Series 2400

General

This solenoid valves series has been developed to meet requirements for electronically controlled pneumatic systems and / or serial control systems already used in all manufacturing sectors.
They have been designed to be easily assembled into groups or manifolds and include integral electrical connection to facilitate simple and speedy integration into a control system.
The 2400 series comprises a range of products classified according to the body size of 18mm divided into 3 types "LINE", "FLAT" and "VDMA".
The 10mm. and 18 mm. 24 VDC range of valves includes a range of accessories for the production of manifolded valve assemblies with integral electrical connections.
Modules are available in two or four station variants for flexibility and are supplied to IP40 or alternatively IP65 environmental protection.

Construction characteristics

Central body	Extruded aluminium bar with chemical nickel treatment and PTFE (polytetrafleurethylene)
Connection plates	Zincalloy
Operators	Technopolymer
Spool seals	Oil resistant nitrile rubber - HNBR
Spools	Aluminium 2011
Springs	AISI 302 stainless steel
Pistons	Technopolymer
Piston seals	Oil resistant nitrile rubber - NBR

Use and maintenance

The average life of the solenoid valve exceeds 50.000.000 cycles when used under optimum conditions.
Adequate lubrication reduces seals wear, just as proper filtering of supply air prevents the build-up of dirt that can cause malfunction.
Ensure the valve is used within our recommended criteria for pressure and temperature.
In dirty or dusty environments, the exhaust ports should be protected.
A seal kit including the spool is available for overhauling the valve. This operation does not require a skilled worker, although a particular care should be taken when reassembling the valve.

Ordering codes for minature solenoid valves

The 15 mm. miniature solenoid valve with 1,1 mm. orifice has been selected for piloting this series of valves (see Series 300).
This results in low response times and reduced power consumption.
The valve can be supplied with the coil upward or downward (multipolar connections) depending on the application.

Codes are as follows:

Coil upward code

01 = miniature solenoid 12 VDC
02 = miniature solenoid 24 VDC
05 = miniature solenoid 24 VAC
06 = miniature solenoid 110 VAC
07 = miniature sol. 230 VAC
08 = miniature sol. 24 VDC 1W
09 = miniature sol. 24 VDC Earth faston

Coil downward code

11 = miniature solenoid 12 VDC
12 = miniature solenoid 24 VDC
15 = miniature solenoid 24 VAC
16 = miniature solenoid 110 VAC
17 = miniature sol. 230 VAC
18 = miniature sol. 24 VDC 1W Downward
19 = miniature sol. 24 VDC Earth faston Downward

	Well-tried component	- The product is a well-tried product for a safety-related application according to ISO 13849-1. - The relevant basic and well-tried safety principles according ISO 13849-2 for this product are fulfilled. - The suitability of the product for a precise application must be verified and confirmed by the user.
B_{10d}	50.000.000	

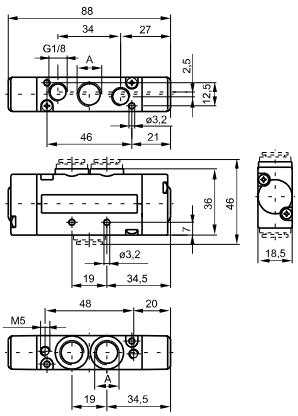
Miniature solenoid homologated are available (see Series 300).

Pneumatic - Spring

Coding: 241Ⓐ.52.00.19

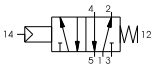
Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Maximum piloting pressure (bar)	2
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with Δp=1 (Nl/min)	800
Orifice size (mm)	7
Pilot ports size	M5

	WORKING PORTS SIZE
Ⓐ	**1** = G1/4"
	5 = G1/8"
	6 = Quick fitting tube Ø6
	8 = Quick fitting tube Ø8



Weight 155 g

For dimension "A" see ordering code

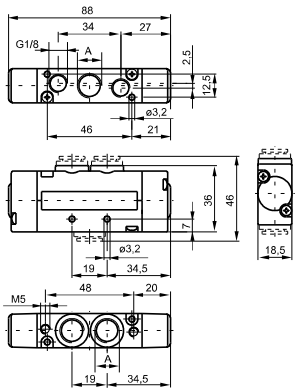


Pneumatic - Differential

Coding: 241Ⓐ.52.00.16

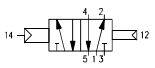
Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Maximum piloting pressure (bar)	2
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with Δp=1 (Nl/min)	800
Orifice size (mm)	7
Pilot ports size	M5

