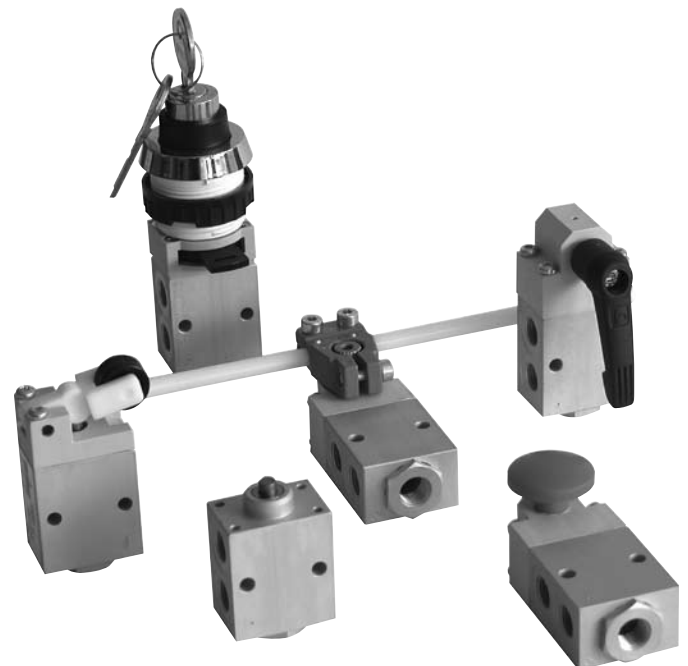


Table of Contents

Version	Actuation	Page		
		Characteristics	Dimensions	Order Instructions Overview
3/2 Way Valves	Manual Control	4	5	9
	Mechanical	4	6	9
	Pedal	4	6	9
for panel mounting to DIN 43696	Manual Control	4	7, 8	9

Directional Control Valves

Series K9-G1/8



3/2 Way Valves

Series K9
G1/8

Actuation:

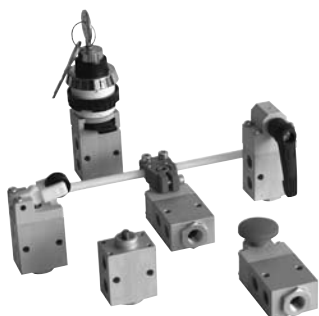
- Rotary lever, indexed
- Rotary lever, spring return
- Rotary lever, indexed, secured in two positions
- Pushbutton
- Cam operation
- Toggle cam operation
- Plunger operated
- Cam operated, free cam left or free cam right
- Pivoted lever
- Pedal
- Actuators for panel mounting

Versions:

For panel mounting, actuators correspond to internationally standardized mounting dimensions to DIN 43696 (Ø22, Ø30 mm)

Non-overlapping poppet valve with low actuating force and short response time.

Applicable as normally closed or normally open valve (see drawing).



Characteristics – Series K9

Characteristics	Symbol	Unit	Description
General Features			
System			Poppet Valve
Mounting			2 Screws M4
Tube connection			Thread
Port size			G1/8
Weight (mass)		kg	See page 4
Installation			In any position
Ambient temperature range	T _{min/max}	°C	-10 to +55
Medium temperature range	T _{min/max}	°C	+5* to +60
Medium			Filtered and lubricated or filtered and unlubricated
Lubrication			None or oil mist lubrication
Pneumatic Characteristics			
Nominal pressure	p _n	bar	6
Operating pressure range	p _{min/max}	bar	0 – 10
Nominal flow	QN	l/min	350
Flow direction			1 → 2 normally closed 3 → 2 normally open
Actuation			
Actuation			Manual, mechanical and pedal actuated (see page 5-8)
Stroke		mm	1.5 – 3
Actuation force	F _b	N	(see page 4)

