



## General

The 2000 series solenoid valves have 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 series comprises a range of products classified according to type, size and performance. There are three main sizes, 10mm., 18 mm. and 26 mm., with each size further divided into 3 types "LINE", "FLAT" and "VDMA" or "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

	2100	2400	2600
Central body	Extruded aluminium bar with chemical nickel treatment and PTFE (polytetrafluorethylene)		
Connection plates	Technopolymer	Zincalloy	Die-cast aluminium
Operators	Technopolymer		
Spool	Aluminium 2011		
Piston seals	Oil resistant nitrile rubber - NBR		
Spool seals	Oil resistant nitrile rubber - HNBR		
Springs	Stainless steel AISI 302		
Piston	Aluminium 2011	Technopolymer	

## Use and maintenance

The average life of the 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 miniature solenoid valves

### Series 2100

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 VDC 90°conn. with led  
 21 = miniature sol. 12 VDC line conn. with led  
 02 = miniature sol. 24 VDC 90°conn. with led  
 22 = miniature sol. 24 VDC line conn. with led

#### Coil downward code

11 = miniature sol. 12 VDC 90° conn. with led  
 31 = miniature sol. 12 VDC line conn. with led  
 12 = miniature sol. 24 VDC 90°conn. with led  
 32 = miniature sol. 24 VDC line conn. with led  
 91 = miniature sol. 12 VDC for integral electrical connections  
 92 = miniature sol. 24 VDC for integral electrical connections

### Series 2400/2600

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 depending on the application.

Codes are as follows :

#### Coil upward code

01 = miniature sol. 12 VDC  
 02 = miniature sol. 24 VDC  
 05 = miniature sol. 24 VAC  
 06 = miniature sol. 110 VAC  
 07 = miniature sol. 220 VAC  
 08 = miniature sol. 24 VDC 1W  
 09 = miniature sol. 24 VDC Earth faston

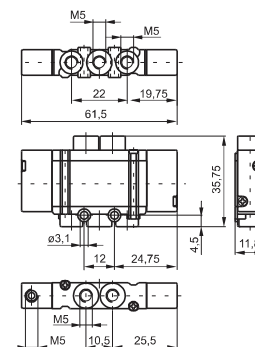
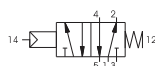
#### Coil downward code

11 = miniature sol. 12 VDC  
 12 = miniature sol. 24 VDC  
 15 = miniature sol. 24 VAC  
 16 = miniature sol. 110 VAC  
 17 = miniature sol. 220 VAC  
 18 = miniature sol. 24 VDC 1W Downward  
 19 = miniature sol. 24 VDC Earth faston Downward

Miniature solenoid  homologated are available (see Series 300).

## Pneumatic - Spring

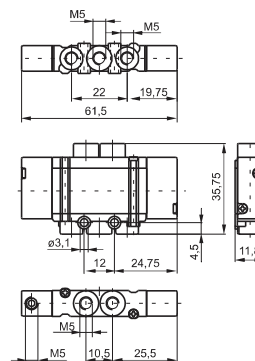
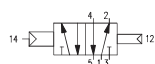
Ordering code

**2115.52.00.19**

Weight gr. 30  
Minimum piloting pressure 2 bar

**Operational characteristic**

Fluid	Max working pressure (bar)	Temperature °C	Flow rate at 6 bar with $\Delta p=1$ (NI/min)	Orifice size (mm)	Working ports size
Filtered and lubricated air or not	7 bar	Min. -5°C Max. +50°C	250 NI/min	mm 2,5	M5

## Pneumatic - Differential

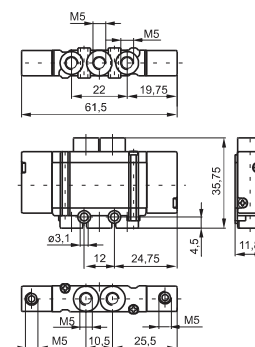
Ordering code

**2115.52.00.16**

Weight gr. 28  
Minimum piloting pressure 2 bar

**Operational characteristic**

Fluid	Max working pressure (bar)	Temperature °C	Flow rate at 6 bar with $\Delta p=1$ (NI/min)	Orifice size (mm)	Working ports size
Filtered and lubricated air or not	7 bar	Min. -5°C Max. +50°C	250 NI/min	mm 2,5	M5


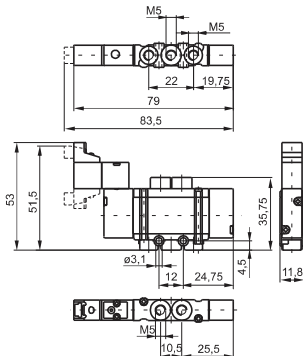

## Pneumatic - Pneumatic




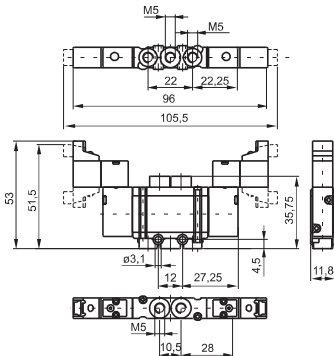

Ordering code

**2115.52.00.18**

Weight gr. 30  
Minimum piloting pressure 2 bar

**Operational characteristic**

Fluid	Max working pressure (bar)	Temperature °C	Flow rate at 6 bar with $\Delta p=1$ (NI/min)	Orifice size (mm)	Working ports size
Filtered and lubricated air or not	7 bar	Min. -5°C Max. +50°C	250 NI/min	mm 2,5	M5