	WORKING PORTS SIZE
Ⓐ	**1** = G1/4"
	5 = G1/8"
	6 = Quick fitting tube Ø6
	8 = Quick fitting tube Ø8



Weight 155 g

For dimension "A" see ordering code

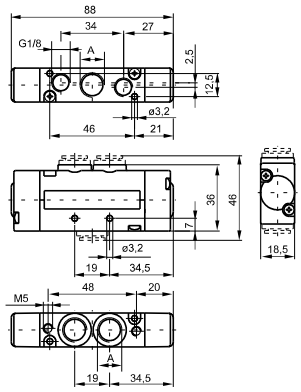


Pneumatic - Differential (External)

Coding: 241Ⓐ.52.00.17

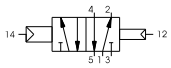
Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Maximum piloting pressure (bar)	2
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with Δp=1 (Nl/min)	800
Orifice size (mm)	7
Pilot ports size	M5

	WORKING PORTS SIZE
Ⓐ	**1** = G1/4"
	5 = G1/8"
	6 = Quick fitting tube Ø6
	8 = Quick fitting tube Ø8



Weight 155 g

For dimension "A" see ordering code

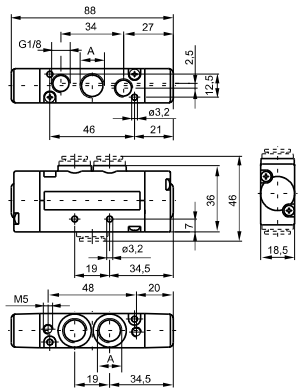


Pneumatic - Pneumatic

Coding: 241Ⓐ.52.00.18

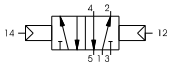
Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Maximum piloting pressure (bar)	1.5
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with Δp=1 (Nl/min)	800
Orifice size (mm)	7
Pilot ports size	M5

	WORKING PORTS SIZE
Ⓐ	**1** = G1/4"
	5 = G1/8"
	6 = Quick fitting tube Ø6
	8 = Quick fitting tube Ø8



Weight 155 g

For dimension "A" see ordering code

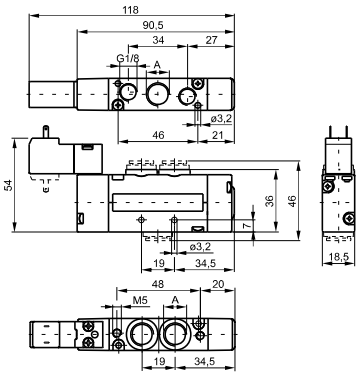


Solenoid-Spring / Differential

Coding: 241Ⓐ.52.00.Ⓥ.Ⓣ

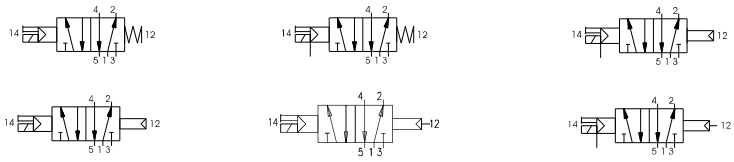
Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Maximum piloting pressure (bar)	2
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with Δp=1 (Nl/min)	800
Orifice size (mm)	7
Pilot ports size	M5

Ⓐ	WORKING PORTS SIZE
	1 = G1/4"
	5 = G1/8"
	6 = Quick fitting tube Ø6
	8 = Quick fitting tube Ø8
Ⓥ	VERSION
	39 = Solenoid - Spring
	29 = Solenoid external-Spring
	36 = Solenoid-Differerential
	37 = Solenoid-Differential external
	26 = Solenoid external-Differerential
	27 = Solenoid external-Differential external
Ⓣ	VOLTAGE
	01 = 12V DC
	02 = 24V DC
	05 = 24V AC
	06 = 110V AC
	07 = 230 V AC
	08 = 24V DC 1W
	09 = 24V DC downward
	11 = 12V DC downward
	12 = 24V DC downward
	15 = 24V AC downward
	16 = 110V AC downward
	17 = 230 V AC downward
	18 = 24V DC 1W downward
	19 = 24V DC Earth faston downward



