Series 2100

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 2100 series comprises a range of products classified according to the body size of 10 mm divided into 3 types "LINE", "FLAT" and "BASE".
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	Technopolymer
Spool seals	Oil resistant nitrile rubber-HNBR
Springs	AISI 302 stainless steel
Operators	Technopolymer
Pistons	Aluminium 2011
Spools	Aluminium 2011

Ordering codes for minature solenoid valves

The 10 mm. miniature solenoid valve with 0,7 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 depending on the application.

Codes are as follows:

Coil upward code

01 = miniature sol. + 12 V DC 90°conn. with LED
21 = miniature sol. + 12 V DC line conn. with LED
02 = miniature sol. + 24 V DC 90°conn. with LED
22 = miniature sol. + 24 V DC line conn. with LED

Coil downward code

11 = miniature sol. + 12 V DC 90°conn. with LED
31 = miniature sol. + 12 V DC line conn. with LED
12 = miniature sol. + 24 V DC 90°conn. with LED
32 = miniature sol. + 24 V DC line conn. with LED
91 = miniature sol. + 12 V DC for integral electrical connections
92 = miniature sol. + 24 V DC for integral electrical connections

Miniature solenoid c UL us homologated are available (see Series 300).

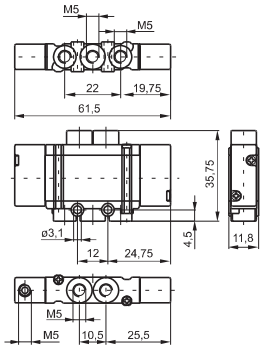
Use and maintenance

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.
Seals kits are available for repairs.
Repairs must be made exclusively by specialized personnel.

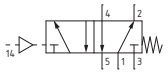
Pneumatic - Spring

Coding: 2115.52.00.19

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max. working pressure (bar)	7
Temperature °C	-5 ... +50
Flow rate at 6 bar with Δp=1 (Nl/min)	150
Orifice size (mm)	2.5
Working ports size	M5



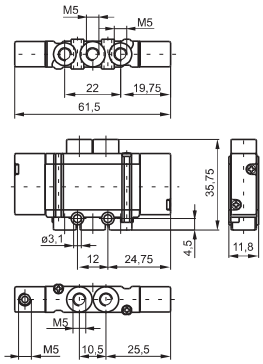
Weight 30 g
Minimum pilot pressure 2 bar



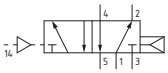
Pneumatic-Differential

Coding: 2115.52.00.16

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max. working pressure (bar)	7
Temperature °C	-5 ... +50
Flow rate at 6 bar with Δp=1 (Nl/min)	150
Orifice size (mm)	2.5
Working ports size	M5



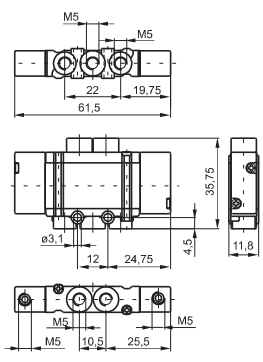
Weight 28 g
Minimum pilot pressure 2 bar



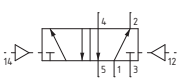
Pneumatic - Pneumatic

Coding: 2115.52.00.18

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max. working pressure (bar)	7
Temperature °C	-5 ... +50
Flow rate at 6 bar with Δp=1 (Nl/min)	150
Orifice size (mm)	2.5
Working ports size	M5



Weight 30 g
Minimum pilot pressure 2 bar

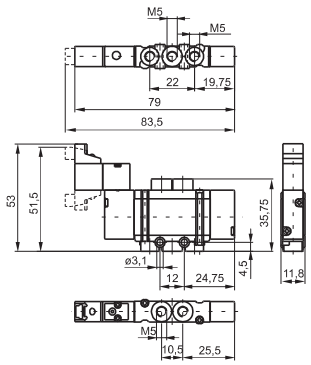


Solenoid - Spring

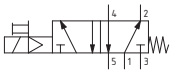
Coding: 2115.52.00.39.Ⓣ

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max. working pressure (bar)	7
Temperature °C	-5 ... +50
Flow rate at 6 bar with Δp=1 (Nl/min)	150
Orifice size (mm)	2.5
Working ports size	M5

	VOLTAGE
Ⓣ	**01** = + 12 V DC 90° conn. with LED
	21 = + 12 V DC line conn. with LED
	02 = + 24 V DC 90° conn. with LED
	22 = + 24 V DC line conn. with LED
	11 = + 12 V DC 90° conn. with LED downward
	31 = + 12 V DC line conn. with LED downward
	12 = + 24 V DC 90° conn. with LED downward
	32 = + 24 V DC line conn. with LED downward



Weight 42 g
Minimum pilot pressure 2 bar

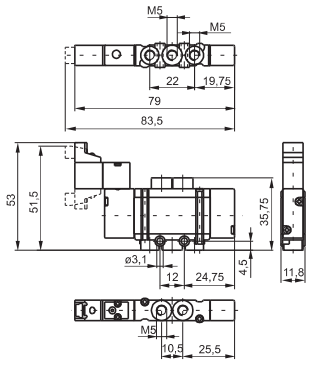


Solenoid - Differential

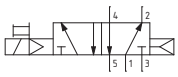
Coding: 2115.52.00.36.Ⓣ

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max. working pressure (bar)	7
Temperature °C	-5 ... +50
Flow rate at 6 bar with Δp=1 (Nl/min)	150
Orifice size (mm)	2.5
Working ports size	M5

