is not completely oiltight.
- Do not use the product in the places where there are risks of fire and corrosion.
- Actual conditions may affect the product reliability including the guaranteed life and tightness.



Basic Accessories

- Front attachment-M4×35 2EA, M4×20 2EA
- Rear Attachment-M5×10 4EA



- Band clip



ex)



Tighten the bottom wire outlet using a band clip.