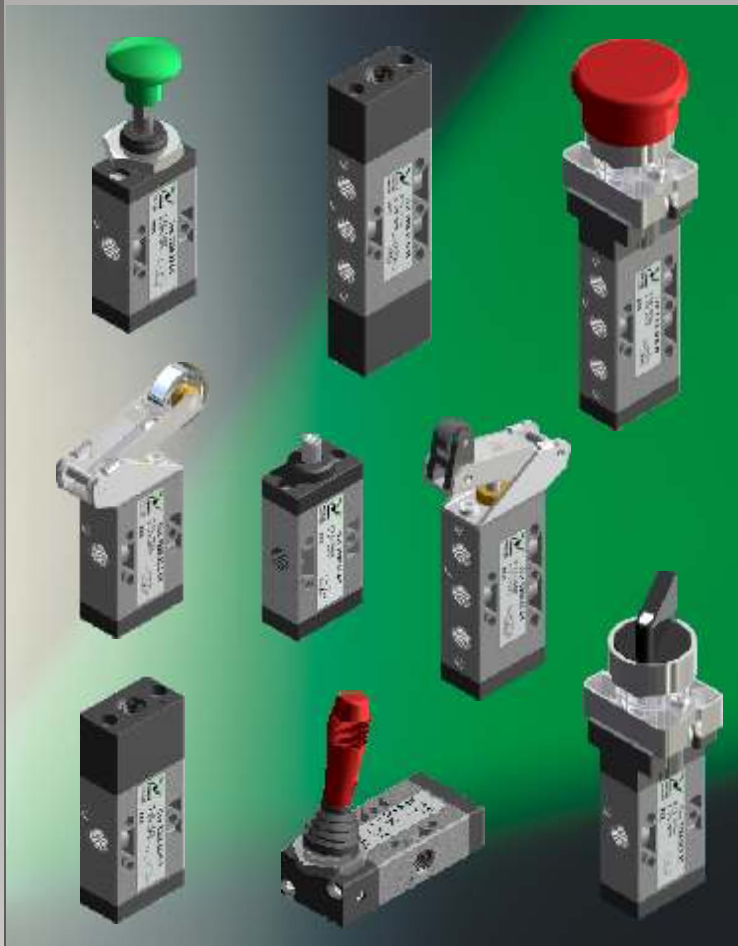


Components for Pneumatic Automation

Tecnopolymer Valves Tecno228 series



PNEUMAX NEWS 42

PNEUMAX S.p.A.
LURANO (BG) - ITALY

Certified
Quality System



ISO 9001 : 2000
ISO 14001 : 2004
Reg. No. 10677



General

The main components constituting the valves of the Tecno228 series are manufactured with high performance technopolymer. The use of tecnopolymer has resulted in a light weight product which can be offered to the market at very interesting prices. This valve 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 interchangeable with the standard 228 series (with aluminium body)

Construction characteristics

Body	Technopolymer
Actuators	Technopolymer
Spool	Nickel plated steel
Piston seals	Nitrile rubber (NBR) oil resistant
Seals	Nitrile rubber (NBR) oil resistant
Spacers	Technopolymer
Springs	Stainless steel AISI 302
Pistons	Technopolymer

"Attention: Dry air must be used for application below 0°C"

Maximum tightening torque for fittings

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

Use and maintenance

These valves have a mean life of 15 millions of cycles if used in standard conditions.

Proper lubrication reduces dramatically the wear of the seals and a good filtration prevents the build-up of dirt and consequent malfunctioning of the valve. Make sure that the conditions of use comply with the pressure and temperature suggested. The exhaust port 3 and 5 have to be protected in a dusty and dirty environment. A spare parts kit including the spool and seals is available for overhauling the valve. This simple operation does not require a skilled worker.

ATTENTION: use hydraulic oil class H such as MAGNA GC 32 (CASTROL).