	VOLTAGE
Ⓣ	**01** = + 12 V DC 90° conn. with LED
	21 = + 12 V DC line conn. with LED
	02 = + 24 V DC 90° conn. with LED
	22 = + 24 V DC line conn. with LED
	11 = + 12 V DC 90° conn. with LED downward
	31 = + 12 V DC line conn. with LED downward
	12 = + 24 V DC 90° conn. with LED downward
	32 = + 24 V DC line conn. with LED downward



Weight 42 g
Minimum pilot pressure 2 bar

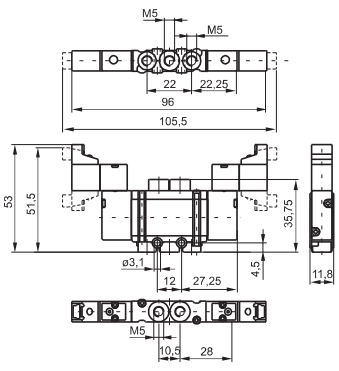


Solenoid - Solenoid

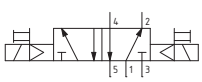
Coding: 2115.52.00.35.Ⓣ

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max. working pressure (bar)	7
Temperature °C	-5 ... +50
Flow rate at 6 bar with Δp=1 (Nl/min)	150
Orifice size (mm)	2.5
Working ports size	M5

	VOLTAGE
Ⓣ	**01** = + 12 V DC 90° conn. with LED
	21 = + 12 V DC line conn. with LED
	02 = + 24 V DC 90° conn. with LED
	22 = + 24 V DC line conn. with LED
	11 = + 12 V DC 90° conn. with LED downward
	31 = + 12 V DC line conn. with LED downward
	12 = + 24 V DC 90° conn. with LED downward
	32 = + 24 V DC line conn. with LED downward



Weight 52 g
Minimum pilot pressure 2 bar

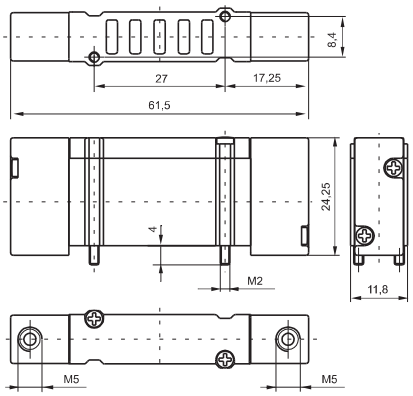


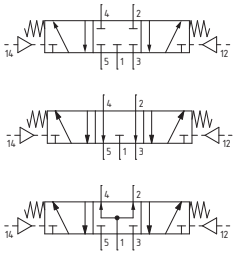
Pneumatic - Pneumatic 5/3

Coding: 2115.53.Ⓕ.18

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max. working pressure (bar)	7
Temperature °C	-5 ... +50
Flow rate at 6 bar with Δp=1 (Nl/min)	180 (Pressured centres) 130 (Closed centres) 140 (Open centres)
Orifice size (mm)	2.5
Working ports size	M5

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





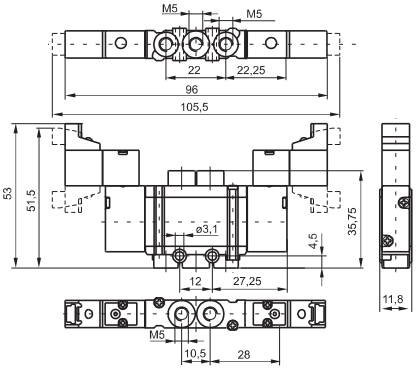
Weight 32 g
Minimum pilot pressure 2,5 bar

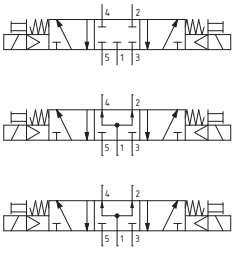
Solenoid - Solenoid 5/3

Coding: 2115.53.Ⓕ.35.Ⓣ

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max. working pressure (bar)	7
Temperature °C	-5 ... +50
Flow rate at 6 bar with Δp=1 (Nl/min)	180 (Pressured centres) 130 (Closed centres) 140 (Open centres)
Orifice size (mm)	2.5
Working ports size	M5

	FUNCTION
Ⓕ	**31** = Closed centres
	32 = Open centres
	33 = Pressured centres
	VOLTAGE
Ⓣ	**01** = + 12 V DC 90° conn. with LED
	21 = + 12 V DC line conn. with LED
	02 = + 24 V DC 90° conn. with LED
	22 = + 24 V DC line conn. with LED
	11 = + 12 V DC 90° conn. with LED downward
	31 = + 12 V DC line conn. with LED downward
	12 = + 24 V DC 90° conn. with LED downward
	32 = + 24 V DC line conn. with LED downward



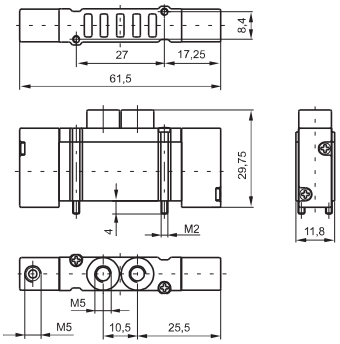


Weight 54 g
Minimum pilot pressure 2,5 bar

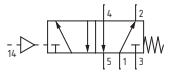
Pneumatic - Spring

Coding: 2135.52.00.19

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max. working pressure (bar)	7
Temperature °C	-5 ... +50
Flow rate at 6 bar with Δp=1 (Nl/min)	150
Orifice size (mm)	2.5
Working ports size	M5



