



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 alluminium body)

1

Construction characteristics

| | |
|--------------|-------------------------------------|
| Body | Technopolymer |
| Actuators | Technopolymer |
| Spool | Nickel plated steel / Technopolymer |
| 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 | | |
|----------------------------|----------------------------|---|-------------------------|--------------------------------------|--------------|---------------------------------------|
| | | Ordering code | | | | Weight gr. 72 Operating force 33 N |
| | | T228.1.0.1 TYPE 32 = 3 ways 52 = 5 ways | | | | |
| Operational characteristic | 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" |

| Plunger - Spring | | 3/2 | 5/2 | Plunger - Spring | | |
|----------------------------|----------------------------|---|-------------------------|--------------------------------------|--------------|---------------------------------------|
| <i>for panel mounting</i> | | | | <i>for panel mounting</i> | | |
| | | Ordering code | | | | Weight gr. 90 Operating force 33 N |
| | | T228.1.1.1 TYPE 32 = 3 ways 52 = 5 ways | | | | |
| Operational characteristic | 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" |

| Roller lever - Spring | | 3/2 | 5/2 | Roller lever - Spring | | |
|----------------------------|----------------------------|--|-------------------------|--------------------------------------|--------------|--|
| | | Ordering code | | | | Weight gr. 102 Operating force 15 N |
| | | T228.2.2.V TYPE 32 = 3 ways 52 = 5 ways VERSION 1 = Plastic roller 1/2 = Ball bearing | | | | |
| Operational characteristic | 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" |

1

Roller lever (ball bearings) - Spring

3/2

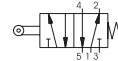
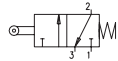
5/2

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

Weight gr. 117
Operating force 15 N



| Operational characteristic | 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" |

Button lever - Spring

3/2

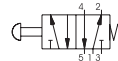
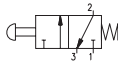
5/2

Button lever - Spring

| | | | | |
|--|--|---|--|--|
| | | Ordering code T228.1.2.6/C | | |
| | | TYPE 32 = 3 ways 52 = 5 ways BUTTON COLOR 1 = Red 2 = Black 3 = Green | | |

Weight gr. 95
Operating force 15 N

Weight gr. 87
Operating force 15 N



| Operational characteristic | 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" |

One way Roller lever - Spring

3/2

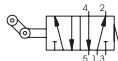
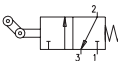
5/2

One way Roller lever - Spring

| | | | | |
|--|--|---|--|--|
| | | Ordering code T228.1.3.V | | |
| | | TYPE 32 = 3 ways 52 = 5 ways VERSION 1 = Plastic roller 1/2 = Ball bearing | | |

Weight gr. 85

Weight gr. 97



| Operational characteristic | 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 (for panel mounting) Ø 30 | | | 3/2 | 5/2 | Toggle Lever (for panel mounting) Ø 30 | | | |
|--|-----------------------------|----------------------|---|------------|--|----------------|--------------------|--|
| 2 positions | | | | | | 2 positions | | |
| | | | Ordering code T228.1.5/C | | | | | |
| | | | TYPE 32 = 3 ways 52 = 5 ways BUTTON COLOR 1 = Red 2 = Black 3 = Green | | | | | |
| Weight gr. 168 | | | | | | Weight gr. 180 | | |
| | | | | | | | | |
| Operational characteristic | Fluid | Max working pressure | Operating Temperature | | Flow rate at 6 bar with $\Delta p=1$ | Orifice size | Working ports size | |
| | Filtered 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 | | | |
|-----------------------------------|-----------------------------|----------------------|---|------------|--------------------------------------|---------------|--------------------|--|
| 2 positions | | | | | | 2 positions | | |
| | | | Ordering code T228.1.55/C | | | | | |
| | | | TYPE 32 = 3 ways 52 = 5 ways BUTTON COLOR 1 = Red 2 = Black 3 = Green | | | | | |
| Weight gr. 84 | | | | | | Weight gr. 96 | | |
| | | | | | | | | |
| Operational characteristic | Fluid | Max working pressure | Operating Temperature | | Flow rate at 6 bar with $\Delta p=1$ | Orifice size | Working ports size | |
| | Filtered 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 | | | |
|--|-----------------------------|----------------------|---|------------|--------------------------------------|--|--------------------|--|
| 2 positions | | | | | | 2 positions | | |
| | | | Ordering code T228.1.6.1/C | | | | | |
| | | | 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 characteristic | Fluid | Max working pressure | Operating Temperature | | Flow rate at 6 bar with $\Delta p=1$ | Orifice size | Working ports size | |
| | Filtered and lubricated air | 10 bar | Min. -5°C | Max. +50°C | 620 NI/min | mm 6 | G 1/8" | |