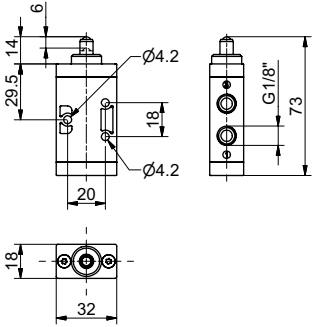

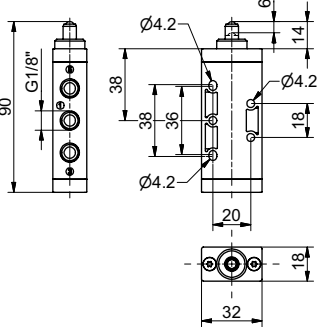
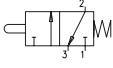



Plunger - Spring

3/2

5/2

Plunger - Spring


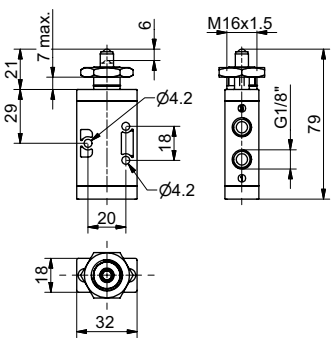

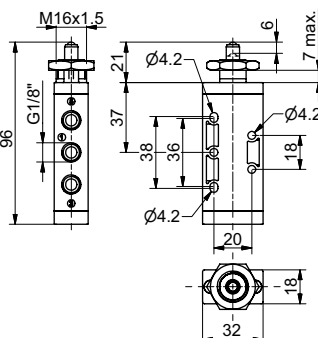
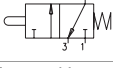

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Weight gr. 60 Operating force 33 N				Weight gr. 72 Operating force 33 N			
Operational characteristics	Fluid	Max working pressure	Operating Temperature		Flow rate at 6 bar with $\Delta p=1$	Orifice size	Working ports size
	Filterd and lubricated air	10 bar	Min. -5°C	Max. +50°C	620 Nl/min	mm 6	G 1/8"

Plunger panel - Spring

3/2

5/2

Plunger panel - Spring


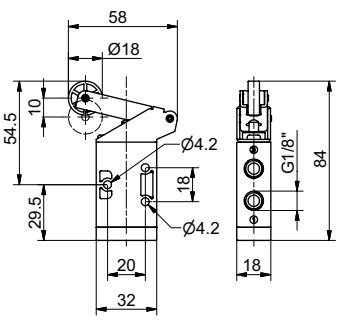

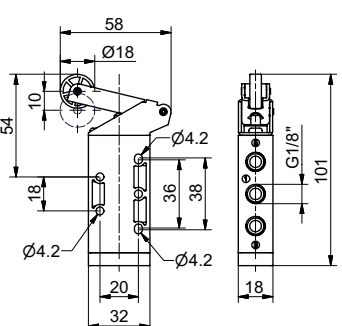
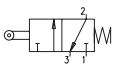
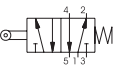
		Ordering Code T228.1.1.1 TYPE 32 = 3 ways 52 = 5 ways					
Weight gr. 77 Operating force 33 N				Weight gr. 90 Operating force 33 N			
Operational characteristics	Fluid	Max working pressure	Operating Temperature		Flow rate at 6 bar with $\Delta p=1$	Orifice size	Working ports size
	Filterd and lubricated air	10 bar	Min. -5°C	Max. +50°C	620 Nl/min	mm 6	G 1/8"


