Limit switches, AL and K244 series

■ Description

FUJI AL and K244 series limit switches have wide application in such industrial equipment as machine tools, printing machines, and transfer machines. These switches feature a sturdy aluminum die-cast housing that is highly resistant to oil, water, and dust, and long mechanical life — 10 million operations minimum.


SI-1020

AL-SK


SF-2025

K244-xP-2


SK-580

K244-gR-2

AL series

AL and AL-S series limit switches feature a forced contact opening mechanism.
Under abnormal conditions, the mechanism forces the contacts open to prevent pitting and fusing.
Gold-plated silver contacts with scrubbing action have high reliability.

K244 series

The K244 series is provided with four kinds of contact operating action: standard normal stroke, snap action, make-before-break, and extended stroke.
WK244 of the K244 series has bifurcated contacts, while HK244 features a scrubbing action mechanism. These limit switches can be used in low-level circuits of 3V, 5mA.

■ Selection guide

Basic type	**AL** Standard	**AL-S** Compact type	**K244** Standard	**HK244** For low-level circuit	**WK244** For low-level circuit
Rated voltage (max.)	550V AC, 250V DC*1		550V AC/DC		
Rated thermal current	10A (5A*1)		10A		
Operating cycles per hour	7,200		3,000		
Expected life (operations) Mechanical Electrical	10 millions 100,000 (at 125V AC, 5A res. load for snap action type)		10 millions 1 million*2 (at 220V AC, 10A res. load)	10 millions 400,000 (at 220V AC, 10A res. load)	10 millions 500,000 (at 220V AC, 2.5A res. load)
Contact arrangement	1NO+1NC		1NO+1NC, 2NO+2NC		
Contact	Single button		Single button		Bifurcated
Degree of protection (IEC)	IP67		–		
Features	Forced contact opening mechanism as standard Highly reliable gold-plated silver contacts		A wide variety of contact operating action Sealed types for oily and wet environments		
Page	*05/99*		*05/113*	*05/120*	*05/120*

*1: For snap action type
*2: 400,000 for snap action type

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

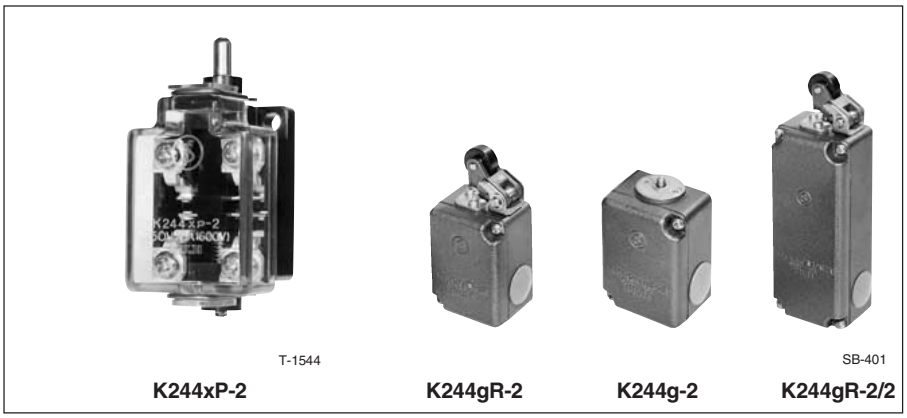
Insulation resistance:
Over 100MΩ at 500V DC
Dielectric strength:
2500V AC rms 1 minute
Max. operating cycle:
3000 cycles per hour
Life expentancy
Mechanical: 10 million operations
Electrical:
- K244-2, 2U and 2V
  3.3 million operations at 24 to 550V AC 3A
- K244-2S
  1.3 million operations at 24 to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

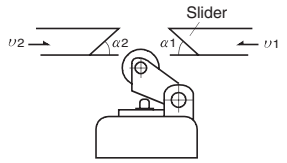
Snap-action types can be used at speeds less than the minimum value.