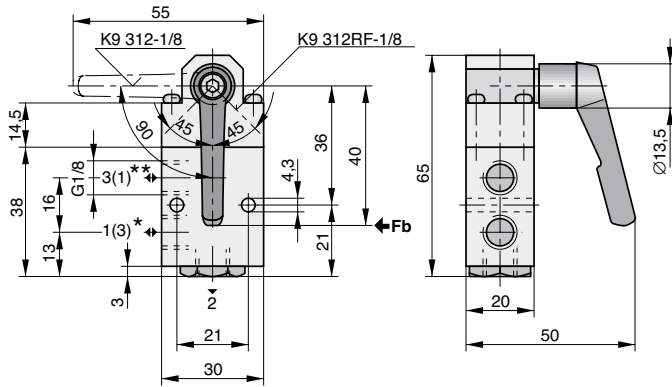
* -10°C when using dry compressed air

Actuation Forces, Rotation Angles and Weight

Description	Type	Actuation force (N)	Rotation angle	Weight mass (kg)
Rotary lever, indexed	K9 312-1/8	4.5	±45°, 90°	0.110
Rotary lever, spring return	K9 312RF-1/8	4.5	±45°, 90°	0.110
Rotary lever, indexed secured in both positions	K9 312S-1/8	4.5	±45°, 90°	0.110
Pushbutton	K9 314RF-1/8	25	–	0.075
Cam operation	K9 321RF-1/8	11	–	0.070
Toggle cam operation	K9 324RF-1/8	5	±40°	0.120
Plunger operated	K9 323RF-1/8	32	–	0.050
Cam operated free cam left	K9 325RF-1/8	5	±40°	0.120
Cam operated free cam right	K9 326RF-1/8	5	±40°	0.120
Pivoted lever	K9 329RF-1/8	2*	±40°	0.115
Pedal	K9 331RF-1/8	12	–	0.800
Basic valve for panel mounting actuators	K9 390RF-1/8	35	–	0.060

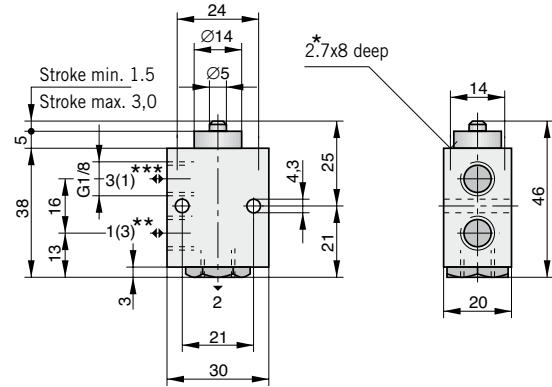
* at a distance of 100 mm from fulcrum

Rotary Lever – Type: K9 312...-1/8



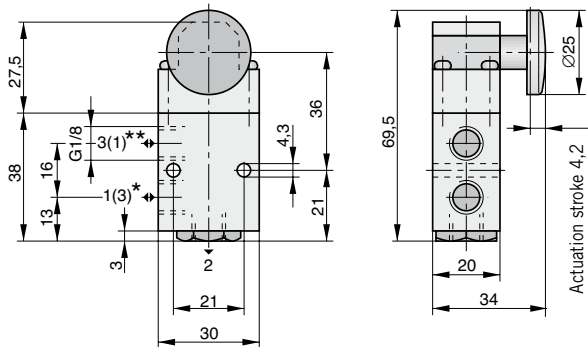
- * = P when used as “normally closed“
- ** = P when used as “normally open“

Plunger Operated – Type: K9 323RF-1/8



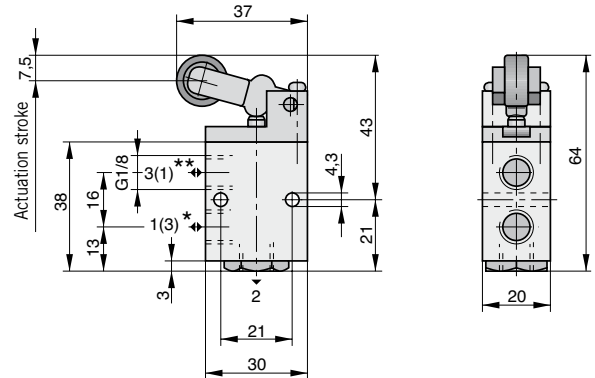
- * Self tapping screws CM 3x.. DIN 7500 to be used
- ** = P when used as “normally closed“
- *** = P when used as “normally open“