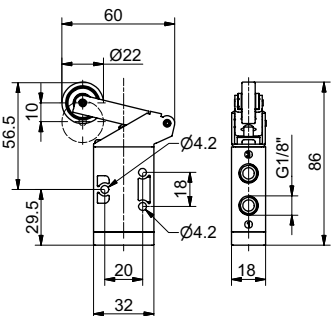
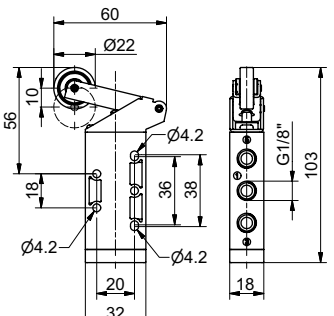
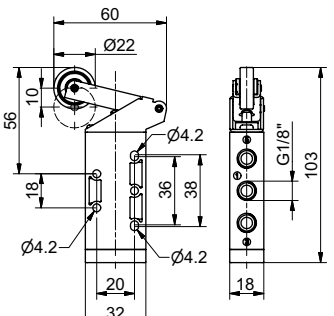
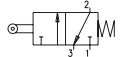

Roller lever - Spring


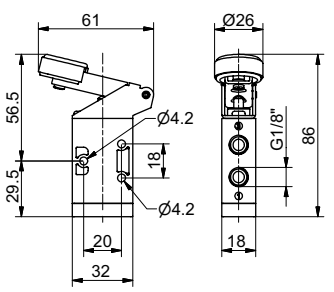

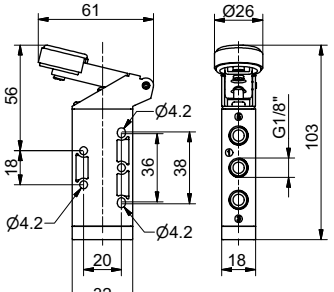
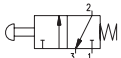

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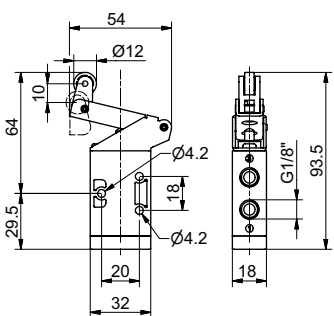

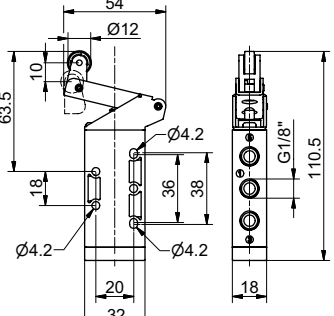
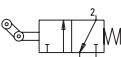
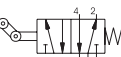
5/2

Roller lever - Spring

		Ordering code T228.1.2.1 TYPE 32 = 3 ways 52 = 5 ways VERSION 1 = Plastic roller 1/2 = Ball bearing					
Weight gr. 90 Operating force 15 N				Weight gr. 102 Operating force 15 N			
Operational characteristics	Fluid	Max working pressure	Operating Temperature		Flow rate at 6 bar with $\Delta p=1$	Orifice size	Working ports size
	Filterd and lubricated air	10 bar	Min. -5°C	Max. +50°C	620 Nl/min	mm 6	G 1/8"

Roller lever (ball bearings) - Spring		3/2	5/2	Roller lever (ball bearings) - Spring			
 		Ordering Code T228.1.2.1/1 TYPE 32 = 3 ways 52 = 5 ways		 			
Weight gr. 105 Operating force 15 N							
Operational characteristics	Fluid	Max working pressure	Operating Temperature		Flow rate at 6 bar with $\Delta p=1$	Orifice size	Working ports size
	Filterd and lubricated air	10 bar	Min. -5°C	Max. +50°C	620 NI/min	mm 6	G 1/8"

Button lever - Spring		3/2	5/2	Button lever - Spring			
 		Ordering Code T228.1.2.6/C TYPE 32 = 3 ways 52 = 5 ways BUTTON COLOR C 1 = Red 2 = Black 3 = Green		 			
Weight gr. 95 Operating force 15 N							
Operational characteristics	Fluid	Max working pressure	Operating Temperature		Flow rate at 6 bar with $\Delta p=1$	Orifice size	Working ports size
	Filterd and lubricated air	10 bar	Min. -5°C	Max. +50°C	620 NI/min	mm 6	G 1/8"