For dimension "A" see ordering code

Weight 195 g

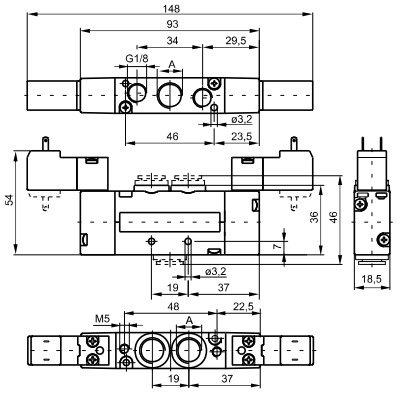


Solenoid - Solenoid

Coding: 241Ⓐ.52.00.Ⓥ.Ⓣ

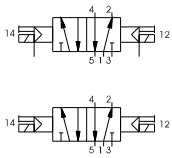
Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Maximum piloting pressure (bar)	1.5
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with Δp=1 (Nl/min)	800
Orifice size (mm)	7
Pilot ports size	M5

Ⓐ	WORKING PORTS SIZE
	1 = G1/4"
	5 = G1/8"
	6 = Quick fitting tube Ø6
	8 = Quick fitting tube Ø8
Ⓥ	VERSION
	35 = Solenoid-Solenoid
	24 = Solenoid external-Solenoid external
Ⓣ	VOLTAGE
	01 = 12V DC
	02 = 24V DC
	05 = 24V AC
	06 = 110V AC
	07 = 230 V AC
	08 = 24V DC 1W
	09 = 24V DC downward
	11 = 12V DC downward
	12 = 24V DC downward
	15 = 24V AC downward
	16 = 110V AC downward
	17 = 230 V AC downward
	18 = 24V DC 1W downward
	19 = 24V DC Earth faston downward



Weight 225 g

For dimension "A" see ordering code

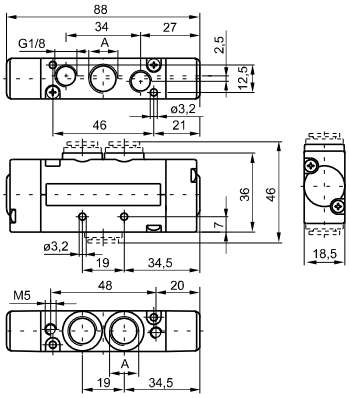


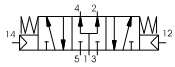
Pneumatic-Pneumatic 5/3

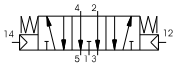
Coding: 241Ⓐ.53.Ⓕ.18

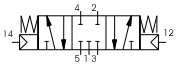
Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Maximum piloting pressure (bar)	3
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with Δp=1 (Nl/min)	650
Orifice size (mm)	7
Pilot ports size	M5

Ⓐ	WORKING PORTS SIZE
	1 = G1/4"
	5 = G1/8"
	6 = Quick fitting tube Ø6
	8 = Quick fitting tube Ø8
Ⓒ	CONNECTOR
	10 = In line
	90 = 90° Angle









Weight 165 g

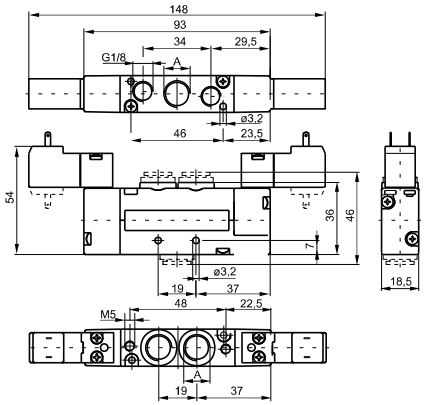
For dimension "A" see ordering code

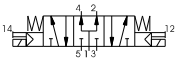
Solenoid - Solenoid

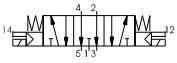
Coding: 241Ⓐ.53.Ⓕ.Ⓥ.Ⓣ

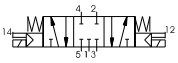
Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Maximum piloting pressure (bar)	3
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with Δp=1 (Nl/min)	650
Orifice size (mm)	7
Pilot ports size	M5