Pushbutton – Type: K9 314RF-1/8



- * = P when used as “normally closed“
- ** = P when used as “normally open“

Cam operation– Type: K9 321RF-1/8

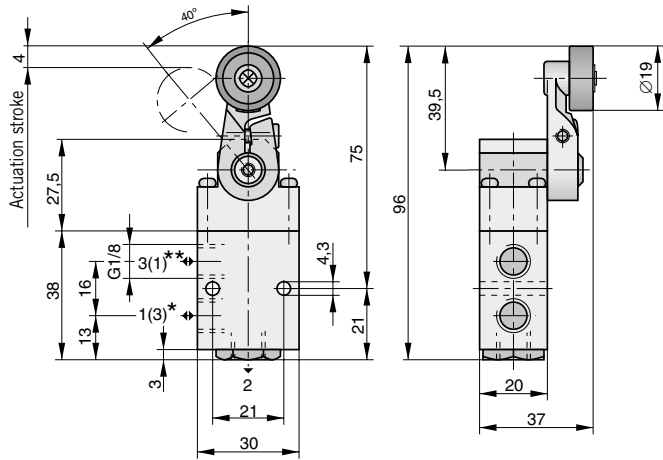


- * = P when used as “normally closed“
- ** = P when used as “normally open“

Order Instructions see page 9, Characteristics see page 4

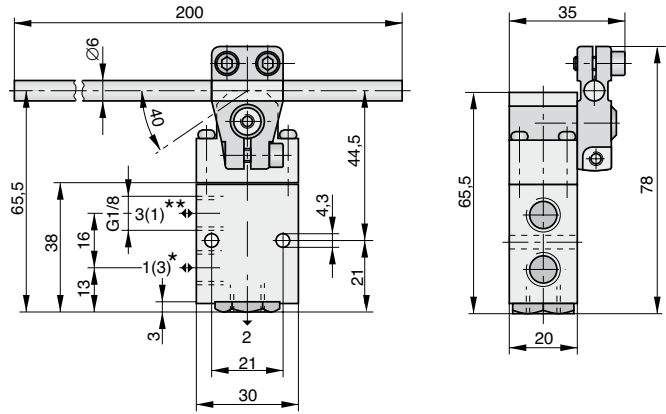
Dimensions in mm

Toggle Cam Operation – Type: K9 324RF-1/8



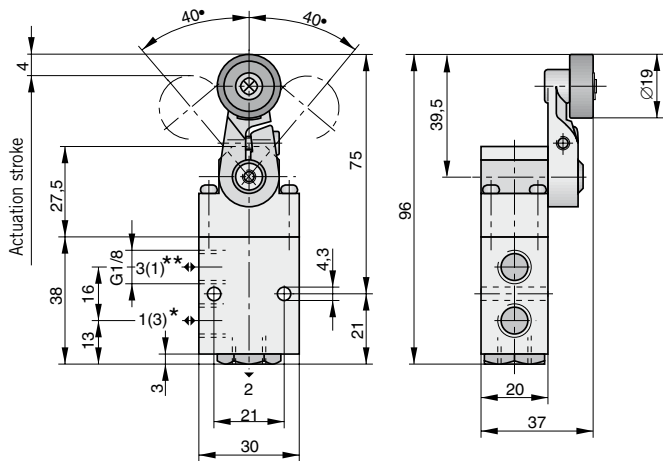
* = P when used as “normally closed”
 ** = P when used as “normally open”

