Momentary-contact limit switches K244 series

■ Description

FUJI K244 type limit switches have an excellent performance.
K244 limit switches employ a highly dependable and long lasting double break silver alloy contact system.
These can be expected to perform more than 10 million mechanical operations and a rate of 3,000 operations per hour.
The large variety of operating types such as standard stroke, snap-action type, make-before-break type and extended stroke type, etc. allow you to select a suitable limit switch that fully meets your requirements.
K244 limit switches are widely used for industrial machinery such as machine tools, printing machines, conveyors, automatic machines and door interlocking and similar applications.
The aluminum die-cast housing can also be supplied in an oil and water proof version.

■ Technical data

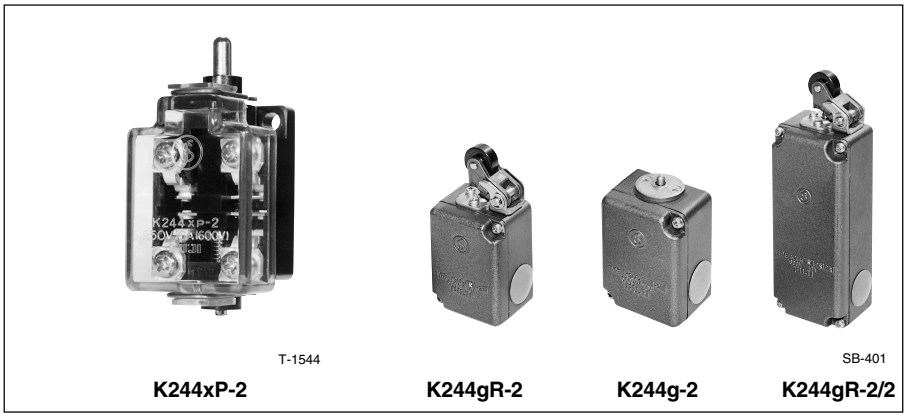
Insulation resistance:
Over 100MΩ at 500V DC
Dielectric strength:
2500V AC rms 1 minute
Max. operating cycle:
3000 cycles per hour
Life expentancy
Mechanical: 10 million operations
Electrical:
- K244-2, 2U and 2V
  3.3 million operations at 24 to 550V AC 3A
- K244-2S
  1.3 million operations at 24 to 550V AC 3A

■ Ordering information

Specify the following:
1. Type number or ordering code

Example

Limit switch	PL
With enclosure	5
Standard contact	N
Cast-metal clad enclosure	G
With top roller lever plunger	R
Contact, normal action 1NO+1NC	22
Ordering code	PL5NGR22



K244xP-2 **K244gR-2** **K244g-2** **K244gR-2/2**

■ Ratings

Type	Thermal current (A)	Making current (A)	Breaking current *1 AC Voltage (V)	AC Current (A)	DC Voltage (V)	DC Current (A) Resistive	DC Current (A) Inductive
K244-2	10	50	24	10	24	10	10
K244-2U			110	10	110	2.2	1.3
K244-2V			220	10	220	0.9	0.4
			440	10	440	0.4	0.2
			550	10	550	0.32*2	0.15*2
K244-2S	10	50	24	10	24	7	7
			110	10	110	1.5	0.9
			220	10	220	0.63	0.28
			440	10	440	0.28	0.14
			550	10	550	0.22*2	0.1*2

Notes: *1 When NO and NC contacts are wired in the same potential.
*2 Value of the breaking current when opposite contacts are not applied with potential.