Ⓐ	WORKING PORTS SIZE
	1 = G1/4"
	5 = G1/8"
	6 = Quick fitting tube Ø6
	8 = Quick fitting tube Ø8
Ⓕ	FUNCTION
	31 = Closed centres
	32 = Open centres
	33 = Pressured centres
Ⓥ	VERSION
	24 = Solenoid external-Solenoid external
	35 = Solenoid-Solenoid
Ⓣ	VOLTAGE
	01 = 12V DC
	02 = 24V DC
	05 = 24V AC
	06 = 110V AC
	07 = 230 V AC
	08 = 24V DC 1W
	09 = 24V DC downward
	11 = 12V DC downward
	12 = 24V DC downward
	15 = 24V AC downward
	16 = 110V AC downward
	17 = 230 V AC downward
	18 = 24V DC 1W downward
	19 = 24V DC Earth faston downward









Weight 235 g

For dimension "A" see ordering code

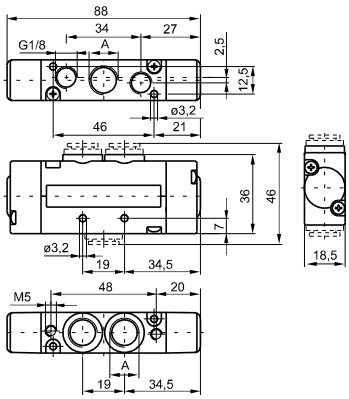
Pneumatic-Pneumatic 2 x 3/2

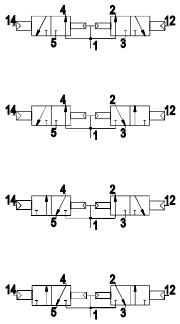
Coding: 241Ⓐ.62.Ⓕ.18

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Maximum piloting pressure (bar)	≥1,5+(0,2xInlet pressure)
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with Δp=1 (Nl/min)	450
Orifice size (mm)	7

Ⓐ	WORKING PORTS SIZE
	1 = G1/4"
	5 = G1/8"
	6 = Quick fitting tube Ø6
	8 = Quick fitting tube Ø8
Ⓕ	FUNCTION
	44 = 2 Coils 3/2 NC
	45 = 1 Coil 3/2 NC (14) + 1 Coil 3/2 NO (12)
	55 = 2 Coils 3/2 NO
	54 = 1 Coil 3/2 NO (14) + 1 Coil 3/2 NC (12)

*Example: if inlet pressure is set at 5bar then pilot pressure must be at least Pp=1,5+(0.2*5)=2,5bar*





Weight 170 g

For dimension "A" see ordering code

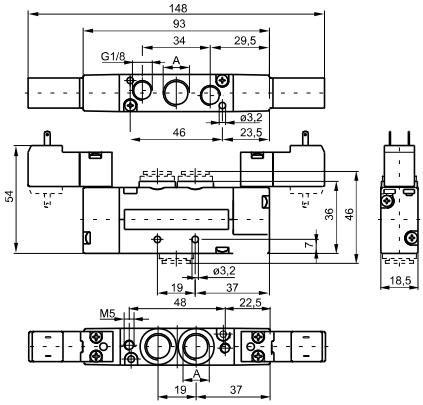
Solenoid - Solenoid 2 x 3/2

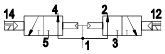
Coding: 241Ⓐ.62.Ⓕ.35.Ⓣ

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Maximum piloting pressure (bar)	≥1,5+(0,2xInlet pressure)
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with Δp=1 (Nl/min)	450
Orifice size (mm)	7

Ⓐ	WORKING PORTS SIZE
	1 = G1/4"
	5 = G1/8"
	6 = Quick fitting tube Ø6
	8 = Quick fitting tube Ø8
Ⓕ	FUNCTION
	44 = 2 Coils 3/2 NC
	45 = 1 Coil 3/2 NC (14) + 1 Coil 3/2 NO (12)
	55 = 2 Coils 3/2 NO
	54 = 1 Coil 3/2 NO (14) + 1 Coil 3/2 NC (12)
Ⓣ	VOLTAGE
	01 = 12V DC
	02 = 24V DC
	05 = 24V AC
	06 = 110V AC
	07 = 230 V AC
	08 = 24V DC 1 Watt
	09 = 24V DC downward
	11 = 12V DC downward
	12 = 24V DC downward
	15 = 24V AC downward
	16 = 110V AC downward
	17 = 230 V AC downward
	18 = 24V DC 1 Watt downward
	19 = 24V DC Earth faston downward

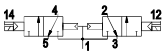
*Example: if inlet pressure is set at 5bar then pilot pressure must be at least Pp=1,5+(0.2*5)=2,5bar*

