Section 01

Air distribution

Valves, solenoid valves and devices for compressed air distribution and control

Valves and solenoid valves

Spool valves and solenoid valves

Single and manifold versions, mechanical and manual or pneumatic command

Direct operated solenoid valves

Pilot valves, high flow rate performance 2/2 ways and 3/2 ways, miniaturized version available as well

Poppet valves and solenoid valves

3/2 & 2/2 valves and solenoid valves for compressed air and vacuum, with aluminium and technopolymer body. 2/2 pad valves, shutter seating, angle seated solenoid valves for fluids

"Namur" valves and solenoid valves

Namur valves and solenoid valves according to standard ISO 5599/1 available in 3 sizes with M12 5/2, 5/3 connectors, aluminium and technopolymer body

ISO 5599/1 valves and solenoid valves

Valves and solenoid valves according to standard ISO 5599/1 available in 3 sizes with M12 5/2, 5/3 connectors, aluminium and technopolymer body

Accessories

Pneumatic circuit accessories

Flow control valves, quick exhaust valves, selectors, silencers, unidirectional valves, manifolds, blocking valves, economizers, gang mounting manifolds, spry valves

Blocking valves

Unidirectional and bidirectional blocking valves, aluminium and technopolymer versions, with G1/8"- G1/4"- G3/8"- G1/2" connections

Complementary valves

Pressure switches, impulse generators, timers, two hands safety valve, oscillator valve, signal amplifier, progressive start up valve, high-low pressure device

Function fittings

Miniaturized logic function with technopolymer body:
RFU, RP, VB, VSR, VS-or, VS-and, IP, AP, RP+IP, VB+RFU, VB+VSR

Accessories (following)

Miniaturised pressure regulators

Brass versions rod G1/8" with technopolymer body and integrated gauge version

Compact fittings for lubrication

Nichel plated brass compact fittings, with straight male adaptor

Valves and solenoid valve manifolds

Wide range of multipole & serial systems, available with main fieldbus protocols

Series 104

General

The micro valves 104 series are a cost effective solution with reduced overall dimensions, easy to install and manage.
Their main characteristic is the possibility to choose between the version with lateral or rear pneumatic connections realized with quick fitting for Ø4mm tube included.
The valves are available with 2 or 3 ways versions, normally closed or open, 5 ways and 5 ways 3 positions open centres and pressured centres.
The 5 ways version is made with two 3 ways valves placed side by side with common inlet.
The operators available for this valve are push button (different versions), selector (key, short and long lever), lever (lever roller or level undirectional) and pneumatic.
It is also possible to combine the 2 and 3 ways valves with electrical switches, normally closed or open.

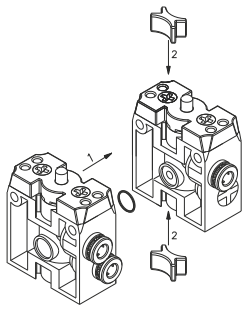
Construction characteristics

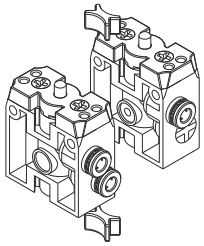
Body and cover	Technopolymer
Operators	Plastic material for buttons and switches
Seals	NBR
Spacer	Technopolymer
Spools	Steel
Springs	Spring steel
Pistons	Aluminium (for pneumatic command version)

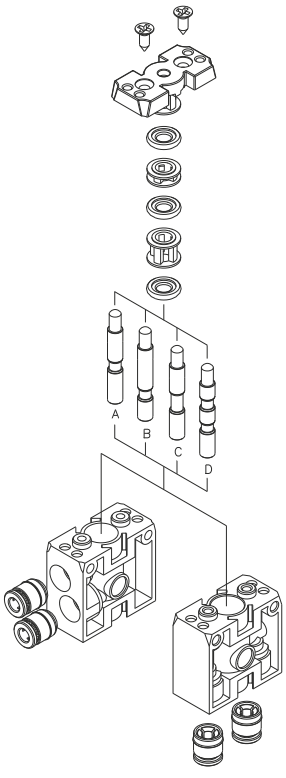
Use and maintenance

This valves have an average life of 15 million cycles depending on the application and air quality.
Filtered and lubricated air using specified lubricants will reduce the wear of the seals and ensures long and trouble free operation.
Please ensure that the valve is being used according with the manufacturers specification, such as air pressure and temperature.

ATTENTION: use hydraulic oil class H for lubrication such as MAGNA GC 32 (Castrol).







A : 2/2 N.C.
B : 2/2 N.A.
C : 3/2 N.C.
D : 3/2 N.A.

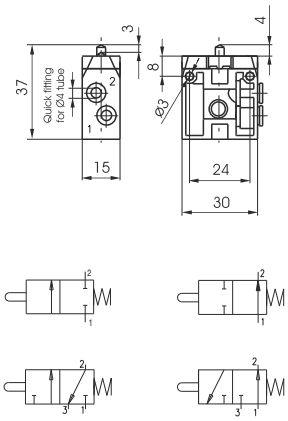
Tappet - Spring

Coding: 104.Ⓣ.0.1.Ⓦ.Ⓕ

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	90
Orifice size (mm)	2.5
Working ports size	ø4 tube

Ⓣ	TYPE	Ⓕ	FUNCTION
	22 = 2 ways		**A** = Normally Open
	32 = 3 ways		**C** = Normally Closed
Ⓦ	CONNECTION TYPE		
	L = Lateral		
	P = Rear		

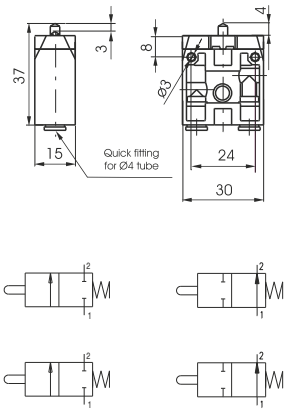
2/2 - 3/2 - Lateral connections



Weight 20 g
Operating force 13 N

104.Ⓣ.0.1.L.Ⓕ

2/2 - 3/2 - Rear connections



Weight 20 g
Operating force 13 N

104.Ⓣ.0.1.P.Ⓕ

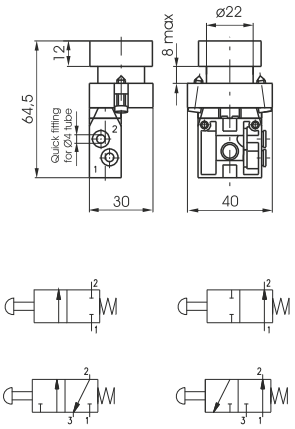
Push button - Spring

Coding: 104.Ⓣ.6.22/Ⓒ.Ⓦ.Ⓕ

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	90
Orifice size (mm)	2.5
Working ports size	ø4 tube

Ⓣ	TYPE	Ⓦ	CONNECTION TYPE
	22 = 2 ways		**L** = Lateral
	32 = 3 ways		**P** = Rear
	52 = 5 ways	Ⓕ	FUNCTION (only for 2 or 3 ways)
Ⓒ	BUTTON COLOR		**A** = Normally Open
	1 = Red		**C** = Normally Closed
	2 = Black		
	3 = Green		
	4 = Yellow		

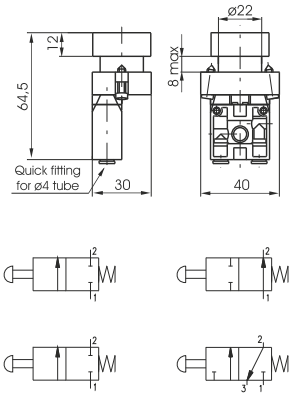
2/2 - 3/2 - Lateral connections



Weight 50 g
Operating force 18 N

104.Ⓣ.6.22/Ⓒ.L.Ⓕ

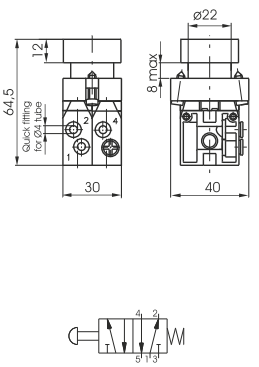
2/2 - 3/2 - Rear connections



Weight 50 g
Operating force 18 N

104.Ⓣ.6.22/Ⓒ.P.Ⓕ

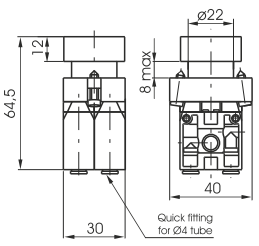
5/2 - Lateral connections



Weight 105 g
Operating force 30 N

104.52.6.22/Ⓒ.L

5/2 - Rear connections



Weight 105 g
Operating force 30 N

104.52.6.22/Ⓒ.P

Push button 2 positions (step - step)

Coding: 104.Ⓣ.6.31.Ⓦ.Ⓕ

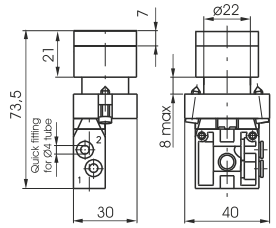
Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	90
Orifice size (mm)	2.5
Working ports size	ø4 tube

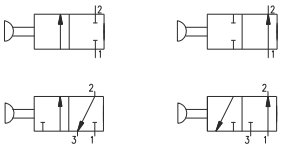
Ⓣ	TYPE
	22 = 2 ways
	32 = 3 ways
	52 = 5 ways

Ⓦ	CONNECTION TYPE
	L = Lateral
	P = Rear

Ⓕ	FUNCTION (only for 2/2 and 3/2 ways)
	A = Normally Open
	C = Normally Closed

2/2 - 3/2 - Lateral connections

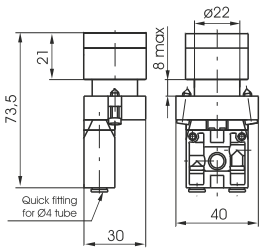


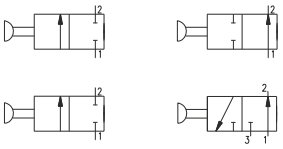


Weight 60 g
Operating force 18 N

104.Ⓣ.6.31.L.Ⓕ

2/2 - 3/2 - Rear connections

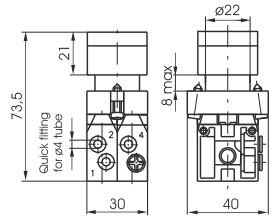




Weight 60 g
Operating force 18 N

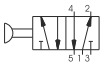
104.Ⓣ.6.31.P.Ⓕ

5/2 - Lateral connections

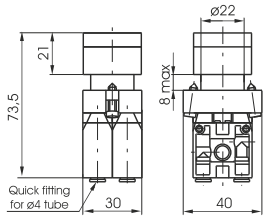


Weight 110 g
Operating force 30 N

104.52.6.31.L

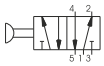


5/2 - Rear connections



Weight 110 g
Operating force 30 N

104.52.6.31.P



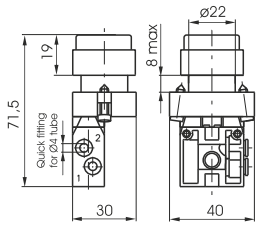
Raised Push button - Spring

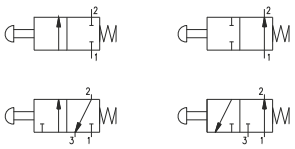
Coding: 104.Ⓣ.6.23/Ⓒ.Ⓦ.Ⓕ

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	90
Orifice size (mm)	2.5
Working ports size	ø4 tube

Ⓣ	TYPE	Ⓦ	CONNECTION TYPE
	22 = 2 ways		**L** = Lateral
	32 = 3 ways		**P** = Rear
	52 = 5 ways	Ⓕ	FUNCTION (only for 2 or 3 ways)
Ⓒ	BUTTON COLOR		**A** = Normally Open
	1 = Red		**C** = Normally Closed
	2 = Black		
	3 = Green		
	4 = Yellow		

2/2 - 3/2 - Lateral connections

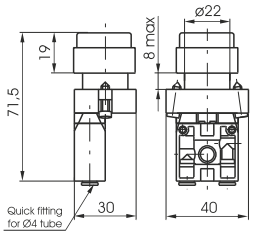


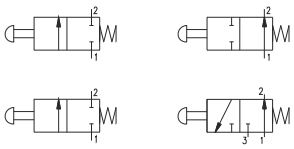


Weight 50 g
Operating force 18 N

104.Ⓣ.6.23/Ⓒ.L.Ⓕ

2/2 - 3/2 - Rear connections

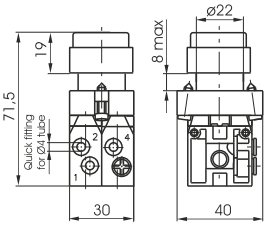




Weight 50 g
Operating force 18 N

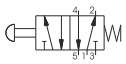
104.Ⓣ.6.23/Ⓒ.P.Ⓕ

5/2 - Lateral connections

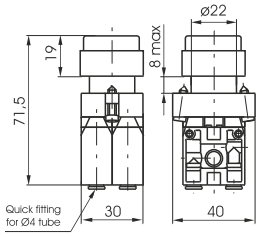


Weight 105 g
Operating force 30 N

104.52.6.23/Ⓒ.L

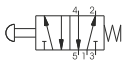


5/2 - Rear connections



Weight 105 g
Operating force 30 N

104.52.6.23/Ⓒ.P



Palm button 2 position

Coding: 104.Ⓣ.6.25.Ⓦ.Ⓕ

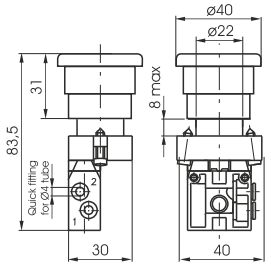
Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	90
Orifice size (mm)	2.5
Working ports size	ø4 tube

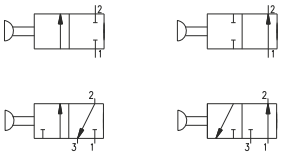
Ⓣ	TYPE
	22 = 2 ways
	32 = 3 ways
	52 = 5 ways

Ⓦ	CONNECTION TYPE
	L = Lateral
	P = Rear

Ⓕ	FUNCTION (only for 2/2 and 3/2 ways)
	A = Normally Open
	C = Normally Closed

2/2 - 3/2 - Lateral connections

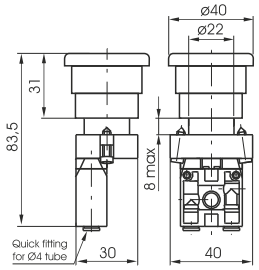


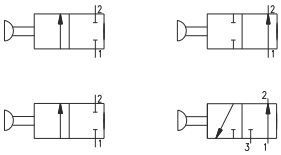


Weight 65 g
Operating force 19 N
Emergency - Rotate to unlock

104.Ⓣ.6.25.L.Ⓕ

2/2 - 3/2 - Rear connections

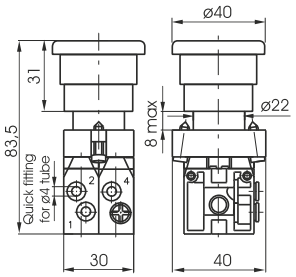




Weight 65 g
Operating force 19 N
Emergency - Rotate to unlock

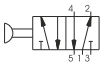
104.Ⓣ.6.25.P.Ⓕ

5/2 - Lateral connections

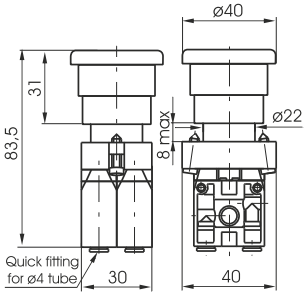


Weight 120 g
Operating force 32 N
Emergency - Rotate to unlock

104.52.6.25.L

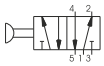


5/2 - Rear connections



Weight 120 g
Operating force 32 N
Emergency - Rotate to unlock

104.52.6.25.P



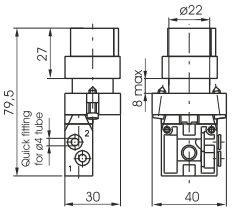
Switch - short lever

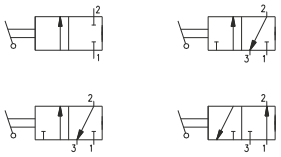
Coding: 104.Ⓣ.Ⓕ1.6.30.Ⓢ.Ⓦ.Ⓕ2

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	90
Orifice size (mm)	2.5
Working ports size	ø4 tube

Ⓣ	TYPE	Ⓢ	SWITCH POSITION (only for 2/2 and 3/2 ways)
	22 = 2 ways		**0** = 3 pos. instable
	32 = 3 ways		**1** = 3 pos. stable
	52 = 5 ways	Ⓦ	CONNECTION TYPE
	53 = 5 ways		**L** = Lateral
Ⓕ1	FUNCTION (only for 5/3 ways)		**P** = Rear
	32 = Open centres	Ⓕ2	FUNCTION (only for 2/2 or 3/2 ways)
	33 = Pressured centres		**A** = Normally Open
			C = Normally Closed

2/2 - 3/2 - Lateral connections

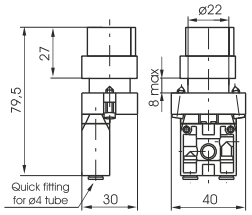


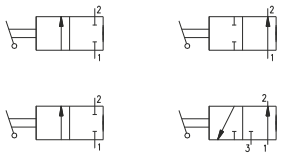


Weight 65 g
Switch 2 positions stable

104.Ⓣ.6.30.L.Ⓕ

2/2 - 3/2 - Rear connections

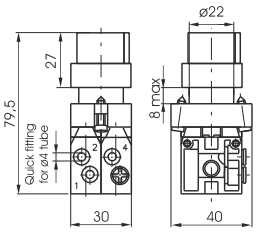




Weight 65 g
Switch 2 positions stable

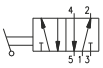
104.Ⓣ.6.30.P.Ⓕ

5/2 - Lateral connections

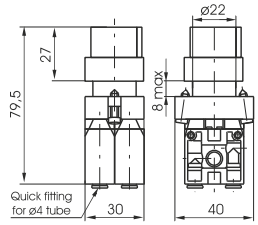


Weight 120 g
Switch 2 positions stable

104.52.6.30.L

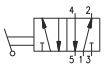


5/2 - Rear connections

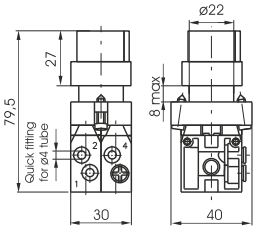


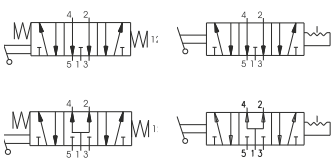
Weight 120 g
Switch 2 positions stable

104.52.6.30.P



5/3 - Lateral connections

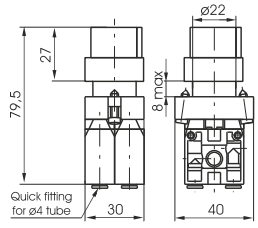


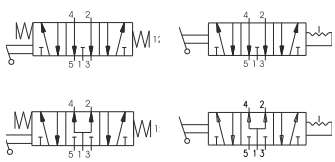


Weight 120 g

104.53.Ⓕ.6.30.Ⓢ.L

5/3 - Rear connections





Weight 120 g

104.53.Ⓕ.6.30.Ⓢ.P

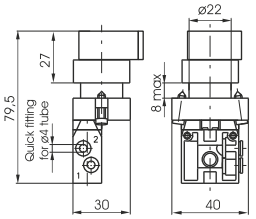
Switch - long lever

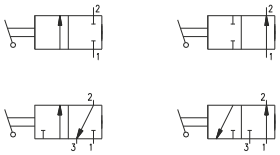
Coding: 104.Ⓣ.Ⓕ1.6.27.Ⓢ.Ⓦ.Ⓕ2

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	90
Orifice size (mm)	2.5
Working ports size	ø4 tube

Ⓣ	TYPE
	22 = 2 ways
	32 = 3 ways
	52 = 5 ways
	53 = 5 ways
Ⓕ1	FUNCTION (only for 5/3 ways)
	32 = Open centres
	33 = Pressured centres
Ⓢ	SWITCH POSITION (only for 2/2 and 3/2 ways)
	0 = 3 pos. instable
	1 = 3 pos. stable
Ⓦ	CONNECTION TYPE
	L = Lateral
	P = Rear
Ⓕ2	FUNCTION (only for 2/2 or 3/2 ways)
	A = Normally Open
	C = Normally Closed

2/2 - 3/2 - Lateral connections

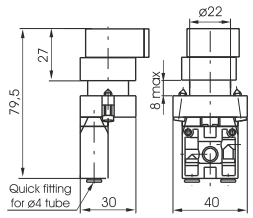


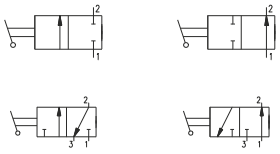


Weight 65 g
Switch 2 positions stable

104.Ⓣ.6.27.L.Ⓕ

2/2 - 3/2 - Rear connections

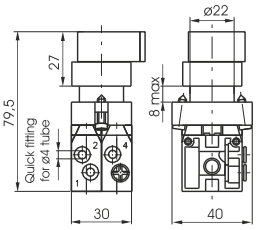


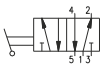


Weight 65 g
Switch 2 positions stable

104.Ⓣ.6.27.P.Ⓕ

5/2 - Lateral connections

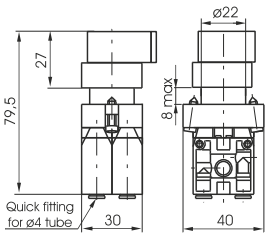


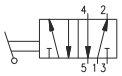


Weight 120 g
Switch 2 positions stable

104.52.6.27.L

5/2 - Rear connections

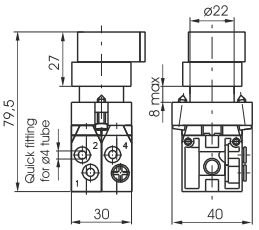


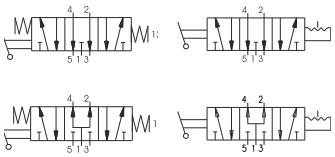


Weight 120 g
Switch 2 positions stable

104.52.6.27.P

5/3 - Lateral connections

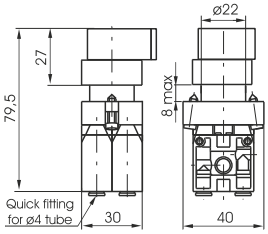


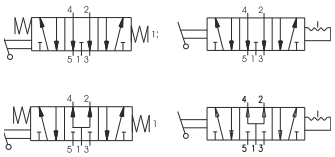


Weight 120 g

104.53.Ⓕ.6.27.Ⓢ.L

5/3 - Rear connections





Weight 120 g

104.53.Ⓕ.6.27.Ⓢ.P

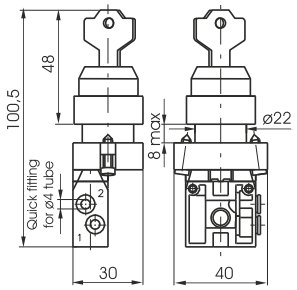
Key switch

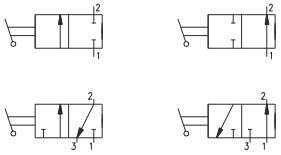
Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	90
Orifice size (mm)	2.5
Working ports size	ø4 tube

Coding: 104.Ⓣ.Ⓕ1.6.28.Ⓢ.Ⓦ.Ⓕ2

Ⓣ	TYPE	Ⓢ	SWITCH POSITION (only for 2/2 and 3/2 ways)
	22 = 2 ways		**0** = 3 pos. instable
	32 = 3 ways		**1** = 3 pos. stable
	52 = 5 ways	Ⓦ	CONNECTION TYPE
	53 = 5 ways		**L** = Lateral
Ⓕ1	FUNCTION 1 (only for 5/3 ways)		**P** = Rear
	32 = Open centres	Ⓕ2	FUNCTION 2 (only for 2/2 or 3/2 ways)
	33 = Pressured centres		**A** = Normally Open
			C = Normally Closed

2/2 - 3/2 - Lateral connections

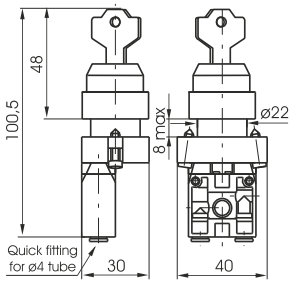


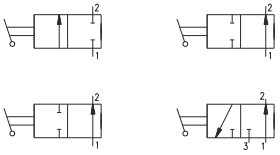


Weight 100 g
Switch 2 positions stable

104.Ⓣ.6.28.L.Ⓕ

2/2 - 3/2 - Rear connections

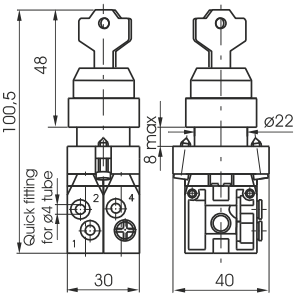


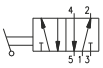


Weight 100 g
Switch 2 positions stable

104.Ⓣ.6.28.P.Ⓕ

5/2 - Lateral connections

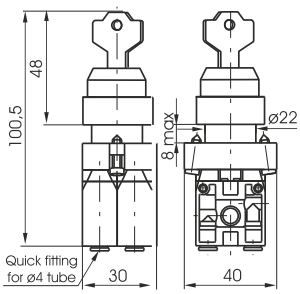


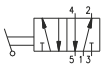


Weight 155 g
Switch 2 positions stable

104.52.6.28.L

5/2 - Rear connections

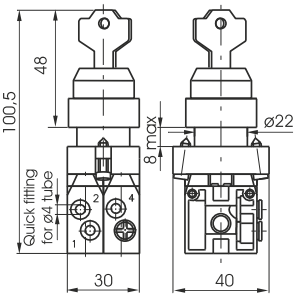


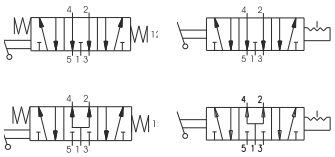


Weight 155 g
Switch 2 positions stable

104.52.6.28.P

5/3 - Lateral connections

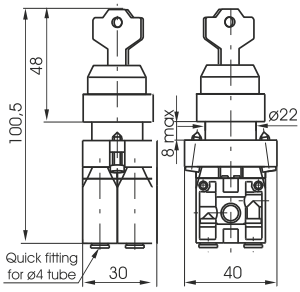


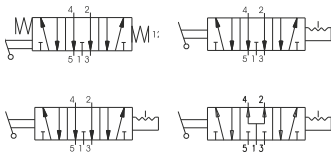


Weight 155 g

104.53.Ⓕ.6.28.Ⓢ.L

5/3 - Rear connections





Weight 155 g

104.53.Ⓕ.6.28.Ⓢ.P

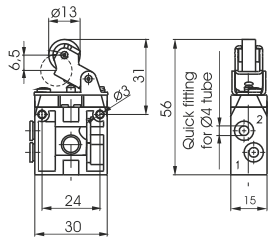
Lever roller - Spring

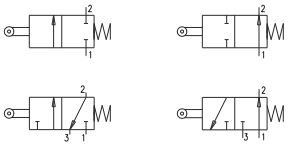
Coding: 104.Ⓣ.2.1.Ⓦ.Ⓕ

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	90
Orifice size (mm)	2.5
Working ports size	ø4 tube

Ⓣ	TYPE	Ⓕ	FUNCTION
	22 = 2 ways		**A** = Normally Open
	32 = 3 ways		**C** = Normally Closed
Ⓦ	CONNECTION TYPE		
	L = Lateral		
	P = Rear		

2/2 - 3/2 - Lateral connections

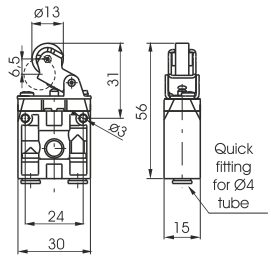


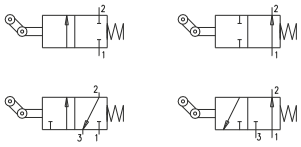


Weight 31 g
Operating force 9 N

104.Ⓣ.2.1.L.Ⓕ

2/2 - 3/2 - Rear connections





Weight 31 g
Operating force 9 N

104.Ⓣ.2.1.P.Ⓕ

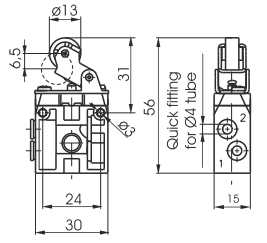
Lever roller ball bearing - Spring

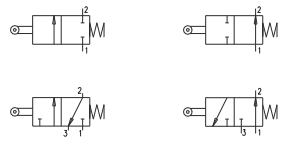
Coding: 104.Ⓣ.2.1/1.Ⓦ.Ⓕ

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	90
Orifice size (mm)	2.5
Working ports size	ø4 tube

Ⓣ	TYPE	Ⓕ	FUNCTION
	22 = 2 ways		**A** = Normally Open
	32 = 3 ways		**C** = Normally Closed
Ⓦ	CONNECTION TYPE		
	L = Lateral		
	P = Rear		

2/2 - 3/2 - Lateral connections

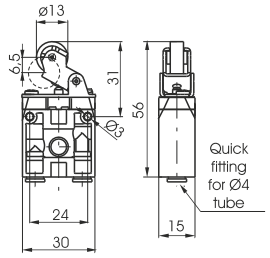


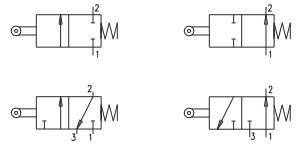


Weight 46 g
Operating force 9 N

104.Ⓣ.2.1/1.L.Ⓕ

2/2 - 3/2 - Rear connections





Weight 46 g
Operating force 9 N

104.Ⓣ.2.1/1.P.Ⓕ

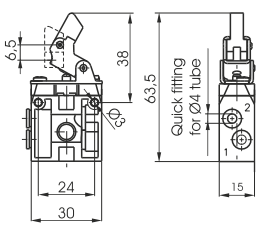
Lever unidirectional - Spring

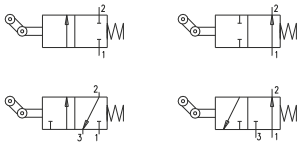
Coding: 104.Ⓣ.3.1.Ⓦ.Ⓕ

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	90
Orifice size (mm)	2.5
Working ports size	ø4 tube

Ⓣ	TYPE	Ⓕ	FUNCTION
	22 = 2 ways		**A** = Normally Open
	32 = 3 ways		**C** = Normally Closed
Ⓦ	CONNECTION TYPE		
	L = Lateral		
	P = Rear		

2/2 - 3/2 - Lateral connections

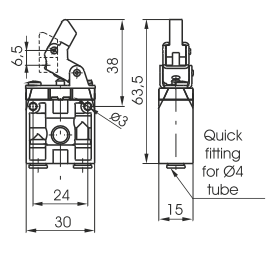


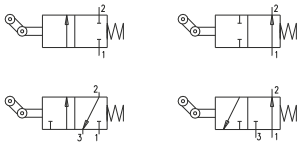


Weight 31 g
Operating force 9 N

104.Ⓣ.3.1.L.Ⓕ

2/2 - 3/2 - Rear connections





Weight 31 g
Operating force 9 N

104.Ⓣ.3.1.P.Ⓕ

Complete lever roller operator

Coding: 104.2.1

Complete lever roller ball bearing operator

Coding: 104.2.1/1

Complete lever unidirectional

Coding: 104.3.1

Fixing plate

Coding: 104.00

Push button

Coding: 104.6.22/Ⓒ

Ⓒ	BUTTON COLOR
	1 = Red
	2 = Black
	3 = Green
	4 = Yellow

Raised Push button

Coding: 104.6.23/Ⓒ

Ⓒ	BUTTON COLOR
	1 = Red
	2 = Black
	3 = Green
	4 = Yellow

Push button 2 positions

Coding: 104.6.31

(step - step)

Palm button 2 position

Coding: 104.6.25

Emergency - Rotate to unlock

Switch - short lever

Coding: 104.6.30.Ⓢ

Ⓢ	SWITCH POSITION (only for 3 position)
	0 = 3 pos. instable
	1 = 3 pos. stable

Switch 2 positions stable
104.6.30

Switch 3 positions
104.6.30.Ⓢ

Switch - long lever

Coding: 104.6.27.Ⓢ

Ⓢ	SWITCH POSITION (only for 3 position)
	0 = 3 pos. instable
	1 = 3 pos. stable

Switch 2 positions stable
104.6.27

Switch 3 positions
104.6.27.Ⓢ

Key switch

Coding: 104.6.28.Ⓢ

Ⓢ	SWITCH POSITION (only for 3 position)
	0 = 3 pos. instable
	1 = 3 pos. stable

Switch 2 positions stable
104.6.28

Switch 3 positions
104.6.28.Ⓢ

Joystick selector switch

Coding: 104.6.39.Ⓢ

Contact electric element

Coding: 104.Ⓕ

Ⓕ	FUNCTION	
	NO =	Normally Open
	NC =	Normally Closed

Complete Pneumatic Operator

Coding: 104.11

Push button protection cover

Coding: 104.02

Pneumatic - Spring

Coding: 104.Ⓣ.11.1.Ⓦ.Ⓕ

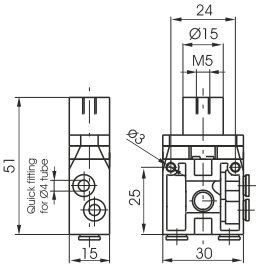
Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with Δp=1 (Nl/min)	90
Orifice size (mm)	2.5
Working ports size	ø4 tube
Pilot ports size	M5

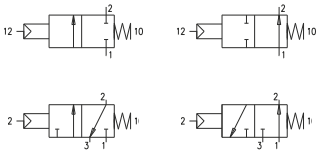
	TYPE
Ⓣ	**22** = 2 ways
	32 = 3 ways

	CONNECTION TYPE
Ⓦ	**L** = Lateral
	P = Rear

	FUNCTION
Ⓕ	**A** = Normally Open
	C = Normally Closed

2/2 - 3/2 - Lateral connections

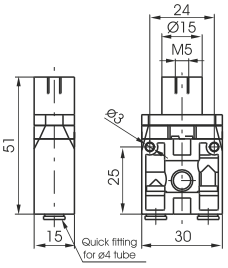


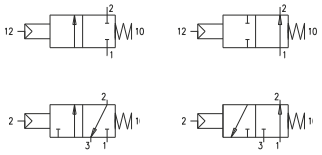


Weight 25 g
Minimum piloting pressure 2,5 bar

104.22.11.1.L.Ⓕ

2/2 - 3/2 - Rear connections





Weight 25 g
Minimum piloting pressure 2,5 bar

104.32.11.1.P.Ⓕ

Series 105

General

The series 105 consist of a broad range of miniature valves and valves with various type of actuation.
The connections are M5 for this series
Due to their special construction with a balanced spool, these valves can be used interchangeably as 3 ways or 5 ways.
The 3 ways can be used normally closed or normally open and the 5 ways can be fed through the exhausts 3 and 5 with different pressures according to the need.
The spool, as it is moving, isolates the connections without being affected by the inlet pressure.