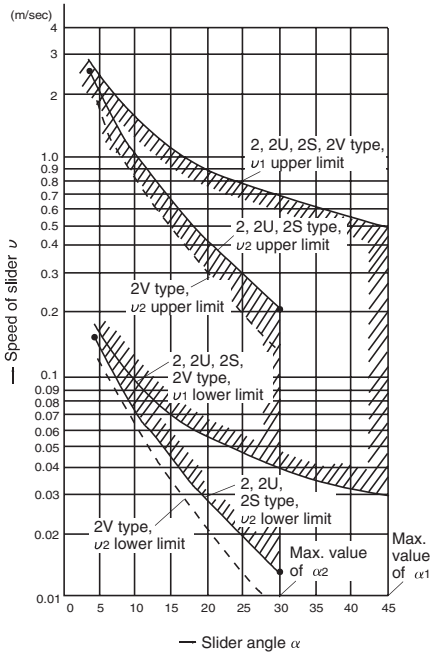
• Roller lever type

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.

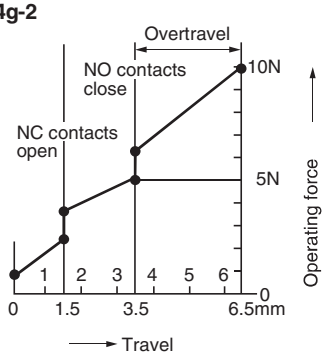




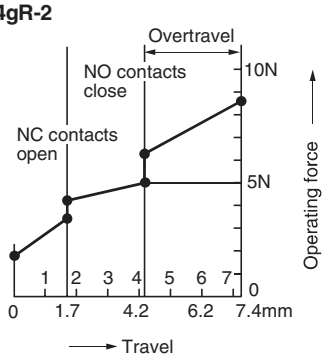
■ Travel operating force curve (Typical example)

The curve indicates forces to operate the contact.

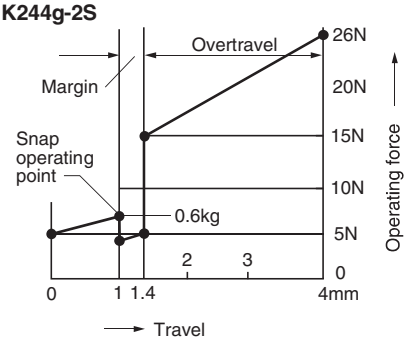
Standard type
K244g-2



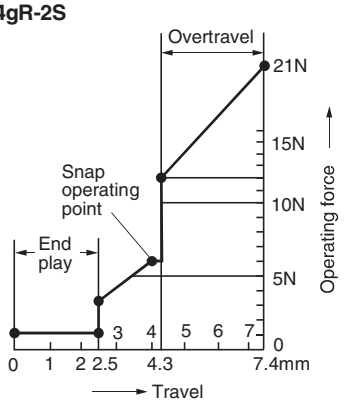
K244gR-2



Snap action contact type
K244g-2S



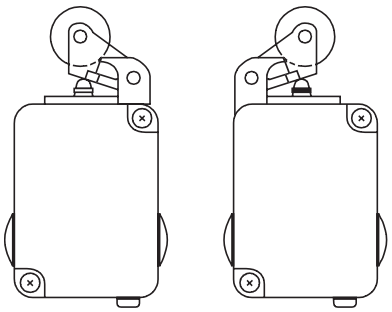
K244gR-2S



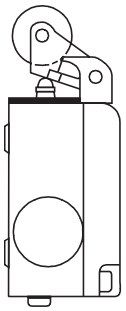
■ Changing direction of operating roller head

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

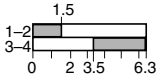
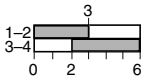
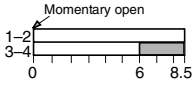
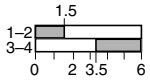
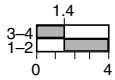
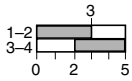
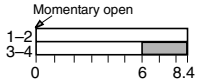