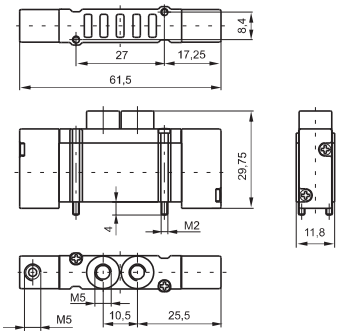
Weight 32 g
Minimum pilot pressure 2 bar



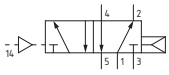
Pneumatic-Differential

Coding: 2135.52.00.16

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max. working pressure (bar)	7
Temperature °C	-5 ... +50
Flow rate at 6 bar with Δp=1 (Nl/min)	150
Orifice size (mm)	2.5
Working ports size	M5



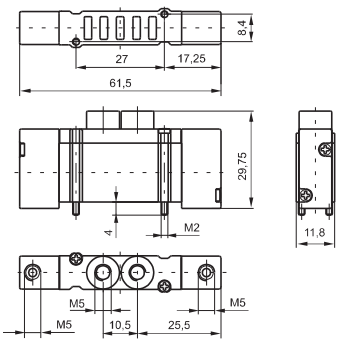
Weight 30 g
Minimum pilot pressure 2 bar



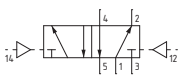
Pneumatic - Pneumatic

Coding: 2135.52.00.18

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max. working pressure (bar)	7
Temperature °C	-5 ... +50
Flow rate at 6 bar with Δp=1 (Nl/min)	150
Orifice size (mm)	2.5
Working ports size	M5



Weight 32 g
Minimum pilot pressure 2 bar

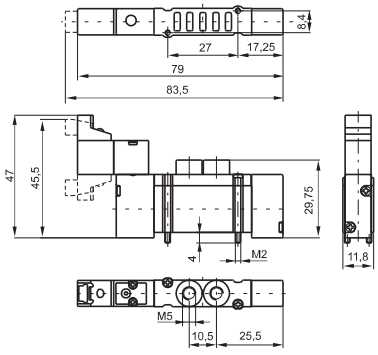


Solenoid - Spring

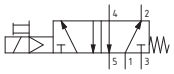
Coding: 2135.52.00.39.Ⓣ

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max. working pressure (bar)	7
Temperature °C	-5 ... +50
Flow rate at 6 bar with Δp=1 (Nl/min)	150
Orifice size (mm)	2.5
Working ports size	M5

	VOLTAGE
Ⓣ	**01** = + 12 V DC 90° conn. with LED
	21 = + 12 V DC line conn. with LED
	02 = + 24 V DC 90° conn. with LED
	22 = + 24 V DC line conn. with LED
	11 = + 12 V DC 90° conn. with LED downward
	31 = + 12 V DC line conn. with LED downward
	12 = + 24 V DC 90° conn. with LED downward
	32 = + 24 V DC line conn. with LED downward
	91 = + 12 V DC for integral electrical connections downward
	92 = + 24 V DC for integral electrical connections downward



Weight 38 g
Minimum pilot pressure 2 bar

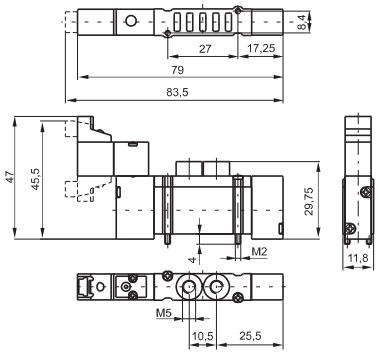


Solenoid - Differential

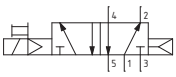
Coding: 2135.52.00.36.Ⓣ

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max. working pressure (bar)	7
Temperature °C	-5 ... +50
Flow rate at 6 bar with Δp=1 (Nl/min)	150
Orifice size (mm)	2.5
Working ports size	M5

	VOLTAGE
Ⓣ	**01** = + 12 V DC 90° conn. with LED
	21 = + 12 V DC line conn. with LED
	02 = + 24 V DC 90° conn. with LED
	22 = + 24 V DC line conn. with LED
	11 = + 12 V DC 90° conn. with LED downward
	31 = + 12 V DC line conn. with LED downward
	12 = + 24 V DC 90° conn. with LED downward
	32 = + 24 V DC line conn. with LED downward
	91 = + 12 V DC for integral electrical connections downward
	92 = + 24 V DC for integral electrical connections downward



Weight 38 g
Minimum pilot pressure 2 bar

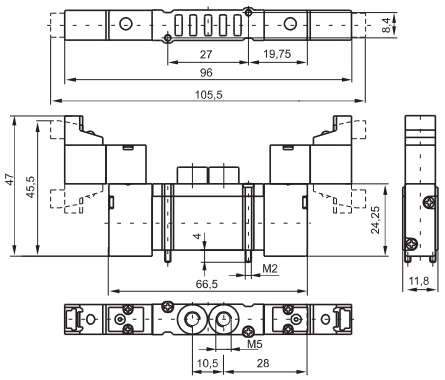


Solenoid - Solenoid

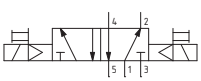
Coding: 2135.52.00.35.Ⓣ

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max. working pressure (bar)	7
Temperature °C	-5 ... +50
Flow rate at 6 bar with Δp=1 (Nl/min)	150
Orifice size (mm)	2.5
Working ports size	M5