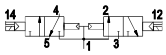


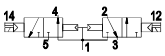


For dimension "A" see ordering code

Weight 250 g







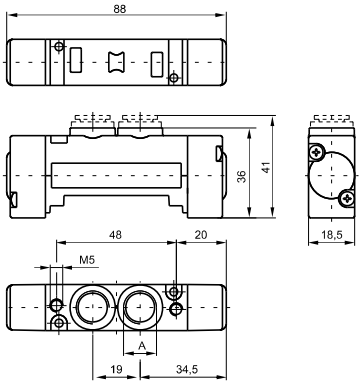
Pneumatic - Spring

Coding: 243Ⓐ.52.00.19

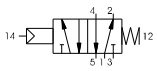
Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Maximum piloting pressure (bar)	2
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with Δp=1 (Nl/min)	800
Orifice size (mm)	7
Pilot ports size	M5

	WORKING PORTS SIZE
Ⓐ	**1** = G1/4"
	5 = G1/8"
	6 = Quick fitting tube Ø6
	8 = Quick fitting tube Ø8

Weight 105 g



For dimension "A" see ordering code



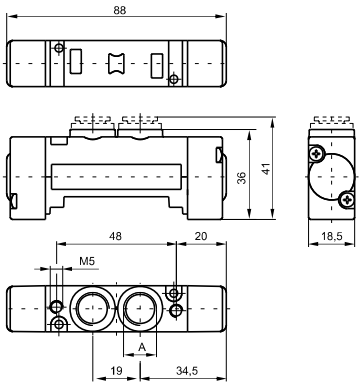
Pneumatic - Differential

Coding: 243Ⓐ.52.00.16

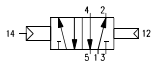
Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Maximum piloting pressure (bar)	2
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with Δp=1 (Nl/min)	800
Orifice size (mm)	7
Pilot ports size	M5

	WORKING PORTS SIZE
Ⓐ	**1** = G1/4"
	5 = G1/8"
	6 = Quick fitting tube Ø6
	8 = Quick fitting tube Ø8

Weight 105 g



For dimension "A" see ordering code



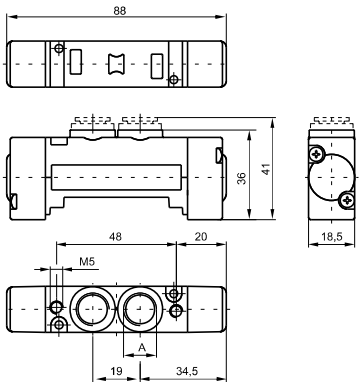
Pneumatic - Differential (External)

Coding: 243Ⓐ.52.00.17

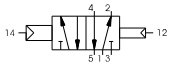
Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Maximum piloting pressure (bar)	2
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with Δp=1 (Nl/min)	800
Orifice size (mm)	7
Pilot ports size	M5

	WORKING PORTS SIZE
Ⓐ	**1** = G1/4"
	5 = G1/8"
	6 = Quick fitting tube Ø6
	8 = Quick fitting tube Ø8

Weight 105 g



For dimension "A" see ordering code

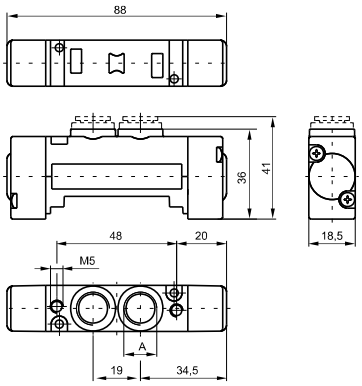


Pneumatic - Pneumatic

Coding: 243Ⓐ.52.00.18

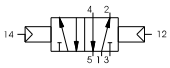
Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Maximum piloting pressure (bar)	1.5
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with Δp=1 (Nl/min)	800
Orifice size (mm)	7
Pilot ports size	M5

	WORKING PORTS SIZE
Ⓐ	**1** = G1/4"
	5 = G1/8"
	6 = Quick fitting tube Ø6
	8 = Quick fitting tube Ø8