■ Cable connection

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

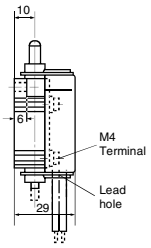
■ K244 series/Standard

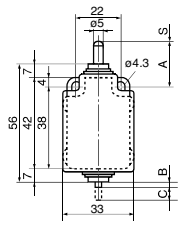
Description	Contact arrangement	Terminal No.	Travel ▩ Contact closed □ Contact open	Type	Ordering code
Top push rod plunger with transparent plastic cover	1NO+1NC		S (mm)		
Normal stroke				**K244xp-2**	PL4NN-22
Snap-action				**K244xp-2S**	PL4NN-21
Make-before-break				**K244xp-2U**	PL4NN-23
Extended 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
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


SF2025


T-1535


T-1535

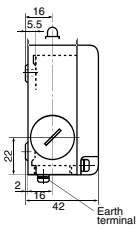


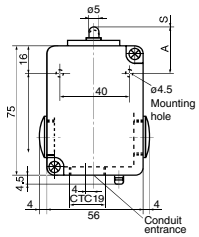


Brass plunger

	-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

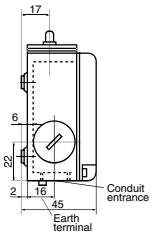


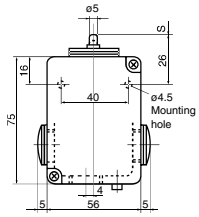


Brass plunger

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

Mass: 200g

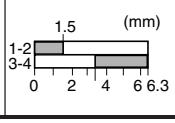
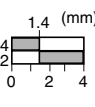
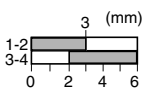
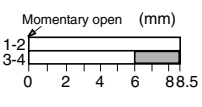




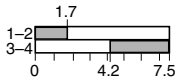
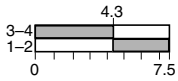
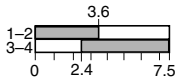
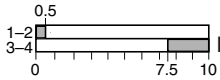
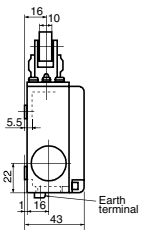
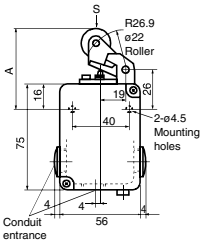
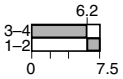
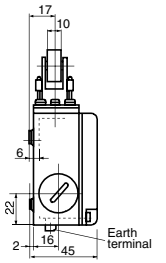
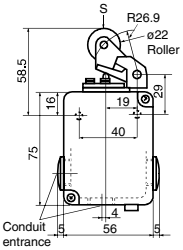
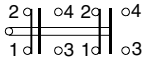
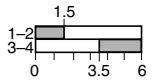
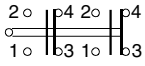
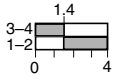
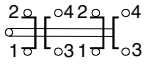
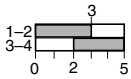
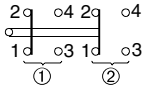
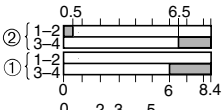
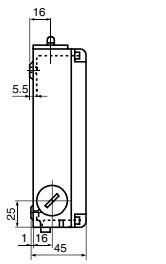
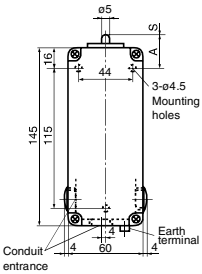
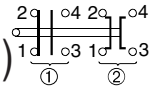
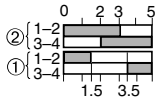
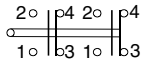
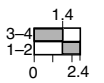
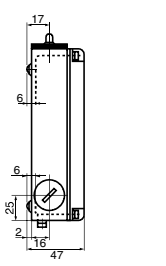
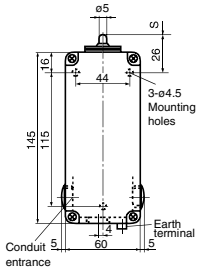
Brass plunger