Miniature solenoid - Spring / Miniature solenoid - Differential							
Ordering code							
2115.52.00. <b>P.V</b>							
<b>P</b>	PILOTING						
	39 = Solenoid - Spring						
	36 = Solenoid - Differential						
	COIL VOLTAGE						
<b>V</b>	01=12 VDC 90°conn. with led						
	21=12 VDC line conn. with led						
	02=24 VDC 90°conn. with led						
	22=24 VDC line conn. with led						
	11=12 VDC 90°conn. with led downward						
	31=12 VDC line conn. with led downward						
12=24 VDC 90° conn. with led downward							
32=24 VDC line conn. with led downward							
<div><div></div><div></div></div>							
<div><div>Weight gr. 42 Minimum working pressure 2 bar</div><div></div><div>Weight gr. 40 Minimum operating pressure 2 bar</div></div>							
Operational characteristic	Fluid	Max working pressure (bar)	Temperature °C		Flow rate at 6 bar with Δp=1 (NI/min)	Orifice size (mm)	Working ports size
	Filtered and lubricated air or not	7 bar	Min. -5°C	Max. +50°C	250 NI/min	mm 2,5	M5

Miniature solenoid - Miniature solenoid							
Ordering code							
2115.52.00.35. 							
	COIL VOLTAGE						
	01=12 VDC 90°conn. With led						
	21=12 VDC line conn. with led						
	02=24 VDC 90°conn. with led						
	22=24 VDC line conn. with led						
	11=12 VDC 90°conn. with led downward						
	31=12 VDC line conn. with led downward						
	12=24 VDC 90° conn. with led						
	12=24 VDC 90° conn. whit led						
32=24 VDC line conn. with led downward							
							
							
							
Weight gr. 52 Minimum working pressure 2 bar							
Operational characteristic	Fluid	Max working pressure (bar)	Temperature °C		Flow rate at 6 bar with Δp=1 (NI/min)	Orifice size (mm)	Working ports size
	Filtered and lubricated air or not	7 bar	Min. -5°C	Max. +50°C	250 NI/min	mm 2,5	M5

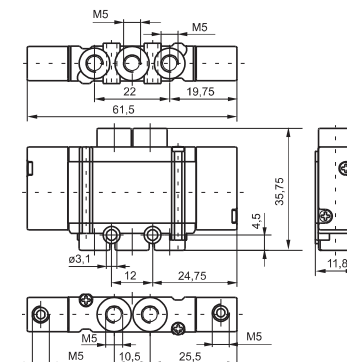
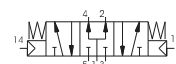
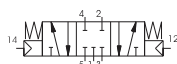
## Pneumatic - Pneumatic

Ordering code

**2115.53.F.18**

## FUNCTION

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


Weight gr. 32  
Minimum working pressure 2,5 bar


## Operational characteristic

Fluid	Max working pressure (bar)	Temperature °C	Flow rate at 6 bar with $\Delta p=1$ (Nl/min)	Orifice size (mm)	Working ports size
Filtered and lubricated air or not	7 bar	Min. -5°C Max. +50°C	180 Nl/min	mm 2,5	M5

## Miniature solenoid - Miniature solenoid

Ordering code

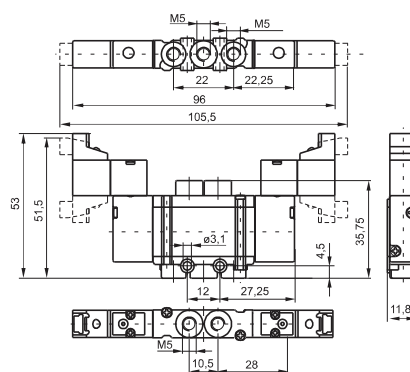
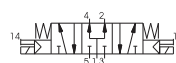
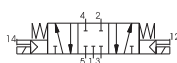
**2115.53.F.35.V**

## FUNCTION

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

## COIL VOLTAGE

- V**
- 01=12 VDC 90° conn. with led
  - 21=12 VDC line conn. with led
  - 02=24 VDC 90° conn. with led
  - 22=24 VDC line conn. with led
  - 11=12 VDC conn.90° led
  - 11=12 VDC 90° conn. whit led
  - 31=12 VDC line conn. with led downward
  - 12=24 VDC 90° conn. with led downward
  - 32=24 VDC line conn. with led downward