	VOLTAGE
Ⓣ	**01** = + 12 V DC 90° conn. with LED
	21 = + 12 V DC line conn. with LED
	02 = + 24 V DC 90° conn. with LED
	22 = + 24 V DC line conn. with LED
	11 = + 12 V DC 90° conn. with LED downward
	31 = + 12 V DC line conn. with LED downward
	12 = + 24 V DC 90° conn. with LED downward
	32 = + 24 V DC line conn. with LED downward
	91 = + 12 V DC for integral electrical connections downward
	92 = + 24 V DC for integral electrical connections downward



Weight 50 g
Minimum pilot pressure 1,5 bar

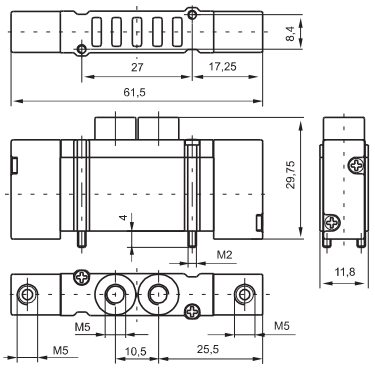


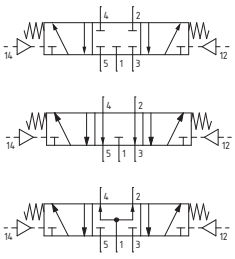
Pneumatic - Pneumatic 5/3

Coding: 2135.53.Ⓕ.18

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max. working pressure (bar)	7
Temperature °C	-5 ... +50
Flow rate at 6 bar with Δp=1 (Nl/min)	180 (Pressured centres) 130 (Closed centres) 140 (Open centres)
Orifice size (mm)	2.5
Working ports size	M5

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





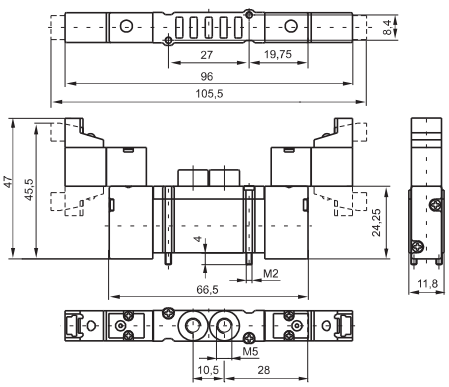
Weight 28 g
Minimum pilot pressure 2 bar

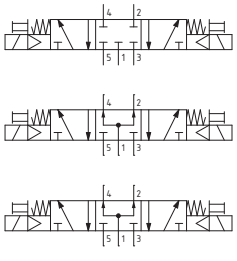
Solenoid - Solenoid 5/3

Coding: 2135.53.Ⓕ.35.Ⓣ

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max. working pressure (bar)	7
Temperature °C	-5 ... +50
Flow rate at 6 bar with Δp=1 (Nl/min)	180 (Pressured centres) 130 (Closed centres) 140 (Open centres)
Orifice size (mm)	2.5
Working ports size	M5

Ⓕ	FUNCTION
	31 = Closed centres
	32 = Open centres
	33 = Pressured centres
Ⓣ	VOLTAGE
	01 = + 12 V DC 90° conn. with LED
	21 = + 12 V DC line conn. with LED
	02 = + 24 V DC 90° conn. with LED
	22 = + 24 V DC line conn. with LED
	11 = + 12 V DC 90° conn. with LED downward
	31 = + 12 V DC line conn. with LED downward
	12 = + 24 V DC 90° conn. with LED downward
	32 = + 24 V DC line conn. with LED downward
	91 = + 12 V DC for integral electrical connections downward
	92 = + 24 V DC for integral electrical connections downward



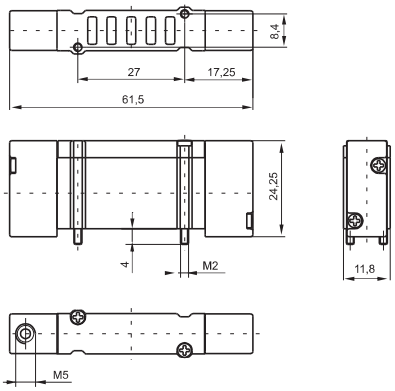


Weight 52 g
Minimum pilot pressure 2,5 bar

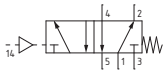
Pneumatic - Spring

Coding: 2141.52.00.19

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max. working pressure (bar)	7
Temperature °C	-5 ... +50
Flow rate at 6 bar with Δp=1 (Nl/min)	150
Orifice size (mm)	2.5
Working ports size	M5



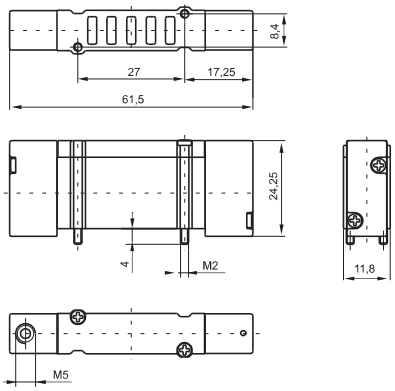
Weight 24 g
Minimum pilot pressure 2 bar



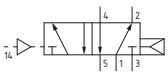
Pneumatic-Differential

Coding: 2141.52.00.16

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max. working pressure (bar)	7
Temperature °C	-5 ... +50
Flow rate at 6 bar with Δp=1 (Nl/min)	150
Orifice size (mm)	2.5
Working ports size	M5