Construction characteristics

	M5
Body	Aluminium
Operators	Nickel plated brass Stainless steel for roller levers and button levers; Zinc plated steel for side levers; Plastic material for handles, buttons and switches Aluminium (for pneumatic command version)
Seals	NBR
Spacer	Technopolymer
Spools	Steel
Springs	Spring steel
Pistons	Aluminium (for pneumatic command version)

Use and maintenance

This valves have an average life of 15 million cycles depending on the application and air quality.
Filtered and lubricated air using specified lubricants will reduce the wear of the seals and ensures long and trouble free operation.
Please ensure that the valve is being used according with the manufacturers specification, such as air pressure and temperature.
The exhaust port of the distributor has to be protected in a dusty and dirty environment.
Repair kits including the spool complete with seals are available for overhauling the valves.
However, although this is a simple operation it should be carried out by a competent person.

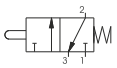
ATTENTION: use hydraulic oil class H for lubrication such as MAGNA GC 32 (Castrol).

Tappet panel - Spring

Coding: 105.Ⓣ.0.1

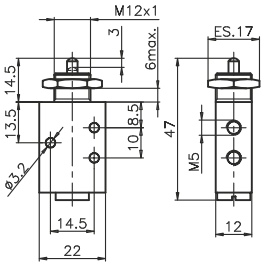
Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	120
Orifice size (mm)	2.5
Working ports size	M5

Ⓣ	TYPE
	32 = 3 ways
	52 = 5 ways


105.32.0.1

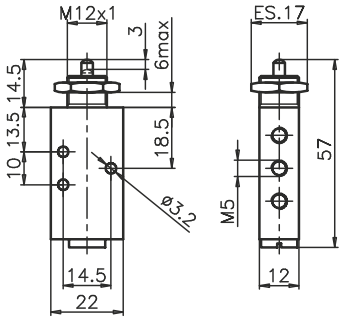

105.52.0.1

3 ways



Weight 70 g
Operating force 14 N

5 ways



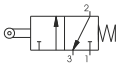
Weight 87 g
Operating force 14 N

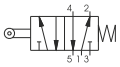
Lever roller - Spring

Coding: 105.Ⓣ.2.1

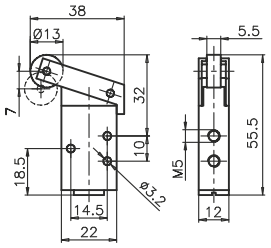
Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	120
Orifice size (mm)	2.5
Working ports size	M5

Ⓣ	TYPE
	32 = 3 ways
	52 = 5 ways


105.32.2.1

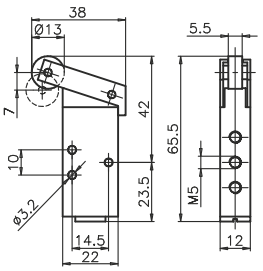

105.52.2.1

3 ways



Weight 85 g
Operating force 6 N

5 ways



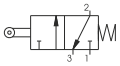
Weight 102 g
Operating force 6 N

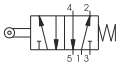
Lever roller ball bearing - Spring

Coding: 105.Ⓣ.2.1/1

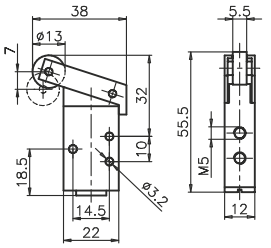
Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	120
Orifice size (mm)	2.5
Working ports size	M5

Ⓣ	TYPE
	32 = 3 ways
	52 = 5 ways


105.32.2.1/1

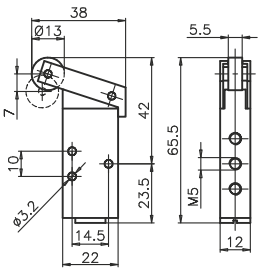

105.52.2.1/1

3 ways



Weight 100 g
Operating force 6 N

5 ways



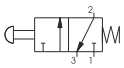
Weight 177 g
Operating force 6 N

Lever button - Spring

Coding: 105.Ⓣ.2.6/Ⓒ

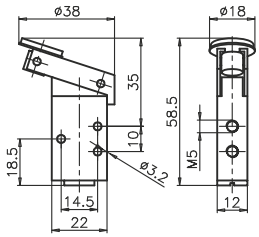
Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	120
Orifice size (mm)	2.5
Working ports size	M5

Ⓣ	TYPE
	32 = 3 ways
	52 = 5 ways
Ⓒ	BUTTON COLOR
	1 = Red
	2 = Black
	3 = Green


105.32.2.6/Ⓒ

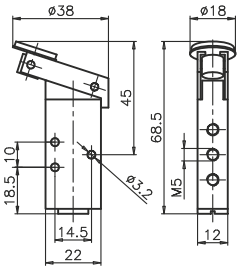

105.52.2.6/Ⓒ

3 ways



Weight 85 g
Operating force 6 N

5 ways



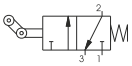
Weight 102 g
Operating force 6 N

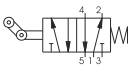
Lever unidirectional - Spring

Coding: 105.Ⓣ.3.1

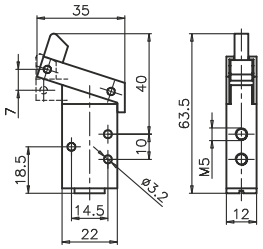
Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	120
Orifice size (mm)	2.5
Working ports size	M5

Ⓣ	TYPE
	32 = 3 ways
	52 = 5 ways


105.32.3.1

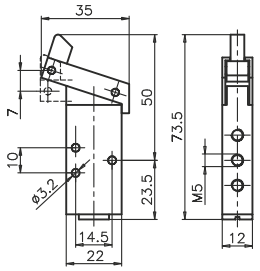

105.52.3.1

3 ways



Weight 85 g
Operating force 6 N

5 ways



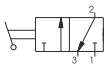
Weight 102 g
Operating force 6 N

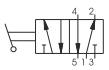
Lever panel Ø22 - 2 positions

Coding: 105.Ⓣ.4/Ⓒ

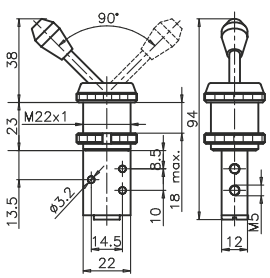
Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	120
Orifice size (mm)	2.5
Working ports size	M5

Ⓣ	TYPE
	32 = 3 ways
	52 = 5 ways
Ⓒ	LEVER COLOR
	1 = Red
	2 = Black
	3 = Green


105.32.4/Ⓒ

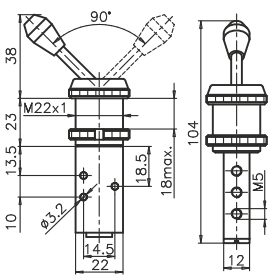

105.52.4/Ⓒ

3 ways



Weight 125 g

5 ways



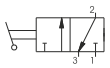
Weight 142 g

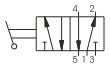
Lever panel Ø30 - 2 positions

Coding: 105.❶.5/Ⓒ

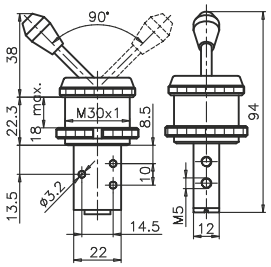
Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	120
Orifice size (mm)	2.5
Working ports size	M5

❶	TYPE
	32 = 3 ways
	52 = 5 ways
Ⓒ	LEVER COLOR
	1 = Red
	2 = Black
	3 = Green


105.32.5/Ⓒ

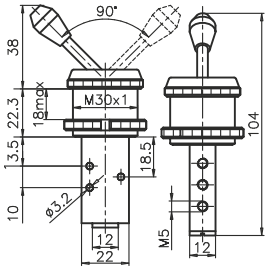

105.52.5/Ⓒ

3 ways



Weight 165 g

5 ways



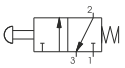
Weight 182 g

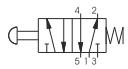
Push button Ø30 - Spring

Coding: 105.❶.6.1/Ⓒ

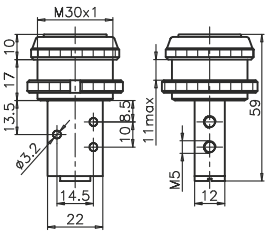
Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	120
Orifice size (mm)	2.5
Working ports size	M5

❶	TYPE
	32 = 3 ways
	52 = 5 ways
Ⓒ	BUTTON COLOR
	1 = Red
	2 = Black
	3 = Green


105.32.6.1/Ⓒ

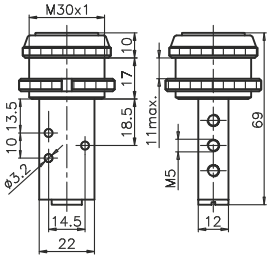

105.52.6.1/Ⓒ

3 ways



Weight 123 g
Operating force 14 N

5 ways



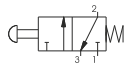
Weight 140 g
Operating force 14 N

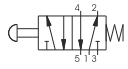
Push button Ø22 - Spring

Coding: 105.❶.6.2/Ⓒ

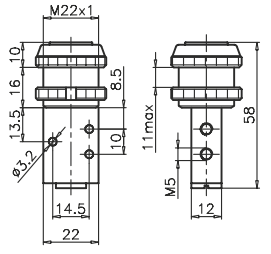
Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	120
Orifice size (mm)	2.5
Working ports size	M5

❶	TYPE
	32 = 3 ways
	52 = 5 ways
Ⓒ	BUTTON COLOR
	1 = Red
	2 = Black
	3 = Green


105.32.6.2/Ⓒ

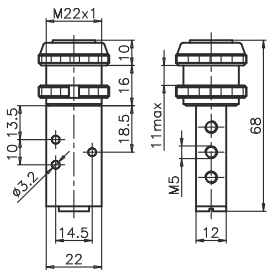

105.52.6.2/Ⓒ

3 ways



Weight 102 g
Operating force 14 N

5 ways



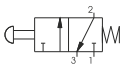
Weight 119 g
Operating force 14 N

Push button - Spring

Coding: 105.Ⓣ.6.22/Ⓒ

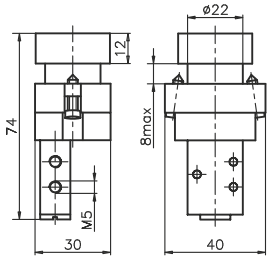
Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	120
Orifice size (mm)	2.5
Working ports size	M5

Ⓣ	TYPE
	32 = 3 ways
	52 = 5 ways
Ⓒ	BUTTON COLOR
	1 = Red
	2 = Black
	3 = Green
	4 = Yellow


105.32.6.22/Ⓒ

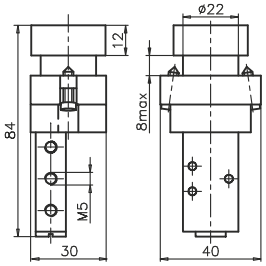

105.52.6.22/Ⓒ

3 ways



Weight 165 g
Operating force 14 N

5 ways



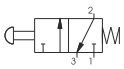
Weight 182 g
Operating force 14 N

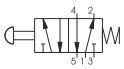
Raised Push button - Spring

Coding: 105.Ⓣ.6.23/Ⓒ

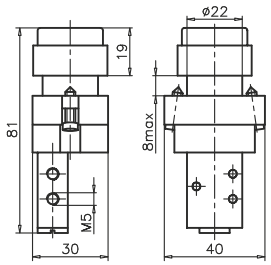
Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	120
Orifice size (mm)	2.5
Working ports size	M5

Ⓣ	TYPE
	32 = 3 ways
	52 = 5 ways
Ⓒ	BUTTON COLOR
	1 = Red
	2 = Black
	3 = Green
	4 = Yellow


105.32.6.23/Ⓒ

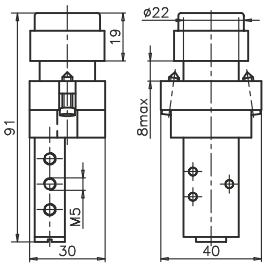

105.52.6.23/Ⓒ

3 ways



Weight 170 g
Operating force 14 N

5 ways



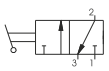
Weight 187 g
Operating force 14 N

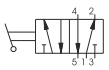
Switch 2 positions

Coding: 105.Ⓣ.6.27

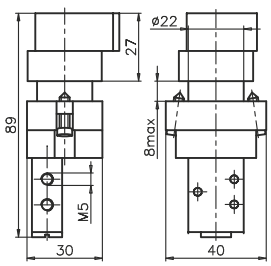
Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	120
Orifice size (mm)	2.5
Working ports size	M5

Ⓣ	TYPE
	32 = 3 ways
	52 = 5 ways


105.32.6.27

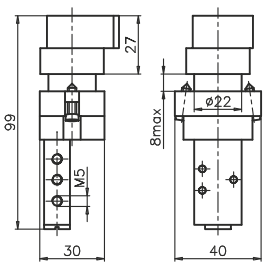

105.52.6.27

3 ways



Weight 185 g

5 ways



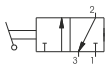
Weight 202 g

Key switch 2 positions

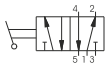
Coding: 105.Ⓣ.6.28

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	120
Orifice size (mm)	2.5
Working ports size	M5

Ⓣ	TYPE
	32 = 3 ways
	52 = 5 ways

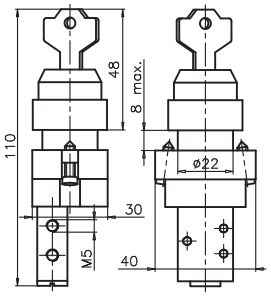


105.32.6.28



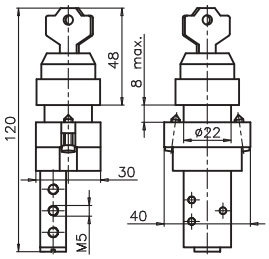
105.52.6.28

3 ways



Weight 215 g

5 ways



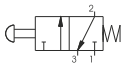
Weight 232 g

Palm pushbutton Ø30 - Spring

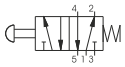
Coding: 105.Ⓣ.7.1/Ⓒ

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	120
Orifice size (mm)	2.5
Working ports size	M5

Ⓣ	TYPE
	32 = 3 ways
	52 = 5 ways
Ⓒ	BUTTON COLOR
	1 = Red
	2 = Black
	3 = Green

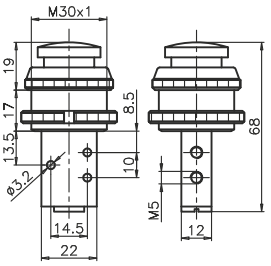


105.32.7.1/Ⓒ



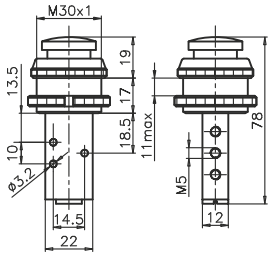
105.52.7.1/Ⓒ

3 ways



Weight 126 g
Operating force 14 N

5 ways



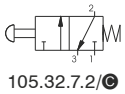
Weight 143 g
Operating force 14 N

Palm pushbutton Ø22 - Spring

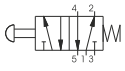
Coding: 105.Ⓣ.7.2/Ⓒ

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	120
Orifice size (mm)	2.5
Working ports size	M5

Ⓣ	TYPE
	32 = 3 ways
	52 = 5 ways
Ⓒ	BUTTON COLOR
	1 = Red
	2 = Black
	3 = Green

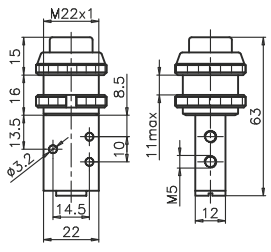


105.32.7.2/Ⓒ



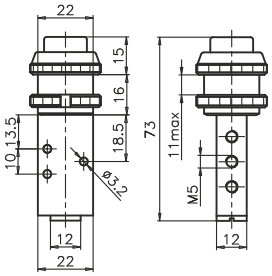
105.52.7.2/Ⓒ

3 ways



Weight 103 g
Operating force 14 N

5 ways



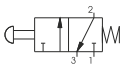
Weight 120 g
Operating force 14 N

Push button

Coding: 105.Ⓣ.8.1/Ⓒ

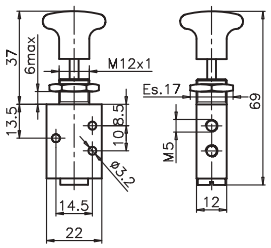
Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	120
Orifice size (mm)	2.5
Working ports size	M5

Ⓣ	TYPE
	32 = 3 ways
	52 = 5 ways
Ⓒ	BUTTON COLOR
	1 = Red
	2 = Black
	3 = Green


105.32.8.1/Ⓒ

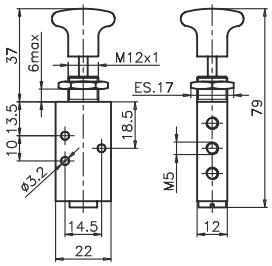

105.52.8.1/Ⓒ

3 ways



Weight 75 g
Operating force 14 N

5 ways



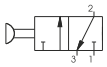
Weight 92 g
Operating force 14 N

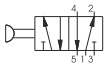
Push button 2 positions

Coding: 105.Ⓣ.8/Ⓒ

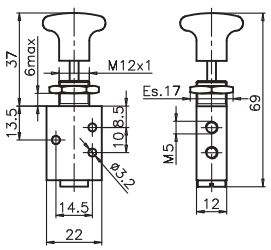
Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	120
Orifice size (mm)	2.5
Working ports size	M5

Ⓣ	TYPE
	32 = 3 ways
	52 = 5 ways
Ⓒ	BUTTON COLOR
	1 = Red
	2 = Black
	3 = Green


105.32.8/Ⓒ

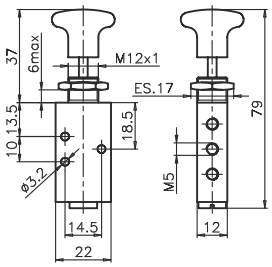

105.52.8/Ⓒ

3 ways



Weight 75 g
Operating force 14 N

5 ways



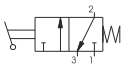
Weight 92 g
Operating force 14 N

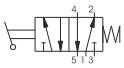
Whisker - Spring

Coding: 105.Ⓣ.9.1

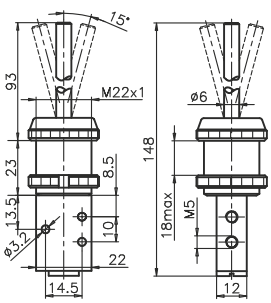
Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	120
Orifice size (mm)	2.5
Working ports size	M5

Ⓣ	TYPE
	32 = 3 ways
	52 = 5 ways


105.32.9.1

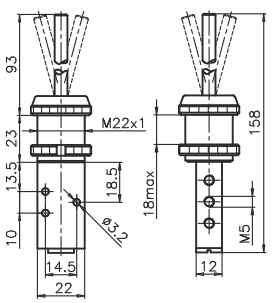

105.52.9.1

3 ways



Weight 136 g

5 ways



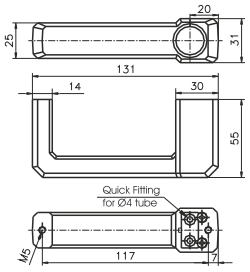
Weight 153 g

Handle with valve

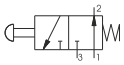
Coding: 105.Ⓣ.6.Ⓐ.Ⓕ

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	120
Orifice size (mm)	2.5
Working ports size	M5 - Quick Fitting for Ø4 tube

Ⓣ	TYPE
	32 = 3 ways
	52 = 5 ways
Ⓐ	FEEDING
	40 = Left feeding
	40D = Right feeding
Ⓕ	FUNCTION (only for 3 ways)
	A = Normally Open
	C = Normally Closed

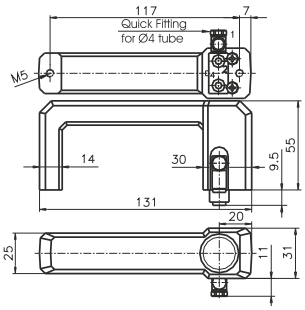


Weight 165 g
Operating force 14 N

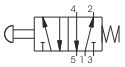


105.32.6.40.Ⓕ

Left feeding

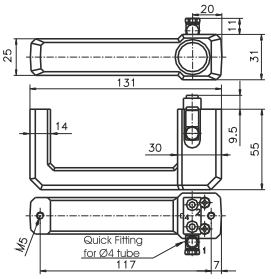


Weight 190 g
Operating force 14 N

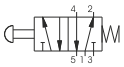


105.52.6.40

Right feeding



Weight 190 g
Operating force 14 N



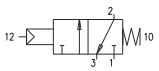
105.52.6.40.Ⓓ

Pneumatic - Spring

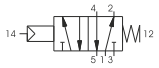
Coding: 105.Ⓣ.11.1

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	120
Orifice size (mm)	2.5
Working ports size	M5
Pilot ports size	M5

Ⓣ	TYPE
	32 = 3 ways
	52 = 5 ways

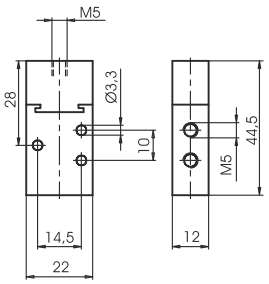


105.32.11.1



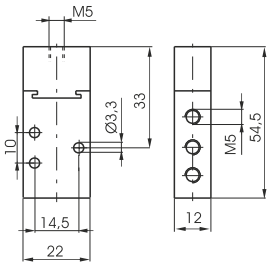
105.52.11.1

3 ways



Weight 90 g
Minimum piloting pressure 2,5 bar

5 ways



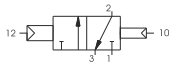
Weight 100 g
Minimum piloting pressure 2,5 bar

Pneumatic - Differential external

Coding: 105.Ⓣ.11.12

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	120
Orifice size (mm)	2.5
Working ports size	M5
Pilot ports size	M5

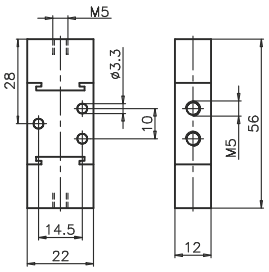
Ⓣ	TYPE
	32 = 3 ways
	52 = 5 ways



105.32.11.12

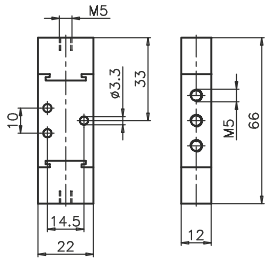
105.52.11.12

3 ways



Weight 110 g
Minimum piloting pressure 2,5 bar

5 ways



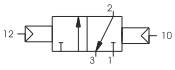
Weight 120 g
Minimum piloting pressure 2,5 bar

Pneumatic - Pneumatic

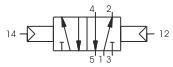
Coding: 105.Ⓣ.11.11

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	120
Orifice size (mm)	2.5
Working ports size	M5
Pilot ports size	M5

Ⓣ	TYPE
	32 = 3 ways
	52 = 5 ways

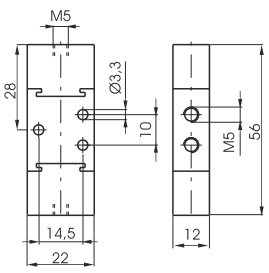


105.32.11.11



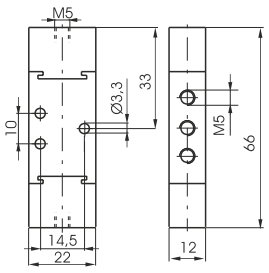
105.52.11.11

3 ways



Weight 110 g
Minimum piloting pressure 2,5 bar

5 ways



Weight 120 g
Minimum piloting pressure 2,5 bar

Series 200

General

The series 200 consist of a broad range of valves with various type of actuation.
The connections for this series are from G 1/8" to G 1".
Due to their special construction with a balanced spool, these valves can be used interchangeably as 3 ways or 5 ways.
The 3 ways can be used normally closed or normally open and the 5 ways can be fed through the exhausts 3 and 5 with different pressures according to the need.
The spool, as it is moving, isolates the connections without being affected by the inlet pressure.

Construction characteristics

	G 1/8" - G 1/4" - G 1/2" - G 1"
Body	Aluminium
Operators	Aluminium Technopolymer
Seals	NBR PUR for 212/2
Spacer	Technopolymer Aluminium for G1" (211)
Spools	Steel Aluminium, for 212/2
Springs	Spring steel
Pistons	Technopolymer, for 228 pneumatic command valves Aluminium, for 224, 212, 212/2 e 211 pneumatic command valves

Use and maintenance

This valves have an average life of 15 million cycles depending on the application and air quality.
Filtered and lubricated air using specified lubricants will reduce the wear of the seals and ensures long and trouble free operation.
Please ensure that the valve is being used according with the manufacturers specification, such as air pressure and temperature.
The exhaust port of the distributor has to be protected in a dusty and dirty environment.
Repair kits including the spool complete with seals are available for overhauling the valves.
However, although this is a simple operation it should be carried out by a competent person.

ATTENTION: use hydraulic oil class H for lubrication such as MAGNA GC 32 (Castrol).

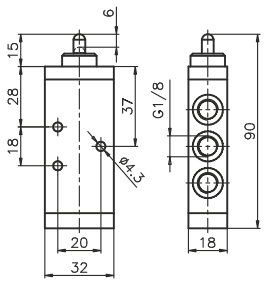
Tappet - Spring

Coding: 228.Ⓣ.0.1

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	540
Orifice size (mm)	6
Working ports size	G1/8"

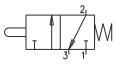
	TYPE
Ⓣ	**32** = 3 ways
	52 = 5 ways

3 ways

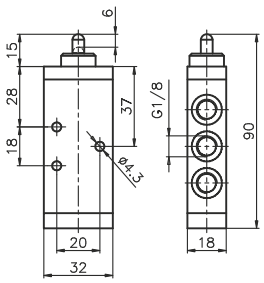


Weight 85 g
Operating force 33 N

228.32.0.1



5 ways



Weight 105 g
Operating force 33 N

228.52.0.1

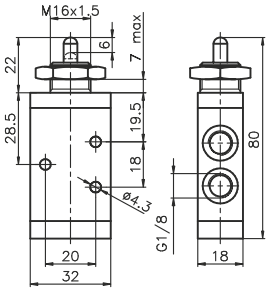
Tappet panel - Spring

Coding: 228.Ⓣ.1.1

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	540
Orifice size (mm)	6
Working ports size	G1/8"

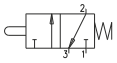
	TYPE
Ⓣ	**32** = 3 ways
	52 = 5 ways

3 ways

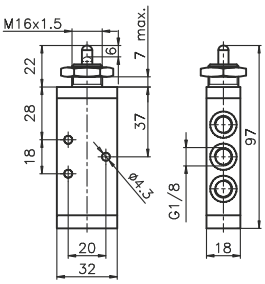


Weight 102 g
Operating force 33 N

228.32.1.1



5 ways



Weight 122 g
Operating force 33 N

228.52.1.1

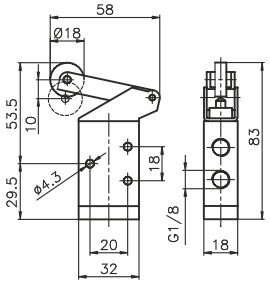
Lever roller - Spring

Coding: 228.Ⓣ.2.Ⓥ

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	540
Orifice size (mm)	6
Working ports size	G1/8"

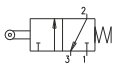
	TYPE
Ⓣ	**32** = 3 ways
	52 = 5 ways
Ⓥ	VERSION
	1 = Plastic roller
	1/2 = Metal roller

3 ways

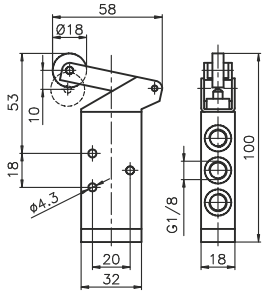


Weight 115 g
Operating force 15 N

228.32.2.Ⓥ

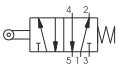


5 ways



Weight 135 g
Operating force 15 N

228.52.2.Ⓥ

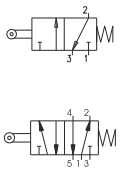


Lever roller ball bearing - Spring

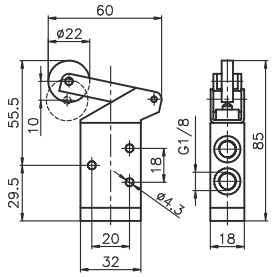
Coding: 228.Ⓣ.2.1/1

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	540
Orifice size (mm)	6
Working ports size	G1/8"

	TYPE
Ⓣ	**32** = 3 ways
	52 = 5 ways



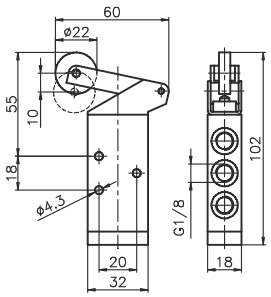
3 ways



Weight 130 g
Operating force 15 N

228.32.2.1/1

5 ways



Weight 150 g
Operating force 15 N

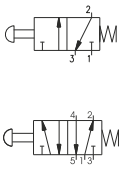
228.52.2.1/1

Lever button - Spring

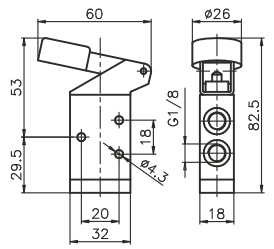
Coding: 228.Ⓣ.2.6/Ⓒ

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	540
Orifice size (mm)	6
Working ports size	G1/8"

Ⓣ	TYPE
	32 = 3 ways
	52 = 5 ways
Ⓒ	BUTTON COLOR
	1 = Red
	2 = Black
	3 = Green



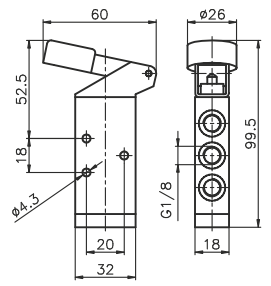
3 ways



Weight 120 g
Operating force 15 N

228.32.2.6/Ⓒ

5 ways



Weight 120 g
Operating force 15 N

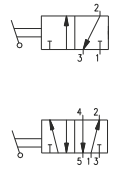
228.52.2.6/Ⓒ

Switch lateral 2 positions

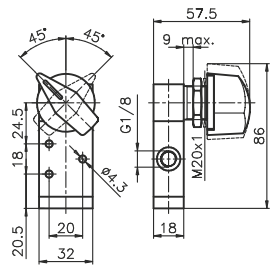
Coding: 228.Ⓣ.27

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	540
Orifice size (mm)	6
Working ports size	G1/8"

	TYPE
Ⓣ	**32** = 3 ways
	52 = 5 ways



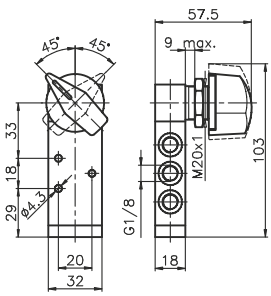
3 ways



Weight 190 g

228.32.27

5 ways



Weight 210 g

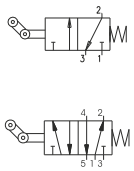
228.52.27

Lever roller unidirectional - Spring

Coding: 228.Ⓣ.3.Ⓥ

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	540
Orifice size (mm)	6
Working ports size	G1/8"

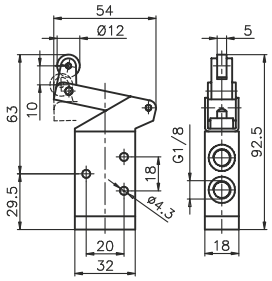
Ⓣ	TYPE
	32 = 3 ways
	52 = 5 ways
Ⓥ	VERSION
	1 = Plastic roller
	1/2 = Metal roller



3 ways

Weight 110 g

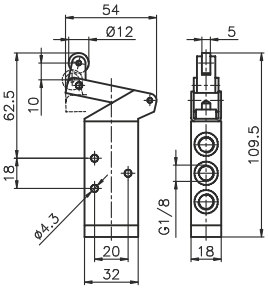
228.32.3.Ⓥ



5 ways

Weight 130 g

228.52.3.Ⓥ

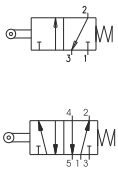


Lever roller lateral bidirectional - Spring

Coding: 228.Ⓣ.4.1

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	540
Orifice size (mm)	6
Working ports size	G1/8"

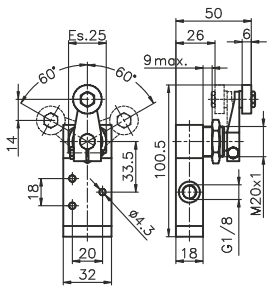
Ⓣ	TYPE
	32 = 3 ways
	52 = 5 ways



3 ways

Weight 180 g

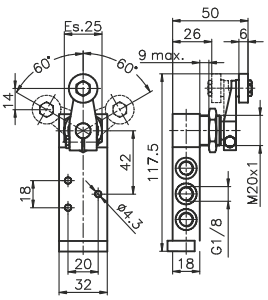
228.32.4.1



5 ways

Weight 200 g

228.52.4.1



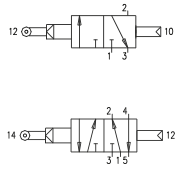
Lever sensitive - differential

Coding: 228.Ⓣ.4.13

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	540
Orifice size (mm)	6
Working ports size	G1/8"

Ⓣ	TYPE
	32 = 3 ways
	52 = 5 ways

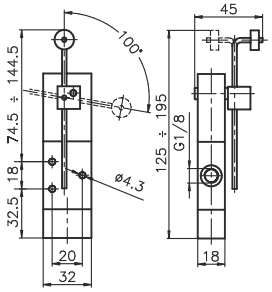
Minimum rotation angle 11°



3 ways

Weight 200 g
Minimum rotation angle 11°
Minimum working pressure 2,5 bar

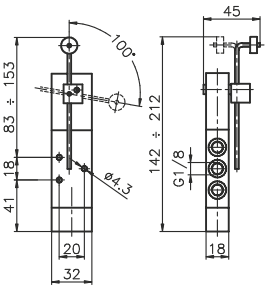
228.32.4.13



5 ways

Weight 220 g
Minimum rotation angle 11°
Minimum working pressure 2,5 bar

228.52.4.13

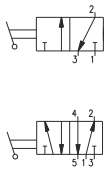


Lever panel Ø30 - 2 positions

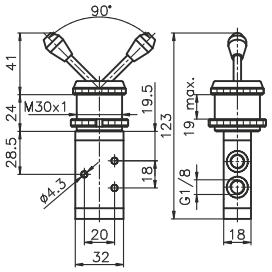
Coding: 228.Ⓣ.5/Ⓒ

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	540
Orifice size (mm)	6
Working ports size	G1/8"

Ⓣ	TYPE
	32 = 3 ways
	52 = 5 ways
Ⓒ	LEVER COLOR
	1 = Red
	2 = Black
	3 = Green



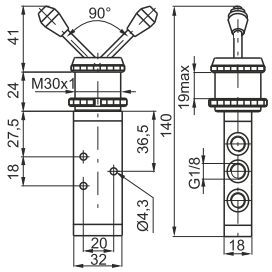
3 ways



Weight 198 g

228.32.5/Ⓒ

5 ways



Weight 218 g

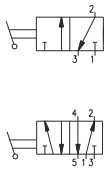
228.52.5/Ⓒ

Frontal lever - 2 positions

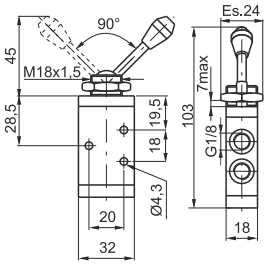
Coding: 228.Ⓣ.55/Ⓒ

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	540
Orifice size (mm)	6
Working ports size	G1/8"