Weight 105 g

For dimension "A" see ordering code

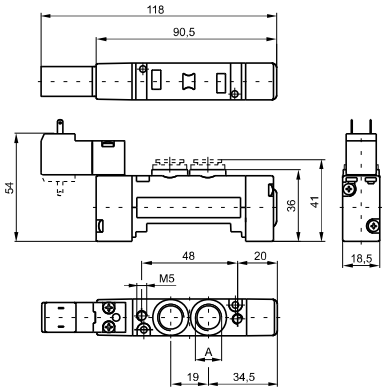


Solenoid-Spring / Differential

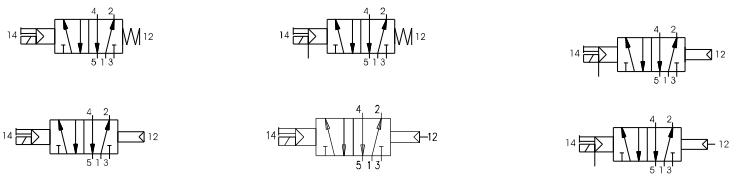
Coding: 243Ⓐ.52.00.Ⓥ.Ⓣ

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Maximum piloting pressure (bar)	2
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with Δp=1 (Nl/min)	800
Orifice size (mm)	7
Pilot ports size	M5

Ⓐ	WORKING PORTS SIZE
	1 = G1/4"
	5 = G1/8"
	6 = Quick fitting tube Ø6
	8 = Quick fitting tube Ø8
Ⓥ	VERSION
	39 = Solenoid - Spring
	29 = Solenoid external-Spring
	36 = Solenoid-Differerential
	37 = Solenoid-Differential external
	26 = Solenoid external-Differerential
	27 = Solenoid external-Differential external
Ⓣ	VOLTAGE
	01 = 12V DC
	02 = 24V DC
	05 = 24V AC
	06 = 110V AC
	07 = 230 V AC
	08 = 24V DC 1W
	09 = 24V DC downward
	11 = 12V DC downward
	12 = 24V DC downward
	15 = 24V AC downward
	16 = 110V AC downward
	17 = 230 V AC downward
	18 = 24V DC 1W downward
	19 = 24V DC Earth faston downward



For dimension "A" see ordering code



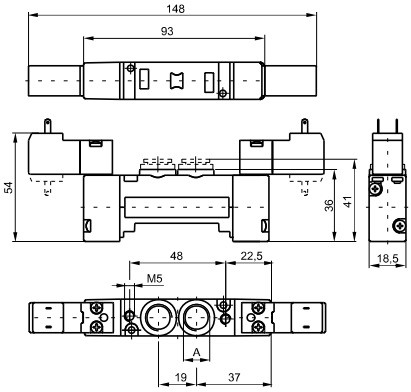
Weight 140 g

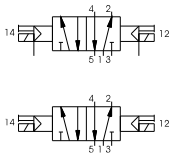
Solenoid - Solenoid

Coding: 243Ⓐ.52.00.Ⓥ.Ⓣ

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Maximum piloting pressure (bar)	1.5
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with Δp=1 (Nl/min)	800
Orifice size (mm)	7
Pilot ports size	M5

Ⓐ	WORKING PORTS SIZE
	1 = G1/4"
	5 = G1/8"
	6 = Quick fitting tube Ø6
	8 = Quick fitting tube Ø8
Ⓥ	VERSION
	35 = Solenoid-Solenoid
	24 = Solenoid external-Solenoid external
Ⓣ	VOLTAGE
	01 = 12V DC
	02 = 24V DC
	05 = 24V AC
	06 = 110V AC
	07 = 230 V AC
	08 = 24V DC 1W
	09 = 24V DC downward
	11 = 12V DC downward
	12 = 24V DC downward
	15 = 24V AC downward
	16 = 110V AC downward
	17 = 230 V AC downward
	18 = 24V DC 1W downward
	19 = 24V DC Earth faston downward





Weight 175 g

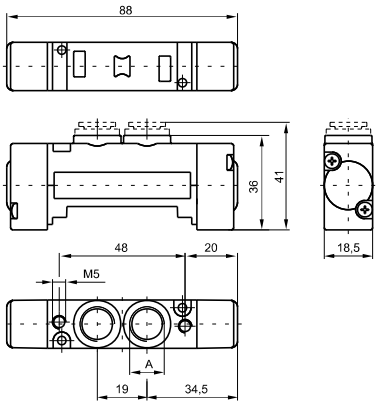
For dimension "A" see ordering code

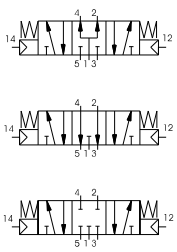
Pneumatic - Pneumatic 5 ways 3 connections

Coding: 243Ⓐ.53.Ⓕ.18

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Maximum piloting pressure (bar)	3
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with Δp=1 (Nl/min)	650
Orifice size (mm)	7
Pilot ports size	M5