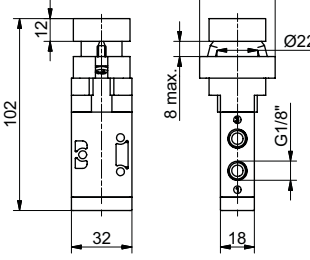

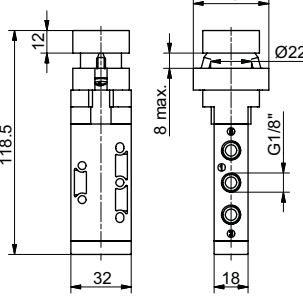
1

Push button - spring

3/2

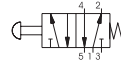
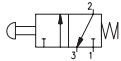
5/2

Push button - spring

| | | | |
|---|---|--|--|
|   | Ordering code T228.1.6.22/C | |   |
| | TYPE 32 = 3 ways 52 = 5 ways BUTTON COLOR 1 = Red 2 = Black 3 = Green 4 = Yellow | | |

Weight gr. 200
Operating force 33N

Weight gr. 212
Operating force 33N




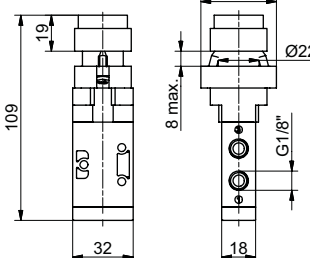

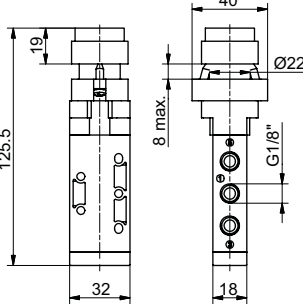
| Operational characteristic | Fluid | Max working pressure | Operating Temperature | | Flow rate at 6 bar with Δp=1 | Orifice size | Working ports size |
|----------------------------|----------------------------|----------------------|-----------------------|------------|------------------------------|--------------|--------------------|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

Raised Push button - spring

3/2

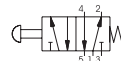
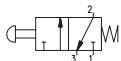
5/2

Raised Push button - spring

| | | | |
|---|---|--|--|
|   | Ordering code T228.1.6.23/C | |   |
| | TYPE 32 = 3 ways 52 = 5 ways BUTTON COLOR 1 = Red 2 = Black 3 = Green 4 = Yellow | | |

Weight gr. 205
Operating force 33N

Weight gr. 217
Operating force 33N



| Operational characteristic | 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" |


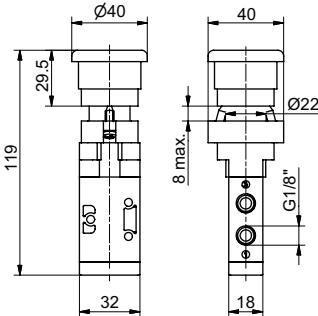

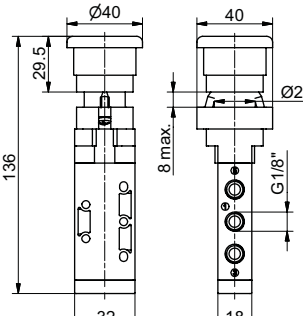
Palm button - 2 positions

3/2

5/2

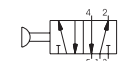
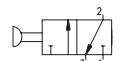
Palm button - 2 positions

emergency - Rotate to unlock

| | | | |
|---|--|--|--|
|   | Ordering code T228.1.6.25 | |   |
| | TYPE 32 = 3 ways 52 = 5 ways | | |

Weight gr. 210
Operating force 33N

Weight gr. 202
Operating force 33N



| Operational characteristic | 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" |

| Switch - 2 positions | | | 3/2 | 5/2 | Switch - 2 positions | | |
|-----------------------------------|--|--|----------------------|-------------------------|--------------------------------------|-----------------------|--------------------|
| | | Ordering code T228.1.6.27 | | | | Weight gr. 217 | |
| | | TYPE 32 = 3 ways 52 = 5 ways | | | | | |
| Operational characteristic | | Fluid | Max working pressure | Operating Temperature | Flow rate at 6 bar with $\Delta p=1$ | Orifice size | Working ports size |
| | | Filtered 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 | | | | Weight gr. 217 | |
| | | TYPE 32 = 3 ways 52 = 5 ways | | | | | |
| Operational characteristic | | Fluid | Max working pressure | Operating Temperature | Flow rate at 6 bar with $\Delta p=1$ | Orifice size | Working ports size |
| | | Filtered and lubricated air | 10 bar | Min. -5°C Max. +50°C | 620 NI/min | mm 6 | G 1/8" |