Ⓣ	TYPE
	32 = 3 ways
	52 = 5 ways
Ⓒ	LEVER COLOR
	1 = Red
	2 = Black
	3 = Green



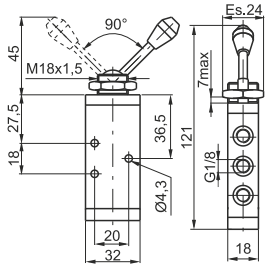
3 ways



Weight 115 g

228.32.55/Ⓒ

5 ways



Weight 135 g

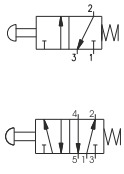
228.52.55/Ⓒ

Push button Ø 30 - spring

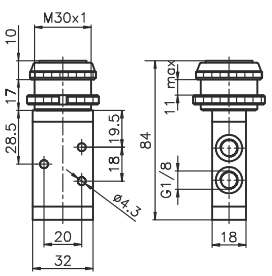
Coding: 228.Ⓣ.6.1/Ⓒ

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	540
Orifice size (mm)	6
Working ports size	G1/8"

Ⓣ	TYPE
	32 = 3 ways
	52 = 5 ways
Ⓒ	BUTTON COLOR
	1 = Red
	2 = Black
	3 = Green



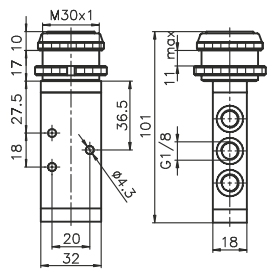
3 ways



Weight 155 g
Operating force 33 N

228.32.6.1/Ⓒ

5 ways



Weight 175 g
Operating force 33 N

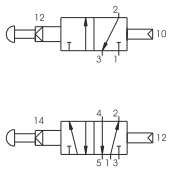
228.52.6.1/Ⓒ

Sensitive push button Ø30 - differential

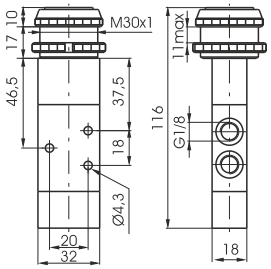
Coding: 228.Ⓣ.6.13/Ⓒ

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	540
Orifice size (mm)	6
Working ports size	G1/8"

Ⓣ	TYPE
	32 = 3 ways
	52 = 5 ways
Ⓒ	BUTTON COLOR
	1 = Red
	2 = Black
	3 = Green



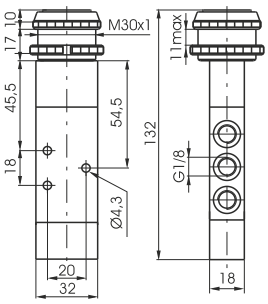
3 ways



Weight 197 g
Operating force 18,5 N (at 6 bar)

228.32.6.13/Ⓒ

5 ways



Weight 217 g
Operating force 18,5 N (at 6 bar)

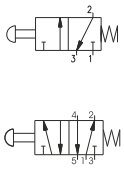
228.52.6.13/Ⓒ

Push button - Spring

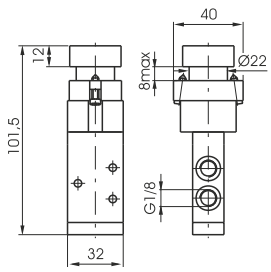
Coding: 228.Ⓣ.6.22/Ⓒ

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	540
Orifice size (mm)	6
Working ports size	G1/8"

Ⓣ	TYPE
	32 = 3 ways
	52 = 5 ways
Ⓒ	BUTTON COLOR
	1 = Red
	2 = Black
	3 = Green
	4 = Yellow



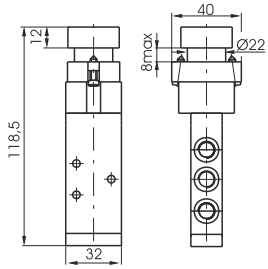
3 ways



Weight 225 g
Operating force 33 N

228.32.6.22/Ⓒ

5 ways



Weight 245 g
Operating force 33 N

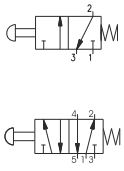
228.52.6.22/Ⓒ

Raised push button Ø22 - Spring

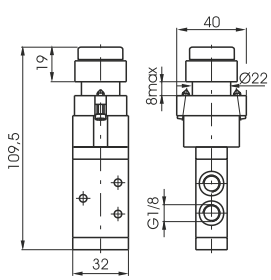
Coding: 228.Ⓣ.6.23/Ⓒ

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	540
Orifice size (mm)	6
Working ports size	G1/8"

Ⓣ	TYPE
	32 = 3 ways
	52 = 5 ways
Ⓒ	BUTTON COLOR
	1 = Red
	2 = Black
	3 = Green
	4 = Yellow



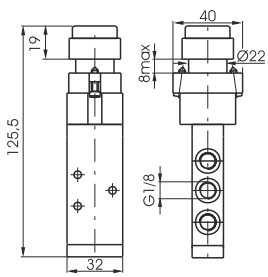
3 ways



Weight 230 g
Operating force 33 N

228.32.6.23/Ⓒ

5 ways



Weight 250 g
Operating force 33 N

228.52.6.23/Ⓒ

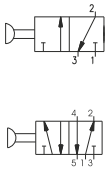
Push button Ø22 - 2 positions

Coding: 228.Ⓣ.6.25

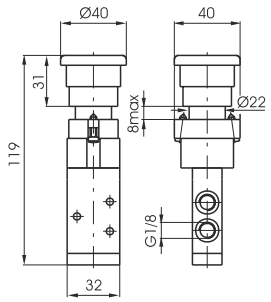
Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	540
Orifice size (mm)	6
Working ports size	G1/8"

Ⓣ	TYPE
	32 = 3 ways
	52 = 5 ways

Emergency - Rotate to unlock



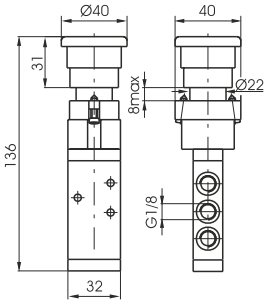
3 ways



Weight 235 g
Operating force 33 N

228.32.6.25

5 ways



Weight 235 g
Operating force 33 N

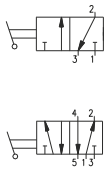
228.52.6.25

Switch 2 positions

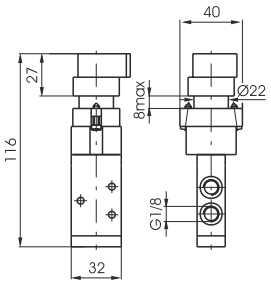
Coding: 228.Ⓣ.6.27

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	540
Orifice size (mm)	6
Working ports size	G1/8"

Ⓣ	TYPE
	32 = 3 ways
	52 = 5 ways



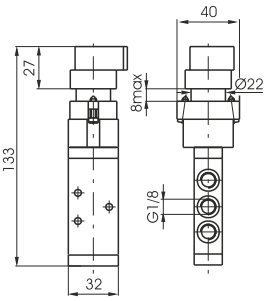
3 ways



Weight 230 g

228.32.6.27

5 ways



Weight 250 g

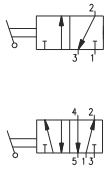
228.52.6.27

Key switch 2 positions

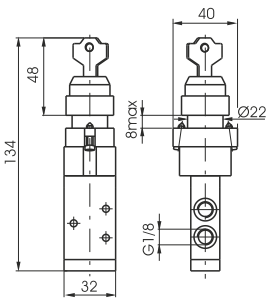
Coding: 228.Ⓣ.6.28

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	540
Orifice size (mm)	6
Working ports size	G1/8"

Ⓣ	TYPE
	32 = 3 ways
	52 = 5 ways



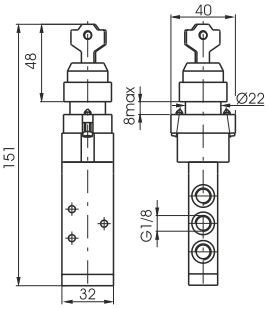
3 ways



Weight 230 g

228.32.6.28

5 ways



Weight 250 g

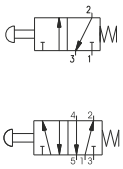
228.52.6.28

Palm push button Ø30 2 positions

Coding: 228.Ⓣ.7.1/Ⓒ

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	540
Orifice size (mm)	6
Working ports size	G1/8"

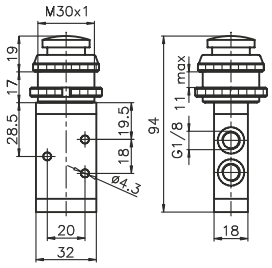
Ⓣ	TYPE
	32 = 3 ways
	52 = 5 ways
Ⓒ	BUTTON COLOR
	1 = Red
	2 = Black
	3 = Green



3 ways

Weight 148 g

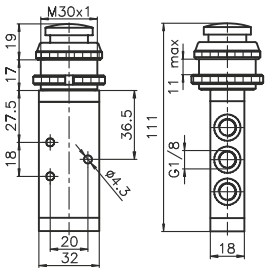
228.32.7.1/Ⓒ



5 ways

Weight 168 g

228.52.7.1/Ⓒ

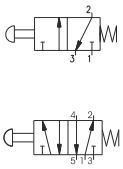


Push button - Spring

Coding: 228.Ⓣ.8.1/Ⓒ

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	540
Orifice size (mm)	6
Working ports size	G1/8"

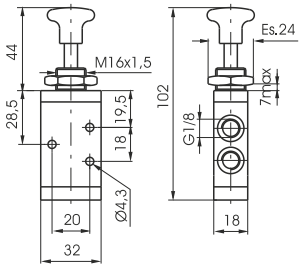
Ⓣ	TYPE
	32 = 3 ways
	52 = 5 ways
Ⓒ	BUTTON COLOR
	1 = Red
	2 = Black
	3 = Green



3 ways

Weight 120 g

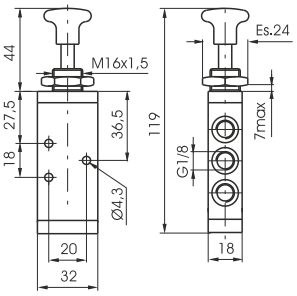
228.32.8.1/Ⓒ



5 ways

Weight 140 g

228.52.8.1/Ⓒ

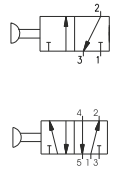


Push button 2 positions

Coding: 228.Ⓣ.8/Ⓒ

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	540
Orifice size (mm)	6
Working ports size	G1/8"

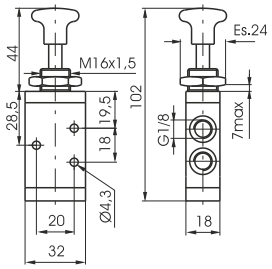
Ⓣ	TYPE
	32 = 3 ways
	52 = 5 ways
Ⓒ	BUTTON COLOR
	1 = Red
	2 = Black
	3 = Green



3 ways

Weight 120 g

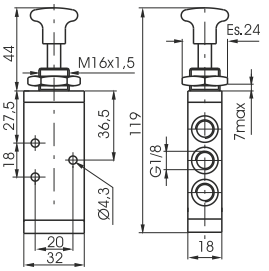
228.32.8/Ⓒ



5 ways

Weight 140 g

228.52.8/Ⓒ

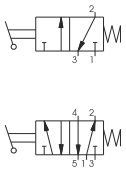


Lever lateral - Spring

Coding: 228.Ⓣ.9.1/Ⓒ

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	540
Orifice size (mm)	6
Working ports size	G1/8"

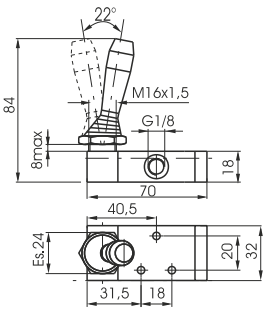
Ⓣ	TYPE
	32 = 3 ways
	52 = 5 ways
Ⓒ	LEVER COLOR
	1 = Red
	2 = Black
	3 = Green



3 ways

Weight 140 g

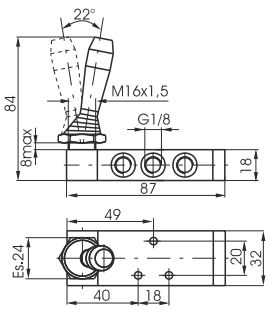
228.32.9.1/Ⓒ



5 ways

Weight 160 g

228.52.9.1/Ⓒ

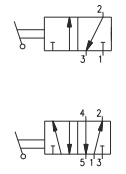


Lever lateral 2 positions

Coding: 228.Ⓣ.9/Ⓒ

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	540
Orifice size (mm)	6
Working ports size	G1/8"

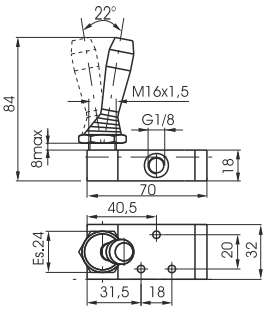
Ⓣ	TYPE
	32 = 3 ways
	52 = 5 ways
Ⓒ	LEVER COLOR
	1 = Red
	2 = Black
	3 = Green



3 ways

Weight 140 g

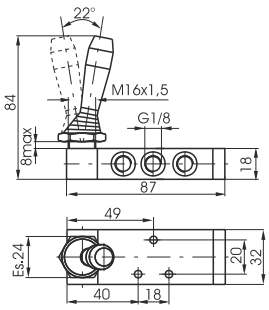
228.32.9/Ⓒ



5 ways

Weight 160 g

228.52.9/Ⓒ

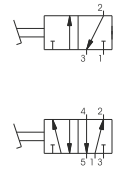


Pedal aluminium 2 positions

Coding: 228.Ⓣ.10

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	540
Orifice size (mm)	6
Working ports size	G1/8"

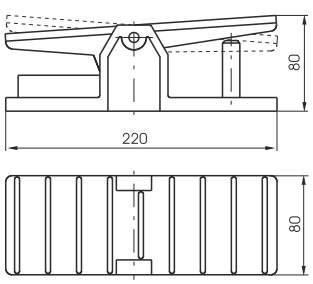
Ⓣ	TYPE
	32 = 3 ways
	52 = 5 ways



3 ways

Weight 790 g

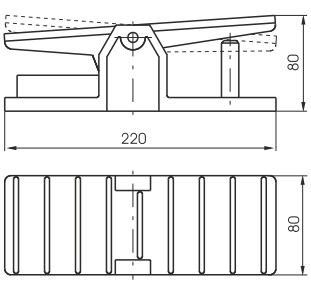
228.32.10



5 ways

Weight 810 g

228.52.10

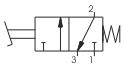
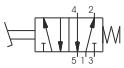


Pedal aluminium - Spring

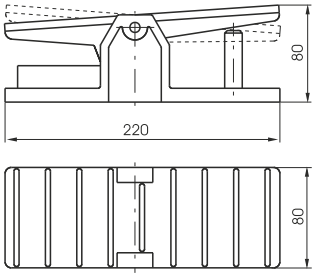
Coding: 228.Ⓣ.10.1

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	540
Orifice size (mm)	6
Working ports size	G1/8"

	TYPE
Ⓣ	**32** = 3 ways
	52 = 5 ways

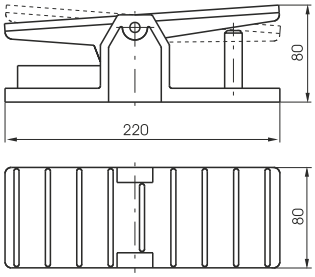
3 ways

Weight 790 g

228.32.10.1

5 ways

Weight 810 g

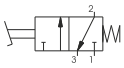
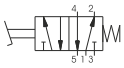
228.52.10.1

Pedal protected - Spring

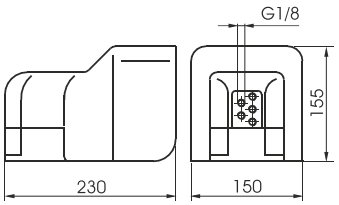
Coding: 228.Ⓣ.10.Ⓥ

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	540
Orifice size (mm)	6
Working ports size	G1/8"

Ⓣ	TYPE	
	32 =	3 ways
	52 =	5 ways
Ⓥ	VERSION	
	1/1 =	Standard version
	2/1 =	without safety device

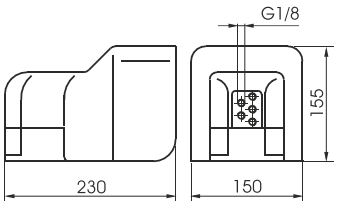
3 ways

Weight 1120 g

228.32.10.Ⓥ

5 ways

Weight 1120 g

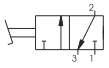
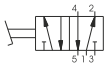
228.52.10.Ⓥ

Pedal protected 2 positions

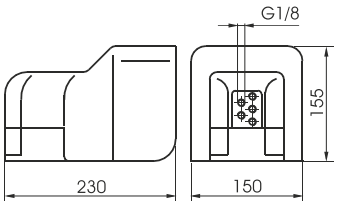
Coding: 228.Ⓣ.10/1

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	540
Orifice size (mm)	6
Working ports size	G1/8"

	TYPE
Ⓣ	**32** = 3 ways
	52 = 5 ways

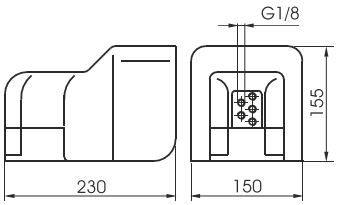
3 ways

Weight 1120 g

228.32.10/1

5 ways

Weight 1120 g

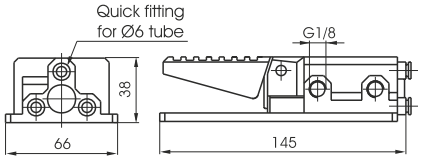
228.52.10/1

Pedal plastic miniaturized - Spring

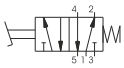
Coding: 228.52.10.Ⓕ

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	540
Orifice size (mm)	6
Working ports size	G1/8"

Ⓕ	FUNCTION
	1P = Standard version
	1PX = Stainless steel spool



Weight 230 g



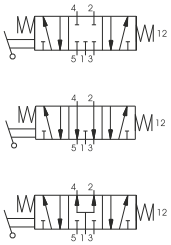
Lever lateral spring centre 3 positions

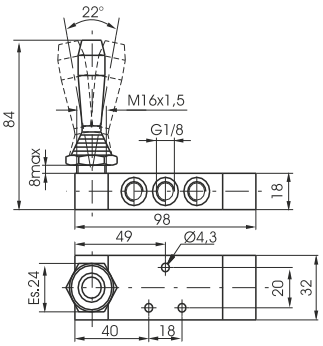
Coding: 228.53.Ⓕ.9.1/Ⓒ

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	540
Orifice size (mm)	6
Working ports size	G1/8"

Ⓕ	FUNCTION
	31 = Closed centres
	32 = Open centres
	33 = Pressured centres
Ⓒ	LEVER COLOR
	1 = Red
	2 = Black
	3 = Green

Weight 190 g





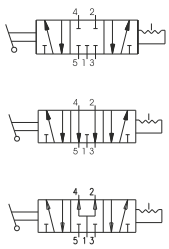
Lever lateral 3 positions detent

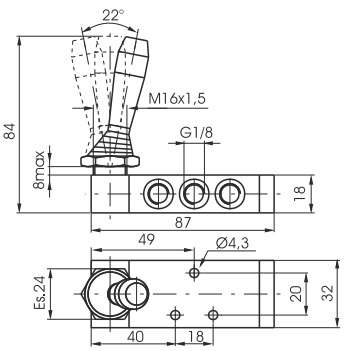
Coding: 228.53.Ⓕ.9/Ⓒ

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	540
Orifice size (mm)	6
Working ports size	G1/8"

Ⓕ	FUNCTION
	31 = Closed centres
	32 = Open centres
	33 = Pressured centres
Ⓒ	LEVER COLOR
	1 = Red
	2 = Black
	3 = Green

Weight 160 g





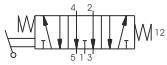
Lever central (spring 3 pos.) Operator, Levar, Spole in Technopolymer

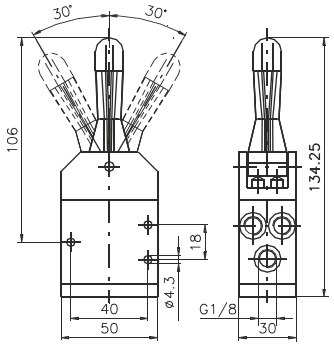
Coding: 228.53.32.99P/Ⓒ

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	410
Orifice size (mm)	6
Working ports size	G1/8"

Ⓒ	LEVER COLOR
	1 = Red
	2 = Black

Weight 140 g





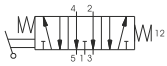
Lever central (spring 3 pos.) Levar in Technopolymer

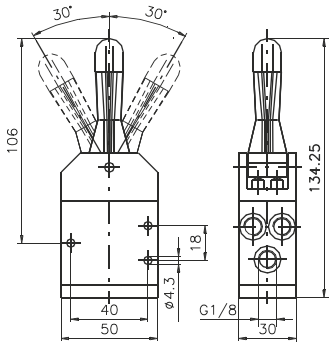
Coding: 228.53.32.99/Ⓒ

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	410
Orifice size (mm)	6
Working ports size	G1/8"

Ⓒ	LEVER COLOR
	1 = Red
	2 = Black

Weight 140 g





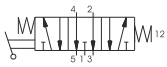
Lever central Metal (spring 3 pos.) One position stable

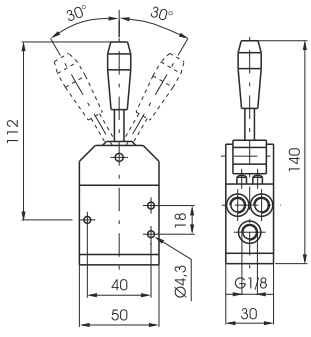
Coding: 228.53.32.99/Ⓒ.S

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	410
Orifice size (mm)	6
Working ports size	G1/8"

Ⓒ	LEVER COLOR
	1 = Red
	2 = Black

Weight 140 g



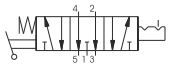


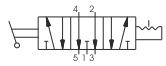
Lever central Metal

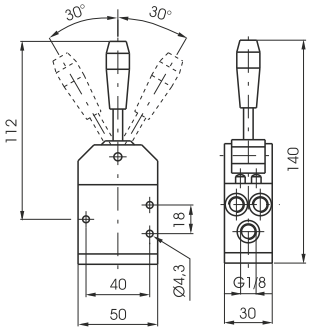
Coding: 228.53.32.99.Ⓕ/Ⓒ

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	410
Orifice size (mm)	6
Working ports size	G1/8"

Ⓕ	FUNCTION
	2 = 2 Stable positions
	3 = 3 pos. stable
Ⓒ	LEVER COLOR
	1 = Red
	2 = Black







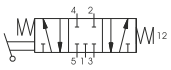
Weight 140 g

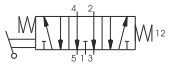
Pedal - Spring 3 positions

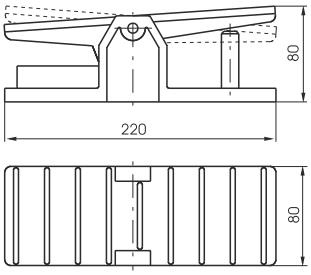
Coding: 228.53.Ⓕ.10.1

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	410
Orifice size (mm)	6
Working ports size	G1/8"

Ⓕ	FUNCTION
	31 = Closed centres
	32 = Open centres







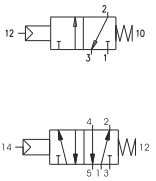
Weight 810 g

Pneumatic - Spring

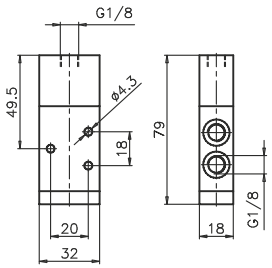
Coding: 228.Ⓣ.11.1

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	540
Orifice size (mm)	6
Working ports size	G1/8"
Pilot ports size	G1/8"

Ⓣ	TYPE
	32 = 3 ways
	52 = 5 ways



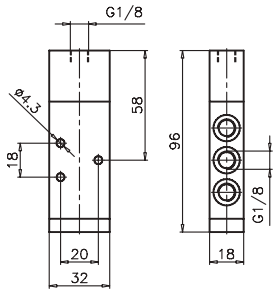
3 ways



Weight 110 g
Minimum piloting pressure 2,5 bar

228.32.11.1

5 ways



Weight 130 g
Minimum piloting pressure 2,5 bar

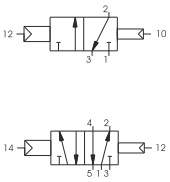
228.52.11.1

Pneumatic - Differential external

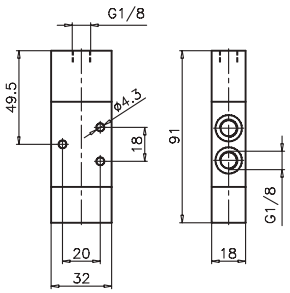
Coding: 228.Ⓣ.11.12

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	540
Orifice size (mm)	6
Working ports size	G1/8"
Pilot ports size	G1/8"

Ⓣ	TYPE
	32 = 3 ways
	52 = 5 ways



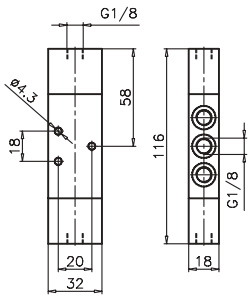
3 ways



Weight 140 g
Minimum piloting pressure 2,5 bar

228.32.11.12

5 ways



Weight 160 g
Minimum piloting pressure 2,5 bar

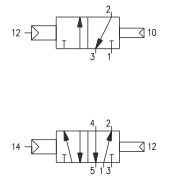
228.52.11.12

Pneumatic - Differential self aligned

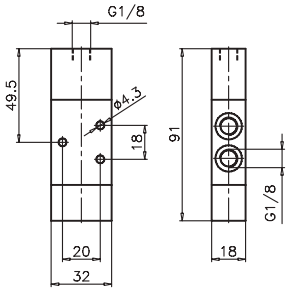
Coding: 228.Ⓣ.11.12/1

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	540
Orifice size (mm)	6
Working ports size	G1/8"
Pilot ports size	G1/8"

Ⓣ	TYPE
	32 = 3 ways
	52 = 5 ways



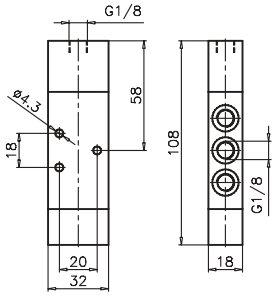
3 ways



Weight 130 g
Minimum piloting pressure 2,5 bar

228.32.11.12/1

5 ways



Weight 150 g
Minimum piloting pressure 2,5 bar

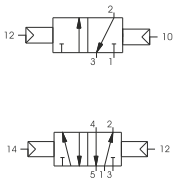
228.52.11.12/1

Pneumatic - Pneumatic

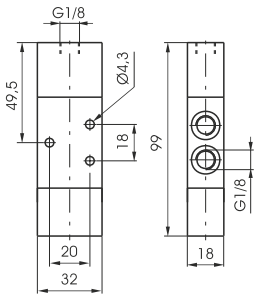
Coding: 228.Ⓣ.11.11

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	540
Orifice size (mm)	6
Working ports size	G1/8"
Pilot ports size	G1/8"

Ⓣ	TYPE
	32 = 3 ways
	52 = 5 ways



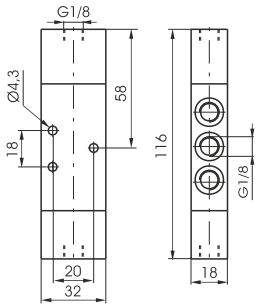
3 ways



Weight 140 g
Minimum piloting pressure 2 bar

228.32.11.11

5 ways



Weight 160 g
Minimum piloting pressure 2 bar

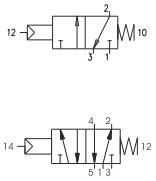
228.52.11.11

Amplified pneumatic - Spring

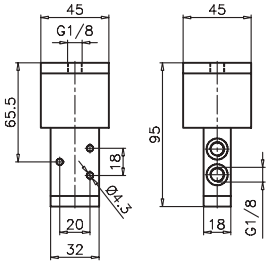
Coding: 228.Ⓣ.13.1

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	540
Orifice size (mm)	6
Working ports size	G1/8"
Pilot ports size	G1/8"

Ⓣ	TYPE
	32 = 3 ways
	52 = 5 ways



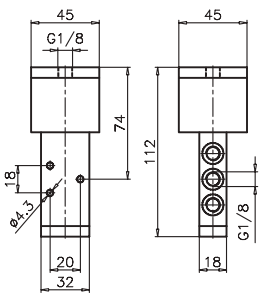
3 ways



Weight 260 g
Minimum piloting pressure 0,5 bar

228.32.13.1

5 ways



Weight 290 g
Minimum piloting pressure 0,5 bar

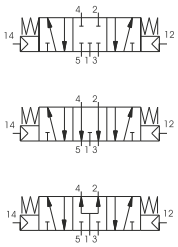
228.52.13.1

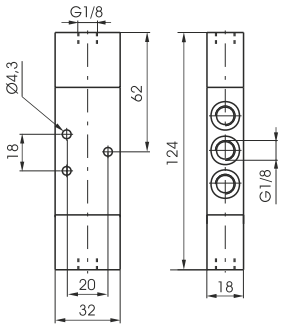
Pneumatic - Pneumatic 5 ways 3 connections

Coding: 228.53.Ⓕ.11.11

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	410
Orifice size (mm)	6
Working ports size	G1/8"
Pilot ports size	G1/8"

Ⓕ	FUNCTION
	31 = Closed centres
	32 = Open centres
	33 = Pressured centres





Weight 180 g
Minimum piloting pressure 3 bar

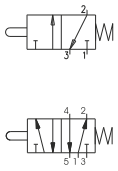
228.53.Ⓕ.11.11

Tappet panel - Spring

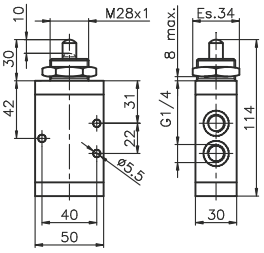
Coding: 224.Ⓣ.1.1

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	1360
Orifice size (mm)	8
Working ports size	G1/4"

Ⓣ	TYPE
	32 = 3 ways
	52 = 5 ways



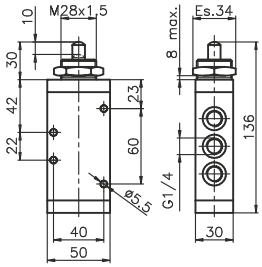
3 ways



Weight 370 g
Operating force 71,5 N

224.32.1.1

5 ways



Weight 455 g
Operating force 71,5 N

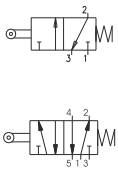
224.52.1.1

Lever roller - Spring

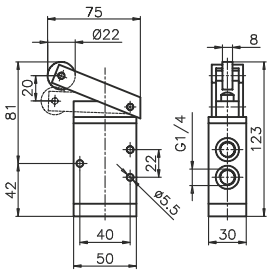
Coding: 224.Ⓣ.2.1

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	1360
Orifice size (mm)	8
Working ports size	G1/4"

Ⓣ	TYPE
	32 = 3 ways
	52 = 5 ways



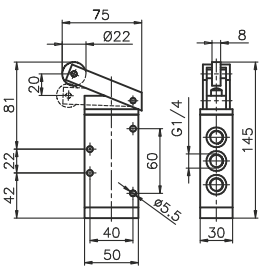
3 ways



Weight 510 g
Operating force 35 N

224.32.2.1

5 ways



Weight 595 g
Operating force 35 N

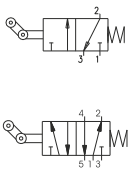
224.52.2.1

Lever roller unidirectional - Spring

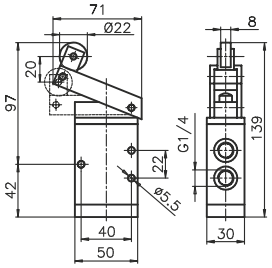
Coding: 224.Ⓣ.3.1

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	1360
Orifice size (mm)	8
Working ports size	G1/4"

Ⓣ	TYPE
	32 = 3 ways
	52 = 5 ways



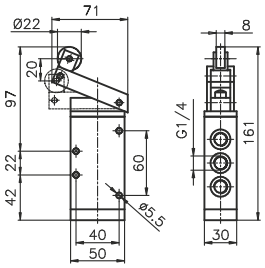
3 ways



Weight 525 g
Operating force 35 N

224.32.3.1

5 ways



Weight 610 g
Operating force 35 N

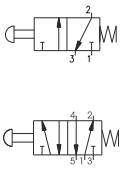
224.52.3.1

Push button - Spring

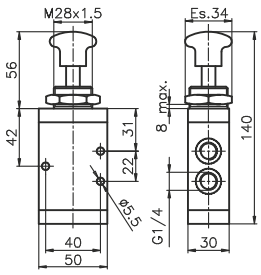
Coding: 224.Ⓣ.8.1

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	1360
Orifice size (mm)	8
Working ports size	G1/4"

Ⓣ	TYPE
	32 = 3 ways
	52 = 5 ways



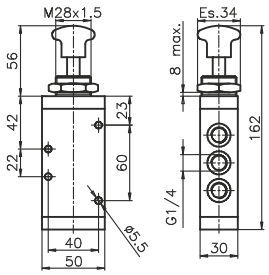
3 ways



Weight 395 g
Operating force 71,5 N

224.32.8.1

5 ways



Weight 480 g
Operating force 71,5 N

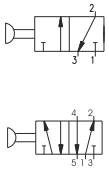
224.52.8.1

Push button 2 positions

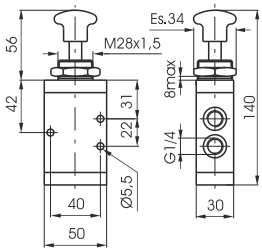
Coding: 224.Ⓣ.8

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	1360
Orifice size (mm)	8
Working ports size	G1/4"

Ⓣ	TYPE
	32 = 3 ways
	52 = 5 ways



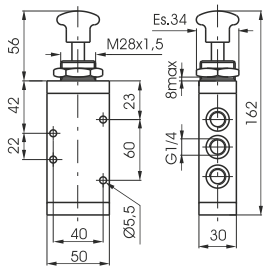
3 ways



Weight 385 g
Operating force 13 N

224.32.8

5 ways



Weight 470 g
Operating force 13 N

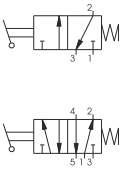
224.52.8

Lever lateral - Spring

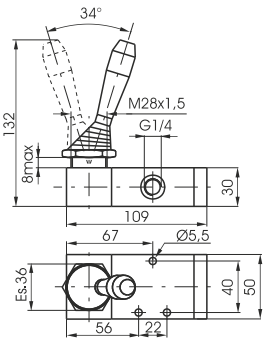
Coding: 224.Ⓣ.9.1/Ⓒ

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	1360
Orifice size (mm)	8
Working ports size	G1/4"