Mass: 210g

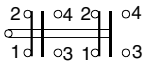
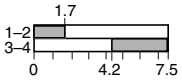
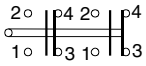
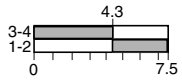
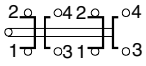
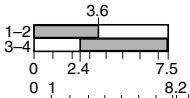
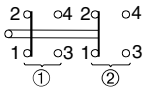
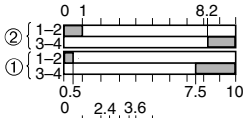
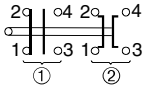
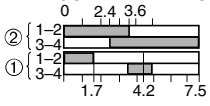
■ Contact action (Typical)

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	Dimensions, mm
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
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
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	
 T-1567						  Brass plunger
Complex (Normal stroke + Make-before-break)				**K244g-2/2U**	PL5NGN-46	
						2/2 2S/2S 2U/2U 2V/2V 2/2U A 26 24 26 26 26 Mass: 410g
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						  Brass plunger
						Mass: 420g

■ K244 series/Standard

Description	Contact arrangement	Terminal No.	Travel ▩Contact closed □Contact open	Type	Ordering code
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

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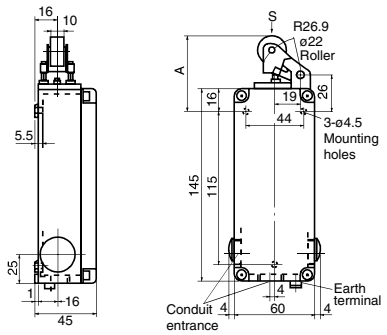
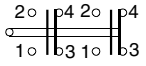
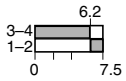


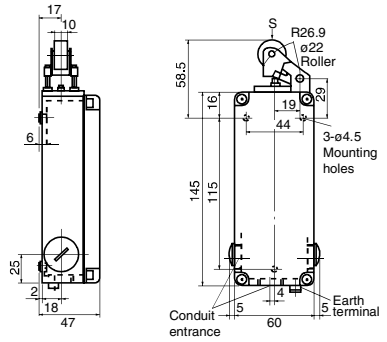
Phenal-formaldehyde roller

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

Mass: 440g

Description	Contact arrangement	Terminal No.	Travel ▩Contact closed □Contact open	Type	Ordering code
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

T-1567



Phenal-formaldehyde roller

Mass: 450g

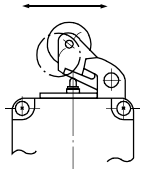
05

Reversing roller lever momentary-contact limit switches, K244g□R

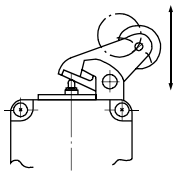
■ Description

These limit switches are designed to detect the movements in the vertical direction. The switch body is identical to the standard type except that one roller is extended from the housing.
The performance is the same as for the standard type.

● **Standard**



● **Reversing**



Right side roller

S-2900

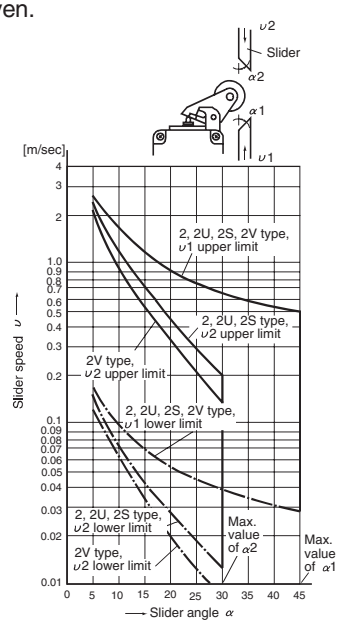
K244gRA-2

SF-2028

K244gRA-2/2

■ Actuating slider face angles and approach speeds

K244 limit switches have an outstanding performance and will have a long service life under normal conditions. They are designed to carry out 3,000 operations per hour but if they are operated at an extremely high speeds or on the contrary at extremely low speeds contact trouble could develop which would reduce the mechanical life expectancy of the devices.
Reversing roller levers are provided with sliders in their vertical direction. The slider face angles and approach speeds should be kept within the range shown by curves. The maximum angle of the actuating slider is α_1=45°, α_2=30° and under. Snap-action types can be used at speeds less than the minimum value given.