One way Roller lever - Spring		3/2	5/2	One way Roller lever - Spring			
 		Ordering Code T228.1.3.V TYPE 32 = 3 ways 52 = 5 ways VERSION V 1 = Plastic roller 1/2 = Ball bearing		 			
Weight gr. 85							
Operational characteristics	Fluid	Max working pressure	Operating Temperature		Flow rate at 6 bar with $\Delta p=1$	Orifice size	Working ports size
	Filterd and lubricated air	10 bar	Min. -5°C	Max. +50°C	620 NI/min	mm 6	G 1/8"

Toggle Lever (for panel mounting) Ø30-2 positions

3/2

5/2

Toggle Lever (for panel mounting) Ø30-2 positions

		Ordering Code T228.1.5/2			
		TYPE 32 = 3 ways 52 = 5 ways	BUTTON COLOR 1 = Red 2 = Black 3 = Green		
Weight gr. 168					Weight gr. 180

Operational characteristics	Fluid	Max working pressure	Operating Temperature		Flow rate at 6 bar with Δp=1	Orifice size	Working ports size
	Filterd and lubricated air	10 bar	Min. -5°C	Max. +50°C	620 NI/min	mm 6	G 1/8"

Toggle lever - 2 positions

3/2

5/2

Toggle lever - 2 positions

		Ordering Code T228.1.55/2			
		TYPE 32 = 3 ways 52 = 5 ways	BUTTON COLOR 1 = Red 2 = Black 3 = Green		
Weight gr. 84					Weight gr. 96

Operational characteristics	Fluid	Max working pressure	Operating Temperature		Flow rate at 6 bar with Δp=1	Orifice size	Working ports size
	Filterd and lubricated air	10 bar	Min. -5°C	Max. +50°C	620 NI/min	mm 6	G 1/8"

Push button Ø 30 - spring

3/2

5/2

Push button Ø 30 - spring

		Ordering Code T228.1.6.1/2			
		TYPE 32 = 3 ways 52 = 5 ways	BUTTON COLOR 1 = Red 2 = Black 3 = Green		
Weight gr. 125 Operating force 33 N					Weight gr. 137 Operating force 33 N

Operational characteristics	Fluid	Max working pressure	Operating Temperature		Flow rate at 6 bar with Δp=1	Orifice size	Working ports size
	Filterd and lubricated air	10 bar	Min. -5°C	Max. +50°C	620 NI/min	mm 6	G 1/8"

Push button - spring		3/2	5/2	Push button - spring				
		Ordering Code						
		T228.1.6.22/C						
Weight gr. 200 Operating force 33N				Weight gr. 212 Operating force 33N				
							TYPE	
							BUTTON COLOR	
							Operating Temperature	
Operational characteristics		Fluid	Max working pressure	Flow rate at 6 bar with $\Delta p=1$	Orifice size	Working ports size		
		Filterd and lubricated air	10 bar	620 NI/min	mm 6	G 1/8"		
		Min. -5°C	Max. +50°C					

Raised push button - spring		3/2	5/2	Raised push button - spring				
		Ordering Code						
		T228.1.6.23/C						
Weight gr. 205 Operating force 33N				Weight gr. 217 Operating force 33N				
							TYPE	
							BUTTON COLOR	
							Operating Temperature	
Operational characteristics		Fluid	Max working pressure	Flow rate at 6 bar with $\Delta p=1$	Orifice size	Working ports size		
		Filterd and lubricated air	10 bar	620 NI/min	mm 6	G 1/8"		
		Min. -5°C	Max. +50°C					

Palm button - 2 positions		3/2	5/2	Palm button - 2 positions				
		Ordering Code						
		T228.1.6.25						
Weight gr. 210 Operating force 33N				Weight gr. 202 Operating force 33N				
							TYPE	
							Operating Temperature	
							Flow rate at 6 bar with $\Delta p=1$	
Operational characteristics		Fluid	Max working pressure	Orifice size	Working ports size			
		Filterd and lubricated air	10 bar	mm 6	G 1/8"			
		Min. -5°C	Max. +50°C					