Pivoted Lever – Type: K9 329RF-1/8



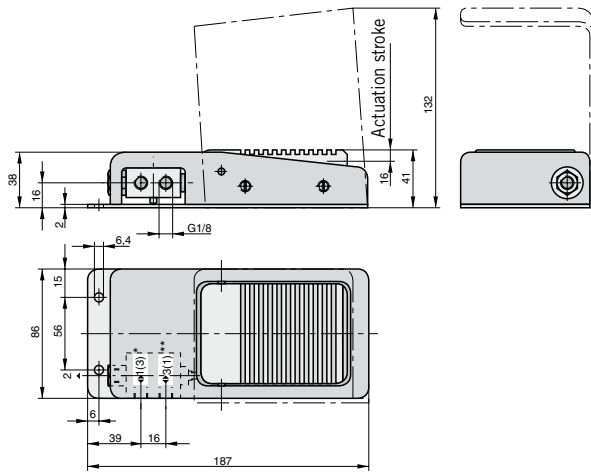
* = P when used as “normally closed”
 ** = P when used as “normally open”

**Cam Operated free cam left / right
 Type: K9 325RF-1/8, K9 326RF-1/8**



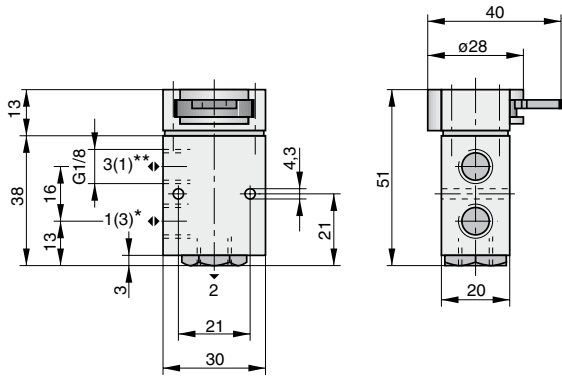
* = P when used as “normally closed”
 ** = P when used as “normally open”

Pedal – Type: K9 331RF-1/8



* = P when used as “normally closed”
 ** = P when used as “normally open”

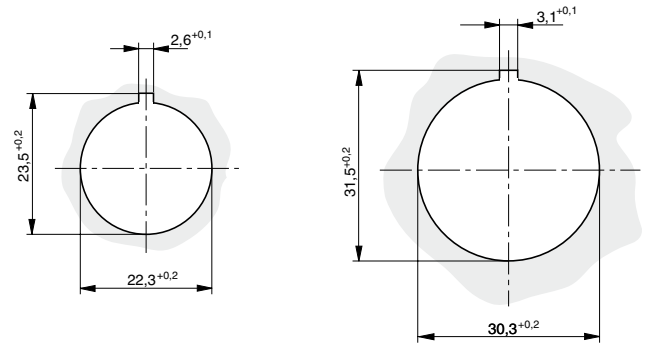
Basic Valve with adaptor for panel mounting
Type: K9 390RF-1/8