Weight gr. 54  
Minimum working pressure 2,5 bar



## Operational characteristic

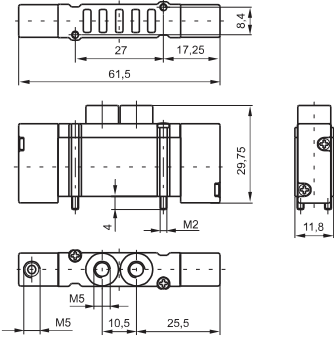
Fluid	Max working pressure (bar)	Temperature °C	Flow rate at 6 bar with $\Delta p=1$ (Nl/min)	Orifice size (mm)	Working ports size
Filtered and lubricated air or not	7 bar	Min. -5°C Max. +50°C	180 Nl/min	mm 2,5	M5

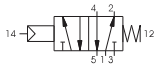
Pneumatic - Spring

Ordering code

2135.52.00.19







Weight gr. 32


Minimum piloting pressure 2 bar

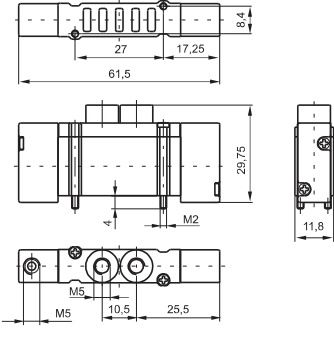
Operational characteristic	Fluid	Max working pressure (bar)	Temperature °C		Flow rate at 6 bar with Δp=1 (NI/min)	Orifice size (mm)	Working ports size
	Filtered and lubricated air or not	7 bar	Min. -5°C	Max. +50°C	250 NI/min	mm 2,5	M5

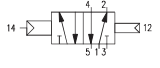
Pneumatic - Differential

Ordering code

2135.52.00.16







Weight gr. 30


Minimum piloting pressure 2 bar

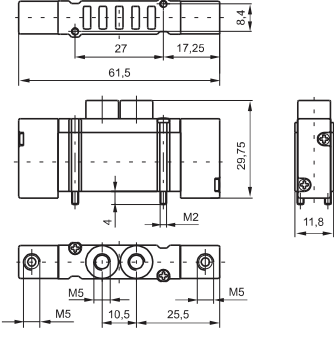
Operational characteristic	Fluid	Max working pressure (bar)	Temperature °C		Flow rate at 6 bar with Δp=1 (NI/min)	Orifice size (mm)	Working ports size
	Filtered and lubricated air or not	7 bar	Min. -5°C	Max. +50°C	250 NI/min	mm 2,5	M5


Pneumatic - Pneumatic

Ordering code

2135.52.00.18







Weight gr. 32

Minimum piloting pressure 2,5 bar

Operational characteristic	Fluid	Max working pressure (bar)	Temperature °C		Flow rate at 6 bar with Δp=1 (NI/min)	Orifice size (mm)	Working ports size
	Filtered and lubricated air or not	7 bar	Min. -5°C	Max. +50°C	250 NI/min	mm 2,5	M5

## Miniature solenoid - Spring / Miniature solenoid - Differential

Ordering code

**2135.52.00.P.V**

### PILOTING

39 = Solenoid - Spring

36 = Solenoid - Differential

### COIL VOLTAGE

01=12 VDC 90°conn. with led

21=12 VDC line conn. with led

02=24 VDC 90°conn. with led

22=24 VDC line conn. with led

11=12 VDC 90°conn. with led  
downward

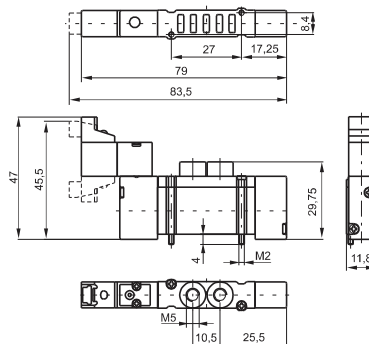
31=12 VDC line conn. with led  
downward

12=24 VDC 90° conn. with led  
downward

32=24 VDC line conn. with led  
downward

91=12 VDC for integral electrical  
connections downward

92=24 VDC for integral electrical  
connections downward



Weight gr. 38  
Minimum working pressure 2 bar



Weight gr. 36  
Minimum operating pressure 2 bar

### Operational characteristic

Fluid	Max working pressure (bar)	Temperature °C	Flow rate at 6 bar with $\Delta p=1$ (Nl/min)	Orifice size (mm)	Working ports size
Filtered and lubricated air or not	7 bar	Min. -5°C Max. +50°C	250 Nl/min	mm 2,5	M5

## Miniature solenoid - Miniature solenoid

Ordering code

**2135.52.00.35.V**

### COIL VOLTAGE

01=12 VDC 90°conn. with led

21=12 VDC line conn. with led

02=24 VDC 90°conn. with led

22=24 VDC line conn. with led

11=12 VDC 90°conn. with led  
downward

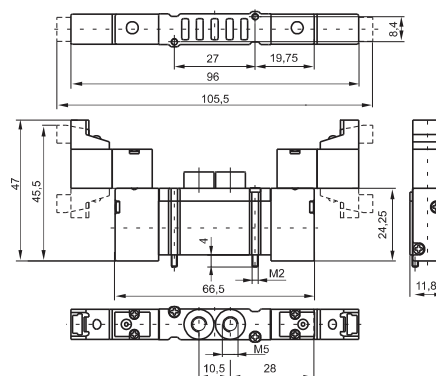
31=12 VDC line conn. with led  
downward