Switch - 2 positions

3/2

5/2

Switch - 2 positions

		Ordering Code T228.1.6.27			
		TYPE 32 = 3 ways 52 = 5 ways			
Weight gr. 205				Weight gr. 217	

Operational characteristics	Fluid	Max working pressure	Operating Temperature		Flow rate at 6 bar with $\Delta p=1$	Orifice size	Working ports size
	Filterd and lubricated air	10 bar	Min. -5°C	Max. +50°C	620 NI/min	mm 6	G 1/8"

Key switch - 2 positions

3/2

5/2

Key switch - 2 positions

		Ordering Code T228.1.6.28			
		TYPE 32 = 3 ways 52 = 5 ways			
Weight gr. 205				Weight gr. 217	

Operational characteristics	Fluid	Max working pressure	Operating Temperature		Flow rate at 6 bar with $\Delta p=1$	Orifice size	Working ports size
	Filterd and lubricated air	10 bar	Min. -5°C	Max. +50°C	620 NI/min	mm 6	G 1/8"

Palm push button Ø 30


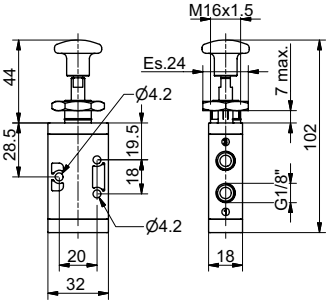

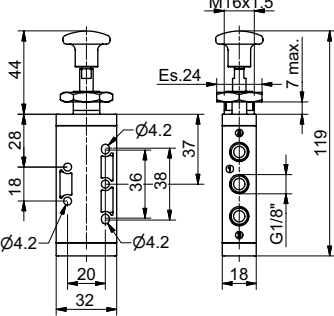
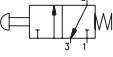
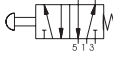
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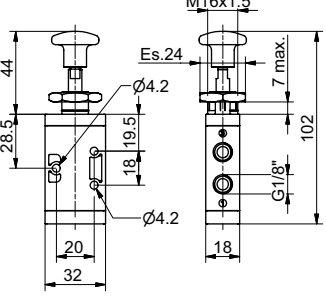

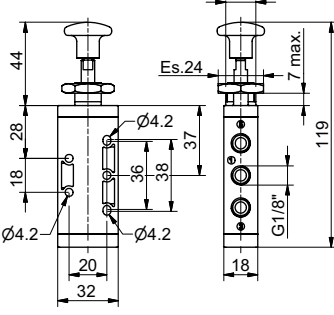
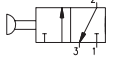

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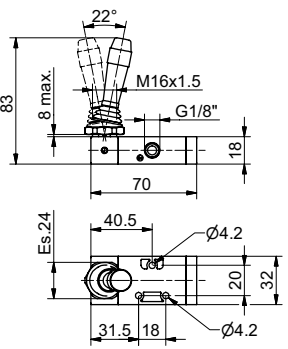

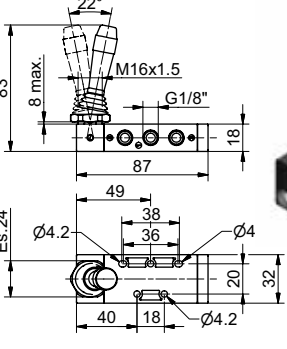
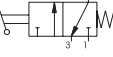

Palm push button Ø 30

		Ordering Code T228.1.7.1/C			
		TYPE 32 = 3 ways 52 = 5 ways BUTTON COLOR 1 = Red 2 = Black 3 = Green			
Weight gr. 118 Operating force 33N				Weight gr. 130 Operating force 33N	

Operational characteristics	Fluid	Max working pressure	Operating Temperature		Flow rate at 6 bar with $\Delta p=1$	Orifice size	Working ports size
	Filterd and lubricated air	10 bar	Min. -5°C	Max. +50°C	620 NI/min	mm 6	G 1/8"