Ⓐ	WORKING PORTS SIZE
	1 = G1/4"
	5 = G1/8"
	6 = Quick fitting tube Ø6
	8 = Quick fitting tube Ø8
Ⓕ	FUNCTION
	31 = Closed centres
	32 = Open centres
	33 = Pressured centres





Weight 115 g

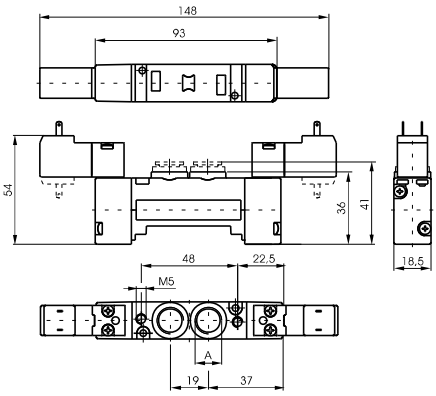
For dimension "A" see ordering code

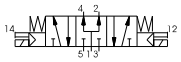
Solenoid - Solenoid 5/3

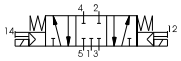
Coding: 243Ⓐ.53.Ⓕ.Ⓥ.Ⓣ

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Maximum piloting pressure (bar)	3
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with Δp=1 (Nl/min)	650
Orifice size (mm)	7
Pilot ports size	M5

Ⓐ	WORKING PORTS SIZE
	1 = G1/4"
	5 = G1/8"
	6 = Quick fitting tube Ø6
	8 = Quick fitting tube Ø8
Ⓕ	FUNCTION
	31 = Closed centres
	32 = Open centres
	33 = Pressured centres
Ⓥ	VERSION
	24 = Solenoid external-Solenoid external
	35 = Solenoid-Solenoid
Ⓣ	VOLTAGE
	01 = 12V DC
	02 = 24V DC
	05 = 24V AC
	06 = 110V AC
	07 = 230 V AC
	08 = 24V DC 1W
	09 = 24V DC downward
	11 = 12V DC downward
	12 = 24V DC downward
	15 = 24V AC downward
	16 = 110V AC downward
	17 = 230 V AC downward
	18 = 24V DC 1W downward
	19 = 24V DC Earth faston downward







Weight 185 g

For dimension "A" see ordering code

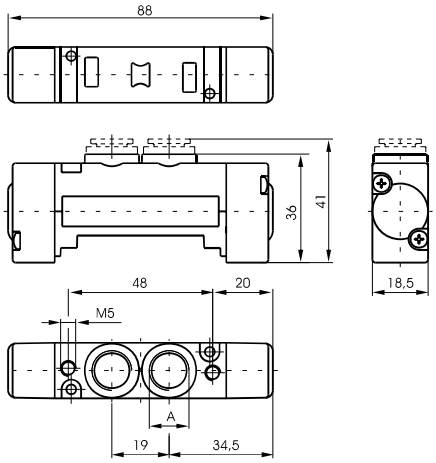
Pneumatic-Pneumatic 2 x 3/2

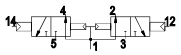
Coding: 243Ⓐ.62.Ⓕ.18

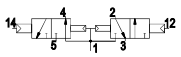
Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Maximum piloting pressure (bar)	≥1,5+(0,2xInlet pressure)
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with Δp=1 (Nl/min)	450
Orifice size (mm)	7

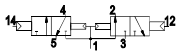
*Example: if inlet pressure is set at 5bar then pilot pressure must be at least Pp=1,5+(0.2*5)=2,5bar*

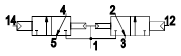
Ⓐ	WORKING PORTS SIZE
	1 = G1/4"
	5 = G1/8"
	6 = Quick fitting tube Ø6
	8 = Quick fitting tube Ø8
Ⓕ	FUNCTION
	44 = 2 Coils 3/2 NC
	45 = 1 Coil 3/2 NC (14) + 1 Coil 3/2 NO (12)
	55 = 2 Coils 3/2 NO
	54 = 1 Coil 3/2 NO (14) + 1 Coil 3/2 NC (12)