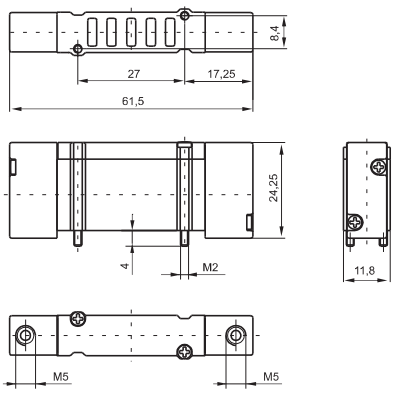
Weight 22 g
Minimum pilot pressure 2 bar



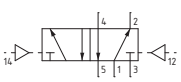
Pneumatic - Pneumatic

Coding: 2141.52.00.18

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max. working pressure (bar)	7
Temperature °C	-5 ... +50
Flow rate at 6 bar with Δp=1 (Nl/min)	150
Orifice size (mm)	2.5
Working ports size	M5



Weight 26 g
Minimum pilot pressure 1,5 bar

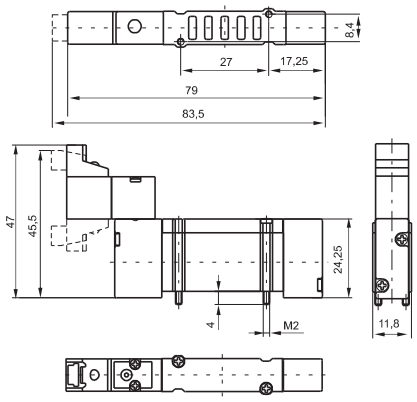


Solenoid - Spring

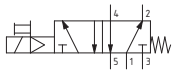
Coding: 2141.52.00.39.Ⓣ

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max. working pressure (bar)	7
Temperature °C	-5 ... +50
Flow rate at 6 bar with Δp=1 (Nl/min)	150
Orifice size (mm)	2.5
Working ports size	M5

Ⓣ	VOLTAGE
	01 = + 12 V DC 90° conn. with LED
	21 = + 12 V DC line conn. with LED
	02 = + 24 V DC 90° conn. with LED
	22 = + 24 V DC line conn. with LED
	11 = + 12 V DC 90° conn. with LED downward
	31 = + 12 V DC line conn. with LED downward
	12 = + 24 V DC 90° conn. with LED downward
	32 = + 24 V DC line conn. with LED downward
	91 = + 12 V DC for integral electrical connections downward
	92 = + 24 V DC for integral electrical connections downward



Weight 38 g
Minimum pilot pressure 2 bar

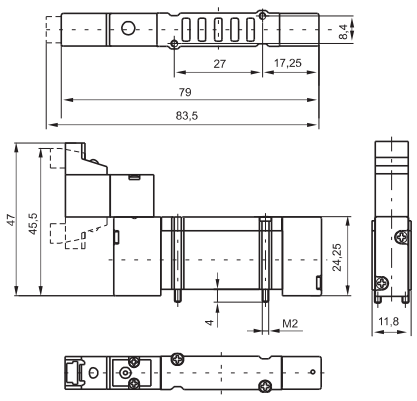


Solenoid - Differential

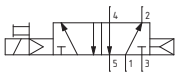
Coding: 2141.52.00.36.Ⓣ

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max. working pressure (bar)	7
Temperature °C	-5 ... +50
Flow rate at 6 bar with Δp=1 (Nl/min)	150
Orifice size (mm)	2.5
Working ports size	M5

Ⓣ	VOLTAGE
	01 = + 12 V DC 90° conn. with LED
	21 = + 12 V DC line conn. with LED
	02 = + 24 V DC 90° conn. with LED
	22 = + 24 V DC line conn. with LED
	11 = + 12 V DC 90° conn. with LED downward
	31 = + 12 V DC line conn. with LED downward
	12 = + 24 V DC 90° conn. with LED downward
	32 = + 24 V DC line conn. with LED downward
	91 = + 12 V DC for integral electrical connections downward
	92 = + 24 V DC for integral electrical connections downward



Weight 38 g
Minimum pilot pressure 2 bar

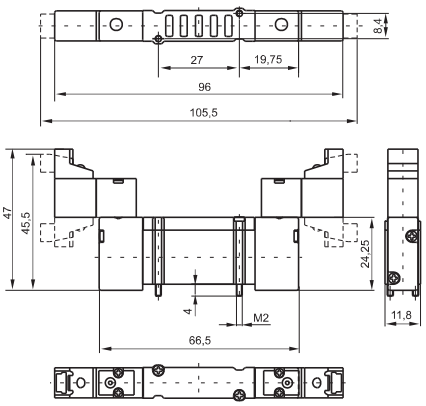


Solenoid - Solenoid

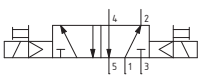
Coding: 2141.52.00.35.Ⓣ

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max. working pressure (bar)	7
Temperature °C	-5 ... +50
Flow rate at 6 bar with Δp=1 (Nl/min)	150
Orifice size (mm)	2.5
Working ports size	M5

Ⓣ	VOLTAGE
	01 = + 12 V DC 90° conn. with LED
	21 = + 12 V DC line conn. with LED
	02 = + 24 V DC 90° conn. with LED
	22 = + 24 V DC line conn. with LED
	11 = + 12 V DC 90° conn. with LED downward
	31 = + 12 V DC line conn. with LED downward
	12 = + 24 V DC 90° conn. with LED downward
	32 = + 24 V DC line conn. with LED downward
	91 = + 12 V DC for integral electrical connections downward
	92 = + 24 V DC for integral electrical connections downward