Push button - Spring		3/2	5/2	Push button - Spring			
 		<p>Ordering Code</p> <p>T228.1.8.1/C</p> <p>TYPE</p> <ul style="list-style-type: none"> 1 = 3 ways 2 = 5 ways <p>BUTTON COLOR</p> <ul style="list-style-type: none"> 1 = Red 2 = Black 3 = Green 		 			
<p>Weight gr. 95</p> <p>Operating force 33N</p> 				<p>Weight gr. 107</p> <p>Operating force 33N</p> 			
Operational characteristics	Fluid	Max working pressure	Operating Temperature		Flow rate at 6 bar with $\Delta p=1$	Orifice size	Working ports size
	Filterd and lubricated air		10 bar	Min. -5°C			

Push button - 2 positions		3/2	5/2	Push button - 2 positions			
 		<p>Ordering Code</p> <p>T228.1.8/C</p> <p>TYPE</p> <ul style="list-style-type: none"> 1 = 3 ways 2 = 5 ways <p>BUTTON COLOR</p> <ul style="list-style-type: none"> 1 = Red 2 = Black 3 = Green 		 			
<p>Weight gr. 95</p> <p>Operating force 10N</p> 				<p>Weight gr. 107</p> <p>Operating force 10N</p> 			
Operational characteristics	Fluid	Max working pressure	Operating Temperature		Flow rate at 6 bar with $\Delta p=1$	Orifice size	Working ports size
	Filterd and lubricated air		10 bar	Min. -5°C			


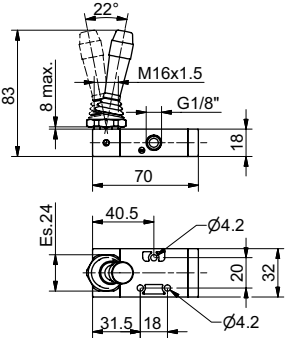

Lateral lever - Spring		3/2	5/2	Lateral lever - Spring			
 		<p>Ordering Code</p> <p>T228.1.9.1/C</p> <p>TYPE</p> <ul style="list-style-type: none"> 1 = 3 ways 2 = 5 ways <p>BUTTON COLOR</p> <ul style="list-style-type: none"> 1 = Red 2 = Black 3 = Green 		 			
<p>Weight gr. 100</p> 				<p>Weight gr. 110</p> 			
Operational characteristics	Fluid	Max working pressure	Operating Temperature		Flow rate at 6 bar with $\Delta p=1$	Orifice size	Working ports size
	Filterd and lubricated air		10 bar	Min. -5°C			

Lateral lever - 2 positions

3/2

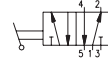
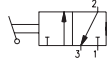
5/2

Lateral lever - 2 positions

		Ordering Code T228.1.9/C		
		TYPE 32 = 3 ways 52 = 5 ways	BUTTON COLOR 1 = Red 2 = Black 3 = Green	

Weight gr. 100


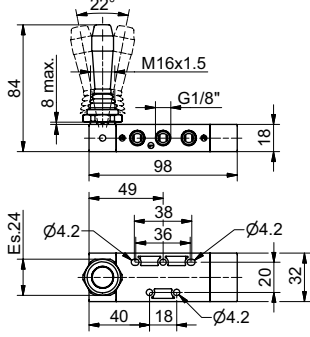
Weight gr. 110



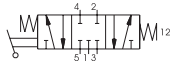
Operational characteristics	Fluid	Max working pressure	Operating Temperature		Flow rate at 6 bar with Δp=1	Orifice size	Working ports size
	Filterd and lubricated air	10 bar	Min. -5°C	Max. +50°C	620 NI/min	mm 6	G 1/8"

Lateral lever spring - 3 positions

5/3

Ordering Code T228.53.F.9.1/C		
FUNCTION 31 = Closed Centres 32 = Open Centres BUTTON COLOR 1 = Red 2 = Black 3 = Green		