Weight 110 g

For dimension "A" see ordering code

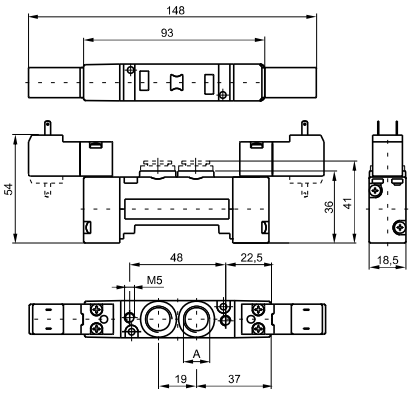
Solenoid - Solenoid 2 x 3/2

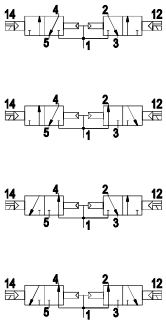
Coding: 243Ⓐ.62.Ⓕ.35.Ⓣ

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max working pressure (bar)	10
Maximum piloting pressure (bar)	≥1,5+(0,2xInlet pressure)
Temperature °C	-5 ÷ +50
Flow rate at 6 bar with Δp=1 (Nl/min)	450
Orifice size (mm)	7

*Example: if inlet pressure is set at 5bar then pilot pressure must be at least Pp=1,5+(0.2*5)=2,5bar*

Ⓐ	WORKING PORTS SIZE
	1 = G1/4"
	5 = G1/8"
	6 = Quick fitting tube Ø6
	8 = Quick fitting tube Ø8
Ⓕ	FUNCTION
	44 = 2 Coils 3/2 NC
	45 = 1 Coil 3/2 NC (14) + 1 Coil 3/2 NO (12)
	55 = 2 Coils 3/2 NO
	54 = 1 Coil 3/2 NO (14) + 1 Coil 3/2 NC (12)
Ⓣ	VOLTAGE
	01 = 12V DC
	02 = 24V DC
	05 = 24V AC
	06 = 110V AC
	07 = 230 V AC
	08 = 24V DC 1 Watt
	09 = 24V DC downward
	11 = 12V DC downward
	12 = 24V DC downward
	15 = 24V AC downward
	16 = 110V AC downward
	17 = 230 V AC downward
	18 = 24V DC 1 Watt downward
	19 = 24V DC Earth faston downward





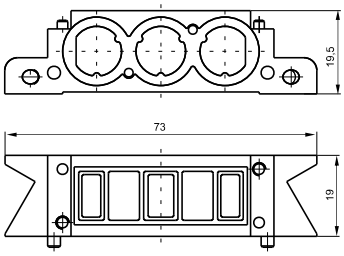
Weight 190 g

For dimension "A" see ordering code

Modular base

Coding: 2430.Ⓥ

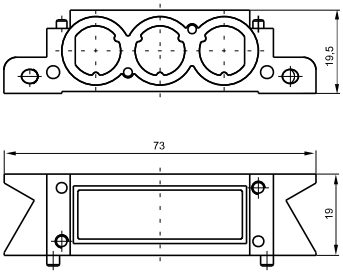
	VERSION
Ⓥ	**01** = Modular base
	06 = Supply and exhaust closed
	07 = Supply closed
	08 = Exhaust closed



Weight 85 g

Blanck base

Coding: 2430.05

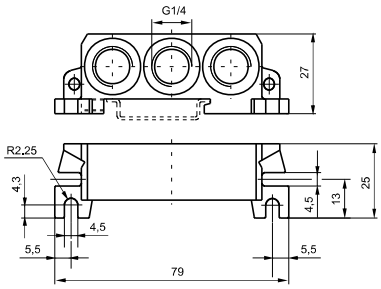


Weight 85 g

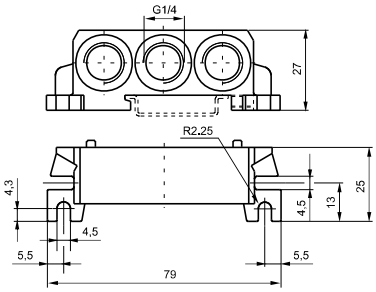
Inlet base

Coding: 2430.Ⓥ

	VERSION
Ⓥ	**02** = Right
	03 = Left



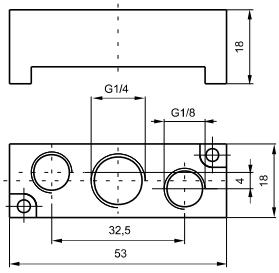
Weight 120 g



Weight 125 g

Intermediate air intake

Coding: 2430.10



Weight 30 g
to be assembled instead of a valve