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**Special valves**

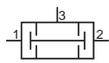
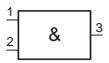
- *Logic components AND/OR*
- *Timer*
- *2/2 way screw-in valves*
- *Miniature screw-in pressure regulators*
- *Relief valves*



# AND valves (dual pressure valves) G1/8

*In-line version*

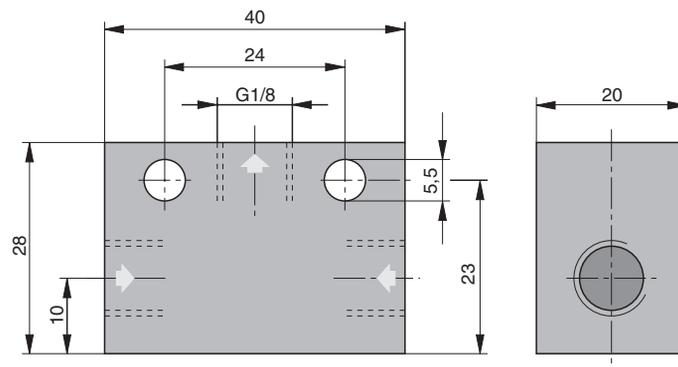
*Series AND 8*



**Actuation: Pneumatic**

Characteristics			Pressures quoted as gauge pressure	
Characteristics	Symbol	Unit	Description	
General features				
Type			Poppet valve	
Mounting			2 through-bolts M5	
Tube connection			Thread	
Port size			G1/8	
Weight (mass)		kg	0.05	
Installation			In any position	
Ambient temperature range	$T_{min}$ $T_{max}$	°C	-20 +80	Note: When using below freezing point (0 °C) it is necessary to consult us
Medium temperature range	$T_{min}$ $T_{max}$	°C	0 +80	
Medium			Filtered compressed air	
Lubrication			With or without oil mist lubrication	
Pneumatic characteristics				
Nominal pressure	$p_n$	bar	6	
Operating pressure range	$p_{min}$	bar	0.5	
	$p_{max}$	bar	10	
Nominal flow	$Q_N$	l/min	134	

## Dimensions



## Order Instructions

AND 8-1/8 PA10207

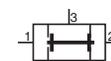
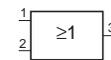
Dimensions in mm

## OR valves (shuttle valves) G1/8, G1/4

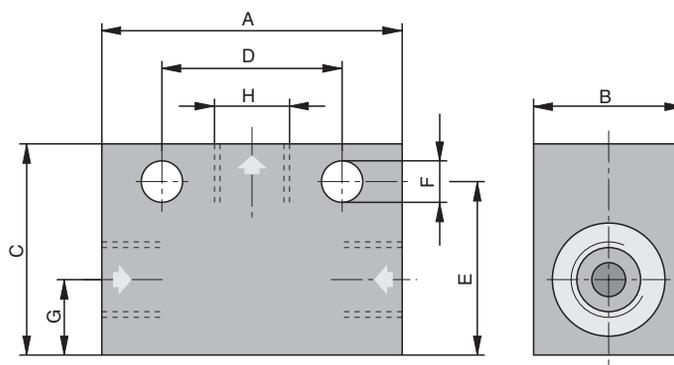
*In-line version*

*Series OR 8*

Characteristics			Pressures quoted as gauge pressure	
Characteristics	Symbol	Unit	Description	
General features				
Type			Poppet valve	
Mounting			2 through-bolts M5	
Tube connection			Thread	
Port size			G1/8	G1/4
Weight (mass)		kg	0.05	0.07
Installation			In any position	
Ambient temperature range	$T_{min}$ $T_{max}$	°C	-20 +80	Note: When using below freezing point (0 °C) it is necessary to consult us
Medium temperature range	$T_{min}$ $T_{max}$	°C	0 +80	
Medium			Filtered compressed air	
Lubrication			With or without oil mist lubrication	
Pneumatic characteristics				
Nominal pressure	$p_n$	bar	6	
Operating pressure range	$p_{min}$	bar	0.5	
	$p_{max}$	bar	10	
Nominal flow	$Q_N$	l/min	385	635



### Dimensions



### Dimension table and order instructions

Order Instructions		A	B	C	D	E	F	G	H
Type	Order No.								
OR 8-1/8	PA10206	40	20	28	24	23	5.5	10	G1/8
OR 8-1/4	PA12516	45	20	35	24	27	5.5	10	G1/4