■ 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
K244gRA-2	10	50	24	10	24	10	10
K244gRA-2U			110	10	110	2.2	1.3
K244gRA-2V			220	10	220	0.9	0.4
			440	10	440	0.4	0.2
			550	10	550	0.32	0.15*2
K244gRA-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	0.1*2

Notes: *1 When NO and NC contacts are wired in the same polarity.
*2 Opposite contacts are not permitted to carry potential.

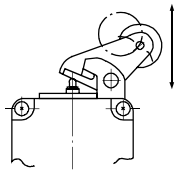
■ Ordering information

Specify the following
1. Type number or ordering code

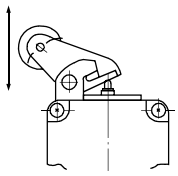
Example

Limit switch	PL
With enclosure	5
Standard contact	N
Cast-metal clad enclosure	G
With reversing roller plunger	W
Contact 1NO+1NC, snap-action	-21
Ordering code	PL5NGW-21

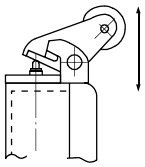
■ Changing direction of operating head



Right side roller



Left side roller



Front-side roller

■ Ordering code: *See page 05/113.*

■ Travel operating force: *See page 05/114.*

■ Cable connection: *See page 05/114.*

■ Type number nomenclature

K244 ■■■ - 2 ■

Basic type

Enclosure
g: Cast-metal clad
go: Cast-metal clad oil-tight
gw: Cast-metal clad water-tight

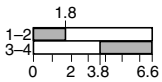
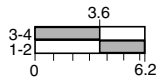
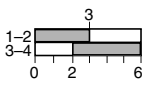
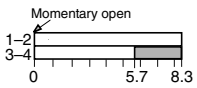
Actuator
R: Top roller lever plunger
A: Reversing roller

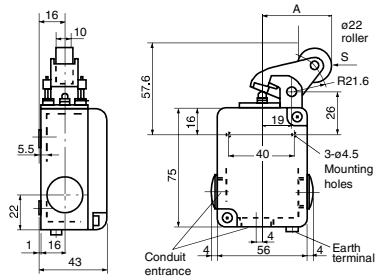
Contact type
Blank: Standard contact (Normal stroke)
S: Snap-action contact
U: Make-before-break contact
V: Extended stroke contact

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

■ Technical data: Same as standard type, *see page 05/113.*

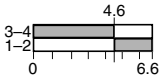
■ K244 series/Reversing roller

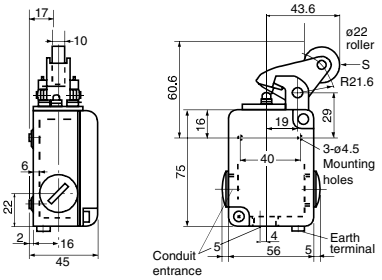
Description	Contact arrangement	Terminal No.	Travel ■Contact closed □Contact open	Type	Ordering code
Reversing top roller lever plunger cast-metal clad	1NO+1NC		S (mm)		
Normal stroke				**K244gRA-2**	PL5NGW-22
Snap-action				**K244gRA-2S**	PL5NGW-21
Make-before-break				**K244gRA-2U**	PL5NGW-23
 S-2900 Extended stroke				**K244gRA-2V**	PL5NGW-25