12=24 VDC 90°conn. with led  
downward

32=24 VDC line conn. with led  
downward

91=12 VDC for integral electrical  
connections downward

92=24 VDC for integral electrical  
connections downward



Weight gr. 50  
Minimum working pressure 1,5 bar



### Operational characteristic

Fluid	Max working pressure (bar)	Temperature °C	Flow rate at 6 bar with $\Delta p=1$ (Nl/min)	Orifice size (mm)	Working ports size
Filtered and lubricated air or not	7 bar	Min. -5°C Max. +50°C	250 Nl/min	mm 2,5	M5



Pneumatic - Pneumatic

Ordering code


2135.53.F.18

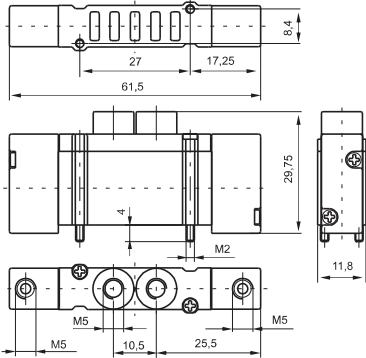
FUNCTION

F31 = Closed centres

32 = Open centres

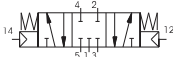
33 = Pressured centres

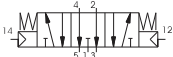


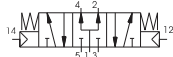


Weight gr. 28

Minimum working pressure 2 bar







For dimension "A" see ordering code

Operational characteristic	Fluid	Max working pressure (bar)	Temperature °C		Flow rate at 6 bar with Δp=1 (NI/min)	Orifice size (mm)	Working ports size
	Filtered and lubricated air or not	7 bar	Min. -5°C	Max. +50°C	180 NI/min	mm 2,5	M5

Miniature solenoid - Miniature solenoid

Ordering code

2135.53.F.35.V

FUNCTION

F31 = Closed centres

32 = Open centres

33 = Pressured centres

COIL VOLTAGE

01=12 VDC 90°conn. with led

21=12 VDC line conn. with led

02=24 VDC 90°conn. with led

22=24 VDC line conn. with led

11=12 VDC 90°conn. with led downward


V31=12 VDC line conn. with led downward

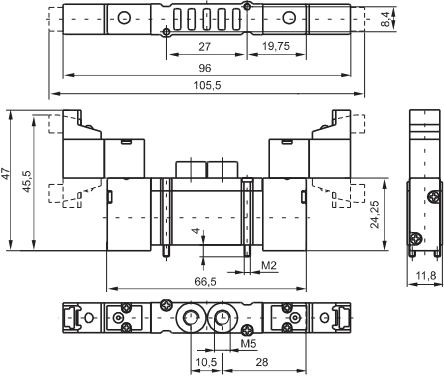
12=24 VDC 90° conn. with led downward

32=24 VDC line conn. with led downward

91=12 VDC for integral electrical connections downward

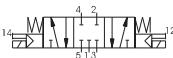
92=24 VDC for integral electrical connections downward




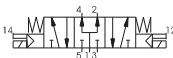


Weight gr. 52

Minimum operating pressure 2,5 bar







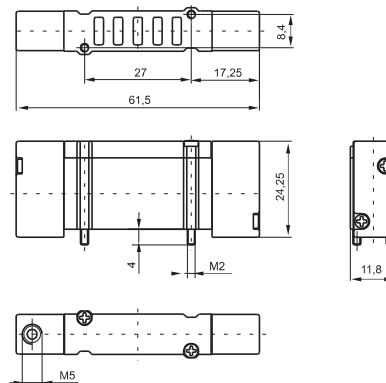
For dimension "A" see ordering code

Operational characteristic	Fluid	Max working pressure (bar)	Temperature °C		Flow rate at 6 bar with Δp=1 (NI/min)	Orifice size (mm)	Working ports size
	Filtered and lubricated air or not	7 bar	Min. -5°C	Max. +50°C	180 NI/min	mm 2,5	M5

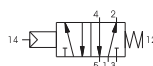
**Pneumatic - Spring**

Ordering code

**2141.52.00.19**



Weight gr. 24  
Minimum piloting pressure 2 bar



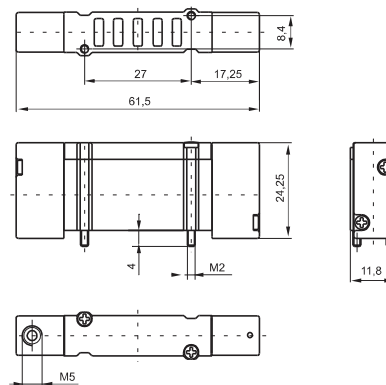
**Operational characteristic**

Fluid	Max working pressure (bar)	Temperature °C	Flow rate at 6 bar with $\Delta p=1$ (NI/min)	Orifice size (mm)
Filtered and lubricated air or not	7 bar	Min. -5°C Max. +50°C	250 NI/min	mm 2,5