Dimensions in mm



# Timer

*In-line version*

*Series T3P10*



**Versions:**

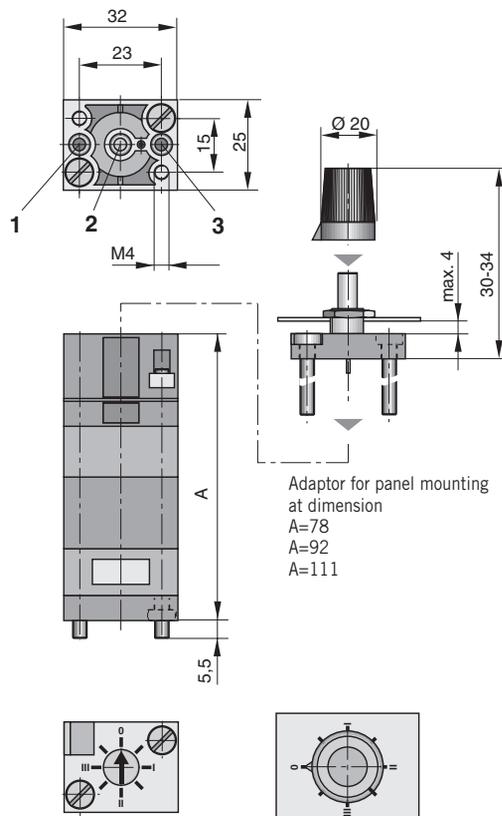
- normally closed (NC)
- normally open (NO)

**Delivery includes:**

- Timer without base plate
- please order this separately

Characteristics			Pressures quoted as gauge pressure
Characteristics	Symbol	Unit	Description
General features			
Mounting		On base plate	
Tube connection		Swivelling plug-in connection	
Port size		mm	For tube Ø 4/2.7
Installation		In any position	
Ambient temperature range		$T_{min}$	°C -5
		$T_{max}$	°C +50
Medium		Filtered and lubricated or filtered and unlubricated air	
Pneumatic characteristics			
Nominal pressure	$p_n$	bar	6
Operating pressure range		$p_{min}$	bar 2
		$p_{max}$	bar 8
Nominal flow	$Q_N$	l/min	170
Time delay	$t_{max}$	s	max. 60 (according to type)
Min. reset time		s	< 0.1

**Dimensions**



**Dimension table, time delay and weight**

Type	Time delay (s)	Dim. A	Weight (mass) kg
T3P10-NG-15	0.1 – 15	78	0.090
T3P10-NG-30	0.1 – 30	92	0.100
T3P10-NG-60	0.1 – 60	111	0.120
T3P10-NO-15	0.1 – 15	78	0.090
T3P10-NO-30	0.1 – 30	92	0.100

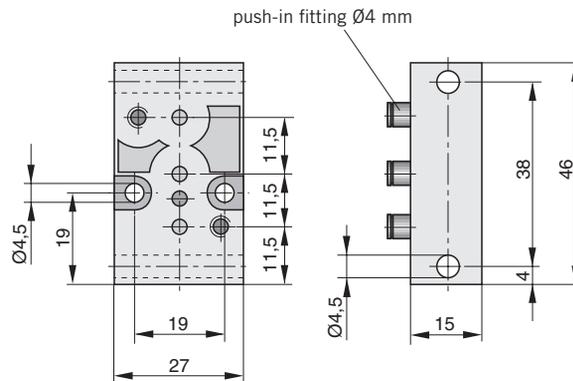
**Order Instructions**

Time delay (s)	Function	Order Instructions Type	Order No.
0.1 – 15	NC *	T3P10-NG-15	KL8255
0.1 – 30	NC *	T3P10-NG-30	KL8256
0.1 – 60	NC *	T3P10-NG-60	KL8257
0.1 – 15	NO *	T3P10-NO-15	KL8258
0.1 – 30	NO *	T3P10-NO-30	KL8259
Adaptor for panel mounting at dim. A=78			KL8260
Adaptor for panel mounting at dim. A=92			KL8261
Adaptor for panel mounting at dim. A=111			KL8262