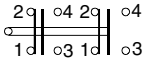
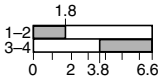
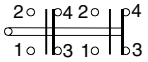
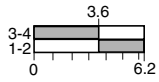
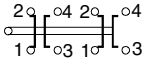
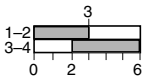
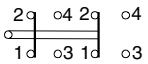
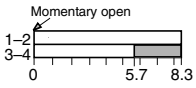
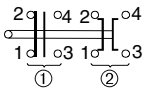
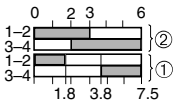
	-2	-2S	-2U	-2V
A	43.6	43.6	43.6	45.8

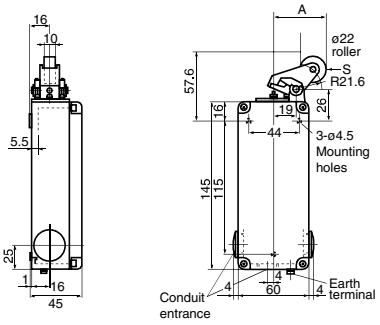
Mass: 240g Phenal-formaldehyde roller

Description	Contact arrangement	Terminal No.	Travel ■Contact closed □Contact open	Type	Ordering code
Reversing top roller lever plunger oiltight and watertight cast-metal clad	1NO+1NC		S (mm)		
Snap-action				Oiltight **K244goRA-2S**	PL5NLW-21
 S-2900				Watertight **K244gwRA-2S**	PL5NWW-21



Mass: 250g Phenal-formaldehyde roller

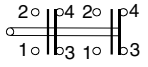
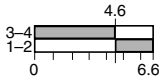
Description	Contact arrangement	Terminal No.	Travel ■Contact closed □Contact open	Type	Ordering code
Reversing top roller lever plunger cast-metal clad	2NO+2NC		S (mm)		
Normal stroke				**K244gRA-2/2**	PL5NGW-42
Snap-action				**K244gRA-2S/2S**	PL5NGW-41
Make-before-break				**K244gRA-2U/2U**	PL5NGW-43
 SF-2028 Extended stroke				**K244gRA-2V/2V**	PL5NGW-45
Complex (Normal stroke + Make-before-break)				**K244gRA-2/2U**	PL5NGW-46

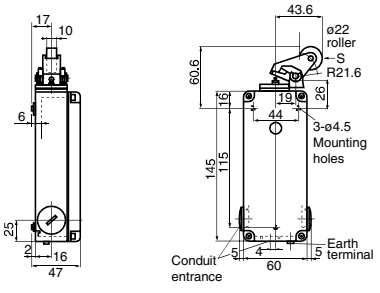


Phenal-formaldehyde roller

	2/2	2S/2S	2U/2U	2V/2V	2/2U
A	43.6	43.6	43.6	45.8	43.6

Mass: 440g

Description	Contact arrangement	Terminal No.	Travel ■Contact closed □Contact open	Type	Ordering code
Reversing top roller lever plunger oiltight and watertight cast-metal clad	2NO+2NC		S (mm)		
Snap-action				Oiltight **K244goRA-2S/2S**	PL5NLW-41
 SF-2028				Watertight **K244gwRA-2S/2S**	PL5NWW-41



Phenal-formaldehyde roller

Mass: 450g

Momentary-contact limit switches for low voltage circuit HK244 and WK244

■ Description

HK244 and WK244 limit switches have been developed for use in low voltage and low current circuits. They will operate effectively in 3 Volts AC or DC, 5mA circuits although they are recommended that they are used in 48 Volts or 110 Volts circuits for best results.

HK244 limit switches

HK244 limit switches are provided with pure silver contacts. The movable contact carries out a scrubbing action during make/break operation ensuring good connections at all times.
The switch body is molded from a high performance resin, and versions with transparent plastic covers and with aluminum die-cast housing are also available.

WK244 limit switches

The bifurcated contact is made of pure silver and like the HK244 series they are also suitable for use with low voltage circuits. The dimensions and operating strokes are similar to the standard type.