■ Type number nomenclature

K244 □□ - 2 □

Basic type

Enclosure
xP: With transparent cover
g: Cast-metal clad
go: Cast-metal clad oil-tight
gw: Cast-metal clad water-tight

Actuator
Blank: Top push rod plunger
R: Top roller lever plunger

Contact type
Blank: Standard contact (Normal stroke)
S: Snap action contact
U: Make-before-break contact
V: Extended stroke

Contact arrangement
2: 1NO+1NC
2/2: 2NO+2NC

■ Ordering code

PL 5 N G N – 22

Product category
PL: Limit switch

Enclosure
4: Without enclosure
5: With enclosure

Contact
N: Standard
W: Bifurcated
H: Scrubbing action

Enclosure type
G: Cast-metal clad
L: Cast-metal clad oil-tight
W: Cast-metal clad water-tight

Contact arrangement
22: 1NO+1NC, normal action
21: 1NO+1NC, snap action
23: 1NO+1NC, make-before-break
25: 1NO+1NC, extended stroke
42: 2NO+2NC, normal action
41: 2NO+2NC, snap action
43: 2NO+2NC, make-before-break
45: 2NO+2NC, extended stroke
46: 2NO+2NC, complex

Roller head position
N: Top push rod plunger
R: Top roller lever plunger
W: Reversing, right-hand side roller

■ Actuating slider face angles and approach speeds

Although K244 limit switches have an excellent performance they should not be operated at an extremely high speed or extremely low speeds, since these conditions will cause contact trouble and reduce the mechanical life expectancy of the devices. The slider face angles and approach speeds should be kept within the following recommendations.

● Push rod plunger type

This type of switch obtains the movement from the vertical travel of the rod.

Speed : Max. 1m/sec
Min. 0.015m/sec

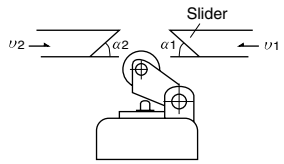
Snap-action types can be used at speeds less than the minimum value.

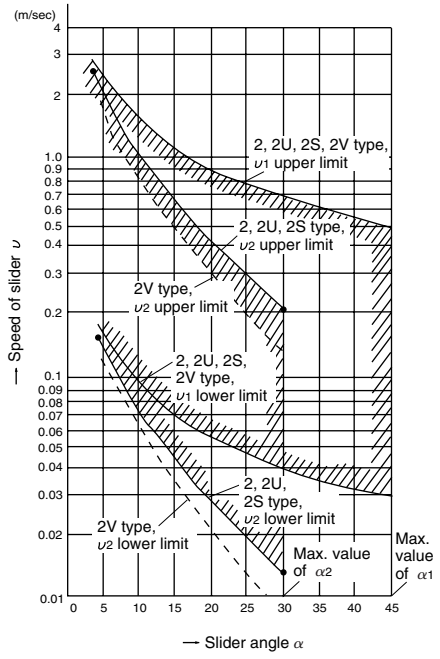
● Roller lever type

The actuating slider face angles and speeds should be within the following range.

The maximum angle of the slider face:
α_1=45° α_2=30°

Snap-action type switches can be used at speeds less than the minimum value.

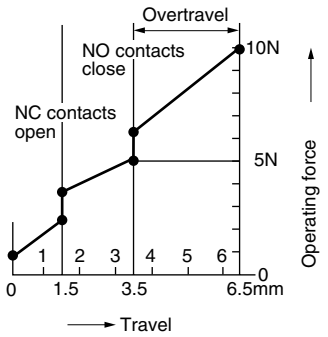




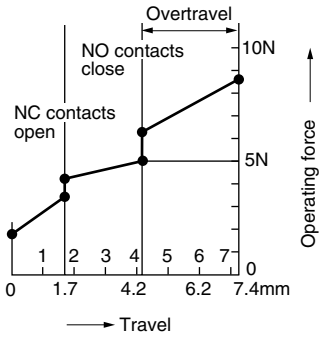
■ Travel operating force curve (Typical example)

The curve indicates forces to operate the contact.