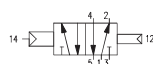
**Pneumatic - Differential**

Ordering code

**2141.52.00.16**



Weight gr. 22  
Minimum piloting pressure 2 bar



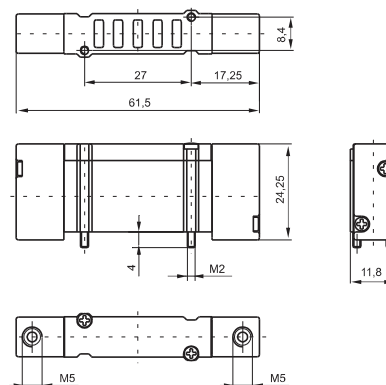
**Operational characteristic**

Fluid	Max working pressure (bar)	Temperature °C	Flow rate at 6 bar with $\Delta p=1$ (NI/min)	Orifice size (mm)
Filtered and lubricated air or not	7 bar	Min. -5°C Max. +50°C	250 NI/min	mm 2,5

**Pneumatic - Pneumatic**

Ordering code

**2141.52.00.18**




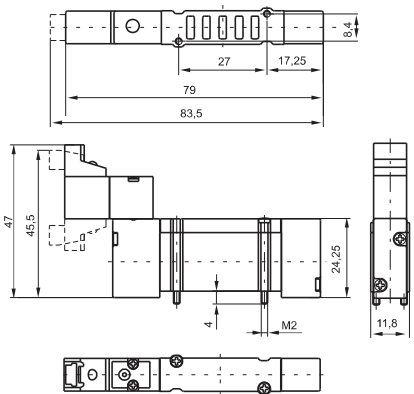
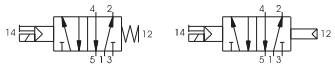
Weight gr. 26  
Minimum piloting pressure 1,5 bar


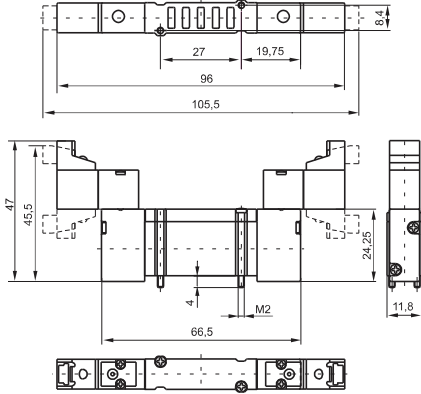



**Operational characteristic**

Fluid	Max working pressure (bar)	Temperature °C	Flow rate at 6 bar with $\Delta p=1$ (NI/min)	Orifice size (mm)
Filtered and lubricated air or not	7 bar	Min. -5°C Max. +50°C	250 NI/min	mm 2,5



Miniature solenoid - Spring / Miniature solenoid - Differential						
Ordering code						
2141.52.00.P.V						
P	PILOTING					
	39 = Solenoid - Spring 36 = Solenoid - Differential					
V	COIL VOLTAGE					
	01=12 VDC 90°conn. with led					
	21=12 VDC line conn. with led					
	02=24 VDC 90°conn. with led					
	22=24 VDC line conn. with led					
	11=12 VDC 90°conn. with led downward					
	31=12 VDC line conn. with led downward					
	12=24 VDC 90° conn. with led downward					
	32=24 VDC line conn. with led downward					
	91=12 VDC for integral electrical connections downward					
	92=24 VDC for integral electrical connections downward					
<div><div></div><div></div></div>						
<div><div>Weight gr. 38 Minimum working pressure 2 bar</div><div></div><div>Weight gr. 36 Minimum working pressure 2 bar</div></div>						
Operational characteristic	Fluid	Max working pressure (bar)	Temperature °C		Flow rate at 6 bar with Δp=1 (Nl/min)	Orifice size (mm)
	Filtered and lubricated air or not	7 bar	Min. -5°C	Max. +50°C	250 Nl/min	mm 2,5

Miniature solenoid - Miniature solenoid						
Ordering code						
2141.52.00.35.V						
V	COIL VOLTAGE					
	01=12 VDC 90°conn. with led					
	21=12 VDC line conn. with led					
	02=24 VDC 90°conn. with led					
	22=24 VDC line conn. with led					
	11=12 VDC 90°conn. with led downward					
	31=12 VDC line conn. with led downward					
	12=24 VDC 90° conn. with led downward					
	32=24 VDC line conn. with led downward					
	91=12 VDC for integral electrical connections downward					
92=24 VDC for integral electrical connections downward						
<div></div>						
<div></div>						
<div></div>						
Weight gr. 48 Minimum working pressure 1,5 bar						
Operational characteristic	Fluid	Max working pressure (bar)	Temperature °C		Flow rate at 6 bar with Δp=1 (Nl/min)	Orifice size (mm)
	Filtered and lubricated air or not	7 bar	Min. -5°C	Max. +50°C	250 Nl/min	mm 2,5