\* NC = normally closed  
NO = normally open

Dimensions in mm

## Single base plate – bolt mounting version – Type EAP-S



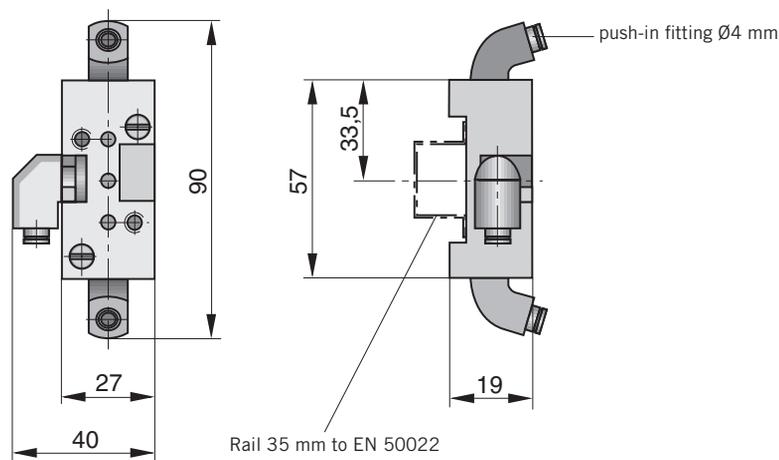
## Base plate for timer

Versions:  
 – Bolt mounting  
 – Rail mounting

## Single base plate – rail mounting version – Type EAP-H

### Characteristics

Characteristics	Description
Mounting	On rail to EN 50022 (35 x 15 or 35 x 7,5)
Connections	Swivelling plug-in connection for tube $\varnothing 4/2.7$



### Colour coding

Connection	Colour	Tube connection
1	green	Input 1
2	red	Output 3
3	yellow	Input or air supply 2

### Order Instructions

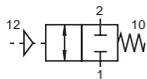
Benennung	Order Instructions	
	Type	Order No.
Single base plate, bolt mounting version	EAP-S	KL8266
Single base plate, rail mounting version	EAP-H	KL8267

Dimensions in mm



## 2/2 way screw-in valves (check valves) G1/8 – G1/2

Series EVP



Actuation: pneumatic



Characteristics			Pressures quoted as gauge pressure	
Characteristics	Symbol	Unit	Description	
General features				
Type	Spool valve with spring return			
Tube connection	Port 1: Internal thread to ISO 228 Port 2: External thread to ISO 228 Port 12: G1/8 internal, push-in. Ø 4			
Port size	See dimension drawing			
Weight (mass)	kg	See table		
Installation	In any position – rings can be rotated 360° after the valve has been installed			
Ambient temperature range	$T_{min}$ $T_{max}$	°C	-10 +70	Note: When using below freezing point (0 °C) it is necessary to consult us
Medium temperature range	$T_{min}$ $T_{max}$	°C	-10 +70	
Medium	Filtered compressed air, neutrale Gase *			
Lubrication	With or without oil mist lubrication <sup>1)</sup>			
Material	Metal parts: Nickel-plated brass or stainless steel Springs: Stainless steel Seals: Buna N			
Pneumatic characteristics				
Nominal pressure	$p_n$	bar	6	
Operating pressure range	$p_{min}$	bar	0	
	$p_{max}$	bar	10	
Nominal flow	$Q_N$	l/min	See table	
Actuation				
Pneumatic	Direct			
Actuation pressure range	$p_{st}$	bar	See diagram	

\* Other media on request

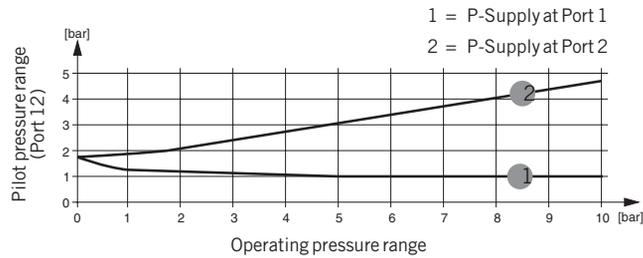
<sup>1)</sup> we recommend the use of mineral oil VG 32 to ISO 3448

### Nominal flow, tightening torque, opening pressure, weight (mass)

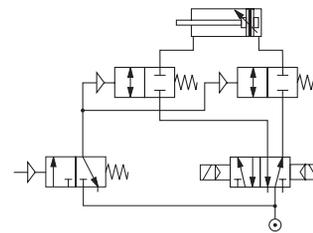
Port size	DN [mm]	$Q_N$ [l/min]	max. tightening [Nm]	Weight Mass [kg]
G1/8	4.0	300	3.0	0.068 – with thread
				0.070 – push-in fitting Ø 6
G1/4	5.6	700	7.0	0.104 – with thread
				0.104 – push-in fitting Ø 6
				0.110 – push-in fitting Ø 8
G3/8	7.7	1200	9.0	0.150 – with thread
				0.145 – push-in fitting Ø 8
				0.155 – push-in fitting Ø 10
G1/2	10.0	2100	15.0	0.210 – with thread
				0.240 – push-in fitting Ø 12