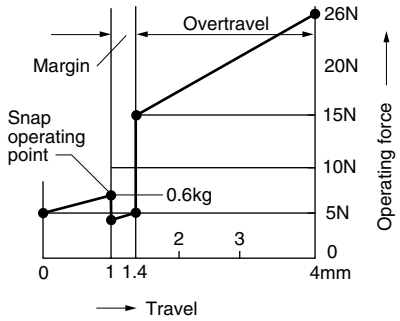
Standard type
K244g-2



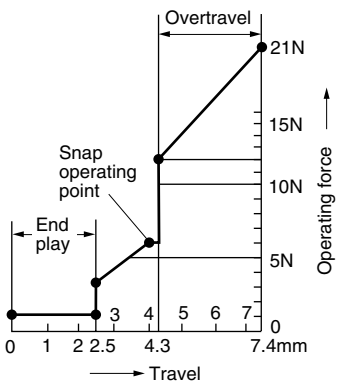
K244gR-2



Snap action contact type
K244g-2S



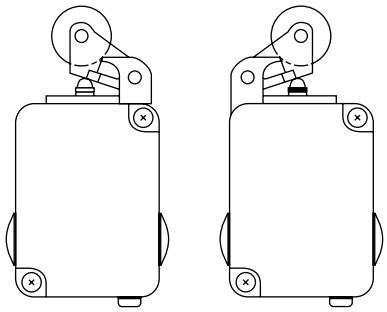
K244gR-2S



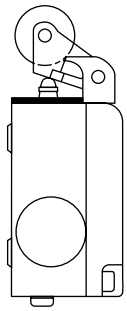
■ Changing direction of operating roller head

Roller head positions can be shifted by 90° in each direction. The head is attached at the standard position when shipped from factory.

Standard **ℓ type**

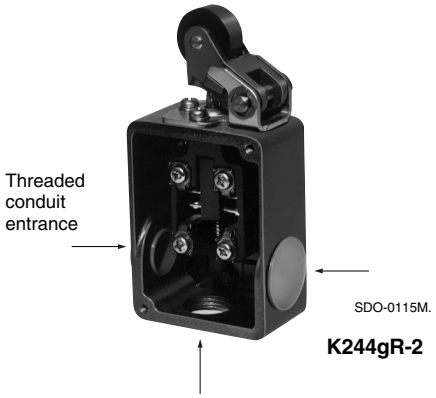


f type



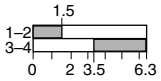
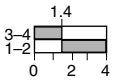
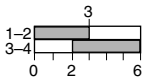
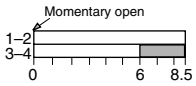
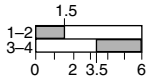
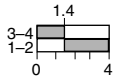
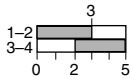
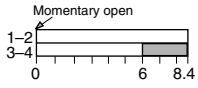
■ Cable connection

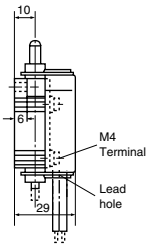
Threaded conduit entrances are provided at 3 locations–left, right and lower side of the limit switch housing. Knockout the plug to carry out wiring. Do not remove plugs from holes not requiring wiring.

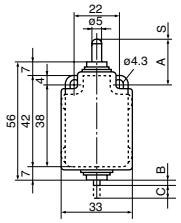


K244gR-2

■ K244 series/Standard

Description	Contact arrangement	Terminal No.	Travel ▩ Contact closed □ Contact open	Type	Ordering code
Top push rod plunger with transparent plastic cover	1NO+1NC		S (mm)		
Normal stroke				**K244xp-2**	PL4NN-22
Snap-action				**K244xp-2S**	PL4NN-21
Make-before-break				**K244xp-2U**	PL4NN-23
SF2025 Extended stroke				**K244xp-2V**	PL4NN-25
Top push rod plunger cast-metal clad	1NO+1NC		S (mm)		
Normal stroke				**K244g-2**	PL5NGN-22
Snap-action				**K244g-2S**	PL5NGN-21
Make-before-break				**K244g-2U**	PL5NGN-23
T-1535 Extended stroke				**K244g-2V**	PL5NGN-25
Top push rod plunger oiltight and watertight cast-metal clad	1NO+1NC		S (mm)		
Snap-action				Oiltight **K244go-2S**	PL5NLN-21
				Watertight **K244gw-2S**	PL5NWN-21
T-1535					