Weight 48 g
Minimum pilot pressure 1,5 bar

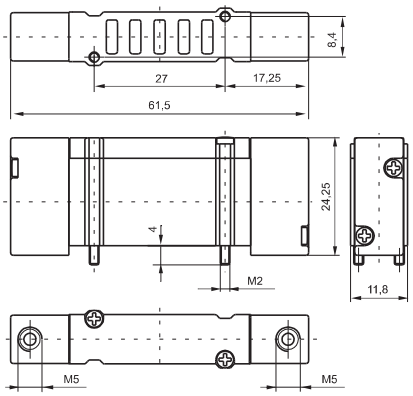


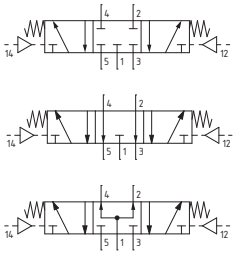
Pneumatic - Pneumatic 5/3

Coding: 2141.53.Ⓕ.18

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max. working pressure (bar)	7
Temperature °C	-5 ... +50
Flow rate at 6 bar with Δp=1 (Nl/min)	180 (Pressured centres) 130 (Closed centres) 140 (Open centres)
Orifice size (mm)	2.5
Working ports size	M5

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





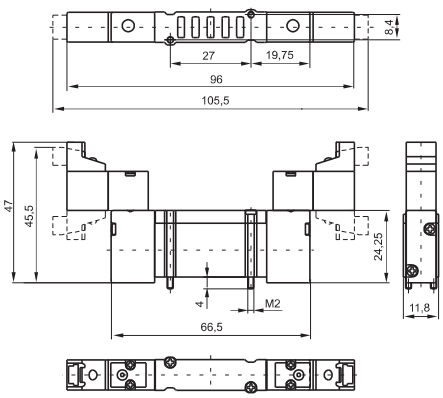
Weight 28 g
Minimum pilot pressure 2,5 bar

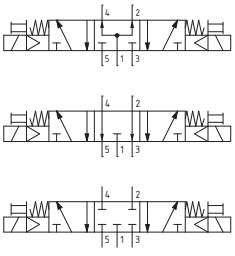
Solenoid - Solenoid 5/3

Coding: 2141.53.Ⓕ.35.Ⓣ

Operational characteristics	
Fluid	Filtered air. No lubrication needed, if applied it shall be continuous
Max. working pressure (bar)	7
Temperature °C	-5 ... +50
Flow rate at 6 bar with Δp=1 (Nl/min)	180 (Pressured centres) 130 (Closed centres) 140 (Open centres)
Orifice size (mm)	2.5
Working ports size	M5

	FUNCTION
Ⓕ	**31** = Closed centres
	32 = Open centres
	33 = Pressured centres
Ⓣ	VOLTAGE
	01 = + 12 V DC 90° conn. with LED
	21 = + 12 V DC line conn. with LED
	02 = + 24 V DC 90° conn. with LED
	22 = + 24 V DC line conn. with LED
	11 = + 12 V DC 90° conn. with LED downward
	31 = + 12 V DC line conn. with LED downward
	12 = + 24 V DC 90° conn. with LED downward
	32 = + 24 V DC line conn. with LED downward
	91 = + 12 V DC for integral electrical connections downward
	92 = + 24 V DC for integral electrical connections downward



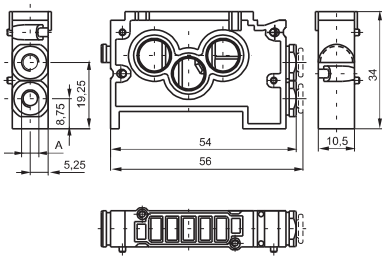


Weight 52 g
Minimum pilot pressure 2,5 bar

Modular base for "BASE" version

Coding: 214Ⓥ.01

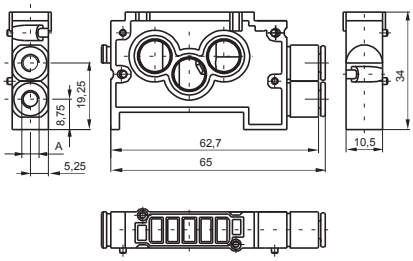
Ⓥ	VERSION
	0 = modular BASE without cartridges
	4 = modular base c/w with 4mm tube cartridges
	5 = modular base c/w with M5 cartridges
	7 = modular base c/w with M7x1 cartridges