Dimensions in mm

### Pilot pressure in relation to operating pressure



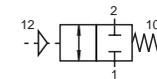
### Example



The cylinder can be stopped during extension and retraction

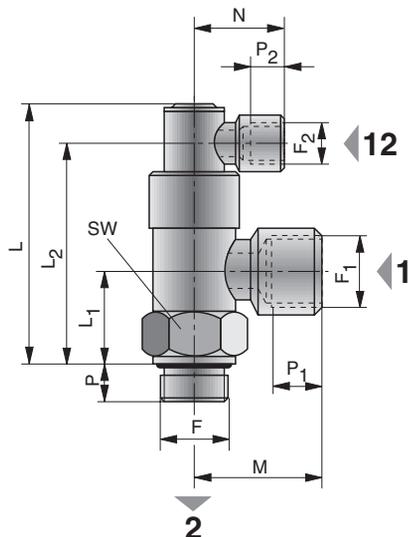
## 2/2 way screw-in valves (check valves) G1/8 – G1/2

Series EVP

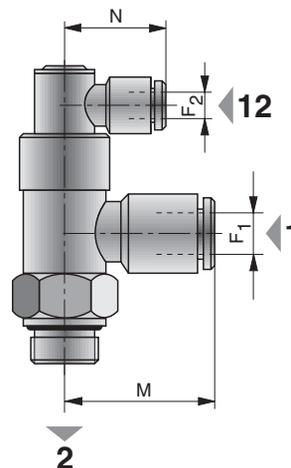


### Dimensions

Dimensions  
with internal thread



Dimensions  
with push-in fitting



Actuation: pneumatic

### Dimension table and order instructions

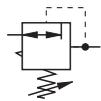
F	F <sub>1</sub>	F <sub>2</sub>	L	L <sub>1</sub>	L <sub>2</sub>	M	N	P	P <sub>1</sub>	P <sub>2</sub>	SW	Order Instructions Type	Order No.
G1/8	G1/8	G1/8	51.5	16.0	42.0	21.0	21	6	7	7	14	EVP-1/8	KL4062
G1/8	∅ 6	∅ 4	51.5	16.0	42.0	25.0	25	6	-	-	14	EVP-1/8	KL4063
G1/4	G1/4	G1/8	57.5	19.5	48.0	25.0	21	8	8	7	17	EVP-1/4	KL4064
G1/4	∅ 6	∅ 4	57.5	19.5	48.0	27.5	25	8	-	-	17	EVP-1/4	KL4065
G1/4	∅ 8	∅ 4	57.5	19.5	48.0	32.0	25	8	-	-	17	EVP-1/4	KL4066
G3/8	G3/8	G1/8	63.0	22.5	53.5	31.0	21	8	10	7	22	EVP-3/8	KL4067
G3/8	∅ 8	∅ 4	63.0	22.5	53.5	31.5	25	8	-	-	22	EVP-3/8	KL4068
G3/8	∅ 10	∅ 4	63.0	22.5	53.5	36.0	25	8	-	-	22	EVP-3/8	KL4069
G1/2	G1/2	G1/8	71.5	27.0	61.5	40.0	21	12	14	7	27	EVP-1/2	KL4070
G1/2	∅ 12	∅ 4	71.5	27.0	61.5	40.5	25	12	-	-	27	EVP-1/2	KL4071

Dimensions in mm



## Miniature screw-in pressure regulators G1/8, M5

Series HMR, HMRS



### Versions:

- Screw-in version
- for panel mounting
- Viton version\*

\* Note:  
The Viton version can be used for temperatures up to 140°C.  
Please consult us before using the valve in high temperatures, especially when using other media than compressed air.