| Palm Push button Ø 30 | | | 3/2 | 5/2 | Palm Push button Ø 30 | | |
|-----------------------------------|--|---|----------------------|-------------------------|--------------------------------------|---|--------------------|
| | | Ordering code T228.1.7.1/C | | | | Weight gr. 130 Operating force 33N | |
| | | TYPE 32 = 3 ways 52 = 5 ways BUTTON COLOR 1 = Red 2 = Black 3 = Green | | | | | |
| Operational characteristic | | Fluid | Max working pressure | Operating Temperature | Flow rate at 6 bar with $\Delta p=1$ | Orifice size | Working ports size |
| | | Filtered and lubricated air | 10 bar | Min. -5°C Max. +50°C | 620 NI/min | mm 6 | G 1/8" |

1

Push button - Spring

3/2

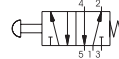
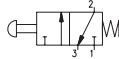
5/2

Push button - Spring

| | | | | | |
|--|--|---|--|--|--|
| | | Ordering code T228.1.8.1/C | | | |
| | | TYPE 32 = 3 ways 52 = 5 ways BUTTON COLOR 1 = Red 2 = Black 3 = Green | | | |

Weight gr. 95
Operating force 33N

Weight gr. 107
Operating force 33N



| Operational characteristic | 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 - 2 positions

3/2

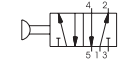
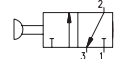
5/2

Push button - 2 positions

| | | | | | |
|--|--|---|--|--|--|
| | | Ordering code T228.1.8/C | | | |
| | | TYPE 32 = 3 ways 52 = 5 ways BUTTON COLOR 1 = Red 2 = Black 3 = Green | | | |

Weight gr. 95
Operating force 10N

Weight gr. 107
Operating force 10N



| Operational characteristic | 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" |

Lever lateral - Spring

3/2

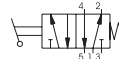
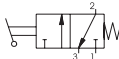
5/2

Lever lateral - Spring



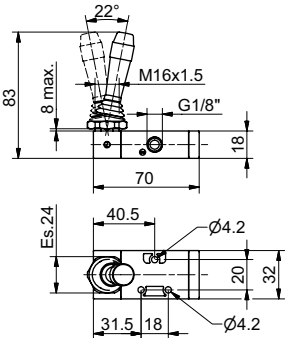
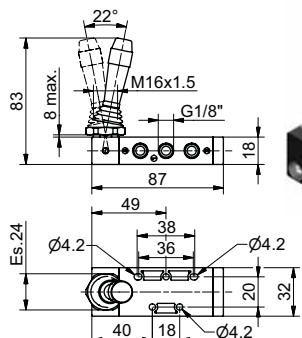
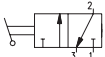
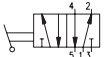
| | | | | | |
|--|--|---|--|--|--|
| | | Ordering code T228.1.9.1/C | | | |
| | | TYPE 32 = 3 ways 52 = 5 ways BUTTON COLOR 1 = Red 2 = Black 3 = Green | | | |


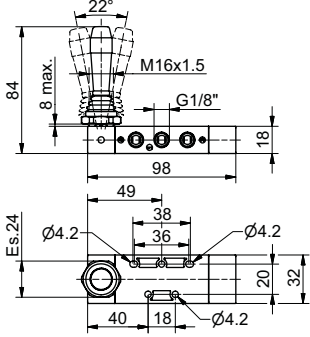
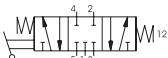

Weight gr. 100


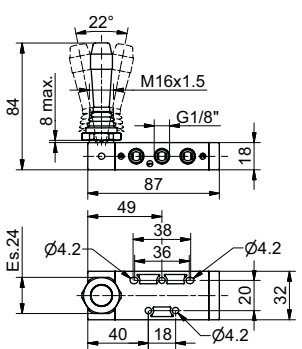
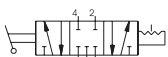