■ Ordering information

Specify the following:
1. Type number or ordering code

Example

Limit switch ..... PL
With enclosure 5
Scrubbing contact ..... H
Cast-metal clad enclosure ..... G
Top roller lever plunger ..... R
Contact 1NO+1NC, normal stroke ..... -22
Ordering code PL5HGR-22

■ Dimensions, mm

Same as standard type limit switch K244 series. *See page 05/115 to 05/117, 05/119.*

■ Ordering code: *See page 05/113.*


SK-583
WK244xp-2


T-1537
HK244gR-2


T-1535
HK244g-2

■ Ratings

HK244

Thermal current (A)	Making current (A)	Breaking current *1 AC Voltage (V)	AC Current (A)	DC Voltage (V)	Current (A) Resistive	Inductive
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

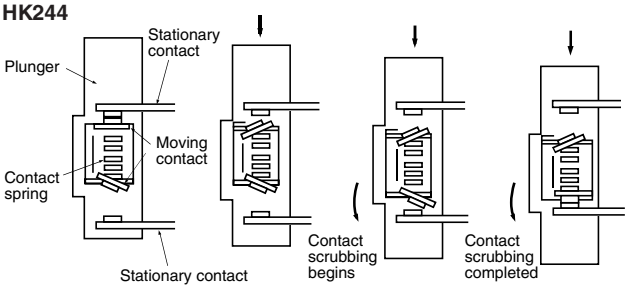
WK244

Thermal current (A)	Making current (A)	Breaking current *1 AC Voltage (V)	AC Current (A)	DC Voltage (V)	Current (A) Resistive	Inductive
10	12.5	110	2.5	110	1.5	0.2
		220	2.5	220	0.63	–

Notes: *1 When NO and NC contacts are wired in same polarity.
*2 Opposite contacts are not permitted to carry potential.

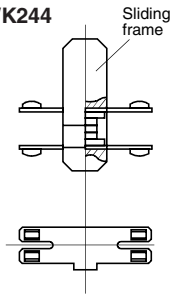
■ Contacts

HK244



Process of scrubbing contact

WK244



Bifurcated contact

■ Technical data

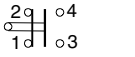
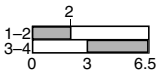
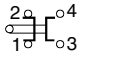
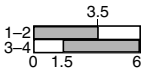
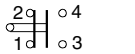
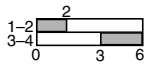
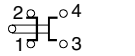
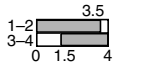
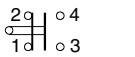
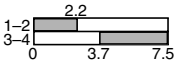
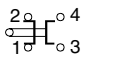
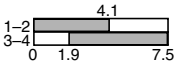
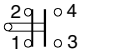
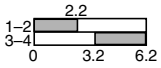
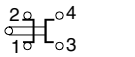
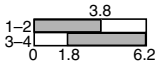
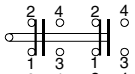
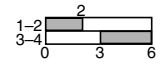
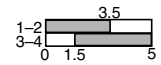
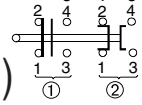
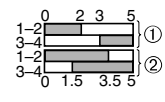
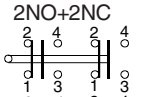
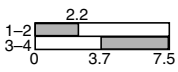
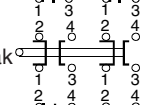
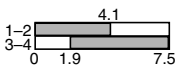
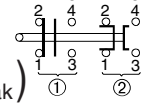
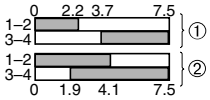
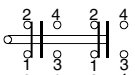
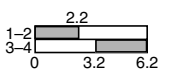
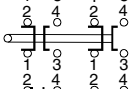
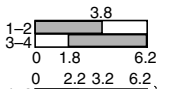
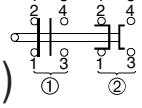
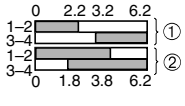
HK244