Characteristics			Pressures quoted as gauge pressure	
Characteristics	Symbol	Unit	Description	
General features				
Type	Pressure regulating valve, piston type with secondary pressure relief			
Tube connection	Thread			
Port size	Input: G1/8 and M5 Output: M5 Gauge: M5			
Nominal bore	mm	2.2		
Weight (mass)	kg	0.08 (0.11)		
Installation	In any position			
Ambient temperature range	$T_{min}$ $T_{max}$	°C	-20 +60	Note: When using below freezing point (0 °C) it is necessary to consult us
Medium temperature range	$T_{min}$ $T_{max}$	°C	-20 +80	
Medium	Filtered compressed air, neutral gases*			
Lubrication	With or without oil mist lubrication <sup>1)</sup>			
Material	Metal parts: Brass Ms 58 Springs: Stainless and zinc-plated steel Seals: Buna N			
Pneumatic characteristics				
Operating pressure range	$p_{min}$	bar	0	
	$p_{max}$	bar	12	
Secondary pressure range	$p_{min}$	bar	1	
	$p_{max}$	bar	8	
Flow rate	$Q_N$	l/min	100 **	

\* Other media on request

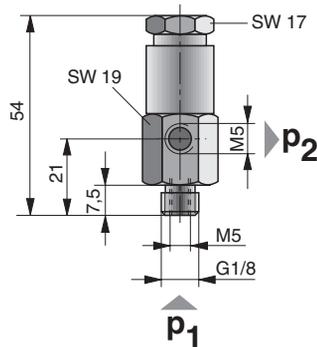
\*\* at  $p_1 = 10$  bar to  $p_2 = 6$  bar,  $\Delta p = 1$  bar

<sup>1)</sup> We recommend the use of mineral oil type VG32 to ISO 3448

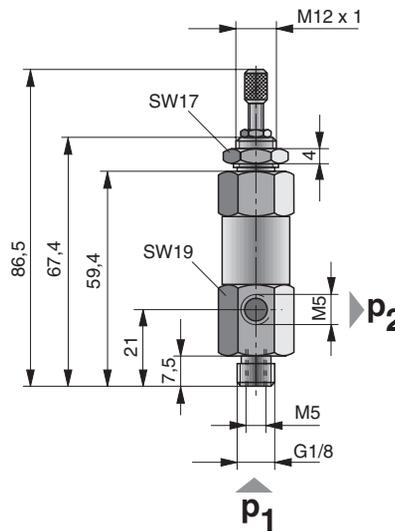
Dimensions in mm

**Dimensions**

Screw-in version

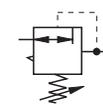


Panel mounting version



**Miniature  
screw-in  
pressure  
regulators  
G1/8, M5**

Series HMR, HMRS



**Versions:**

- Screw-in version
- for panel mounting
- Viton version\*

**Order Instructions**

Version	Port size	Sealing material	Order Instructions	
			Type	Order No.
Screw-in version	G1/8, M5	Buna N	HMR-1/8	KL4072
Panel version	G1/8, M5	Buna N	HMRS-1/8	KL4074
Screw-in version	G1/8, M5	Viton	HMR-1/8-V	KL4073
Panel version	G1/8, M5	Viton	HMRS-1/8-V	KL4075

\* Note:  
The Viton version can be used for temperatures up to 140°C. Please consult us before using the valve in high temperatures, especially when using other media than compressed air.

Dimensions in mm



# Relief Valves G1/8, G1/4

*Screw-in version*

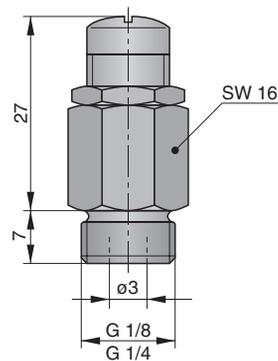
*Series USV*

**Adjustment:**

1.1 – 3 bar  
3.1 – 6 bar

Characteristics		Pressures quoted as gauge pressure	
Characteristics	Symbol	Unit	Description
General features			
Type	Spring-loaded poppet valve with adjustable opening pressure		
Type		USV-1/8	USV-1/4
Port size		G1/8	G1/4
Weight (mass)	kg	0.031	0.034
Installation			
In any position			
Temperature range	$T_{min}$	°C	-10
	$T_{max}$	°C	+90
Medium			
Compressed air			
Opening pressure	bar	1.1 – 3 or 3.1 – 6 (adjustable)	
Material			
Brass			

**Dimensions**



**Order Instructions**

Adjustment	Port size	Order Instructions	
		Type	Order No.
1.1 – 3 bar	G1/8	USV-1/8	KY 4093
3.1 – 6 bar	G1/8	USV-1/8	KY 4065
1.1 – 3 bar	G1/4	USV-1/4	KY 4094
3.1 – 6 bar	G1/4	USV-1/4	KY 4066



Dimensions in mm