Weight gr. 140



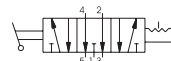
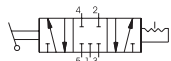
Operational characteristics	Fluid	Max working pressure	Operating Temperature		Flow rate at 6 bar with Δp=1	Orifice size	Working ports size
	Filterd and lubricated air	10 bar	Min. -5°C	Max. +50°C	410 NI/min	mm 6	G 1/8"

Lateral lever - 3 positions detent

5/3

Ordering Code T228.53.F.9/C		
FUNCTION 31 = Closed Centres 32 = Open Centres BUTTON COLOR 1 = Red 2 = Black 3 = Green		

Weight gr. 110



Operational characteristics	Fluid	Max working pressure	Operating Temperature		Flow rate at 6 bar with Δp=1	Orifice size	Working ports size
	Filterd and lubricated air	10 bar	Min. -5°C	Max. +50°C	410 NI/min	mm 6	G 1/8"

Pneumatic - Spring		3/2	5/2	Pneumatic - Spring				
		Ordering Code				Weight gr. 78 Minimum operating pressure 2,5 bar		
		T228.11.1 TYPE 32 = 3 ways 52 = 5 ways						
Operational characteristics	Fluid	Max working pressure	Operating Temperature		Flow rate at 6 bar with $\Delta p=1$	Orifice size	Working ports size	Pilot ports size
	Filterd and lubricated air	10 bar	Min. -5°C	Max. +50°C	620 NI/min	mm 6	G 1/8"	G 1/8"

Pneumatic - Differential (external)		3/2	5/2	Pneumatic - Differential (external)				
		Ordering Code				Weight gr. 86 Minimum operating pressure 2,5 bar		
		T228.11.12 TYPE 32 = 3 ways 52 = 5 ways						
Operational characteristics	Fluid	Max working pressure	Operating Temperature		Flow rate at 6 bar with $\Delta p=1$	Orifice size	Working ports size	Pilot ports size
	Filterd and lubricated air	10 bar	Min. -5°C	Max. +50°C	620 NI/min	mm 6	G 1/8"	G 1/8"

Pneumatic - Differential (self-feeding)		3/2	5/2	Pneumatic - Differential (self-feeding)				
		Ordering Code				Weight gr. 82 Minimum operating pressure 2,5 bar		
		T228.11.12/1 TYPE 32 = 3 ways 52 = 5 ways						
Operational characteristics	Fluid	Max working pressure	Operating Temperature		Flow rate at 6 bar with $\Delta p=1$	Orifice size	Working ports size	Pilot ports size
	Filterd and lubricated air	10 bar	Min. -5°C	Max. +50°C	620 NI/min	mm 6	G 1/8"	G 1/8"

Pneumatic - Pneumatic

3/2

5/2

Pneumatic - Pneumatic

Ordering Code

T228.11.11

TYPE

32 = 3 ways

52 = 5 ways

Weight gr. 77
Minimum operating pressure 2 bar



Weight gr. 90
Minimum operating pressure 2 bar

Operational characteristics	Fluid	Max working pressure	Operating Temperature		Flow rate at 6 bar with Δp=1	Orifice size	Working ports size	Pilot ports size
	Filterd and lubricated air		10 bar	Min. -5°C				
					620 NI/min	mm 6	G 1/8"	G 1/8"

Pneumatic - Pneumatic 3 positions

5/3

Ordering Code

T228.53.11.11

FUNCTION

31 = Closed Centres

32 = Open Centres

33 = Pressured Centres

Weight gr. 110
Minimum operating pressure 3 bar



Operational characteristics	Fluid	Max working pressure	Operating Temperature		Flow rate at 6 bar with Δp=1	Orifice size	Working ports size	Pilot ports size
	Filterd and lubricated air		10 bar	Min. -5°C				
					410 NI/min	mm 6	G 1/8"	G 1/8"