Ⓣ	TYPE
	32 = 3 ways
	52 = 5 ways
Ⓒ	LEVER COLOR
	1 = Red
	2 = Black
	3 = Green



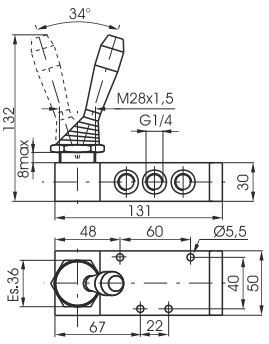
3 ways



Weight 520 g

224.32.9.1/Ⓒ

5 ways



Weight 605 g

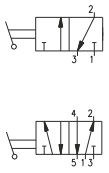
224.52.9.1/Ⓒ

Lever lateral 2 positions

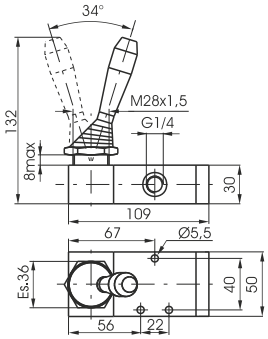
Coding: 224.Ⓣ.9/Ⓒ

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	1360
Orifice size (mm)	8
Working ports size	G1/4"

	TYPE
Ⓣ	**32** = 3 ways
	52 = 5 ways
Ⓒ	LEVER COLOR
	1 = Red
	2 = Black
	3 = Green



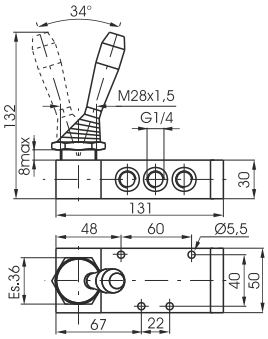
3 ways



Weight 510 g

224.32.9/Ⓒ

5 ways



Weight 595 g

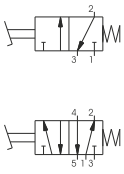
224.52.9/Ⓒ

Pedal aluminium - Spring

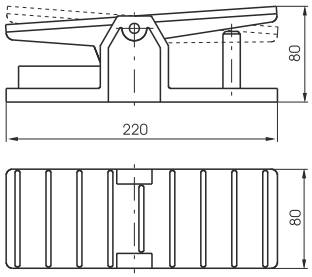
Coding: 224.Ⓣ.10.1

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	1360
Orifice size (mm)	8
Working ports size	G1/4"

	TYPE
Ⓣ	**32** = 3 ways
	52 = 5 ways



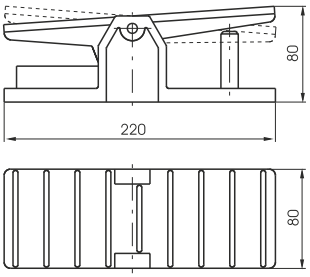
3 ways



Weight 1070 g

224.32.10.1

5 ways



Weight 1155 g

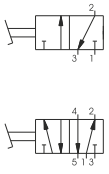
224.52.10.1

Pedal aluminium 2 positions

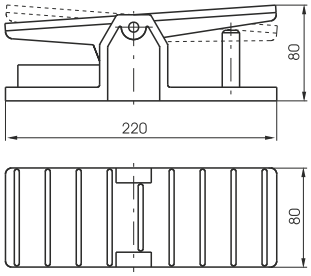
Coding: 224.Ⓣ.10

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	1360
Orifice size (mm)	8
Working ports size	G1/4"

	TYPE
Ⓣ	**32** = 3 ways
	52 = 5 ways



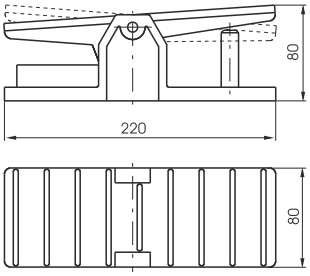
3 ways



Weight 1060 g

224.32.10

5 ways



Weight 1145 g

224.52.10

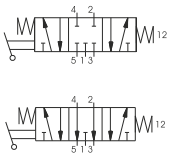
Lateral Lever spring - 3 positions

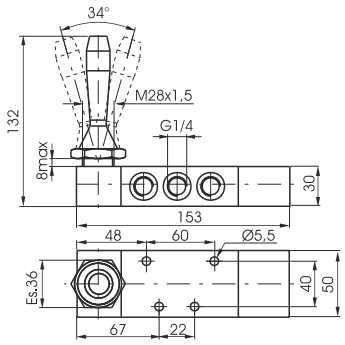
Coding: 224.53.Ⓕ.9.1/Ⓒ

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	1280
Orifice size (mm)	8
Working ports size	G1/4"

Ⓕ	FUNCTION
	31 = Closed centres
	32 = Open centres
Ⓒ	LEVER COLOR
	1 = Red
	2 = Black
	3 = Green

Weight 745 g





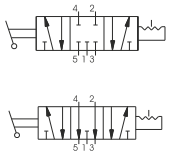
Lever lateral 3 positions detent

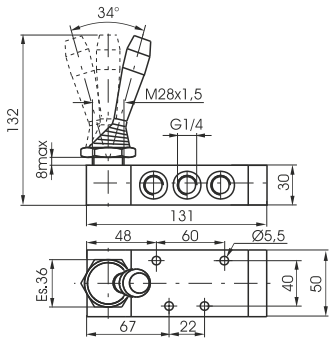
Coding: 224.53.Ⓕ.9/Ⓒ

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	1280
Orifice size (mm)	8
Working ports size	G1/4"

Ⓕ	FUNCTION
	31 = Closed centres
	32 = Open centres
Ⓒ	LEVER COLOR
	1 = Red
	2 = Black
	3 = Green

Weight 605 g



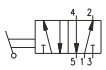


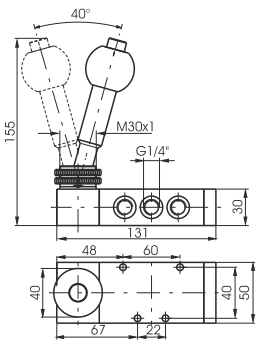
Lever lateral with locking device - 2 positions

Coding: 224.52.9.2

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	1020
Orifice size (mm)	8
Working ports size	G1/4"

Weight 825 g





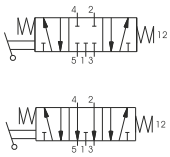
Lever lateral with locking device - Spring 3 positions

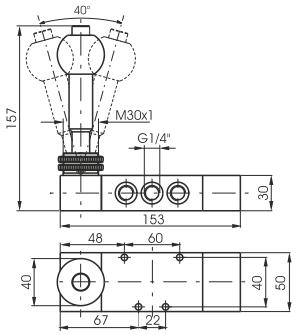
Coding: 224.53.Ⓕ.9.2

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	1020
Orifice size (mm)	8
Working ports size	G1/4"

Ⓕ	FUNCTION
	31 = Closed centres
	32 = Open centres

Weight 965 g





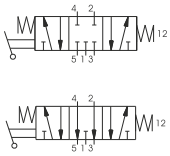
Pedal - Spring 3 positions

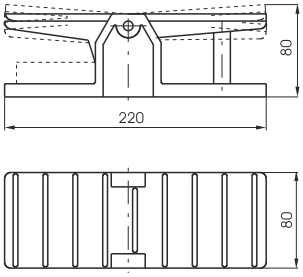
Coding: 224.53.Ⓕ.10.1

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	1280
Orifice size (mm)	8
Working ports size	G1/4"

Ⓕ	FUNCTION
	31 = Closed centres
	32 = Open centres

Weight 1285 g





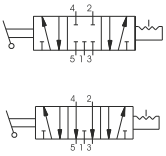
Pedal 3 positions

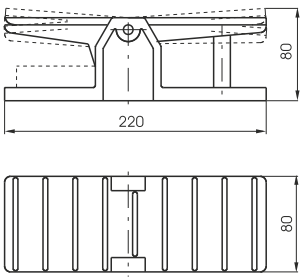
Coding: 224.53.Ⓕ.10

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	1280
Orifice size (mm)	8
Working ports size	G1/4"

Ⓕ	FUNCTION
	31 = Closed centres
	32 = Open centres

Weight 1145 g



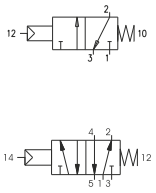


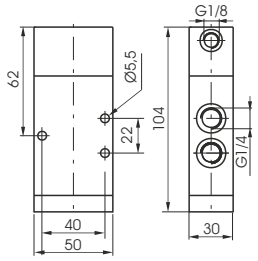
Pneumatic - Spring

Coding: 224.Ⓣ.11.1

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	1360
Orifice size (mm)	8
Working ports size	G1/4"
Pilot ports size	G1/8"

Ⓣ	TYPE
	32 = 3 ways
	52 = 5 ways

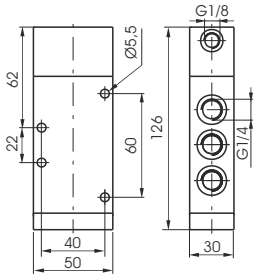




Weight 370 g
Minimum piloting pressure 2,5 bar

224.32.11.1

5 ways



Weight 450 g
Minimum piloting pressure 2,5 bar

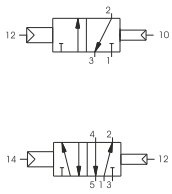
224.52.11.1

Pneumatic - Differential external

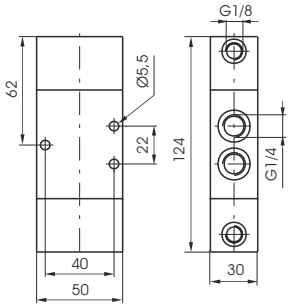
Coding: 224.Ⓣ.11.12

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	11
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	1360
Orifice size (mm)	8
Working ports size	G1/4"
Pilot ports size	G1/8"

Ⓣ	TYPE
	32 = 3 ways
	52 = 5 ways



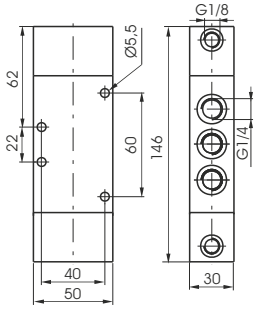
3 ways



Weight 480 g
Minimum piloting pressure 2,5 bar

224.32.11.12

5 ways



Weight 550 g
Minimum piloting pressure 2,5 bar

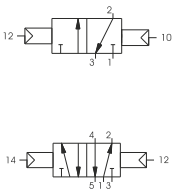
224.52.11.12

Pneumatic - Pneumatic

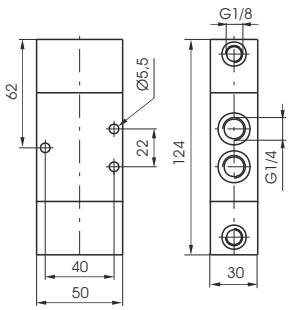
Coding: 224.Ⓣ.11.11

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	12
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	1360
Orifice size (mm)	8
Working ports size	G1/4"
Pilot ports size	G1/8"

Ⓣ	TYPE
	32 = 3 ways
	52 = 5 ways



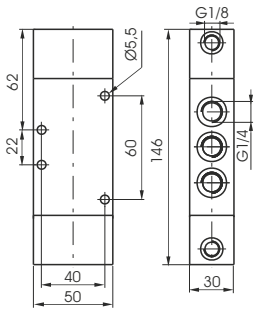
3 ways



Weight 470 g
Minimum piloting pressure 2 bar

224.32.11.11

5 ways



Weight 540 g
Minimum piloting pressure 2 bar

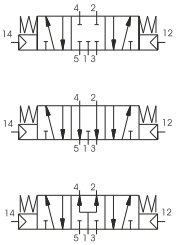
224.52.11.11

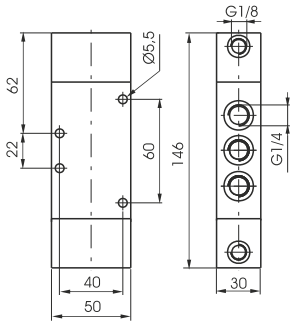
Pneumatic - Pneumatic 5 ways 3 connections

Coding: 224.53.Ⓕ.11.11

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	13
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	1280
Orifice size (mm)	8
Working ports size	G1/4"
Pilot ports size	G1/8"

Ⓕ	FUNCTION
	31 = Closed centres
	32 = Open centres
	33 = Pressured centres





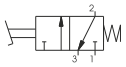
Weight 550 g
Minimum piloting pressure 3 bar

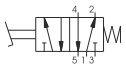
Pedal protected 2 positions

Coding: 214.Ⓣ.10/1

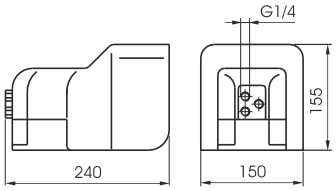
Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	1360
Orifice size (mm)	8
Working ports size	G1/4"

	TYPE
Ⓣ	**32** = 3 ways
	52 = 5 ways





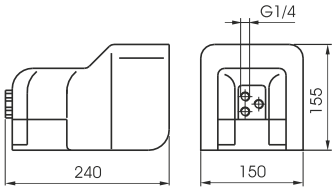
3 ways



Weight 1730 g

214.32.10.Ⓥ

5 ways



Weight 1730 g

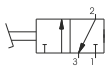
214.52.10.Ⓥ

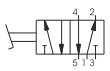
Pedal protected - Spring

Coding: 214.Ⓣ.10.Ⓥ

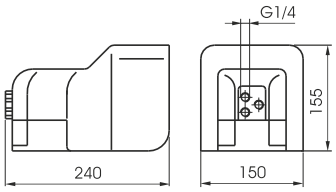
Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	1360
Orifice size (mm)	8
Working ports size	G1/4"

Ⓣ	TYPE		
	32	=	3 ways
	52	=	5 ways
Ⓥ	VERSION		
	1/1	=	Standard version
	2/1	=	without safety device





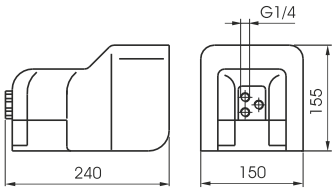
3 ways



Weight 1730 g

214.32.10/1

5 ways



Weight 1730 g

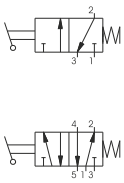
214.52.10/1

Lever lateral - Spring

Coding: 212.Ⓣ.9.1

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	3500
Orifice size (mm)	15
Working ports size	G1/2"

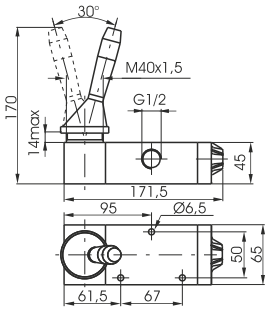
Ⓣ	TYPE
	32 = 3 ways
	52 = 5 ways



3 ways

Weight 1480 g

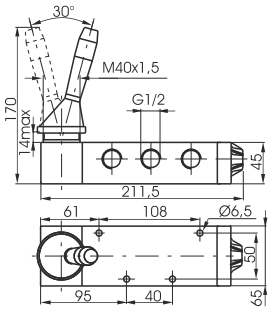
212.32.9.1



5 ways

Weight 1765 g

212.52.9.1

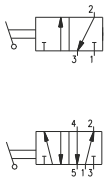


Lever lateral 2 positions

Coding: 212.Ⓣ.9

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	3500
Orifice size (mm)	15
Working ports size	G1/2"

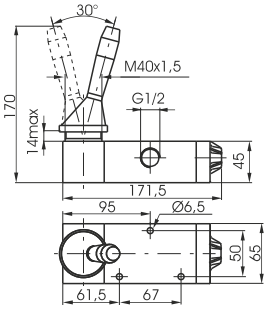
Ⓣ	TYPE
	32 = 3 ways
	52 = 5 ways



3 ways

Weight 1460 g

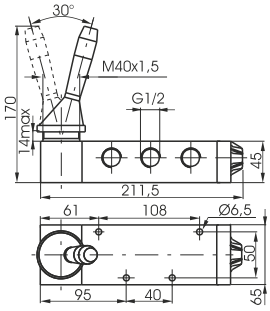
212.32.9



5 ways

Weight 1745 g

212.52.9



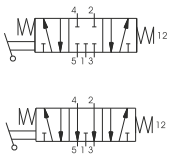
Lever lateral spring centre 3 positions

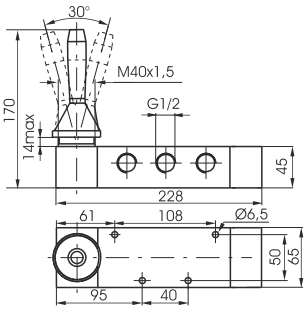
Coding: 212.53.Ⓕ.9.1

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	3000
Orifice size (mm)	15
Working ports size	G1/2"

Ⓕ	FUNCTION
	31 = Closed centres
	32 = Open centres

Weight 2100 g



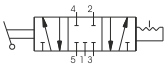


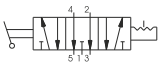
Lever lateral 3 positions detent

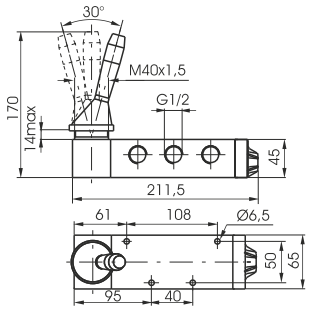
Coding: 212.53.Ⓕ.9

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	3000
Orifice size (mm)	15
Working ports size	G1/2"

Ⓕ	FUNCTION
	31 = Closed centres
	32 = Open centres







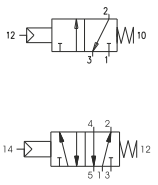
Weight 1765 g

Pneumatic - Spring

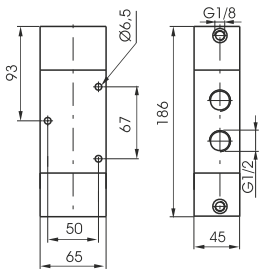
Coding: 212.Ⓣ.11.1

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	3500
Orifice size (mm)	15
Working ports size	G1/2"
Pilot ports size	G1/8"

Ⓣ	TYPE
	32 = 3 ways
	52 = 5 ways



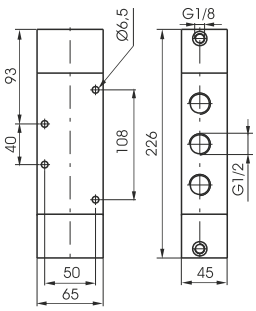
3 ways



Weight 1110 g
Minimum piloting pressure 2,5 bar

212.32.11.1

5 ways



Weight 1390 g
Minimum piloting pressure 2,5 bar

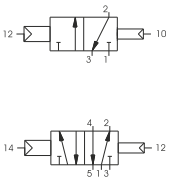
212.52.11.1

Pneumatic - Differential external

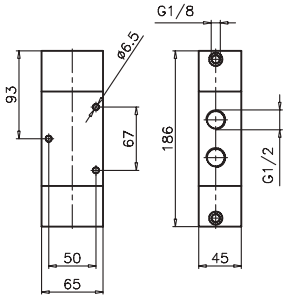
Coding: 212.Ⓣ.11.12

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	3500
Orifice size (mm)	15
Working ports size	G1/2"
Pilot ports size	G1/8"

Ⓣ	TYPE
	32 = 3 ways
	52 = 5 ways



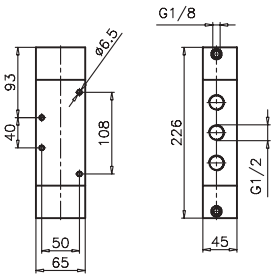
3 ways



Weight 1380 g
Minimum piloting pressure 2,5 bar

212.32.11.12

5 ways



Weight 1660 g
Minimum piloting pressure 2,5 bar

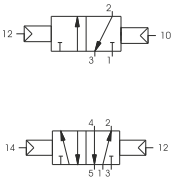
212.52.11.12

Pneumatic - Pneumatic

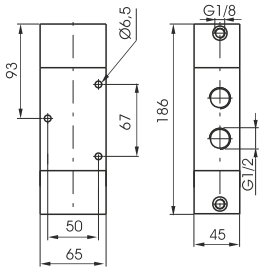
Coding: 212.Ⓣ.11.11

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	3500
Orifice size (mm)	15
Working ports size	G1/2"
Pilot ports size	G1/8"

Ⓣ	TYPE
	32 = 3 ways
	52 = 5 ways



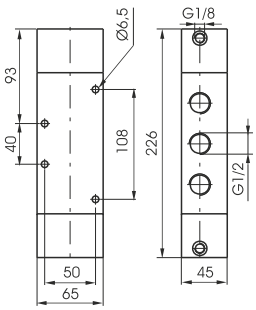
3 ways



Weight 1350 g
Minimum piloting pressure 2 bar

212.32.11.11

5 ways



Weight 1630 g
Minimum piloting pressure 2 bar

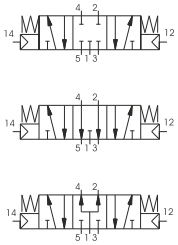
212.52.11.11

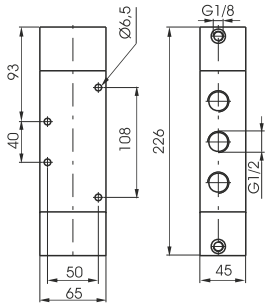
Pneumatic - Pneumatic 5 ways 3 connections

Coding: 212.53.Ⓕ.11.11

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	3000
Orifice size (mm)	15
Working ports size	G1/2"
Pilot ports size	G1/8"

Ⓕ	FUNCTION
	31 = Closed centres
	32 = Open centres
	33 = Pressured centres





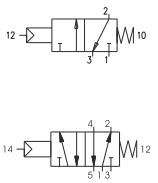
Weight 1650 g
Minimum piloting pressure 3 bar

Pneumatic - Differential external

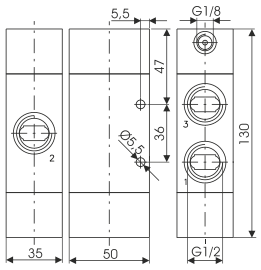
Coding: 212/2.Ⓣ.11.1

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	3600
Orifice size (mm)	15
Working ports size	G1/2"
Pilot ports size	G1/8"

Ⓣ	TYPE
	32 = 3 ways
	52 = 5 ways



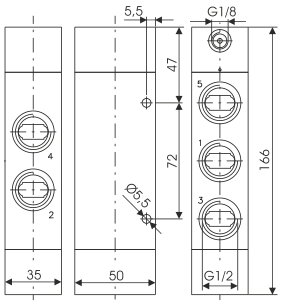
3 ways



Weight 524 g
Minimum piloting pressure 2,5 bar

212/2.32.11.1

5 ways



Weight 644 g
Minimum piloting pressure 2,5 bar

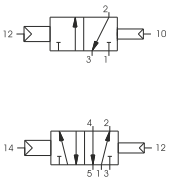
212/2.52.11.1

Pneumatic - Differential self aligned

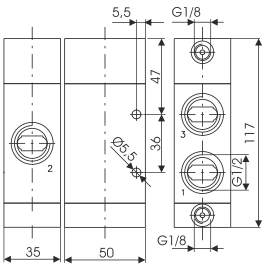
Coding: 212/2.Ⓣ.11.12

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	3600
Orifice size (mm)	15
Working ports size	G1/2"
Pilot ports size	G1/8"

Ⓣ	TYPE
	32 = 3 ways
	52 = 5 ways



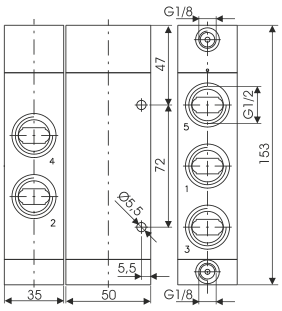
3 ways



Weight 464 g
Minimum piloting pressure 2,5 bar

212/2.32.11.12

5 ways



Weight 586 g
Minimum piloting pressure 2,5 bar

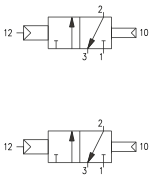
212/2.52.11.12

Pneumatic - Pneumatic

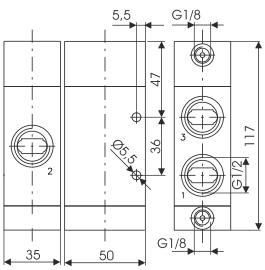
Coding: 212/2.Ⓣ.11.12.Ⓕ

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	3600
Orifice size (mm)	15
Working ports size	G1/2"
Pilot ports size	G1/8"

Ⓣ	TYPE
	32 = 3 ways
	52 = 5 ways
Ⓕ	FUNCTION
	1.C = Normally closed
	1.A = Normally open
	1 = Self-feeding



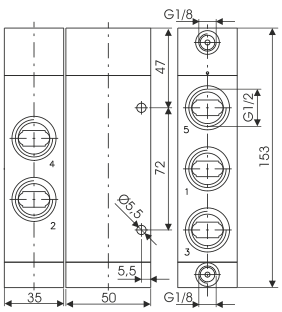
3 ways



Weight 466 g
Minimum piloting pressure 2,5 bar

212/2.32.11.12/Ⓕ

5 ways



Weight 588 g
Minimum piloting pressure 2,5 bar

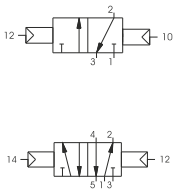
212/2.52.11.12/Ⓕ

Amplified pneumatic - Spring

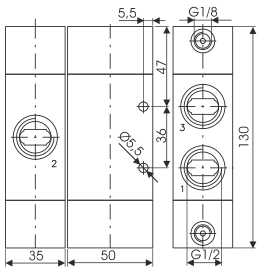
Coding: 212/2.Ⓣ.11.11

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	3600
Orifice size (mm)	15
Working ports size	G1/2"
Pilot ports size	G1/8"

Ⓣ	TYPE
	32 = 3 ways
	52 = 5 ways

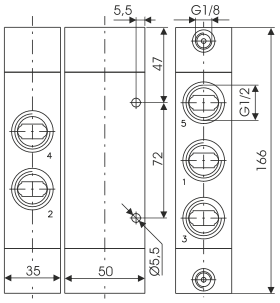


5 ways



Weight 518 g
Minimum piloting pressure 2,5 bar

212/2.32.11.11



Weight 640 g
Minimum piloting pressure 2,5 bar

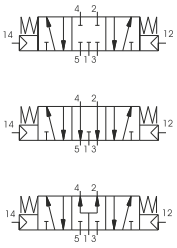
212/2.52.11.11

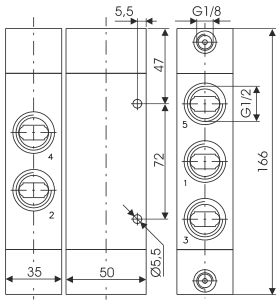
Pneumatic - Pneumatic 5 ways 3 connections

Coding: 212/2.53.Ⓕ.11.11

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	3300
Orifice size (mm)	15
Working ports size	G1/2"
Pilot ports size	G1/8"

Ⓕ	FUNCTION
	31 = Closed centres
	32 = Open centres
	33 = Pressured centres





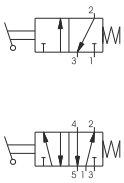
Weight 684 g
Minimum piloting pressure 3 bar

Lever lateral - Spring

Coding: 211.Ⓣ.9.1

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	6500
Orifice size (mm)	20
Working ports size	G1"

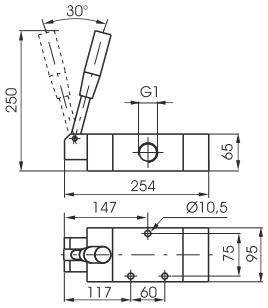
Ⓣ	TYPE
	32 = 3 ways
	52 = 5 ways



3 ways

Weight 4300 g

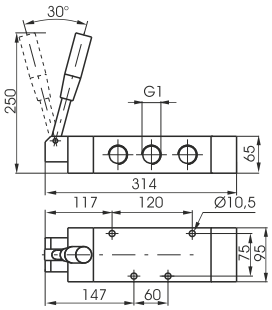
211.32.9.1



5 ways

Weight 4900 g

211.52.9.1

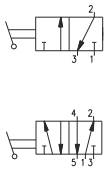


Lever lateral 2 positions

Coding: 211.Ⓣ.9

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	6500
Orifice size (mm)	20
Working ports size	G1"

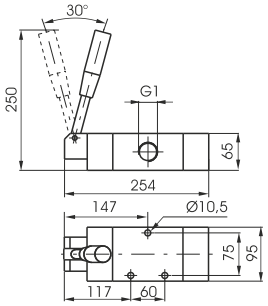
Ⓣ	TYPE
	32 = 3 ways
	52 = 5 ways



3 ways

Weight 4300 g

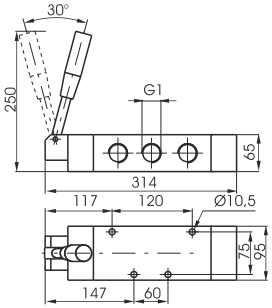
211.32.9



5 ways

Weight 4900 g

211.52.9



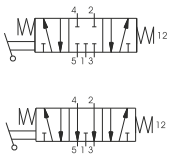
Lever lateral spring centre 3 positions

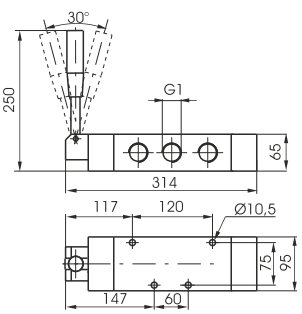
Coding: 211.53.Ⓕ.9.1

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	6500
Orifice size (mm)	20
Working ports size	G1"

Ⓕ	FUNCTION
	31 = Closed centres
	32 = Open centres

Weight 5000 g



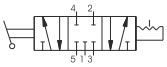


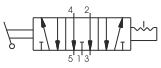
Lever lateral 3 positions detent

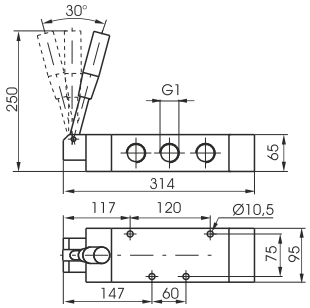
Coding: 211.53.Ⓕ.9

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	6500
Orifice size (mm)	20
Working ports size	G1"

Ⓕ	FUNCTION
	31 = Closed centres
	32 = Open centres







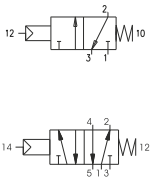
Weight 5000 g

Pneumatic - Spring

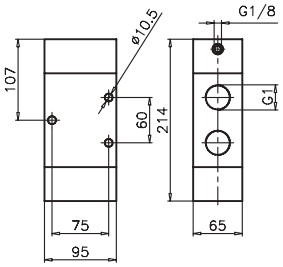
Coding: 211.Ⓣ.11.1

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	6500
Orifice size (mm)	20
Working ports size	G1"
Pilot ports size	G1/8"

Ⓣ	TYPE
	32 = 3 ways
	52 = 5 ways



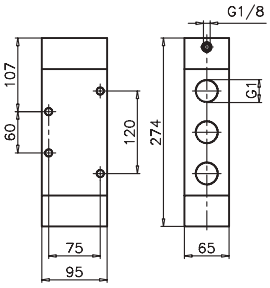
3 ways



Weight 3330 g
Minimum piloting pressure 2,5 bar

211.32.11.1

5 ways



Weight 4200 g
Minimum piloting pressure 2,5 bar

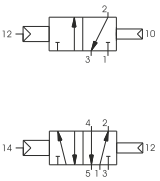
211.52.11.1

Pneumatic - Differential external

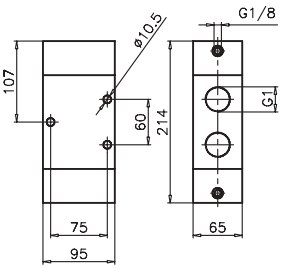
Coding: 211.Ⓣ.11.12

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	6500
Orifice size (mm)	20
Working ports size	G1"
Pilot ports size	G1/8"

Ⓣ	TYPE
	32 = 3 ways
	52 = 5 ways



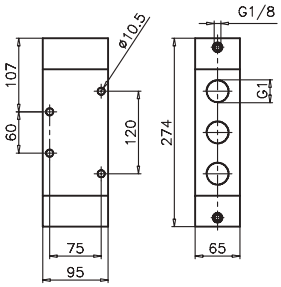
3 ways



Weight 3330 g
Minimum piloting pressure 2,5 bar

211.32.11.12

5 ways



Weight 4200 g
Minimum piloting pressure 2,5 bar

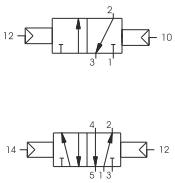
211.52.11.12

Pneumatic - Pneumatic

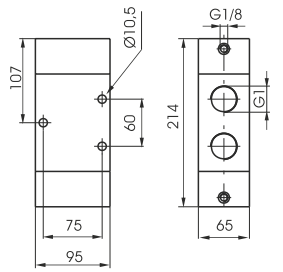
Coding: 211.Ⓣ.11.11

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	6500
Orifice size (mm)	20
Working ports size	G1"
Pilot ports size	G1/8"

Ⓣ	TYPE
	32 = 3 ways
	52 = 5 ways



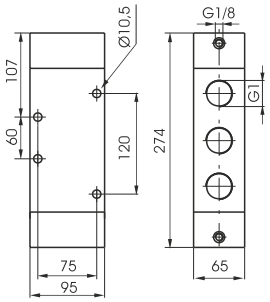
3 ways



Weight 3330 g
Minimum piloting pressure 2 bar

211.32.11.11

5 ways



Weight 4200 g
Minimum piloting pressure 2 bar

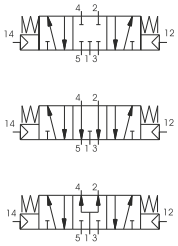
211.52.11.11

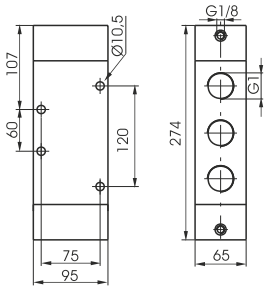
Pneumatic - Pneumatic 5 ways 3 connections

Coding: 211.53.Ⓕ.11.11

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	6500
Orifice size (mm)	20
Working ports size	G1"
Pilot ports size	G1/8"

Ⓕ	FUNCTION
	31 = Closed centres
	32 = Open centres
	33 = Pressured centres





Weight 4200 g
Minimum piloting pressure 3 bar

Series T200

General

The **T200** series, consist of a broad range of valves with various type of actuation. The connections for this series are from G 1/8" to G 1/4".
The main components constituting the valves of the Tecno228 series are manufactured with high performance technopolymer.
The use of technopolymer has resulted in a light weight product which can be offered to the market at very interesting prices.
The **T228** series, is manufactured with 1/8" connections, 3 and 5 ways function, mechanical or pneumatically operated, monostable spring or pneumatic return, bistable and in 5 ways 3 positions version with closed, open and pressured centres.
This series is completely interchangable with the standard 228 series (with alluminium body).
The **T224** valves and solenoid valves series, are manufactured with 1/4" connections. Depending on version and actuation (manual, pneumatic, or electrical), and self aligning (pneu - elect, spring) 3/2, 5/2 and 5/3 ways function, (monostable), (bistable).
The gang mounted solenoid valves are available with the traditional manifold obtained from bored square bar of series 600 and with the extruded aluminium base allowing a unic inlet port conveying the exhausts. The base is also prearranged to be fixed on DIN 46277/3 guide.