Weight gr. 110



| Operational characteristic | 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 - 2 positions | | 3/2 | 5/2 | Lateral lever - 2 positions | | | |
|---|-----------------------------|---|-----------------------|---|--------------------------------------|--------------|--------------------|
|  | | <p>Ordering code</p> <p>T228.1.9/C</p> <p>TYPE</p> <p>1 = 3 ways</p> <p>52 = 5 ways</p> <p>BUTTON COLOR</p> <p>1 = Red</p> <p>2 = Black</p> <p>3 = Green</p> | |  | | | |
|  | |  | | | | | |
| Weight gr. 100 | | | | Weight gr. 110 | | | |
|  | | | |  | | | |
| Operational characteristic | Fluid | Max working pressure | Operating Temperature | | Flow rate at 6 bar with $\Delta p=1$ | Orifice size | Working ports size |
| | Filtered 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 |
|---|-----------------------------|--|-----------------------|------------|--|--------------|--------------------|
| <p>Ordering code</p> <p>T228.53.F.9.1/C</p> <p>FUNCTION</p> <p>31 = Closed Centres</p> <p>32 = Open Centres</p> <p>BUTTON COLOR</p> <p>1 = Red</p> <p>2 = Black</p> <p>3 = Green</p> | |  | | |  | | |
| Weight gr. 140 | | | | | | | |
|  | | | | |  | | |
| Operational characteristic | Fluid | Max working pressure | Operating Temperature | | Flow rate at 6 bar with $\Delta p=1$ | Orifice size | Working ports size |
| | Filtered 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 |
|---|-----------------------------|---|-----------------------|------------|---|--------------|--------------------|
| <p>Ordering code</p> <p>T228.53.F.9/C</p> <p>FUNCTION</p> <p>31 = Closed Centres</p> <p>32 = Open Centres</p> <p>BUTTON COLOR</p> <p>1 = Red</p> <p>2 = Black</p> <p>3 = Green</p> | |  | | |  | | |
| Weight gr. 110 | | | | | | | |
|  | | | | |  | | |
| Operational characteristic | Fluid | Max working pressure | Operating Temperature | | Flow rate at 6 bar with $\Delta p=1$ | Orifice size | Working ports size |
| | Filtered and lubricated air | 10 bar | Min. -5°C | Max. +50°C | 410 NI/min | mm 6 | G 1/8" |

1

Pneumatic - Spring

3/2

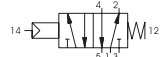
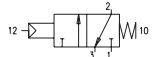
5/2

Pneumatic - Spring

Ordering code
T228.11.11.1

TYPE
32 = 3 ways
52 = 5 ways

Weight gr. 65
Minimum operating pressure 2,5 bar



Weight gr. 78
Minimum operating pressure 2,5 bar

| Operational characteristic | 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

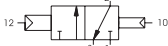
5/2

Pneumatic - Differential (external)

Ordering code
T228.11.11.12

TYPE
32 = 3 ways
52 = 5 ways

Weight gr. 74
Minimum operating pressure 2,5 bar



Weight gr. 86
Minimum operating pressure 2,5 bar

| Operational characteristic | 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
T228.11.11.12/1

TYPE
32 = 3 ways
52 = 5 ways

Weight gr. 70
Minimum operating pressure 2,5 bar


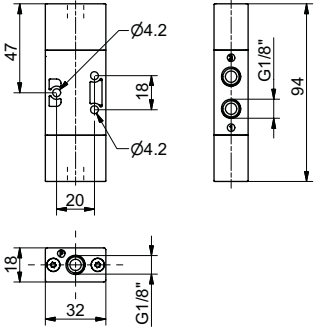

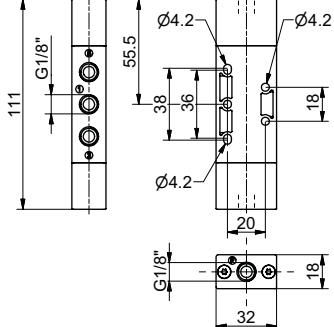



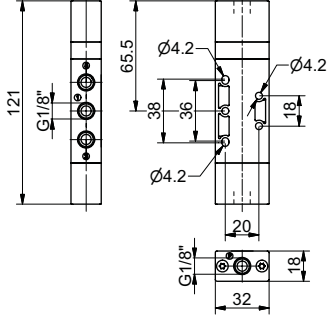
Weight gr. 82
Minimum operating pressure 2,5 bar

| Operational characteristic | 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" |



1

| 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 characteristic | 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 positions | | | | | | | 5/3 | | |
|---|----------------------------|--|--|-----------------------|------------|--------------------------------------|--------------|--------------------|------------------|
| Ordering code T228.53.F.11.11 | |  |  | | | | | | |
| FUNCTION F 31 = Closed Centres 32 = Open Centres 33 = Pressured Centres | | | Weight gr. 110 Minimum operating pressure 3 bar | | | | | | |
| Operational characteristic | 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 | 410 NI/min | mm 6 | G 1/8" | G 1/8" |