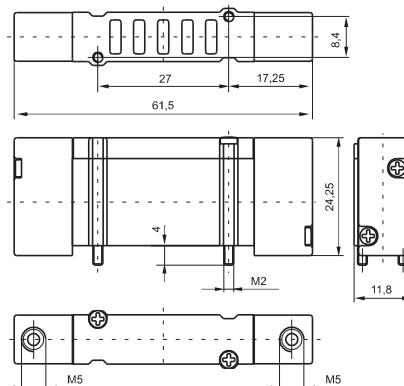
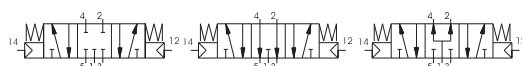
## Pneumatic - Pneumatic

Ordering code

**2141.53.F.18**

## FUNCTION

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


Weight gr. 28  
Minimum working pressure 2 bar


## Operational characteristic

Fluid	Max working pressure (bar)	Temperature °C	Flow rate at 6 bar with $\Delta p=1$ (NI/min)	Orifice size (mm)
Filtered and lubricated air or not	7 bar	Min. -5°C Max. +50°C	180 NI/min	mm 2,5

## Miniature solenoid - Miniature solenoid

Ordering code

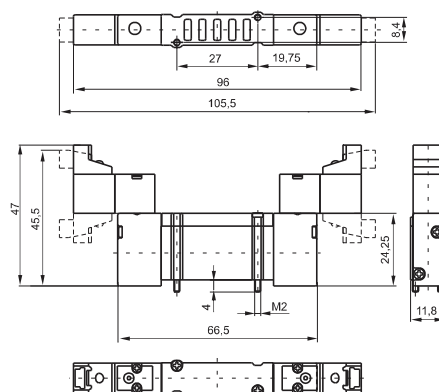
**2141.53.F.35.V**

## FUNCTION

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

## COIL VOLTAGE

- V**
- 01=12 VDC 90° conn. with led
  - 21=12 VDC line conn. with led
  - 02=24 VDC 90° conn. with led
  - 22=24 VDC line conn. with led
  - 11=12 VDC 90° conn. with led downward
  - 31=12 VDC line conn. with led downward
  - 12=24 VDC 90° conn. with led downward
  - 32=24 VDC line conn. with led downward
  - 91=12 VDC for integral electrical connections downward
  - 92=24 VDC for integral electrical connections downward


Weight gr. 52  
Minimum working pressure 2,5 bar


## Operational characteristic

Fluid	Max working pressure (bar)	Temperature °C	Flow rate at 6 bar with $\Delta p=1$ (NI/min)	Orifice size (mm)
Filtered and lubricated air or not	7 bar	Min. -5°C Max. +50°C	180 NI/min	mm 2,5