Maximum fitting torque

Thread	Maximum torque (Nm)
G 1/8"	4
G1/4"	9

Construction characteristics

	G 1/8" (T228) and G 1/4" (T224)
Body	Technopolymer
Operators	Technopolymer
Seals	NBR
Spacer	Technopolymer
Spools	Technopolymer Stainless steel only for the versions Push button-Spring and Lever lateral
Springs	Spring steel
Pistons	Technopolymer

Use and maintenance

This valves have an average life of 15 million cycles depending on the application and air quality.
Filtered and lubricated air using specified lubricants will reduce the wear of the seals and ensures long and trouble free operation.
Please ensure that the valve is being used according with the manufacturers specification, such as air pressure and temperature.
The exhaust port of the distributor has to be protected in a dusty and dirty environment.
Repair kits including the spool complete with seals are available for overhauling the valves.
However, although this is a simple operation it should be carried out by a competent person.

ATTENTION: use hydraulic oil class H for lubrication such as MAGNA GC 32 (Castrol).

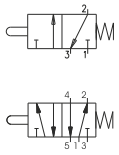
Tappet - Spring

Coding: T228.Ⓣ.0.1

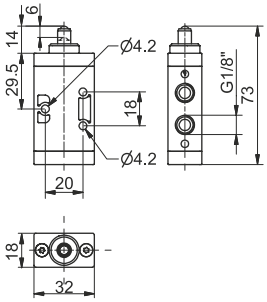
Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with Δp=1 (Nl/min)	620
Orifice size (mm)	6
Working ports size	G1/8"

Ⓣ	TYPE
	32 = 3 ways
	52 = 5 ways

Operating force 33 N



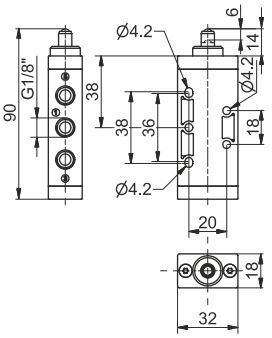
3 ways



Weight 60 g

T228.32.0.1

5 ways



Weight 72 g

T228.52.0.1

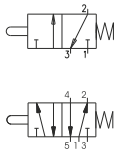
Tappet panel - Spring

Coding: T228.Ⓣ.1.1

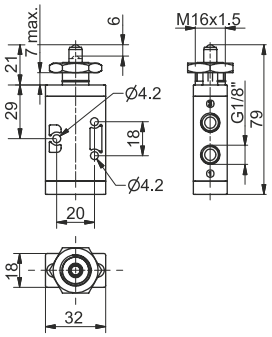
Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with Δp=1 (Nl/min)	620
Orifice size (mm)	6
Working ports size	G1/8"

Ⓣ	TYPE
	32 = 3 ways
	52 = 5 ways

Operating force 33 N



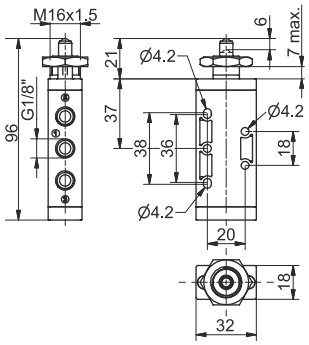
3 ways



Weight 77 g

T228.32.1.1

5 ways



Weight 90 g

T228.52.1.1

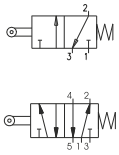
Lever roller

Coding: T228.Ⓣ.2.Ⓥ

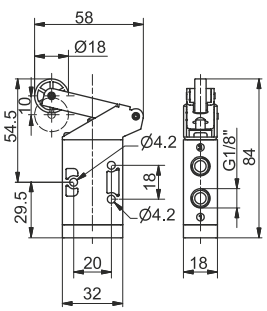
Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with Δp=1 (Nl/min)	620
Orifice size (mm)	6
Working ports size	G1/8"

Ⓣ	TYPE
	32 = 3 ways
	52 = 5 ways
Ⓥ	VERSION
	1 = Plastic roller
	1/1 = ball bearing
	1/2 = Metal roller

Operating force 15 N



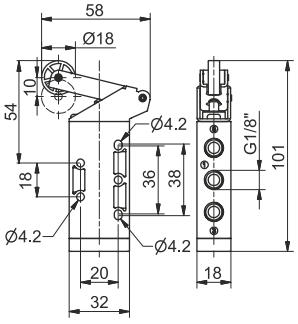
3 ways



Weight 90 g

T228.32.2.Ⓥ

5 ways



Weight 102 g

T228.52.2.Ⓥ

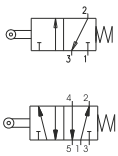
Lever roller ball bearing - Spring

Coding: T228.Ⓣ.2.1/1

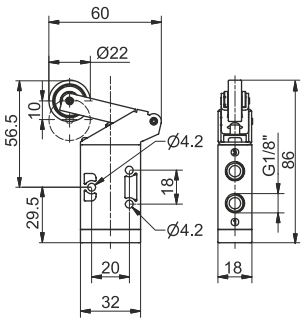
Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with Δp=1 (Nl/min)	620
Orifice size (mm)	6
Working ports size	G1/8"

	TYPE
Ⓣ	**32** = 3 ways
	52 = 5 ways

Operating force 15 N



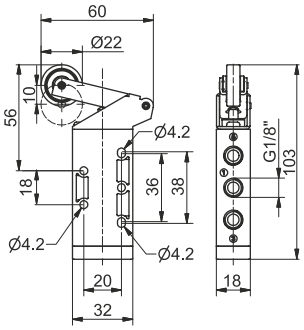
3 ways



Weight 105 g

T228.32.2.1/1

5 ways



Weight 117 g

T228.52.2.1/1

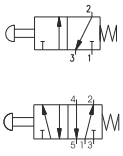
Lever button - Spring

Coding: T228.Ⓣ.2.6/Ⓒ

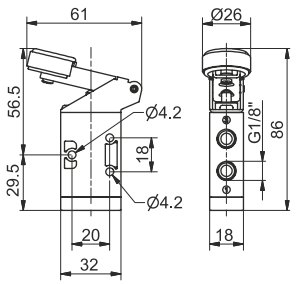
Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with Δp=1 (Nl/min)	620
Orifice size (mm)	6
Working ports size	G1/8"

	TYPE
Ⓣ	**32** = 3 ways
	52 = 5 ways
Ⓒ	LEVER COLOR
	1 = Red
	2 = Black
	3 = Green

Operating force 15 N



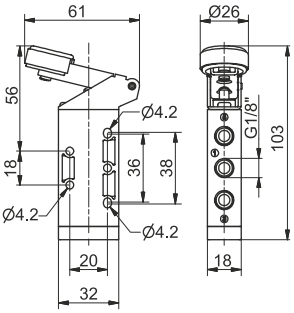
3 ways



Weight 95 g

T228.32.2.6/Ⓒ

5 ways



Weight 87 g

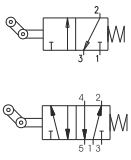
T228.52.2.6/Ⓒ

Lever roller unidirectional - Spring

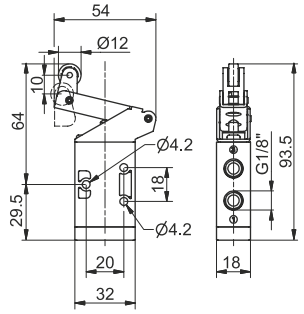
Coding: T228.Ⓣ.3.Ⓥ

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with Δp=1 (Nl/min)	620
Orifice size (mm)	6
Working ports size	G1/8"

	TYPE
Ⓣ	**32** = 3 ways
	52 = 5 ways
Ⓥ	VERSION
	1 = Plastic roller
	1/2 = Metal roller



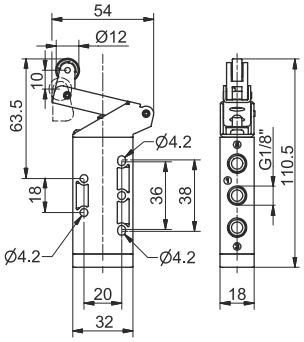
3 ways



Weight 85 g

T228.32.3.Ⓥ

5 ways



Weight 97 g

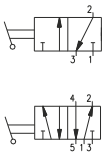
T228.52.3.Ⓥ

Lever panel Ø30 - 2 positions

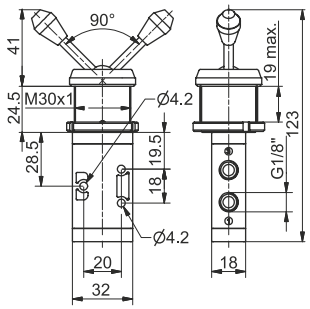
Coding: T228.❶.5/©

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with Δp=1 (Nl/min)	620
Orifice size (mm)	6
Working ports size	G1/8"

❶	TYPE
	32 = 3 ways
	52 = 5 ways
©	LEVER COLOR
	1 = Red
	2 = Black
	3 = Green



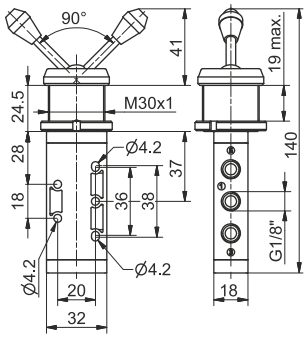
3 ways



Weight 168 g

T228.32.5/©

5 ways



Weight 180 g

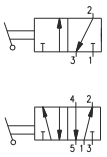
T228.52.5/©

Lever lateral 2 positions

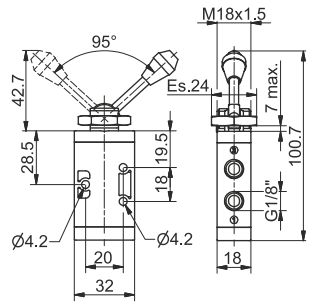
Coding: T228.❶.55/©

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with Δp=1 (Nl/min)	620
Orifice size (mm)	6
Working ports size	G1/8"

❶	TYPE
	32 = 3 ways
	52 = 5 ways
©	LEVER COLOR
	1 = Red
	2 = Black
	3 = Green



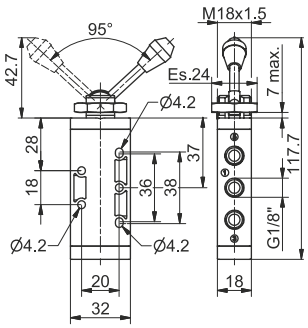
3 ways



Weight 84 g

T228.32.55/©

5 ways



Weight 96 g

T228.52.55/©

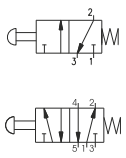
Push button Ø 30 - spring

Coding: T228.❶.6.1/©

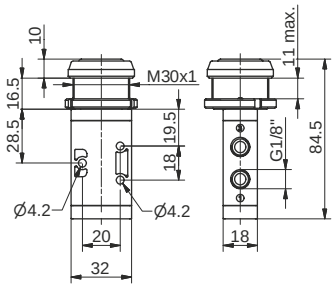
Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with Δp=1 (Nl/min)	620
Orifice size (mm)	6
Working ports size	G1/8"

❶	TYPE
	32 = 3 ways
	52 = 5 ways
©	BUTTON COLOR
	1 = Red
	2 = Black
	3 = Green

Operating force 33 N



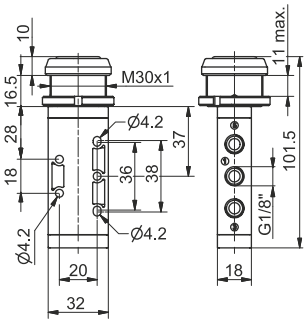
3 ways



Weight 125 g

T228.32.6.1/©

5 ways



Weight 137 g

T228.52.6.1/©

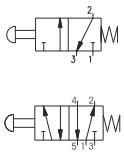
Push button - Spring

Coding: T228.Ⓣ.6.22/Ⓒ

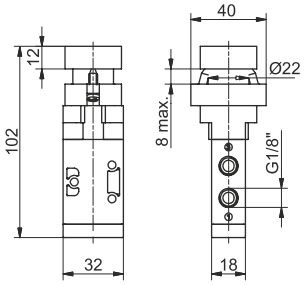
Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with Δp=1 (Nl/min)	620
Orifice size (mm)	6
Working ports size	G1/8"

Ⓣ TYPE	
	32 = 3 ways
	52 = 5 ways
Ⓒ BUTTON COLOR	
	1 = Red
	2 = Black
	3 = Green
	4 = Yellow

Operating force 33 N



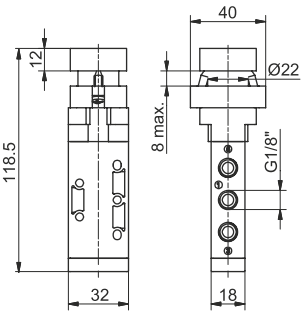
3 ways



Weight 200 g

T228.32.6.22/Ⓒ

5 ways



Weight 212 g

T228.52.6.22/Ⓒ

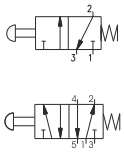
Raised push button Ø22 - Spring

Coding: T228.Ⓣ.6.23/Ⓒ

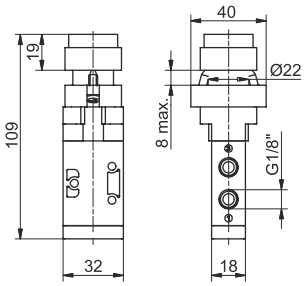
Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with Δp=1 (Nl/min)	620
Orifice size (mm)	6
Working ports size	G1/8"

Ⓣ TYPE	
	32 = 3 ways
	52 = 5 ways
Ⓒ BUTTON COLOR	
	1 = Red
	2 = Black
	3 = Green
	4 = Yellow

Operating force 33 N



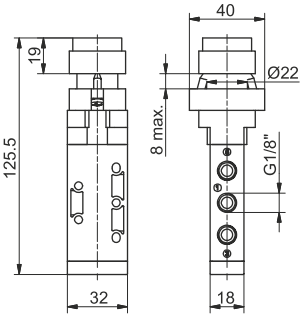
3 ways



Weight 205 g

T228.32.6.23/Ⓒ

5 ways



Weight 217 g

T228.52.6.23/Ⓒ

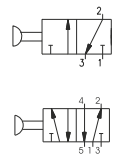
Push button Ø22 - 2 positions

Coding: T228.Ⓣ.6.25

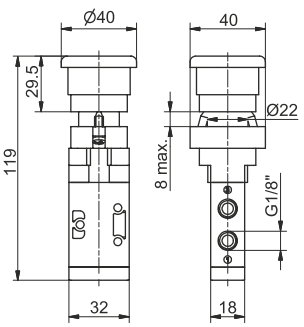
Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with Δp=1 (Nl/min)	620
Orifice size (mm)	6
Working ports size	G1/8"

Ⓣ TYPE	
	32 = 3 ways
	52 = 5 ways

Operating force 33 N



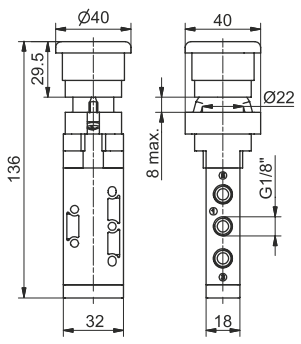
3 ways



Weight 210 g

T228.32.6.25

5 ways



Weight 202 g

T228.52.6.25

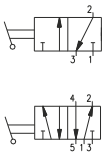
Switch 2 positions

Coding: T228.Ⓣ.6.27

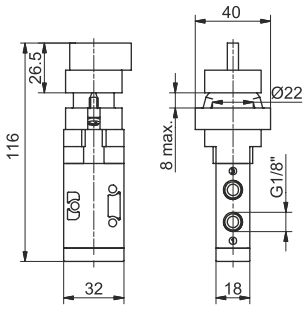
Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with Δp=1 (Nl/min)	620
Orifice size (mm)	6
Working ports size	G1/8"

Ⓣ	TYPE
	32 = 3 ways
	52 = 5 ways

Operating force 33 N



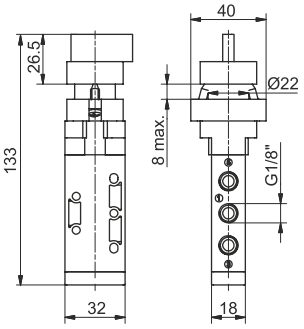
3 ways



Weight 205 g

T228.32.6.27

5 ways



Weight 217 g

T228.52.6.27

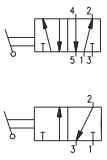
Key switch 2 positions

Coding: T228.Ⓣ.6.28

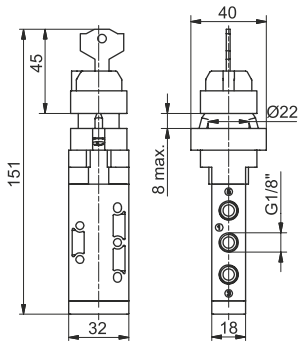
Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with Δp=1 (Nl/min)	620
Orifice size (mm)	6
Working ports size	G1/8"

Ⓣ	TYPE
	32 = 3 ways
	52 = 5 ways

Operating force 33 N



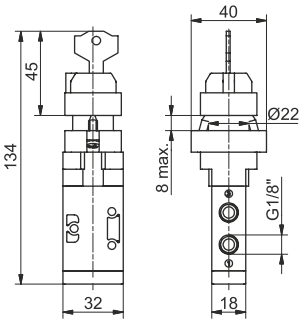
5 ways



Weight 217 g

T228.52.6.28

3 ways



Weight 205 g

T228.32.6.28

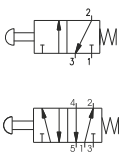
Palm push button Ø30 2 positions

Coding: T228.Ⓣ.7.1/Ⓒ

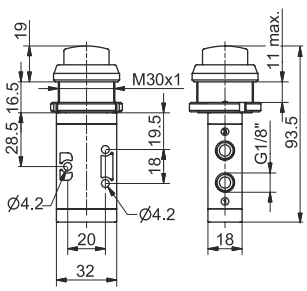
Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with Δp=1 (Nl/min)	620
Orifice size (mm)	6
Working ports size	G1/8"

Ⓣ	TYPE
	32 = 3 ways
	52 = 5 ways
Ⓒ	BUTTON COLOR
	1 = Red
	2 = Black
	3 = Green

Operating force 33 N



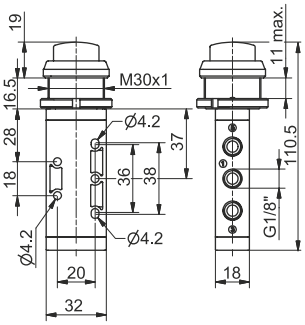
3 ways



Weight 118 g

T228.32.7.1/Ⓒ

5 ways



Weight 130 g

T228.52.7.1/Ⓒ

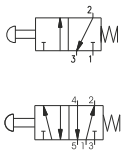
Push button - Spring

Coding: T228.Ⓣ.8.1/Ⓒ

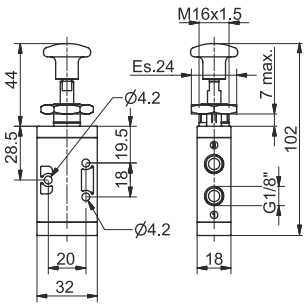
Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with Δp=1 (Nl/min)	620
Orifice size (mm)	6
Working ports size	G1/8"

Ⓣ	TYPE
	32 = 3 ways
	52 = 5 ways
Ⓒ	BUTTON COLOR
	1 = Red
	2 = Black
	3 = Green

Operating force 33 N



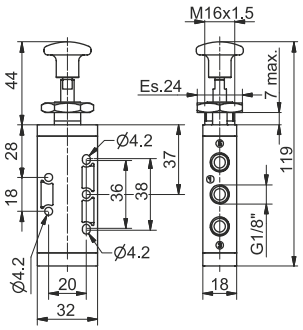
3 ways



Weight 95 g

T228.32.8.1/Ⓒ

5 ways



Weight 107 g

T228.52.8.1/Ⓒ

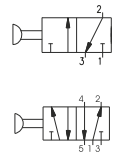
Push button 2 positions

Coding: T228.Ⓣ.8/Ⓒ

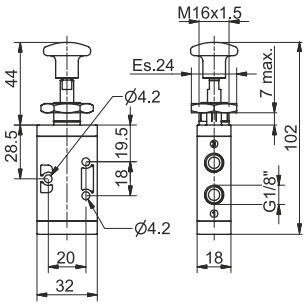
Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with Δp=1 (Nl/min)	620
Orifice size (mm)	6
Working ports size	G1/8"

Ⓣ	TYPE
	32 = 3 ways
	52 = 5 ways
Ⓒ	BUTTON COLOR
	1 = Red
	2 = Black
	3 = Green

Operating force 10 N



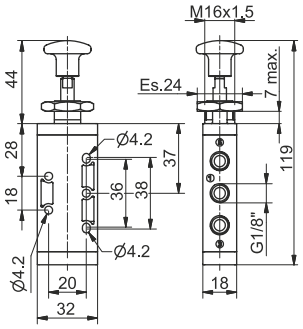
3 ways



Weight 95 g

T228.32.8/Ⓒ

5 ways



Weight 107 g

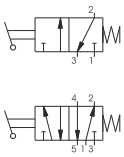
T228.52.8/Ⓒ

Lever lateral - Spring

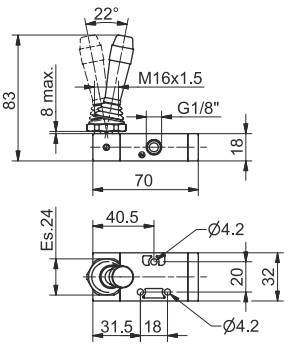
Coding: T228.Ⓣ.9.1/Ⓒ

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with Δp=1 (Nl/min)	620
Orifice size (mm)	6
Working ports size	G1/8"

Ⓣ	TYPE
	32 = 3 ways
	52 = 5 ways
Ⓒ	LEVER COLOR
	1 = Red
	2 = Black
	3 = Green



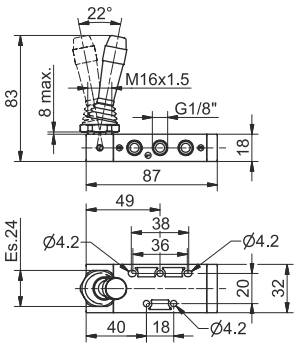
3 ways



Weight 100 g

T228.32.9.1/Ⓒ

5 ways



Weight 110 g

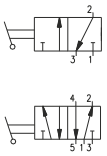
T228.52.9.1/Ⓒ

Lever lateral 2 positions

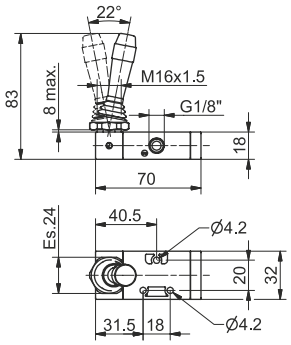
Coding: T228.Ⓣ.9/Ⓒ

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with Δp=1 (Nl/min)	620
Orifice size (mm)	6
Working ports size	G1/8"

Ⓣ	TYPE
	32 = 3 ways
	52 = 5 ways
Ⓒ	LEVER COLOR
	1 = Red
	2 = Black
	3 = Green



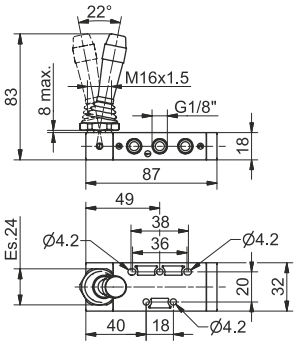
3 ways



Weight 100 g

T228.32.9/Ⓒ

5 ways



Weight 110 g

T228.52.9/Ⓒ

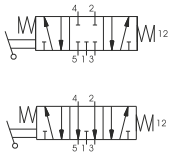
Lever lateral - Spring 3 positions

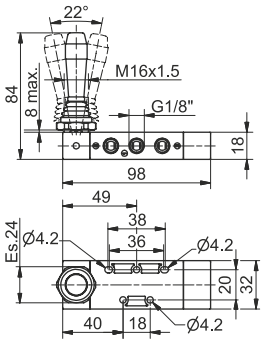
Coding: T228.53.Ⓕ.9.1.Ⓒ

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with Δp=1 (Nl/min)	410
Orifice size (mm)	6
Working ports size	G1/8"

Ⓕ	FUNCTION
	31 = Closed centres
	32 = Open centres
Ⓒ	LEVER COLOR
	1 = Red
	2 = Black
	3 = Green

Weight 140 g





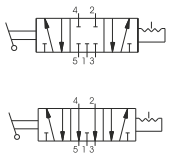
Lever lateral - Spring 3 positions detent

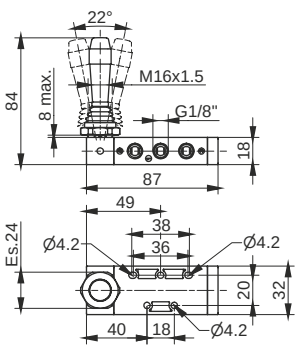
Coding: T228.53.Ⓕ.9/Ⓒ

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	410
Orifice size (mm)	6
Working ports size	G1/8"

Ⓕ	FUNCTION
	31 = Closed centres
	32 = Open centres
Ⓒ	LEVER COLOR
	1 = Red
	2 = Black
	3 = Green

Weight 110 g





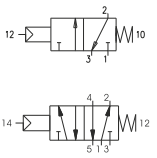
Pneumatic - Spring

Coding: T228.Ⓣ.11.1

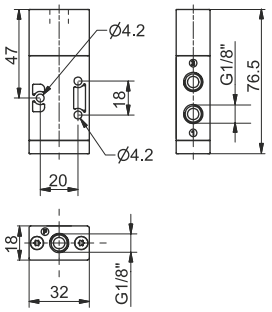
Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with Δp=1 (Nl/min)	620
Orifice size (mm)	6
Working ports size	G1/8"
Pilot ports size	G1/8"

Ⓣ	TYPE
	32 = 3 ways
	52 = 5 ways

Minimum piloting pressure 2,5 bar



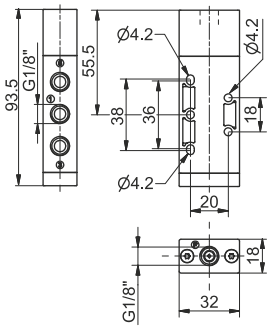
3 ways



Weight 65 g

T228.32.11.1

5 ways



Weight 78 g

T228.52.11.1

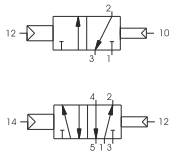
Pneumatic - Differential external

Coding: T228.Ⓣ.11.12

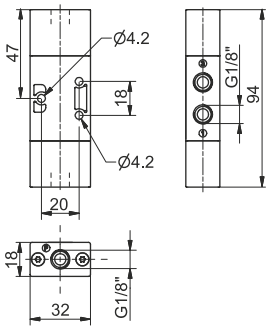
Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with Δp=1 (Nl/min)	620
Orifice size (mm)	6
Working ports size	G1/8"
Pilot ports size	G1/8"

Ⓣ	TYPE
	32 = 3 ways
	52 = 5 ways

Minimum piloting pressure 2,5 bar



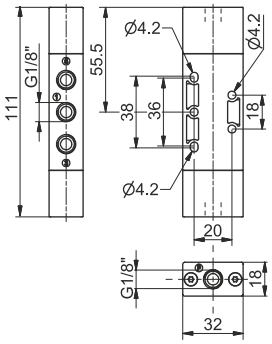
3 ways



Weight 74 g

T228.32.11.12

5 ways



Weight 86 g

T228.52.11.12

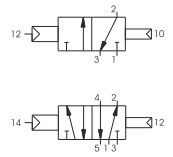
Pneumatic - Differential self aligned

Coding: T228.Ⓣ.11.12/1

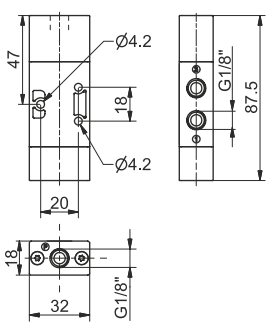
Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with Δp=1 (Nl/min)	620
Orifice size (mm)	6
Working ports size	G1/8"
Pilot ports size	G1/8"

Ⓣ	TYPE
	32 = 3 ways
	52 = 5 ways

Minimum piloting pressure 2,5 bar



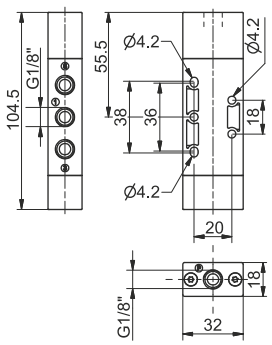
3 ways



Weight 70 g

T228.32.11.12/1

5 ways



Weight 82 g

T228.52.11.12/1

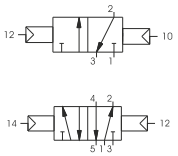
Pneumatic - Pneumatic

Coding: T228.Ⓣ.11.11

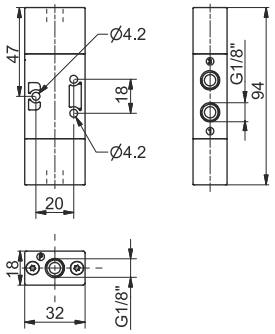
Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with Δp=1 (Nl/min)	620
Orifice size (mm)	6
Working ports size	G1/8"
Pilot ports size	G1/8"

Ⓣ	TYPE
	32 = 3 ways
	52 = 5 ways

Minimum piloting pressure 2 bar



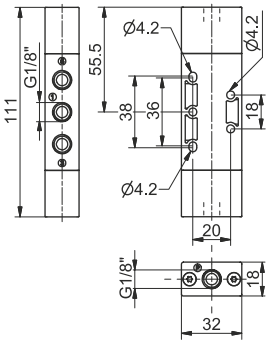
3 ways



Weight 77 g

T228.32.11.11

5 ways



Weight 90 g

T228.52.11.11

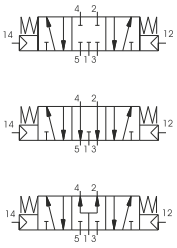
Pneumatic - Pneumatic 3 positions

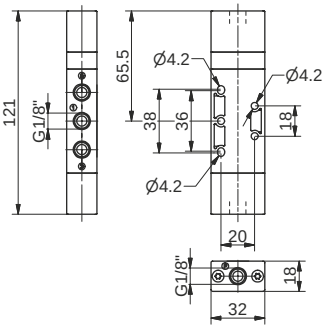
Coding: T228.53.Ⓕ.11.11

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with Δp=1 (Nl/min)	410
Orifice size (mm)	6
Working ports size	G1/8"
Pilot ports size	G1/8"

Ⓕ	FUNCTION
	31 = Closed centres
	32 = Open centres
	33 = Pressured centres

Minimum piloting pressure 3 bar





Weight 110 g

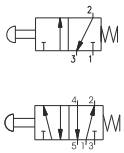
Push button - Spring

Coding: T224.Ⓣ.8.1

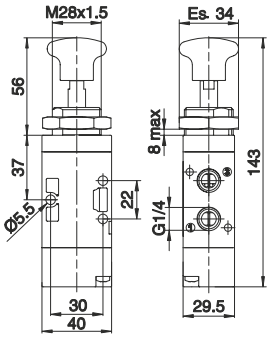
Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with Δp=1 (Nl/min)	1050
Orifice size (mm)	8.5
Working ports size	G1/4"

Ⓣ	TYPE
	32 = 3 ways
	52 = 5 ways

Operating force 50 N



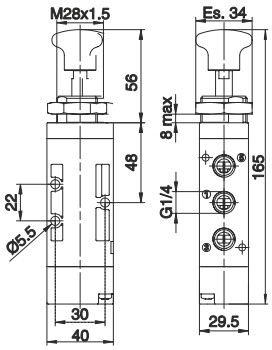
3 ways



Weight 170 g

T224.32.8.1

5 ways



Weight 200 g

T224.52.8.1

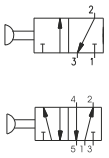
Push button 2 positions

Coding: T224.Ⓣ.8

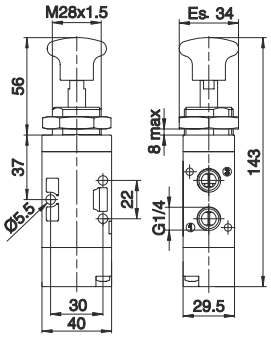
Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with Δp=1 (Nl/min)	1050
Orifice size (mm)	8.5
Working ports size	G1/4"

Ⓣ	TYPE
	32 = 3 ways
	52 = 5 ways

Operating force 13 N



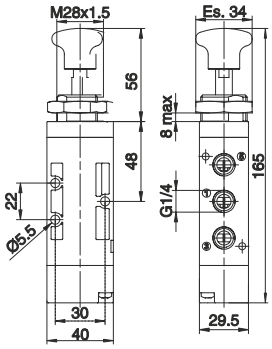
3 ways



Weight 170 g

T224.32.8

5 ways



Weight 200 g

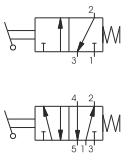
T224.52.8

Lever lateral - Spring

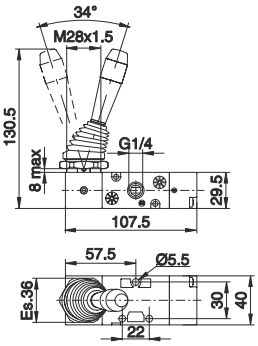
Coding: T224.Ⓣ.9.1/Ⓒ

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with Δp=1 (Nl/min)	1050
Orifice size (mm)	8.5
Working ports size	G1/4"

Ⓣ	TYPE
	32 = 3 ways
	52 = 5 ways
Ⓒ	LEVER COLOR
	1 = Red
	2 = Black
	3 = Green



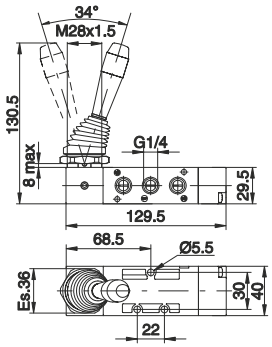
3 ways



Weight 220 g

T224.32.9.1/Ⓒ

5 ways



Weight 250 g

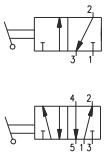
T224.52.9.1/Ⓒ

Lever lateral 2 positions

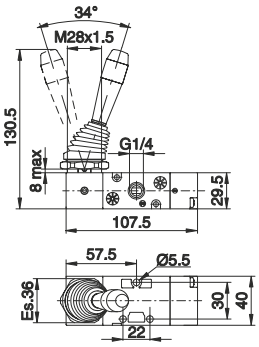
Coding: T224.Ⓣ.9/Ⓒ

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with Δp=1 (Nl/min)	1050
Orifice size (mm)	8.5
Working ports size	G1/4"

Ⓣ	TYPE
	32 = 3 ways
	52 = 5 ways
Ⓒ	LEVER COLOR
	1 = Red
	2 = Black
	3 = Green



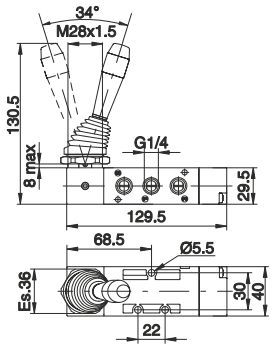
3 ways



Weight 220 g

T224.32.9/Ⓒ

5 ways



Weight 250 g

T224.52.9/Ⓒ

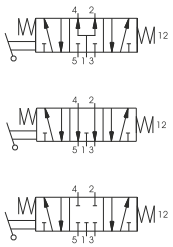
Lever lateral 3 positions

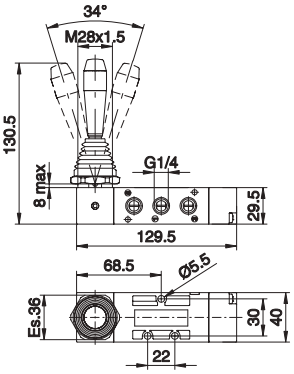
Coding: T224.53.Ⓕ9.1/Ⓒ

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with Δp=1 (Nl/min)	900
Orifice size (mm)	8.5
Working ports size	G1/4"