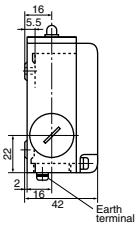


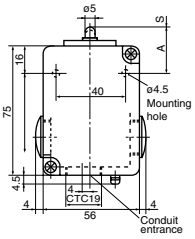


Brass plunger

	-2	-2S	-2U	-2V
A	21	19	21	21
B	1.5	1.5	1.5	1.0
C	6.5	1.4	6	8.5

Mass: 60g

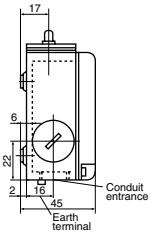


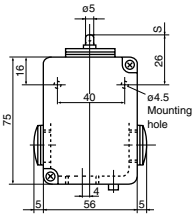


Brass plunger

	-2	-2S	-2U	-2V
A	26	24	26	26

Mass: 200g

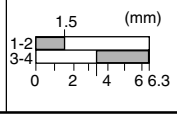
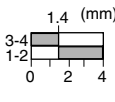
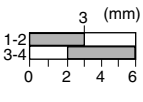
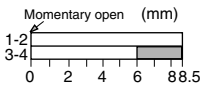




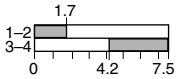
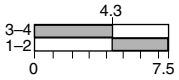
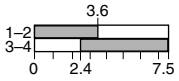
Brass plunger

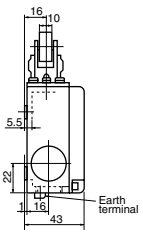
Mass: 210g

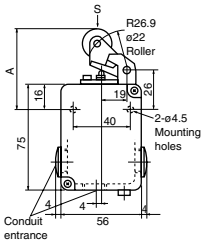
■ Contact action (Typical)

Contact	Standard type (Normal stroke)	Snap action contact	Make-before-break contact	Extended stroke
Contact diagram				
Contact travel ▩ : Contact closed □ : Contact open				

■ K244 series/Standard

Description	Contact arrangement	Terminal No.	Travel ■ Contact closed □ Contact open	Type	Ordering code
Top roller lever plunger cast-metal clad	1NO+1NC		S (mm)		
Normal stroke				**K244gR-2**	PL5NGR-22
Snap-action				**K244gR-2S**	PL5NGR-21
Make-before-break				**K244gR-2U**	PL5NGR-23
Extended stroke				**K244gR-2V**	PL5NGR-25
 T-1537					

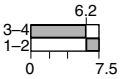


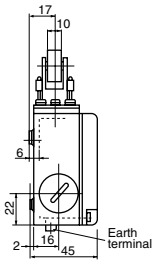


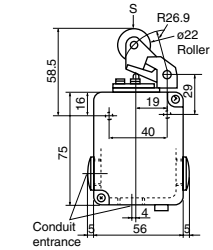
Phenal-formaldehyde roller

	-2	-2S	-2U	-2V
A	55	55	55	57

Mass: 240g

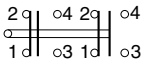
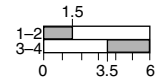
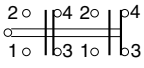
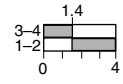
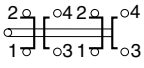
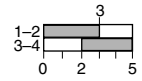
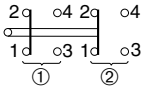
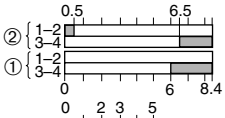
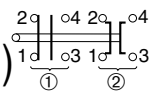
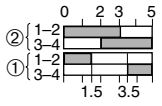
Description	Contact arrangement	Terminal No.	Travel ■ Contact closed □ Contact open	Type	Ordering code
Top roller lever plunger oiltight and watertight cast-metal clad	1NO+1NC		S (mm)		
Snap-action				Oiltight **K244goR-2S**	PL5NLR-21
				Watertight **K244gwR-2S**	PL5NWR-21
 T-1531					