Modular base for "BASE" version

Ordering code

**2140.01**

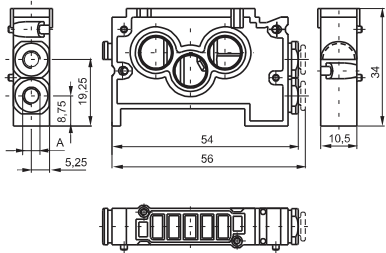
TYPE

0 = modular BASE without cartridges

**T** 4 = modular BASE c/w with 4mm tube cartridges

5 = modular BASE c/w with M5 cartridges

Weight gr. 22

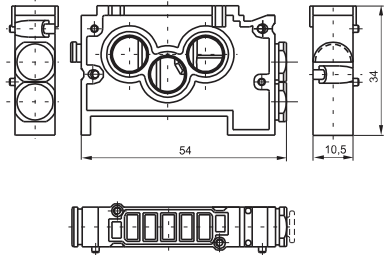


Modular base for "FLAT" version

Ordering code

**2130.01**

Weight gr. 28

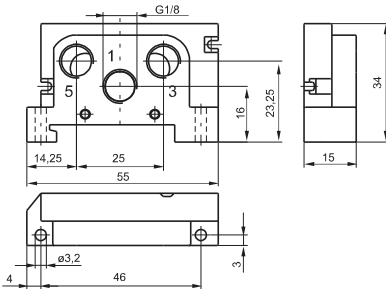


Right inlet base

Ordering code

**2140.02**

Weight gr. 18

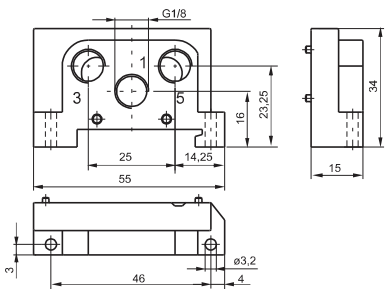


Left inlet base

Ordering code

**2140.03**

Weight gr. 18

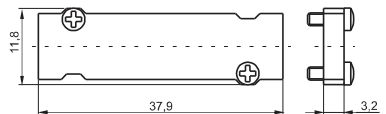


Closing plate

Ordering code

**2130.00**

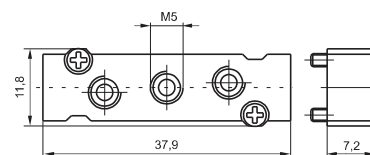
Weight gr. 7



### Intermediate air intake

Ordering code

**2130.10**

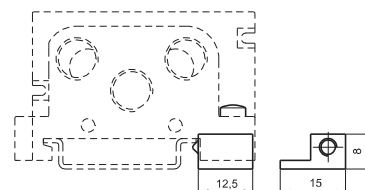


Weight gr. 12  
to be assembled of a valve

### DIN rail adapter

Ordering code

**2130.16**



Weight gr. 6

### Modular base cartridge

Ordering code

**2100.T**

TYPE

031M = 4mm tube cartridges

033M = M5 cartridges

034M = M7x1 cartridges

035M = lock cartridges

036M = 6mm tube cartridges

**T**



Weight gr. 5

### Diaphragm plug

Ordering code

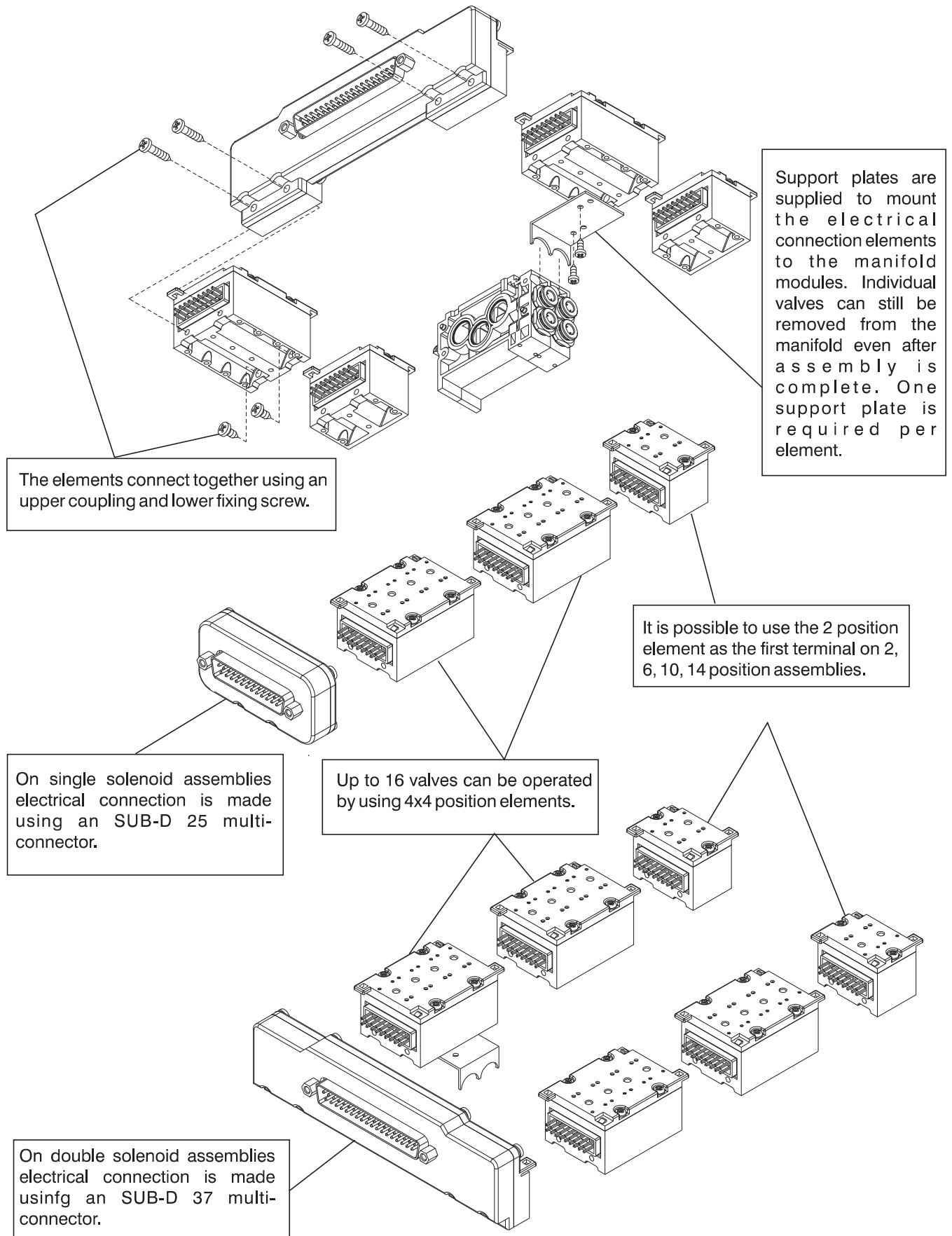
**2130.17**



Weight gr. 6

The integral electrical design for the series 2400 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).