Ⓕ	FUNCTION
	31 = Closed centres
	32 = Open centres
	33 = Pressured centres
Ⓒ	LEVER COLOR
	1 = Red
	2 = Black
	3 = Green

Weight 270 g





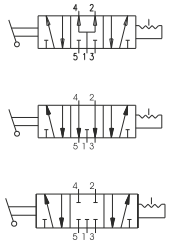
Lateral lever - 3 positions detent

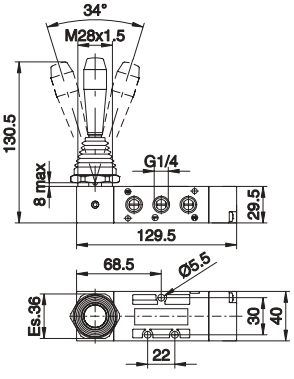
Coding: T224.53.Ⓕ.9/Ⓒ

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with Δp=1 (Nl/min)	900
Orifice size (mm)	8.5
Working ports size	G1/4"

Ⓕ	FUNCTION
	31 = Closed centres
	32 = Open centres
	33 = Pressured centres
Ⓒ	LEVER COLOR
	1 = Red
	2 = Black
	3 = Green

Weight 270 g





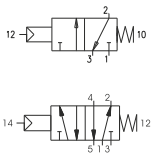
Pneumatic - Spring

Coding: T224.Ⓣ.11.1

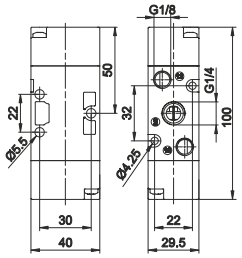
Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with Δp=1 (Nl/min)	1050
Orifice size (mm)	8.5
Working ports size	G1/4"
Pilot ports size	G1/8"

Ⓣ	TYPE
	32 = 3 ways
	52 = 5 ways

Minimum piloting pressure 2,5 bar



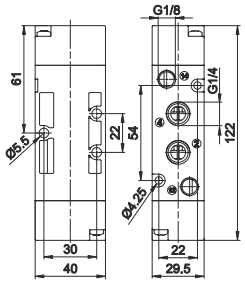
3 ways



Weight 110 g

T224.32.11.1

5 ways



Weight 140 g

T224.52.11.1

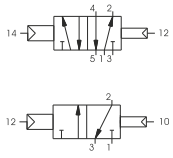
Pneumatic - Differential external

Coding: T224.Ⓣ.11.12

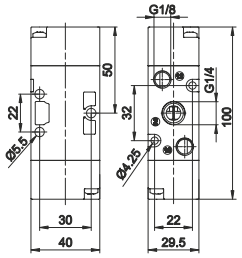
Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with Δp=1 (Nl/min)	1050
Orifice size (mm)	8.5
Working ports size	G1/4"
Pilot ports size	G1/8"

Ⓣ	TYPE
	32 = 3 ways
	52 = 5 ways

Minimum piloting pressure 2 bar



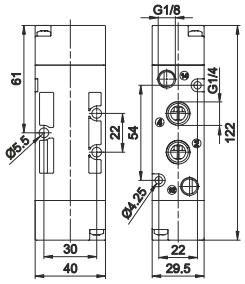
3 ways



Weight 110 g

T224.32.11.12

5 ways



Weight 140 g

T224.52.11.12

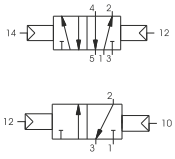
Pneumatic - Pneumatic

Coding: T224.Ⓣ.11.11

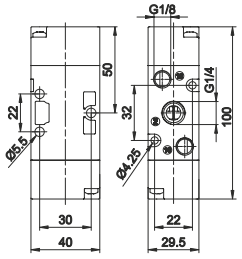
Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with Δp=1 (Nl/min)	1050
Orifice size (mm)	8.5
Working ports size	G1/4"
Pilot ports size	G1/8"

Ⓣ	TYPE
	32 = 3 ways
	52 = 5 ways

Minimum piloting pressure 2 bar



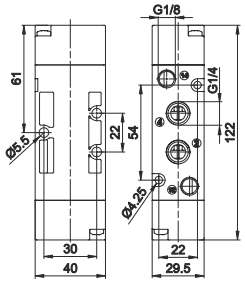
3 ways



Weight 110 g

T224.32.11.11

5 ways



Weight 140 g

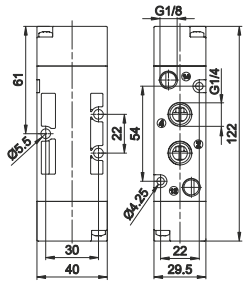
T224.52.11.11

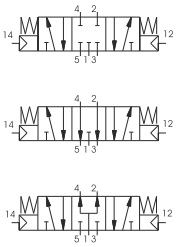
Pneumatic - Pneumatic 5 ways 3 connections

Coding: T224.53.Ⓕ.11.11

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with Δp=1 (Nl/min)	900
Orifice size (mm)	8.5
Working ports size	G1/4"
Pilot ports size	G1/8"

Ⓕ	FUNCTION
	31 = Closed centres
	32 = Open centres
	33 = Pressured centres





Weight 160 g
Minimum piloting pressure 3 bar

Series 800

General

The trend towards the miniaturization of components has been consolidated. The use of new technologies makes it possible to manufacture components with high flow rates but extremely compact sizes.
Electric piloting is by means of low-absorption miniature solenoids which are easily connected to the electronic control systems of machines (PLC).
Another object of study have been manifolds and multiple bases for ganged assembly of valves or solenoid valves with option for having outlets 2 and 4 either on the valve body or on the base through threaded holes or integrated quick connections provided.
Versions 3/2 and 5/2 are fitted with pneumatic and electropneumatic controls with resetting by mechanically or pneumatically operated spring, or by pneumatic or electropneumatic operation on the bistable versions.
The basic difference between this type of distributors and the others we produce, based on the spool system, lies in the fact that the seals rest on the spool and are dynamic, instead of being locked intoo spool the valve body by means of spacers. By this means a compact size is obtained and the distributors can be slotted into bases and manifolds by means of two screws.

Construction characteristics

Body	Aluminium
Operators	Aluminium
Seals	HNBR
Spools	Aluminium
Springs	Stainless steel
Pistons	Aluminium

Use and maintenance

These valves have an average life of 15 million cycles depending on the application and air quality.
Filtered and lubricated air using specified lubricants will reduce the wear of the seals and ensures long and trouble free operation.
Please ensure that the valve is being used according with the manufacturers specification, such as air pressure and temperature.
The exhaust port of the distributor has to be protected in a dusty and dirty environment.
Repair kits including the spool complete with seals are available for overhauling the valves.
However, although this is a simple operation it should be carried out by a competent person.

ATTENTION: use hydraulic oil class H for lubrication such as MAGNA GC 32 (Castrol).

How to order the solenoid valves

Example:
805.52.0.1.01 Solenoid valves with miniature solenoid 12 V D.C.
List of codes for tensions:

01 = miniature solenoid 12 VDC

02 = miniature solenoid 24 VDC

05 = miniature solenoid 24 VAC

06 = miniature solenoid 110 VAC

07 = miniature solenoid 220 VAC

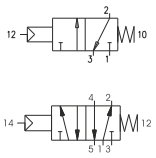
The electropilot utilized is a 15 mm 3/2 N.C. miniature solenoid with faston and 1.1 mm orifice
Miniature solenoid homologated are available c UL us (see series 300)

Pneumatic - Spring

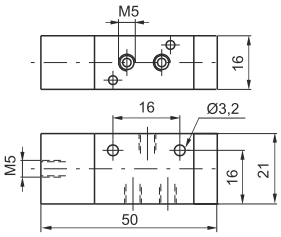
Coding: 805.Ⓣ.11.1

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	160
Orifice size (mm)	2.5
Working ports size	M5
Pilot ports size	M5

Ⓣ	TYPE
	32 = 3 ways
	52 = 5 ways



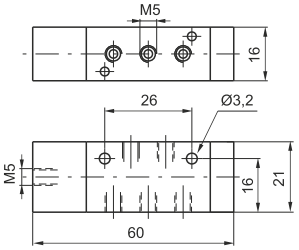
3 ways



Weight 45 g
Minimum piloting pressure 2 bar

805.32.11.1

5 ways



Weight 50 g
Minimum piloting pressure 2 bar

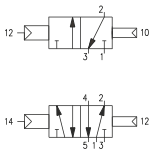
805.52.11.1

Pneumatic - Differential

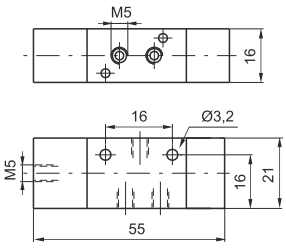
Coding: 805.Ⓣ.11.12

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	160
Orifice size (mm)	2.5
Working ports size	M5
Pilot ports size	M5

Ⓣ	TYPE
	32 = 3 ways
	52 = 5 ways



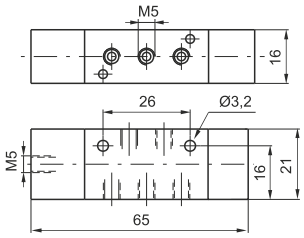
3 ways



Weight 50 g
Minimum piloting pressure 2 bar

805.32.11.12

5 ways



Weight 55 g
Minimum piloting pressure 2 bar

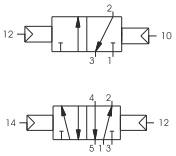
805.52.11.12

Pneumatic - Pneumatic

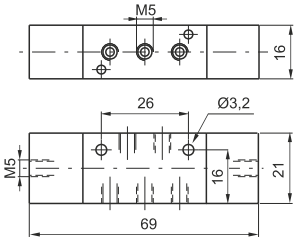
Coding: 805.Ⓣ.11.11

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	160
Orifice size (mm)	2.5
Working ports size	M5
Pilot ports size	M5

Ⓣ	TYPE
	32 = 3 ways
	52 = 5 ways



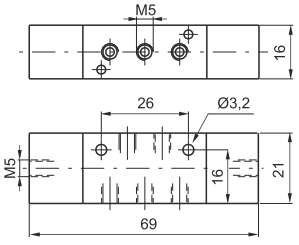
3 ways



Weight 55 g
Minimum piloting pressure 1,5 bar

805.32.11.11

5 ways 2 connections



Weight 60 g
Minimum piloting pressure 1,5 bar

805.52.11.11

Solenoid - Spring

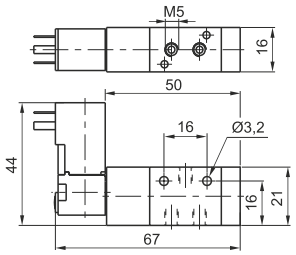
Coding: 805.Ⓣ.0.1.Ⓥ

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with Δp=1 (Nl/min)	160
Orifice size (mm)	2.5
Working ports size	M5

Ⓣ	TYPE
	32 = 3 ways
	52 = 5 ways

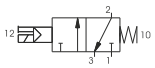
Ⓥ	VOLTAGE
	01 = 12V D.C.
	02 = 24V D.C.
	05 = 24V A.C.
	06 = 110V A.C.
	07 = 230 V A.C.

3 ways

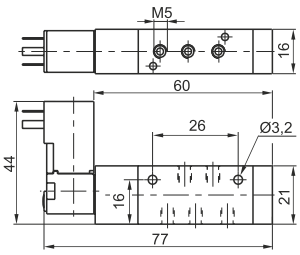


Weight 80 g
Minimum working pressure 2 bar

805.32.0.1.Ⓥ

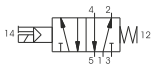


5 ways



Weight 85 g
Minimum working pressure 2 bar

805.52.0.1.Ⓥ



Solenoid - Differential

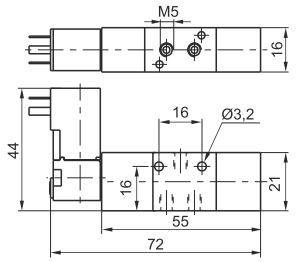
Coding: 805.Ⓣ.0.12.Ⓥ

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with Δp=1 (Nl/min)	160
Orifice size (mm)	2.5
Working ports size	M5

Ⓣ	TYPE
	32 = 3 ways
	52 = 5 ways

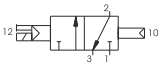
Ⓥ	VOLTAGE
	01 = 12V D.C.
	02 = 24V D.C.
	05 = 24V A.C.
	06 = 110V A.C.
	07 = 230 V A.C.

3 ways

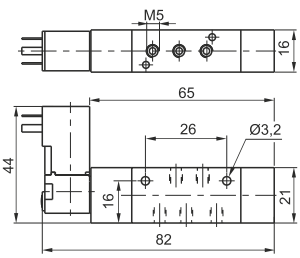


Weight 85 g
Minimum working pressure 2 bar

805.32.0.12.Ⓥ

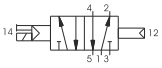


5 ways



Weight 90 g
Minimum working pressure 2 bar

805.52.0.12.Ⓥ



Solenoid - Solenoid

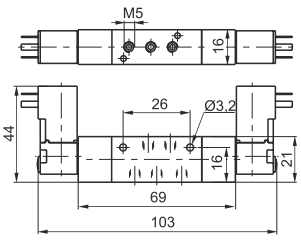
Coding: 805.Ⓣ.0.0.Ⓥ

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with Δp=1 (Nl/min)	160
Orifice size (mm)	2.5
Working ports size	M5

Ⓣ	TYPE
	32 = 3 ways
	52 = 5 ways

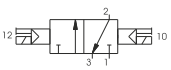
Ⓥ	VOLTAGE
	01 = 12V D.C.
	02 = 24V D.C.
	05 = 24V A.C.
	06 = 110V A.C.
	07 = 230 V A.C.

3 ways

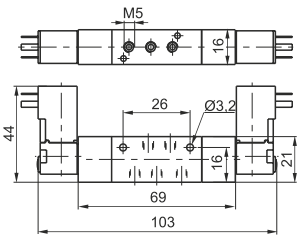


Weight 120 g
Minimum working pressure 1,5 bar

805.32.0.0.Ⓥ

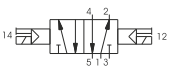


5 ways



Weight 125 g
Minimum working pressure 1,5 bar

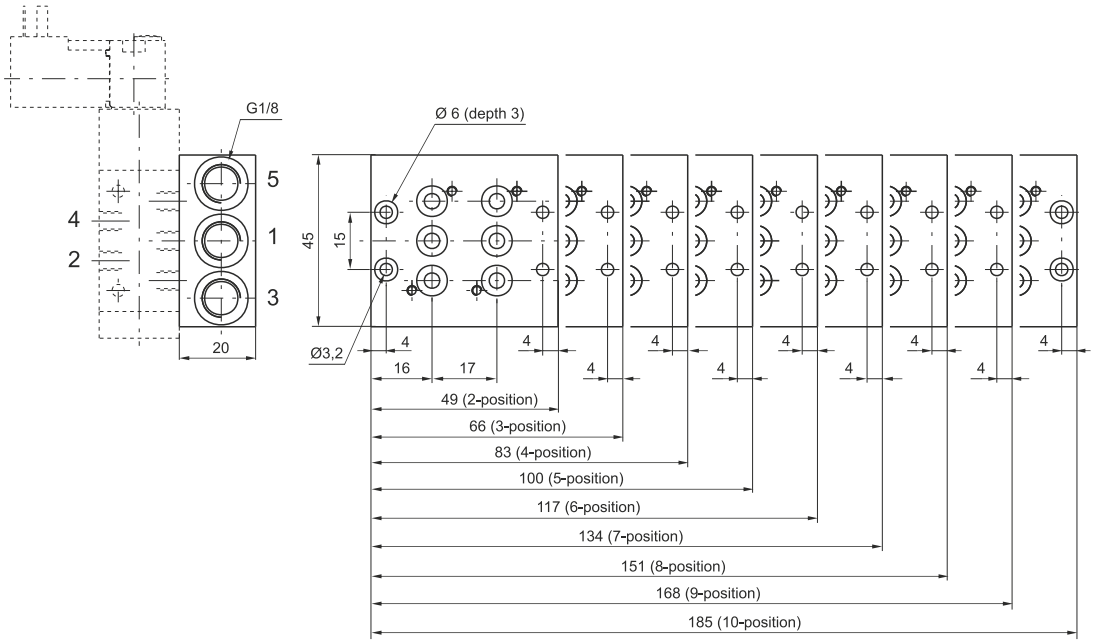
805.52.0.0.Ⓥ



Collectors

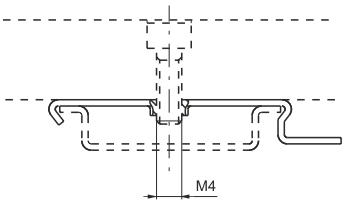
Coding: 805.Ⓝ

Ⓝ	N. POSITIONS
	02 = 2 positions (weight 95 g)
	03 = 3 positions (weight 130 g)
	04 = 4 positions (weight 160 g)
	05 = 5 positions (weight 190 g)
	06 = 6 positions (weight 225 g)
	07 = 7 positions (weight 260 g)
	08 = 8 positions (weight 290 g)
	09 = 9 positions (weight 325 g)
	10 = 10 positions (weight 365 g)



Clip

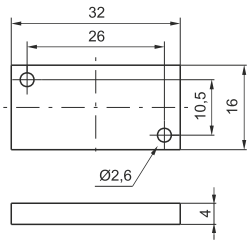
Coding: 800.00



weight 5 g
(for mounting the distributors groups on guide DIN 46277/3)

Closing plate

Coding: 805.00



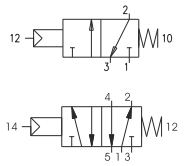
weight 15 g

Pneumatic - Spring

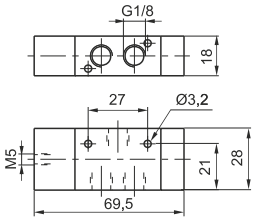
Coding: 808.Ⓣ.11.1

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	520
Orifice size (mm)	4
Working ports size	G1/8"
Pilot ports size	M5

Ⓣ	TYPE
	32 = 3 ways
	52 = 5 ways



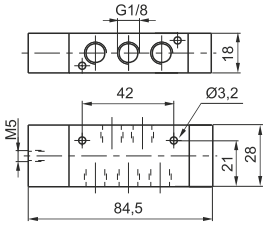
Pneumatic - Spring



Weight 95 g
Minimum piloting pressure 2 bar

808.32.11.1

Pneumatic - Spring



Weight 100 g
Minimum piloting pressure 2 bar

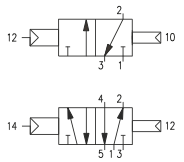
808.52.11.1

Pneumatic - Differential

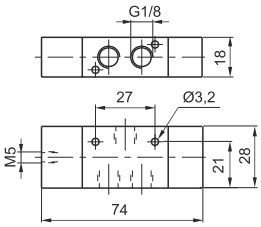
Coding: 808.Ⓣ.11.12

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	520
Orifice size (mm)	4
Working ports size	G1/8"
Pilot ports size	M5

Ⓣ	TYPE
	32 = 3 ways
	52 = 5 ways



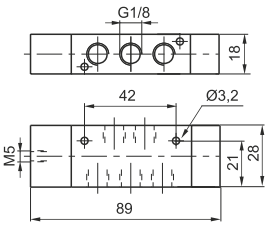
Pneumatic - Differential external



Weight 105 g
Minimum piloting pressure 2 bar

808.32.11.12

Pneumatic - Differential external



Weight 110 g
Minimum piloting pressure 2 bar

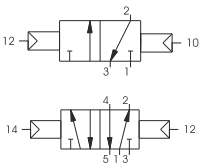
808.52.11.12

Pneumatic - Pneumatic

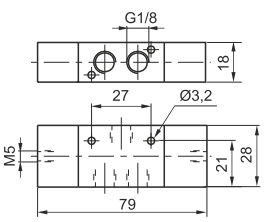
Coding: 808.Ⓣ.11.11

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	520
Orifice size (mm)	4
Working ports size	G1/8"
Pilot ports size	M5

Ⓣ	TYPE
	32 = 3 ways
	52 = 5 ways



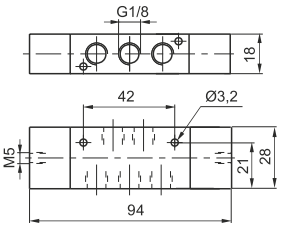
Pneumatic-pneumatic



Weight 115 g
Minimum piloting pressure 1,5 bar

808.32.11.11

Pneumatic-pneumatic



Weight 120 g
Minimum piloting pressure 1,5 bar

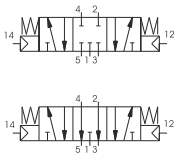
808.52.11.11

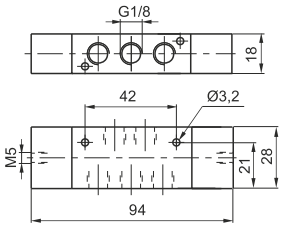
Pneumatic - Pneumatic

Coding: 808.53.Ⓣ.11.11

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +70
Flow rate at 6 bar with Δp=1 (Nl/min)	520
Orifice size (mm)	4
Working ports size	G 1/8"
Pilot ports size	M5

Ⓣ	TYPE
	31 = Closed centres
	32 = Open centres





Weight 125 g
Minimum piloting pressure 3 bar

Solenoid - Spring

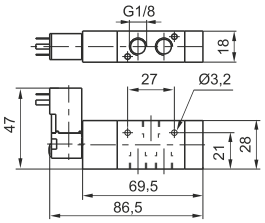
Coding: 808.Ⓣ.0.1.Ⓥ

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with Δp=1 (Nl/min)	520
Orifice size (mm)	4
Working ports size	G 1/8"

Ⓣ	TYPE
	32 = 3 ways
	52 = 5 ways

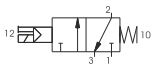
Ⓥ	VOLTAGE
	01 = 12V D.C.
	02 = 24V D.C.
	05 = 24V A.C.
	06 = 110V A.C.
	07 = 230 V A.C.

3 ways

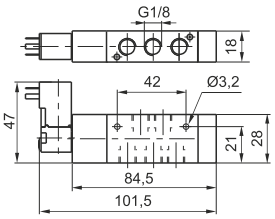


Weight 130 g
Minimum working pressure 2 bar

808.32.0.1.Ⓥ

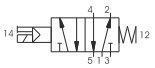


5 ways



Weight 135 g
Minimum working pressure 2 bar

808.52.0.1.Ⓥ



Solenoid - Differential

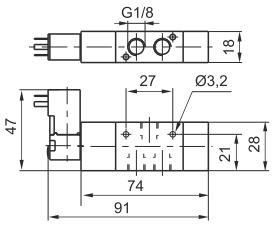
Coding: 808.Ⓣ.0.12.Ⓥ

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with Δp=1 (Nl/min)	520
Orifice size (mm)	4
Working ports size	G 1/8"

Ⓣ	TYPE
	32 = 3 ways
	52 = 5 ways

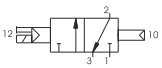
Ⓥ	VOLTAGE
	01 = 12V D.C.
	02 = 24V D.C.
	05 = 24V A.C.
	06 = 110V A.C.
	07 = 230 V A.C.

3 ways

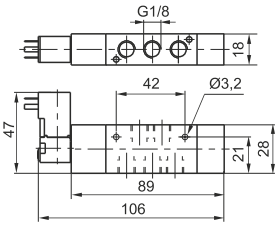


Weight 140 g
Minimum working pressure 2 bar

808.32.0.12.Ⓥ

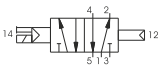


5 ways



Weight 145 g
Minimum working pressure 2 bar

808.52.0.12.Ⓥ



Solenoid - Solenoid

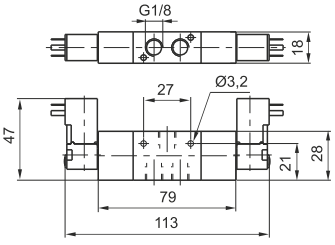
Coding: 808.Ⓣ.0.0.Ⓥ

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with Δp=1 (Nl/min)	520
Orifice size (mm)	4
Working ports size	G 1/8"

Ⓣ	TYPE
	32 = 3 ways
	52 = 5 ways

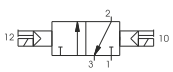
Ⓥ	VOLTAGE
	01 = 12V D.C.
	02 = 24V D.C.
	05 = 24V A.C.
	06 = 110V A.C.
	07 = 230 V A.C.

3 ways

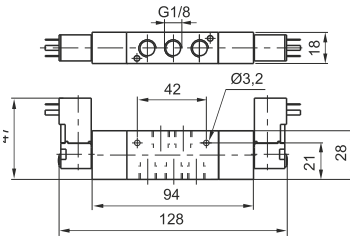


Weight 185 g
Minimum working pressure 1,5 bar

808.32.0.0.Ⓥ

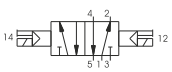


5 ways



Weight 190 g
Minimum working pressure 1,5 bar

808.52.0.0.Ⓥ



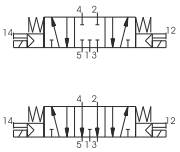
Solenoid - Solenoid 5 ways 3 connections

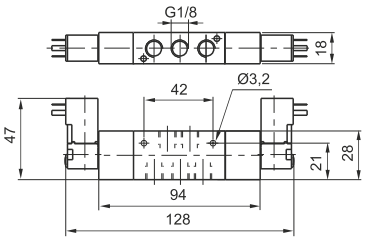
Coding: 808.53.Ⓣ.0.0.Ⓥ

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with Δp=1 (Nl/min)	520
Orifice size (mm)	4
Working ports size	G 1/8"

Ⓣ	TYPE
	31 = Closed centres
	32 = Open centres

Ⓥ	VOLTAGE
	01 = 12V D.C.
	02 = 24V D.C.
	05 = 24V A.C.
	06 = 110V A.C.
	07 = 230 V A.C.





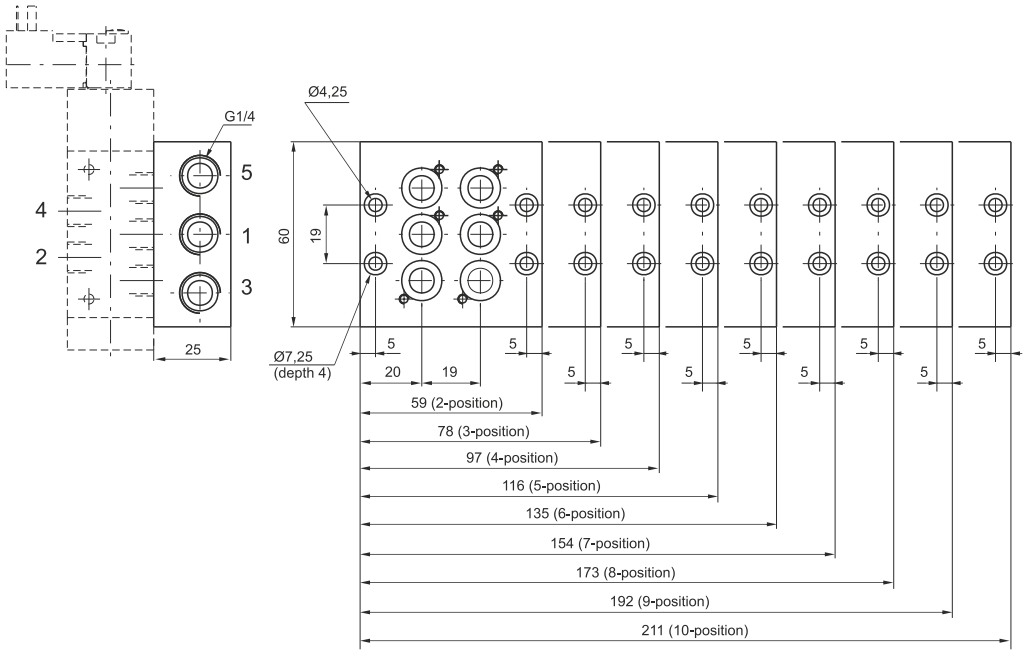
Weight 190 g
Minimum working pressure 3 bar

1 AIR DISTRIBUTION

Collectors

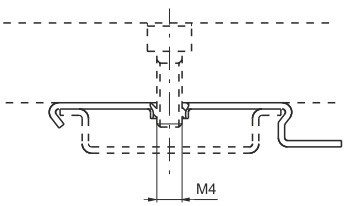
Coding: 808.Ⓝ

Ⓝ	N. POSITIONS
	02 = 2 positions (weight 180 g)
	03 = 3 positions (weight 245 g)
	04 = 4 positions (weight 310 g)
	05 = 5 positions (weight 375 g)
	06 = 6 positions (weight 440 g)
	07 = 7 positions (weight 500 g)
	08 = 8 positions (weight 560 g)
	09 = 9 positions (weight 620 g)
	10 = 10 positions (weight 680 g)



Clip

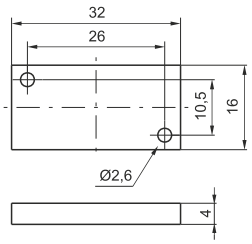
Coding: 800.00



weight 5 g
(for mounting the distributors groups on guide DIN 46277/3)

Closing plate

Coding: 808.00



Weight 65 g

Series 888

General

Competitively priced, good performance and versatility combined with a compact design are the main characteristics of this new series of valves.
The aluminium valve body and spool/seal arrangement optimize both the flow rate and the valve switching time.
This series of valves are available with G1/8" and G1/4" ports in 3/2, 5/2 and 5/3 versions.
Monostable or bistable versions are available and include an integrated technopolymer solenoid operator with 9mm stem and built in manual override.
Solenoid valves series 888 are available in point-to-point and serial configurations.
For serial system specifications, see Optyma-F series.
The valves can be supplied with or without the solenoid coil, however, if the solenoid coil is required please refer to the following table:

Voltages		Coil Code	Voltage Code
Direct current DC	12V (3,5W)	MF4	F04
	24V (3,5W)	MF5	F05
Alternating current AC 50 - 60 Hz	24V (3,7W)	MF56	F56
	110V (3,7W)	MF57	F57
	230V (3,7W)	MF58	F58

Connectors Coding		
Voltages		Kit 100 pieces
DC/AC	24V	888.11.01L-K
Alternating current AC 50 - 60 Hz	110V	888.11.02L-K
	230V	888.11.03L-K

Construction characteristics

Body	Aluminium
Operators	Technopolymer Aluminium for spring bottom plates
Seals	NBR
Spools	Aluminium
Springs	Spring steel
Pistons	Technopolymer

Use and maintenance

These valves have an average life of 15 million cycles
depending on the application and air quality, filtered and lubricated air using specified lubricants will dramatically reduce the wear of the seals and ensures long and trouble free operation.
Please ensure that the valve is being used according with the manufacturers specification, such as air pressure and temperature.
The exhaust ports 3 and 5 must be protected against the possible ingress of dirt or debris.
Repair kits including the spool complete with seals are available for overhauling the valves; however, although this is a simple operation it should be carried out by a competent person.