Mounting holes for mounting diameters 22 and 30 mm

Mounting diameter $\varnothing 22$ mm

Mounting diameter $\varnothing 30$ mm

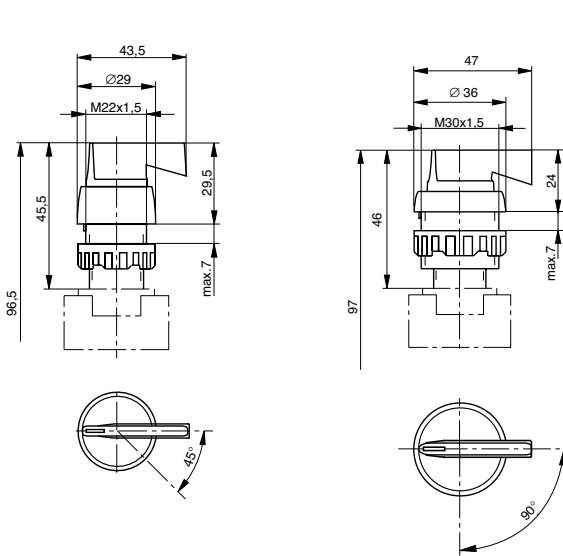


* = P when used as “normally closed“
 ** = P when used as “normally open“

Rotary Lever, indexed – Type: 12T-22, 12T-30

Mounting diameter $\varnothing 22$ mm

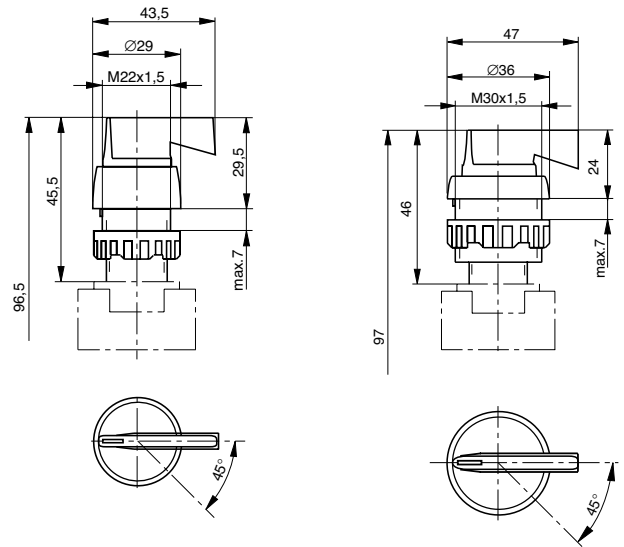
Mounting diameter $\varnothing 30$ mm



Rotary Lever with spring return – Type: 12T-RF-22, 12T-RF-30

Mounting diameter $\varnothing 22$ mm

Mounting diameter $\varnothing 30$ mm



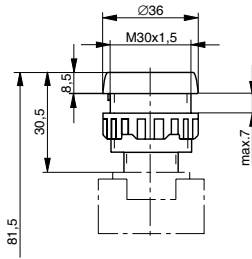
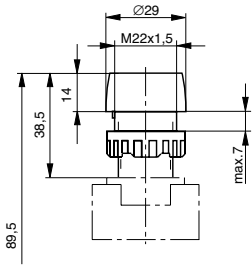
Order Instructions see page 9, Characteristics see page 4

Dimensions in mm

Pushbutton – Type: 13T-RF-22, 13T-RF-30

Mounting diameter $\varnothing 22$ mm

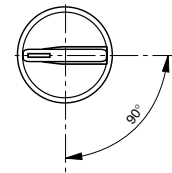
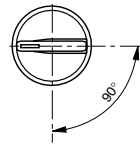
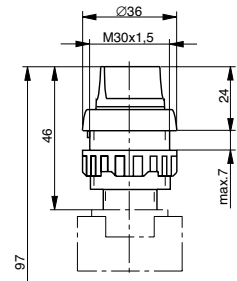
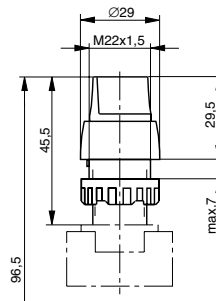
Mounting diameter $\varnothing 30$ mm



Rotary Switch – Type: 17T-22, 17T-30

Mounting diameter $\varnothing 22$ mm

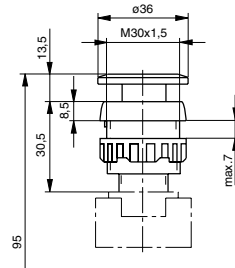
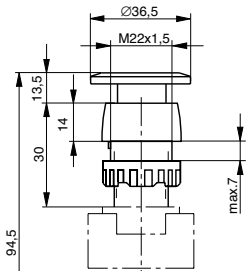
Mounting diameter $\varnothing 30$ mm