Weight 22 g

Modular BASE c/w with 6mm tube cartridges

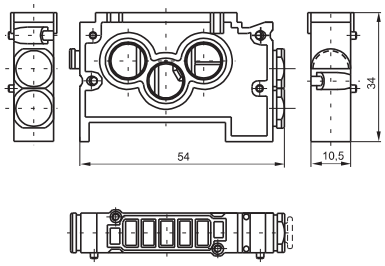
Coding: 2146.01



Weight 22 g

Modular base for "FLAT" version

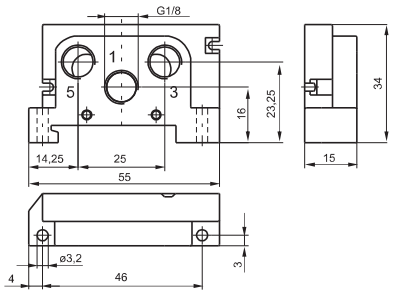
Coding: 2130.01



Weight 28 g

Right inlet base

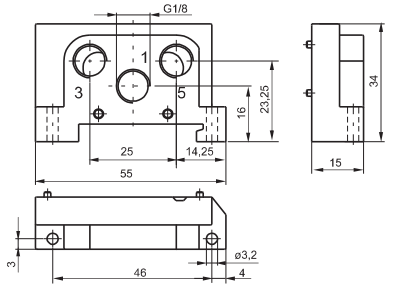
Coding: 2140.02



Weight 18 g

Left inlet base

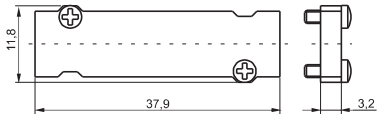
Coding: 2140.03



Weight 18 g

Closing plate

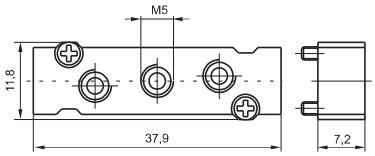
Coding: 2130.00



Weight 7 g

Intermediate air intake

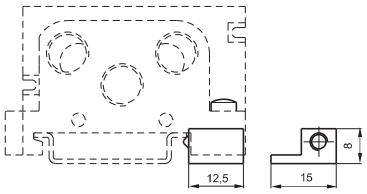
Coding: 2130.10



Weight 12 g
to be assembled instead of a valve

DIN rail adapter

Coding: 2130.16



Weight 6 g

Modular base cartridge

Coding: 2100.Ⓥ

Ⓥ	VERSION
	031M = Ø4 tube cartridge
	033M = M5 cartridges
	034M = M7x1 cartridges
	035M = lock cartridge
	036M = Ø4 tube cartridge

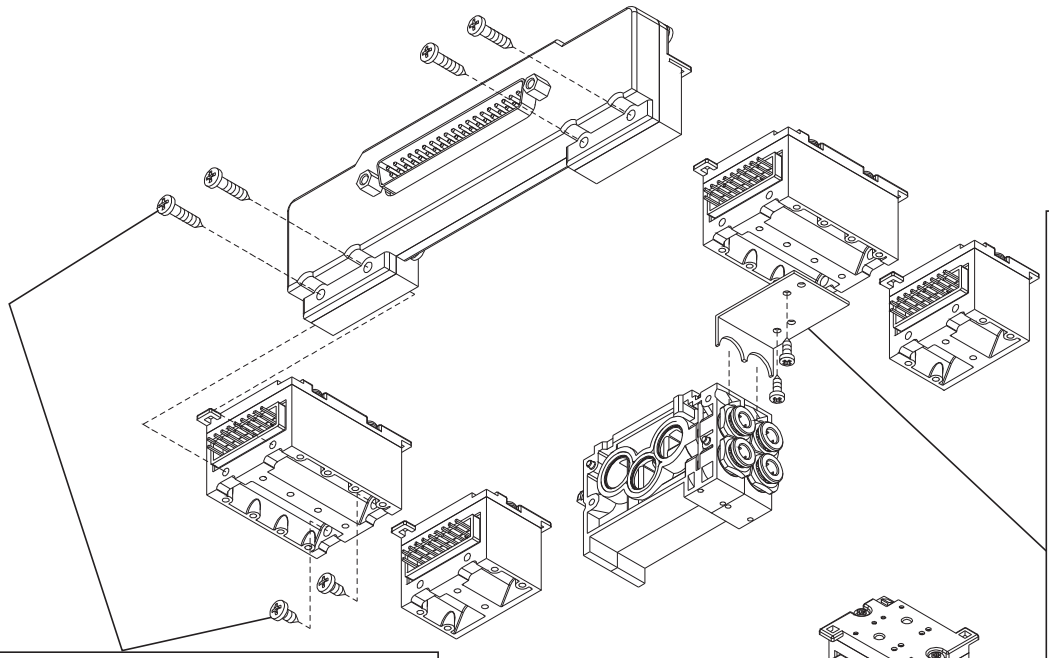
Weight 5 g

Diaphragm plug

Coding: 2130.17

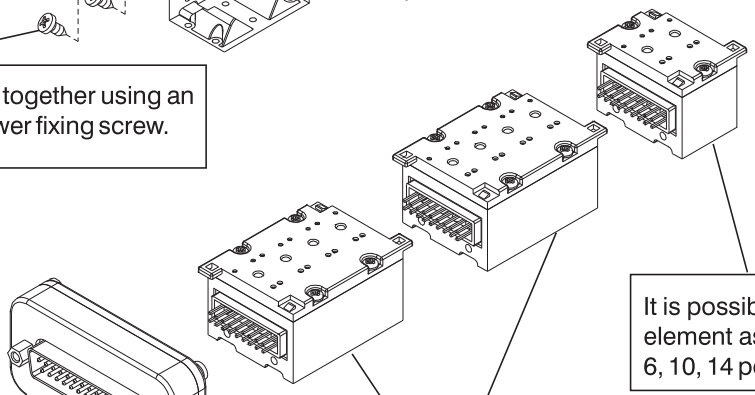
Weight 6 g

The integral electrical design for the series 2100 valve is extremely flexible, allowing the production of pre-wired solenoid valve manifolds, the configuration of which can be determined at the point of assembly. The 24 VDC, 12 VDC (equivalent PNP) modules are available with 2 or 4 positions. The system assembled is designed for an IP40 - IP65 protection.
Coil type 91 or 92 is required for the multipin electrical connection (see valve ordering codes).

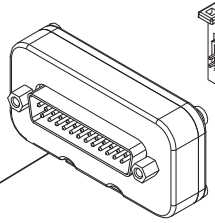


Support plates are supplied to mount the electrical connection elements to the manifold modules. Individual valves can still be removed from the manifold even after assembly is complete. One support plate is required per element.