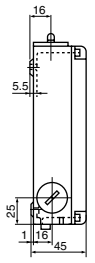


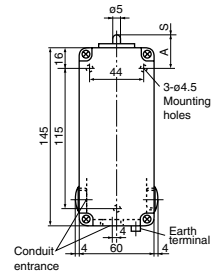


Phenal-formaldehyde roller

Mass: 250g

Description	Contact arrangement	Terminal No.	Travel ■ Contact closed □ Contact open	Type	Ordering code
Top push rod plunger cast-metal clad	2NO+2NC		S (mm)		
Normal stroke				**K244g-2/2**	PL5NGN-42
Snap-action				**K244g-2S/2S**	PL5NGN-41
Make-before-break				**K244g-2U/2U**	PL5NGN-43
Extended stroke				**K244g-2V/2V**	PL5NGN-45
Complex (Normal stroke + Make-before-break)				**K244g-2/2U**	PL5NGN-46
 T-1567					

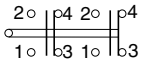
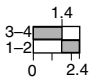


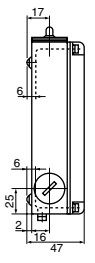


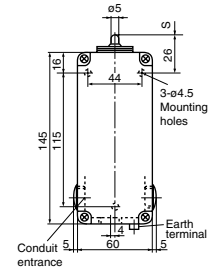
Brass plunger

	2/2	2S/2S	2U/2U	2V/2V	2/2U
A	26	24	26	26	26

Mass: 410g

Description	Contact arrangement	Terminal No.	Travel ■ Contact closed □ Contact open	Type	Ordering code
Top push rod plunger oiltight and watertight cast-metal clad	2NO+2NC		S (mm)		
Snap-action				Oiltight **K244go-2S/2S**	PL5NLN-41
				Watertight **K244gw-2S/2S**	PL5NWN-41
 T-1567					

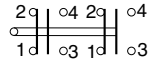
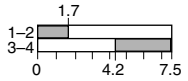
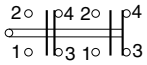
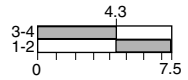
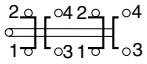
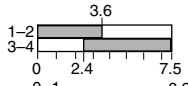
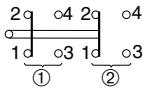
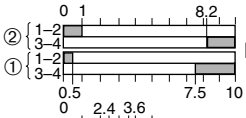
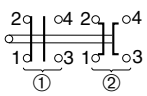
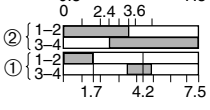




Mass: 420g

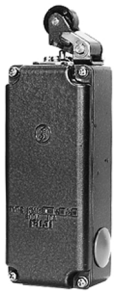
Brass plunger

■ K244 series/Standard

Description	Contact arrangement	Terminal No.	Travel ■ Contact closed □ Contact open	Type	Ordering code	Dimensions, mm
Top roller lever plunger cast-metal clad	2NO+2NC		S (mm)			
Normal stroke				**K244gR-2/2**	PL5NGR-42	
Snap-action				**K244gR-2S/2S**	PL5NGR-41	
Make-before-break				**K244gR-2U/2U**	PL5NGR-43	
Extended stroke				**K244gR-2V/2V**	PL5NGR-45	
Complex (Normal stroke + Make-before-break)				**K244gR-2/2U**	PL5NGR-46	
						Phenal-formaldehyde roller

	2/2	2S/2S	2U/2U	2V/2V	2/2U
A	55	55	55	57	55

Mass: 440g



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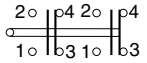
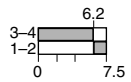
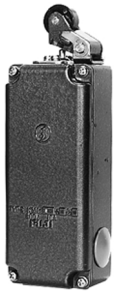
Description	Contact arrangement	Terminal No.	Travel ■ Contact closed □ Contact open	Type	Ordering code	Dimensions, mm
Top roller lever plunger oiltight and watertight cast-metal clad	2NO+2NC		S (mm)			
Snap-action				Oiltight **K244goR-2S/2S**	PL5NLR-41	
				Watertight **K244gwR-2S/2S**	PL5NWR-41	
						Phenal-formaldehyde roller

Mass: 450g



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