Mushroom Pushbutton – Type: 15T-RF-22, 15T-RF-30

Mounting diameter $\varnothing 22$ mm

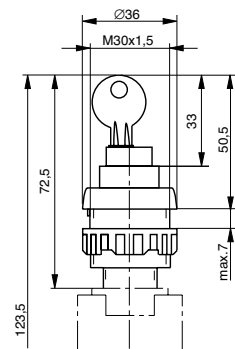
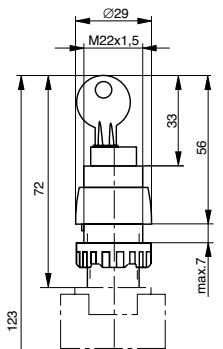
Mounting diameter $\varnothing 30$ mm



Locking Switch – Type: 16T-22, 16T-30

Mounting diameter $\varnothing 22$ mm

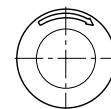
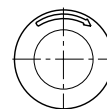
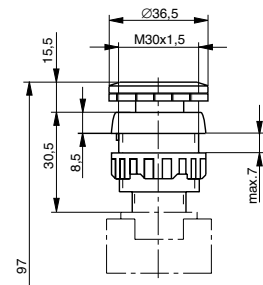
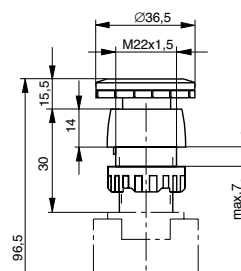
Mounting diameter $\varnothing 30$ mm



Mushroom Switch (EMERGENCY SHUTDOWN) – Type: 18T-22, 18T-30

Mounting diameter $\varnothing 22$ mm

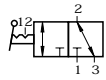
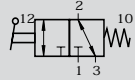
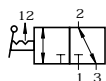
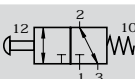
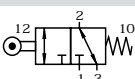
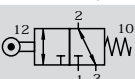
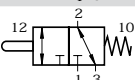
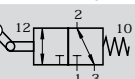
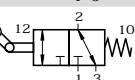
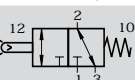
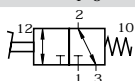
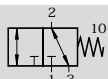







Mounting diameter $\varnothing 30$ mm



Order Instructions see page 9, Characteristics see page 4

Dimensions in mm

Order Instructions – 3/2 Way Poppet Valves, Series K9

Actuation	Symbol	Mounting Ø (mm)	Order Instructions		Page
			Type	Order No.	
Rotary lever, indexed			K9 312-1/8	PA 10269	5
Rotary lever, spring return			K9 312RF-1/8	PA 10270	5
Rotary lever, indexed secured in both positions			K9 312S-1/8	PA 10349	5
Pushbutton			K9 314RF-1/8	PA 10271	5
Cam operation			K9 321RF-1/8	PA 10272	5
Toggle cam operation			K9 324RF-1/8	PA 10273	6
Plunger operated			K9 323RF-1/8	PA 10235	5
Cam operated free cam left			K9 325RF-1/8	PA 10274	6
Cam operated free cam right			K9 326RF-1/8	PA 10275	6
Pivoted lever			K9 329RF-1/8	PA 10276	6
Pedal			K9 331RF-1/8	PA 10277	6
Panel mounting valve with adaptor for interchangeable actuation			K9 390RF-1/8	PA 10278	7
Rotary lever, indexed		22 30	12T-22 12T-30	KX 9355 KX 9314	7
Rotary lever, spring return		22 30	12T-RF-22 12T-RF-30	KX 9356 KX 9315	7
Pushbutton		22 30	13T-RF-22 13T-RF-30	KX 9357 KX 9316	8
Mushroom pushbutton		22 30	15T-RF-22 15T-RF-30	KX 9358 KX 9317	8
Locking switch		22 30	16T-22 16T-30	KX 9359 KX 9318	8
Rotary switch		22 30	17T-22 17T-30	KX 9360 KX 9319	8
Mushroom switch EMERGENCY SHUTDOWN		22 30	18T-22 18T-30	KX 9361 KX 9320	8