The elements connect together using an upper coupling and lower fixing screw.

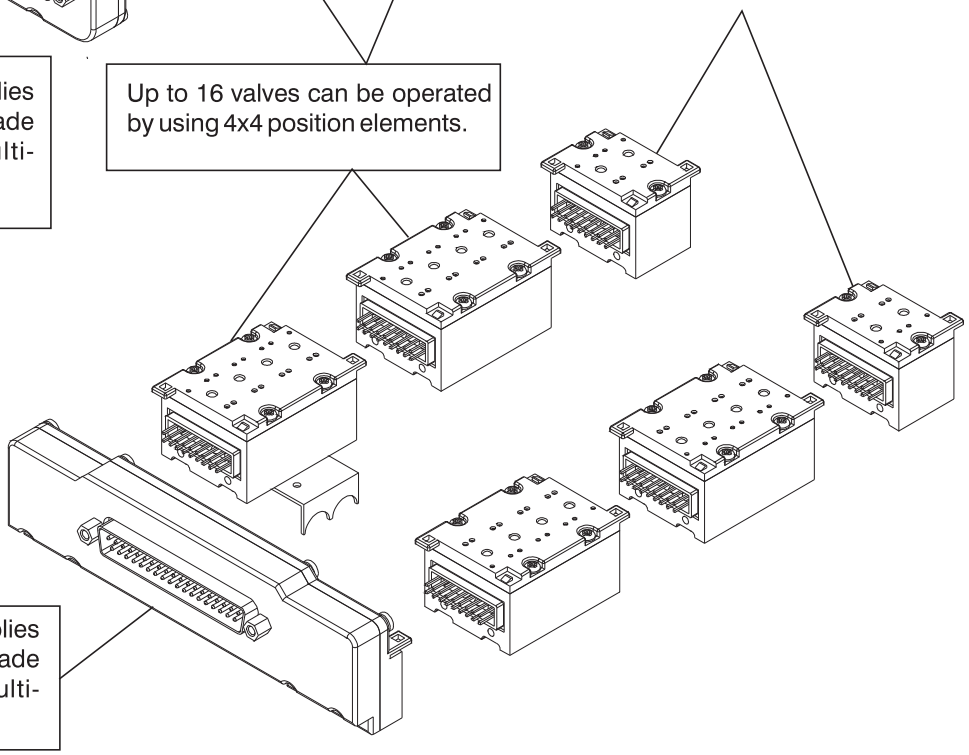


It is possible to use the 2 position element as the first terminal on 2, 6, 10, 14 position assemblies.



On single solenoid assemblies electrical connection is made using an D-SUB 25 multi-connector.

Up to 16 valves can be operated by using 4x4 position elements.



On double solenoid assemblies electrical connection is made usinfg an D-SUB 37 multi-connector.

Module for connections, 2 positions

Coding: 2100.02.Ⓥ

	VERSION
Ⓥ	**00** = Left IP40-PNP
	02 = Left IP40-PNP with protection diode
	10 = Left IP65-PNP
	12 = Left IP65-PNP with protection diode
	01 = Right IP40-PNP
	03 = Right IP40-PNP with protection diode
	11 = Right IP65-PNP
	13 = Right IP65-PNP with protection diode

Weight 35 g
Note: with protection diode only direct current (V DC) is available

Module for connections, 4 positions

Coding: 2100.04.Ⓥ

	VERSION
Ⓥ	**00** = Left IP40-PNP
	02 = Left IP40-PNP with protection diode
	10 = Left IP65-PNP
	12 = Left IP65-PNP with protection diode
	01 = Right IP40-PNP
	03 = Right IP40-PNP with protection diode
	11 = Right IP65-PNP
	13 = Right IP65-PNP with protection diode

Weight 35 g
Note: with protection diode only direct current (V DC) is available

Connectors 25 poles

Coding: 2100.25.10

Weight 40 g
The IP65 protection is obtained by IP65 Pneumax cable

Connectors 37 poles

Coding: 2100.37.10

Weight 120 g
The IP65 protection is obtained by IP65 Pneumax cable

Plug

Coding: 2100.00

Weight 4 g

FLAT support plate

Coding: 2130.50

Weight 5 g

In line cable complete with connector, IP40

Coding: 2400.Ⓒ.Ⓛ.00

	CONNECTOR
Ⓒ	**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.Ⓛ.Ⓒ

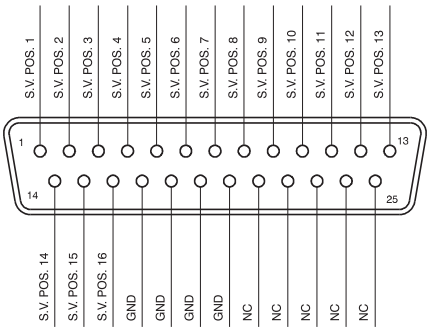
	CABLE LENGTH
Ⓛ	**03** = 3 meters
	05 = 5 meters
	10 = 10 meters
	CONNECTOR
Ⓒ	**10** = Stand alone
	90 = 90° Angle

Cable complete with connector, 37 Poles, IP65

Coding: 2400.37.Ⓛ.Ⓒ

	CABLE LENGTH
Ⓛ	**03** = 3 meters
	05 = 5 meters
	10 = 10 meters
	CONNECTOR
Ⓒ	**10** = Stand alone
	90 = 90° Angle

SUB-D 25 POLES CONNECTOR



SUB-D 37 POLES CONNECTOR