## 4 positions module



Weight gr. 35

## Ordering code

**2100.P.T**

PLACES	
<b>P</b>	04 = 4 Places
	02 = 2 Places
TYPE	
	00 = left IP40-PNP
	02 = left IP40-PNP with protection diode
	10 = left IP65-PNP
<b>T</b>	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

## 2 positions module



Weight gr. 20

## Front connector IP65 - 37 poles

Ordering code  
**2100.37.10**

Weight gr. 120  
The IP65 protection is obtained by IP65 Pneumax cable



## Front connector IP65 - 25 poles

Ordering code  
**2100.25.10**

Weight gr. 40  
The IP65 protection is obtained by IP65 Pneumax cable



## Plug

Ordering code  
**2100.00**

Weight gr. 4



## FLAT support plate

Ordering code  
**2130.50**

Weight gr. 5



## In line cable complete with connector IP40

Ordering code  
**2400.T.L.00**

CONNECTOR TYPE	
<b>T</b>	25 = 25 contacts
	37 = 37 contacts
CABLE LENGTH	
<b>L</b>	03 = 3 meters
	05 = 5 meters
	10 = 10 meters



## Cable complete with connector, 25 Poles IP65

Ordering code  
**2300.25.L.C**

CABLE LENGTH	
<b>L</b>	03 = 3 meters
	05 = 5 meters
	10 = 10 meters
CONNECTOR	
<b>C</b>	10 = In line
	90 = a 90°



## Cable complete with connector, 37 Poles IP65

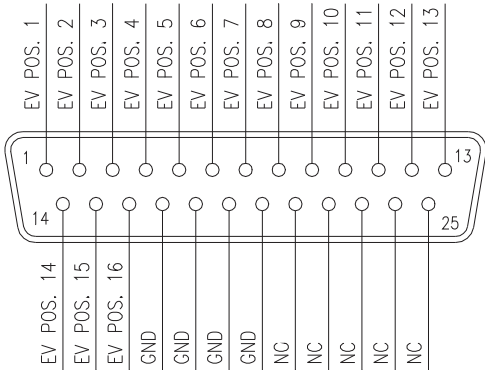
Ordering code  
**2400.37.L.C**

CABLE LENGTH	
<b>L</b>	03 = 3 meters
	05 = 5 meters
	10 = 10 meters
CONNECTOR	
<b>C</b>	10 = In line
	90 = a 90°

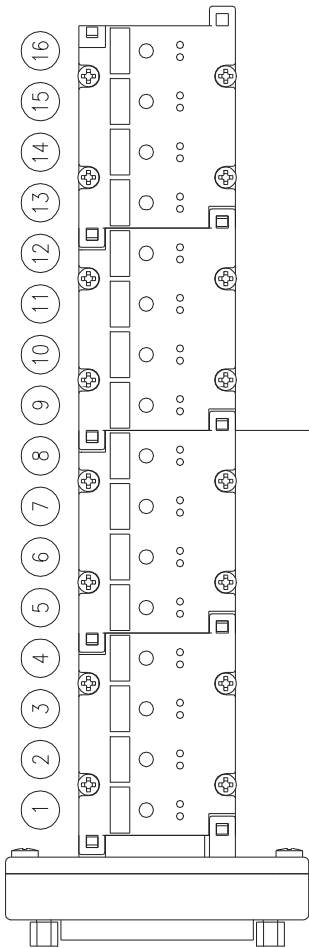
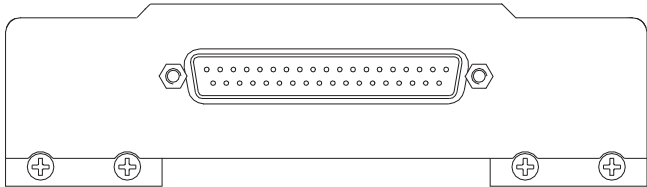
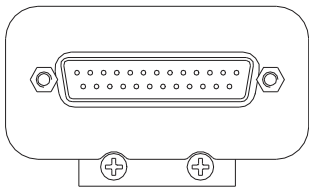
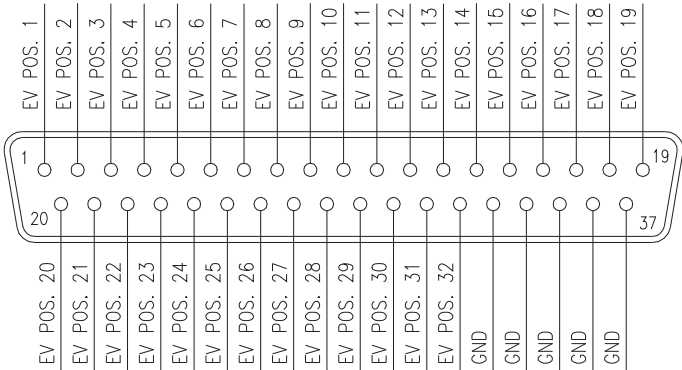




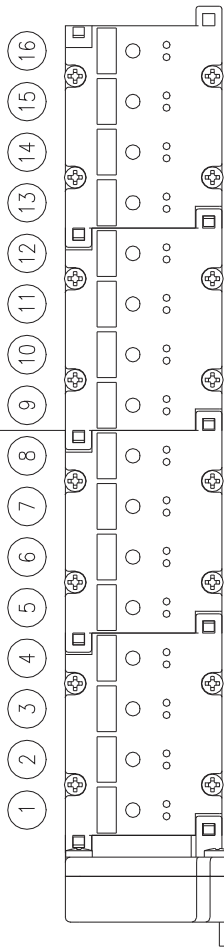
SUB-D 25 CONTACTS  
CONNECTOR



SUB-D 37 CONTACTS  
CONNECTOR



Left modules



Right modules