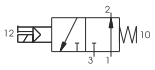
Solenoid - Spring - 3/2 (Self-feeding)

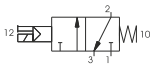
Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	8
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with Δp=1 (Nl/min)	790
Orifice size (mm)	5.8
Working ports size	G 1/8"

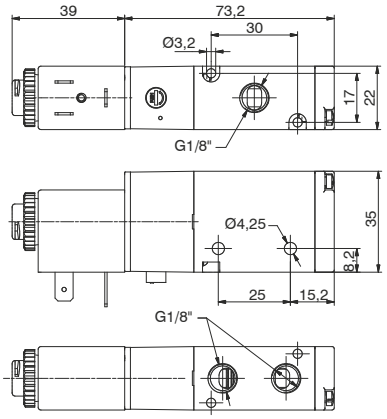
Coding: 8880.32.Ⓕ.39.Ⓥ

Ⓕ	FUNCTION
	A = Normally Open
	C = Normally Closed

Ⓥ	VOLTAGE	
	F04	= 12 V DC
	F05	= 24 V DC
	F56	= 24 V (50-60 Hz)
	F57	= 110 V (50-60 Hz)
	F58	= 230 V (50-60 Hz)
	F00	= Without coil







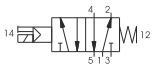
Weight 210 g
Minimum working pressure 2 bar

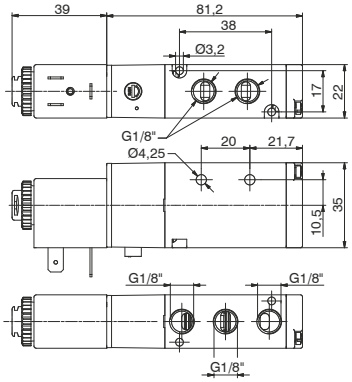
Solenoid - Spring - 5/2 (Self-feeding)

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	8
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with Δp=1 (Nl/min)	790
Orifice size (mm)	5.8
Working ports size	G 1/8"

Coding: 8880.52.00.39.Ⓥ

Ⓥ	VOLTAGE	
	F04	= 12 V DC
	F05	= 24 V DC
	F56	= 24 V (50-60 Hz)
	F57	= 110 V (50-60 Hz)
	F58	= 230 V (50-60 Hz)
	F00	= Without coil





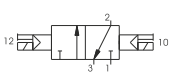
Weight 220 g
Minimum working pressure 2 bar

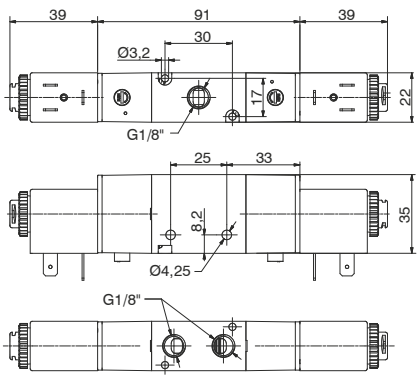
Solenoid - Solenoid - 3/2

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	8
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with Δp=1 (Nl/min)	790
Orifice size (mm)	5.8
Working ports size	G 1/8"

Coding: 8880.32.00.35.Ⓥ

Ⓥ	VOLTAGE	
	F04	= 12 V DC
	F05	= 24 V DC
	F56	= 24 V (50-60 Hz)
	F57	= 110 V (50-60 Hz)
	F58	= 230 V (50-60 Hz)
	F00	= Without coil





Weight 310 g
Minimum working pressure 2 bar

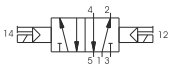
Solenoid - Solenoid - 5 ways 2 connections

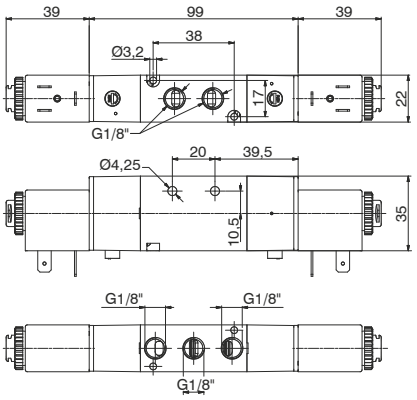
Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	8
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with Δp=1 (Nl/min)	790
Orifice size (mm)	5.8
Working ports size	G 1/8"

Coding: 8880.52.00.35.Ⓥ

	VOLTAGE	
Ⓥ	**F04**	= 12 V DC
	F05	= 24 V DC
	F56	= 24 V (50-60 Hz)
	F57	= 110 V (50-60 Hz)
	F58	= 230 V (50-60 Hz)
	F00	= Without coil

Weight 320 g
Minimum working pressure 2 bar





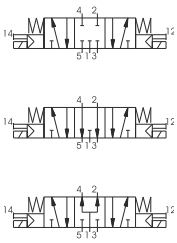
Solenoid - Solenoid - 5 ways 3 connections

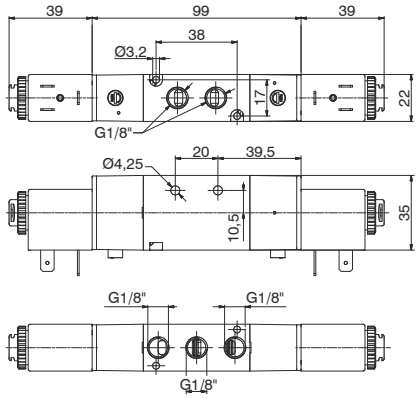
Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	8
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with Δp=1 (Nl/min)	440
Orifice size (mm)	5.8
Working ports size	G 1/8"

Coding: 8880.53.Ⓕ.35.Ⓥ

	FUNCTION		VOLTAGE	
Ⓕ	**31**	= Closed centres		
	32	= Open centres		
	33	= Pressured centres		
Ⓥ			**F04**	= 12 V DC
			F05	= 24 V DC
			F56	= 24 V (50-60 Hz)
			F57	= 110 V (50-60 Hz)
			F58	= 230 V (50-60 Hz)
			F00	= Without coil

Weight 330 g
Minimum working pressure 2,5 bar





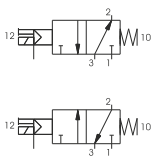
Solenoid - Spring - 3/2 (External-feeding)

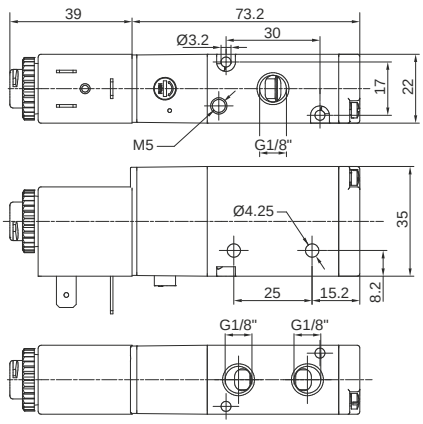
Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	8
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with Δp=1 (Nl/min)	790
Orifice size (mm)	5.8
Working ports size	G 1/8"

Coding: 8880E.32.Ⓕ.39.Ⓥ

	FUNCTION		VOLTAGE	
Ⓕ	**A**	= 3/2 Normally Open		
	C	= 3/2 Normally Closed		
Ⓥ			**F04**	= 12 V DC
			F05	= 24 V DC
			F56	= 24 V (50-60 Hz)
			F57	= 110 V (50-60 Hz)
			F58	= 230 V (50-60 Hz)
			F00	= Without coil

Weight 210 g
Minimum working pressure 2 bar



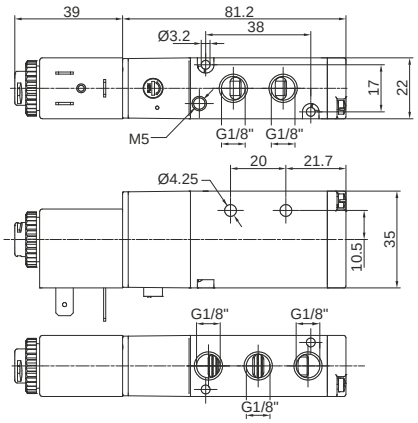


Solenoid - Spring - 5/2 (External-feeding)

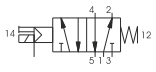
Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	8
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with Δp=1 (Nl/min)	790
Orifice size (mm)	5.8
Working ports size	G 1/8"

Coding: 8880E.52.00.39.Ⓥ

Ⓥ	VOLTAGE		
	F04	=	12 V DC
	F05	=	24 V DC
	F56	=	24 V (50-60 Hz)
	F57	=	110 V (50-60 Hz)
	F58	=	230 V (50-60 Hz)
	F00	=	Without coil



Weight 220 g
Minimum working pressure 2 bar

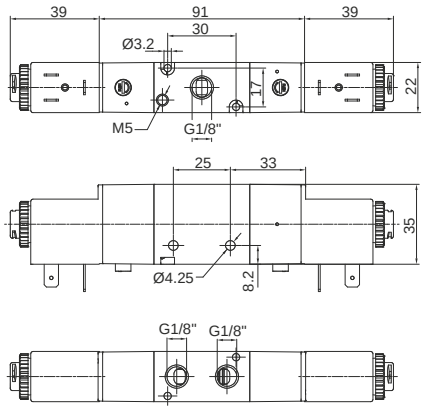


Solenoid - Solenoid - 3/2 (External-feeding)

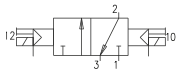
Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	8
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with Δp=1 (Nl/min)	790
Orifice size (mm)	5.8
Working ports size	G 1/8"

Coding: 8880E.32.00.35.Ⓥ

Ⓥ	VOLTAGE		
	F04	=	12 V DC
	F05	=	24 V DC
	F56	=	24 V (50-60 Hz)
	F57	=	110 V (50-60 Hz)
	F58	=	230 V (50-60 Hz)
	F00	=	Without coil



Weight 310 g
Minimum working pressure 2 bar

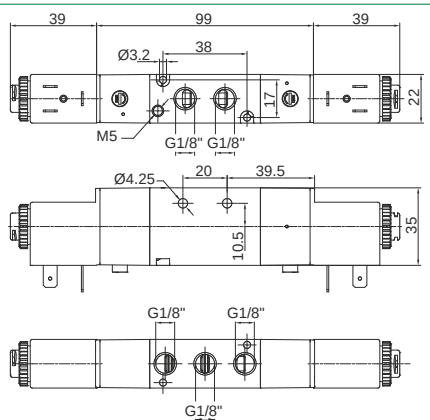


Solenoid - Solenoid - 5/2 (External-feeding)

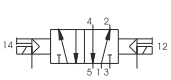
Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	8
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with Δp=1 (Nl/min)	790
Orifice size (mm)	5.8
Working ports size	G 1/8"

Coding: 8880E.52.00.35.Ⓥ

Ⓥ	VOLTAGE		
	F04	=	12 V DC
	F05	=	24 V DC
	F56	=	24 V (50-60 Hz)
	F57	=	110 V (50-60 Hz)
	F58	=	230 V (50-60 Hz)
	F00	=	Without coil



Weight 320 g
Minimum working pressure 2 bar



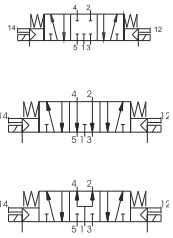
Solenoid - Solenoid - 5/3 connections (External-feeding)

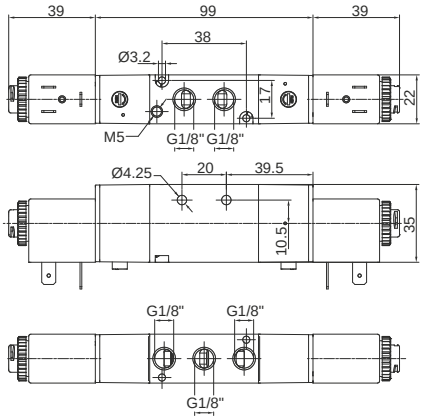
Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	8
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with Δp=1 (Nl/min)	440
Orifice size (mm)	5.8
Working ports size	G 1/8"

Coding: 8880E.53.Ⓕ.35.Ⓥ

Ⓕ	FUNCTION
	31 = Closed centres
	32 = Open centres
	33 = Pressured centres

Ⓥ	VOLTAGE	
	F04 =	12 V DC
	F05 =	24 V DC
	F56 =	24 V (50-60 Hz)
	F57 =	110 V (50-60 Hz)
	F58 =	230 V (50-60 Hz)
	F00 =	Without coil





Weight 330 g
Minimum working pressure 2,5 bar

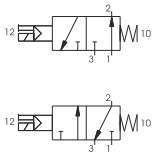
Solenoid - Spring - 3/2 (Self-feeding)

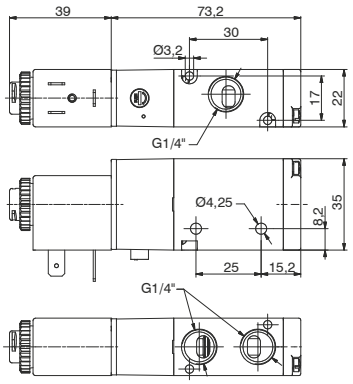
Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	8
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with Δp=1 (Nl/min)	890
Orifice size (mm)	6.5
Working ports size	G 1/4"

Coding: 8884.32.Ⓕ.39.Ⓥ

Ⓕ	FUNCTION
	A = 3/2 Normally Open
	C = 3/2 Normally Closed

Ⓥ	VOLTAGE	
	F04 =	12 V DC
	F05 =	24 V DC
	F56 =	24 V (50-60 Hz)
	F57 =	110 V (50-60 Hz)
	F58 =	230 V (50-60 Hz)
	F00 =	Without coil





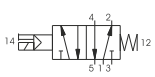
Weight 210 g
Minimum working pressure 2 bar

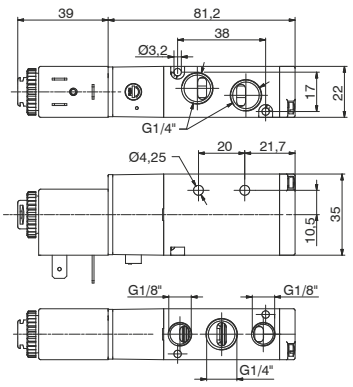
Solenoid - Spring - 5/2 (Self-feeding)

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	8
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with Δp=1 (Nl/min)	890
Orifice size (mm)	6.5
Working ports size	G 1/4"

Coding: 8884.52.00.39.Ⓥ

Ⓥ	VOLTAGE	
	F04 =	12 V DC
	F05 =	24 V DC
	F56 =	24 V (50-60 Hz)
	F57 =	110 V (50-60 Hz)
	F58 =	230 V (50-60 Hz)
	F00 =	Without coil





Weight 220 g
Minimum working pressure 2 bar

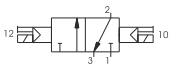
Solenoid - Solenoid - 3/2

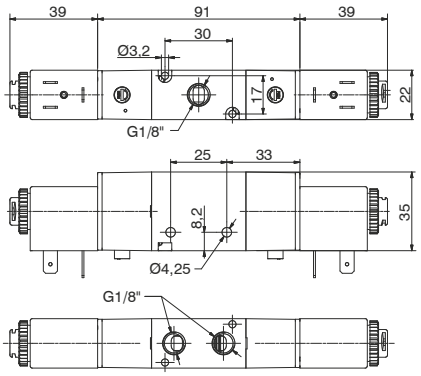
Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	8
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with Δp=1 (Nl/min)	890
Orifice size (mm)	6.5
Working ports size	G 1/4"

Coding: 8884.32.00.35.Ⓥ

Ⓥ	VOLTAGE	
	F04	= 12 V DC
	F05	= 24 V DC
	F56	= 24 V (50-60 Hz)
	F57	= 110 V (50-60 Hz)
	F58	= 230 V (50-60 Hz)
	F00	= Without coil

Weight 310 g
Minimum working pressure 2 bar





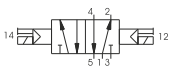
Solenoid - Solenoid - 5/2

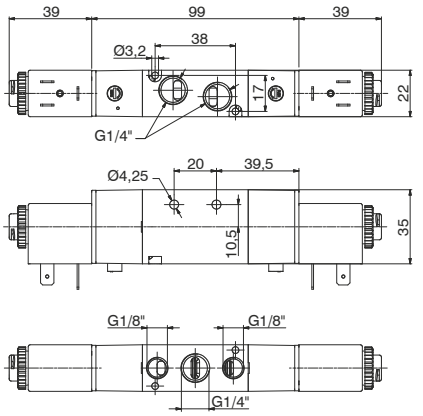
Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	8
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with Δp=1 (Nl/min)	540
Orifice size (mm)	6.5
Working ports size	G 1/4"

Coding: 8884.52.00.35.Ⓥ

Ⓥ	VOLTAGE	
	F04	= 12 V DC
	F05	= 24 V DC
	F56	= 24 V (50-60 Hz)
	F57	= 110 V (50-60 Hz)
	F58	= 230 V (50-60 Hz)
	F00	= Without coil

Weight 320 g
Minimum working pressure 2 bar





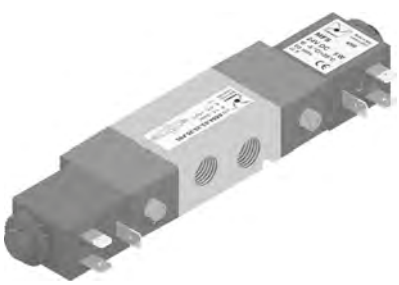
Solenoid - Solenoid - 5/3

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	8
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with Δp=1 (Nl/min)	540
Orifice size (mm)	6.5
Working ports size	G 1/4"

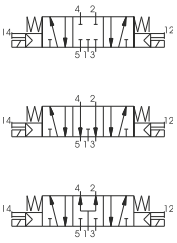
Coding: 8884.53.Ⓕ.35.Ⓥ

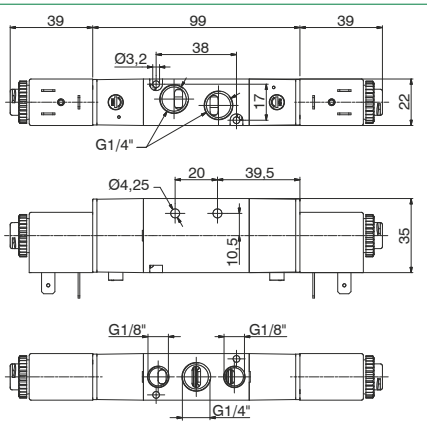
Ⓕ	FUNCTION
	31 = Closed centres
	32 = Open centres
	33 = Pressured centres

Ⓥ	VOLTAGE	
	F04	= 12 V DC
	F05	= 24 V DC
	F56	= 24 V (50-60 Hz)
	F57	= 110 V (50-60 Hz)
	F58	= 230 V (50-60 Hz)
	F00	= Without coil



Weight 330 g
Minimum working pressure 2,5 bar

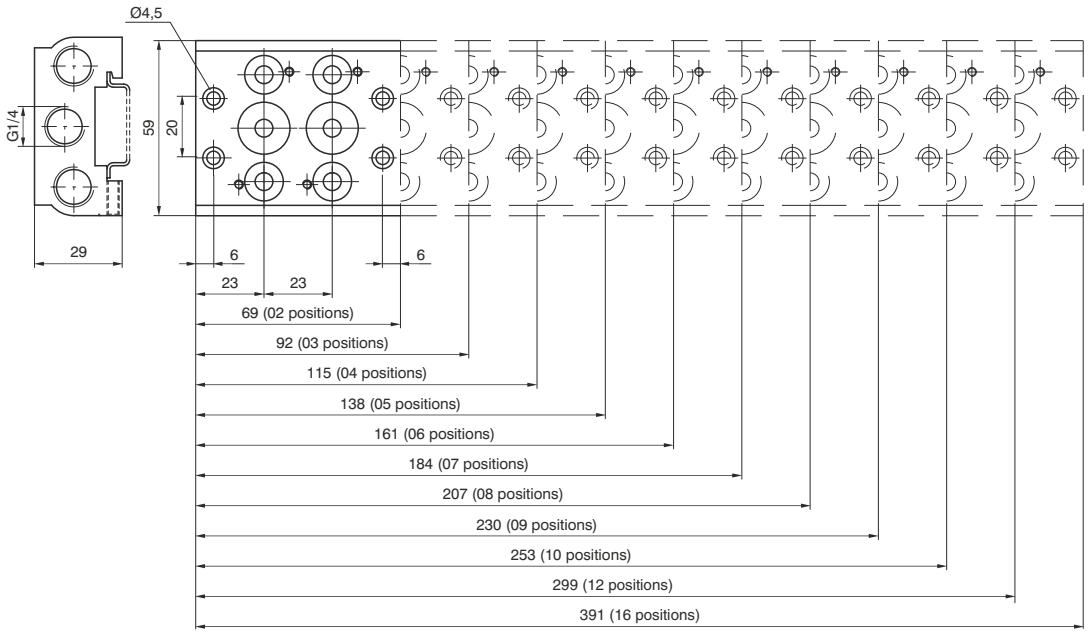




Manifold (Valves 5/2 - 5/3)

Coding: 888.Ⓟ

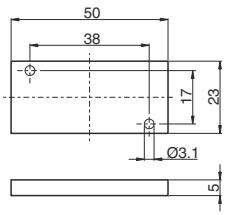
Ⓟ	CONNECTION TYPE
	02 = nr. 2 positions (270 g)
	03 = nr. 3 positions (335 g)
	04 = nr. 4 positions (400 g)
	05 = nr. 5 positions (465 g)
	06 = nr. 6 positions (530 g)
	07 = nr. 7 positions (595 g)
	08 = nr. 8 positions (660 g)
	09 = nr. 9 positions (725 g)
	10 = nr. 10 positions (790 g)
	12 = nr. 12 positions (920 g)
	16 = nr. 16 positions (1180 g)

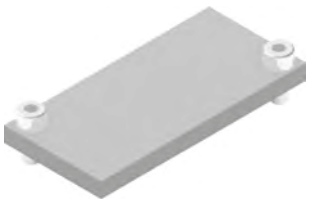


weight 5 g
(for mounting the distributors groups on guide DIN 46277/3)

Closing plate

Coding: 888.00



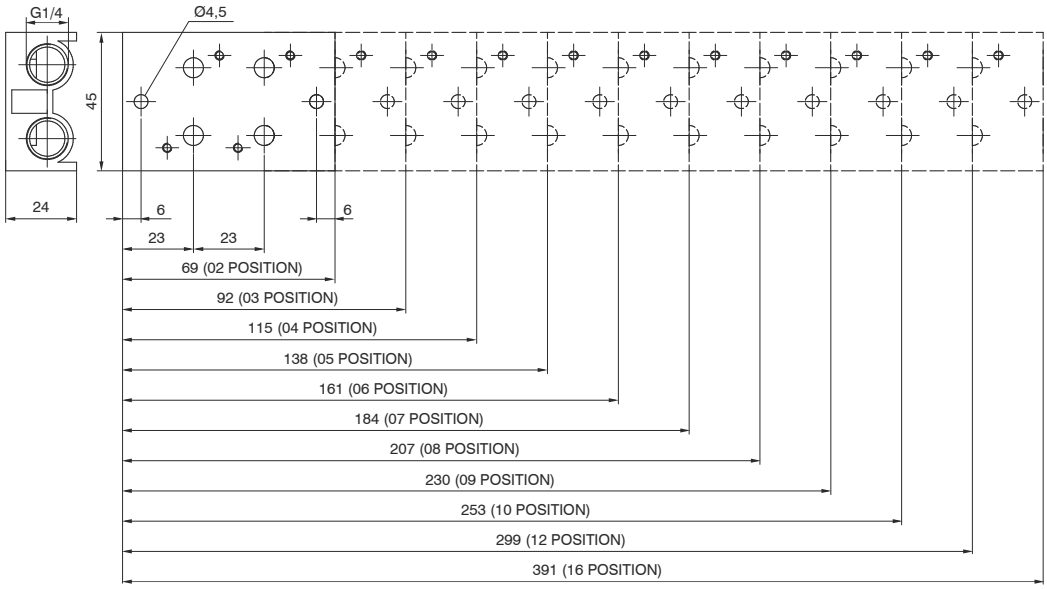


Weight 18 g
Closing plate supplied complete with 2 fixing screws to the manifold and 2 fixing screws to the multi-polar base

Manifold (Valves 3/2)

Coding: 8883.Ⓟ

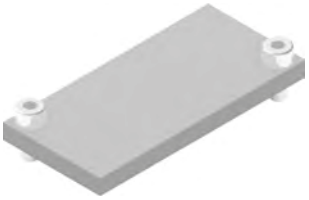
Ⓟ	CONNECTION TYPE
	02 = nr. 2 positions (270 g)
	03 = nr. 3 positions (335 g)
	04 = nr. 4 positions (400 g)
	05 = nr. 5 positions (465 g)
	06 = nr. 6 positions (530 g)
	07 = nr. 7 positions (595 g)
	08 = nr. 8 positions (660 g)
	09 = nr. 9 positions (725 g)
	10 = nr. 10 positions (790 g)
	12 = nr. 12 positions (920 g)
	16 = nr. 16 positions (1180 g)

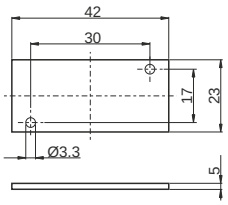


weight 5 g
(for mounting the distributors groups on guide DIN 46277/3)

Closing plate

Coding: 8883.00



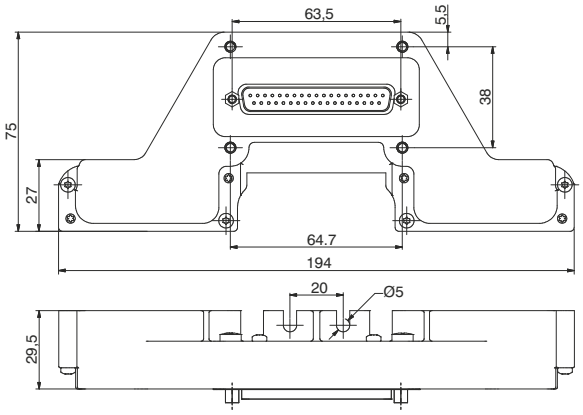


Weight 10 g
Closing plate supplied complete with 2 fixing screws to the manifold

Endplate, 37 Poles IP65

Coding: 888M.37.10

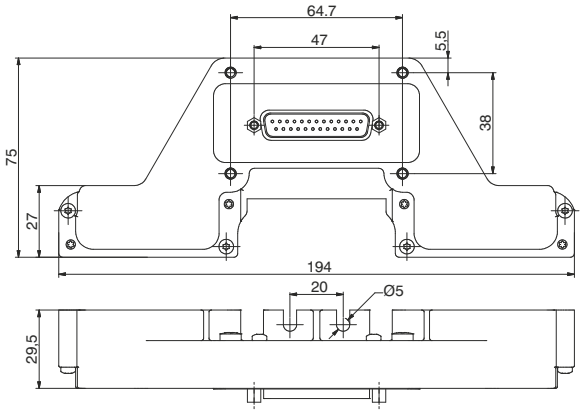
Weight 186 g
The IP65 protection is obtained by IP65 Pneumax cable.
Code complete with assembled endplate and 4 manifold fixing screws, previously mounted on the Manifold.



Endplate, 25 Poles IP65

Coding: 888M.25.10

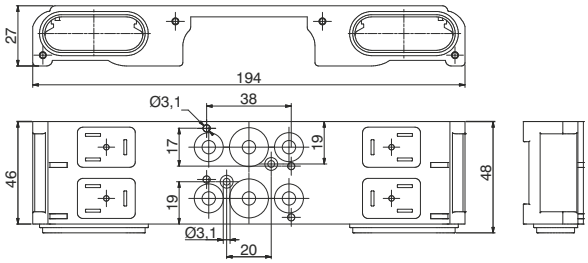
Weight 181 g
The IP65 protection is obtained by IP65 Pneumax cable.
Code complete with assembled endplate and 4 manifold fixing screws, previously mounted on the Manifold.



Modular base, 2 positions IP65

Coding: 888M.02.BM

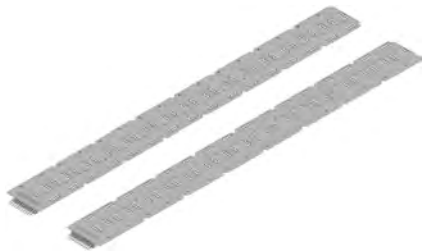
Weight 220 g
Complete with seals and fixing screws
Usable only for 5/2 and 5/3 Distributors



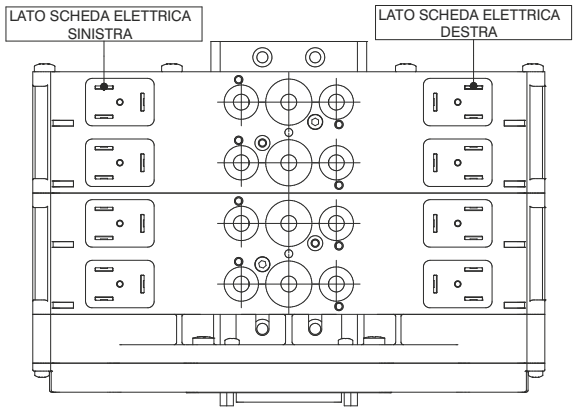
Left and Right Power board PNP 24 VDC

Coding: 888M.Ⓟ.Ⓣ

Ⓟ	POSITIONS
	04 = nr. 4 positions (11,2 g)
	08 = nr. 8 positions (22,4 g)
	12 = nr. 12 positions (33,6 g)
	16 = nr. 16 positions (44,8 g)
Ⓣ	TYPE
	00 = Left
	01 = Right

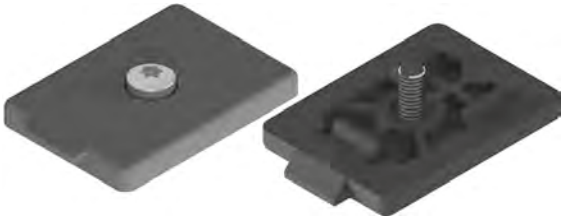


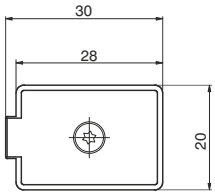
weight 5 g
(for mounting the distributors groups on guide DIN 46277/3)



Closing plate

Coding: 888M.22.PC

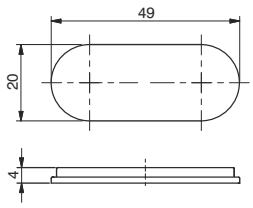




Weight 3 g
Closing plate supplied complete with 1 Seal and fixing screw with O ring
Maximum fixing torque for fittings: 0,35Nm

Multipolar base plug

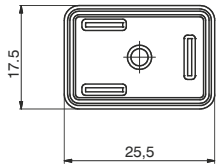
Coding: 888M.T



Weight 2,6 g
Complete with: Nr. 1 Plug, Nr. 2 Fixing screws

Seals

Coding: 888M.22.G



Weight 0,52 g

In line cable complete with connector IP40

Coding: 2400.Ⓣ.Ⓛ.00

Ⓣ	CONNECTORS
	25 = 25 poles
	37 = 37 poles
Ⓛ	CABLE LENGTH
	03 = 3 meters
	05 = 5 meters
	10 = 10 meters

Cable complete with connector, 25 Poles IP65

Coding: 2300.25.Ⓛ.Ⓒ

Ⓛ	CABLE LENGTH
	03 = 3 meters
	05 = 5 meters
	10 = 10 meters
Ⓒ	CONNECTOR
	10 = In line
	90 = 90° Angle

Cable complete with connector, 37 Poles IP65

Coding: 2400.37.Ⓛ.Ⓒ

Ⓛ	CABLE LENGTH
	03 = 3 meters
	05 = 5 meters
	10 = 10 meters
Ⓒ	CONNECTOR
	10 = In line
	90 = 90° Angle

Manifold layout Configuration Point to Point

3/2 valves

V22	P (point to point)	_	_	...

Nr. POSITIONS:

A= 02 positions
B= 03 positions
C= 04 positions
D= 05 positions
E= 06 positions
F= 07 positions
G= 08 positions
H= 09 positions
I= 10 positions
M= 12 positions
Q= 16 positions

VOLTAGE:

A= 12 V DC
B= 24 V DC
C= 24 V (50-60 Hz)
D= 110 V (50-60 Hz)
E= 230 V (50-60 Hz)
Z= without coil

SHORT CODE FUNCTION / CONNECTION :

G1= EV 3/2 SOL.-SPRING G1/8" N.O.
G2= EV 3/2 SOL.-SPRING G1/4" N.O.
H1= EV 3/2 SOL.-SPRING G1/8" N.C.
H2= EV 3/2 SOL.-SPRING G1/4" N.C.

L1= EV 3/2 SOL.-SPRING G1/8" N.O. EXT. FEED.
M1= EV 3/2 SOL.-SPRING G1/8" N.C. EXT. FEED.

N1= EV 3/2 SOL.-SOL. G1/8"
N2= EV 3/2 SOL.-SOL. G1/4"
P1= EV 3/2 SOL.-SOL. G1/8" EXT. FEEDING

T4= VALVE SPACE PLUG 3/2

5/2 valves

V22	P (point to point)	_	_	...

Nr. POSITIONS:

A= 02 positions
B= 03 positions
C= 04 positions
D= 05 positions
E= 06 positions
F= 07 positions
G= 08 positions
H= 09 positions
I= 10 positions
M= 12 positions
Q= 16 positions

VOLTAGE:

A= 12 V DC
B= 24 V DC
C= 24 V (50-60 Hz)
D= 110 V (50-60 Hz)
E= 230 V (50-60 Hz)
Z= without coil

SHORT CODE FUNCTION / CONNECTION :

A1= S.V. 5/2 SOL.-SPRING G1/8"
A2= S.V. 5/2 SOL.-SPRING G1/4"
D1= S.V. 5/2 SOL.-SPRING G1/8" EXT. FEED.
B1= S.V. 5/2 SOL.-SOL. G1/8"
B2= S.V. 5/2 SOL.-SOL. G1/4"
E1= S.V. 5/2 SOL.-SOL. G1/8" EXT. FEED.
C1= S.V. 5/3 CC SOL.-SOL. G1/8"
C2= S.V. 5/3 CC SOL.-SOL. G1/4"
F1= S.V. 5/3 CC SOL.-SOL. G1/8" EXT. FEED.
C3= S.V. 5/3 OC SOL.-SOL. G1/8"
C4= S.V. 5/3 OC SOL.-SOL. G1/4"
F3= S.V. 5/3 OC SOL.-SOL. G1/8" EXT. FEED.
C5= S.V. 5/3 PC SOL.-SOL. G1/8"
C6= S.V. 5/3 PC SOL.-SOL. G1/4"
F5= S.V. 5/3 PC SOL.-SOL. G1/8" EXT. FEED.
T3= VALVE SPACE PLUG

Manifold layout Configuration Multi-pole

V22	M (Multi-pole)	_ _	_	_	...

LEFT ENDPLATES

P2= 25 poles (max. 11 S.E.)
P3= 37 poles (max. 16 S.E.)

LEFT BOARD SIGNALS

C= 04 positions
G= 08 positions
M= 12 positions
Q= 16 positions

RIGHT BOARD SIGNALS

C= 04 positions
G= 08 positions
M= 12 positions
Q= 16 positions
00= no board

SHORT CODE FUNCTION / CONNECTION :

A1= S.V. 5/2 SOL.-SPRING G1/8"
A2= S.V. 5/2 SOL.-SPRING G1/4"
D1= S.V. 5/2 SOL.-SPRING G1/8" EXT. FEEDING
B1= S.V. 5/2 SOL.-SOL. G1/8"
B2= S.V. 5/2 SOL.-SOL. G1/4"
E1= S.V. 5/2 SOL.-SOL. G1/8" EXT. FEEDING
C1= S.V. 5/3 CC SOL.-SOL. G1/8"
C2= S.V. 5/3 CC SOL.-SOL. G1/4"
F1= S.V. 5/3 CC SOL.-SOL. G1/8" EXT. FEEDING
C3= S.V. 5/3 OC SOL.-SOL. G1/8"
C4= S.V. 5/3 OC SOL.-SOL. G1/4"
F3= S.V. 5/3 OC SOL.-SOL. G1/8" EXT. FEEDING
C5= S.V. 5/3 PC SOL.-SOL. G1/8"
C6= S.V. 5/3 PC SOL.-SOL. G1/4"
F5= S.V. 5/3 PC SOL.-SOL. G1/8" EXT. FEEDING
T1= VALVE SPACE PLUG
+ Nr. 2 ELECTRICAL SPACE PLUGS

Serial manifold layout (for the serial system node, see the Optyma-F Series)

V22	S (Serial)	_ _	–	_ _	_	_	...

INPUT MODULE

A= None
D1= 8IN DIGITAL MODULE M8
D2= 16IN DIGITAL MODULE D-SUB 25 P
T1= 2IN ANALOG MODULE 0-5V
T2= 2IN ANALOG MODULE 0-10V
C1= 2IN ANALOG MODULE 0-20mA
C1= 2IN ANALOG MODULE 4-20mA

SERIAL NODE

C3= CANopen® 32 OUT
D3= DeviceNet 32 OUT
P3= PROFIBUS DP 32 OUT
A3= EtherCAT® 32 OUT
I3= EtherNet/IP 32 OUT
N3= PROFINET IO RT/IRT 32 OUT
L3= Powerlink 32 OUT
M3= Modbus/TCP 32 OUT

LEFT BOARD SIGNALS

C= 04 positions
G= 08 positions
M= 12 positions
Q= 16 positions

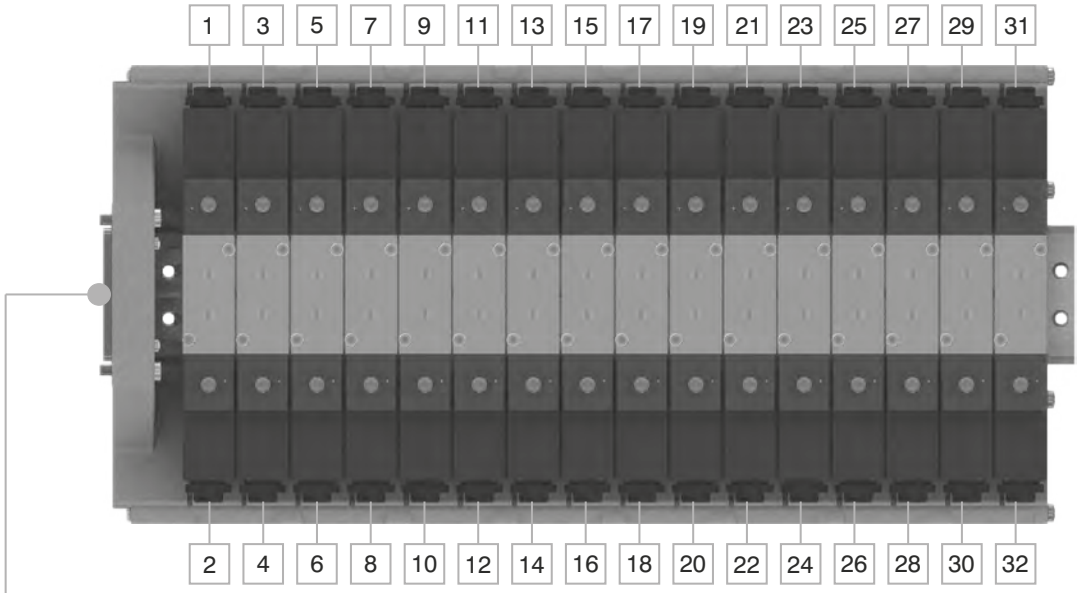
RIGHT BOARD SIGNALS

C= 04 positions
G= 08 positions
M= 12 positions
Q= 16 positions
00= no board

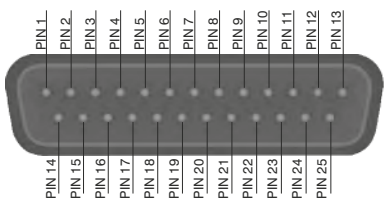
SHORT CODE FUNCTION / CONNECTION :

A1= S.V. 5/2 SOL.-SPRING G1/8"
A2= S.V. 5/2 SOL.-SPRING G1/4"
D1= S.V. 5/2 SOL.-SPRING G1/8" EXT. FEED.
B1= S.V. 5/2 SOL.-SOL. G1/8"
B2= S.V. 5/2 SOL.-SOL. G1/4"
E1= S.V. 5/2 SOL.-SOL. G1/8" EXT. FEED.
C1= S.V. 5/3 CC SOL.-SOL. G1/8"
C2= S.V. 5/3 CC SOL.-SOL. G1/4"
F1= S.V. 5/3 CC SOL.-SOL. G1/8" EXT. FEED.
C3= S.V. 5/3 OC SOL.-SOL. G1/8"
C4= S.V. 5/3 OC SOL.-SOL. G1/4"
F3= S.V. 5/3 OC SOL.-SOL. G1/8" EXT. FEED.
C5= S.V. 5/3 PC SOL.-SOL. G1/8"
C6= S.V. 5/3 PC SOL.-SOL. G1/4"
F5= S.V. 5/3 PC SOL.-SOL. G1/8" EXT. FEED.
T1= VALVE SPACE PLUG
+ Nr. 2 ELECTRICAL SPACE PLUGS

NOTE:
When constructing the configuration, please consider that the maximum number of valves that can be mounted on the manifold is 16, regardless of the valve type.
Any valve position presents two electrical connections: in case of use of monostable valves(A1-A2) it will be necessary to assemble a plug to protect the unused electrical connection.
The correspondence between the electrical signal and its location on the manifold is showed in the following diagrams.