Insulation resistance: Over 100MΩ at 500VDC
Dielectric strength: 2500V AC rms 1 minute
Max. operating cycle: 3000 cycles per hour
Life expectancy Mechanical: 10 million operations
Electrical: 1.3 million operations at 24 to 550V AC 3A
Allowable ambient temperature: –5° to +60°C

WK244

Insulation resistance: Over 100MΩ at 500VDC
Dielectric strength: 2500VAC rms 1 minute
Max. operating cycle: 3000 cycles per hour
Life expectancy Mechanical: 10 million operations
Electrical: 1 million operations at 220V AC 1.5A
Allowable ambient temperature: –5° to +60°C

■ HK244 and WK244 series

Description	Contact arrangement	Travel (mm) of HK series (WK series: Same as standard series, pages 05/115 to 05/117)	HK series With scrubbing contact action Type	Ordering code	WK series With bifurcated contact Type	Ordering code	Dimensions (Same as K244)
Top push rod plunger transparent plastic cover	1NO+1NC						
Normal stroke			**HK244xp-2**	PL4HGN-22	**WK244xp-2**	PL4WGN-22	*Page 05/115*
Make-before-break			**HK244xp-2U**	PL4HGN-23	**WK244xp-2U**	PL4WGN-23	*Page 05/115*
Top push rod plunger cast-metal clad	1NO+1NC						
Normal stroke			**HK244g-2**	PL5HGN-22	**WK244g-2**	PL5WGN-22	*Page 05/115*
Make-before-break			**HK244g-2U**	PL5HGN-23	**WK244g-2U**	PL5WGN-23	*Page 05/115*
Top roller lever plunger cast-metal clad	1NO+1NC						
Normal stroke			**HK244gR-2**	PL5HGR-22	**WK244gR-2**	PL5WGR-22	*Page 05/116*
Make-before-break			**HK244gR-2U**	PL5HGR-23	**WK244gR-2U**	PL5WGR-23	*Page 05/116*
Reversing top roller lever plunger cast-metal clad	1NO+1NC						
Normal stroke			**HK244gRA-2**	PL5HGW-22	**WK244gRA-2**	PL5WGW-22	*Page 05/119*
Make-before-break			**HK244gRA-2U**	PL5HGW-23	**WK244gRA-2U**	PL5WGW-23	*Page 05/119*
Top push rod plunger cast-metal clad	2NO+2NC						
Normal stroke			**HK244g-2/2**	PL5HGN-41	**WK244g-2/2**	PL5WGN-41	*Page 05/116*
Make-before-break			**HK244g-2U/2U**	PL5HGN-43	**WK244g-2U/2U**	PL5WGN-43	*Page 05/116*
Complex (Normal stroke + Make-before-break)			**HK244g-2/2U**	PL5HGN-46	**WK244g-2/2U**	PL5WGN-46	*Page 05/116*
Top roller lever plunger cast-metal clad	2NO+2NC						
Normal stroke			**HK244gR-2/2**	PL5HGR-41	**WK244gR-2/2**	PL5WGR-41	*Page 05/117*
Make-before-break			**HK244gR-2U/2U**	PL5HGR-43	**WK244gR-2U/2U**	PL5WGR-43	*Page 05/117*
Complex (Normal stroke + Make-before-break)			**HK244gR-2/2U**	PL5HGR-46	**WK244gR-2/2U**	PL5WGR-46	*Page 05/117*
Reversing top roller lever plunger cast-metal clad	2NO+2NC						
Normal stroke			**HK244gRA-2/2**	PL5HGW-41	**WK244gRA-2/2**	PL5WGW-41	*Page 05/119*
Make-before-break			**HK244gRA-2U/2U**	PL5HGW-43	**WK244gRA-2U/2U**	PL5WGW-43	*Page 05/119*
Complex (Normal stroke + Make-before-break)			**HK244gRA-2/2U**	PL5HGW-46	**WK244gRA-2/2U**	PL5WGW-46	*Page 05/119*

Contact closed
Contact open