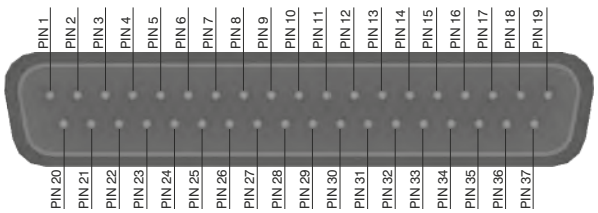


Connector 25 Poles from 1 to 11
Positions E.V. Bistable / Monostable



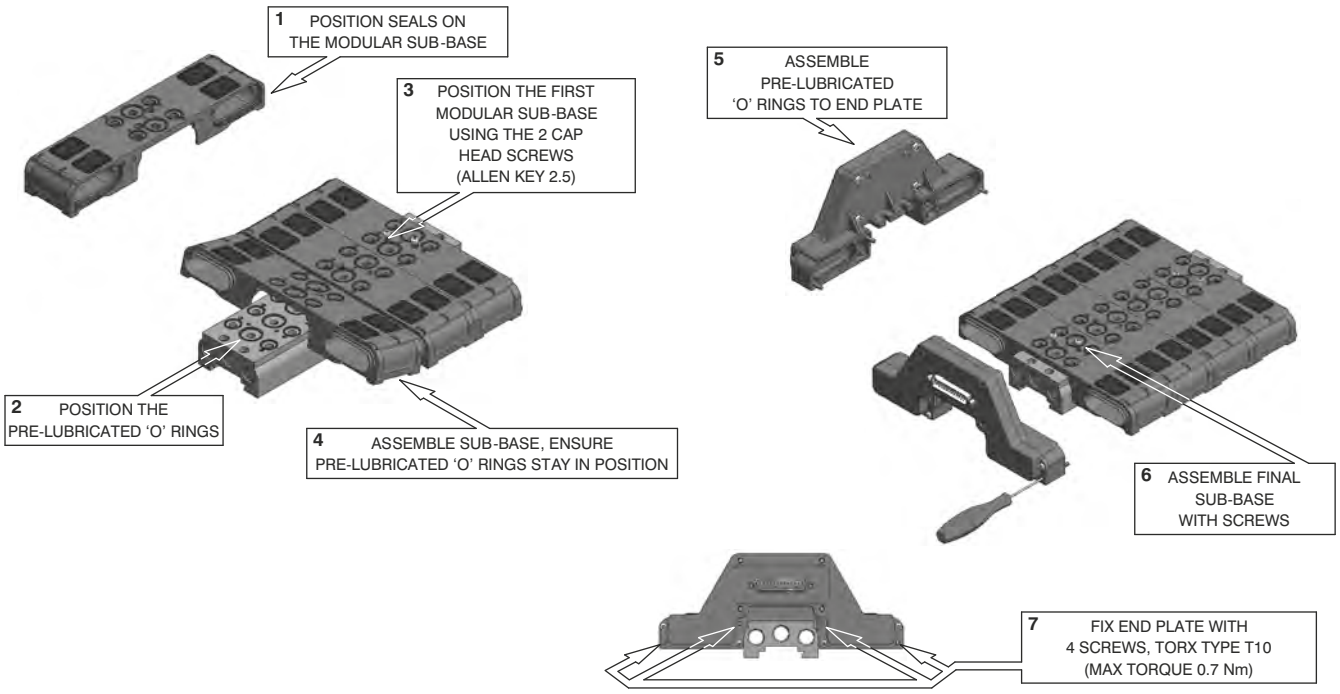
1 - 22 = SIGNALS
23 - 24 = GND
25 = NC

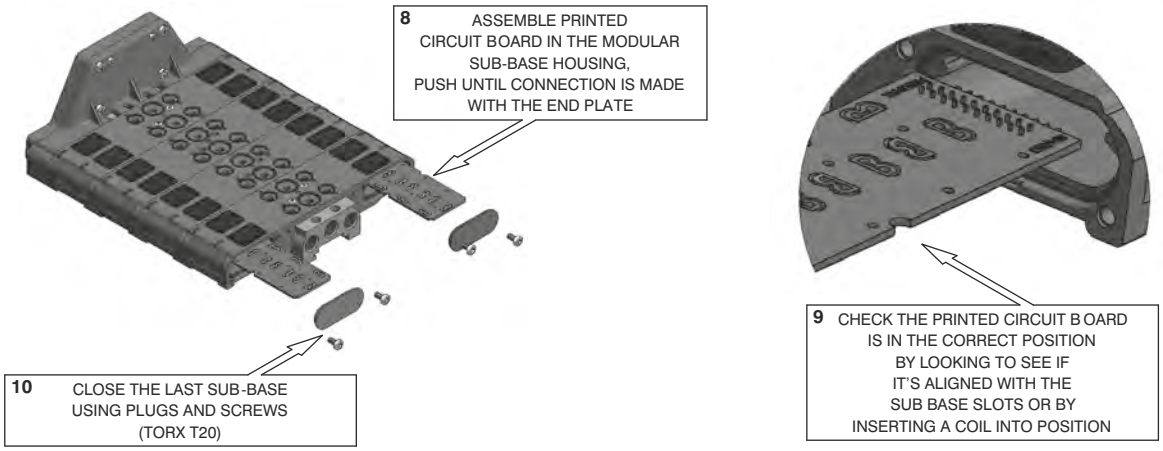
Connector 37 Poles from 1 to 16
Positions E.V. Bistable / Monostable

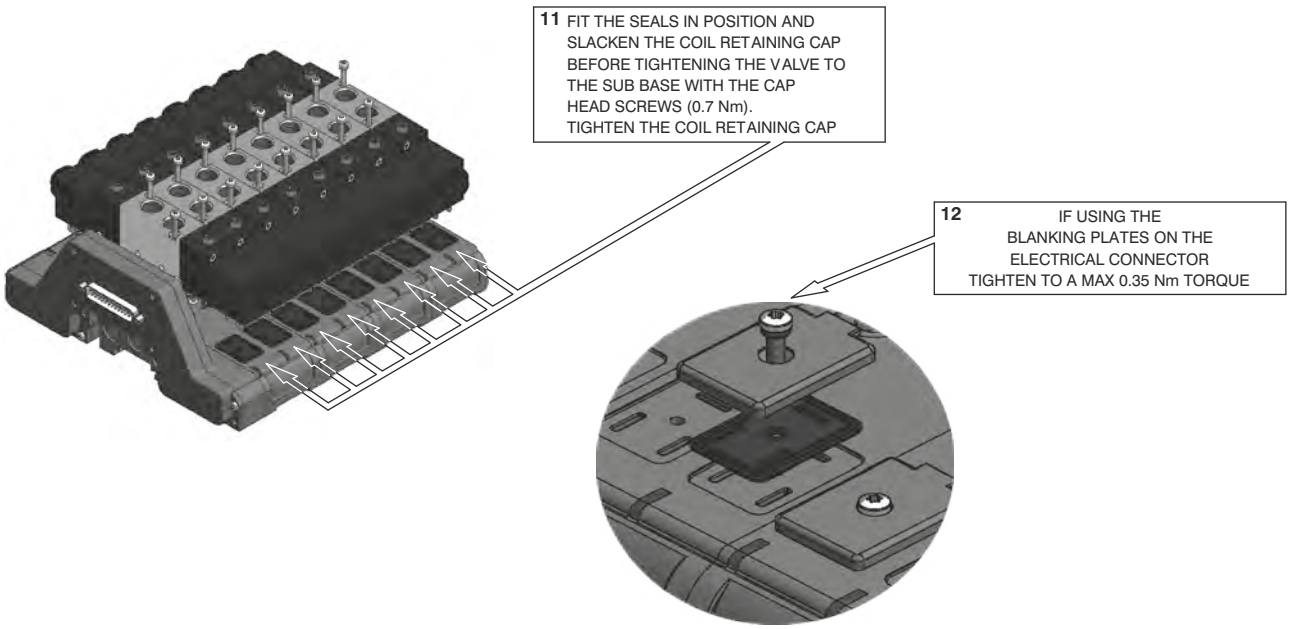


1 - 32 = SIGNALS
33 - 35 = GND
36 - 37 = NC

Assembly sequence







Series 400

General

These are 2 stage valves actuated electro-pneumatically. A serie 300 directly operated solenoid valve actuates pneumatically the principal power distributor.
This integrated system allows configurations of systems requiring very little space.
The pilot air is normally taken from the inlet port (autofeed) and the only actuating signal is electric.
The range of the solenoid valves, as far as dimensions and mechanical construction, is similar to series 200.
We have therefore solenoid valves G 1/8", G 1/4", G 1/2" and G 1" with identical pneumatic characteristics that are, however, actuated electrically.
They have a balanced spool, insentive to presence or absence of pressure. They are constructed in 3 and 5 way with 1 solenoid (monostable) or 2 solenoids (bistable) and also 5 ways 3 positions with closed centres, open centres and pressured centres.
If should be noted that the autofeed of the electric pilot requires always inlet through port 1 and if a 3 ways normally open configuration is desired, it is necessary to switch the operators.
Solenoid valves G 1/8" and G 1/4" can be equipped with microsolenoids as well as standard solenoids and they can be mounted in line or in 90 degrees on valves.
Please note that while the microsolenoid can be mounted in any direction, standard solenoid requires mounting as inticated in the photographs and diagrams.

The order codes pertain only to the solenoid valve with mechanical actuator "M2" or solenoid "S*" already assembled.
M2 coils are not included and have to be ordered separately (see Series 300).
Coils for M2 and solenoids "S" homologated are available (see Series 300).

Construction characteristics

Body	Aluminium
Operators	Aluminium Technopolymer for spring botton plate G 1/8", G1/4", G 1/2" and aluminium for G 1"
Seals	NBR Polyurethane compound for oil free applications (G 1/8", G 1/4" and G 1/2")
Spacer	Technopolymer (aluminium for G1")
Spools	Steel
Springs	Stainless steel or spring steel

Use and maintenance

This valves have an average life of 15 million cycles depending on the application and air quality.
Filtered and lubricated air using specified lubricants will reduce the wear of the seals and ensures long and trouble free operation.
Please ensure that the valve is being used according with the manufacturers specification, such as air pressure and temperature.
The exhaust port of the distributor has to be protected in a dusty and dirty environment.
Repair kits including the spool complete with seals are available for overhauling the valves.
However, although this is a simple operation it should be carried out by a competent person.

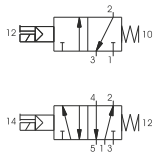
ATTENTION: use hydraulic oil class H for lubrication such as MAGNA GC 32 (Castrol).

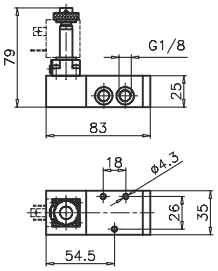
Solenoid - Spring

Coding: 468.Ⓣ.0.1.M2

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with Δp=1 (Nl/min)	540
Orifice size (mm)	6
Working ports size	G 1/8"

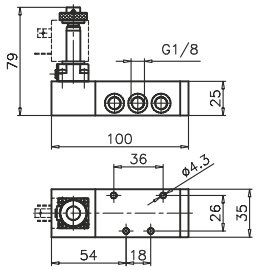
Ⓣ	TYPE
	32 = 3 ways
	52 = 5 ways





Weight 240 g
Minimum working pressure 2,5 bar

468.32.0.1.M2



Weight 240 g
Minimum working pressure 2,5 bar

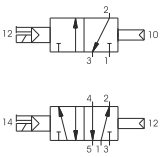
468.52.0.1.M2

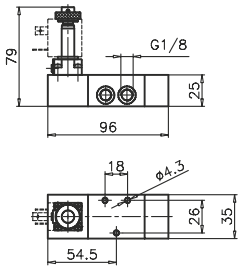
Solenoid - Differential

Coding: 468.Ⓣ.0.12.M2

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with Δp=1 (Nl/min)	540
Orifice size (mm)	6
Working ports size	G 1/8"

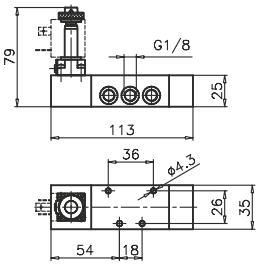
Ⓣ	TYPE
	32 = 3 ways
	52 = 5 ways





Weight 280 g
Minimum working pressure 2,5 bar

468.32.0.12.M2



Weight 320 g
Minimum working pressure 2,5 bar

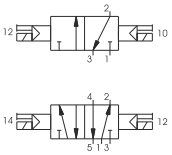
468.52.0.12.M2

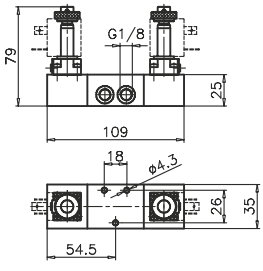
Solenoid - Solenoid

Coding: 468.Ⓣ.0.0.M2

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with Δp=1 (Nl/min)	540
Orifice size (mm)	6
Working ports size	G 1/8"

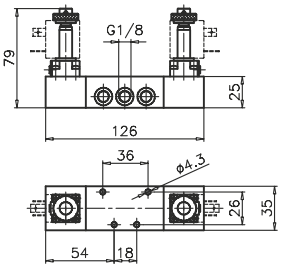
Ⓣ	TYPE
	32 = 3 ways
	52 = 5 ways





Weight 370 g
Minimum working pressure 2 bar

468.32.0.0.M2



Weight 410 g
Minimum working pressure 2 bar

468.52.0.0.M2

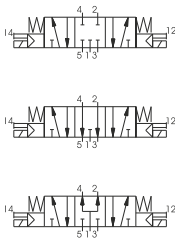
Solenoid - Solenoid 5 ways 3 connections

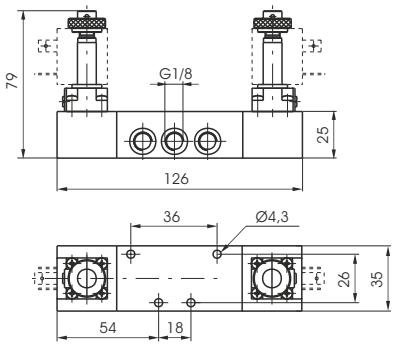
Coding: 468.53.Ⓕ.0.0.M2

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with Δp=1 (Nl/min)	410
Orifice size (mm)	6
Working ports size	G 1/8"

Ⓕ	FUNCTION
	31 = Closed centres
	32 = Open centres
	33 = Pressured centres

Weight 420 g
Minimum working pressure 3 bar



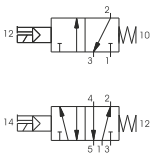


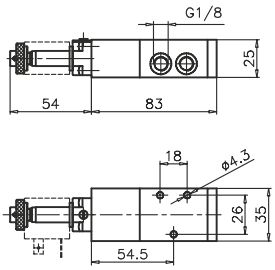
Solenoid - Spring

Coding: 468/1.Ⓣ.0.1.M2

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with Δp=1 (Nl/min)	540
Orifice size (mm)	6
Working ports size	G 1/8"

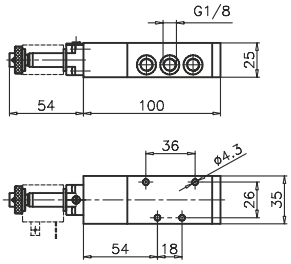
Ⓣ	TYPE
	32 = 3 ways
	52 = 5 ways





Weight 240 g
Minimum working pressure 2,5 bar

468/1.32.0.1.M2



Weight 280 g
Minimum working pressure 2,5 bar

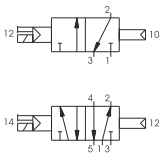
468/1.52.0.1.M2

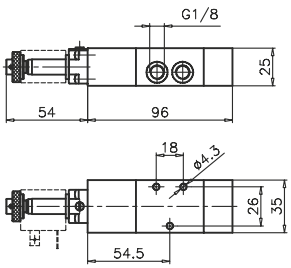
Solenoid - Differential

Coding: 468/1.Ⓣ.0.12.M2

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with Δp=1 (Nl/min)	540
Orifice size (mm)	6
Working ports size	G 1/8"

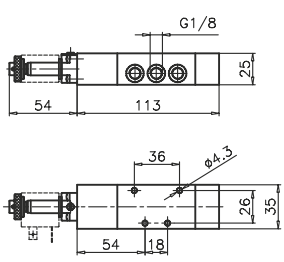
Ⓣ	TYPE
	32 = 3 ways
	52 = 5 ways





Weight 280 g
Minimum working pressure 2,5 bar

468/1.32.0.12.M2



Weight 320 g
Minimum working pressure 2,5 bar

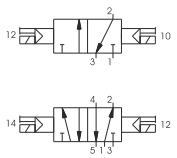
468/1.52.0.12.M2

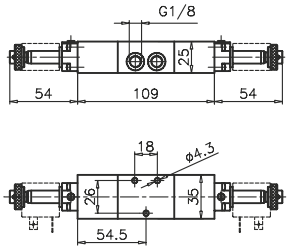
Solenoid - Solenoid

Coding: 468/1.Ⓣ.0.0.M2

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with Δp=1 (Nl/min)	540
Orifice size (mm)	6
Working ports size	G 1/8"

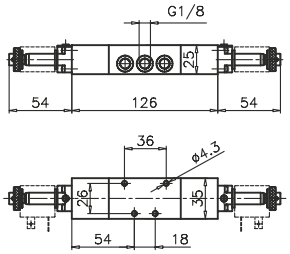
Ⓣ	TYPE
	32 = 3 ways
	52 = 5 ways





Weight 370 g
Minimum working pressure 2 bar

468/1.32.0.0.M2



Weight 410 g
Minimum working pressure 2 bar

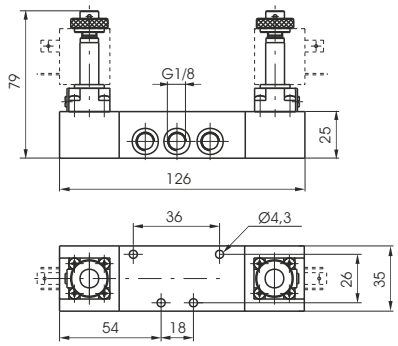
468/1.52.0.0.M2

Solenoid - Solenoid 5 ways 3 connections

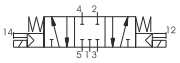
Coding: 468/1.Ⓕ.0.0.M2

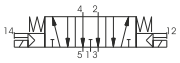
Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with Δp=1 (Nl/min)	410
Orifice size (mm)	6
Working ports size	G 1/8"

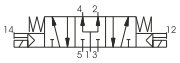
Ⓕ	FUNCTION
	31 = Closed centres
	32 = Open centres
	33 = Pressured centres



Weight 420 g
Minimum working pressure 3 bar







Solenoid - Spring

Coding: 488.Ⓣ.0.1.Ⓢ

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with Δp=1 (Nl/min)	620
Orifice size (mm)	6
Working ports size	G 1/8"
Responce time according to ISO 12238, activation time (ms)	20,3 (3 ways) 22,5 (5 ways)
Responce time according to ISO 12238, deactivation time (ms)	44,5 (3 ways) 47,0 (5 ways)

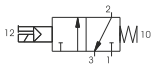
Ⓣ	TYPE
	32 = 3 ways
	52 = 5 ways

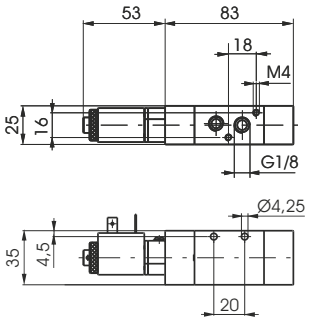
Shifting time of pneumatic directional control valves or moving parts, logic devices were measured in accordance to ISO 12238:2001

Ⓢ	SOLENOID
	M11 = 24V D.C. (rating power 3,8W)
	M56 = 24V 50/60Hz (starting power 9VA, rating power 6VA)
	M57 = 110 V 50/60Hz (starting power 9 A, rating power 6 A)
	M58 = 230V 50/60Hz (starting power 9VA, rating power 6VA)

Weight 220 g
Minimum working pressure 2,5 bar

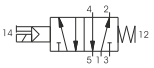
488.32.0.1.Ⓢ

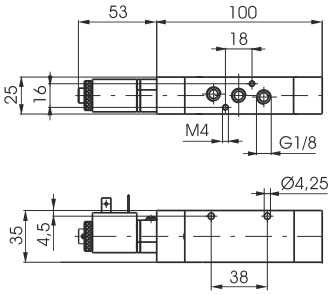




Weight 260 g
Minimum working pressure 2,5 bar

488.52.0.1.Ⓢ





Solenoid - Differential

Coding: 488.Ⓣ.0.12.Ⓢ

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with Δp=1 (Nl/min)	620
Orifice size (mm)	6
Working ports size	G 1/8"
Responce time according to ISO 12238, activation time (ms)	28,0 (3 ways) 28,3 (5 ways)
Responce time according to ISO 12238, deactivation time (ms)	34,5 (3 ways) 35,5 (5 ways)

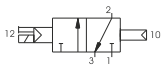
Ⓣ	TYPE
	32 = 3 ways
	52 = 5 ways

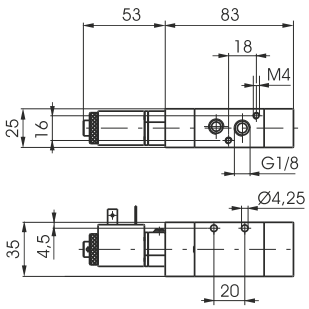
Shifting time of pneumatic directional control valves or moving parts, logic devices were measured in accordance to ISO 12238:2001

Ⓢ	SOLENOID
	M11 = 24V D.C. (rating power 3,8W)
	M56 = 24V 50/60Hz (starting power 9VA, rating power 6VA)
	M57 = 110 V 50/60Hz (starting power 9 A, rating power 6 A)
	M58 = 230V 50/60Hz (starting power 9VA, rating power 6VA)

Weight 220 g
Minimum working pressure 2,5 bar

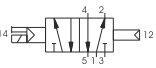
488.32.0.12.Ⓢ

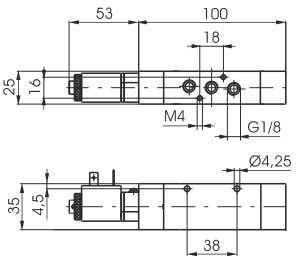




Weight 260 g
Minimum working pressure 2,5 bar

488.52.0.12.Ⓢ





Solenoid - Solenoid

Coding: 488.Ⓣ.0.0.Ⓢ

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with Δp=1 (Nl/min)	410
Orifice size (mm)	6
Working ports size	G 1/8"
Responce time according to ISO 12238, activation time (ms)	19,0 (3 ways) 18,2 (5 ways)
Responce time according to ISO 12238, deactivation time (ms)	21,1 (3 ways) 18,5 (5 ways)

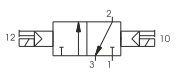
Ⓣ	TYPE
	32 = 3 ways
	52 = 5 ways

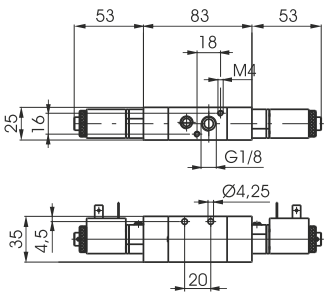
Shifting time of pneumatic directional control valves or moving parts, logic devices were measured in accordance to ISO 12238:2001

Ⓢ	SOLENOID
	M11 = 24V D.C. (rating power 3,8W)
	M56 = 24V 50/60Hz (starting power 9VA, rating power 6VA)
	M57 = 110 V 50/60Hz (starting power 9 A, rating power 6 A)
	M58 = 230V 50/60Hz (starting power 9VA, rating power 6VA)

Weight 320 g
Minimum working pressure 2 bar

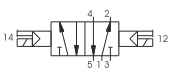
488.32.0.0.Ⓢ

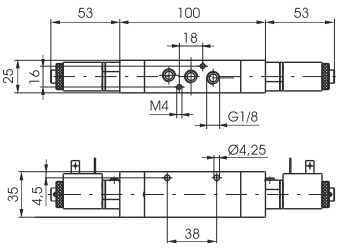




Weight 360 g
Minimum working pressure 2 bar

488.52.0.0.Ⓢ





Solenoid - Solenoid 5 ways 3 connections

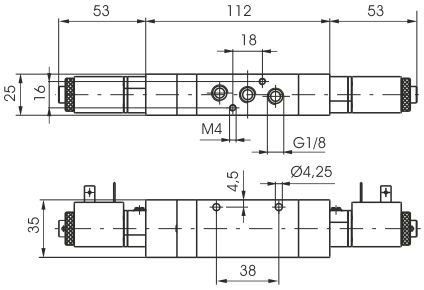
Coding: 488.53.Ⓕ.0.0.Ⓢ

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with Δp=1 (Nl/min)	410
Orifice size (mm)	6
Working ports size	G 1/8"
Responce time according to ISO 12238, activation time (ms)	23,0 (closed centres) 21,5 (open centres) 18,9 (pressured centres)
Responce time according to ISO 12238, deactivation time (ms)	41,0 (closed centres) 38,0 (open centres) 40,2 (pressured centres)

Ⓕ	FUNCTION
	31 = Closed centres
	32 = Open centres
	33 = Pressured centres

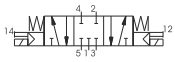
Shifting time of pneumatic directional control valves or moving parts, logic devices were measured in accordance to ISO 12238:2001

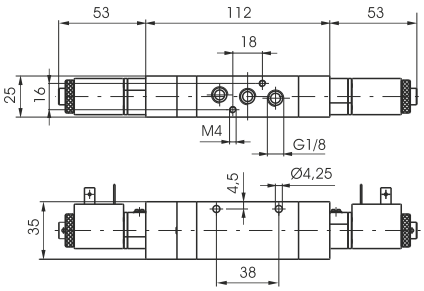
Ⓢ	SOLENOID
	M11 = 24V D.C. (rating power 3,8W)
	M56 = 24V 50/60Hz (starting power 9VA, rating power 6VA)
	M57 = 110 V 50/60Hz (starting power 9 A, rating power 6 A)
	M58 = 230V 50/60Hz (starting power 9VA, rating power 6VA)



Weight 400 g
Minimum working pressure 3 bar

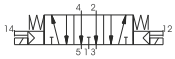
488.53.31.0.0.Ⓢ

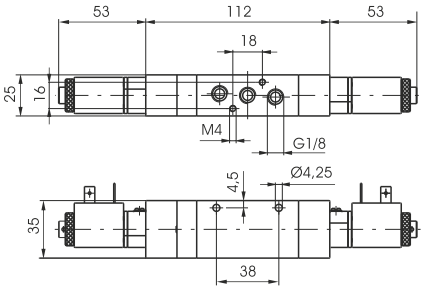




Weight 400 g
Minimum working pressure 3 bar

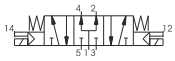
488.53.32.0.0.Ⓢ





Weight 400 g
Minimum working pressure 3 bar

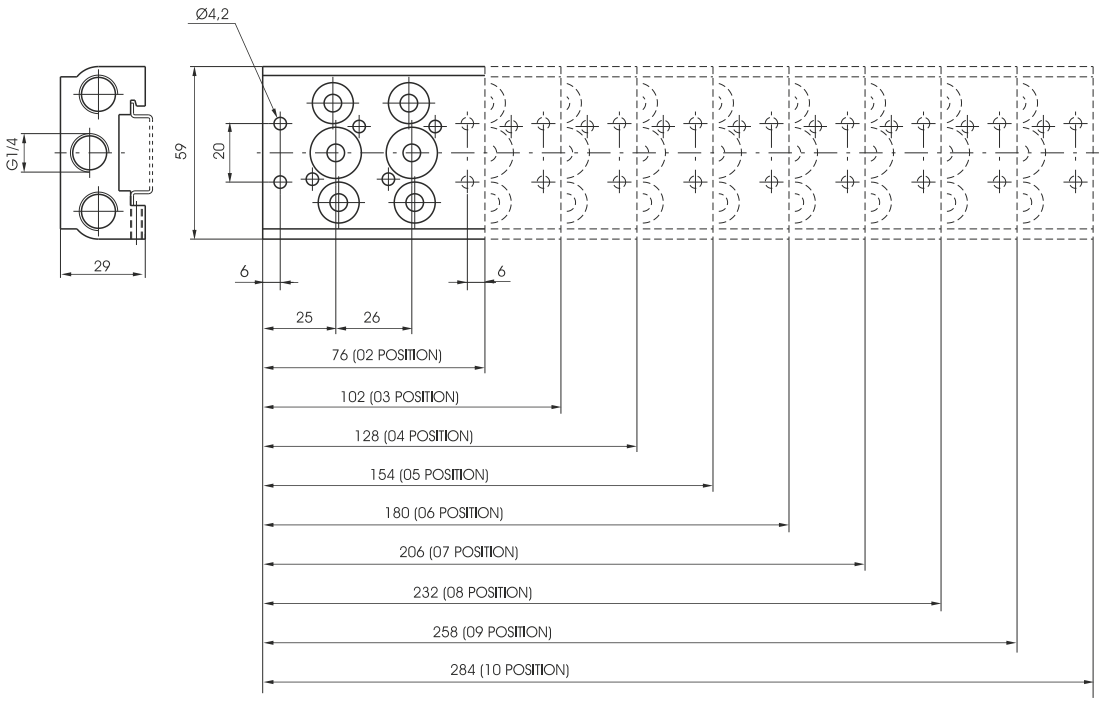
488.53.33.0.0.Ⓢ



Collectors

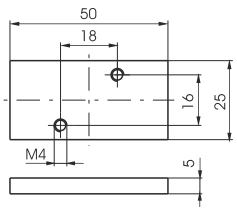
Coding: 488.Ⓟ

Ⓟ	N. POSITIONS
	02 = 2 positions (220 g)
	03 = 3 positions (290 g)
	04 = 4 positions (360 g)
	05 = 5 positions (430 g)
	06 = 6 positions (500 g)
	07 = 7 positions (570 g)
	08 = 8 positions (640 g)
	09 = 9 positions (710 g)
	10 = 10 positions (780 g)



Closing plate

Coding: 488.00



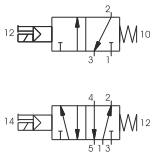
Weight 25 g

Solenoid - Spring

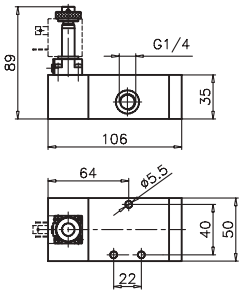
Coding: 464.Ⓣ.0.1.M2

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with Δp=1 (Nl/min)	1360
Orifice size (mm)	8
Working ports size	G 1/4"

Ⓣ	TYPE
	32 = 3 ways
	52 = 5 ways



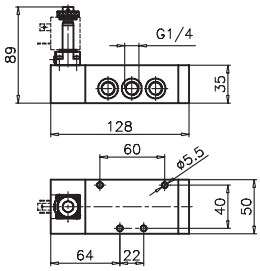
3 ways



Weight 530 g
Minimum working pressure 2,5 bar

464.32.0.1.M2

5 ways



Weight 625 g
Minimum working pressure 2,5 bar

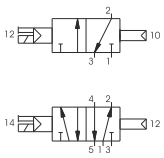
464.52.0.1.M2

Solenoid - Differential

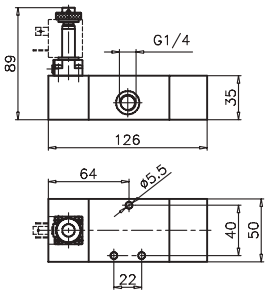
Coding: 464.Ⓣ.0.12.M2

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with Δp=1 (Nl/min)	1360
Orifice size (mm)	8
Working ports size	G 1/4"

Ⓣ	TYPE
	32 = 3 ways
	52 = 5 ways



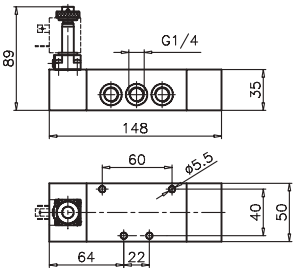
3 ways



Weight 650 g
Minimum working pressure 2,5 bar

464.32.0.12.M2

5 ways



Weight 740 g
Minimum working pressure 2,5 bar

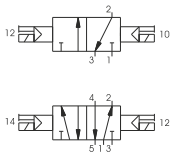
464.52.0.12.M2

Solenoid - Solenoid

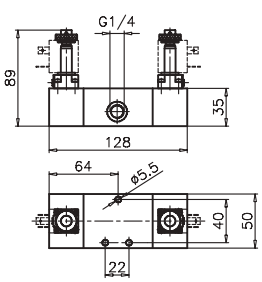
Coding: 464.Ⓣ.0.0.M2

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with Δp=1 (Nl/min)	1360
Orifice size (mm)	8
Working ports size	G 1/4"

Ⓣ	TYPE
	32 = 3 ways
	52 = 5 ways



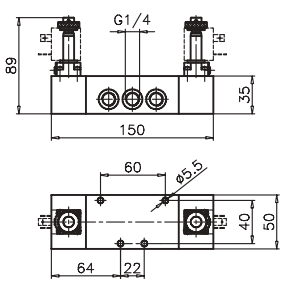
3 ways



Weight 730 g
Minimum working pressure 2 bar

464.32.0.0.M2

5 ways 2 connections



Weight 820 g
Minimum working pressure 2 bar

464.52.0.0.M2